Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources.* AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

AP42 Section:	11.20
Reference:	19
Title:	Emission Test Results For No. 7 And No. 8 Aggregate Kilns, Solite Corporation, A. F. Old Plant, Arvonia, Virginia, IEA, Research Triangle Park, NC, August 8, 1992.

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AP-42 Section 11.20
Reference 19
Report Sect. 4
Reference 26
PART I OF II

REPORT NO.: 192-92-67

PROJECT: 1381-003

DATE: August 8, 1992

TYPE: **EMISSION TEST REPORT**

EMISSION TEST RESULTS FOR NO. 7 AND NO. 8 AGGREGATE KILNS SOLITE CORPORATION, A.F. OLD PLANT ARVONIA, VIRGINIA

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PART I OF II

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SUMMARY OF COMPLIANCE TI[illegible] OPERATING CONDITIONS

AF 04 #7

Complete a separate form for each run of a specified test condition, use same identification codes as on Forms CC-3 and CTN-3.

1. Unit #: 7 ; Mode: A ; Test Condition (1,2 or N/A): N/A;
   Run No.: 1 ; Test Date: 6/4/92
2. Run Start Time (hr.min): 09:20 ; Run End Time (hr.min): 12:56
   If there were any interruptions in sampling, discuss cause, duration, and impact on stack sampling: Multi-metals stack sample delayed but not interrupted. No impact
   Sample Times/PM/HCl/Cl_2: 09:20 to 11:28. Metals 10:30 to 11:35. Cr^{+6} 11:51 to 12:56.
3. Operating Conditions:

	Run Avg	60-min Avg(a)
Max. Production Rate (specify units) Raw Feed Rate (tons/hr)	2.3	2.3
Max. PM Control Device Inlet Temp.(degrees F)(b)	419.3	N/A
Max. Combustion Chamber Temp. (degrees F)(b)	2438	N/A
APCS Operating Parameters (List applicable parameters, see Section 266.103(c)(1)(ix-xiii))	Run Avg	N/A
Min. Pressure Drop Across Baghouse (in. H2O)	4.5	N/A
HW Feed Feed Rate (lbs/hr)	2814	N/A

Stream No. (e)	1	2	3	4
Stream Type (e.g., coal, sludge, liquid solvents, etc.)	HW Fuel	Shale		
Category (e.g., Fuel, Raw Material, Pumpable HW, Nonpumpable HW)	Pumpable HW	Raw Material		
Mass Feed Rate (g/hr)	2182536	1.17E+06(7)		
Thermal Feed Rate (Btu/hr)	4.11E+06(7)	N/A		
Ash Feed Rate (g/hr)(7)	N/A	N/A		
Chlorine and Chloride (g/hr)	33961.82	44461.38		
Antimony (g/hr)	15.81	44.28		
Arsenic (g/hr)	424.28	168.38		
Barium (g/hr)	0.81	225.86		
Beryllium (g/hr)	38.41	14.85		
Cadmium (g/hr)	590.88	45.83		
Chromium (g/hr) Total	305.02	475.36		
Chromium (g/hr) Cr+6 (Option)	237.85	0		
Lead (g/hr)	9253.84	168.76		
Mercury (g/hr)	0.22	41.45		
Silver (g/hr)	41.81	47.82		
Thallium (g/hr)	48.52	13.74		

(a) Indicate highest or lowerst 60-minute rolling average as appropriate.
(b) Not applicable if complying with Tier I or adjusted Tier I metals feed rate screening limits.
(c) Indicate highest 60-minute rolling averages for maximum flue gas flow rate and if chosen, maximum suspended solids content of scrubber water where applicable. Indicate lowest 60-minute averages for all other APCS parameters.
(d) Owners/operators of furnaces monitoring metals concentrations in collected PM are not required to determine metals feed rates in nonhazardous waste feed streams.
(e) Copy form and add additionalpages if more than four streams were fed during test.
(f) Owners/opertors of cement and lighweight aggregate kilns are not required to determine ash feed rates of feed streams.

SUMMARY OF COMPLIANCE TF OPERATING CONDITIONS AF 012 #7

Complete a separate form for each run of a specified test condition, use same identification codes as on Forms CC-3 and CTN-3.

1. Unit #: 7 ; Mode: A ; Test Condition (1,2 or N/A): N/A;
   Run No.: 2 ; Test Date: 6/4/92
2. Run Start Time (hr.min): 14:15 ; Run End Time (hr.min): 19:36
   If there were any interruptions in sampling, discuss cause, duration, and impact on stack sampling: Cr^{+6} train stopped for 6 minutes to repair recirc. line. No impact.
   Sample Times/PM/HCl/Cl_2: 14:15 to 16:17 Metals 18:30 to 19:36. Cr^{+6} 14:15 to 15:42.
3. Operating Conditions:

	Run Avg	60-min Avg(a)
Max. Production Rate (specify units) Raw Feed Rate (tons/hr)	12.5	13.2
Max. PM Control Device Inlet Temp.(degrees F)(b)	419.4	N/A
Max. Combustion Chamber Temp. (degrees F)(b)	2403	N/A

APCS Operating Parameters (List applicable parameters, see Section 266.103(c)(1)(ix-xiii))	Run Avg	N/A
Min. Pressure Drop Across Baghouse (in. H2O)	3.0	N/A
HW Feed Feed Rate (lbs/hr)	2862	3124

Stream No. (e)	1	2	3	4
Stream Type (e.g., coal, shale, sludge, liquid solvents, etc.)	HW Fuel	Shale		
Category (e.g., Fuel, Raw Material, Pumpable HW, Nonpumpable HW)	100% Pumpable HW	Raw Material		
Mass Feed Rate (g/hr)	1372866	1.38E+06(7)		
Thermal Feed Rate (Btu/hr)	4.35E+06(7)	N/A		
Ash Feed Rate (g/hr)(f)	N/A	N/A		
Chlorine and Chloride (g/hr)	33408.86	41164.24		
Antimony (g/hr)	118.83	41.25		
Arsenic (g/hr)	412.83	164.72		
Barium (g/hr)	267.86	250.61		
Beryllium (g/hr)	65.85	41.26		
Cadmium (g/hr)	753.86	41.44		
Chromium (g/hr) Total	809.08	548.84		
Chromium (g/hr) Cr^{+6} (Spike)	213.67	0		
Lead (g/hr)	10833.88	318.54		
Mercury (g/hr)	0.35	0.44		
Silver (g/hr)	41.82	41.83		
Thallium (g/hr)	1.61	41.38		

(a) Indicate highest or lowerst 60-minute rolling average as appropriate.
(b) Not applicable if complying with Tier I or adjusted Tier I metals feed rate screening limits.
(c) Indicate highest 60-minute rolling averages for maximum flue gas flow rate and if chosen, maximum suspended solids content of scrubber water where applicable. Indicate lowest 60-minute averages for all other APCS parameters.
(d) Owners/operators of furnaces monitoring metals concentrations in collected PM are not required to determine metals feed rates in nonhazardous waste feed streams.
(e) Copy form and add additionalpages if more than four streams were fed during test.
(f) Owners/opertors of cement and lighweight aggregate kilns are not required to determine ash feed rates of feed streams.

SUMMARY OF COMPLIANCE TE OPERATING CONDITIONS AF Old #7

Complete a separate form for each run of a specified test condition, use same identification codes as on Forms CC-3 and CTN-3.

1. Unit #: 7 ; Mode: A ; Test Condition (1,2 or N/A): N/A;
   Run No.: 3 ; Test Date: 6/4/92
2. Run Start Time (hr.min): 19:52 ; Run End Time (hr.min): 22:18
   If there were any interruptions in sampling, discuss cause, duration, and impact on stack sampling: _____
   Sample Times/PM/HCl/Cl_2: 19:52 to 21:58. Metals 21:15 to 22:18. Cr^{+6} 19:52 to 20:55.
3. Operating Conditions:

	Run Avg	60-min Avg(a)
Max. Production Rate (specify units) Raw Feed Rate (tons/hr)	12.2	12.4
Max. PM Control Device Inlet Temp.(degrees F)(b)	420.0	N/A
Max. Combustion Chamber Temp. (degrees F)(b)	2325	N/A

APCS Operating Parameters (List applicable parameters, see Section 266.103(c)(1)(ix-xiii))	Run Avg	N/A
Min. Pressure Drop Across Baghouse (in. H2O)	4.5	N/A
HW Fuel Feed Rate (lbs/hr)	2796	2880

Stream No. (a)	1	2	3	4
Stream Type (e.g., coal, shale, sludge, liquid solvents, etc.)	HW Fuel	Shale		
Category (e.g., Fuel, Raw Material, Pumpable HW, Nonpumpable HW)	HW Pumpable HW	Raw Material		
Mass Feed Rate (g/hr)	1307520	1.12E+06(f)		
Thermal Feed Rate (Btu/hr)	3.20E+06(f)	N/A		
Ash Feed Rate (g/hr)(f)	N/A	N/A		
Chlorine and Chlorides (g/hr)	33885.52	4503.68		
Antimony (g/hr)	145.28	4.36		
Arsenic (g/hr)	382.65	231.18		
Barium (g/hr)	271.28	222.25		
Beryllium (g/hr)	45.48	8.38		
Cadmium (g/hr)	775.97	5.03		
Chromium (g/hr) Total	636.53	484.28		
Chromium (g/hr) Cr+6 (Spike)	237.74	0		
Lead (g/hr)	8781.33	184.28		
Mercury (g/hr)	0.31	0.67		
Silver (g/hr)	40.90	7.82		
Thallium (g/hr)	48.51	9.85		

(a) Indicate highest or lowerst 60-minute rolling average as appropriate.
(b) Not applicable if complying with Tier I or adjusted Tier I metals feed rate screening limits.
(c) Indicate highest 60-minute rolling averages for maximum flue gas flow rate and if chosen, maximum suspended solids content of scrubber water where applicable. Indicate lowest 60-minute averages for all other APCS parameters.
(d) Owners/operators of furnaces monitoring metals concentrations in collected PM are not required to determine metals feed rates in nonhazardous waste feed streams.
(e) Copy form and add additionalpages if more than four streams were fed during test.
(f) Owners/opertors of cement and lightweight aggregate kilns are not required to determine ash feed rates of feed streams.

AF OW #8

SUMMARY OF COMPLIANCE T[illegible] OPERATING CONDITIONS

Complete a separate form for each run of a specified test condition, use same identification codes as on Forms CC-3 and CTN-3.

1. Unit #: 8 ; Mode: A ; Test Condition (1,2 or N/A): N/A;
   Run No.: 1 ; Test Date: 6/2/92
2. Run Start Time (hr.min): 16:12 ; Run End Time (hr.min): 19:00
   If there were any interruptions in sampling, discuss cause, duration, and impact on stack sampling: _____
   Sample Times/PM/HCl/Cl_2: 16:12 to 18:18. Metals 17:50 to 19:00. Cr^{+6} 16:12 to 17:26.
3. Operating Conditions:

	Run Avg	60-min Avg(a)
Max. Production Rate (specify units) Raw Feed Rate (tons/hr)	16.7	18.2
Max. PM Control Device Inlet Temp.(degrees F)(b)	643.3	N/A
Min. Combustion Chamber Temp. (degrees F)(b)	2318	N/A

APCS Operating Parameters (List applicable parameters, see Section 266.103(c)(1)(ix-xiii))	Run Avg	N/A
Min. Pressure Drop Across Baghouse (in. H2O)	5.25	5.2
HW Fuel Feed Rate (lbs/hr)	2788.0	3120

Stream No. (e)	1	2	3	4
Stream Type (e.g., coal, shale, sludge, liquid solvents, etc.)	HW Fuel	Shale		
Category (e.g., Fuel, Raw Material, Pumpable HW, Nonpumpable HW)	HW Pumpable HW	Raw Material		
Mass Feed Rate (g/hr)	[illegible]	[illegible]		
Thermal Feed Rate (Btu/hr)	50252000	N/A		
Ash Feed Rate (g/hr)(f)	N/A	N/A		
Chlorine and Chloride (g/hr)	25869.80	5411.88		
Antimony (g/hr)	10.80	5.31		
Arsenic (g/hr)	361.43	131.58		
Barium (g/hr)	192.58	276.48		
Beryllium (g/hr)	33.87	43.85		
Cadmium (g/hr)	566.22	4.13		
Chromium (g/hr) total	555.92	518.74		
Chromium (g/hr) Cr+6 (Spike)	266.33	4		
Lead (g/hr)	10571.82	384.88		
Mercury (g/hr)	0.88	43.54		
Silver (g/hr)	43.82	43.53		
Thallium (g/hr)	43.52	8.38		

(a) Indicate highest or lowerst 60-minnte rolling average as appropriate.
(b) Not applicable if complying with Tier I or adjusted Tier I metals feed rate screening limits.
(c) Indicate highest 60-minute rolling averages for maximum flue gas flow rate and if chosen, maximum suspended solids content of scrubber water where applicable. Indicate lowest 60-minute averages for all other APCS parameters.
(d) Owners/operators of furnaces monitoring metals concentrations in collected PM are not required to determine metals feed rates in nonhazardous waste feed streams.
(e) Copy form and add additionalpages if more than four streams were fed during test.
(f) Owners/opertors of cement and lighweight aggregate kilns are not required to determine ash feed rates of feed streams.

AF 01Q #8

SUMMARY OF COMPLIANCE T[illegible] OPERATING CONDITIONS

Complete a separate form for each run of a specified test condition, use same identification codes as on Forms CC-3 and CTN-3.

1. Unit #: 8 ; Mode: A ; Test Condition (1,2 or N/A): N/A;
   Run No.: 2 ; Test Date: 6/2/92
2. Run Start Time (hr.min): 20:45 ; Run End Time (hr.min): 23:50
   If there were any interruptions in sampling, discuss cause, duration, and impact on stack sampling: _____
   Sample Times/PM/HCl/Cl_2: 20:47 to 23:11. Metals 22:40 to 23:50. Cr^{+6} 20:45 to 21:50.
3. Operating Conditions:

	Run Avg	60-min Avg(c)
Max. Production Rate (specify units) Raw Feed Rate (tons/hr)	14.1	15.0
Max. Air Control Device Inlet Temp.(degrees F)(b)	440.0	N/A
Max. Combustion Chamber Temp. (degrees F)(b)	2258	N/A

APCS Operating Parameters (List applicable parameters, see Section 266.103(c)(1)(ii-viii))	Run Avg	N/A
Min. Pressure Drop Across Baghouse (in. H2O)	4.0	N/A
HW Fuel Feed Rate (lbs/hr)	2760	3240

Stream No. (e)	1	2	3	4
Stream Type (e.g., coal, shale, sludge, liquid solvents, etc.)	HW Fuel	Shale		
Category (e.g., fuel, Raw Material, Pumpable HW, Nonpumpable HW)	Pumpable HW	Raw Material		
Mass Feed Rate (g/hr)	1240000	1920000		
Thermal Feed Rate,(Btu/hr)	52612000	N/A		
Ash Feed Rate (g/hr)(f)	N/A	N/A		
Chlorine and Chloride (g/hr)	21922.46	45256.80		
Antimony (g/hr)	1.24	4.96		
Arsenic (g/hr)	360.10	207.21		
Barium (g/hr)	17.36	212.28		
Beryllium (g/hr)	35.07	4.96		
Cadmium (g/hr)	571.68	45.72		
Chromium (g/hr) Total	353.77	410.28		
Chromium (g/hr) Cr+6 (Spike)	312.00	0		
Lead (g/hr)	1845.27	261.00		
Mercury (g/hr)	0.34	1.02		
Silver (g/hr)	4.96	4.96		
Thallium (g/hr)	4.96	9.92		

(a) Indicate highest or lowerst 60-minute rolling average as appropriate.
(b) Not applicable if complying with Tier I or adjusted Tier I metals feed rate screening limits.
(c) Indicate highest 60-minute rolling averages for maximum flue gas flow rate and if chosen, maximum suspended solids content of scrubber water where applicable. Indicate lowest 60-minute averages for all other APCS parameters.
(d) Owners/operators of furnaces monitoring metals concentrations in collected PM are not required to determine metals feed rates in nonhazardous waste feed streams.
(e) Copy form and add additionalpages if more than four streams were fed during test.
(f) Owners/opertors of cement and lighweight aggregate kilns are not required to determine ash feed rates of feed streams.

AF Old #8

SUMMARY OF COMPLIANCE TEST OPERATING CONDITIONS

Complete a separate form for each run of a specified test condition, use same identification codes as on Forms CC-3 and CTN-3.

1. Unit #: 8; Mode: A; Test Condition (1,2 or N/A): N/A;
   Run No.: 3; Test Date: 6/3/92
2. Run Start Time (hr.min): 10:16; Run End Time (hr.min): 13:30
   If there were any interruptions in sampling, discuss cause, duration, and impact on stack sampling: _____
   Sample Times/PM/HCl/Cl_2: 10:16 to 12:25. Metals 10:16 to 11:40. Cr^{+6} 12:25 to 13:30.
3. Operating Conditions:

	Run Avg	60-min Avg(a)
Max. Production Rate (specify units) Raw Feed Rate (tons/hr)	14.9	15.4
Max. PM Control Device Inlet Temp.(degrees F)(b)	429	N/A
Max. Combustion Chamber Temp. (degrees F)(b)	2217	N/A

APCS Operating Parameters (List applicable parameters, see Section 266.103(c)(1)(ix-xiii))	Run Avg	N/A
Min. Pressure Drop Across Baghouse (in. H2O)	5.0	N/A
HW Fuel Feed Rate (lbs/hr)	2002	3000

Stream No. (e)	1	2	3	4
Stream Type (e.g., coal, shale, sludge, liquid solvents, etc.)	HWD Fuel	Shale		
Category (e.g., Fuel, Raw Material, Pumpable HW, Nonpumpable HW)	100% Pumpable HWD	Raw Material		
Mass Feed Rate (g/hr)	1362000	1981200(f)		
Thermal Feed Rate (Btu/hr)	9200000	N/A		
Ash Feed Rate (g/hr)(f)	N/A	N/A		
Chlorine and Chloride (g/hr)	25083.48	5411.68		
Antimony (g/hr)	8.24	45.17		
Arsenic (g/hr)	432.16	225.30		
Barium (g/hr)	381.22	241.27		
Beryllium (g/hr)	12.22	21.83		
Cadmium (g/hr)	208.16	45.87		
Chromium (g/hr) Total	355.32	518.14		
Chromium (g/hr) Cr+6 (Soluble)	352.50	0		
Lead (g/hr)	10887.50	278.72		
Mercury (g/hr)	1.78	0.334		
Silver (g/hr)	1.08	38.28		
Thallium (g/hr)	21.48	16.17		

(a) Indicate highest or lowerst 60-minute rolling average as appropriate.
(b) Not applicable if complying with Tier I or adjusted Tier I metals feed rate screening limits.
(c) Indicate highest 60-minute rolling averages for maximum flue gas flow rate and if chosen, maximum suspended solids content of scrubber water where applicable. Indicate lowest 60-minute averages for all other APCS parameters.
(d) Owners/operators of furnaces monitoring metals concentrations in collected PM are not required to determine metals feed rates in nonhazardous waste feed streams.
(e) Copy form and add additionalpages if more than four streams were fed during test.
(f) Owners/opertors of cement and lighweight aggregate kilns are not required to determine ash feed rates of feed streams.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

FACSIMILE TRANSMISSION

Date: 4-7-93

To: Rick Marwaha

Address: _____ Fax: 919-677-0065

_____ Phone: 919-677-0249

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From: Gary Gross
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Comments:

VA Solite operating data.

This page is followed by a 12 page transmission.

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1. INTRODUCTION

Emission tests were conducted at the No. 7 and No. 8 Rotary Aggregate Kiln of the Solite Corporation's A. F. Old plant in Arvonia, Virginia during on June 2-4, 1992. Stack sampling was conducted by personnel from Industrial & Environmental Analysts, Inc. (IEA) and their subcontractor DEECO, Inc. Process samples were collected by personnel from Solite. Sample analysis was performed at Triangle Laboratories, Inc. in Research Triangle Park, NC; Research Triangle Institute in Research Triangle Park, NC; Ross Analytical Services, Inc. in Strongsville, OH; and CAE Analytical Services in Palatine, IL.

Testing was conducted on each kiln to demonstrate compliance with the Resource Conservation and Recovery Act (RCRA) 40 CFR Parts 266.104(b) through 266.107 performance standards for carbon monoxide, particulate matter, metals, hydrogen chloride and chlorine emissions. The objective of this compliance test program was to demonstrate that each Lightweight Aggregate Kiln is capable of burning hazardous waste within the following emission limits:

- Particulate matter (PM) emissions less than 180 mg/dscm (0.08 gr/dscf) corrected to 7 percent oxygen.
- Compliance with EPA's tiered screening emission limits for selected metals (Sb, As, Ba, Be, Cd, Cr, Pb, Hg, Ag and Tl), hydrogen chloride (HCl), and chlorine (Cl_2).
- Compliance with a 100 ppmv carbon monoxide (CO) emission limit based on a 60-minute rolling average and continuous correction to 7% oxygen.

The trial burn program was designed by Solite Corporation and their contractor (Four Nines, Inc.) to demonstrate the capabilities of each Aggregate Kiln to effectively utilize waste fuel materials within the performance parameters set forth in the applicable regulations. To demonstrate compliance with the applicable Tier III requirements, the Liquid Burnable Material (LBM) feed was spiked with tetrachloroethene, arsenic, cadmium, chromium, and lead.

Process samples of LBM feed were collected for analyses of metals, chlorine, ash, Btu content, density, and water content and the LBM flow rate was determined. Process samples of raw feed, aggregate product, and baghouse dust were collected for analyses of metals analysis, chlorine, and water content.

2. SUMMARY OF RESULTS

The No. 7 kiln and the No. 8 kiln were tested with triplicate test runs while both were operated at one process condition. Each test run was approximately three hours long. Each test involved sampling the stack gas emissions with three separate manual sampling trains; a combined particulate matter/HCl/Cl_2 train; a multiple metals train; and a hexavalent chromium train. A continuous emission monitoring system was also operated during each test run to measure stack gas concentrations of oxygen (O_2), carbon dioxide (CO_2), carbon monoxide (CO), and total hydrocarbons (THC).

Table 2-1 presents a summary of the mass emission rates (three-run averages) for PM (corrected to 7% O_2), HCl, Cl_2, metals, hexavalent chromium, and the CO and THC concentrations (rolling one-hour average corrected to 7% O_2). All the measured stack emission rates and concentrations were below the applicable emission standards for these two sources for all sampling runs. Any values shown as "less than" (<) indicate that one or more of the results were below the detectable limit for a given analyte, with the detection limit being used when calculating the average. In particular, the metals sampling train analysis was performed on two fractions, the probe wash and filter fraction and the impinger solutions, with the analytical results for the two fractions being summed. If one or the other fraction was below the detection limit, then the results for the entire sample train were reported as "less than", with the detection limit value used in the calculation.

Table 2-2 and Table 2-3 present a summary of the stack gas conditions measured during each test run for Kiln No. 7 and Kiln No. 8, respectively. With the exception of the moisture results for the hexavalent chromium sampling, the measured and calculated stack gas parameters for Kiln No. 7 were in good agreement among the three trains for each sampling run. The low moisture values for the hexavalent chromium train will cause a high bias in the calculated dry volumetric flow rate of the flue gas, and results in high bias in the mass emission rate for that train. All sampling runs on Kiln No. 7 were performed within the acceptable isokinetic variation range. The measured and calculated stack gas parameters for Kiln No. 8 were in good agreement among the three trains for each sampling run. All sampling runs on Kiln No. 8 were performed within the acceptable isokinetic variation range.

Table 2-4 presents the results for each particulate matter/HCl/Cl_2 sampling run for Kiln No. 7 and Kiln No. 8, respectively, in milligrams per dry standard cubic meter (mg/M^3), grains per dry standard cubic feet corrected to seven percent oxygen for particulate matter, and grams/hour (g/hr) for HCl and Cl_2. The particulate emissions for Kiln No. 8 were about three times higher than Kiln No. 7. The HCl emissions from Kiln No.8 were about 40% lower than the HCl emissions from Kiln No. 8. The Cl_2 emissions were about the same from both kilns.

Table 2-5 presents the results for each multiple metals sampling run and hexavalent chromium sampling run for Kiln No. 7 and Kiln No. 8, respectively, in micrograms per cubic meter ($\mu g/M^3$) and grams/hour (g/hr). The results for the multiple metals results were blank corrected following the specified procedures in Method 0012. These procedures do not allow for direct blank correction for blank values exceeding 1 μg, and other blank correction values are calculated. The techniques employed are documented in Appendix A.

TABLE 2-1. SUMMARY OF MEASURED AND ALLOWABLE EMISSION RATES AND CONCENTRATIONS

Constituent	Kiln No. 7	Kiln No. 8	Kilns 7 & 8
	Measured[1]	Measured	Allowable
Particulate Matter (gr/dscf)[3]	0.007	0.025	0.08
HCl (g/hr)	36,600	22,500	79,776
Cl_2 (g/hr)	49.9	50.8	2,412
Antimony (g/hr)	4.04	0.404	3,419.23
Arsenic (g/hr)	0.347	1.61	9.23
Barium (g/hr)	<0.373	<1.14	569,870.89
Beryllium (g/hr)	0.027	<0.062	6.82
Cadmium (g/hr)	0.510	1.58	21.95
Total Chromium (g/hr)	<0.244	<1.01	N/A[4]
Hexavalent Chromium (g/hr)	<0.029	<0.023	1.47
Lead (g/hr)	10.2	28.5	1,025.77
Mercury (g/hr)	<0.006	0.396	911.79
Silver (g/hr)	<0.055	<0.061	34,192.25
Thallium (g/hr)	<0.020	<0.029	5,698.71
Carbon Monoxide (ppm)[5]	18.6	3.1	100
Total Hydrocarbons (ppm)[5]	3.5	4.1	20

[1]Average of three test runs.
[2]Based on Tier III dispersion monitoring.
[3]Corrected to 7% oxygen.
[4]Not Applicable
[5]Continuous 60-minute rolling average corrected to 7% oxygen.

TABLE 2-2. STACK GAS CONDITIONS FOR KILN NO. 7

Sampling Train	Stack Gas Parameters							Isokinetic Variation
	Temp. (°F)	O_2	CO_2	Moisture	Velocity (ft/s)	Gas Flow Rate (dscfm)	Gas Flow Rate (acfm)	
Kiln No. 7, Sampling Run 1, June 4, 1992, 09:20 to 12:56								
PM/HCl/Cl_2	344	15.0%	4.1 %	11.4%	43.12	21,700	37,400	98.5%
Metals	340	15.1%	4.1 %	10.4%	45.76	23,400	39,700	100.4%
Hex. Cr	346	15.1%	4.1 %	4.6%[1]	42.27	22,800	36,700	92.2%
Average	343	15.1%	4.1 %	10.9%	43.72	22,600	37,900	---
Kiln No. 7, Sampling Run 2, June 4, 1992, 14:00 to 16:17								
PM/HCl/Cl_2	349	14.8%	4.4 %	11.4%	44.17	22,100	38,300	99.0%
Metals[2]	341	14.7%	4.3 %	13.0%	40.16	19,900	34,900	98.4%
Hex. Cr	344	14.9%	4.3 %	2.6%[1]	40.51	22,400	35,200	96.6%
Average	343	14.8%	4.3 %	12.2%	41.61	21,500	36,100	---
Kiln No. 7, Sampling Run 3, June 4, 1992, 19:52 to 22:18								
PM/HCl/Cl_2	341	14.6%	4.4 %	12.3%	38.76	19,400	33,600	100.5%
Metals	336	14.6%	4.5 %	12.9%	40.28	20,100	35,000	102.5%
Hex. Cr	338	14.3%	4.4 %	8.9%[1]	39.06	20,400	33,900	101.0%
Average	338	14.5%	4.4 %	12.6%	39.37	20,000	34,200	---

[1]Apparent outlier, not included in the average.
[2]Metals run conducted from 18:30 to 19:35

TABLE 2-3. STACK GAS CONDITIONS FOR KILN NO. 8

Sampling Train	Stack Gas Parameters							Isokinetic Variation
	Temp. (°F)	O_2	CO_2	Moisture	Velocity (ft/s)	Gas Flow Rate (dscfm)	Gas Flow Rate (acfm)	
Kiln No. 8, Sampling Run 1, June 2, 1992, 16:12 to 19:00								
PM/HCl/Cl_2	364	15.5%	3.8 %	9.4%	43.93	22,700	38,900	94.1%
Metals	357	15.2%	4.0 %	9.4%	44.93	23,400	39,800	95.8%
Hex. Cr	366	15.6%	3.8 %	11.3%	43.86	22,100	38,800	95.4%
Average	362	15.4%	3.9 %	10.0%	44.24	22,700	39,200	---
Kiln No. 8, Sampling Run 2, June 2, 1992, 20:45 to 23:50								
PM/HCl/Cl_2	366	15.5%	3.8 %	9.2%	47.36	24,400	41,900	100.0%
Metals	357	15.5%	3.8 %	7.0%	45.35	24,100	40,100	99.6%
Hex. Cr	366	15.4%	3.9 %	8.7%	45.11	23,400	39,900	100.3%
Average	363	14.8%	3.8 %	8.3%	45.94	24,000	40,600	---
Kiln No. 8, Sampling Run 3, June 3, 1992, 10:15 to 13:30								
PM/HCl/Cl_2	358	15.1%	3.9 %	9.2%	43.41	22,600	38,400	95.9%
Metals	351	15.2%	3.9 %	11.0%	44.44	22,900	39,300	100.4%
Hex. Cr	358	15.0%	4.0 %	9.4%	40.46	21,000	35,800	98.1%
Average	356	15.1%	3.9 %	8.7%	42.77	22,200	37,800	---

TABLE 2-4. PARTICULATE MATTER, HCl, AND CHLORINE STACK GAS RESULTS

Test Run	Particulate Matter		Hydrogen Chloride		Chlorine	
	mg/cu.M	gr/dscf[1]	mg/cu.M	g/hr	mg/cu.M	g/hr
Kiln No. 7						
Run 1	7.94	0.008	1020	37,500	2.70	99.4
Run 2	6.39	0.006	1020	38,500	0.782	29.4
Run 3	6.29	0.006	1030	33,900	0.725	23.8
Average	6.87	0.007	1020	36,600	1.40	50.9
Kiln No. 8						
Run 1	11.5	0.013	585	21,700	1.32	48.9
Run 2	26.3	0.030	550	22,500	1.30	53.2
Run 3	31.3	0.033	571	21,600	1.00	37.7
Average	23.1	0.025	568	21,900	1.20	46.6

[1]Corrected to 7% oxygen

TABLE 2-5 MULTIPLE METALS AND HEXAVALENT CHROMIUM STACK GAS RESULTS

	Run 1		Run 2		Run 3		Average	
Metal	ug/cu.M	g/hr	ug/cu.M	g/hr	ug/cu.M	g/hr	ug/cu.M	g/hr
Kiln No. 7								
Antimony	127	5.06	115	3.89	92	3.15	112	4.04
Arsenic	0.853	0.034	15.4	0.520	14.2	0.486	10.2	0.347
Barium	6.65	0.264	<14.3	<0.484	<10.9	<0.372	<10.6	<0.374
Beryllium	0.518	0.021	1.10	0.037	0.644	0.022	0.753	0.027
Cadmium	9.19	0.365	19.9	0.673	14.3	0.491	14.5	0.510
Chromium	<5.19	<0.206	<9.28	<0.314	<6.24	<0.213	<6.90	<0.244
Hex. Cr	0.658	0.026	<0.785	<0.030	0.928	0.032	<0.790	<0.029
Lead	92.5	3.68	598	20.2	193	6.60	295	10.2
Mercury	<0.139	<0.006	<0.042	<0.001	<0.317	<0.011	<0.166	<0.006
Silver	<1.17	<0.046	<2.21	<0.075	<1.29	<0.044	<1.56	<0.055
Thallium	<0.334	<0.013	<0.966	<0.033	<0.370	<0.013	<0.557	<0.020
Kiln No. 8								
Antimony	4.38	0.174	6.33	0.259	19.9	0.773	10.2	0.402
Arsenic	23.9	0.950	39.6	1.62	57.5	2.24	40.3	1.60
Barium	30.5	1.21	<26.4	<1.08	<28.9	<1.13	<28.6	<1.14
Beryllium	0.966	0.038	<1.88	<0.077	1.81	0.071	<1.55	<0.062
Cadmium	34.2	1.36	45.7	1.872	28.9	1.13	36.3	1.45
Chromium	<36.7	<1.46	<24.0	<0.982	<15.0	<0.584	<25.2	<1.01
Hex. Cr	<0.430	<0.016	0.516	0.020	<0.724	<0.026	<0.557	<0.021
Lead	629	25.0	686	28.1	823	32.0	713	28.4
Mercury	6.75	0.269	11.2	0.459	11.7	0.455	9.89	0.394
Silver	<1.55	<0.062	<1.66	<0.068	<1.328	<0.052	<1.51	<0.060
Thallium	<0.842	<0.033	<0.553	<0.023	<0.771	<0.030	<0.722	<0.029

For both kilns, chromium and silver were not detected in any sample. Arsenic, antimony, cadmium, and lead were detected in all samples. For both kilns, lead had the highest stack concentration of all target metals, except for antimony that was slightly higher than lead during the first sampling run on Kiln No. 7. The metals results for each kiln were fairly consistent for each run, with arsenic, cadmium, and lead having the greatest run-to-run variability. Hexavalent chromium was only detected in two samples, and, in all cases, the results for hexavalent chromium were lower than the total chromium emissions.

3. PROCESS OPERATION PARAMETERS

The No. 7 and No. 8 rotary aggregate kilns burn liquid waste as fuel from the Oldover storage tank farm. Kiln No. 7 and Kiln No. 8 are 9 ft. in diameter and 120 ft. long with a maximum fuel feed rate of 42.4 mmBtu/hr. The typical feed material is a shale from an adjacent quarry, which is crushed and sized before feeding at the cold end of the kiln. Lightweight aggregate is produced by heating the shale to a temperature of at least 1800°F, the temperature at which the material expands, or "bloats." Exhaust gases from the kilns go to ducting for gas cooling, then to fabric filter baghouses for particulate removal. The operation is such that only one kiln uses one baghouse at a time. The system uses induced draft fans at the exit of each baghouse which discharges to single exhaust stacks.

Figure 3-1 provides a diagram depicting the various locations where the process sample were collected. Tables 3-1 presents a summary of the analytical results for the product, baghouse dust, LBM, and raw feed samples collected during each test run for Kiln No. 7 and Kiln No. 8, respectively.

The results for metals, moisture, and total chlorine on the raw feed samples from both Kiln No. 7 and Kiln No. 8 were, as would be expected, very consistent between each run. Chromium, lead, barium, and arsenic, in that order, were found in the highest concentrations.

The results for metals, moisture, and total chlorine on the product samples from both Kiln No. 7 and Kiln No. 8 were more variable between each run. In the product, chromium, lead, barium, and arsenic were found in the highest concentrations.

For the baghouse dust from Kiln No. 7, the concentrations of metals were fairly consistent for each run, except for lead which was almost ten times higher for Run 3 compared to Runs 1 and 2. For the baghouse dust from Kiln No. 8, the concentrations of metals were fairly consistent for each run, except for lead and cadmium, which were almost three times and ten times higher, respectively, for Run 3, and barium and chromium, which were about 50% lower for Run 3.

For the LBM, the physical parameters were very consistent for each run on the two kilns. The metals concentrations in the LBM were highly variable from run to run.

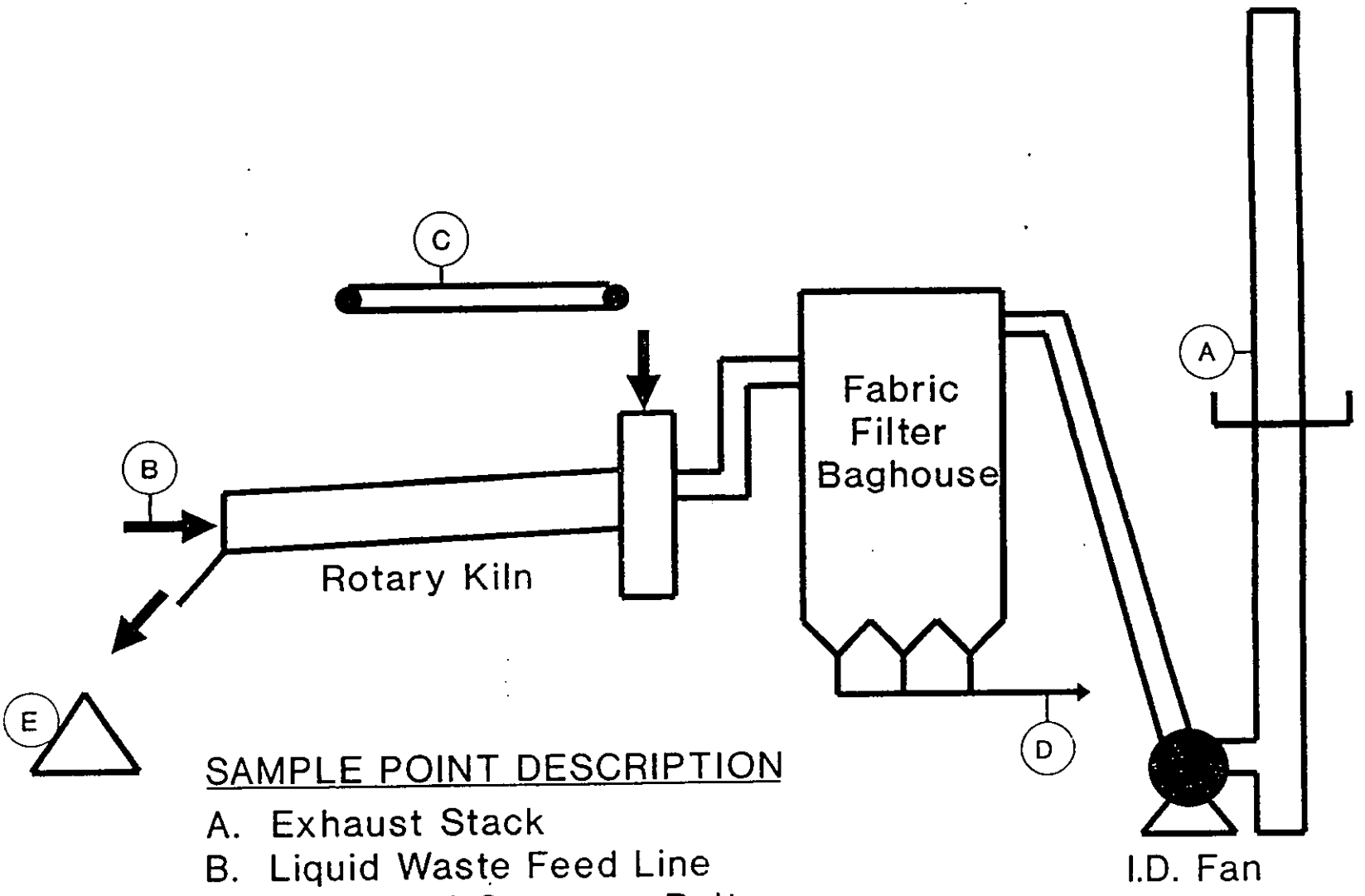


Figure 3-1. Diagram of process sampling locations.

TABLE 3-1. SUMMARY OF PROCESS SAMPLE ANALYSES FOR KILN NO. 7

	Raw Feed				Product				Baghouse Dust				LBM			
Analytical Parameter	Run 1	Run 2	Run 3	Avg.	Run 1	Run 2	Run 3	Avg.	Run 1	Run 2	Run 3	Avg.	Run 1	Run 2	Run 3	Avg.
Total Chloride (%)	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	NA	NA	NA	NA	2.54	2.44	2.60	2.53
Ash (%)	NA[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.22	<0.05	0.13	<0.13
Heating Value (Btu/lb)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14,300	14,400	13,800	14,200
Density (g/mL)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.941	0.924	0.945	0.943
Moisture (%)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5
Antimony (mg/Kg)	<0.39	<0.39	<0.39	<0.39	<0.39	0.57	<0.39	<0.45	<0.39	<0.39	0.22	<0.33	11.5	89.2	113	71.2
Arsenic (mg/Kg)	11.5	14.2	20.7	15.5	9.37	8.64	5.14	7.72	119	113	122	118	2.13	2.58	2.51	2.41
Barium (mg/Kg)	24.7	23.0	19.9	22.5	29.3	17.4	19.6	22.1	148	161	158	156	0.62	220	211	144
Beryllium (mg/Kg)	1.33	<0.07	<0.07	<0.49	0.27	0.15	<0.07	0.16	1.55	<0.07	<0.07	<0.56	<0.07	<0.07	<0.07	<0.07
Cadmium (mg/Kg)	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	27.7	30.1	42.2	33.3	12.0	20.4	21.3	17.9
Total Chromium (mg/Kg)	40.6	45.8	43.9	43.4	25.3	145	23.4	64.6	40.3	46.1	48.7	45.0	55.5	288	305	216
Lead (mg/Kg)	15.2	28.5	16.5	20.1	27.5	29.3	13.2	23.3	63.8	76.4	667	269.1	59.8	639	120	273
Mercury (mg/Kg)	<0.04	0.04	0.06	<0.05	0.05	0.04	0.11	0.07	<0.04	<0.04	<0.04	<0.04	0.17	0.23	0.24	0.21
Silver (mg/Kg)	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.07	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70
Thallium (mg/Kg)	1.23	1.23	1.24	1.23	0.49	<0.40	0.48	<0.46	3.75	4.30	3.67	3.91	<0.40	<0.40	<0.40	<0.40

[1] Sample not analyzed for this parameter.

TABLE 3-2. SUMMARY OF PROCESS SAMPLE ANALYSES FOR KILN NO. 8

	Raw Feed				Product				Baghouse Dust				LBM			
Analytical Parameter	Run 1	Run 2[1]	Run 3	Avg.	Run 1	Run 2[1]	Run 3	Avg.	Run 1	Run 2[1]	Run 3	Avg.	Run 1	Run 2[1]	Run 3	Avg.
Total Chlorides (%)	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	NA	NA	NA	NA	1.98	1.87	1.96	1.94
Ash (%)	NA[2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	<0.26	0.13	<0.15
Heating value (Btu/lb)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16,100	16,300	16,400	16,300
Density (g/mL)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.865	0.895	0.884	0.882
Moisture (%)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5
Antimony (mg/Kg)	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	0.64	0.68	<0.39	<0.57	8.11	0.99	10.8	6.63
Arsenic (mg/Kg)	9.69	16.3	17.0	14.3	8.26	9.84	9.27	9.12	6.33	7.12	11.7	8.38	0.26	0.20	0.72	0.39
Barium (mg/Kg)	20.3	16.7	18.2	18.4	38.6	68.8	14.4	40.6	239	249	124	204	132	14.2	311	152
Beryllium (mg/Kg)	<0.07	<0.07	<0.07	<0.07	0.14	0.50	<0.07	0.24	<0.07	<0.07	1.23	0.46	<0.07	<0.07	0.36	<0.17
Cadmium (mg/Kg)	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	6.20	8.45	105	39.9	6.87	4.58	10.2	7.22
Total Chromium (mg/Kg)	39.4	31.2	35.4	35.3	49.9	24.3	33.1	107.3	62.1	59.6	32.4	51.4	71.5	38.8	95.2	68.5
Lead (mg/Kg)	29.0	20.6	21.1	23.6	20.8	15.1	24.8	20.2	672	719	2650	1347	164	57.6	210	144
Mercury (mg/Kg)	<0.04	0.08	0.07	<0.06	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.68	0.27	1.45	0.76
Silver (mg/Kg)	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	0.89	<0.76
Thallium (mg/Kg)	1.35	1.15	1.22	1.24	0.52	0.94	<0.40	0.62	4.69	4.18	3.37	4.02	<0.40	<0.40	<0.40	<0.40

[1] Average of duplicate analyses.

[2] Sample not analyzed for this parameter.

4. SAMPLING AND ANALYTICAL PROCEDURES

Table 4-1 presents a summary of the overall sampling and analytical protocols used for the Certificate of Compliance test program for Kiln No. 7 and Kiln No. 8. All sampling and analytical methods employed for this test program were performed in accordance with the procedures outlined in the Methods Manual for Compliance with the BIF Regulations - Burning Hazardous Waste in Boilers and Industrial Furnaces, EPA/530-SW-91-010, December 1990, and those referenced in EPA-SW-846.

4.1 Sampling Point, Flue Gas Velocity, and Volumetric Flow Rate Determination

The stack gas sampling ports were located at the exhaust stack 13.83 ft. (3.2 duct diameters) above the junction of the duct breaching. The CEM port was located slightly above the isokinetic ports. This location meets the minimum specifications for selection of a measurement site as outlined in EPA Method 1. Schematics of each sampling location are shown in Figures 4-1 and 4-2 for Kiln No. 7 and Kiln No. 8, respectively.

A 24-point velocity/particulate traverse in each of two 90° directions was made at the sampling location using a type-S pitot tube and sampling nozzle (glass) in accordance with EPA Methods 2 and 5 procedures. Gas temperatures were measured using calibrated Type K thermocouples and digital readout devices.

Dry gas molecular weight was determined using the oxygen and carbon dioxide measurements following EPA Method 3A employing the IEA continuous emission monitoring system (CEMS). Stack gas moisture was measured in accordance with EPA Method 4 procedures for the condensation option contained within Methods 12, 13, and 0050.

4.2 Sampling and Analysis for Flue Gas Metals

EPA Method 0012 sampling trains were used to collect metals stack gas samples from the Kiln No. 7 and Kiln No. 8 sampling locations. A glass nozzle and glass probe liner were used with a quartz fiber filter and a Teflon filter support. The first two impingers each contained 100 ml of 5% nitric acid/10% hydrogen peroxide solution, the third impinger was empty, the fourth and fifth impingers each contained 100 ml of 10% sulfuric acid/4% potassium permanganate solution, and the last impinger contained silica gel.

Analytical procedures followed those outlined in EPA Methods 0012 in Methods Manual for Compliance with the BIF Regulations - Burning Hazardous Waste in Boilers and Industrial Furnaces, EPA/530-SW-91-010, December 1990, and those referenced in EPA-SW-846. The probe and nozzle rinses and the quartz filter were subjected to microwave digestion with concentrated hydrogen fluoride and nitric acid. After an aliquot was removed for mercury analysis, the 5% nitric acid/10% hydrogen peroxide solution was reduced to near dryness, and digested with nitric acid and hydrogen peroxide. The metals, except

TABLE 4-1. SUMMARY OF SAMPLING AND ANALYTICAL METHODS USED FOR CERTIFICATION OF COMPLIANCE TEST PROGRAM ON LIGHTWEIGHT AGGREGATE KILNS NO. 7 AND NO. 8

Test Parameter	Sampling Procedure or Method	No. of Samples	Analytical Parameters	Analytical Procedure
<u>Stack Gas Streams</u> Stack gas flow	EPA Method 2 pitot tube	During each isokinetic test run	N/A	EPA Method 2 Inclined manometer
Dry gas molecular weight	EPA Method 3A continuous	During whole testing period	O_2, CO_2	EPA Method 3A electrochemical & nondispersive IR
Stack gas moisture	EPA Method 4 traverse integrated	During each isokinetic test run	Moisture content	EPA Method 4 condensation and gravimetric
Particulate matter concentration	EPA Method 5 isokinetic traverse integrated	Three 120-min test runs; 60 ft^3 minimum gas sample	Particulate matter	EPA Method 5 desiccation and gravimetric
Hydrogen chloride and chlorine gas concentration	EPA Method 0050 isokinetic traverse integrated back-half of EPA Method 5	Three 120-min test runs; 60 ft^3 minimum gas sample	HCl and Cl_2	EPA Method 9057 ion chromatography
Metals concentration	EPA Method 0012 Multiple Metals isokinetic traverse integrated	Three 60-min test runs; 45 ft^3 minimum gas sample	Sb, As, Ba, Be, Cd, Cr, Pb, Hg, Ag, and Tl	Microwave digestion EPA 6010 ICP GFAAS EPA 7041 (Sb) EPA 7060 (As) EPA 7241 (Pb) EPA 7841 (Tl) CVAAs EPA 7470 (Hg)
Hexavalent Chromium (Cr^{+6}) concentration	EPA Method 0013 isokinetic traverse integrated	Three 60-min test runs; 45 ft^3 minimum gas sample	Cr^{+6}	EPA 0013 ion chromatography with a post column reactor
Carbon monoxide concentration	EPA Method 10 continuous	During whole testing period	Carbon monoxide	EPA Method 10 gas filter correlation NDIR
Total hydrocarbons concentration	EPA Method 25A continuous	During whole testing period	THC as C_3H_8	EPA Method 25A FID

(continued)

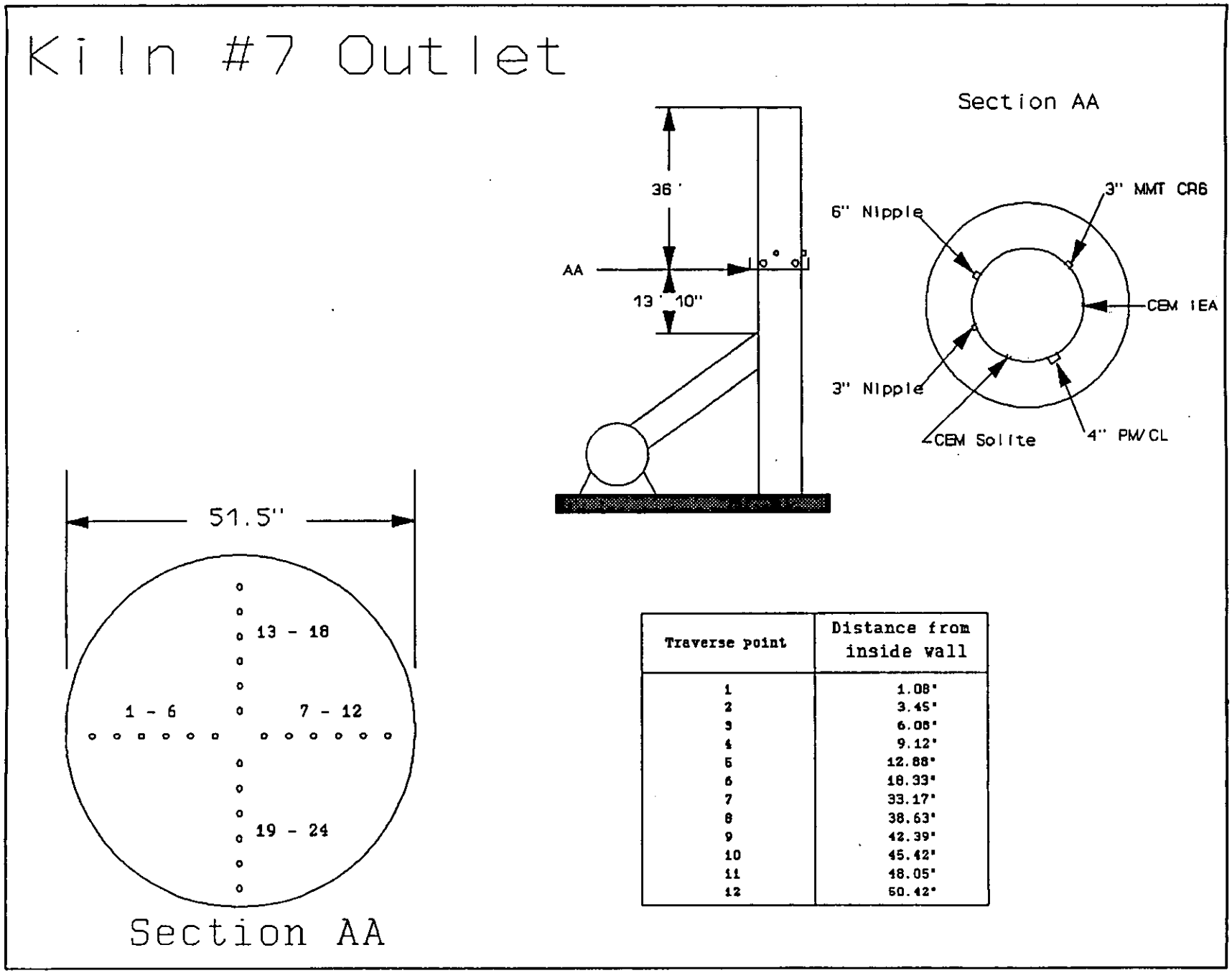
TABLE 4-1 (Continued).

Test Parameter	Sampling Procedure or Method	No. of Samples	Analytical Parameters	Analytical Procedure
<u>Waste Feed Stream</u> Liquid Burnable Materials	S004 tap	One grab every 15 minutes field composite 500-mL glass container	Metals Sb, As, Ba, Be, Cd, Cr, Pb, Hg, Ag, and Tl	EPA 3040 solvent dilution EPA 3050 acid digestion EPA 6010 ICP GFAAS EPA 7041 (Sb) EPA 7060 (As) EPA 7241 (Pb) EPA 7841 (Tl) CVAAs EPA 7470 (Hg)
		One grab every 15 minutes field composite 500-mL glass container	Chlorine	ASTM D808 bomb combustion absorption and titration
			Ash	ASTM D482 combustion and gravimetry
			Btu Content	ASTM D2382 high-precision bomb calorimetry
			Density	Std Method 213 calibrated flask
			Water Content	Karl Fisher titration
LBM Flow Rate	Mass flow meters	Continuous	Flow rate	N/A
<u>APCE Residuals</u> Baghouse dust concentration	S004 tap	One grab every 30 minutes field composite 1-L glass container	Metals	EPA 6010, 7000s ICAP & AAS

(continued)

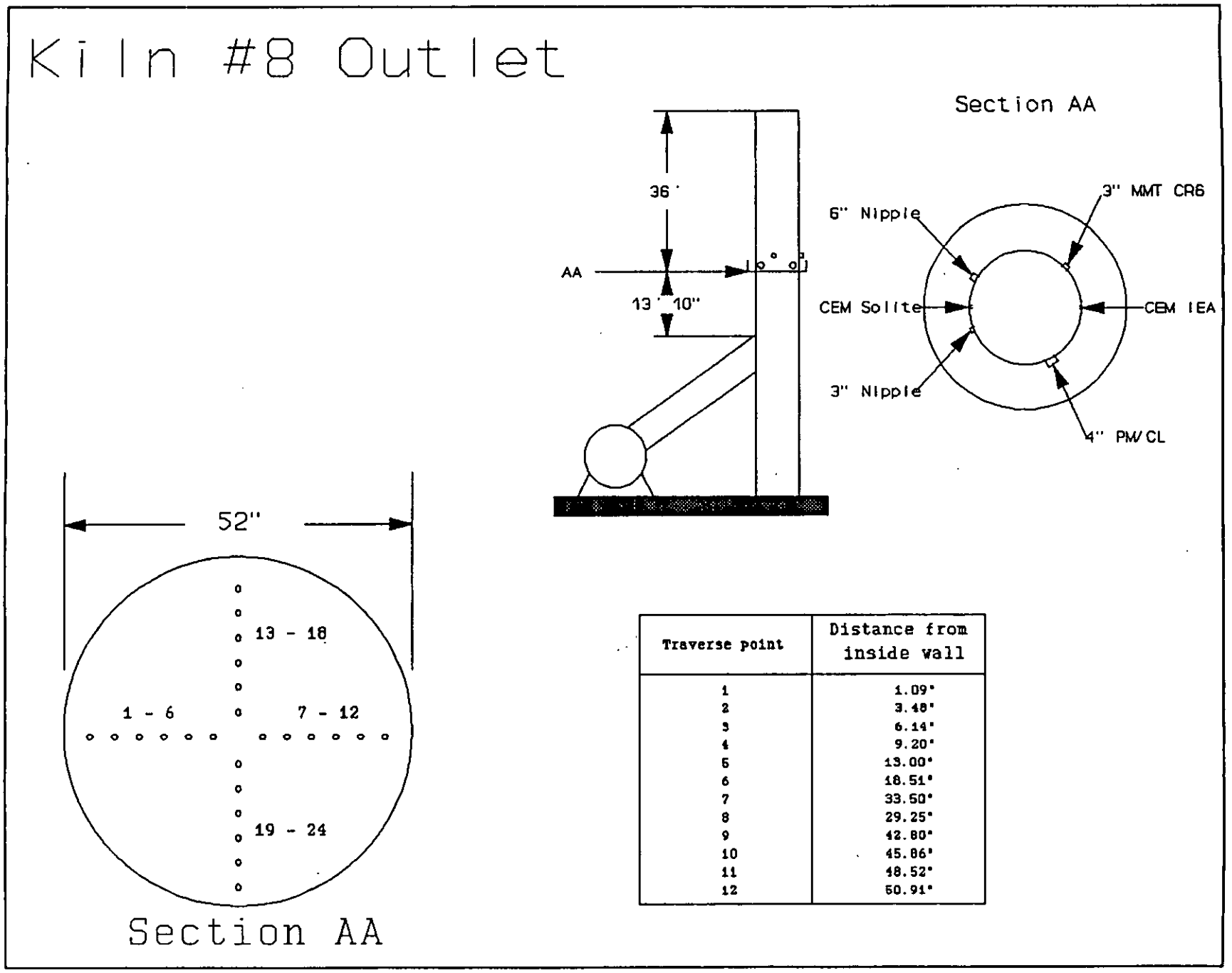
TABLE 4-1 (Continued).

Test Parameter	Sampling Procedure or Method	No. of Samples	Analytical Parameters	Analytical Procedure
<u>Kiln Feed Stream</u> Raw Feed	S007 trowel scoop	One grab every 30 minutes field composite 500-mL glass container	Metals Sb, As, Ba, Be, Cd, Cr, Pb, Hg, Ag, and Tl	EPA 3050 acid digestion EPA 6010 ICP GFAAS EPA 7041 (Sb) EPA 7060 (As) EPA 7241 (Pb) EPA 7841 (Tl) CVAAs EPA 7470 (Hg)
		One grab every 30 minutes field composite 500-mL glass container	Chlorine	ASTM D4208 bomb combustion ion selective electrode
			Water Content	ASTM D3173 modified pulverize, dry and gravimetry
<u>Product Stream</u> Lwt. Aggregate	S006 trier-corer	One grab every 30 minutes field composite 500-mL glass container	Metals Sb, As, Ba, Be, Cd, Cr, Pb, Hg, Ag, and Tl	EPA 3050 acid digestion EPA 6010 ICP GFAAS EPA 7041 (Sb) EPA 7060 (As) EPA 7241 (Pb) EPA 7841 (Tl) CVAAs EPA 7470 (Hg)
		One grab every 30 minutes field composite 500-mL glass container	Chlorine	ASTM D4208 bomb combustion ion selective electrode
			Water Content	ASTM D3173 modified pulverize, dry and gravimetry



Traverse point	Distance from inside wall
1	1.08"
2	3.45"
3	6.08"
4	9.12"
5	12.88"
6	18.33"
7	33.17"
8	38.63"
9	42.39"
10	45.42"
11	48.05"
12	50.42"

Figure 4-1. Schematic of stack sampling location for Kiln No. 7.



Traverse point	Distance from inside wall
1	1.09"
2	3.48"
3	6.14"
4	9.20"
5	13.00"
6	18.51"
7	33.50"
8	29.25"
9	42.80"
10	45.86"
11	48.52"
12	50.91"

Figure 4-2. Schematic of stack sampling location for Kiln No. 8.

mercury, in these solutions were measured employing Inductively-Coupled Plasmography (ICP). Mercury analysis was performed by Cold-Vapor Atomic Absorption Spectroscopy (CVASS). Samples with low levels of antimony, arsenic, lead, and thallium were subjected to addition analysis employing the more-sensitive Graphite Furnace Atomic Absorption Spectroscopy (GFAAS).

4.3 Sampling and Analysis for Flue Gas Hexavalent Chromium

EPA Method 0013 sampling trains were used to collect stack gas samples for hexavalent chromium from the Kiln No. 7 and Kiln No. 8 sampling locations. After the glass nozzle, a Teflon union tee, a Teflon probe and recirculation line, and a peristaltic pump fitted with C-flex tubing were used for recirculation of the impinger solution. Due to the high acid gas levels in the stack gas, the first Teflon impinger contained 250 ml of 0.5 N potassium hydroxide solution. The second and third Teflon impingers each contained 75 ml of 0.1 N potassium hydroxide solution, the fourth Teflon impinger was empty, and the last impinger contained silica gel.

At the conclusion of sampling, each sample train was purged with nitrogen for 30 minutes at ten liters per minute. During sample recovery, the pH of all impinger solutions were checked, and found to be above 8.5. Following sampling recovery, the impinger solutions were filtered though 0.45 μm Teflon membrane filters.

Analytical procedures followed those outlined in EPA Methods 0013 in Methods Manual for Compliance with the BIF Regulations - Burning Hazardous Waste in Boilers and Industrial Furnaces, EPA/530-SW-91-010, December 1990. The filtered impinger solutions were analyzed by ion chromatography, with the separated hexavalent chromium being reacted with a diphenylcarbizide solution to form a hexavalent chromium specific chromophore that was measured with a spectrophotometer set at 520 nm.

4.4 Sampling and Analysis for Flue Gas Particulate Matter, HCl, and Cl_2

EPA Method 0050 sampling trains were used to stack gas samples for particulate matter, hydrogen chloride, and chlorine (PM/HCl/Cl_2) from the Kiln No. 7 and Kiln No. 8 sampling locations. A glass nozzle and glass probe liner were used with a tare-weighed quartz fiber filter and a Teflon filter support. The first of two impingers each contained 100 ml of 0.1 N sulfuric acid solution, the third and fourth impingers each contained 100 ml of 0.1 N sodium hydroxide solution, and the last impinger contained silica gel. The sampling procedures and chloride analysis followed those outlined in EPA Methods 0050 and 9057 in Methods Manual for Compliance with the BIF Regulations - Burning Hazardous Waste in Boilers and Industrial Furnaces, EPA/530-SW-91-010, December 1990. Particulate matter was determined by gravimetric analysis. HCl was determined by measuring the chloride ion content of the sulfuric acid impinger solutions. Cl_2 was determined by measuring the chloride ion content of the sodium hydroxide impinger solutions. The chloride ions in these solutions were measured by ion chromatography, with the separated chloride ions being measured with a conductivity detector.

4.5 Continuous Measurement of Carbon Monoxide and Total Hydrocarbons

Carbon monoxide was measured continuously in the flue gas using the procedures outlined in EPA Method 10. A gas sample was transferred continuously to a Thermo Electron Model 48 gas filter correlation NDIR analyzer. Output from the analyzer was directed to a data acquisition system which corrects to 7% oxygen (using the Method 3A values) and records one-minute averages.

Total hydrocarbons were measured continuously in the flue gas using the procedures outlined in EPA Method 25A. A heated sample line was used to transfer the gas sample to a JUM Model VE-7 THC instrumental analyzer using flame ionization detection. Output from the analyzer was directed to a data acquisition system which corrects to 7% oxygen (using the Method 3A values) and records one-minute averages.

4.6 Waste Feed Sampling

Waste feed liquid stream samples were obtained from an in-line sample tap already present at the site. All liquid waste samples were collected at 15-minute intervals in conjunction with the flue gas sampling. Sample collection of the process streams was coordinated with the flue gas sampling such that sampling for the same analyte was completed at the same time (e.g., process samples for a test run were collected during the same time period as the flue gas sampling test run).

At each 15 minute interval, a 100-mL grab sample for metals and a 100-mL grab sample for physical parameter analysis were collected. The 100-mL grab samples were composited immediately after collection into a 1-gallon jar at the sampling location, with the lid placed on the 1-gallon container between grab sampling events. At the end of a test run, aliquots for different analyses were taken from the gallon composite jar and stored in 500-mL amber glass bottles with Teflon-lined caps.

The following is a brief summary of the general procedures followed during the collection of liquid process stream samples:

1. The sample line was purged appropriately to assure the sample was not collected from a static line.

2. The precleaned container was rinsed with liquid from the sample stream.

3. The required volume (typically 100 mL) was collected and transferred to the compositing container.

4. The compositing container was placed in the cooler. Custody of the sample was maintained until it was transferred to the designated field sample custodian.

4.7 Baghouse Dust Sampling

During each test run, the baghouse dust was collected in an empty silo. At the completion of each test run, the baghouse dust was emptied into a truck, and a sample was taken from the truck, for metals and physical analytical parameters.

4.8 Raw Feed Sampling

Samples of the raw feed stream were collected at 30-minute intervals from the belt feeder to the kiln's cold end using a scoop. The grab samples were field composited into two containers -- one for metals analysis and the other for chlorine and moisture analysis.

4.9 Aggregate Product Sampling

Samples of the hot aggregate product were collected with a shovel at 30-minute intervals, and placed in an aluminum pan to cool. After cooling, about 100 mL was taken from each subsample, and composited in a 950 mL sample jar. The composited samples were submitted for metals, chlorine, and moisture analyses.

5. QA/QC PROCEDURES

The objective of a quality assurance/quality control (QA/QC) program is to assure that the precision and accuracy of all environmental data generated by IEA for clients are commensurate with data quality objectives (DQO's). DQO's are based on a common understanding of the intended end use(s) of the data, the measurement process, and the availability of resources. Once DQO's are established, formally or informally, QC protocol can be defined for the measurements.

In this project, the final data user will be Solite Corporation. The data quality objectives in this project are to certify compliance with "Boiler and Industrial Furnace Regulations (Paragraph 266.103c)". All sections and procedures of the QA/AC plan were followed to meet these objectives.

All of the equipment used was calibrated according to the procedures outlined in the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III, EPA-600/4-77-027b.

5.1 Method 5-Type Sampling Equipment Calibrations

For sampling Methods 0012, 0013, and 0050, the procedures and equipment used to measure stack gas velocity and temperature measurements and the metering system used to maintain isokinetic sampling conditions and to determine the sample gas volume were subjected to pretest and posttest calibrations and/or inspections as required by the appropriate EPA methods.

5.1.1 Barometer

Barometric pressure values were obtained from a calibrated Airguide barometer, verified by phone call to a local airport, and corrected for elevation to sample port level (0.01 inches Hg per 10 ft. elevation).

5.1.2 Probe Nozzle

The probe nozzles used during testing were calibrated initially by the manufacturer and thereafter by the field sampling crew by checking for dimensional roundness. This was done by taking three separate measurements using alternative inside diameters and calculating the average. A micrometer with a minimum tolerance of 0.001 inch is used for measuring. If a deviation of more than 0.004 inch is found between any measurements, the nozzle is either discarded or repaired and remeasured. The nozzle calibration data sheets for this test program are include in Appendix E.

5.1.3 Pitot Tubes

Each pitot tube used in sampling meets the design specifications for type-S pitot tubes in EPA Method 2. Therefore, a maximum value baseline coefficient (C_p) of 0.84 is assigned to each pitot tube. Calibration by the manufacturer for pitot face-opening alignment included measuring the external tubing diameter (dimension D_t), the base-to-opening plane distance (dimensions P_a and P_b), and the face opening misalignment angles, with all terms as described in Figures 2-2 and 2-3 of EPA Method 2. Pitot tubes were visually inspected for structural integrity at the completion of each test. Inspection sheets for pitot tubes are included in Appendix E.

5.1.4 Calibration Meter and Metering System

The secondary reference meter equipment arrangement for calibration is shown in Figure 5.7 of EPA Method 5. The following prescribed procedures were followed. A wet test meter with a 1 ft^3/rev capacity and $\pm$ 1 percent accuracy is used as the primary calibrant. The dry gas meter's pump is run for a minimum of 5 minutes at a flow rate of 0.35 cfm to condition the interior surface of the wet test meter. Leak checks are performed and if satisfactory, triplicate runs at no less than five different flow rates are done. A calibration curve is prepared and the meter is recalibrated after 200 hours of operation or annually, whichever comes first.

The calibration set-up for the dry gas metering system using the secondary reference meter in lieu of the wet test meter is given in Figure 5.5 of EPA Method 5. A leak check of the metering system before calibration was performed as shown in Figure 5.4 of EPA Method 5. The metering systems's pump was operated for 5 minutes at an orifice manometer setting of 0.5 inches H_20 to heat up the pump and system to stabilize the meter inlet and outlet temperatures. Values for the orifice setting (delta H), wet test meter volume (V_w), corresponding dry test meter volume (V_d) dry test meter inlet and outlet gas temperatures (t_{di} and t_{do}), and time were recorded for the initial calibration. Then the ratio of the wet test meter to the dry test meter (gamma) and the orifice pressure differential that equates to 0.75 cfm at standard conditions (delta H@) were calculated.

A post-test meter calibration was made on the dry gas meter used during the test to check its accuracy against the pre-test calibration. This post-test calibration check was made using the average orifice setting obtained during each test run and setting the vacuum at the maximum value obtained during each test run. These test runs were made against IEA's secondary reference dry gas meter which was calibrated against a wet test meter.

The calibration data sheets for the dry gas meters are included in Appendix E.

5.1.5 Thermocouples and Digital Indicators

Thermocouples were calibrated by comparing them against an ASTM-3F mercury-in-glass thermometer at approximately 32°F (ice water), ambient temperature, approximately 100°F (hot oil). Each thermocouple was calibrated against temperature ranges to which it is typically exposed during test conditions, and they agreed within 1.5 percent (expressed in °R) of the reference thermometer throughout the entire calibration range. Also, thermocouples were checked at ambient temperature at the test site to verify calibration.

Digital indicators were checked by feeding a series of millivolt signal strengths to the input and comparing the indicator reading with the reading the signal should have generated. Acceptable calibration error did not exceed 0.5 percent when temperatures are expressed in °R.

The calibration data sheets for the thermocouples and digital indicators are included in Appendix E.

5.1.6 Pretest and Posttest Leak Checks of Sampling Trains

Each Method 0012, 0013, and 0050 sampling trains were subjected to pretest and posttest leak checks. The leak check results are summarized in Table 5-1. For all sampling runs except one, the posttest leak checks were acceptable. The second multiple metals sampling run on Kiln No. 7 failed the posttest leak check. The sample was invalidated, and the metals sampling run was repeated.

5.2 Analytical QA/QC Results

Analytical measurements for precision were made on stack gas and process samples by means of replicate analyses. The analytical accuracies were demonstrated by spike compound recoveries; no correction to analysis results was made. A Lab Control Sample (LCS) was also prepared and analyzed with the samples from this project. Blanks of each reagent and/or filter used in each sample train were submitted for analysis of the appropriate target analyte. The results for replicate analyses, spike analyses, LCS analyses, and analyses of reagent blanks are summarized in Table 5-2 for the stack gas samples and Table 5-3 for the process samples, and discussed below in the appropriate section for each analytical procedure.

5.2.1 Analyses for Hydrogen Chloride and Chlorine

Stack Gas Samples - Hydrogen chloride and chlorine are measured in the stack gas samples as the chloride ion in the dilute sulfuric acid solution and the dilute sodium hydroxide solution, respectively. The duplicate analysis reported for two samples, with relative percent differences (RPDs) of 3.0% and 0.2%, were well within the 5% criteria required by the method. The spike recovery was 97%, and the results for the LCS analysis were within 1.9% of the expected value. The reagent blanks submitted for analysis were both less than the analytical detection limit.

5.2.2 Analyses for Metals and Hexavalent Chromium

Stack Gas Samples - Analysis for hexavalent chromium involves the use of an ion chromatograph with a post-column reactor (IC/PCR). The duplicate analysis for one sample resulted in a RPD of 2.8%, well within the required 5% criteria required for the method. The spike recovery was 105%, and the results for the LCS analyses were within -9.7% and -2.7% of the expected value. The reagent blank submitted for analysis was less than the analytical detection limit.

Analysis for metals in the flue gas samples involved complex digestion steps generating several fractions for subsequent analysis by three different procedures. Except for mercury

analysis, duplicate analysis was performed on only one sample, the reagent blank, and generally gave meaningless results for most analytes. Only lead and barium were found in sufficient quantity to provide estimates of precision. For barium the RPD was 6.4% and, for lead, was 2.1%. For mercury analysis, all sample fractions were analyzed in duplicate, with RPDs ranging from 0.0% to 33.3%. Generally the higher RPDs were associated with sample fractions with low levels of mercury.

Matrix spikes are not required for ICP analysis. Only thallium required a post digestion spike prior to GFAA analysis, which had a recovery of 86.2% in one front half sample. The spike of the corresponding back half sample had a low recovery, and all back half samples were analyzed for thallium by Method of Standard Addition (MSA). Spike recoveries for mercury analysis ranged form 102% to 114% for the three types of sample fractions, and were within 25% of the expected value as required by the method.

Results for the analyses of LCSs for metals ranged from -2.1% to +5.7%, all well within the 25% required by the method.

The reagent blank submitted for analysis had levels below the detection limits for all metals except antimony, arsenic, lead, and mercury that had 7.9 μg, 7.6μg, 591 μg, and 1.8 μg, respectively. The blank correction procedures for the method do not permit subtraction of high blank values. The blank correction values used and the procedures to determine those values are provided in Appendix D.

Process Samples - For the analysis of the process samples for metals, good precision was demonstrated on samples where the particular metals were at measurable quantities. Spike recoveries were good for most metals except antimony, where recoveries ranged from 0-36%. Results for LCS were not reported.

TABLE 5-1. SUMMARY OF SAMPLE TRAIN LEAK CHECKS FOR KILN NO.7 AND KILN NO. 8

Sample Train	Initial Leak Rate		Final Leak Rate	
	CFM	inches Hg	CFM	inches Hg
Kiln No. 7, Run 1				
Part./Cl/HCl	.001	10	.000	5
Hex. Chrome	.000	10	.000	5
Multi Metals	.009	16	.002	6
Kiln No. 7, Run 2				
Part./Cl/HCl	.000	10	.000	5
Hex. Chrome	.002	12	.002	6
Multi Metals	.010	12	.006	6
Kiln No. 7, Run 3				
Part./Cl/HCl	.000	10	.000	5
Hex. Chrome	.010	10	.009	9
Multi Metals	.001	10	.005	9
Kiln No. 8, Run 1				
Part./Cl/HCl	.000	10	.001	5
Hex. Chrome	.001	15	.010	6
Multi Metals	.008	15	.001	7
Kiln No. 8, Run 2				
Part./Cl/HCl	.006	10	.001	5
Hex. Chrome	.007	12	.005	5
Multi Metals	.003	10	.002	10
Kiln No. 8, Run 3				
Part./Cl/HCl	.000	10	.000	5
Hex. Chrome	.003	10	.010	7
Multi Metals	.001	10	.001	7

TABLE 5-2. SUMMARY ANALYTICAL QA/QC RESULTS FOR STACK GAS SAMPLES

Analytical Parameter	Duplicate Analysis (RPD)	Spike Recovery	Laboratory Control Sample	Reagent Blank
Chlorides	3.0% 0.2%	97%	+1.9%	<0.05 (mg/L)
Hexavalent Cr	2.8%	105%	-9.7% -2.7%	<0.0015 (μg/ml)
Antimony	N/A[1]	NR[2]	+5.7%	7.9 μg
Arsenic	N/A	NR	-0.9%	7.6 μg
Barium	6.4%	NR	+0.8%	<11.9 μg
Beryllium	N/A	NR	-2.1%	<0.60 μg
Cadmium	200%[3]	NR	+0.6%	<1.4 μg
Total Chromium	200%[3]	NR	+0.5%	<4.0 μg
Lead	2.1%	NR	-0.5%	591 μg
Mercury	0% to 33.3%[4]	102% 114% 110%	+2.0%	1.8 μg
Silver	N/A	NR	-2.0%	<2.1 μg
Thallium	N/A	86.2%	+3.3%	<0.6 μg

[1] Not applicable due to sample value being below the detection limit.
[2] Matrix spike not required by the method.
[3] High imprecision due to one of the duplicates being less than the detection limit.
[4] All mercury samples analyzed in duplicate. Samples with higher imprecision at or near the analytical detection limit.

TABLE 5-3 SUMMARY ANALYTICAL QA/QC RESULTS FOR PROCESS SAMPLES

Analytical Parameter	Duplicate Analysis (RPD)	Spike Recovery	Laboratory Control Sample
Chlorides	1.2	68% 67%	NR[1]
Ash	NC[2]	N/A[3]	NR
Heating Value	0.7	N/A	NR
Density	1.1	N/A	NR
Moisture	NC	N/A	NR
Antimony	NC 34 38 NC	0% 17% 10% 36%	NR
Arsenic	6 15 3 10	256% 99% NR 86%	NR
Barium	1 5 1 17	94% 109% 92% 122%	NR
Beryllium	1 3 3 5	96% 89% 92% 84%	NR
Cadmium	1 3 1 4	88% 81% 88% 80%	NR
Total Chromium	3 3 1 9	100% 94% 93% 97%	NR

TABLE 5-3. (Continued)

Analytical Parameter	Duplicate Analysis (RPD)	Spike Recovery	Laboratory Control Sample
Lead	3 20 10 81	317% 44%	NR
Mercury	1 6 2 3	100% 95% 105% 96%	NR
Silver	43 4 0 2	83% 88% 97% 54%	NR
Thallium	5 16 4 132	192% 132% 114% 73%	NR

5.3 Oxygen, Carbon Dioxide, Carbon Monoxide, and Total Hydrocarbons CEMS Calibrations

Calibration procedures were performed in accordance with those outlined in EPA Reference Method 3A for oxygen and carbon dioxide, EPA Method 10 for carbon monoxide, and EPA Method 25A for total hydrocarbons. Each analyzer was calibrated before, after test run #1, and after the end of the test series. The results of the CEM calibration checks are included in Appendix C.

The pre-test calibrations consisted of the following two steps:

- Internal (direct to instrument) calibration of each analyzer to adjust calibration and check linearity.
- External (through the entire sampling system) calibration to check the system bias on zero and span gases.

The post-test calibration consisted of an external system bias calibration check.

5.3.1 Internal Calibration

Each analyzer was calibrated using a certified zero and span (mid range) gas. Zero and span gases were directed to each analyzer through the appropriate plumbing, the calibration gas flow rates were adjusted to the correct flow rate and the analyzer was adjusted with the appropriate span pot.

After the analyzer was properly adjusted, the linearity was checked using a low and high range calibration gas. The maximum allowable limit for linearity $\pm 2\%$ of the analyzer range. All analyzers were demonstrated to be linear within these limits.

5.3.2 External Calibration

The external calibration bias check was performed by placing the CEM system in the sampling mode and injecting a zero and span gas into the sample line at the probe exit. This check shows if there is any sampling system related bias, and also serves as a check of the sample line integrity.

5.3.3 Calibration Gases

EPA Protocol #1 and/or $\pm 2\%$ NIST-traceable gases were used for calibration as required by the various Reference Methods used in this test project. The log of the calibration gases used for this test program is included in Appendix C.

5.4 Sample Chain-of-Custody

Sample chain-of-custody records for sample transfer to laboratory, log-in, identification assignment, analysis request, and sample storage are given in Appendix D.

Appendix A

Equations Used and Calculations

SOURCE SAMPLING CALCULATIONS

The equations used for source sampling calculations are presented. These equations are divided into two parts -- equipment calibration and source test calculations. Gaseous source test equations are included to aid the reader reviewing emission test reports and to give a quick reference to mathematical expresions used in source testing.

EQUIPMENT CALIBRATION EQUATIONS

Orifice Meter Calibration Using Test Meter

Test meter volumetric flowrate (Q_m) in cubic feet per minute

$$Q_m = [\text{Test meter } V_f - \text{Test meter } V_i] \times [\text{Test meter corr. factor}]$$

Proportionality Factor (K_m)

$$K_m = Q_m \sqrt{\frac{P_m \, M_m}{T_m \, \Delta H}}$$

Orifice meter $\Delta H_@$ Flow Rate

$$1. \quad \text{English units } \Delta H_@ = \frac{0.9244}{K_m^2}$$

where $\Delta H_@ = 0.75$ cfm at 68°F and 29.92 in. Hg

$$1. \quad \text{Metric units } \Delta H_@ = \frac{0.3306}{K_m^2}$$

where $\Delta H_@ = 0.021$ m^3/min at 20°C and 760 mm Hg

Sampling Meter Console Calibration

Ratio of the accuracy of the Console Gas Meter Calibration Test Meter (Y). Tolerance 1 ± 0.02.

$$Y = \frac{V_T \, T_m \, P_b}{V_m \, T_T \, (P_b + \Delta H/13.6)}$$

Meter Console Orifice Meter Calibration ($\Delta H_@$)

$$1. \quad \Delta H_@ = \frac{K\ \Delta H}{P_b\ T_m} \left[\frac{T_T \theta}{V_T} \right]^2$$

where $K = 0.0317$ *English units*
$= 0.0012$ *metric units*

Source Sampling Nomograph Calibration

Isokinetic ΔH Equation

$$\text{Isokinetic } \Delta H = \left[846.72\ D_n^4\ \Delta H_@\ C_p^2\ (1-B_{ws})^2\ \frac{M_d\ T_m\ P_s}{M_s\ T_s\ P_m} \right] \Delta p$$

Sampling Nozzle Equation

$$D_n = \sqrt{\frac{0.0358\ Q_m\ P_m}{T_m\ C_p\ (1-B_{ws})}} \sqrt{\frac{T_s\ M_s}{P_s\ \Delta p_{avg}}}$$

SOURCE SAMPLING EQUATIONS

Method 1 - Traverse Point Selection

Equal Area Equation (circular ducts)

$$P = 50 \left[1 - \sqrt{\frac{2j - 1}{2n}} \right]$$

Equivalent Diameter for a Rectangular Duct

$$D_E = \frac{2(\text{length})(\text{width})}{\text{length} + \text{width}}$$

Method 2 - Gas Velocity and Volumetric Flow Rate

Average Stack Gas Velocity

$$v_s = K_p C_p \left(\sqrt{\Delta p}\right)_{avg} \sqrt{\frac{T_s}{P_s\ M_s}}$$

Average Dry Stack Gas Volumetric Flow Rate (dscfm) at Standard Conditions (Q_{sd})

$$Q_{sd} = 60\ (1-B_{ws})\ v_s\ A_s \left[\frac{T_{std}}{P_{std}}\right] \frac{P_s}{T_s}$$

Average Actual Stack Gas Volumetric Flow Rate (acfm)

$$Q_s = v_s\ A_s$$

Method 3 - Orsat Analysis for Dry Gas Molecular Weight

Stack Gas Dry Molecular Weight

$$M_d = \Sigma M_x B_x = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$

Stack Gas Wet Molecular Weight

$$M_s = M_d(1-B_{ws}) + 18\ B_{ws}$$

Percent Excess Air (%EA)

$$\%EA = \frac{(\%O_2) - 0.05(\%CO)}{0.264(\%N_2) - (\%O_2 - \%CO)} \times 100$$

Method 4 - Reference Moisture Content of Stack Gas

Volume Water Vapor Condensed at Standard Conditions (V_{wc})

$$V_{wc} = \frac{(ml\ H_2O)\ \sigma_w\ R\ T_{std}}{P_{std}\ M_w} = K_1\ (V_f - V_i)$$

where $K_1 = 0.04707\ ft^3/ml$ for English units
$= 0.001333\ m^3/ml$ for metric units

Silica Gel Water Vapor Catch (V_{wsg})

$$V_{wsg} = K_2 \ (W_f - W_i)$$

where $K_2 = 0.04715\ ft^3/ml$ for English units
$= 0.001335\ m^3/ml$ for metric units

Gas Volume at Standard Conditions

$$V_{mstd} = V_m \ Y \left(\frac{T_{std}}{P_{std}}\right)\left(\frac{P_b + (\Delta H/13.6)}{T_m}\right)$$

Moisture Content of Stack Gas

$$B_{ws} = \frac{V_{wc} + V_{wsg}}{V_{wc} + V_{wsg} + V_{mstd}}$$

Method 5 - Particulate Emissions Testing

Dry Gas Volume Metered at Standard Conditions

Leak Rate Adjustment - no component changes during run

$$V_{madj} = V_m - (L_p - L_a)\theta$$

Leak Rate Adjustment - one or more component changes during run

$$V_{madj} = [V_m - (L_1 - L_a)\theta_1 - \sum_{i=2}^{n}(L_i - L_a)\theta_i - (L_p - L_a)\theta_p]$$

Sampling Meter Dry Gas Volume at Standard Conditions

$$V_{mstd} = V_m \ Y \left(\frac{T_{std}}{P_{std}}\right)\left(\frac{P_b + (\Delta H/13.6)}{T_m}\right)$$

Isokinetic Variation

Raw Data

$$\%I = 100 \times \frac{T_s \ [K_3 \ V_{lc} + (V_m/T_m) \ (P_b + \Delta H/13.6)}{60 \ \theta_s \ v_s \ P_s \ A_n}$$

where

$$K_3 = 0.003454 \frac{mm\ Hg\ m^3}{ml\ °K}\ metric\ units$$

$$= 0,002669 \frac{in.\ Hg\ ft^3}{ml\ °R}\ English\ units$$

Note: This equation includes a correction for the pressure differential across the dry gas meter measured by the orifice meter -- average sampling run ΔH readings.

Intermediate Data

$$\%I = 100 \times \frac{T_s\ V_{mstd}\ P_{std}}{T_{std}\ v_s\ \Theta\ A_n\ P_s\ 60\ (1-B_{ws})} = K_4 \frac{T_s\ V_{mstd}}{v_s\ \Theta\ A_n\ P_s\ (1-B_{ws})}$$

where

$K_4 = 4.320$ *for metric units*
$= 0.09450$ *for English units*

Particulate Concentration Correction to 7% Oxygen

$$c_s(7\%\ O_2) = c_s \times \frac{14}{21 - \%O_2}$$

Method 0030 - Volatile Organic Sampling Train

Gas Volume at Standard Conditions

$$V_{mstd} = V_m\ Y \frac{T_{std}\ P_b}{P_{std}\ T_m} = K_1\ Y \frac{V_m\ P_b}{T_m}$$

where

$K_1 = 0.3858$ *°K/mm Hg for metric units*
$= 17.64$ *°R/in. Hg for English units*

Destruction and Removal Efficiency (DRE)

$$DRE = 100 \times \frac{W_{in} - W_{out}}{W_{in}}$$

NOMENCLATURE

A_n - sampling nozzle cross-sectional area
A_s - stack cross-sectional area
B_{ws} - moisture fraction present in stack gas
$\%CO$ - percent carbon monoxide in stack gas
$\%CO_2$ - percent carbon dioxide in stack gas
C_p - pitot tube calibration coefficient
c_s - concentration of particulate matter in stack gas, corrected to standard conditions
$c_s(7\%\ O_2)$ - concentration of particulate matter in stack gas, corrected to 7% oxygen basis
D_E - equivalent diameter of rectangular stack
D_n - source sampling nozzle diameter
$\%EA$ - percent excess air
$\Delta H_@$ - pressure drop acros orifice meter for 0.75 cfm flow rate at standard conditions
ΔH - pressure drop across orifice meter
j - equal area centroid location
K_p - pitot tube equation dimensional constant
Metric units = 34.97
English units = 85.49
L - length of duct cross-section at sampling site
L_1 - leak rate at first component change
L_a - maximum acceptable leakage rate for either a pretest leak check or for a leak check following a component change
L_i - individual leakage rate observed during the leak check conducted prior to the "i^{th}" component change (i = 1, 2, 3....n)
L_p - leakage rate observed during the post-test leak change
M_d - dry gas molecular weight
M_s - wet gas molecular weight
n - total number of equal areas
$\%N_2$ - percent nitrogen in stack gas
$\%O_2$ - percent oxygen in stack gas
P - percent of diameter from from inside stack wall to centroid point j
P_b - barometric pressure
P_m - absolute pressure at the dry gas meter
P_s - absolute pressure in the stack
P_{std} - standard absolute pressure
Metric units = 760 mm Hg
English units = 29.92 in. Hg
Δp - gas velocity pressure
Δp_{avg} - average of the square root of all Δp's
Q_a - actual stack gas volumetric flow rate
Q_{sd} - stack gas volumteric flow rate corrected to standard conditions
T_m - absolute temperature at the dry gas meter
Metric units = °C + 273 = °K

English units = °F + 460 = °R

T_s - absolute temperature of the stack gas

T_{std} - standard absolute temperature

Metric units = 20°C + 273 = 293°K

English units = 68°F + 460 = 528°R

V_m - gas volume metered at actual conditions

V_{mstd} - gas volume metered corrected to standard consitions

v_s - stack gas velocity

W - width of the duct cross-section at the sampling site

W_{in} - feed rate of POHC to incinerator

W_{out} - stack gas emission rate of POHC from incinerator

θ - time in minutes

σ - density

SUBSCRIPTS

avg - average
b - barometric
d - dry gas basis
f - final
g - gauge
i - initial
m - at meter
n - at nozzle
p - of pitot tube
s - at stack
std - standard consitions
T - reference test meter
w - wet basis or water

PARTICULATE EMISSIONS SUMMARY
Kiln #7, Exhaust Stack
Solite A.F. Old plant, Arvonia, VA

filename:BIGMETH5.wk1

	SAMPLING PARAMETERS	RUN NO.==> / DATE==> / RUN TIME==>	K7-1 6/4/92 920-1128	K7-2 6/4/92 1400-1617	K7-3 6/4/92 1952-2158	AVERAGE
SYMBOL	MEASURED DATA AT STACK	UNITS				
(Y)	Dry Gas Meter Calibration Factor	--	0.998	0.998	0.998	
(Vi)	Initial Meter Volume	cf	** 280.825	387.494	458.025	
	IF NO INTERMEDIATE LEAK CHECK WAS DONE ENTER 0	**	0			
	Volume Before Intermed Leak Check	cf	0			
	Volume After Intermed Leak Check	cf	0	0	0	
(Vf)	Final Meter Volume	cf	349.090	457.903	520.702	
(Lp)	Leak Check Correction	cfm	0	0	0	
(Vm)	Total Meter Volume	cf	68.265	70.409	62.677	67.117
(t)	Sampling Time	min.	120	120	120	120
(Vwc)	Volume of Water Collected	mL	164.0	170.0	161.0	165.0
(Vwsg)	Silica Gel Weight Increase	g	14.4	13.1	17.0	14.8
(Vlc)	Total Water Collected	mL	178.4	183.1	178.0	179.8
(Pbar)	Barometric Pressure	in. Hg	29.85	29.85	29.85	29.85
(Pg)	Stack Static Pressure	in. H2O	-0.41	-0.41	-0.41	
(?H)	Avg. Orifice Pressure Drop ?H	in. H2O	1.10	1.10	0.90	
(Ts)	Avg. Stack Gas Temperature	°F	344.0	349.0	341.0	344.7
(Tm)	Avg. Dry Gas Meter Temperature	°F	88.0	93.0	93.0	
(Dn)	Nozzle Diameter	inches	0.260	0.260	0.260	
	FOR STACK DIMENSIONS, ENTER 0 WHERE SIZE IS NOT APPROPRIATE					
(Ds)	Diameter of Stack	inches	51.500	51.500	51.500	
(W)	Width of Stack	inches	0.000	0.000	0.000	
(L)	Length of Stack	inches	0.000	0.000	0.000	
(Cp)	Pitot Tube Coefficient	--	0.84	0.84	0.84	
(?p)½	Avg. Square Root Velocity Head ?p	(in. H2O)½	0.612	0.625	0.550	
(%O2)	Stack Gas Oxygen	%	15.0	14.8	14.6	14.8
(%CO2)	Stack Gas Carbon Dioxide	%	4.1	4.4	4.4	4.3
(%N2)	Stack Gas Nitrogen	%	80.9	80.8	81.0	80.9
(ppmCO)	Stack Gas Carbon Monoxide	ppm	0	0	0	0.0
	CALCULATED STACK GAS DATA					
(Ps)	Stack Gas Pressure	in. Hg	29.82	29.82	29.82	29.82
(%Bws)	Stack Gas Moisture	%	11.4	11.4	12.3	11.7
(%B'w)	Moisture at Saturation	%	96.4	96.4	96.4	
(Vmstd)	Standard Dry Gas Meter Volume	dscf	65.396	66.840	59.500	63.912
(Md)	Dry Gas Molecular Weight	lb/lb-mole	29.26	29.30	29.29	29.28
(Ms)	Wet Gas Molecular Weight	lb/lb-mole	27.98	28.01	27.89	27.96
(vs)	Stack Gas Velocity	ft/s	43.12	44.17	38.76	42.0
(A)	Stack Area	ft2	14.47	14.47	14.47	
(Qsd)	Volumetric Gas Flow Rate	dscfs	362	368	323	351
(Qsd)	Volumetric Gas Flow Rate	dscfm	21,700	22,100	19,400	21,067
(Qsd)	Volumetric Gas Flow Rate	dscfh	1.30E+06	1.33E+06	1.16E+06	1.26E+06
(Qa)	Volumetric Gas Flow Rate	acfm	37,400	38,300	33,600	36,433
(%EA)	Percent Excess Air	%	232.7	223.2	212.0	222.6
(I)	Isokinetic Variation	%	98.5	99.0	100.5	

PARTICULATE EMISSIONS SUMMARY
Kiln #7, Exhaust Stack, Page 2
Solite A.F. Old plant, Arvonia, VA

filename:BIGMETH5.wk1

Symbol	SAMPLING PARAMETERS	Units	RUN NO.==> K7-1	K7-2	K7-3	AVERAGE
	DATE==>		6/4/92	6/4/92	6/4/92	
	RUN TIME==>		920-1128	1400-1617	1952-2158	
	PARTICULATE COLLECTION ANALYSIS					
(Wfi)	Tare Weight of Filter	g	0.36740	0.36870	0.36350	
(Wff)	Final Filter Weight	g	0.37150	0.33860	0.36720	
(mf)	Weight on Filter	mg	4.1	-30.1	3.7	
(Wai)	Acetone Rinse Tare Weight	g	116.451	119.8946	112.4359	
(Waf)	Acetone Rinse Final Weight	g	116.4616	119.9368	112.4428	
(ma)	Weight in Acetone Rinse	mg	10.6	42.2	6.9	
(Vaw)	Acetone Volume Used in Rinse	mL	110	130	145	
(Va)	Acetone Volume Used in Blank	mL	100	100	100	
(Wa)	Weight in Acetone Blank	g	0.0037	0.0037	0.0037	
(Ca)	Acetone Blank Correction	g/mL	0.00001	0.00001	0.00001	
(mn)	Total Particulate Collected	mg	14.70	12.10	10.60	12.47
	Conc. of Particulate in Gas Sample	mg/cu.M	7.937661	6.392399	6.290632	6.87
	Grains/dry std cu. ft	gr/dscf	0.003468	0.002793	0.002748	0.003
	gr/dscf at 7% O2	gr/dscf	0.008170	0.006364	0.006064	0.007
	Total Particulate flow in Stack	Lbs./hr.	0.643616	0.530281	0.455138	0.54
	CHLORINE AND HCL RECOVERY DATA					
	Volume in H2SO4 Impinger	mL	382	448	425	
	Concentration of Cl In H2SO4 Impinger	mg/L	4804.56	4198.69	3978.54	
	Total Cl in H2SO4 Impinger	mg	1835.341	1881.013	1690.879	
	Volume in NaOH Impinger	mL	226	303	280	
	Concentration in NaOH Impinger	mg/L	11.07	4.75	4.24	
	Total Cl in NaOH Impinger	mg	2.50182	1.43925	1.1872	
	Concentration of Cl in H2SO4 blank	mg/L	0	0	0	
	Concentration of Cl in NaOH blank	mg/L	0	0	0	
	Total HCl recovered	mg	1887.472	1934.441	1738.906	
	Total Cl2 recovered	mg	5.003922	1.480130	1.220920	
	Concentration of HCl in Gas Sample	mg/CMeter	1019.251	1022.047	1032.076	1024.46
	Concentration of Cl2 in Gas Sample	mg/CMeter	2.702162	0.782015	0.724641	1.40
	Total HCl flow in Stack	Lbs./hr.	82.64488	84.78394	74.67251	80.70
		g/hr	37487.72	38457.99	33871.45	36605.72
	Total Cl2 flow in Stack	Lbs./hr.	0.219101	0.064872	0.052429	0.11
		g/hr	99.38456	29.42598	23.78181	50.86

Metals Emissions Summary
Kiln #7, Exhaust Stack
Solite A.F. Old plant, Arvonia, VA

filename:METALS.WQ1

	SAMPLING PARAMETERS	RUN NO.==> / DATE==> / RUN TIME==>		K7-1 6/4/92 1030-1135	K7-2 6/4/92 1830-1935	K7-3 6/4/92 2115-2218	AVERAGE
SYMBOL	MEASURED DATA AT STACK	UNITS					
(Y)	Dry Gas Meter Calibration Factor	--		1.067	1.067	1.067	
(Vi)	Initial Meter Volume	cf	**	728.179	843.956	908.726	
	IF NO INTERMEDIATE LEAK CHECK WAS DONE ENTER 0		**	0			
	Volume Before Intermed Leak Check	cf		0			
	Volume After Intermed Leak Check	cf		0	0	0	
(Vf)	Final Meter Volume	cf		777.606	877.008	952.424	
(Lp)	Leak Check Correction	cfm		0	0	0	
(Vm)	Total Meter Volume	cf		49.427	33.052	43.698	42.059
(t)	Sampling Time	min.		60	60	60	60
(Vwc)	Volume of Water Collected	mL		109.0	101.0	126.0	112.0
(Vwsg)	Silica Gel Weight Increase	g		15.8	6.1	13.6	11.8
(Vlc)	Total Water Collected	mL		124.8	107.1	139.6	123.8
(Pbar)	Barometric Pressure	in. Hg		29.85	29.85	29.85	29.85
(Pg)	Stack Static Pressure	in. H2O		-0.41	-0.41	-0.41	
(?H)	Avg. Orifice Pressure Drop ?H	in. H2O		2.21	0.93	1.70	
(Ts)	Avg. Stack Gas Temperature	°F		340.0	341.0	336.0	339.0
(Tm)	Avg. Dry Gas Meter Temperature	°F		86.6	89.6	90.4	
(Dn)	Nozzle Diameter	inches		0.309	0.276	0.309	
	FOR STACK DIMENSIONS, ENTER 0 WHERE SIZE IS NOT APPROPRIATE						
(Ds)	Diameter of Stack	inches		51.500	51.500	51.500	
(W)	Width of Stack	inches		0.000	0.000	0.000	
(L)	Length of Stack	inches		0.000	0.000	0.000	
(Cp)	Pitot Tube Coefficient	--		0.84	0.84	0.84	
(?p)½	Avg. Square Root Velocity Head ?p	(in. H2O)½		0.652	0.569	0.573	
(%O2)	Stack Gas Oxygen	%		15.1	14.7	14.6	14.8
(%CO2)	Stack Gas Carbon Dioxide	%		4.1	4.3	4.5	4.3
(%N2)	Stack Gas Nitrogen	%		80.8	81.0	80.9	80.9
(ppmCO)	Stack Gas Carbon Monoxide	ppm		0	0	0	0.0
	CALCULATED STACK GAS DATA						
(Ps)	Stack Gas Pressure	in. Hg		29.82	29.82	29.82	29.82
(%Bws)	Stack Gas Moisture	%		10.4	13.0	12.9	12.1
(%B'w)	Moisture at Saturation	%		96.4	96.4	96.4	
(Vmstd)	Standard Dry Gas Meter Volume	dscf		50.753	33.754	44.561	43.022
(Md)	Dry Gas Molecular Weight	lb/lb-mole		29.26	29.28	29.30	29.28
(Ms)	Wet Gas Molecular Weight	lb/lb-mole		28.09	27.81	27.85	27.92
(vs)	Stack Gas Velocity	ft/s		45.76	40.16	40.28	42.1
(A)	Stack Area	ft2		14.47	14.47	14.47	
(Qsd)	Volumetric Gas Flow Rate	dscfs		390	332	336	353
(Qsd)	Volumetric Gas Flow Rate	dscfm		23,400	19,900	20,100	21,133
(Qsd)	Volumetric Gas Flow Rate	dscfh		1.404E+06	1.194E+06	1.206E+06	1.268E+06
(Qa)	Volumetric Gas Flow Rate	acfm		39,700	34,900	35,000	36,533
(%EA)	Percent Excess Air	%		239.0	216.7	212.7	222.8
(I)	Isokinetic Variation	%		100.4	98.4	102.5	

Metals Emissions — Kiln #7

Run 1

FlowRate dscfh	Sample Vol dscf		Front (ug)	Back	Total	ug/cu.M	Mass Flows lbs./hr.	g/hr.
1404000	50.753	Ag	< 0.7	< 0.98	< 1.68	< 1.169	<1.024E-04	0.046
1404000	50.753	As	0.8	0.426	1.226	0.853	7.471E-05	0.034
1404000	50.753	Ba	6.33	3.23	9.56	6.652	5.825E-04	0.264
1404000	50.753	Be	0.442	0.302	0.744	0.518	4.534E-05	0.021
1404000	50.753	Cd	9.891	3.32	13.211	9.193	8.050E-04	0.365
1404000	50.753	Cr	5.78	< 1.68	< 7.46	< 5.191	<4.546E-04	0.206
1404000	50.753	Pb	128.25	4.63	132.88	92.463	8.097E-03	3.676
1404000	50.753	Sb	3.43	179.55	182.98	127.324	1.115E-02	5.062
1404000	50.753	Tl	< 0.2	< 0.28	< 0.48	< 0.334	<2.925E-05	0.013
1404000	50.753	Hg	0	< 0.2	< 0.2	< 0.139	<1.219E-05	0.006

Run 2

FlowRate dscfh	Sample Vol dscf		Front (ug)	Back	Total	ug/cu.M	Mass Flows lbs./hr.	g/hr.
1194000	33.754	Ag	1.08	< 1.03	< 2.11	< 2.208	<1.644E-04	0.075
1194000	33.754	As	14.01	0.68	14.69	15.370	1.145E-03	0.520
1194000	33.754	Ba	10.73	< 2.95	< 13.68	< 14.313	<1.066E-03	0.484
1194000	33.754	Be	0.536	0.513	1.049	1.098	8.174E-05	0.037
1194000	33.754	Cd	17.391	1.64	19.031	19.912	1.483E-03	0.673
1194000	33.754	Cr	7.1	< 1.77	< 8.87	< 9.280	<6.911E-04	0.314
1194000	33.754	Pb	563.35	8.93	572.28	598.758	4.459E-02	20.244
1194000	33.754	Sb	12.2	97.85	110.05	115.142	8.575E-03	3.893
1194000	33.754	Tl	< 0.2	0.723	< 0.923	< 0.966	<7.192E-05	0.033
1194000	33.754	Hg	0	< 0.04	< 0.04	< 0.042	<3.117E-06	0.001

Run 3

FlowRate dscfh	Sample Vol dscf		Front (ug)	Back	Total	ug/cu.M	Mass Flows lbs./hr.	g/hr.
1206000	44.561	Ag	< 0.7	< 0.933	< 1.633	< 1.294	<9.735E-05	0.044
1206000	44.561	As	17.81	0.15	17.96	14.234	1.071E-03	0.486
1206000	44.561	Ba	10.33	3.43	13.76	10.905	8.203E-04	0.372
1206000	44.561	Be	0.424	0.389	0.813	0.644	4.847E-05	0.022
1206000	44.561	Cd	16.691	1.44	18.131	14.369	1.081E-03	0.491
1206000	44.561	Cr	6.27	< 1.6	< 7.87	< 6.237	<4.692E-04	0.213
1206000	44.561	Pb	234.65	9.3	243.95	193.337	1.454E-02	6.602
1206000	44.561	Sb	20.5	95.95	116.45	92.290	6.942E-03	3.152
1206000	44.561	Tl	< 0.2	< 0.267	< 0.467	< 0.370	<2.784E-05	0.013
1206000	44.561	Hg	0	< 0.4	< 0.4	< 0.317	<2.385E-05	0.011

Note: ALL VALUES ARE CORRECTED FOR BLANKS PER SPECIFIED METHOD *

HEXAVALENT CHROMIUM Emissions Summary
Kiln #7, Exhaust Stack
Solite A.F. Old plant, Arvonia, VA

filename:HEXCHROM.WQ1

	SAMPLING PARAMETERS	UNITS	RUN NO.==> K7-1	K7-2	K7-3	AVERAGE
			DATE==> 6/4/92	6/4/92	6/4/92	
			RUN TIME==> 1151-1256	1400-1542	1952-2055	
SYMBOL	MEASURED DATA AT STACK	UNITS				
(Y)	Dry Gas Meter Calibration Factor	--	0.998	1.067	1.067	
(Vi)	Initial Meter Volume	cf	** 349.179	777.747	877.213	
	IF NO INTERMEDIATE LEAK CHECK WAS DONE ENTER 0		** 0			
	Volume Before Intermed Leak Check	cf	0			
	Volume After Intermed Leak Check	cf	0	0	0	
(Vf)	Final Meter Volume	cf	387.371	810.424	908.573	
(Lp)	Leak Check Correction	cfm	0	0	0	
(Vm)	Total Meter Volume	cf	38.192	32.677	31.360	34.076
(t)	Sampling Time	min.	60	60	60	60
(Vwc)	Volume of Water Collected	mL	16.0	-7.0	52.0	20.3
(Vwsg)	Silica Gel Weight Increase	g	21.5	25.9	14.4	20.6
(Vlc)	Total Water Collected	mL	37.5	18.9	66.4	40.9
(Pbar)	Barometric Pressure	in. Hg	29.85	29.85	29.85	29.85
(Pg)	Stack Static Pressure	in. H2O	-0.41	-0.41	-0.41	
(?H)	Avg. Orifice Pressure Drop ?H	in. H2O	1.39	0.92	0.84	
(Ts)	Avg. Stack Gas Temperature	°F	346.0	344.0	338.0	342.7
(Tm)	Avg. Dry Gas Meter Temperature	°F	92.4	85.7	91.7	
(Dn)	Nozzle Diameter	inches	0.276	0.262	0.262	
	FOR STACK DIMENSIONS, ENTER 0 WHERE SIZE IS NOT APPROPRIATE					
(Ds)	Diameter of Stack	inches	51.500	51.500	51.500	
(W)	Width of Stack	inches	0.000	0.000	0.000	
(L)	Length of Stack	inches	0.000	0.000	0.000	
(Cp)	Pitot Tube Coefficient	--	0.84	0.84	0.84	
(?p)½	Avg. Square Root Velocity Head ?p	(in. H2O)½	0.607	0.585	0.559	
(%O2)	Stack Gas Oxygen	%	15.1	14.9	14.3	14.8
(%CO2)	Stack Gas Carbon Dioxide	%	4.1	4.3	4.4	4.3
(%N2)	Stack Gas Nitrogen	%	80.8	80.8	81.3	81.0
(ppmCO)	Stack Gas Carbon Monoxide	ppm	0	0	0	0.0
	CALCULATED STACK GAS DATA					
(Ps)	Stack Gas Pressure	in. Hg	29.82	29.82	29.82	29.82
(%Bws)	Stack Gas Moisture	%	4.6	2.6	8.9	5.4
(%B'w)	Moisture at Saturation	%	96.4	96.4	96.4	
(Vmstd)	Standard Dry Gas Meter Volume	dscf	36.296	33.609	31.904	33.936
(Md)	Dry Gas Molecular Weight	lb/lb-mole	29.26	29.28	29.28	29.27
(Ms)	Wet Gas Molecular Weight	lb/lb-mole	28.74	28.99	28.27	28.67
(vs)	Stack Gas Velocity	ft/s	42.27	40.51	39.06	40.6
(A)	Stack Area	ft2	14.47	14.47	14.47	
(Qsd)	Volumetric Gas Flow Rate	dscfs	381	374	339	365
(Qsd)	Volumetric Gas Flow Rate	dscfm	22,800	22,400	20,400	21,867
(Qsd)	Volumetric Gas Flow Rate	dscfh	1.37E+06	1.34E+06	1.22E+06	1.31E+06
(Qa)	Volumetric Gas Flow Rate	acfm	36,700	35,200	33,900	35,267
(%EA)	Percent Excess Air	%	239.0	228.3	196.6	221.3
(I)	Isokinetic Variation	%	92.2	96.6	101.0	
	HEXAVALENT CHROMIUM Emissions Analysis					
	Volume in Impinger	mL	448	498	527	
	Concentration of Hex. Chromium in KOH Imp	ug/ml	0.00151 <	0.0015	0.00159	
	Total Hex. Chromium Recovered	ug	0.67648 <	0.7470	0.83793	
	Volume of Blank	ml	0	0	0	
	Concentration of Hex. Chromium in blank	mg/L	0	0	0	
	Concentration of Hex. Chromium in Gas Sam	ug/cu.M	0.658195 <	0.784904	0.927511 <	0.790203
	Total Flow of Hex. Chromium in Stack	g/hr	0.025533 <	0.029781	0.032041 <	0.029118
	Total Flow of Hex. Chromium in Stack	Lbs./hr.	0.056242 <	0.065601	0.070578 <	0.064140

PARTICULATE EMISSIONS SUMMARY
Kiln #8, Exhaust Stack
Solite A.F. Old plant, Arvonia, VA

BIGMETH5.wk1	RUN NO.==>		K8-1	K8-2	K8-3	
	DATE==>		6/2/92	6/2/92	6/3/92	
SAMPLING PARAMETERS	RUN TIME==>		1612-1818	2047-2311	1016-1224	AVERAGE
MEASURED DATA AT STACK	UNITS					
Dry Gas Meter Calibration Factor	--		0.998	0.998	0.998	
Initial Meter Volume	cf	**	68.021	135.155	212.050	
IF NO INTERMEDIATE LEAK CHECK WAS DONE ENTER 0		**	0			
Volume Before Intermed Leak Check	cf		0			
Volume After Intermed Leak Check	cf		0	0	0	
Final Meter Volume	cf		134.666	211.938	280.664	
Leak Check Correction	cfm		0	0	0	
Total Meter Volume	cf		66.645	76.783	68.614	70.681
Sampling Time	min.		120	120	120	120
Volume of Water Collected	mL		124.0	143.0	129.0	132.0
Silica Gel Weight Increase	g		16.4	18.9	10.5	15.3
Total Water Collected	mL		140.4	161.9	139.5	147.3
Barometric Pressure	in. Hg		30.02	30.02	30.00	30.01
Stack Static Pressure	in. H2O		0.32	0.32	0.32	
Avg. Orifice Pressure Drop ?H	in. H2O		1.04	1.40	1.09	
Avg. Stack Gas Temperature	°F		364.0	366.0	358.0	362.7
Avg. Dry Gas Meter Temperature	°F		91.0	82.4	98.3	
Nozzle Diameter	inches		0.260	0.263	0.260	
FOR STACK DIMENSIONS, ENTER 0 WHERE SIZE IS NOT APPROPRIATE						
Diameter of Stack	inches		52.000	52.000	52.000	
Width of Stack	inches		0.000	0.000	0.000	
Length of Stack	inches		0.000	0.000	0.000	
Pitot Tube Coefficient	--		0.84	0.84	0.84	
Avg. Square Root Velocity Head ?p	(in. H2O)½		0.620	0.668	0.615	
Stack Gas Oxygen	%		15.5	15.5	15.1	15.4
Stack Gas Carbon Dioxide	%		3.8	3.8	3.9	3.8
Stack Gas Nitrogen	%		80.7	80.7	81.0	80.8
Stack Gas Carbon Monoxide	ppm		0	0	0	0.0
CALCULATED STACK GAS DATA						
Stack Gas Pressure	in. Hg		30.04	30.04	30.02	30.04
Stack Gas Moisture	%		13.5	10.0	10.0	11.2
Moisture at Saturation	%		95.7	95.7	95.8	
Standard Dry Gas Meter Volume	dscf		63.973	74.873	64.958	67.935
Dry Gas Molecular Weight	lb/lb-mole		29.23	29.23	29.23	29.23
Wet Gas Molecular Weight	lb/lb-mole		27.71	28.11	28.11	27.97
Stack Gas Velocity	ft/s		44.29	47.43	43.48	45.1
Stack Area	ft2		14.75	14.75	14.75	
Volumetric Gas Flow Rate	dscfs		364	404	374	380
Volumetric Gas Flow Rate	dscfm		21,800	24,200	22,400	22,800
Volumetric Gas Flow Rate	dscfh		1.31E+06	1.45E+06	1.34E+06	1.37E+06
Volumetric Gas Flow Rate	acfm		39,200	42,000	38,500	39,900
Percent Excess Air	%		263.7	263.7	237.2	254.9
Isokinetic Variation	%		97.8	100.7	96.6	

PARTICULATE EMISSIONS SUMMARY
Kiln #8, Exhaust Stack
Solite A.F. Old plant, Arvonia, VA

BIGMETH5.wk1	RUN NO.==>	K8-1	K8-2	K8-3	
	DATE==>	6/2/92	6/2/92	6/3/92	
SAMPLING PARAMETERS	RUN TIME==>	1612-1818	2047-2311	1016-1224	AVERAGE
PARTICULATE COLLECTION ANALYSIS	*Units*				
Tare Weight of Filter	g	0.36630	0.36440	0.36850	
Final Filter Weight	g	0.37330	0.38870	0.39070	
Weight on Filter	mg	7	24.3	22.2	
Acetone Rinse Tare Weight	g	116.5192	113.7107	119.5735	
Acetone Rinse Final Weight	g	116.5333	113.7421	119.6088	
Weight in Acetone Rinse	mg	14.1	31.4	35.3	
Acetone Volume Used in Rinse	mL	275	125	130	
Acetone Volume Used in Blank	mL	100	100	100	
Weight in Acetone Blank	g	0.0037	0.0037	0.0037	
Acetone Blank Correction	g/mL	0.00001	0.00001	0.00001	
Total Particulate Collected	mg	21.10	55.70	57.50	44.77
Conc. of Particulate in Gas Sample	mg/cu.M	11.64648	26.27090	31.25915	23.06
Grains/dry std cu. ft	gr/dscf	0.005088	0.011478	0.013658	0.010
gr/dscf at 7% 02	gr/dscf	0.013098	0.029546	0.032732	0.025
Total Particulate flow in Stack	Lbs./hr.	0.951605	2.375932	2.612600	1.98
CHLORINE AND HCL RECOVERY DATA					
Volume in H2SO4 Impinger	mL	315	375	367	
Concentration of Cl In H2SO4 Impinger	mg/L	3269.39	3021.4	2782.76	
Total Cl in H2SO4 Impinger	mg	1029.857	1133.025	1021.272	
Volume in NaOH Impinger	mL	*220*	*217*	237	
Concentration in NaOH Impinger	mg/L	5.48	12.37	7.56	
Total Cl in NaOH Impinger	mg	1.2056	2.68429	1.79172	
Concentration of Cl in H2SO4 blank	mg/L	< 0.05	< 0.05	< 0.05	
Concentration of Cl in NaOH blank	mg/L	< 0.05	< 0.05	< 0.05	
Total HCl recovered	mg	1059.093	1165.187	1050.262	
Total Cl2 recovered	mg	2.389334	2.749375	1.830425	
Concentration of HCl in Gas Sample	mg/cu. M	584.6437	549.5707	570.9719	568.395
Concentration of Cl2 in Gas Sample	mg/cu. M	1.318967	1.296766	0.995105	1.204
Total HCl flow in Stack	Lbs./hr.	47.76983	49.70300	47.72112	48.398
	g/hr	21668.39	22545.28	21646.30	21953.33
Total Cl2 flow in Stack	Lbs./hr.	0.107769	0.117279	0.083169	0.103
	g/hr	48.88430	53.19782	37.72575	46.603

HEXAVALENT CHROMIUM EMISSIONS SUMMARY
Kiln #8, Exhaust Stack
Solite A.F. Old plant, Arvonia, VA

filename:HEXCHROM.WQ1

	SAMPLING PARAMETERS	RUN NO.==> / DATE==> / RUN TIME==>		K8-1 6/2/92 1612-1726	K8-2 6/2/92 2045-2150	K8-3 6/3/92 1225-1330	AVERAGE
SYMBOL	MEASURED DATA AT STACK	UNITS					
(Y)	Dry Gas Meter Calibration Factor	--		1	1	1	
(Vi)	Initial Meter Volume	cf	**	50.675	87.770	124.753	
	IF NO INTERMEDIATE LEAK CHECK WAS DONE ENTER 0		**	0			
	Volume Before Intermed Leak Check	cf		0			
	Volume After Intermed Leak Check	cf		0	0	0	
(Vf)	Final Meter Volume	cf		87.563	124.163	161.169	
(Lp)	Leak Check Correction	cfm		0	0	0	
(Vm)	Total Meter Volume	cf		36.888	36.393	36.416	36.566
(t)	Sampling Time	min.		60	60	60	60
(Vwc)	Volume of Water Collected	mL		53.0	12.0	58.0	41.0
(Vwsg)	Silica Gel Weight Increase	g		43.1	59.9	19.0	40.7
(Vlc)	Total Water Collected	mL		96.1	71.9	77.0	81.7
(Pbar)	Barometric Pressure	in. Hg		30.02	30.02	30.00	30.01
(Pg)	Stack Static Pressure	in. H2O		0.32	0.32	0.32	
(?H)	Avg. Orifice Pressure Drop ?H	in. H2O		1.31	1.26	1.26	
(Ts)	Avg. Stack Gas Temperature	°F		366.0	366.0	358.0	363.3
(Tm)	Avg. Dry Gas Meter Temperature	°F		88.8	79.7	94.0	
(Dn)	Nozzle Diameter	inches		0.276	0.262	0.276	
	FOR STACK DIMENSIONS, ENTER 0 WHERE SIZE IS NOT APPROPRIATE						
(Ds)	Diameter of Stack	inches		52.000	52.000	52.000	
(W)	Width of Stack	inches		0.000	0.000	0.000	
(L)	Length of Stack	inches		0.000	0.000	0.000	
(Cp)	Pitot Tube Coefficient	--		0.84	0.84	0.84	
(?p)½	Avg. Square Root Velocity Head ?p	(in. H2O)½		0.616	0.637	0.573	
(%O2)	Stack Gas Oxygen	%		15.6	15.4	15.0	15.3
(%CO2)	Stack Gas Carbon Dioxide	%		3.8	3.9	4.0	3.9
(%N2)	Stack Gas Nitrogen	%		80.6	80.7	81.0	80.8
(ppmCO)	Stack Gas Carbon Monoxide	ppm		0	0	0	0.0
	CALCULATED STACK GAS DATA						
(Ps)	Stack Gas Pressure	in. Hg		30.04	30.04	30.02	30.04
(%Bws)	Stack Gas Moisture	%		11.3	8.7	9.4	9.8
(%B'w)	Moisture at Saturation	%		95.7	95.7	95.8	
(Vmstd)	Standard Dry Gas Meter Volume	dscf		35.622	35.737	34.813	35.391
(Md)	Dry Gas Molecular Weight	lb/lb-mole		29.23	29.24	29.24	29.24
(Ms)	Wet Gas Molecular Weight	lb/lb-mole		27.97	28.27	28.18	28.14
(vs)	Stack Gas Velocity	ft/s		43.86	45.11	40.46	43.1
(A)	Stack Area	ft2		14.75	14.75	14.75	
(Qsd)	Volumetric Gas Flow Rate	dscfs		368	390	350	370
(Qsd)	Volumetric Gas Flow Rate	dscfm		22,100	23,400	21,000	22,167
(Qsd)	Volumetric Gas Flow Rate	dscfh		1.33E+06	1.40E+06	1.26E+06	1.33E+06
(Qa)	Volumetric Gas Flow Rate	acfm		38,800	39,900	35,800	38,167
(%EA)	Percent Excess Air	%		271.4	257.5	231.8	253.6
(I)	Isokinetic Variation	%		95.4	100.3	98.1	
	HEXAVALENT CHROMIUM Emissions Analysis						
	Volume in Impinger	mL		289	348	476	
	Concentration of Hex. Chromium in KOH Imp	ug	<	0.0015	0.0015	< 0.0015	
	Total Hex. Chromium Recovered	ug	<	0.4335	0.522	< 0.714	
	Volume of Blank	ml		0	0	0	
	Concentration of Hex. Chromium in blank	mg/L		0	0	0	
	Concentration of Hex. Chromium in Gas Sam	ug/cu.M	<	0.429755	0.515832	< 0.724283	< 0.556623
	Total Flow of Hex. Chromium in Stack	g/hr	<	0.016171	0.020431	< 0.025819	< 0.020807
		Lbs./hr.	<	0.000035	0.000045	< 0.000056	< 0.000045

Metals Emissions Summary
Kiln #8, Exhaust Stack
Solite A.F. Old plant, Arvonia, VA

filename:METALS.WQ1		RUN NO.==>	K8-1	K8-2	K8-3	
		DATE==>	6/2/92	6/2/92	6/3/92	
	SAMPLING PARAMETERS	RUN TIME==>	1750-1900	2240-2350	1015-1140	AVERAGE
SYMBOL	MEASURED DATA AT STACK	UNITS				
(Y)	Dry Gas Meter Calibration Factor	--	1.067	1.067	1.067	
(Vi)	Initial Meter Volume	cf **	564.062	613.232	662.502	
	IF NO INTERMEDIATE LEAK CHECK WAS DONE ENTER 0	**	0			
	Volume Before Intermed Leak Check	cf	0			
	Volume After Intermed Leak Check	cf	0	0	0	
(Vf)	Final Meter Volume	cf	611.713	662.370	702.267	
(Lp)	Leak Check Correction	cfm	0	0	0	
(Vm)	Total Meter Volume	cf	47.651	49.138	39.765	45.518
(t)	Sampling Time	min.	60	60	60	60
(Vwc)	Volume of Water Collected	mL	94.2	66.0	93.0	84.4
(Vwsg)	Silica Gel Weight Increase	g	12.9	14.7	13.3	13.6
(Vlc)	Total Water Collected	mL	107.1	80.7	106.3	98.0
(Pbar)	Barometric Pressure	in. Hg	30.02	30.02	30.00	30.01
(Pg)	Stack Static Pressure	in. H2O	0.32	0.32	0.32	
(?H)	Avg. Orifice Pressure Drop ?H	in. H2O	2.02	2.14	1.38	
(Ts)	Avg. Stack Gas Temperature	°F	357.0	362.0	351.0	356.7
(Tm)	Avg. Dry Gas Meter Temperature	°F	93.7	87.1	95.9	
(Dn)	Nozzle Diameter	inches	0.313	0.309	0.282	
	FOR STACK DIMENSIONS, ENTER 0 WHERE SIZE IS NOT APPROPRIATE					
(Ds)	Diameter of Stack	inches	52.000	52.000	52.000	
(W)	Width of Stack	inches	0.000	0.000	0.000	
(L)	Length of Stack	inches	0.000	0.000	0.000	
(Cp)	Pitot Tube Coefficient	--	0.84	0.84	0.84	
(?p)½	Avg. Square Root Velocity Head ?p	(in. H2O)½	0.637	0.644	0.630	
(%O2)	Stack Gas Oxygen	%	15.2	15.5	15.2	15.3
(%CO2)	Stack Gas Carbon Dioxide	%	4.0	3.8	3.9	3.9
(%N2)	Stack Gas Nitrogen	%	80.8	80.7	80.9	80.8
(ppmCO)	Stack Gas Carbon Monoxide	ppm	0	0	0	0.0
	CALCULATED STACK GAS DATA					
(Ps)	Stack Gas Pressure	in. Hg	30.04	30.04	30.02	30.04
(%Bws)	Stack Gas Moisture	%	9.4	7.0	11.0	9.1
(%B'w)	Moisture at Saturation	%	95.7	95.7	95.8	
(Vmstd)	Standard Dry Gas Meter Volume	dscf	48.664	50.788	40.423	46.625
(Md)	Dry Gas Molecular Weight	lb/lb-mole	29.25	29.23	29.23	29.24
(Ms)	Wet Gas Molecular Weight	lb/lb-mole	28.19	28.45	27.99	28.21
(vs)	Stack Gas Velocity	ft/s	44.93	45.35	44.44	44.9
(A)	Stack Area	ft2	14.75	14.75	14.75	
(Qsd)	Volumetric Gas Flow Rate	dscfs	390	401	381	391
(Qsd)	Volumetric Gas Flow Rate	dscfm	23,400	24,100	22,900	23,467
(Qsd)	Volumetric Gas Flow Rate	dscfh	1.404E+06	1.446E+06	1.374E+06	1.41E+06
(Qa)	Volumetric Gas Flow Rate	acfm	39,800	40,100	39,300	39,733
(%EA)	Percent Excess Air	%	244.7	263.7	243.7	250.7
(I)	Isokinetic Variation	%	95.8	99.6	100.4	

Metals Emissions — Kiln #8

Run 1

FlowRate dscfh	Sample Vol dscf		Front		Back		Total		ug/cu.M	Mass Flows lbs./hr.	g/hr.
1404000	48.626	Ag	1.09	<	1.05	<	2.14	<	1.554	<1.361E-04	0.062
1404000	48.626	As	28.71		4.19		32.9		23.894	2.092E-03	0.950
1404000	48.626	Ba	29.13		12.9		42.03		30.525	2.673E-03	1.214
1404000	48.626	Be	1.01		0.32		1.33		0.966	8.459E-05	0.038
1404000	48.626	Cd	42.691		4.41		47.101		34.208	2.996E-03	1.360
1404000	48.626	Cr	48.7	<	1.8	<	50.5	<	36.677	<3.212E-03	1.458
1404000	48.626	Pb	855.95		10.7		866.65		629.424	5.512E-02	25.023
1404000	48.626	Sb	0.04		5.99		6.03		4.379	3.835E-04	0.174
1404000	48.626	Tl	0.2	<	0.96	<	1.16	<	0.842	<7.378E-05	0.033
1404000	48.626	Hg	0		9.3		9.3		6.754	5.915E-04	0.269

Run 2

FlowRate dscfh	Sample Vol dscf		Front		Back		Total		ug/cu.M	Mass Flows lbs./hr.	g/hr.
1446000	50.749	Ag	1.41	<	0.969	<	2.379	<	1.656	<1.493E-04	0.068
1446000	50.749	As	56.61		0.34		56.95		39.631	3.574E-03	1.623
1446000	50.749	Ba	35.13	<	2.77	<	37.9	<	26.374	<2.379E-03	1.080
1446000	50.749	Be	2.42	<	0.277	<	2.697	<	1.877	<1.693E-04	0.077
1446000	50.749	Cd	64.691		1		65.691		45.714	4.123E-03	1.872
1446000	50.749	Cr	32.8	<	1.66	<	34.46	<	23.980	<2.163E-03	0.982
1446000	50.749	Pb	974.7		10.5		985.2		685.591	6.183E-02	28.071
1446000	50.749	Sb	4.53		4.57		9.1		6.333	5.711E-04	0.259
1446000	50.749	Tl	0.2	<	0.595	<	0.795	<	0.553	<4.990E-05	0.023
1446000	50.749	Hg	0		16.1		16.1		11.204	1.010E-03	0.459

Run 3

FlowRate dscfh	Sample Vol dscf		Front		Back		Total		ug/cu.M	Mass Flows lbs./hr.	g/hr.
1374000	45.278	Ag	0.733	<	0.969	<	1.702	<	1.328	<1.138E-04	0.052
1374000	45.278	As	73.31		0.41		73.72		57.500	4.928E-03	2.237
1374000	45.278	Ba	34.33	<	2.77	<	37.1	<	28.937	<2.480E-03	1.126
1374000	45.278	Be	1.91		0.416		2.326		1.814	1.555E-04	0.071
1374000	45.278	Cd	47.191		1.86		49.051		38.259	3.279E-03	1.488
1374000	45.278	Cr	17.6	<	1.66	<	19.26	<	15.022	<1.287E-03	0.584
1374000	45.278	Pb	1045		10.6		1055.6		823.342	7.056E-02	32.033
1374000	45.278	Sb	22.1		3.38		25.48		19.874	1.703E-03	0.773
1374000	45.278	Tl	0.2	<	0.789	<	0.989	<	0.771	<6.611E-05	0.030
1374000	45.278	Hg	0		15		15		11.700	1.003E-03	0.455

```
A1: U [W1] ||
B1: [W9] 'Name file for source (e.g.. /fs [esc] [esc] a:acmepm) if not already
O1: [W6] ||
P1: [W1] 'TO BEGIN, BLANK ALL FIELD DATA VALUES BY PRESSING ALT X
A2: U [W1] ||
B2: [W9] '    saved on floppy disk.
Q2: [W6] 'CALCULATIONS FOR SQUARE ROOT OF ~P FOR PITOT TUBE
AJ2: "TEMP
AK2: "VP H2O
A3: U [W1] ||
B3: [W9] 'Type [Alt M] to get a menu to: A) move around spreadsheet,
Q3: [W6] 'filename:
S3: [W6] +C14
AJ3: +"     "&@CHAR(176)&"F"
AK3: "in. Hg
A4: U [W1] ||
B4: [W9] '     B) print parts of spreadsheet, or C) get help instructions.
Q4: [W6] 'ENTER NUMBER OF POINTS===>
U4: (F0) U [W6]. 24

AJ4: 50
AK4: 0.3626
A5: U [W1] ||
B5: [W9] 'Use arrow keys to go to desired cells.  Enter number and go to next
O5: [W6] \-
P5: [W1] ^|
Q5: [W6] \-
R5: [W7] \-
S5: [W6] \-
T5: [W8] \-
U5: [W6] \-
V5: [W1] ^|
W5: [W6] \-
X5: [W7] \-
Y5: [W6] \-
Z5: [W8] \-
AA5: [W6] \-
AB5: [W1] ^|
AC5: [W6] \-
AD5: [W7] \-
AE5: [W6] \-
AF5: [W8] \-
AG5: [W6] \-
AH5: [W1] ^|
AJ5: 51
AK5: 0.3764
A6: U [W1] ||
B6: [W9] '    cell.
P6: [W1] ^|
Q6: [W6] 'DATA INPUT FROM FIELD DATA SHEETS
V6: [W1] ^|
W6: [W6] 'DATA INPUT FROM FIELD DATA SHEETS
AB6: [W1] ^|
AC6: [W6] 'DATA INPUT FROM FIELD DATA SHEETS
AH6: [W1] ^|
AJ6: 52
AK6: 0.3906
A7: U [W1] ||
B7: [W9] 'You must enter ~p, ~H, stack gas T, and DGM T individual values from
O7: [W6] "POINT
P7: [W1] ^|
S7: [W6] +F14
V7: [W1] ^|
```

```
Y7: [W6] +H14
AB7: [W1] ^|
AE7: [W6] +J14
AH7: [W1] ^|
AJ7: 53
AK7: 0.4052
A8: U [W1] ||
B8: [W9] '    the field data sheets.
O8: [W6] "NO.
P8: [W1] ^|
Q8: [W6] ^~p
R8: [W7] ^SQRT ~p
S8: [W6] ^~H
T8: [W8] ^Stack T
U8: [W6] ^DGM T
V8: [W1] ^|
W8: [W6] ^~p
```

```
X8: [W7] ^SQRT ~p
Y8: [W6] ^~H
Z8: [W8] ^Stack T
AA8: [W6] ^DGM T
AB8: [W1] ^|
AC8: [W6] ^~p
AD8: [W7] ^SQRT ~p
AE8: [W6] ^~H
AF8: [W8] ^Stack T
AG8: [W6] ^DGM T
AH8: [W1] ^|
AJ8: 54
AK8: 0.4203
C9: U [W41] 'TABLE X-X
O9: [W6] \-
P9: [W1] ^|
Q9: [W6] \-
R9: [W7] \-
S9: [W6] \-
T9: [W8] \-
U9: [W6] \-
V9: [W1] ^|
W9: [W6] \-
X9: [W7] \-
Y9: [W6] \-
Z9: [W8] \-
AA9: [W6] \-
AB9: [W1] ^|
AC9: [W6] \-
AD9: [W7] \-
AE9: [W6] \-
AF9: [W8] \-
AG9: [W6] \-
AH9: [W1] ^|
AJ9: 55
AK9: 0.4359
C10: U [W41] 'Metals Emissions Summary
O10: U [W6] 1
P10: [W1] ^|
Q10: (F2) U [W6] 0.51
R10: (F3) [W7] +Q10^0.5
S10: (F2) U [W6] 2.61
T10: U [W8] 336
U10: U [W6] 79
V10: [W1] ^|
```

```
W10: (F2) U [W6] 0.38
X10: (F3) [W7] +W10^0.5
Y10: (F2) U [W6] 1.08
Z10: U [W8] 333
AA10: U [W6] 85
AB10: [W1] ^|
AC10: (F2) U [W6] 0.52
AD10: (F3) [W7] +AC10^0.5
AE10: (F2) U [W6] 2.65
AF10: U [W8] 337
AG10: U [W6] 85
AH10: [W1] ^|
AJ10: 56
AK10: 0.452
C11: U [W41] 'Kiln #7, Exhaust Stack
```

```
O11: U [W6] 2
P11: [W1] ^|
Q11: (F2) U [W6] 0.54
R11: (F3) [W7] +Q11^0.5
S11: (F2) U [W6] 2.75
T11: U [W8] 340
U11: U [W6] 86
V11: [W1] ^|
W11: (F2) U [W6] 0.42
X11: (F3) [W7] +W11^0.5
Y11: (F2) U [W6] 1.19
Z11: U [W8] 341
AA11: U [W6] 85
AB11: [W1] ^|
AC11: (F2) U [W6] 0.49
AD11: (F3) [W7] +AC11^0.5
AE11: (F2) U [W6] 2.49
AF11: U [W8] 338
AG11: U [W6] 89
AH11: [W1] ^|
AJ11: 57
AK11: 0.4586
C12: U [W41] 'Solite A.F. Old plant, Arvonia, VA
H12: [W9] '
O12: U [W6] 3
P12: [W1] ^|
Q12: (F2) U [W6] 0.45
R12: (F3) [W7] +Q12^0.5
S12: (F2) U [W6] 2.2
T12: U [W8] 340
U12: U [W6] 86
V12: [W1] ^|
W12: (F2) U [W6] 0.41
X12: (F3) [W7] +W12^0.5
Y12: (F2) U [W6] 1.17
Z12: U [W8] 342
AA12: U [W6] 86
AB12: [W1] ^|
AC12: (F2) U [W6] 0.46
AD12: (F3) [W7] +AC12^0.5
AE12: (F2) U [W6] 2.34
AF12: U [W8] 339
AG12: U [W6] 90
AH12: [W1] ^|
AJ12: 58
AK12: 0.4858
O13: U [W6] 4
```

```
P13: [W1] ^|
Q13: (F2) U [W6] 0.52
R13: (F3) [W7] +Q13^0.5
S13: (F2) U [W6] 2.6
T13: U [W8] 340
U13: U [W6] 86
V13: [W1] ^|
W13: (F2) U [W6] 0.39
X13: (F3) [W7] +W13^0.5
Y13: (F2) U [W6] 1.1
Z13: U [W8] 342
AA13: U [W6] 86
AB13: [W1] ^|
```

```
AC13: (F2) U [W6] 0.41
AD13: (F3) [W7] +AC13^0.5
AE13: (F2) U [W6] 2.09
AF13: U [W8] 339
AG13: U [W6] 90
AH13: [W1] ^|
AJ13: 59
AK13: 0.5035
B14: [W9] 'filename:
C14: U [W41] 'METALS.WQ1
D14: [W10] "RUN NO.==>
F14: U [W9] 'K7-1
H14: U [W9] 'K7-2
I14: U [W2] '
J14: U [W9] 'K7-3
O14: U [W6] 5
P14: [W1] ^|
Q14: (F2) U [W6] 0.46
R14: (F3) [W7] +Q14^0.5
S14: (F2) U [W6] 2.35
T14: U [W8] 341
U14: U [W6] 87
V14: [W1] ^|
W14: (F2) U [W6] 0.33
X14: (F3) [W7] +W14^0.5
Y14: (F2) U [W6] 0.94
Z14: U [W8] 342
AA14: U [W6] 87
AB14: [W1] ^|
AC14: (F2) U [W6] 0.33
AD14: (F3) [W7] +AC14^0.5
AE14: (F2) U [W6] 1.68
AF14: U [W8] 338
AG14: U [W6] 90
AH14: [W1] ^|
AJ14: 60
AK14: 0.5218
D15: [W10] "DATE==>
F15: U [W9] '6/4/92
H15: U [W9] '6/4/92
J15: U [W9] '6/4/92
O15: U [W6] 6
P15: [W1] ^|
Q15: (F2) U [W6] 0.38
R15: (F3) [W7] +Q15^0.5
S15: (F2) U [W6] 1.93
T15: U [W8] 340
U15: U [W6] 87
V15: [W1] ^|
```

```
W15: (F2) U [W6] 0.26
X15: (F3) [W7] +W15^0.5
Y15: (F2) U [W6] 0.74
Z15: U [W8] 341
AA15: U [W6] 87
AB15: [W1] ^|
AC15: (F2) U [W6] 0.25
AD15: (F3) [W7] +AC15^0.5
AE15: (F2) U [W6] 1.27
AF15: U [W8] 336
AG15: U [W6] 91
```

```
AH15: [W1] ^|
AJ15: 61
AK15: 0.5407
C16: [W41] 'SAMPLING PARAMETERS
D16: [W10] "RUN TIME==>
F16: U [W9] '1030-1135
H16: U [W9] '1830-1935
J16: U [W9] '2115-2218
L16: [W9] ^AVERAGE
O16: U [W6] 7
P16: [W1] ^|
Q16: (F2) U [W6] 0.3
R16: (F3) [W7] +Q16^0.5
S16: (F2) U [W6] 1.53
T16: U [W8] 339
U16: U [W6] 87
V16: [W1] ^|
W16: (F2) U [W6] 0.24
X16: (F3) [W7] +W16^0.5
Y16: (F2) U [W6] 0.68
Z16: U [W8] 340
AA16: U [W6] 87
AB16: [W1] ^|
AC16: (F2) U [W6] 0.27
AD16: (F3) [W7] +AC16^0.5
AE16: (F2) U [W6] 1.37
AF16: U [W8] 336
AG16: U [W6] 91
AH16: [W1] ^|
AJ16: 62
AK16: 0.5601
B17: [W9] \-
C17: [W41] \-
D17: [W10] \-
E17: [W2] \-
F17: [W9] \-
G17: [W2] \-
H17: [W9] \-
I17: [W2] \-
J17: [W9] \-
K17: [W2] \-
L17: [W9] \-
O17: U [W6] 8
P17: [W1] ^|
Q17: (F2) U [W6] 0.35
R17: (F3) [W7] +Q17^0.5
S17: (F2) U [W6] 1.78
T17: U [W8] 340
U17: U [W6] 87
V17: [W1] ^|
W17: (F2) U [W6] 0.29
```

```
X17: (F3) [W7] +W17^0.5
Y17: (F2) U [W6] 0.82
Z17: U [W8] 341
AA17: U [W6] 88
AB17: [W1] ^|
AC17: (F2) U [W6] 0.31
AD17: (F3) [W7] +AC17^0.5
AE17: (F2) U [W6] 1.58
AF17: U [W8] 336

AG17: U [W6] 91
AH17: [W1] ^|
AJ17: 63
AK17: 0.5802
B18: [W9] ^SYMBOL
C18: [W41] 'MEASURED DATA AT STACK
D18: [W10] ^UNITS
O18: U [W6] 9
P18: [W1] ^|
Q18: (F2) U [W6] 0.41
R18: (F3) [W7] +Q18^0.5
S18: (F2) U [W6] 2.09
T18: U [W8] 339
U18: U [W6] 87
V18: [W1] ^|
W18: (F2) U [W6] 0.32
X18: (F3) [W7] +W18^0.5
Y18: (F2) U [W6] 0.91
Z18: U [W8] 341
AA18: U [W6] 89
AB18: [W1] ^|
AC18: (F2) U [W6] 0.33
AD18: (F3) [W7] +AC18^0.5
AE18: (F2) U [W6] 1.68
AF18: U [W8] 336
AG18: U [W6] 91
AH18: [W1] ^|
AJ18: 64
AK18: 0.6009
B19: [W9] ^(Y)
C19: [W41] 'Dry Gas Meter Calibration Factor
D19: [W10] ^--
F19: U [W9] 1.067
H19: U [W9] +F19
J19: U [W9] +F19
O19: U [W6] 10
P19: [W1] ^|
Q19: (F2) U [W6] 0.45
R19: (F3) [W7] +Q19^0.5
S19: (F2) U [W6] 2.2
T19: U [W8] 339
U19: U [W6] 88
V19: [W1] ^|
W19: (F2) U [W6] 0.33
X19: (F3) [W7] +W19^0.5
Y19: (F2) U [W6] 0.94
Z19: U [W8] 341
AA19: U [W6] 89
AB19: [W1] ^|
AC19: (F2) U [W6] 0.35
AD19: (F3) [W7] +AC19^0.5
AE19: (F2) U [W6] 1.78
AF19: U [W8] 336
```

```
AG19: U [W6] 91
AH19: [W1] ^|
AJ19: 65
AK19: 0.6222
B20: [W9] ^(Vi)
C20: [W41] 'Initial Meter Volume
D20: [W10] ^cf



E20: U [W2] 812.297
F20: (F3) U [W9] 728.179
H20: (F3) U [W9] 843.956
J20: (F3) U [W9] 908.726
O20: U [W6] 11
P20: [W1] ^|
Q20: (F2) U [W6] 0.47
R20: (F3) [W7] +Q20^0.5
S20: (F2) U [W6] 2.39
T20: U [W8] 339
U20: U [W6] 88
V20: [W1] ^|
W20: (F2) U [W6] 0.34
X20: (F3) [W7] +W20^0.5
Y20: (F2) U [W6] 0.969
Z20: U [W8] 341
AA20: U [W6] 89
AB20: [W1] ^|
AC20: (F2) U [W6] 0.32
AD20: (F3) [W7] +AC20^0.5
AE20: (F2) U [W6] 1.63
AF20: U [W8] 336
AG20: U [W6] 91
AH20: [W1] ^|
AJ20: 66
AK20: 0.6442
A21: U [W1] ||
C21: [W41] '  IF NO INTERMEDIATE LEAK CHECK WAS DONE ENTER 0
E21: U [W2] 812.297
F21: [W9] 0
O21: U [W6] 12
P21: [W1] ^|
Q21: (F2) U [W6] 0.48
R21: (F3) [W7] +Q21^0.5
S21: (F2) U [W6] 2.44
T21: U [W8] 338
U21: U [W6] 88
V21: [W1] ^|
W21: (F2) U [W6] 0.35
X21: (F3) [W7] +W21^0.5
Y21: (F2) U [W6] 0.997
Z21: U [W8] 340
AA21: U [W6] 89
AB21: [W1] ^|
AC21: (F2) U [W6] 0.26
AD21: (F3) [W7] +AC21^0.5
AE21: (F2) U [W6] 1.32
AF21: U [W8] 336
AG21: U [W6] 91
AH21: [W1] ^|
AJ21: 67
AK21: 0.6669
A22: U [W1] ||
C22: [W41] 'Volume Before Intermed Leak Check
D22: [W10] ^cf
```

```
F22: U [W9] 0
O22: U [W6] 13
P22: [W1] ^|
Q22: (F2) U [W6] 0.62
R22: (F3) [W7] +Q22^0.5

S22: (F2) U [W6] 3.16
T22: U [W8] 333
U22: U [W6] 85
V22: [W1] ^|
W22: (F2) U [W6] 0.47
X22: (F3) [W7] +W22^0.5
Y22: (F2) U [W6] 1.33
Z22: U [W8] 342
AA22: U [W6] 86
AB22: [W1] ^|
AC22: (F2) U [W6] 0.46
AD22: (F3) [W7] +AC22^0.5
AE22: (F2) U [W6] 2.34
AF22: U [W8] 332
AG22: U [W6] 91
AH22: [W1] ^|
AJ22: 68
AK22: 0.6903
A23: U [W1] ||
C23: [W41] 'Volume After Intermed Leak Check
D23: [W10] ^cf
F23: U [W9] 0
H23: U [W9] 0
J23: U [W9] 0
O23: U [W6] 14
P23: [W1] ^|
Q23: (F2) U [W6] 0.65
R23: (F3) [W7] +Q23^0.5
S23: (F2) U [W6] 3.31
T23: U [W8] 344
U23: U [W6] 83
V23: [W1] ^|
W23: (F2) U [W6] 0.48
X23: (F3) [W7] +W23^0.5
Y23: (F2) U [W6] 1.36
Z23: U [W8] 344
AA23: U [W6] 89
AB23: [W1] ^|
AC23: (F2) U [W6] 0.47
AD23: (F3) [W7] +AC23^0.5
AE23: (F2) U [W6] 2.39
AF23: U [W8] 338
AG23: U [W6] 91
AH23: [W1] ^|
AJ23: 69
AK23: 0.7144
B24: [W9] ^(Vf)
C24: [W41] 'Final Meter Volume
D24: [W10] ^cf
F24: (F3) U [W9] 777.606
H24: (F3) U [W9] 877.008
J24: (F3) U [W9] 952.424
O24: U [W6] 15
P24: [W1] ^|
Q24: (F2) U [W6] 0.62
R24: (F3) [W7] +Q24^0.5
S24: (F2) U [W6] 3.66
```

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T24: U [W8] 344
U24: U [W6] 83
V24: [W1] ^|


W24: (F2) U [W6] 0.48
X24: (F3) [W7] +W24^0.5
Y24: (F2) U [W6] 1.36
Z24: U [W8] 344
AA24: U [W6] 92
AB24: [W1] ^|
AC24: (F2) U [W6] 0.4
AD24: (F3) [W7] +AC24^0.5
AE24: (F2) U [W6] 2.04
AF24: U [W8] 338
AG24: U [W6] 91
AH24: [W1] ^|
AJ24: 70
AK24: 0.7392
B25: [W9] ^(Lp)
C25: [W41] 'Leak Check Correction
D25: [W10] ^cfm
F25: U [W9] 0
H25: U [W9] 0
J25: U [W9] 0
Q25: U [W6] 16
P25: [W1] ^|
Q25: (F2) U [W6] 0.52
R25: (F3) [W7] +Q25^0.5
S25: (F2) U [W6] 2.65
T25: U [W8] 344
U25: U [W6] 86
V25: [W1] ^|
W25: (F2) U [W6] 0.41
X25: (F3) [W7] +W25^0.5
Y25: (F2) U [W6] 1.16
Z25: U [W8] 344
AA25: U [W6] 92
AB25: [W1] ^|
AC25: (F2) U [W6] 0.38
AD25: (F3) [W7] +AC25^0.5
AE25: (F2) U [W6] 1.93
AF25: U [W8] 338
AG25: U [W6] 91
AH25: [W1] ^|
AJ25: 71
AK25: 0.7648
A26: U [W1] ||
C26: [W41] ||
F26: (H) [W9] @IF(F25-0.02>0,F25,0)
H26: (H) [W9] @IF(H25-0.02>0,H25,0)
J26: (H) [W9] @IF(J25-0.02>0,J25,0)
Q26: U [W6] 17
P26: [W1] ^|
Q26: (F2) U [W6] 0.45
R26: (F3) [W7] +Q26^0.5
S26: (F2) U [W6] 2.29
T26: U [W8] 343
U26: U [W6] 87
V26: [W1] ^|
W26: (F2) U [W6] 0.31
X26: (F3) [W7] +W26^0.5
Y26: (F2) U [W6] 0.88
Z26: U [W8] 343
```

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AA26: U [W6] 92

AB26: [W1] ^|
AC26: (F2) U [W6] 0.31
AD26: (F3) [W7] +AC26^0.5
AE26: (F2) U [W6] 1.58
AF26: U [W8] 336
AG26: U [W6] 90
AH26: [W1] ^|
AJ26: 72
AK26: 0.7912
B27: [W9] ^(Vm)
C27: [W41] 'Total Meter Volume
D27: [W10] ^cf
F27: (F3) [W9] (F24-F23)+(F22-F20)-(0.02-F24)*F26
H27: (F3) [W9] (H24-H23)+(H22-H20)-(0.02-H24)*H26
J27: (F3) [W9] (J24-J23)+(J22-J20)-(0.02-J24)*J26
L27: (F3) [W9] @AVG(F27..J27)
O27: U [W6] 18
P27: [W1] ^|
Q27: (F2) U [W6] 0.33
R27: (F3) [W7] +Q27^0.5
S27: (F2) U [W6] 1.68
T27: U [W8] 341
U27: U [W6] 87
V27: [W1] ^|
W27: (F2) U [W6] 0.25
X27: (F3) [W7] +W27^0.5
Y27: (F2) U [W6] 0.71
Z27: U [W8] 341
AA27: U [W6] 92
AB27: [W1] ^|
AC27: (F2) U [W6] 0.24
AD27: (F3) [W7] +AC27^0.5
AE27: (F2) U [W6] 1.2
AF27: U [W8] 335
AG27: U [W6] 90
AH27: [W1] ^|
AJ27: 73
AK27: 0.8183
B28: [W9] ^(t)
C28: [W41] 'Sampling Time
D28: [W10] ^min.
F28: U [W9] 60
H28: U [W9] 60
J28: U [W9] 60
L28: (F0) [W9] @AVG(F28..J28)
O28: U [W6] 19
P28: [W1] ^|
Q28: (F2) U [W6] 0.28
R28: (F3) [W7] +Q28^0.5
S28: (F2) U [W6] 1.42
T28: U [W8] 339
U28: U [W6] 88
V28: [W1] ^|
W28: (F2) U [W6] 0.22
X28: (F3) [W7] +W28^0.5
Y28: (F2) U [W6] 0.627
Z28: U [W8] 340
AA28: U [W6] 92
AB28: [W1] ^|
AC28: (F2) U [W6] 0.23
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```
AD28: (F3) [W7] +AC28^0.5
AE28: (F2) U [W6] 1.17
AF28: U [W8] 335
AG28: U [W6] 90
AH28: [W1] ^|
AJ28: 74
AK28: 0.8462
B29: [W9] ^(Vwc)
C29: [W41] 'Volume of Water Collected
D29: [W10] ^mL
F29: (F1) U [W9] (F31-F30)
H29: (F1) U [W9] (H31-H30)
J29: (F1) U [W9] (J31-J30)
L29: (F1) [W9] @AVG(F29..J29)
O29: U [W6] 20
P29: [W1] ^|
Q29: (F2) U [W6] 0.3
R29: (F3) [W7] +Q29^0.5
S29: (F2) U [W6] 1.53
T29: U [W8] 339
U29: U [W6] 88
V29: [W1] ^|
W29: (F2) U [W6] 0.22
X29: (F3) [W7] +W29^0.5
Y29: (F2) U [W6] 0.627
Z29: U [W8] 339
AA29: U [W6] 92
AB29: [W1] ^|
AC29: (F2) U [W6] 0.18
AD29: (F3) [W7] +AC29^0.5
AE29: (F2) U [W6] 0.91
AF29: U [W8] 332
AG29: U [W6] 90
AH29: [W1] ^|
AJ29: 75
AK29: 0.875
B30: [W9] ^(Vwsg)
C30: [W41] 'Silica Gel Weight Increase
D30: [W10] ^g
F30: (F1) U [W9] 15.8
H30: (F1) U [W9] 6.1
J30: (F1) U [W9] 13.6
L30: (F1) [W9] @AVG(F30..J30)
O30: U [W6] 21
P30: [W1] ^|
Q30: (F2) U [W6] 0.31
R30: (F3) [W7] +Q30^0.5
S30: (F2) U [W6] 1.58
T30: U [W8] 339
U30: U [W6] 88
V30: [W1] ^|
W30: (F2) U [W6] 0.24
X30: (F3) [W7] +W30^0.5
Y30: (F2) U [W6] 0.68
Z30: U [W8] 338
AA30: U [W6] 94
AB30: [W1] ^|
AC30: (F2) U [W6] 0.26
AD30: (F3) [W7] +AC30^0.5
AE30: (F2) U [W6] 1.32
```

```
AF30: U [W8] 332
AG30: U [W6] 91
AH30: [W1] ^|
AJ30: 76
AK30: 0.9046
B31: [W9] ^(Vlc)
C31: [W41] 'Total Water Collected
D31: [W10] ^mL
F31: (F1) [W9] 124.8
H31: (F1) [W9] 107.1
J31: (F1) [W9] 139.6
L31: (F1) [W9] @AVG(F31..J31)
O31: U [W6] 22
P31: [W1] ^|
Q31: (F2) U [W6] 0.33
R31: (F3) [W7] +Q31^0.5
S31: (F2) U [W6] 1.68
T31: U [W8] 337
U31: U [W6] 89
V31: [W1] ^|
W31: (F2) U [W6] 0.27
X31: (F3) [W7] +W31^0.5
Y31: (F2) U [W6] 0.769
Z31: U [W8] 338
AA31: U [W6] 94
AB31: [W1] ^|
AC31: (F2) U [W6] 0.28
AD31: (F3) [W7] +AC31^0.5
AE31: (F2) U [W6] 1.42
AF31: U [W8] 334
AG31: U [W6] 91
AH31: [W1] ^|
AJ31: 77
AK31: 0.9352
B32: [W9] ^(Pbar)
C32: [W41] 'Barometric Pressure
D32: [W10] ^in. Hg
F32: (F2) U [W9] 29.85
H32: (F2) U [W9] 29.85
J32: (F2) U [W9] 29.85
L32: (F2) [W9] @AVG(F32..J32)
O32: U [W6] 23
P32: [W1] ^|
Q32: (F2) U [W6] 0.3
R32: (F3) [W7] +Q32^0.5
S32: (F2) U [W6] 1.53
T32: U [W8] 336
U32: U [W6] 89
V32: [W1] ^|
W32: (F2) U [W6] 0.28
X32: (F3) [W7] +W32^0.5
Y32: (F2) U [W6] 0.798
Z32: U [W8] 337
AA32: U [W6] 94
AB32: [W1] ^|
AC32: (F2) U [W6] 0.24
AD32: (F3) [W7] +AC32^0.5
AE32: (F2) U [W6] 1.2
AF32: U [W8] 332
AG32: U [W6] 91
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AH32: [W1] ^|
AJ32: 78
AK32: 0.9666
B33: [W9] ^(Pg)
C33: [W41] 'Stack Static Pressure
D33: [W10] ^in. H2O
F33: U [W9] -0.41
G33: U [W2] '
H33: U [W9] -0.41
J33: U [W9] -0.41
O33: U [W6] 24
P33: [W1] ^|
Q33: (F2) U [W6] 0.33
R33: (F3) [W7] +Q33^0.5
S33: (F2) U [W6] 1.68
T33: U [W8] 337
U33: U [W6] 89
V33: [W1] ^|
W33: (F2) U [W6] 0.2
X33: (F3) [W7] +W33^0.5
Y33: (F2) U [W6] 0.57
Z33: U [W8] 337
AA33: U [W6] 94
AB33: [W1] ^|
AC33: (F2) U [W6] 0.29
AD33: (F3) [W7] +AC33^0.5
AE33: (F2) U [W6] 1.48
AF33: U [W8] 331
AG33: U [W6] 91
AH33: [W1] ^|
AJ33: 79
AK33: 0.9989
B34: [W9] ^(¯H)
C34: [W41] 'Avg. Orifice Pressure Drop ¯H
D34: [W10] ^in. H2O
F34: (F2) [W9] 2.21
H34: (F2) [W9] 0.93
J34: (F2) [W9] 1.7
O34: U [W6] 25
P34: [W1] ^|
R34: (F3) [W7] +Q34^0.5
V34: [W1] ^|
X34: (F3) [W7] +W34^0.5
AB34: [W1] ^|
AD34: (F3) [W7] +AC34^0.5
AH34: [W1] ^|
AJ34: 80
AK34: 1.032
B35: [W9] ^(Ts)
C35: [W41] 'Avg. Stack Gas Temperature
D35: [W10] +"     "&@CHAR(176)&"F"
F35: (F1) [W9] 340
H35: (F1) [W9] 341
J35: (F1) [W9] 336
L35: (F1) [W9] @AVG(F35..J35)
O35: U [W6] 26
P35: [W1] ^|
R35: (F3) [W7] +Q35^0.5
V35: [W1] ^|
X35: (F3) [W7] +W35^0.5
AB35: [W1] ^|
```

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AD35: (F3) [W7] +AC35^0.5
AH35: [W1] ^|
AJ35: 81
AK35: 1.066
B36: [W9] ^(Tm)
C36: [W41] 'Avg. Dry Gas Meter Temperature
D36: [W10] +"     "&@CHAR(176)&"F"
F36: (F1) [W9] 86.6
H36: (F1) [W9] 89.6
J36: (F1) [W9] 90.4
O36: U [W6] 27
P36: [W1] ^|
R36: (F3) [W7] +Q36^0.5
V36: [W1] ^|
X36: (F3) [W7] +W36^0.5
AB36: [W1] ^|
AD36: (F3) [W7] +AC36^0.5
AH36: [W1] ^|
AJ36: 82
AK36: 1.102
B37: [W9] ^(Dn)
C37: [W41] 'Nozzle Diameter
D37: [W10] ^inches
F37: (F3) U [W9] 0.309
H37: (F3) U [W9] 0.276
J37: (F3) U [W9] 0.309
O37: U [W6] 28
P37: [W1] ^|
R37: (F3) [W7] +Q37^0.5
V37: [W1] ^|
X37: (F3) [W7] +W37^0.5
AB37: [W1] ^|
AD37: (F3) [W7] +AC37^0.5
AH37: [W1] ^|
AJ37: 83
AK37: 1.138
A38: U [W1] ||
C38: [W41] '  FOR STACK DIMENSIONS, ENTER 0 WHERE SIZE IS NOT APPROPRIATE
O38: U [W6] 29
P38: [W1] ^|
R38: (F3) [W7] +Q38^0.5
V38: [W1] ^|
X38: (F3) [W7] +W38^0.5
AB38: [W1] ^|
AD38: (F3) [W7] +AC38^0.5
AH38: [W1] ^|
AJ38: 84
AK38: 1.175
B39: [W9] ^(Ds)
C39: [W41] 'Diameter of Stack
D39: [W10] ^inches
F39: (F3) U [W9] 51.5
H39: (F3) U [W9] 51.5
J39: (F3) U [W9] 51.5
O39: U [W6] 30
P39: [W1] ^|
R39: (F3) [W7] +Q39^0.5
V39: [W1] ^|
X39: (F3) [W7] +W39^0.5
AB39: [W1] ^|
AD39: (F3) [W7] +AC39^0.5
AH39: [W1] ^|
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```
AJ39: 85
AK39: 1.213
B40: [W9] ^(W)
C40: [W41] 'Width of Stack
D40: [W10] ^inches
F40: (F3) U [W9] 0
H40: (F3) U [W9] 0
J40: (F3) U [W9] 0
O40: U [W6] 31
P40: [W1] ^|
R40: (F3) [W7] +Q40^0.5
V40: [W1] ^|
X40: (F3) [W7] +W40^0.5
AB40: [W1] ^|
AD40: (F3) [W7] +AC40^0.5
AH40: [W1] ^|
AJ40: 86
AK40: 1.253
B41: [W9] ^(L)
C41: [W41] 'Length of Stack
D41: [W10] ^inches
F41: (F3) U [W9] 0
H41: (F3) U [W9] 0
J41: (F3) U [W9] 0
O41: U [W6] 32
P41: [W1] ^|
R41: (F3) [W7] +Q41^0.5
V41: [W1] ^|
X41: (F3) [W7] +W41^0.5
AB41: [W1] ^|
AD41: (F3) [W7] +AC41^0.5
AH41: [W1] ^|
AJ41: 87
AK41: 1.293
B42: [W9] ^(Cp)
C42: [W41] 'Pitot Tube Coefficient
D42: [W10] ^--
F42: (F2) U [W9] 0.84
H42: (F2) U [W9] +F42
J42: (F2) U [W9] +F42
O42: U [W6] 33
P42: [W1] ^|
R42: (F3) [W7] +Q42^0.5
V42: [W1] ^|
X42: (F3) [W7] +W42^0.5
AB42: [W1] ^|
AD42: (F3) [W7] +AC42^0.5
AH42: [W1] ^|
AJ42: 88
AK42: 1.335
B43: [W9] ^(¯p)§
C43: [W41] 'Avg. Square Root Velocity Head ¯p
D43: [W10] ^(in. H2O)§
F43: (F3) [W9] 0.652
H43: (F3) [W9] 0.569
J43: (F3) [W9] 0.573
O43: U [W6] 34

P43: [W1] ^|
R43: (F3) [W7] +Q43^0.5
V43: [W1] ^|
X43: (F3) [W7] +W43^0.5
AB43: [W1] ^|
```

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AD43: (F3) [W7] +AC43^0.5
AH43: [W1] ^|
AJ43: 89
AK43: 1.378
B44: [W9] ^(%O2)
C44: [W41] 'Stack Gas Oxygen
D44: [W10] ^%
F44: (F1) U [W9] 15.1
H44: (F1) U [W9] 14.7
I44: (F1) U [W2] 20.8
J44: (F1) U [W9] 14.6
L44: (F1) [W9] @AVG(F44..J44)
O44: U [W6] 35
P44: [W1] ^|
R44: (F3) [W7] +Q44^0.5
V44: [W1] ^|
X44: (F3) [W7] +W44^0.5
AB44: [W1] ^|
AD44: (F3) [W7] +AC44^0.5
AH44: [W1] ^|
AJ44: 90
AK44: 1.422
B45: [W9] ^(%CO2)
C45: [W41] 'Stack Gas Carbon Dioxide
D45: [W10] ^%
F45: (F1) U [W9] 4.1
H45: (F1) U [W9] 4.3
J45: (F1) U [W9] 4.5
L45: (F1) [W9] @AVG(F45..J45)
O45: U [W6] 36
P45: [W1] ^|
R45: (F3) [W7] +Q45^0.5
V45: [W1] ^|
X45: (F3) [W7] +W45^0.5
AB45: [W1] ^|
AD45: (F3) [W7] +AC45^0.5
AH45: [W1] ^|
AJ45: 91
AK45: 1.467
B46: [W9] ^(%N2)
C46: [W41] 'Stack Gas Nitrogen
D46: [W10] ^%
F46: (F1) U [W9] 100-F44-F45
H46: (F1) U [W9] 100-H44-H45
J46: (F1) U [W9] 100-J44-J45
L46: (F1) [W9] @AVG(F46..J46)
O46: U [W6] 37
P46: [W1] ^|
R46: (F3) [W7] +Q46^0.5
V46: [W1] ^|
X46: (F3) [W7] +W46^0.5
AB46: [W1] ^|
AD46: (F3) [W7] +AC46^0.5
AH46: [W1] ^|
AJ46: 92
AK46: 1.513
A47: U [W1] ||
B47: [W9] ^(ppmCO)
C47: [W41] 'Stack Gas Carbon Monoxide
D47: [W10] ^ppm
F47: U [W9] 0
H47: U [W9] 0
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J47: U [W9] 0
L47: (F1) [W9] @AVG(F47..J47)
O47: U [W6] 38
P47: [W1] ^|
R47: (F3) [W7] +Q47^0.5
V47: [W1] ^|
X47: (F3) [W7] +W47^0.5
AB47: [W1] ^|
AD47: (F3) [W7] +AC47^0.5
AH47: [W1] ^|
AJ47: 93
AK47: 1.561
O48: U [W6] 39
P48: [W1] ^|
R48: (F3) [W7] +Q48^0.5
V48: [W1] ^|
X48: (F3) [W7] +W48^0.5
AB48: [W1] ^|
AD48: (F3) [W7] +AC48^0.5
AH48: [W1] ^|
AJ48: 94
AK48: 1.61
C49: [W41] 'CALCULATED STACK GAS DATA
O49: U [W6] 40
P49: [W1] ^|
R49: (F3) [W7] +Q49^0.5
V49: [W1] ^|
X49: (F3) [W7] +W49^0.5
AB49: [W1] ^|
AD49: (F3) [W7] +AC49^0.5
AH49: [W1] ^|
AJ49: 95
AK49: 1.66
B50: [W9] ^(Ps)
C50: [W41] 'Stack Gas Pressure
D50: [W10] ^in. Hg
F50: (F2) [W9] (F33/13.6+F32)
H50: (F2) [W9] (H33/13.6+H32)
J50: (F2) [W9] (J33/13.6+J32)
L50: (F2) [W9] @AVG(F50..J50)
O50: U [W6] 41
P50: [W1] ^|
R50: (F3) [W7] +Q50^0.5
V50: [W1] ^|
X50: (F3) [W7] +W50^0.5
AB50: [W1] ^|
AD50: (F3) [W7] +AC50^0.5
AH50: [W1] ^|
AJ50: 96
AK50: 1.712
B51: [W9] ^(%Bws)
C51: [W41] 'Stack Gas Moisture
D51: [W10] ^%
```

```
F51: (F1) [W9] (F31*0.04707)/((F31*0.04707)+F53)*100
H51: (F1) [W9] (H31*0.04707)/((H31*0.04707)+H53)*100
J51: (F1) [W9] (J31*0.04707)/((J31*0.04707)+J53)*100
L51: (F1) [W9] @AVG(F51..J51)
O51: U [W6] 42
P51: [W1] ^|
R51: (F3) [W7] +Q51^0.5
V51: [W1] ^|
X51: (F3) [W7] +W51^0.5
```

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AB51: [W1] ^|
AD51: (F3) [W7] +AC51^0.5
AH51: [W1] ^|
AJ51: 97
AK51: 1.765
B52: [W9] ^(%B'W)
C52: [W41] 'Moisture at Saturation
D52: [W10] ^%
F52: (F1) [W9] (@VLOOKUP(F35,$AJ$4..$AK$164,1)/(F50)*100)
H52: (F1) [W9] (@VLOOKUP(H35,$AJ$4..$AK$164,1)/(H50)*100)
J52: (F1) [W9] (@VLOOKUP(J35,$AJ$4..$AK$164,1)/(J50)*100)
O52: U [W6] 43
P52: [W1] ^|
R52: (F3) [W7] +Q52^0.5
V52: [W1] ^|
X52: (F3) [W7] +W52^0.5
AB52: [W1] ^|
AD52: (F3) [W7] +AC52^0.5
AH52: [W1] ^|
AJ52: 98
AK52: 1.819
B53: [W9] ^(Vmstd)
C53: [W41] 'Standard Dry Gas Meter Volume
D53: [W10] ^dscf
F53: (F3) [W9] (17.64*(F27)*F19*(F50)/(F36+460))
H53: (F3) [W9] (17.64*(H27)*H19*(H50)/(H36+460))
J53: (F3) [W9] (17.64*(J27)*J19*(J50)/(J36+460))
L53: (F3) [W9] @AVG(F53..J53)
O53: U [W6] 44
P53: [W1] ^|
R53: (F3) [W7] +Q53^0.5
V53: [W1] ^|
X53: (F3) [W7] +W53^0.5
AB53: [W1] ^|
AD53: (F3) [W7] +AC53^0.5
AH53: [W1] ^|
AJ53: 99
AK53: 1.875
B54: [W9] ^(Md)
C54: [W41] 'Dry Gas Molecular Weight
D54: [W10] ^lb/lb-mole
F54: (F2) [W9] (0.44*(F45)+0.32*(F44)+0.28*(F46+F47/10000))
H54: (F2) [W9] (0.44*(H45)+0.32*(H44)+0.28*(H46+H47/10000))
J54: (F2) [W9] (0.44*(J45)+0.32*(J44)+0.28*(J46+J47/10000))
L54: (F2) [W9] @AVG(F54..J54)
O54: U [W6] 45
P54: [W1] ^|
R54: (F3) [W7] +Q54^0.5
V54: [W1] ^|
X54: (F3) [W7] +W54^0.5
AB54: [W1] ^|
```

```
AD54: (F3) [W7] +AC54^0.5
AH54: [W1] ^|
AJ54: 100
AK54: 1.932
B55: [W9] ^(Ms)
C55: [W41] 'Wet Gas Molecular Weight
D55: [W10] ^lb/lb-mole
F55: (F2) [W9] (F54*(1-((F58*F51)+((-F58+1)*F52))/100))+18*(((F58*F51)+((-F58+1)*F52))/100)
H55: (F2) [W9] (H54*(1-((H58*H51)+((-H58+1)*H52))/100))+18*(((H58*H51)+((-H58+1)*H52))/100)
J55: (F2) [W9] (J54*(1-((J58*J51)+((-J58+1)*J52))/100))+18*(((J58*J51)+((-J58+1)*J52))/100)
L55: (F2) [W9] @AVG(F55..J55)
```

```
O55: U [W6] 46
P55: [W1] ^|
R55: (F3) [W7] +Q55^0.5
V55: [W1] ^|
X55: (F3) [W7] +W55^0.5
AB55: [W1] ^|
AD55: (F3) [W7] +AC55^0.5
AH55: [W1] ^|
AJ55: 101
AK55: 1.992
B56: [W9] ^(vs)
C56: [W41] 'Stack Gas Velocity
D56: [W10] ^ft/s
F56: (F2) [W9] (85.49*(F42)*(F43)*((F35+460)/((F50)*(F55)))^0.5)
H56: (F2) [W9] (85.49*(H42)*(H43)*((H35+460)/((H50)*(H55)))^0.5)
J56: (F2) [W9] (85.49*(J42)*(J43)*((J35+460)/((J50)*(J55)))^0.5)
L56: (F1) [W9] @AVG(F56..J56)
O56: U [W6] 47
P56: [W1] ^|
R56: (F3) [W7] +Q56^0.5
V56: [W1] ^|
X56: (F3) [W7] +W56^0.5
AB56: [W1] ^|
AD56: (F3) [W7] +AC56^0.5
AH56: [W1] ^|
AJ56: 102
AK56: 2.052
B57: [W9] ^(A)
C57: [W41] 'Stack Area
D57: [W10] ^ft2
F57: (F2) [W9] (+F39/24)^2*@PI+(F40*F41/144)
H57: (F2) [W9] (+H39/24)^2*@PI+(H40*H41/144)
J57: (F2) [W9] (+J39/24)^2*@PI+(J40*J41/144)
O57: U [W6] 48
P57: [W1] ^|
R57: (F3) [W7] +Q57^0.5
V57: [W1] ^|
X57: (F3) [W7] +W57^0.5
AB57: [W1] ^|
AD57: (F3) [W7] +AC57^0.5
AH57: [W1] ^|
AJ57: 103
AK57: 2.114
A58: U [W1] ||
F58: (H) [W9] +F51<=F52
H58: (H) [W9] +H51<=H52
J58: (H) [W9] +J51<=J52
O58: [W6] \-
P58: [W1] ^|
```

```
Q58: (F4) [W6] \-
R58: (F4) [W7] \-
S58: (F2) [W6] \-
T58: [W8] \-
U58: [W6] \-
V58: [W1] ^|
W58: (F4) [W6] \-
X58: (F3) [W7] \-
Y58: [W6] \-
Z58: [W8] \-
AA58: [W6] \-
AB58: [W1] ^|
AC58: (F4) [W6] \-
```

```
AD58: (F3) [W7] \-
AE58: [W6] \-
AF58: [W8] \-
AG58: [W6] \-
AH58: [W1] ^|
AJ58: 104
AK58: 2.178
A59: U [W1] ||
B59: [W9] ^(Qsd)
C59: [W41] 'Volumetric Gas Flow Rate
D59: [W10] ^dscfs
F59: (F0) [W9] (F$57)*F$56*(1-((F$58*F51)+((-F58+1)*F52))/100)*528/(460+F35)*((F32+(F33/13.6))/29.92)
H59: (F0) [W9] (H$57)*H$56*(1-((H$58*H51)+((-H58+1)*H52))/100)*528/(460+H35)*((H32+(H33/13.6))/29.92)
J59: (F0) [W9] (J$57)*J$56*(1-((J$58*J51)+((-J58+1)*J52))/100)*528/(460+J35)*((J32+(J33/13.6))/29.92)
L59: (F0) [W9] @AVG(F59..J59)
O59: [W6] ^AVGS
P59: [W1] ^|
R59: (F3) [W7] @SUM(R10..R57)/$U$4
S59: (F2) [W6] @SUM(S10..S57)/$U$4
T59: (F1) [W8] @SUM(T10..T57)/$U$4
U59: (F1) [W6] @SUM(U10..U57)/$U$4
V59: [W1] ^|
X59: (F3) [W7] @SUM(X10..X57)/$U$4
Y59: (F2) [W6] @SUM(Y10..Y57)/$U$4
Z59: (F1) [W8] @SUM(Z10..Z57)/$U$4
AA59: (F1) [W6] @SUM(AA10..AA57)/$U$4
AB59: [W1] ^|
AD59: (F3) [W7] @SUM(AD10..AD57)/$U$4
AE59: (F2) [W6] @SUM(AE10..AE57)/$U$4
AF59: (F1) [W8] @SUM(AF10..AF57)/$U$4
AG59: (F1) [W6] @SUM(AG10..AG57)/$U$4
AH59: [W1] ^|
AJ59: 105
AK59: 2.243
B60: [W9] ^(Qsd)
C60: [W41] 'Volumetric Gas Flow Rate
D60: [W10] ^dscfm
F60: (,0) [W9] @ROUND(60*F59,-2)
H60: (,0) [W9] @ROUND(60*H59,-2)
J60: (,0) [W9] @ROUND(60*J59,-2)
L60: (,0) [W9] @AVG(F60..J60)
O60: [W6] \-
P60: [W1] ^|
Q60: (F4) [W6] \-
R60: (F4) [W7] \-
S60: [W6] \-
T60: [W8] \-
U60: [W6] \-
V60: [W1] ^|
W60: (F4) [W6] \-
X60: (F3) [W7] \-
Y60: [W6] \-
Z60: [W8] \-
AA60: [W6] \-
AB60: [W1] ^|
AC60: (F4) [W6] \-
AD60: (F3) [W7] \-
AE60: [W6] \-
AF60: [W8] \-
AG60: [W6] \-
AH60: [W1] ^|
AJ60: 106
```

```
AK60: 2.31
A61: U [W1] ||
B61: [W9] ^(Qsd)
C61: [W41] 'Volumetric Gas Flow Rate
D61: [W10] ^dscfh
F61: (S2) [W9] @ROUND(60*F60,-4)
H61: (S2) [W9] @ROUND(60*H60,-4)
J61: (S2) [W9] @ROUND(60*J60,-4)
L61: (S2) [W9] @AVG(F61..J61)
AJ61: 107
AK61: 2.379
B62: [W9] ^(Qa)
C62: [W41] 'Volumetric Gas Flow Rate
D62: [W10] ^acfm
F62: (,0) [W9] @ROUND(60*F56*F57,-2)
H62: (,0) [W9] @ROUND(60*H56*H57,-2)
J62: (,0) [W9] @ROUND(60*J56*J57,-2)
L62: (,0) [W9] @AVG(F62..J62)
AJ62: 108
AK62: 2.449
A63: U [W1] ||
B63: [W9] ^(%EA)
C63: [W41] 'Percent Excess Air
D63: [W10] ^%
F63: (F1) [W9] 100*(F44-(0.05*F45))/((0.264*F46)-F44+(0.5*(F47/10^4)))
H63: (F1) [W9] 100*(H44-(0.05*H45))/((0.264*H46)-H44+(0.5*(H47/10^4)))
J63: (F1) [W9] 100*(J44-(0.05*J45))/((0.264*J46)-J44+(0.5*(J47/10^4)))
L63: (F1) [W9] @AVG(F63..J63)
AJ63: 109
AK63: 2.921
B64: [W9] ^(I)
C64: [W41] 'Isokinetic Variation
D64: [W10] ^%
F64: (F1) [W9] (0.0945*(F35+460)*F53/((F50)*F56*((0.5*F37)^2*3.1417/144)*F28*(1-F51/100)))
H64: (F1) [W9] (0.0945*(H35+460)*H53/((H50)*H56*((0.5*H37)^2*3.1417/144)*H28*(1-H51/100)))
J64: (F1) [W9] (0.0945*(J35+460)*J53/((J50)*J56*((0.5*J37)^2*3.1417/144)*J28*(1-J51/100)))
AJ64: 110
AK64: 2.596
AJ65: 111
AK65: 2.672
AJ66: 112
AK66: 2.749
AJ67: 113
AK67: 2.829
AJ68: 114
```

```
AK68: 2.911
AJ69: 115
AK69: 2.995
AJ70: 116
AK70: 3.081
AJ71: 117
AK71: 3.169
AJ72: 118
AK72: 3.259
AJ73: 119
AK73: 3.351
AJ74: 120
AK74: 3.446
AJ75: 121
AK75: 3.543
AJ76: 122
AK76: 3.642
```

AJ77: 123
AK77: 3.744
AJ78: 124
AK78: 3.848
AJ79: 125
AK79: 3.954
AJ80: 126
AK80: 4.063
AJ81: 127
AK81: 4.174
AJ82: 128
AK82: 4.289
AJ83: 129
AK83: 4.406
AJ84: 130
AK84: 4.525
AJ85: 131
AK85: 4.647
AJ86: 132
AK86: 4.772
AJ87: 133
AK87: 4.9
AJ88: 134
AK88: 5.031
AJ89: 135
AK89: 5.165
AJ90: 136
AK90: 5.302
AJ91: 137
AK91: 5.442
AJ92: 138
AK92: 5.585
AJ93: 139
AK93: 5.732
AJ94: 140
AK94: 2.881
AJ95: 141
AK95: 6.034
AJ96: 142
AK96: 6.19
AJ97: 143
AK97: 6.38
AJ98: 144

AK98: 6.513
AJ99: 145
AK99: 6.68
AJ100: 146
AK100: 6.85
AJ101: 147
AK101: 7.024
AJ102: 148
AK102: 7.202
AJ103: 149
AK103: 7.384
AJ104: 150
AK104: 7.569
AJ105: 151
AK105: 7.759
AJ106: 152
AK106: 7.952
AJ107: 153
AK107: 8.15

AJ108: 154
AK108: 8.351
AJ109: 155
AK109: 8.557
AJ110: 156
AK110: 8.767
AJ111: 157
AK111: 8.981
AJ112: 158
AK112: 9.2
AJ113: 159
AK113: 9.424
AJ114: 160
AK114: 9.652
AJ115: 161
AK115: 9.885
AJ116: 162
AK116: 10.12
AJ117: 163
AK117: 10.36
AJ118: 164
AK118: 10.61
AJ119: 165
AK119: 10.86
AJ120: 166
AK120: 11.12
AJ121: 167
AK121: 11.38
AJ122: 168
AK122: 11.65
AJ123: 169
AK123: 11.92
AJ124: 170
AK124: 12.2
AJ125: 171
AK125: 12.48
AJ126: 172
AK126: 12.77
AJ127: 173
AK127: 13.07
AJ128: 174

AK128: 13.37
AJ129: 175
AK129: 13.67
AJ130: 176
AK130: 13.98
AJ131: 177
AK131: 14.3
AJ132: 178
AK132: 14.62
AJ133: 179
AK133: 14.96
AJ134: 180
AK134: 15.29
AJ135: 181
AK135: 15.63
AJ136: 182
AK136: 15.98
AJ137: 183
AK137: 16.34
AJ138: 184
AK138: 16.7

AJ139: 185
AK139: 17.07
AJ140: 186
AK140: 17.44
AJ141: 187
AK141: 17.82
AJ142: 188
AK142: 18.21
AJ143: 189
AK143: 18.61
AJ144: 1+AJ143
AK144: 19.01
AJ145: 1+AJ144
AK145: 19.42
AJ146: 1+AJ145
AK146: 19.84
AJ147: 1+AJ146
AK147: 20.27
AJ148: 1+AJ147
AK148: 20.7
AJ149: 1+AJ148
AK149: 21.14
AJ150: 1+AJ149
AK150: 21.5
AJ151: 1+AJ150
AK151: 22.05
AJ152: 1+AJ151
AK152: 22.52
AJ153: 1+AJ152
AK153: 22.99
AJ154: 1+AJ153
AK154: 23.47
AJ155: 1+AJ154
AK155: 23.96
AJ156: 1+AJ155
AK156: 24.46
AJ157: 1+AJ156
AK157: 24.97
AJ158: 1+AJ157

AK158: 25.48
AJ159: 1+AJ158
AK159: 26
AJ160: 1+AJ159
AK160: 26.53
AJ161: 1+AJ160
AK161: 27.07
AJ162: 1+AJ161
AK162: 27.62
AJ163: 1+AJ162
AK163: 28.18
AJ164: 1+AJ163
AK164: 28.75

```
A1: U [W1] ||
B1: [W9] 'Name file for source (e.g.. /fs [esc] [esc] a:acmepm) if not already
O1: [W6] ||
P1: [W1] 'TO BEGIN, BLANK ALL FIELD DATA VALUES BY PRESSING ALT X
A2: U [W1] ||
B2: [W9] '    saved on floppy disk.
Q2: [W6] 'CALCULATIONS FOR SQUARE ROOT OF ¯P FOR PITOT TUBE
AJ2: "TEMP
AK2: "VP H2O
A3: U [W1] ||
B3: [W9] 'Type [Alt M] to get a menu to: A) move around spreadsheet,
Q3: [W6] 'filename:
S3: [W6] +C14
AJ3: +"     "&@CHAR(176)&"F"
AK3: "in. Hg
A4: U [W1] ||
B4: [W9] '     B) print parts of spreadsheet, or C) get help instructions.
Q4: [W6] 'ENTER NUMBER OF POINTS===>
U4: (F0) U [W6] 24
AJ4: 50
AK4: 0.3626
A5: U [W1] ||
B5: [W9] 'Use arrow keys to go to desired cells.  Enter number and go to next
O5: [W6] \-
P5: [W1] ^|
Q5: [W6] \-
R5: [W7] \-
S5: [W6] \-
T5: [W8] \-
U5: [W6] \-
V5: [W1] ^|
W5: [W6] \-
X5: [W7] \-
Y5: [W6] \-

Z5: [W8] \-
AA5: [W6] \-
AB5: [W1] ^|
AC5: [W6] \-
AD5: [W7] \-
AE5: [W6] \-
AF5: [W8] \-
AG5: [W6] \-
AH5: [W1] ^|
AJ5: 51
AK5: 0.3764
A6: U [W1] ||
B6: [W9] '    cell.
P6: [W1] ^|
Q6: [W6] 'DATA INPUT FROM FIELD DATA SHEETS
V6: [W1] ^|
W6: [W6] 'DATA INPUT FROM FIELD DATA SHEETS
AB6: [W1] ^|
AC6: [W6] 'DATA INPUT FROM FIELD DATA SHEETS
AH6: [W1] ^|
AJ6: 52
AK6: 0.3906
A7: U [W1] ||
B7: [W9] 'You must enter ¯p, ¯H, stack gas T, and DGM T individual values from
O7: [W6] "POINT
P7: [W1] ^|
S7: [W6] +F14
V7: [W1] ^|
```

```
Y7: [W6] +H14
AB7: [W1] ^|
AE7: [W6] +J14
AH7: [W1] ^|
AJ7: 53
AK7: 0.4052
A8: U [W1] ||
B8: [W9] '    the field data sheets.
O8: [W6] "NO.
P8: [W1] ^|
Q8: [W6] ^~p
R8: [W7] ^SQRT ~p
S8: [W6] ^~H
T8: [W8] ^Stack T
U8: [W6] ^DGM T
V8: [W1] ^|
W8: [W6] ^~p
X8: [W7] ^SQRT ~p
Y8: [W6] ^~H
Z8: [W8] ^Stack T
AA8: [W6] ^DGM T
AB8: [W1] ^|
AC8: [W6] ^~p
AD8: [W7] ^SQRT ~p
AE8: [W6] ^~H
AF8: [W8] ^Stack T
AG8: [W6] ^DGM T
AH8: [W1] ^|
AJ8: 54
AK8: 0.4203
C9: U [W41] 'TABLE X-X
O9: [W6] \-
```

```
P9: [W1] ^|
Q9: [W6] \-
R9: [W7] \-
S9: [W6] \-
T9: [W8] \-
U9: [W6] \-
V9: [W1] ^|
W9: [W6] \-
X9: [W7] \-
Y9: [W6] \-
Z9: [W8] \-
AA9: [W6] \-
AB9: [W1] ^|
AC9: [W6] \-
AD9: [W7] \-
AE9: [W6] \-
AF9: [W8] \-
AG9: [W6] \-
AH9: [W1] ^|
AJ9: 55
AK9: 0.4359
C10: U [W41] 'PARTICULATE EMISSIONS SUMMARY
O10: U [W6] 1
P10: [W1] ^|
Q10: (F2) U [W6] 0.59
R10: (F3) [W7] +Q10^0.5
S10: (F2) U [W6] 1.7
T10: U [W8] 349
U10: U [W6] 79
V10: [W1] ^|
```

```
W10: (F2) U [W6] 0.49
X10: (F3) [W7] +W10^0.5
Y10: (F2) U [W6] 1.4
Z10: U [W8] 347
AA10: U [W6] 89
AB10: [W1] ^|
AC10: (F2) U [W6] 0.39
AD10: (F3) [W7] +AC10^0.5
AE10: (F2) U [W6] 1.1
AF10: U [W8] 340
AG10: U [W6] 91
AH10: [W1] ^|
AJ10: 56
AK10: 0.452
C11: U [W41] 'Kiln #7, Exhaust Stack
O11: U [W6] 2
P11: [W1] ^|
Q11: (F2) U [W6] 0.6
R11: (F3) [W7] +Q11^0.5
S11: (F2) U [W6] 1.7
T11: U [W8] 349
U11: U [W6] 80
V11: [W1] ^|
W11: (F2) U [W6] 0.51
X11: (F3) [W7] +W11^0.5
Y11: (F2) U [W6] 1.5
Z11: U [W8] 349
AA11: U [W6] 90
AB11: [W1] ^|
AC11: (F2) U [W6] 0.38
```

```
AD11: (F3) [W7] +AC11^0.5
AE11: (F2) U [W6] 1.1
AF11: U [W8] 341
AG11: U [W6] 91
AH11: [W1] ^|
AJ11: 57
AK11: 0.4586
C12: U [W41] 'Solite A.F. Old plant, Arvonia, VA
H12: [W9] '
O12: U [W6] 3
P12: [W1] ^|
Q12: (F2) U [W6] 0.57
R12: (F3) [W7] +Q12^0.5
S12: (F2) U [W6] 1.6
T12: U [W8] 349
U12: U [W6] 82
V12: [W1] ^|
W12: (F2) U [W6] 0.53
X12: (F3) [W7] +W12^0.5
Y12: (F2) U [W6] 1.5
Z12: U [W8] 350
AA12: U [W6] 90
AB12: [W1] ^|
AC12: (F2) U [W6] 0.36
AD12: (F3) [W7] +AC12^0.5
AE12: (F2) U [W6] 1.04
AF12: U [W8] 342
AG12: U [W6] 91
AH12: [W1] ^|
AJ12: 58
AK12: 0.4858
O13: U [W6] 4
```

```
P13: [W1] ^|
Q13: (F2) U [W6] 0.48
R13: (F3) [W7] +Q13^0.5
S13: (F2) U [W6] 1.4
T13: U [W8] 349
U13: U [W6] 83
V13: [W1] ^|
W13: (F2) U [W6] 0.49
X13: (F3) [W7] +W13^0.5
Y13: (F2) U [W6] 1.4
Z13: U [W8] 352
AA13: U [W6] 91
AB13: [W1] ^|
AC13: (F2) U [W6] 0.34
AD13: (F3) [W7] +AC13^0.5
AE13: (F2) U [W6] 0.99
AF13: U [W8] 342
AG13: U [W6] 92
AH13: [W1] ^|
AJ13: 59
AK13: 0.5035
B14: [W9] 'filename:
C14: U [W41] 'BIGMETH5.wk1
D14: [W10] "RUN NO.==>
F14: U [W9] 'K7-1
H14: U [W9] 'K7-2
I14: U [W2] '
J14: U [W9] 'K7-3
```

```
O14: U [W6] 5
P14: [W1] ^|
Q14: (F2) U [W6] 0.32
R14: (F3) [W7] +Q14^0.5
S14: (F2) U [W6] 0.93
T14: U [W8] 347
U14: U [W6] 84
V14: [W1] ^|
W14: (F2) U [W6] 0.3
X14: (F3) [W7] +W14^0.5
Y14: (F2) U [W6] 0.87
Z14: U [W8] 351
AA14: U [W6] 92
AB14: [W1] ^|
AC14: (F2) U [W6] 0.32
AD14: (F3) [W7] +AC14^0.5
AE14: (F2) U [W6] 0.93
AF14: U [W8] 342
AG14: U [W6] 92
AH14: [W1] ^|
AJ14: 60
AK14: 0.5218
D15: [W10] "DATE==>
F15: U [W9] '6/4/92
H15: U [W9] '6/4/92
J15: U [W9] '6/4/92
O15: U [W6] 6
P15: [W1] ^|
Q15: (F2) U [W6] 0.29
R15: (F3) [W7] +Q15^0.5
S15: (F2) U [W6] 0.84
T15: U [W8] 349
U15: U [W6] 86
V15: [W1] ^|
```

```
W15: (F2) U [W6] 0.34
X15: (F3) [W7] +W15^0.5
Y15: (F2) U [W6] 0.99
Z15: U [W8] 352
AA15: U [W6] 92
AB15: [W1] ^|
AC15: (F2) U [W6] 0.28
AD15: (F3) [W7] +AC15^0.5
AE15: (F2) U [W6] 0.81
AF15: U [W8] 342
AG15: U [W6] 93
AH15: [W1] ^|
AJ15: 61
AK15: 0.5407
C16: [W41] 'SAMPLING PARAMETERS
D16: [W10] "RUN TIME==>
F16: U [W9] '920-1128
H16: U [W9] '1400-1617
J16: U [W9] '1952-2158
L16: [W9] ^AVERAGE
O16: U [W6] 7
P16: [W1] ^|
Q16: (F2) U [W6] 0.28
R16: (F3) [W7] +Q16^0.5
S16: (F2) U [W6] 0.81
T16: U [W8] 345
```

```
U16: U [W6] 86
V16: [W1] ^|
W16: (F2) U [W6] 0.34
X16: (F3) [W7] +W16^0.5
Y16: (F2) U [W6] 0.99
Z16: U [W8] 348
AA16: U [W6] 93
AB16: [W1] ^|
AC16: (F2) U [W6] 0.26
AD16: (F3) [W7] +AC16^0.5
AE16: (F2) U [W6] 0.76
AF16: U [W8] 341
AG16: U [W6] 93
AH16: [W1] ^|
AJ16: 62
AK16: 0.5601
B17: [W9] \-
C17: [W41] \-
D17: [W10] \-
E17: [W2] \-
F17: [W9] \-
G17: [W2] \-
H17: [W9] \-
I17: [W2] \-
J17: [W9] \-
K17: [W2] \-
L17: [W9] \-
O17: U [W6] 8
P17: [W1] ^|
Q17: (F2) U [W6] 0.26
R17: (F3) [W7] +Q17^0.5
S17: (F2) U [W6] 0.76
T17: U [W8] 344
U17: U [W6] 87
V17: [W1] ^|
W17: (F2) U [W6] 0.36
```

```
X17: (F3) [W7] +W17^0.5
Y17: (F2) U [W6] 1.04
Z17: U [W8] 349
AA17: U [W6] 93
AB17: [W1] ^|
AC17: (F2) U [W6] 0.23
AD17: (F3) [W7] +AC17^0.5
AE17: (F2) U [W6] 0.67
AF17: U [W8] 342
AG17: U [W6] 94
AH17: [W1] ^|
AJ17: 63
AK17: 0.5802
B18: [W9] ^SYMBOL
C18: [W41] 'MEASURED DATA AT STACK
D18: [W10] ^UNITS
O18: U [W6] 9
P18: [W1] ^|
Q18: (F2) U [W6] 0.29
R18: (F3) [W7] +Q18^0.5
S18: (F2) U [W6] 0.84
T18: U [W8] 344
U18: U [W6] 87
V18: [W1] ^|
```

```
W18: (F2) U [W6] 0.35
X18: (F3) [W7] +W18^0.5
Y18: (F2) U [W6] 1.01
Z18: U [W8] 349
AA18: U [W6] 93
AB18: [W1] ^|
AC18: (F2) U [W6] 0.31
AD18: (F3) [W7] +AC18^0.5
AE18: (F2) U [W6] 0.9
AF18: U [W8] 341
AG18: U [W6] 93
AH18: [W1] ^|
AJ18: 64
AK18: 0.6009
B19: [W9] ^(Y)
C19: [W41] 'Dry Gas Meter Calibration Factor
D19: [W10] ^--
F19: U [W9] 0.998
H19: U [W9] +F19
J19: U [W9] +F19
O19: U [W6] 10
P19: [W1] ^|
Q19: (F2) U [W6] 0.36
R19: (F3) [W7] +Q19^0.5
S19: (F2) U [W6] 1.04
T19: U [W8] 344
U19: U [W6] 88
V19: [W1] ^|
W19: (F2) U [W6] 0.36
X19: (F3) [W7] +W19^0.5
Y19: (F2) U [W6] 1.04
Z19: U [W8] 349
AA19: U [W6] 93
AB19: [W1] ^|
AC19: (F2) U [W6] 0.33
AD19: (F3) [W7] +AC19^0.5
AE19: (F2) U [W6] 0.96
AF19: U [W8] 343
```

```
AG19: U [W6] 94
AH19: [W1] ^|
AJ19: 65
AK19: 0.6222
B20: [W9] ^(Vi)
C20: [W41] 'Initial Meter Volume
D20: [W10] ^cf
E20: U [W2] 812.297
F20: (F3) U [W9] 280.825
H20: (F3) U [W9] 387.494
J20: (F3) U [W9] 458.025
O20: U [W6] 11
P20: [W1] ^|
Q20: (F2) U [W6] 0.35
R20: (F3) [W7] +Q20^0.5
S20: (F2) U [W6] 1.01
T20: U [W8] 344
U20: U [W6] 89
V20: [W1] ^|
W20: (F2) U [W6] 0.37
X20: (F3) [W7] +W20^0.5
Y20: (F2) U [W6] 1.1
```

```
Z20: U [W8] 349
AA20: U [W6] 93
AB20: [W1] ^|
AC20: (F2) U [W6] 0.33
AD20: (F3) [W7] +AC20^0.5
AE20: (F2) U [W6] 0.96
AF20: U [W8] 342
AG20: U [W6] 94
AH20: [W1] ^|
AJ20: 66
AK20: 0.6442
A21: U [W1] ||
C21: [W41] '  IF NO INTERMEDIATE LEAK CHECK WAS DONE ENTER 0
E21: U [W2] 812.297
F21: [W9] 0
O21: U [W6] 12
P21: [W1] ^|
Q21: (F2) U [W6] 0.25
R21: (F3) [W7] +Q21^0.5
S21: (F2) U [W6] 0.73
T21: U [W8] 327
U21: U [W6] 89
V21: [W1] ^|
W21: (F2) U [W6] 0.37
X21: (F3) [W7] +W21^0.5
Y21: (F2) U [W6] 1.1
Z21: U [W8] 346
AA21: U [W6] 93
AB21: [W1] ^|
AC21: (F2) U [W6] 0.32
AD21: (F3) [W7] +AC21^0.5
AE21: (F2) U [W6] 0.93
AF21: U [W8] 343
AG21: U [W6] 94
AH21: [W1] ^|
AJ21: 67
AK21: 0.6669
A22: U [W1] ||
C22: [W41] 'Volume Before Intermed Leak Check
D22: [W10] ^cf
```

```
F22: U [W9] 0
O22: U [W6] 13
P22: [W1] ^|
Q22: (F2) U [W6] 0.29
R22: (F3) [W7] +Q22^0.5
S22: (F2) U [W6] 0.84
T22: U [W8] 337
U22: U [W6] 88
V22: [W1] ^|
W22: (F2) U [W6] 0.39
X22: (F3) [W7] +W22^0.5
Y22: (F2) U [W6] 1.1
Z22: U [W8] 346
AA22: U [W6] 93
AB22: [W1] ^|
AC22: (F2) U [W6] 0.28
AD22: (F3) [W7] +AC22^0.5
AE22: (F2) U [W6] 0.81
AF22: U [W8] 333
AG22: U [W6] 93
```

```
AH22: [W1] ^|
AJ22: 68
AK22: 0.6903
A23: U [W1] ||
C23: [W41] 'Volume After Intermed Leak Check
D23: [W10] ^cf
F23: U [W9] 0
H23: U [W9] 0
J23: U [W9] 0
O23: U [W6] 14
P23: [W1] ^|
Q23: (F2) U [W6] 0.41
R23: (F3) [W7] +Q23^0.5
S23: (F2) U [W6] 1.2
T23: U [W8] 342
U23: U [W6] 89
V23: [W1] ^|
W23: (F2) U [W6] 0.39
X23: (F3) [W7] +W23^0.5
Y23: (F2) U [W6] 1.1
Z23: U [W8] 347
AA23: U [W6] 93
AB23: [W1] ^|
AC23: (F2) U [W6] 0.27
AD23: (F3) [W7] +AC23^0.5
AE23: (F2) U [W6] 0.78
AF23: U [W8] 336
AG23: U [W6] 94
AH23: [W1] ^|
AJ23: 69
AK23: 0.7144
B24: [W9] ^(Vf)
C24: [W41] 'Final Meter Volume
D24: [W10] ^cf
F24: (F3) U [W9] 349.09
H24: (F3) U [W9] 457.903
J24: (F3) U [W9] 520.702
O24: U [W6] 15
P24: [W1] ^|
Q24: (F2) U [W6] 0.4
R24: (F3) [W7] +Q24^0.5
S24: (F2) U [W6] 1.2
```

```
T24: U [W8] 342
U24: U [W6] 90
V24: [W1] ^|
W24: (F2) U [W6] 0.43
X24: (F3) [W7] +W24^0.5
Y24: (F2) U [W6] 1.2
Z24: U [W8] 346
AA24: U [W6] 93
AB24: [W1] ^|
AC24: (F2) U [W6] 0.27
AD24: (F3) [W7] +AC24^0.5
AE24: (F2) U [W6] 0.78
AF24: U [W8] 336
AG24: U [W6] 94
AH24: [W1] ^|
AJ24: 70
AK24: 0.7392
B25: [W9] ^(Lp)



C25: [W41] 'Leak Check Correction
D25: [W10] ^cfm
F25: U [W9] 0
H25: U [W9] 0
J25: U [W9] 0
O25: U [W6] 16
P25: [W1] ^|
Q25: (F2) U [W6] 0.35
R25: (F3) [W7] +Q25^0.5
S25: (F2) U [W6] 1.01
T25: U [W8] 344
U25: U [W6] 90
V25: [W1] ^|
W25: (F2) U [W6] 0.35
X25: (F3) [W7] +W25^0.5
Y25: (F2) U [W6] 1.01
Z25: U [W8] 346
AA25: U [W6] 93
AB25: [W1] ^|
AC25: (F2) U [W6] 0.29
AD25: (F3) [W7] +AC25^0.5
AE25: (F2) U [W6] 0.84
AF25: U [W8] 339
AG25: U [W6] 94
AH25: [W1] ^|
AJ25: 71
AK25: 0.7648
A26: U [W1] ||
C26: [W41] ||
F26: (H) [W9] @IF(F25-0.02>0,F25,0)
H26: (H) [W9] @IF(H25-0.02>0,H25,0)
J26: (H) [W9] @IF(J25-0.02>0,J25,0)
O26: U [W6] 17
P26: [W1] ^|
Q26: (F2) U [W6] 0.32
R26: (F3) [W7] +Q26^0.5
S26: (F2) U [W6] 0.93
T26: U [W8] 345
U26: U [W6] 91
V26: [W1] ^|
W26: (F2) U [W6] 0.34
X26: (F3) [W7] +W26^0.5
Y26: (F2) U [W6] 0.99
Z26: U [W8] 346
```

```
AA26: U [W6] 93
AB26: [W1] ^|
AC26: (F2) U [W6] 0.26
AD26: (F3) [W7] +AC26^0.5
AE26: (F2) U [W6] 0.75
AF26: U [W8] 340
AG26: U [W6] 95
AH26: [W1] ^|
AJ26: 72
AK26: 0.7912
B27: [W9] ^(Vm)
C27: [W41] 'Total Meter Volume
D27: [W10] ^cf
F27: (F3) [W9] (F24-F23)+(F22-F20)-(0.02-F24)*F26
H27: (F3) [W9] (H24-H23)+(H22-H20)-(0.02-H24)*H26
J27: (F3) [W9] (J24-J23)+(J22-J20)-(0.02-J24)*J26

L27: (F3) [W9] @AVG(F27..J27)
O27: U [W6] 18
P27: [W1] ^|
Q27: (F2) U [W6] 0.31
R27: (F3) [W7] +Q27^0.5
S27: (F2) U [W6] 0.9
T27: U [W8] 345
U27: U [W6] 91
V27: [W1] ^|
W27: (F2) U [W6] 0.32
X27: (F3) [W7] +W27^0.5
Y27: (F2) U [W6] 0.93
Z27: U [W8] 346
AA27: U [W6] 93
AB27: [W1] ^|
AC27: (F2) U [W6] 0.26
AD27: (F3) [W7] +AC27^0.5
AE27: (F2) U [W6] 0.75
AF27: U [W8] 340
AG27: U [W6] 95
AH27: [W1] ^|
AJ27: 73
AK27: 0.8183
B28: [W9] ^(t)
C28: [W41] 'Sampling Time
D28: [W10] ^min.
F28: U [W9] 120
H28: U [W9] 120
J28: U [W9] 120
L28: (F0) [W9] @AVG(F28..J28)
O28: U [W6] 19
P28: [W1] ^|
Q28: (F2) U [W6] 0.3
R28: (F3) [W7] +Q28^0.5
S28: (F2) U [W6] 0.87
T28: U [W8] 346
U28: U [W6] 91
V28: [W1] ^|
W28: (F2) U [W6] 0.3
X28: (F3) [W7] +W28^0.5
Y28: (F2) U [W6] 0.87
Z28: U [W8] 349
AA28: U [W6] 93
AB28: [W1] ^|
AC28: (F2) U [W6] 0.25
AD28: (F3) [W7] +AC28^0.5
```

```
AE28: (F2) U [W6] 0.73
AF28: U [W8] 340
AG28: U [W6] 94
AH28: [W1] ^|
AJ28: 74
AK28: 0.8462
B29: [W9] ^(Vwc)
C29: [W41] 'Volume of Water Collected
D29: [W10] ^mL
F29: (F1) U [W9] (F31-F30)
H29: (F1) U [W9] (H31-H30)
J29: (F1) U [W9] (J31-J30)
L29: (F1) [W9] @AVG(F29..J29)
O29: U [W6] 20

P29: [W1] ^|
Q29: (F2) U [W6] 0.34
R29: (F3) [W7] +Q29^0.5
S29: (F2) U [W6] 0.99
T29: U [W8] 347
U29: U [W6] 91
V29: [W1] ^|
W29: (F2) U [W6] 0.38
X29: (F3) [W7] +W29^0.5
Y29: (F2) U [W6] 1.1
Z29: U [W8] 349
AA29: U [W6] 93
AB29: [W1] ^|
AC29: (F2) U [W6] 0.23
AD29: (F3) [W7] +AC29^0.5
AE29: (F2) U [W6] 0.67
AF29: U [W8] 341
AG29: U [W6] 94
AH29: [W1] ^|
AJ29: 75
AK29: 0.875
B30: [W9] ^(Vwsg)
C30: [W41] 'Silica Gel Weight Increase
D30: [W10] ^g
F30: (F1) U [W9] 14.4
H30: (F1) U [W9] 13.1
J30: (F1) U [W9] 17
L30: (F1) [W9] @AVG(F30..J30)
O30: U [W6] 21
P30: [W1] ^|
Q30: (F2) U [W6] 0.42
R30: (F3) [W7] +Q30^0.5
S30: (F2) U [W6] 1.2
T30: U [W8] 350
U30: U [W6] 91
V30: [W1] ^|
W30: (F2) U [W6] 0.4
X30: (F3) [W7] +W30^0.5
Y30: (F2) U [W6] 1.2
Z30: U [W8] 352
AA30: U [W6] 94
AB30: [W1] ^|
AC30: (F2) U [W6] 0.27
AD30: (F3) [W7] +AC30^0.5
AE30: (F2) U [W6] 0.78
AF30: U [W8] 342
AG30: U [W6] 94
AH30: [W1] ^|
```

```
AJ30: 76
AK30: 0.9046
B31: [W9] ^(Vlc)
C31: [W41] 'Total Water Collected
D31: [W10] ^mL
F31: (F1) [W9] 178.4
H31: (F1) [W9] 183.1
J31: (F1) [W9] 178
L31: (F1) [W9] @AVG(F31..J31)
O31: U [W6] 22
P31: [W1] ^|
Q31: (F2) U [W6] 0.46

R31: (F3) [W7] +Q31^0.5
S31: (F2) U [W6] 1.3
T31: U [W8] 352
U31: U [W6] 91
V31: [W1] ^|
W31: (F2) U [W6] 0.45
X31: (F3) [W7] +W31^0.5
Y31: (F2) U [W6] 1.3
Z31: U [W8] 352
AA31: U [W6] 94
AB31: [W1] ^|
AC31: (F2) U [W6] 0.33
AD31: (F3) [W7] +AC31^0.5
AE31: (F2) U [W6] 0.96
AF31: U [W8] 344
AG31: U [W6] 93
AH31: [W1] ^|
AJ31: 77
AK31: 0.9352
B32: [W9] ^(Pbar)
C32: [W41] 'Barometric Pressure
D32: [W10] ^in. Hg
F32: (F2) U [W9] 29.85
H32: (F2) U [W9] 29.85
J32: (F2) U [W9] 29.85
L32: (F2) [W9] @AVG(F32..J32)
O32: U [W6] 23
P32: [W1] ^|
Q32: (F2) U [W6] 0.47
R32: (F3) [W7] +Q32^0.5
S32: (F2) U [W6] 1.4
T32: U [W8] 351
U32: U [W6] 91
V32: [W1] ^|
W32: (F2) U [W6] 0.44
X32: (F3) [W7] +W32^0.5
Y32: (F2) U [W6] 1.3
Z32: U [W8] 351
AA32: U [W6] 94
AB32: [W1] ^|
AC32: (F2) U [W6] 0.37
AD32: (F3) [W7] +AC32^0.5
AE32: (F2) U [W6] 1.1
AF32: U [W8] 346
AG32: U [W6] 93
AH32: [W1] ^|
AJ32: 78
AK32: 0.9666
B33: [W9] ^(Pg)
C33: [W41] 'Stack Static Pressure
```

```
D33: [W10] ^in. H2O
F33: U [W9] -0.41
G33: U [W2] '
H33: U [W9] -0.41
J33: U [W9] -0.41
O33: U [W6] 24
P33: [W1] ^|
Q33: (F2) U [W6] 0.42
R33: (F3) [W7] +Q33^0.5
S33: (F2) U [W6] 1.2

T33: U [W8] 324
U33: U [W6] 92
V33: [W1] ^|
W33: (F2) U [W6] 0.43
X33: (F3) [W7] +W33^0.5
Y33: (F2) U [W6] 1.2
Z33: U [W8] 351
AA33: U [W6] 95
AB33: [W1] ^|
AC33: (F2) U [W6] 0.38
AD33: (F3) [W7] +AC33^0.5
AE33: (F2) U [W6] 1.1
AF33: U [W8] 345
AG33: U [W6] 93
AH33: [W1] ^|
AJ33: 79
AK33: 0.9989
B34: [W9] ^(~H)
C34: [W41] 'Avg. Orifice Pressure Drop ~H
D34: [W10] ^in. H2O
F34: (F2) [W9] 1.1
H34: (F2) [W9] 1.1
J34: (F2) [W9] 0.9
O34: U [W6] 25
P34: [W1] ^|
R34: (F3) [W7] +Q34^0.5
V34: [W1] ^|
X34: (F3) [W7] +W34^0.5
AB34: [W1] ^|
AD34: (F3) [W7] +AC34^0.5
AH34: [W1] ^|
AJ34: 80
AK34: 1.032
B35: [W9] ^(Ts)
C35: [W41] 'Avg. Stack Gas Temperature
D35: [W10] +"     "&@CHAR(176)&"F"
F35: (F1) [W9] 344
H35: (F1) [W9] 349
J35: (F1) [W9] 341
L35: (F1) [W9] @AVG(F35..J35)
O35: U [W6] 26
P35: [W1] ^|
R35: (F3) [W7] +Q35^0.5
V35: [W1] ^|
X35: (F3) [W7] +W35^0.5
AB35: [W1] ^|
AD35: (F3) [W7] +AC35^0.5
AH35: [W1] ^|
AJ35: 81
AK35: 1.066
B36: [W9] ^(Tm)
C36: [W41] 'Avg. Dry Gas Meter Temperature
```

```
D36: [W10] +"     "&@CHAR(176)&"F"
F36: (F1) [W9] 88
H36: (F1) [W9] 93
J36: (F1) [W9] 93
O36: U [W6] 27
P36: [W1] ^|
R36: (F3) [W7] +Q36^0.5
V36: [W1] ^|


X36: (F3) [W7] +W36^0.5
AB36: [W1] ^|
AD36: (F3) [W7] +AC36^0.5
AH36: [W1] ^|
AJ36: 82
AK36: 1.102
B37: [W9] ^(Dn)
C37: [W41] 'Nozzle Diameter
D37: [W10] ^inches
F37: (F3) U [W9] 0.26
H37: (F3) U [W9] 0.26
J37: (F3) U [W9] 0.26
O37: U [W6] 28
P37: [W1] ^|
R37: (F3) [W7] +Q37^0.5
V37: [W1] ^|
X37: (F3) [W7] +W37^0.5
AB37: [W1] ^|
AD37: (F3) [W7] +AC37^0.5
AH37: [W1] ^|
AJ37: 83
AK37: 1.138
A38: U [W1] ||
C38: [W41] '  FOR STACK DIMENSIONS, ENTER 0 WHERE SIZE IS NOT APPROPRIATE
O38: U [W6] 29
P38: [W1] ^|
R38: (F3) [W7] +Q38^0.5
V38: [W1] ^|
X38: (F3) [W7] +W38^0.5
AB38: [W1] ^|
AD38: (F3) [W7] +AC38^0.5
AH38: [W1] ^|
AJ38: 84
AK38: 1.175
B39: [W9] ^(Ds)
C39: [W41] 'Diameter of Stack
D39: [W10] ^inches
F39: (F3) U [W9] 51.5
H39: (F3) U [W9] 51.5
J39: (F3) U [W9] 51.5
O39: U [W6] 30
P39: [W1] ^|
R39: (F3) [W7] +Q39^0.5
V39: [W1] ^|
X39: (F3) [W7] +W39^0.5
AB39: [W1] ^|
AD39: (F3) [W7] +AC39^0.5
AH39: [W1] ^|
AJ39: 85
AK39: 1.213
B40: [W9] ^(W)
C40: [W41] 'Width of Stack
D40: [W10] ^inches
F40: (F3) U [W9] 0
```

```
H40: (F3) U [W9] 0
J40: (F3) U [W9] 0
O40: U [W6] 31
P40: [W1] ^|
R40: (F3) [W7] +Q40^0.5
V40: [W1] ^|

X40: (F3) [W7] +W40^0.5
AB40: [W1] ^|
AD40: (F3) [W7] +AC40^0.5
AH40: [W1] ^|
AJ40: 86
AK40: 1.253
B41: [W9] ^(L)
C41: [W41] 'Length of Stack
D41: [W10] ^inches
F41: (F3) U [W9] 0
H41: (F3) U [W9] 0
J41: (F3) U [W9] 0
O41: U [W6] 32
P41: [W1] ^|
R41: (F3) [W7] +Q41^0.5
V41: [W1] ^|
X41: (F3) [W7] +W41^0.5
AB41: [W1] ^|
AD41: (F3) [W7] +AC41^0.5
AH41: [W1] ^|
AJ41: 87
AK41: 1.293
B42: [W9] ^(Cp)
C42: [W41] 'Pitot Tube Coefficient
D42: [W10] ^--
F42: (F2) U [W9] 0.84
H42: (F2) U [W9] +F42
J42: (F2) U [W9] +F42
O42: U [W6] 33
P42: [W1] ^|
R42: (F3) [W7] +Q42^0.5
V42: [W1] ^|
X42: (F3) [W7] +W42^0.5
AB42: [W1] ^|
AD42: (F3) [W7] +AC42^0.5
AH42: [W1] ^|
AJ42: 88
AK42: 1.335
B43: [W9] ^(~p)§
C43: [W41] 'Avg. Square Root Velocity Head ~p
D43: [W10] ^(in. H2O)§
F43: (F3) [W9] 0.6117
H43: (F3) [W9] 0.625
J43: (F3) [W9] 0.55
O43: U [W6] 34
P43: [W1] ^|
R43: (F3) [W7] +Q43^0.5
V43: [W1] ^|
X43: (F3) [W7] +W43^0.5
AB43: [W1] ^|
AD43: (F3) [W7] +AC43^0.5
AH43: [W1] ^|
AJ43: 89
AK43: 1.378
B44: [W9] ^(%O2)
C44: [W41] 'Stack Gas Oxygen
```

```
D44: [W10] ^%
F44: (F1) U [W9] 15
H44: (F1) U [W9] 14.8
I44: (F1) U [W2] 20.8



J44: (F1) U [W9] 14.6
L44: (F1) [W9] @AVG(F44..J44)
O44: U [W6] 35
P44: [W1] ^|
R44: (F3) [W7] +Q44^0.5
V44: [W1] ^|
X44: (F3) [W7] +W44^0.5
AB44: [W1] ^|
AD44: (F3) [W7] +AC44^0.5
AH44: [W1] ^|
AJ44: 90
AK44: 1.422
B45: [W9] ^(%CO2)
C45: [W41] 'Stack Gas Carbon Dioxide
D45: [W10] ^%
F45: (F1) U [W9] 4.1
H45: (F1) U [W9] 4.4
J45: (F1) U [W9] 4.4
L45: (F1) [W9] @AVG(F45..J45)
O45: U [W6] 36
P45: [W1] ^|
R45: (F3) [W7] +Q45^0.5
V45: [W1] ^|
X45: (F3) [W7] +W45^0.5
AB45: [W1] ^|
AD45: (F3) [W7] +AC45^0.5
AH45: [W1] ^|
AJ45: 91
AK45: 1.467
B46: [W9] ^(%N2)
C46: [W41] 'Stack Gas Nitrogen
D46: [W10] ^%
F46: (F1) U [W9] 100-F44-F45
H46: (F1) U [W9] 100-H44-H45
J46: (F1) U [W9] 100-J44-J45
L46: (F1) [W9] @AVG(F46..J46)
O46: U [W6] 37
P46: [W1] ^|
R46: (F3) [W7] +Q46^0.5
V46: [W1] ^|
X46: (F3) [W7] +W46^0.5
AB46: [W1] ^|
AD46: (F3) [W7] +AC46^0.5
AH46: [W1] ^|
AJ46: 92
AK46: 1.513
A47: U [W1] ||
B47: [W9] ^(ppmCO)
C47: [W41] 'Stack Gas Carbon Monoxide
D47: [W10] ^ppm
F47: U [W9] 0
H47: U [W9] 0
J47: U [W9] 0
L47: (F1) [W9] @AVG(F47..J47)
O47: U [W6] 38
P47: [W1] ^|
R47: (F3) [W7] +Q47^0.5
V47: [W1] ^|
```

```
X47: (F3) [W7] +W47^0.5
AB47: [W1] ^|

AD47: (F3) [W7] +AC47^0.5
AH47: [W1] ^|
AJ47: 93
AK47: 1.561
O48: U [W6] 39
P48: [W1] ^|
R48: (F3) [W7] +Q48^0.5
V48: [W1] ^|
X48: (F3) [W7] +W48^0.5
AB48: [W1] ^|
AD48: (F3) [W7] +AC48^0.5
AH48: [W1] ^|
AJ48: 94
AK48: 1.61
C49: [W41] 'CALCULATED STACK GAS DATA
O49: U [W6] 40
P49: [W1] ^|
R49: (F3) [W7] +Q49^0.5
V49: [W1] ^|
X49: (F3) [W7] +W49^0.5
AB49: [W1] ^|
AD49: (F3) [W7] +AC49^0.5
AH49: [W1] ^|
AJ49: 95
AK49: 1.66
B50: [W9] ^(Ps)
C50: [W41] 'Stack Gas Pressure
D50: [W10] ^in. Hg
F50: (F2) [W9] (F33/13.6+F32)
H50: (F2) [W9] (H33/13.6+H32)
J50: (F2) [W9] (J33/13.6+J32)
L50: (F2) [W9] @AVG(F50..J50)
O50: U [W6] 41
P50: [W1] ^|
R50: (F3) [W7] +Q50^0.5
V50: [W1] ^|
X50: (F3) [W7] +W50^0.5
AB50: [W1] ^|
AD50: (F3) [W7] +AC50^0.5
AH50: [W1] ^|
AJ50: 96
AK50: 1.712
B51: [W9] ^(%Bws)
C51: [W41] 'Stack Gas Moisture
D51: [W10] ^%
F51: (F1) [W9] (F31*0.04707)/((F31*0.04707)+F53)*100
H51: (F1) [W9] (H31*0.04707)/((H31*0.04707)+H53)*100
J51: (F1) [W9] (J31*0.04707)/((J31*0.04707)+J53)*100
L51: (F1) [W9] @AVG(F51..J51)
O51: U [W6] 42
P51: [W1] ^|
R51: (F3) [W7] +Q51^0.5
V51: [W1] ^|
X51: (F3) [W7] +W51^0.5
AB51: [W1] ^|
AD51: (F3) [W7] +AC51^0.5
AH51: [W1] ^|
AJ51: 97
AK51: 1.765
B52: [W9] ^(%B'w)
```

```
C52: [W41] 'Moisture at Saturation
D52: [W10] ^%
F52: (F1) [W9] (@VLOOKUP(F35,$AJ$4..$AK$164,1)/(F50)*100)
H52: (F1) [W9] (@VLOOKUP(H35,$AJ$4..$AK$164,1)/(H50)*100)
J52: (F1) [W9] (@VLOOKUP(J35,$AJ$4..$AK$164,1)/(J50)*100)
O52: U [W6] 43
P52: [W1] ^|
R52: (F3) [W7] +Q52^0.5
V52: [W1] ^|
X52: (F3) [W7] +W52^0.5
AB52: [W1] ^|
AD52: (F3) [W7] +AC52^0.5
AH52: [W1] ^|
AJ52: 98
AK52: 1.819
B53: [W9] ^(Vmstd)
C53: [W41] 'Standard Dry Gas Meter Volume
D53: [W10] ^dscf
F53: (F3) [W9] (17.64*(F27)*F19*(F50)/(F36+460))
H53: (F3) [W9] (17.64*(H27)*H19*(H50)/(H36+460))
J53: (F3) [W9] (17.64*(J27)*J19*(J50)/(J36+460))
L53: (F3) [W9] @AVG(F53..J53)
O53: U [W6] 44
P53: [W1] ^|
R53: (F3) [W7] +Q53^0.5
V53: [W1] ^|
X53: (F3) [W7] +W53^0.5
AB53: [W1] ^|
AD53: (F3) [W7] +AC53^0.5
AH53: [W1] ^|
AJ53: 99
AK53: 1.875
B54: [W9] ^(Md)
C54: [W41] 'Dry Gas Molecular Weight
D54: [W10] ^lb/lb-mole
F54: (F2) [W9] (0.44*(F45)+0.32*(F44)+0.28*(F46+F47/10000))
H54: (F2) [W9] (0.44*(H45)+0.32*(H44)+0.28*(H46+H47/10000))
J54: (F2) [W9] (0.44*(J45)+0.32*(J44)+0.28*(J46+J47/10000))
L54: (F2) [W9] @AVG(F54..J54)
O54: U [W6] 45
P54: [W1] ^|
R54: (F3) [W7] +Q54^0.5
V54: [W1] ^|
X54: (F3) [W7] +W54^0.5
AB54: [W1] ^|
AD54: (F3) [W7] +AC54^0.5
AH54: [W1] ^|
AJ54: 100
AK54: 1.932
B55: [W9] ^(Ms)
C55: [W41] 'Wet Gas Molecular Weight
D55: [W10] ^lb/lb-mole
F55: (F2) [W9] (F54*(1-((F58*F51)+((-F58+1)*F52))/100))+18*(((F58*F51)+((-F58+1)*F52))/100)
H55: (F2) [W9] (H54*(1-((H58*H51)+((-H58+1)*H52))/100))+18*(((H58*H51)+((-H58+1)*H52))/100)
J55: (F2) [W9] (J54*(1-((J58*J51)+((-J58+1)*J52))/100))+18*(((J58*J51)+((-J58+1)*J52))/100)
L55: (F2) [W9] @AVG(F55..J55)
O55: U [W6] 46
P55: [W1] ^|
R55: (F3) [W7] +Q55^0.5
V55: [W1] ^|
```

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X55: (F3) [W7] +W55^0.5
AB55: [W1] ^|
AD55: (F3) [W7] +AC55^0.5
AH55: [W1] ^|
AJ55: 101
AK55: 1.992
B56: [W9] ^(vs)
C56: [W41] 'Stack Gas Velocity
D56: [W10] ^ft/s
F56: (F2) [W9] (85.49*(F42)*(F43)*((F35+460)/((F50)*(F55)))^0.5)
H56: (F2) [W9] (85.49*(H42)*(H43)*((H35+460)/((H50)*(H55)))^0.5)
J56: (F2) [W9] (85.49*(J42)*(J43)*((J35+460)/((J50)*(J55)))^0.5)
L56: (F1) [W9] @AVG(F56..J56)
O56: U [W6] 47
P56: [W1] ^|
R56: (F3) [W7] +Q56^0.5
V56: [W1] ^|
X56: (F3) [W7] +W56^0.5
AB56: [W1] ^|
AD56: (F3) [W7] +AC56^0.5
AH56: [W1] ^|
AJ56: 102
AK56: 2.052
B57: [W9] ^(A)
C57: [W41] 'Stack Area
D57: [W10] ^ft2
F57: (F2) [W9] (+F39/24)^2*@PI+(F40*F41/144)
H57: (F2) [W9] (+H39/24)^2*@PI+(H40*H41/144)
J57: (F2) [W9] (+J39/24)^2*@PI+(J40*J41/144)
O57: U [W6] 48
P57: [W1] ^|
R57: (F3) [W7] +Q57^0.5
V57: [W1] ^|
X57: (F3) [W7] +W57^0.5
AB57: [W1] ^|
AD57: (F3) [W7] +AC57^0.5
AH57: [W1] ^|
AJ57: 103
AK57: 2.114
A58: U [W1] ||
F58: (H) [W9] +F51<=F52
H58: (H) [W9] +H51<=H52
J58: (H) [W9] +J51<=J52
O58: [W6] \-
P58: [W1] ^|
Q58: (F4) [W6] \-
R58: (F4) [W7] \-
S58: (F2) [W6] \-
T58: [W8] \-
U58: [W6] \-
V58: [W1] ^|
W58: (F4) [W6] \-
X58: (F3) [W7] \-
Y58: [W6] \-
Z58: [W8] \-
AA58: [W6] \-
AB58: [W1] ^|
AC58: (F4) [W6] \-
AD58: (F3) [W7] \-
AE58: [W6] \-
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AF58: [W8] \-
AG58: [W6] \-
AH58: [W1] ^|
AJ58: 104
AK58: 2.178
A59: U [W1] ||
B59: [W9] ^(Qsd)
C59: [W41] 'Volumetric Gas Flow Rate
D59: [W10] ^dscfs
F59: (F0) [W9] (F$57)*F$56*(1-((F$58*F51)+((-F58+1)*F52))/100)*528/(460+F35)*((F32+(F33/13.6))/29.92)
H59: (F0) [W9] (H$57)*H$56*(1-((H$58*H51)+((-H58+1)*H52))/100)*528/(460+H35)*((H32+(H33/13.6))/29.92)
J59: (F0) [W9] (J$57)*J$56*(1-((J$58*J51)+((-J58+1)*J52))/100)*528/(460+J35)*((J32+(J33/13.6))/29.92)
L59: (F0) [W9] @AVG(F59..J59)
O59: [W6] ^AVGS
P59: [W1] ^|
R59: (F3) [W7] @SUM(R10..R57)/$U$4
S59: (F2) [W6] @SUM(S10..S57)/$U$4
T59: (F1) [W8] @SUM(T10..T57)/$U$4
U59: (F1) [W6] @SUM(U10..U57)/$U$4
V59: [W1] ^|
X59: (F3) [W7] @SUM(X10..X57)/$U$4
Y59: (F2) [W6] @SUM(Y10..Y57)/$U$4
Z59: (F1) [W8] @SUM(Z10..Z57)/$U$4
AA59: (F1) [W6] @SUM(AA10..AA57)/$U$4
AB59: [W1] ^|
AD59: (F3) [W7] @SUM(AD10..AD57)/$U$4
AE59: (F2) [W6] @SUM(AE10..AE57)/$U$4
AF59: (F1) [W8] @SUM(AF10..AF57)/$U$4
AG59: (F1) [W6] @SUM(AG10..AG57)/$U$4
AH59: [W1] ^|
AJ59: 105
AK59: 2.243
B60: [W9] ^(Qsd)
C60: [W41] 'Volumetric Gas Flow Rate
D60: [W10] ^dscfm
F60: (,0) [W9] @ROUND(60*F59,-2)
H60: (,0) [W9] @ROUND(60*H59,-2)
J60: (,0) [W9] @ROUND(60*J59,-2)
L60: (,0) [W9] @AVG(F60..J60)
O60: [W6] \-
P60: [W1] ^|
Q60: (F4) [W6] \-
R60: (F4) [W7] \-
S60: [W6] \-
T60: [W8] \-
U60: [W6] \-
V60: [W1] ^|
W60: (F4) [W6] \-
X60: (F3) [W7] \-
Y60: [W6] \-
Z60: [W8] \-
AA60: [W6] \-
AB60: [W1] ^|
AC60: (F4) [W6] \-
AD60: (F3) [W7] \-
AE60: [W6] \-
AF60: [W8] \-
AG60: [W6] \-
AH60: [W1] ^|
AJ60: 106
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AK60: 2.31
A61: U [W1] ||
B61: [W9] ^(Qsd)
C61: [W41] 'Volumetric Gas Flow Rate
D61: [W10] ^dscfh
F61: (S2) [W9] @ROUND(60*F60,-4)
H61: (S2) [W9] @ROUND(60*H60,-4)
J61: (S2) [W9] @ROUND(60*J60,-4)
L61: (S2) [W9] @AVG(F61..J61)
AJ61: 107
AK61: 2.379
B62: [W9] ^(Qa)
C62: [W41] 'Volumetric Gas Flow Rate
D62: [W10] ^acfm
F62: (,0) [W9] @ROUND(60*F56*F57,-2)
H62: (,0) [W9] @ROUND(60*H56*H57,-2)
J62: (,0) [W9] @ROUND(60*J56*J57,-2)
L62: (,0) [W9] @AVG(F62..J62)
AJ62: 108
AK62: 2.449
A63: U [W1] ||
B63: [W9] ^(%EA)
C63: [W41] 'Percent Excess Air
D63: [W10] ^%
F63: (F1) [W9] 100*(F44-(0.05*F45))/((0.264*F46)-F44+(0.5*(F47/10^4)))
H63: (F1) [W9] 100*(H44-(0.05*H45))/((0.264*H46)-H44+(0.5*(H47/10^4)))
J63: (F1) [W9] 100*(J44-(0.05*J45))/((0.264*J46)-J44+(0.5*(J47/10^4)))
L63: (F1) [W9] @AVG(F63..J63)
AJ63: 109
AK63: 2.921
B64: [W9] ^(I)
C64: [W41] 'Isokinetic Variation
D64: [W10] ^%
F64: (F1) [W9] (0.0945*(F35+460)*F53/((F50)*F56*((0.5*F37)^2*3.1417/144)*F28*(1-F51/100)))
H64: (F1) [W9] (0.0945*(H35+460)*H53/((H50)*H56*((0.5*H37)^2*3.1417/144)*H28*(1-H51/100)))
J64: (F1) [W9] (0.0945*(J35+460)*J53/((J50)*J56*((0.5*J37)^2*3.1417/144)*J28*(1-J51/100)))
AJ64: 110
AK64: 2.596
AJ65: 111
AK65: 2.672
AJ66: 112
AK66: 2.749
AJ67: 113
AK67: 2.829
AJ68: 114
AK68: 2.911
AJ69: 115
AK69: 2.995
AJ70: 116
AK70: 3.081
AJ71: 117
AK71: 3.169
V72: U [W1] '
AJ72: 118
AK72: 3.259
AJ73: 119
AK73: 3.351
AJ74: 120
AK74: 3.446
AJ75: 121
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AK75: 3.543
AJ76: 122
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AK76: 3.642
AJ77: 123
AK77: 3.744
AJ78: 124
AK78: 3.848
AJ79: 125
AK79: 3.954
AJ80: 126
AK80: 4.063
AJ81: 127
AK81: 4.174
AJ82: 128
AK82: 4.289
AJ83: 129
AK83: 4.406
AJ84: 130
AK84: 4.525
AJ85: 131
AK85: 4.647
AJ86: 132
AK86: 4.772
AJ87: 133
AK87: 4.9
C88: U [W41] 'TABLE X-X
AJ88: 134
AK88: 5.031
C89: U [W41] 'PARTICULATE EMISSIONS SUMMARY
AJ89: 135
AK89: 5.165
C90: U [W41] 'Kiln #7, Exhaust Stack, Page 2
AJ90: 136
AK90: 5.302
C91: U [W41] 'Solite A.F. Old plant, Arvonia, VA
H91: [W9] '
AJ91: 137
AK91: 5.442
AJ92: 138
AK92: 5.585
B93: [W9] 'filename:
C93: U [W41] 'BIGMETH5.wk1
D93: [W10] "RUN NO.==>
F93: U [W9] 'K7-1
H93: U [W9] 'K7-2
I93: U [W2] '
J93: U [W9] 'K7-3
AJ93: 139
AK93: 5.732
D94: [W10] "DATE==>
F94: U [W9] '6/4/92
H94: U [W9] '6/4/92
J94: U [W9] '6/4/92
AJ94: 140
AK94: 2.881
C95: [W41] 'SAMPLING PARAMETERS
D95: [W10] "RUN TIME==>
F95: U [W9] '920-1128
H95: U [W9] '1400-1617
J95: U [W9] '1952-2158

L95: [W9] ^AVERAGE
AJ95: 141
AK95: 6.034
B96: [W9] \-
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C96: [W41] \-
D96: [W10] \-
E96: [W2] \-
F96: [W9] \-
G96: [W2] \-
H96: [W9] \-
I96: [W2] \-
J96: [W9] \-
K96: [W2] \-
L96: [W9] \-
AJ96: 142
AK96: 6.19
B97: [W9] ^Symbol
C97: [W41] 'PARTICULATE COLLECTION ANALYSIS
D97: [W10] ^Units
AJ97: 143
AK97: 6.38
B98: [W9] ^(Wfi)
C98: [W41] 'Tare Weight of Filter
D98: [W10] ^g
F98: (F5) U [W9] 0.3674
H98: (F5) U [W9] 0.3687
J98: (F5) U [W9] 0.3635
AJ98: 144
AK98: 6.513
B99: [W9] ^(Wff)
C99: [W41] 'Final Filter Weight
D99: [W10] ^g
F99: (F5) U [W9] 0.3715
H99: (F5) U [W9] 0.3386
J99: (F5) U [W9] 0.3672
AJ99: 145
AK99: 6.68
B100: [W9] ^(mf)
C100: [W41] 'Weight on Filter
D100: [W10] ^mg
F100: [W9] ((F99-F98)*1000)
H100: [W9] ((H99-H98)*1000)
J100: [W9] ((J99-J98)*1000)
AJ100: 146
AK100: 6.85
B101: [W9] ^(Wai)
C101: [W41] 'Acetone Rinse Tare Weight
D101: [W10] ^g
F101: U [W9] 116.451
H101: U [W9] 119.8946
J101: U [W9] 112.4359
AJ101: 147
AK101: 7.024
B102: [W9] ^(Waf)
C102: [W41] 'Acetone Rinse Final Weight
D102: [W10] ^g
F102: U [W9] 116.4616
H102: U [W9] 119.9368
J102: U [W9] 112.4428
AJ102: 148
AK102: 7.202
B103: [W9] ^(ma)
C103: [W41] 'Weight in Acetone Rinse
D103: [W10] ^mg
F103: [W9] ((F102-F101)*1000)
H103: [W9] ((H102-H101)*1000)
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J103: [W9] ((J102-J101)*1000)
AJ103: 149
AK103: 7.384
B104: [W9] ^(Vaw)
C104: [W41] 'Acetone Volume Used in Rinse
D104: [W10] ^mL
F104: U [W9] 110
H104: U [W9] 130
J104: U [W9] 145
AJ104: 150
AK104: 7.569
B105: [W9] ^(Va)
C105: [W41] 'Acetone Volume Used in Blank
D105: [W10] ^mL
F105: U [W9] 100
H105: U [W9] 100
J105: U [W9] 100
AJ105: 151
AK105: 7.759
B106: [W9] ^(Wa)
C106: [W41] 'Weight in Acetone Blank
D106: [W10] ^g
F106: U [W9] 0.0037
H106: U [W9] 0.0037
J106: U [W9] 0.0037
AJ106: 152
AK106: 7.952
B107: [W9] ^(Ca)
C107: [W41] 'Acetone Blank Correction
D107: [W10] ^g/mL
F107: (F5) [W9] 7.9E-06
H107: (F5) [W9] 7.9E-06
J107: (F5) [W9] 7.9E-06
AJ107: 153
AK107: 8.15
B108: [W9] ^(mn)
C108: [W41] 'Total Particulate Collected
D108: [W10] ^mg
F108: (F2) [W9] (F100+F103-F104*($F$107))
H108: (F2) [W9] (H100+H103-H104*($F$107))
J108: (F2) [W9] (J100+J103-J104*($F$107))
L108: (F2) [W9] @AVG(F108..J108)
AJ108: 154
AK108: 8.351
C109: [W41] 'Conc. of Particulate in Gas Sample
D109: [W10] ^mg/CMeter
F109: [W9] ((F108/F53)*35.3145)
H109: [W9] ((H108/H53)*35.3145)
J109: [W9] ((J108/J53)*35.3145)
L109: (F2) [W9] @AVG(F109..J109)
AJ109: 155
AK109: 8.557
C110: [W41] 'Total Particulate flow in Stack
D110: [W10] ^Lbs./hr.

F110: [W9] ((F109/35.3145)*F61/454000)
H110: [W9] ((H109/35.3145)*H61/454000)
J110: [W9] ((J109/35.3145)*J61/454000)
L110: (F2) [W9] @AVG(F110..J110)
AJ110: 156
AK110: 8.767
AJ111: 157
AK111: 8.981

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AJ112: 158
AK112: 9.2
AJ113: 159
AK113: 9.424
C114: [W41] 'CHLORINE AND HCL RECOVERY DATA
AJ114: 160
AK114: 9.652
C115: [W41] 'Volume in H2SO4 Impinger
D115: [W10] ^mL
F115: [W9] 382
H115: [W9] 448
J115: [W9] 425
AJ115: 161
AK115: 9.885
C116: [W41] 'Concentration of Cl In H2SO4 Impinger
D116: [W10] ^mg/L
F116: [W9] 4804.56
H116: [W9] 4198.69
J116: [W9] 3978.54
AJ116: 162
AK116: 10.12
C117: [W41] 'Total Cl in H2SO4 Impinger
D117: [W10] ^mg
F117: [W9] ((F115/1000)*F116)
H117: [W9] ((H115/1000)*H116)
J117: [W9] ((J115/1000)*J116)
AJ117: 163
AK117: 10.36
C118: [W41] 'Volume in NaOH Impinger
D118: [W10] ^mL
F118: [W9] 226
H118: [W9] 303
J118: [W9] 280
AJ118: 164
AK118: 10.61
C119: [W41] 'Concentration in NaOH Impinger
D119: [W10] ^mg/L
F119: [W9] 11.07
H119: [W9] 4.75
J119: [W9] 4.24
AJ119: 165
AK119: 10.86
C120: [W41] 'Total Cl in NaOH Impinger
D120: [W10] ^mg
F120: [W9] ((F118/1000)*F119)
H120: [W9] ((H118/1000)*H119)
J120: [W9] ((J118/1000)*J119)
AJ120: 166
AK120: 11.12
AJ121: 167
AK121: 11.38
C122: [W41] 'Concentration of Cl in H2SO4 blank

D122: [W10] ^mg/L
F122: [W9] 0
H122: [W9] 0
J122: [W9] 0
AJ122: 168
AK122: 11.65
C123: [W41] 'Concentration of Cl in NaOH blank
D123: [W10] ^mg/L
F123: [W9] 0
H123: [W9] 0
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J123: [W9] 0
AJ123: 169
AK123: 11.92
AJ124: 170
AK124: 12.2
C125: [W41] 'Total HCl recovered
D125: [W10] ^mg
F125: [W9] ((F116-F122)*(F115/1000)*36.46/35.453)
H125: [W9] ((H116-H122)*(H115/1000)*36.46/35.453)
J125: [W9] ((J116-J122)*(J115/1000)*36.46/35.453)
AJ125: 171
AK125: 12.48
C126: [W41] 'Total Cl2 recovered
D126: [W10] ^mg
F126: [W9] ((F119-F123)*(F118/1000)*70.91/35.453)
H126: [W9] ((H119-H123)*(H118/1000)*36.46/35.453)
J126: [W9] ((J119-J123)*(J118/1000)*36.46/35.453)
AJ126: 172
AK126: 12.77
AJ127: 173
AK127: 13.07
C128: [W41] 'Concentration of HCl in Gas Sample
D128: [W10] ^mg/CMeter
F128: [W9] ((F125/F53)*35.3145)
H128: [W9] ((H125/H53)*35.3145)
J128: [W9] ((J125/J53)*35.3145)
L128: (F2) [W9] @AVG(F128..J128)
AJ128: 174
AK128: 13.37
C129: [W41] 'Concentration of Cl2 in Gas Sample
D129: [W10] ^mg/CMeter
F129: [W9] ((F126/F53)*35.3145)
H129: [W9] ((H126/H53)*35.3145)
J129: [W9] ((J126/J53)*35.3145)
L129: (F2) [W9] @AVG(F129..J129)
AJ129: 175
AK129: 13.67
L130: (F2) [W9] '
AJ130: 176
AK130: 13.98
C131: [W41] 'Total HCl flow in Stack
D131: [W10] ^Lbs./hr.
F131: [W9] ((F128/35.3145)*F61/454000)
H131: [W9] ((H128/35.3145)*H61/454000)
J131: [W9] ((J128/35.3145)*J61/454000)
L131: (F2) [W9] @AVG(F131..J131)
AJ131: 177
AK131: 14.3
C132: [W41] 'Total Cl2 flow in Stack
D132: [W10] ^Lbs./hr.

F132: [W9] ((F129/35.3145)*F61/454000)
H132: [W9] ((H129/35.3145)*H61/454000)
J132: [W9] ((J129/35.3145)*J61/454000)
L132: (F2) [W9] @AVG(F132..J132)
AJ132: 178
AK132: 14.62
AJ133: 179
AK133: 14.96
AJ134: 180
AK134: 15.29
AJ135: 181
AK135: 15.63
```

AJ136: 182
AK136: 15.98
AJ137: 183
AK137: 16.34
AJ138: 184
AK138: 16.7
AJ139: 185
AK139: 17.07
AJ140: 186
AK140: 17.44
AJ141: 187
AK141: 17.82
AJ142: 188
AK142: 18.21
AJ143: 189
AK143: 18.61
AJ144: 1+AJ143
AK144: 19.01
B145: U [W9] '
AJ145: 1+AJ144
AK145: 19.42
AJ146: 1+AJ145
AK146: 19.84
AJ147: 1+AJ146
AK147: 20.27
AJ148: 1+AJ147
AK148: 20.7
AJ149: 1+AJ148
AK149: 21.14
AJ150: 1+AJ149
AK150: 21.5
AJ151: 1+AJ150
AK151: 22.05
AJ152: 1+AJ151
AK152: 22.52
AJ153: 1+AJ152
AK153: 22.99
AJ154: 1+AJ153
AK154: 23.47
AJ155: 1+AJ154
AK155: 23.96
AJ156: 1+AJ155
AK156: 24.46
AJ157: 1+AJ156
AK157: 24.97
AJ158: 1+AJ157
AK158: 25.48
AJ159: 1+AJ158

AK159: 26
AJ160: 1+AJ159
AK160: 26.53
AJ161: 1+AJ160
AK161: 27.07
AJ162: 1+AJ161
AK162: 27.62
AJ163: 1+AJ162
AK163: 28.18
AJ164: 1+AJ163
AK164: 28.75

```
A1: U [W1] ||
B1: [W9] 'Name file for source (e.g.. /fs [esc] [esc] a:acmepm) if not already
O1: [W6] ||
P1: [W1] 'TO BEGIN, BLANK ALL FIELD DATA VALUES BY PRESSING ALT X
A2: U [W1] ||
B2: [W9] '    saved on floppy disk.
Q2: [W6] 'CALCULATIONS FOR SQUARE ROOT OF ¯P FOR PITOT TUBE
AJ2: "TEMP
AK2: "VP H2O
A3: U [W1] ||
B3: [W9] 'Type [Alt M] to get a menu to: A) move around spreadsheet,
Q3: [W6] 'filename:
S3: [W6] +C14
AJ3: +"     "&@CHAR(176)&"F"
AK3: "in. Hg
A4: U [W1] ||
B4: [W9] '     B) print parts of spreadsheet, or C) get help instructions.
Q4: [W6] 'ENTER NUMBER OF POINTS===>
U4: (F0) U [W6] 24
AJ4: 50
AK4: 0.3626
A5: U [W1] ||
B5: [W9] 'Use arrow keys to go to desired cells.  Enter number and go to next
O5: [W6] \-
P5: [W1] ^|
Q5: [W6] \-
R5: [W7] \-
S5: [W6] \-
T5: [W8] \-
U5: [W6] \-
V5: [W1] ^|
W5: [W6] \-
X5: [W7] \-
Y5: [W6] \-
Z5: [W8] \-
AA5: [W6] \-
AB5: [W1] ^|
AC5: [W6] \-
AD5: [W7] \-
AE5: [W6] \-
AF5: [W8] \-
AG5: [W6] \-
AH5: [W1] ^|
AJ5: 51
AK5: 0.3764
A6: U [W1] ||
B6: [W9] '    cell.
P6: [W1] ^|
Q6: [W6] 'DATA INPUT FROM FIELD DATA SHEETS
V6: [W1] ^|
W6: [W6] 'DATA INPUT FROM FIELD DATA SHEETS
AB6: [W1] ^|
AC6: [W6] 'DATA INPUT FROM FIELD DATA SHEETS
AH6: [W1] ^|
AJ6: 52
AK6: 0.3906
A7: U [W1] ||
B7: [W9] 'You must enter ¯p, ¯H, stack gas T, and DGM T individual values from
O7: [W6] "POINT
P7: [W1] ^|
S7: [W6] +F14
V7: [W1] ^|
```

```
Y7: [W6] +H14
AB7: [W1] ^|
AE7: [W6] +J14
AH7: [W1] ^|
AJ7: 53
AK7: 0.4052
A8: U [W1] ||
B8: [W9] '    the field data sheets.
O8: [W6] "NO.
P8: [W1] ^|
Q8: [W6] ^"p
R8: [W7] ^SQRT "p
S8: [W6] ^"H
T8: [W8] ^Stack T
U8: [W6] ^DGM T
V8: [W1] ^|
W8: [W6] ^"p
X8: [W7] ^SQRT "p
Y8: [W6] ^"H
Z8: [W8] ^Stack T
AA8: [W6] ^DGM T
AB8: [W1] ^|
AC8: [W6] ^"p
AD8: [W7] ^SQRT "p
AE8: [W6] ^"H
AF8: [W8] ^Stack T
AG8: [W6] ^DGM T
AH8: [W1] ^|
AJ8: 54
AK8: 0.4203
C9: U [W41] 'TABLE X-X
O9: [W6] \-
P9: [W1] ^|
Q9: [W6] \-
R9: [W7] \-
S9: [W6] \-
T9: [W8] \-
U9: [W6] \-
V9: [W1] ^|
W9: [W6] \-
X9: [W7] \-
Y9: [W6] \-
Z9: [W8] \-
AA9: [W6] \-
AB9: [W1] ^|
AC9: [W6] \-
AD9: [W7] \-
AE9: [W6] \-
AF9: [W8] \-
AG9: [W6] \-
AH9: [W1] ^|
AJ9: 55
AK9: 0.4359
C10: U [W41] 'HEXAVALENT CHROMIUM Emissions Summary
O10: U [W6] 1
P10: [W1] ^|
Q10: (F2) U [W6] 0.55
R10: (F3) [W7] +Q10^0.5
S10: (F2) U [W6] 2.04
T10: U [W8] 327
U10: U [W6] 92
V10: [W1] ^|
```

```
W10: (F2) U [W6] 0.38
X10: (F3) [W7] +W10^0.5
Y10: (F2) U [W6] 1.07
Z10: U [W8] 343
AA10: U [W6] 78
AB10: [W1] ^|
AC10: (F2) U [W6] 0.41
AD10: (F3) [W7] +AC10^0.5
AE10: (F2) U [W6] 1.08
AF10: U [W8] 336
AG10: U [W6] 90
AH10: [W1] ^|
AJ10: 56
AK10: 0.452
C11: U [W41] 'Kiln #7, Exhaust Stack
O11: U [W6] 2
P11: [W1] ^|
Q11: (F2) U [W6] 0.6
R11: (F3) [W7] +Q11^0.5
S11: (F2) U [W6] 2.2
T11: U [W8] 352
U11: U [W6] 92
V11: [W1] ^|
W11: (F2) U [W6] 0.46
X11: (F3) [W7] +W11^0.5
Y11: (F2) U [W6] 1.22
Z11: U [W8] 342
AA11: U [W6] 80
AB11: [W1] ^|
AC11: (F2) U [W6] 0.4
AD11: (F3) [W7] +AC11^0.5
AE11: (F2) U [W6] 1.06
AF11: U [W8] 339
AG11: U [W6] 90
AH11: [W1] ^|
AJ11: 57
AK11: 0.4586
C12: U [W41] 'Solite A.F. Old plant, Arvonia, VA
H12: [W9] '
O12: U [W6] 3
P12: [W1] ^|
Q12: (F2) U [W6] 0.45
R12: (F3) [W7] +Q12^0.5
S12: (F2) U [W6] 1.7
T12: U [W8] 353
```

```
U12: U [W6] 93
V12: [W1] ^|
W12: (F2) U [W6] 0.35
X12: (F3) [W7] +W12^0.5
Y12: (F2) U [W6] 0.93
Z12: U [W8] 342
AA12: U [W6] 81
AB12: [W1] ^|
AC12: (F2) U [W6] 0.34
AD12: (F3) [W7] +AC12^0.5
AE12: (F2) U [W6] 0.901
AF12: U [W8] 338
AG12: U [W6] 92
AH12: [W1] ^|
AJ12: 58
AK12: 0.4858
O13: U [W6] 4
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```
P13: [W1] ^|
Q13: (F2) U [W6] 0.48
R13: (F3) [W7] +Q13^0.5
S13: (F2) U [W6] 1.8
T13: U [W8] 353
U13: U [W6] 93
V13: [W1] ^|
W13: (F2) U [W6] 0.43
X13: (F3) [W7] +W13^0.5
Y13: (F2) U [W6] 1.13
Z13: U [W8] 345
AA13: U [W6] 82
AB13: [W1] ^|
AC13: (F2) U [W6] 0.29
AD13: (F3) [W7] +AC13^0.5
AE13: (F2) U [W6] 0.768
AF13: U [W8] 338
AG13: U [W6] 92
AH13: [W1] ^|
AJ13: 59
AK13: 0.5035
B14: [W9] 'filename:
C14: U [W41] 'HEXCHROM.WQ1
D14: [W10] "RUN NO.==>
F14: U [W9] 'K7-1
H14: U [W9] 'K7-2
I14: U [W2] '
J14: U [W9] 'K7-3
O14: U [W6] 5
P14: [W1] ^|
Q14: (F2) U [W6] 0.42
R14: (F3) [W7] +Q14^0.5
S14: (F2) U [W6] 1.6
T14: U [W8] 354
U14: U [W6] 94
V14: [W1] ^|
W14: (F2) U [W6] 0.36
X14: (F3) [W7] +W14^0.5
Y14: (F2) U [W6] 0.954
Z14: U [W8] 345
AA14: U [W6] 85
AB14: [W1] ^|
AC14: (F2) U [W6] 0.24
AD14: (F3) [W7] +AC14^0.5
AE14: (F2) U [W6] 0.63
AF14: U [W8] 338
AG14: U [W6] 92
AH14: [W1] ^|
AJ14: 60
AK14: 0.5218
D15: [W10] "DATE==>
F15: U [W9] '6/4/92
H15: U [W9] '6/4/92
J15: U [W9] '6/4/92
O15: U [W6] 6
P15: [W1] ^|
Q15: (F2) U [W6] 0.34
R15: (F3) [W7] +Q15^0.5
S15: (F2) U [W6] 1.3
T15: U [W8] 353
U15: U [W6] 94
V15: [W1] ^|
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W15: (F2) U [W6] 0.19
X15: (F3) [W7] +W15^0.5
Y15: (F2) U [W6] 0.5
Z15: U [W8] 341
AA15: U [W6] 86
AB15: [W1] ^|
AC15: (F2) U [W6] 0.25
AD15: (F3) [W7] +AC15^0.5
AE15: (F2) U [W6] 0.66
AF15: U [W8] 337
AG15: U [W6] 92
AH15: [W1] ^|
AJ15: 61
AK15: 0.5407
C16: [W41] 'SAMPLING PARAMETERS
D16: [W10] "RUN TIME==>
F16: U [W9] '1151-1256
H16: U [W9] '1400-1542
J16: U [W9] '1952-2055
L16: [W9] ^AVERAGE
O16: U [W6] 7
P16: [W1] ^|
Q16: (F2) U [W6] 0.28
R16: (F3) [W7] +Q16^0.5
S16: (F2) U [W6] 1.03
T16: U [W8] 352
U16: U [W6] 94
V16: [W1] ^|
W16: (F2) U [W6] 0.28
X16: (F3) [W7] +W16^0.5
Y16: (F2) U [W6] 0.74
Z16: U [W8] 343
AA16: U [W6] 86
AB16: [W1] ^|
AC16: (F2) U [W6] 0.25
AD16: (F3) [W7] +AC16^0.5
AE16: (F2) U [W6] 0.66
AF16: U [W8] 337
AG16: U [W6] 92
AH16: [W1] ^|
AJ16: 62
AK16: 0.5601
B17: [W9] \-
C17: [W41] \-
D17: [W10] \-
E17: [W2] \-
F17: [W9] \-
G17: [W2] \-
H17: [W9] \-
I17: [W2] \-
J17: [W9] \-
K17: [W2] \-
L17: [W9] \-
O17: U [W6] 8
P17: [W1] ^|
Q17: (F2) U [W6] 0.28
R17: (F3) [W7] +Q17^0.5
S17: (F2) U [W6] 1.03
T17: U [W8] 349
U17: U [W6] 94
V17: [W1] ^|
W17: (F2) U [W6] 0.3
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X17: (F3) [W7] +W17^0.5
Y17: (F2) U [W6] 0.79
Z17: U [W8] 345
AA17: U [W6] 86
AB17: [W1] ^|
AC17: (F2) U [W6] 0.27
AD17: (F3) [W7] +AC17^0.5
AE17: (F2) U [W6] 0.71
AF17: U [W8] 336
AG17: U [W6] 92
AH17: [W1] ^|
AJ17: 63
AK17: 0.5802
B18: [W9] ^SYMBOL
C18: [W41] 'MEASURED DATA AT STACK
D18: [W10] ^UNITS
O18: U [W6] 9
P18: [W1] ^|
Q18: (F2) U [W6] 0.32
R18: (F3) [W7] +Q18^0.5
S18: (F2) U [W6] 1.2
T18: U [W8] 348
U18: U [W6] 94
V18: [W1] ^|
W18: (F2) U [W6] 0.3
X18: (F3) [W7] +W18^0.5
Y18: (F2) U [W6] 0.79
Z18: U [W8] 345
AA18: U [W6] 86
AB18: [W1] ^|
AC18: (F2) U [W6] 0.29
AD18: (F3) [W7] +AC18^0.5
AE18: (F2) U [W6] 0.77
AF18: U [W8] 335
AG18: U [W6] 92
AH18: [W1] ^|
AJ18: 64
AK18: 0.6009
B19: [W9] ^(Y)

C19: [W41] 'Dry Gas Meter Calibration Factor
D19: [W10] ^--
F19: U [W9] 0.998
H19: U [W9] 1.067
J19: U [W9] 1.067
O19: U [W6] 10
P19: [W1] ^|
Q19: (F2) U [W6] 0.3
R19: (F3) [W7] +Q19^0.5
S19: (F2) U [W6] 1.1
T19: U [W8] 345
U19: U [W6] 94
V19: [W1] ^|
W19: (F2) U [W6] 0.42
X19: (F3) [W7] +W19^0.5
Y19: (F2) U [W6] 1.11
Z19: U [W8] 345
AA19: U [W6] 86
AB19: [W1] ^|
AC19: (F2) U [W6] 0.31
AD19: (F3) [W7] +AC19^0.5
AE19: (F2) U [W6] 0.82
AF19: U [W8] 335
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AG19: U [W6] 92
AH19: [W1] ^|
AJ19: 65
AK19: 0.6222
B20: [W9] ^(Vi)
C20: [W41] 'Initial Meter Volume
D20: [W10] ^cf
E20: U [W2] 812.297
F20: (F3) U [W9] 349.179
H20: (F3) U [W9] 777.747
J20: (F3) U [W9] 877.213
O20: U [W6] 11
P20: [W1] ^|
Q20: (F2) U [W6] 0.29
R20: (F3) [W7] +Q20^0.5
S20: (F2) U [W6] 1.1
T20: U [W8] 342
U20: U [W6] 94
V20: [W1] ^|
W20: (F2) U [W6] 0.46
X20: (F3) [W7] +W20^0.5
Y20: (F2) U [W6] 1.21
Z20: U [W8] 347
AA20: U [W6] 86
AB20: [W1] ^|
AC20: (F2) U [W6] 0.26
AD20: (F3) [W7] +AC20^0.5
AE20: (F2) U [W6] 0.69
AF20: U [W8] 338
AG20: U [W6] 92
AH20: [W1] ^|
AJ20: 66
AK20: 0.6442
A21: U [W1] ||
C21: [W41] '  IF NO INTERMEDIATE LEAK CHECK WAS DONE ENTER 0
E21: U [W2] 812.297
F21: [W9] 0

O21: U [W6] 12
P21: [W1] ^|
Q21: (F2) U [W6] 0.31
R21: (F3) [W7] +Q21^0.5
S21: (F2) U [W6] 1.2
T21: U [W8] 339
U21: U [W6] 93
V21: [W1] ^|
W21: (F2) U [W6] 0.38
X21: (F3) [W7] +W21^0.5
Y21: (F2) U [W6] 1
Z21: U [W8] 344
AA21: U [W6] 86
AB21: [W1] ^|
AC21: (F2) U [W6] 0.22
AD21: (F3) [W7] +AC21^0.5
AE21: (F2) U [W6] 0.58
AF21: U [W8] 339
AG21: U [W6] 92
AH21: [W1] ^|
AJ21: 67
AK21: 0.6669
A22: U [W1] ||
C22: [W41] 'Volume Before Intermed Leak Check
D22: [W10] ^cf
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F22: U [W9] 0
O22: U [W6] 13
P22: [W1] ^|
Q22: (F2) U [W6] 0.42
R22: (F3) [W7] +Q22^0.5
S22: (F2) U [W6] 1.6
T22: U [W8] 331
U22: U [W6] 91
V22: [W1] ^|
W22: (F2) U [W6] 0.48
X22: (F3) [W7] +W22^0.5
Y22: (F2) U [W6] 1.27
Z22: U [W8] 348
AA22: U [W6] 87
AB22: [W1] ^|
AC22: (F2) U [W6] 0.36
AD22: (F3) [W7] +AC22^0.5
AE22: (F2) U [W6] 0.95
AF22: U [W8] 342
AG22: U [W6] 92
AH22: [W1] ^|
AJ22: 68
AK22: 0.6903
A23: U [W1] ||
C23: [W41] 'Volume After Intermed Leak Check
D23: [W10] ^cf
F23: U [W9] 0
H23: U [W9] 0
J23: U [W9] 0
O23: U [W6] 14
P23: [W1] ^|
Q23: (F2) U [W6] 0.41
R23: (F3) [W7] +Q23^0.5
S23: (F2) U [W6] 1.52
T23: U [W8] 342
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U23: U [W6] 91
V23: [W1] ^|
W23: (F2) U [W6] 0.55
X23: (F3) [W7] +W23^0.5
Y23: (F2) U [W6] 1.45
Z23: U [W8] 349
AA23: U [W6] 87
AB23: [W1] ^|
AC23: (F2) U [W6] 0.53
AD23: (F3) [W7] +AC23^0.5
AE23: (F2) U [W6] 1.4
AF23: U [W8] 342
AG23: U [W6] 92
AH23: [W1] ^|
AJ23: 69
AK23: 0.7144
B24: [W9] ^(Vf)
C24: [W41] 'Final Meter Volume
D24: [W10] ^cf
F24: (F3) U [W9] 387.371
H24: (F3) U [W9] 810.424
J24: (F3) U [W9] 908.573
O24: U [W6] 15
P24: [W1] ^|
Q24: (F2) U [W6] 0.46
R24: (F3) [W7] +Q24^0.5
S24: (F2) U [W6] 1.7
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T24: U [W8] 342
U24: U [W6] 91
V24: [W1] ^|
W24: (F2) U [W6] 0.44
X24: (F3) [W7] +W24^0.5
Y24: (F2) U [W6] 1.1
Z24: U [W8] 349
AA24: U [W6] 88
AB24: [W1] ^|
AC24: (F2) U [W6] 0.48
AD24: (F3) [W7] +AC24^0.5
AE24: (F2) U [W6] 1.27
AF24: U [W8] 341
AG24: U [W6] 92
AH24: [W1] ^|
AJ24: 70
AK24: 0.7392
B25: [W9] ^(Lp)
C25: [W41] 'Leak Check Correction
D25: [W10] ^cfm
F25: U [W9] 0
H25: U [W9] 0
J25: U [W9] 0
O25: U [W6] 16
P25: [W1] ^|
Q25: (F2) U [W6] 0.44
R25: (F3) [W7] +Q25^0.5
S25: (F2) U [W6] 1.6
T25: U [W8] 349
U25: U [W6] 92
V25: [W1] ^|
W25: (F2) U [W6] 0.38
X25: (F3) [W7] +W25^0.5
```

```
Y25: (F2) U [W6] 1
Z25: U [W8] 348
AA25: U [W6] 88
AB25: [W1] ^|
AC25: (F2) U [W6] 0.36
AD25: (F3) [W7] +AC25^0.5
AE25: (F2) U [W6] 0.95
AF25: U [W8] 340
AG25: U [W6] 92
AH25: [W1] ^|
AJ25: 71
AK25: 0.7648
A26: U [W1] ||
C26: [W41] ||
F26: (H) [W9] @IF(F25-0.02>0,F25,0)
H26: (H) [W9] @IF(H25-0.02>0,H25,0)
J26: (H) [W9] @IF(J25-0.02>0,J25,0)
O26: U [W6] 17
P26: [W1] ^|
Q26: (F2) U [W6] 0.39
R26: (F3) [W7] +Q26^0.5
S26: (F2) U [W6] 1.4
T26: U [W8] 350
U26: U [W6] 92
V26: [W1] ^|
W26: (F2) U [W6] 0.25
X26: (F3) [W7] +W26^0.5
Y26: (F2) U [W6] 0.66
Z26: U [W8] 345
```

```
AA26: U [W6] 88
AB26: [W1] ^|
AC26: (F2) U [W6] 0.36
AD26: (F3) [W7] +AC26^0.5
AE26: (F2) U [W6] 0.95
AF26: U [W8] 341
AG26: U [W6] 92
AH26: [W1] ^|
AJ26: 72
AK26: 0.7912
B27: [W9] ^(Vm)
C27: [W41] 'Total Meter Volume
D27: [W10] ^cf
F27: (F3) [W9] (F24-F23)+(F22-F20)-(0.02-F24)*F26
H27: (F3) [W9] (H24-H23)+(H22-H20)-(0.02-H24)*H26
J27: (F3) [W9] (J24-J23)+(J22-J20)-(0.02-J24)*J26
L27: (F3) [W9] @AVG(F27..J27)
O27: U [W6] 18
P27: [W1] ^|
Q27: (F2) U [W6] 0.34
R27: (F3) [W7] +Q27^0.5
S27: (F2) U [W6] 1.3
T27: U [W8] 350
U27: U [W6] 92
V27: [W1] ^|
W27: (F2) U [W6] 0.24
X27: (F3) [W7] +W27^0.5
Y27: (F2) U [W6] 0.636
Z27: U [W8] 343
AA27: U [W6] 88
AB27: [W1] ^|
```

```
AC27: (F2) U [W6] 0.28
AD27: (F3) [W7] +AC27^0.5
AE27: (F2) U [W6] 0.74
AF27: U [W8] 340
AG27: U [W6] 92
AH27: [W1] ^|
AJ27: 73
AK27: 0.8183
B28: [W9] ^(t)
C28: [W41] 'Sampling Time
D28: [W10] ^min.
F28: U [W9] 60
H28: U [W9] 60
J28: U [W9] 60
L28: (F0) [W9] @AVG(F28..J28)
O28: U [W6] 19
P28: [W1] ^|
Q28: (F2) U [W6] 0.29
R28: (F3) [W7] +Q28^0.5
S28: (F2) U [W6] 1.07
T28: U [W8] 349
U28: U [W6] 92
V28: [W1] ^|
W28: (F2) U [W6] 0.26
X28: (F3) [W7] +W28^0.5
Y28: (F2) U [W6] 0.69
Z28: U [W8] 342
AA28: U [W6] 88
AB28: [W1] ^|
AC28: (F2) U [W6] 0.21
AD28: (F3) [W7] +AC28^0.5
```

```
AE28: (F2) U [W6] 0.55
AF28: U [W8] 338
AG28: U [W6] 92
AH28: [W1] ^|
AJ28: 74
AK28: 0.8462
B29: [W9] ^(Vwc)
C29: [W41] 'Volume of Water Collected
D29: [W10] ^mL
F29: (F1) U [W9] (F31-F30)
H29: (F1) U [W9] (H31-H30)
J29: (F1) U [W9] (J31-J30)
L29: (F1) [W9] @AVG(F29..J29)
O29: U [W6] 20
P29: [W1] ^|
Q29: (F2) U [W6] 0.28
R29: (F3) [W7] +Q29^0.5
S29: (F2) U [W6] 1.03
T29: U [W8] 347
U29: U [W6] 92
V29: [W1] ^|
W29: (F2) U [W6] 0.27
X29: (F3) [W7] +W29^0.5
Y29: (F2) U [W6] 0.71
Z29: U [W8] 339
AA29: U [W6] 88
AB29: [W1] ^|
AC29: (F2) U [W6] 0.29
AD29: (F3) [W7] +AC29^0.5
```

```
AE29: (F2) U [W6] 0.77
AF29: U [W8] 338
AG29: U [W6] 92
AH29: [W1] ^|
AJ29: 75
AK29: 0.875
B30: [W9] ^(Vwsg)
C30: [W41] 'Silica Gel Weight Increase
D30: [W10] ^g
F30: (F1) U [W9] 21.5
H30: (F1) U [W9] 25.9
J30: (F1) U [W9] 14.4
L30: (F1) [W9] @AVG(F30..J30)
O30: U [W6] 21
P30: [W1] ^|
Q30: (F2) U [W6] 0.3
R30: (F3) [W7] +Q30^0.5
S30: (F2) U [W6] 1.1
T30: U [W8] 346
U30: U [W6] 91
V30: [W1] ^|
W30: (F2) U [W6] 0.28
X30: (F3) [W7] +W30^0.5
Y30: (F2) U [W6] 0.74
Z30: U [W8] 340
AA30: U [W6] 88
AB30: [W1] ^|
AC30: (F2) U [W6] 0.31
AD30: (F3) [W7] +AC30^0.5
AE30: (F2) U [W6] 0.82
AF30: U [W8] 338
AG30: U [W6] 91
AH30: [W1] ^|
```

```
AJ30: 76
AK30: 0.9046
B31: [W9] ^(Vlc)
C31: [W41] 'Total Water Collected
D31: [W10] ^mL
F31: (F1) [W9] 37.5
H31: (F1) [W9] 18.9
J31: (F1) [W9] 66.4
L31: (F1) [W9] @AVG(F31..J31)
O31: U [W6] 22
P31: [W1] ^|
Q31: (F2) U [W6] 0.32
R31: (F3) [W7] +Q31^0.5
S31: (F2) U [W6] 1.2
T31: U [W8] 347
U31: U [W6] 91
V31: [W1] ^|
W31: (F2) U [W6] 0.3
X31: (F3) [W7] +W31^0.5
Y31: (F2) U [W6] 0.79
Z31: U [W8] 340
AA31: U [W6] 88
AB31: [W1] ^|
AC31: (F2) U [W6] 0.32
AD31: (F3) [W7] +AC31^0.5
AE31: (F2) U [W6] 0.84
AF31: U [W8] 339
```

```
AG31: U [W6] 91
AH31: [W1] ^|
AJ31: 77
AK31: 0.9352
B32: [W9] ^(Pbar)
C32: [W41] 'Barometric Pressure
D32: [W10] ^in. Hg
F32: (F2) U [W9] 29.85
H32: (F2) U [W9] 29.85
J32: (F2) U [W9] 29.85
L32: (F2) [W9] @AVG(F32..J32)
O32: U [W6] 23
P32: [W1] ^|
Q32: (F2) U [W6] 0.34
R32: (F3) [W7] +Q32^0.5
S32: (F2) U [W6] 1.3
T32: U [W8] 347
U32: U [W6] 91
V32: [W1] ^|
W32: (F2) U [W6] 0.3
X32: (F3) [W7] +W32^0.5
Y32: (F2) U [W6] 0.79
Z32: U [W8] 340
AA32: U [W6] 84
AB32: [W1] ^|
AC32: (F2) U [W6] 0.28
AD32: (F3) [W7] +AC32^0.5
AE32: (F2) U [W6] 0.74
AF32: U [W8] 339
AG32: U [W6] 91
AH32: [W1] ^|
AJ32: 78
AK32: 0.9666
B33: [W9] ^(Pg)
C33: [W41] 'Stack Static Pressure
```

```
D33: [W10] ^in. H2O
F33: U [W9] -0.41
G33: U [W2] '
H33: U [W9] -0.41
J33: U [W9] -0.41
O33: U [W6] 24
P33: [W1] ^|
Q33: (F2) U [W6] 0.35
R33: (F3) [W7] +Q33^0.5
S33: (F2) U [W6] 1.3
T33: U [W8] 334
U33: U [W6] 91
V33: [W1] ^|
W33: (F2) U [W6] 0.3
X33: (F3) [W7] +W33^0.5
Y33: (F2) U [W6] 0.79
Z33: U [W8] 339
AA33: U [W6] 86
AB33: [W1] ^|
AC33: (F2) U [W6] 0.29
AD33: (F3) [W7] +AC33^0.5
AE33: (F2) U [W6] 0.77
AF33: U [W8] 335
AG33: U [W6] 91
AH33: [W1] ^|
```

```
AJ33: 79
AK33: 0.9989
B34: [W9] ^(ΔH)
C34: [W41] 'Avg. Orifice Pressure Drop ΔH
D34: [W10] ^in. H2O
F34: (F2) [W9] 1.39
H34: (F2) [W9] 0.92
J34: (F2) [W9] 0.84
O34: U [W6] 25
P34: [W1] ^|
R34: (F3) [W7] +Q34^0.5
V34: [W1] ^|
X34: (F3) [W7] +W34^0.5
AB34: [W1] ^|
AD34: (F3) [W7] +AC34^0.5
AH34: [W1] ^|
AJ34: 80
AK34: 1.032
B35: [W9] ^(Ts)
C35: [W41] 'Avg. Stack Gas Temperature
D35: [W10] +"     "&@CHAR(176)&"F"
F35: (F1) [W9] 346
H35: (F1) [W9] 344
J35: (F1) [W9] 338
L35: (F1) [W9] @AVG(F35..J35)
O35: U [W6] 26
P35: [W1] ^|
R35: (F3) [W7] +Q35^0.5
V35: [W1] ^|
X35: (F3) [W7] +W35^0.5
AB35: [W1] ^|
AD35: (F3) [W7] +AC35^0.5
AH35: [W1] ^|
AJ35: 81
AK35: 1.066
B36: [W9] ^(Tm)
C36: [W41] 'Avg. Dry Gas Meter Temperature
```

```
D36: [W10] +"     "&@CHAR(176)&"F"
F36: (F1) [W9] 92.4
H36: (F1) [W9] 85.7
J36: (F1) [W9] 91.7
O36: U [W6] 27
P36: [W1] ^|
R36: (F3) [W7] +Q36^0.5
V36: [W1] ^|
X36: (F3) [W7] +W36^0.5
AB36: [W1] ^|
AD36: (F3) [W7] +AC36^0.5
AH36: [W1] ^|
AJ36: 82
AK36: 1.102
B37: [W9] ^(Dn)
C37: [W41] 'Nozzle Diameter
D37: [W10] ^inches
F37: (F3) U [W9] 0.276
H37: (F3) U [W9] 0.262
J37: (F3) U [W9] 0.262
O37: U [W6] 28
P37: [W1] ^|
R37: (F3) [W7] +Q37^0.5
V37: [W1] ^|
X37: (F3) [W7] +W37^0.5
AB37: [W1] ^|
AD37: (F3) [W7] +AC37^0.5
AH37: [W1] ^|
AJ37: 83
AK37: 1.138
A38: U [W1] ||
C38: [W41] '  FOR STACK DIMENSIONS, ENTER 0 WHERE SIZE IS NOT APPROPRIATE
O38: U [W6] 29
P38: [W1] ^|
R38: (F3) [W7] +Q38^0.5
V38: [W1] ^|
X38: (F3) [W7] +W38^0.5
AB38: [W1] ^|
AD38: (F3) [W7] +AC38^0.5
AH38: [W1] ^|
AJ38: 84
AK38: 1.175
B39: [W9] ^(Ds)
C39: [W41] 'Diameter of Stack
D39: [W10] ^inches
F39: (F3) U [W9] 51.5
H39: (F3) U [W9] 51.5
J39: (F3) U [W9] 51.5
O39: U [W6] 30
P39: [W1] ^|
R39: (F3) [W7] +Q39^0.5
V39: [W1] ^|
X39: (F3) [W7] +W39^0.5
AB39: [W1] ^|
AD39: (F3) [W7] +AC39^0.5
AH39: [W1] ^|
AJ39: 85
AK39: 1.213
B40: [W9] ^(W)
C40: [W41] 'Width of Stack
D40: [W10] ^inches
F40: (F3) U [W9] 0
```

```
H40: (F3) U [W9] 0
J40: (F3) U [W9] 0
O40: U [W6] 31
P40: [W1] ^|
R40: (F3) [W7] +Q40^0.5
V40: [W1] ^|
X40: (F3) [W7] +W40^0.5
AB40: [W1] ^|
AD40: (F3) [W7] +AC40^0.5
AH40: [W1] ^|
AJ40: 86
AK40: 1.253
B41: [W9] ^(L)
C41: [W41] 'Length of Stack
D41: [W10] ^inches
F41: (F3) U [W9] 0
H41: (F3) U [W9] 0
J41: (F3) U [W9] 0
O41: U [W6] 32
P41: [W1] ^|
R41: (F3) [W7] +Q41^0.5
```

```
V41: [W1] ^|
X41: (F3) [W7] +W41^0.5
AB41: [W1] ^|
AD41: (F3) [W7] +AC41^0.5
AH41: [W1] ^|
AJ41: 87
AK41: 1.293
B42: [W9] ^(Cp)
C42: [W41] 'Pitot Tube Coefficient
D42: [W10] ^--
F42: (F2) U [W9] 0.84
H42: (F2) U [W9] +F42
J42: (F2) U [W9] +F42
O42: U [W6] 33
P42: [W1] ^|
R42: (F3) [W7] +Q42^0.5
V42: [W1] ^|
X42: (F3) [W7] +W42^0.5
AB42: [W1] ^|
AD42: (F3) [W7] +AC42^0.5
AH42: [W1] ^|
AJ42: 88
AK42: 1.335
B43: [W9] ^(¯p)§
C43: [W41] 'Avg. Square Root Velocity Head ¯p
D43: [W10] ^(in. H2O)§
F43: (F3) [W9] 0.607
H43: (F3) [W9] 0.585
J43: (F3) [W9] 0.559
O43: U [W6] 34
P43: [W1] ^|
R43: (F3) [W7] +Q43^0.5
V43: [W1] ^|
X43: (F3) [W7] +W43^0.5
AB43: [W1] ^|
AD43: (F3) [W7] +AC43^0.5
AH43: [W1] ^|
AJ43: 89
AK43: 1.378
B44: [W9] ^(%O2)
C44: [W41] 'Stack Gas Oxygen
```

```
D44: [W10] ^%
F44: (F1) U [W9] 15.1
H44: (F1) U [W9] 14.9
I44: (F1) U [W2] 20.8
J44: (F1) U [W9] 14.3
L44: (F1) [W9] @AVG(F44..J44)
O44: U [W6] 35
P44: [W1] ^|
R44: (F3) [W7] +Q44^0.5
V44: [W1] ^|
X44: (F3) [W7] +W44^0.5
AB44: [W1] ^|
AD44: (F3) [W7] +AC44^0.5
AH44: [W1] ^|
AJ44: 90
AK44: 1.422
B45: [W9] ^(%CO2)
C45: [W41] 'Stack Gas Carbon Dioxide
D45: [W10] ^%

F45: (F1) U [W9] 4.1
H45: (F1) U [W9] 4.3
J45: (F1) U [W9] 4.4
L45: (F1) [W9] @AVG(F45..J45)
O45: U [W6] 36
P45: [W1] ^|
R45: (F3) [W7] +Q45^0.5
V45: [W1] ^|
X45: (F3) [W7] +W45^0.5
AB45: [W1] ^|
AD45: (F3) [W7] +AC45^0.5
AH45: [W1] ^|
AJ45: 91
AK45: 1.467
B46: [W9] ^(%N2)
C46: [W41] 'Stack Gas Nitrogen
D46: [W10] ^%
F46: (F1) U [W9] 100-F44-F45
H46: (F1) U [W9] 100-H44-H45
J46: (F1) U [W9] 100-J44-J45
L46: (F1) [W9] @AVG(F46..J46)
O46: U [W6] 37
P46: [W1] ^|
R46: (F3) [W7] +Q46^0.5
V46: [W1] ^|
X46: (F3) [W7] +W46^0.5
AB46: [W1] ^|
AD46: (F3) [W7] +AC46^0.5
AH46: [W1] ^|
AJ46: 92
AK46: 1.513
A47: U [W1] ||
B47: [W9] ^(ppmCO)
C47: [W41] 'Stack Gas Carbon Monoxide
D47: [W10] ^ppm
F47: U [W9] 0
H47: U [W9] 0
J47: U [W9] 0
L47: (F1) [W9] @AVG(F47..J47)
O47: U [W6] 38
P47: [W1] ^|
R47: (F3) [W7] +Q47^0.5
V47: [W1] ^|
```

```
X47: (F3) [W7] +W47^0.5
AB47: [W1] ^|
AD47: (F3) [W7] +AC47^0.5
AH47: [W1] ^|
AJ47: 93
AK47: 1.561
O48: U [W6] 39
P48: [W1] ^|
R48: (F3) [W7] +Q48^0.5
V48: [W1] ^|
X48: (F3) [W7] +W48^0.5
AB48: [W1] ^|
AD48: (F3) [W7] +AC48^0.5
AH48: [W1] ^|
AJ48: 94
AK48: 1.61
C49: [W41] 'CALCULATED STACK GAS DATA
```

```
O49: U [W6] 40
P49: [W1] ^|
R49: (F3) [W7] +Q49^0.5
V49: [W1] ^|
X49: (F3) [W7] +W49^0.5
AB49: [W1] ^|
AD49: (F3) [W7] +AC49^0.5
AH49: [W1] ^|
AJ49: 95
AK49: 1.66
B50: [W9] ^(Ps)
C50: [W41] 'Stack Gas Pressure
D50: [W10] ^in. Hg
F50: (F2) [W9] (F33/13.6+F32)
H50: (F2) [W9] (H33/13.6+H32)
J50: (F2) [W9] (J33/13.6+J32)
L50: (F2) [W9] @AVG(F50..J50)
O50: U [W6] 41
P50: [W1] ^|
R50: (F3) [W7] +Q50^0.5
V50: [W1] ^|
X50: (F3) [W7] +W50^0.5
AB50: [W1] ^|
AD50: (F3) [W7] +AC50^0.5
AH50: [W1] ^|
AJ50: 96
AK50: 1.712
B51: [W9] ^(%Bws)
C51: [W41] 'Stack Gas Moisture
D51: [W10] ^%
F51: (F1) [W9] (F31*0.04707)/((F31*0.04707)+F53)*100
H51: (F1) [W9] (H31*0.04707)/((H31*0.04707)+H53)*100
J51: (F1) [W9] (J31*0.04707)/((J31*0.04707)+J53)*100
L51: (F1) [W9] @AVG(F51..J51)
O51: U [W6] 42
P51: [W1] ^|
R51: (F3) [W7] +Q51^0.5
V51: [W1] ^|
X51: (F3) [W7] +W51^0.5
AB51: [W1] ^|
AD51: (F3) [W7] +AC51^0.5
AH51: [W1] ^|
AJ51: 97
AK51: 1.765
B52: [W9] ^(%B'w)
```

```
C52: [W41] 'Moisture at Saturation
D52: [W10] ^%
F52: (F1) [W9] (@VLOOKUP(F35,$AJ$4..$AK$164,1)/(F50)*100)
H52: (F1) [W9] (@VLOOKUP(H35,$AJ$4..$AK$164,1)/(H50)*100)
J52: (F1) [W9] (@VLOOKUP(J35,$AJ$4..$AK$164,1)/(J50)*100)
O52: U [W6] 43
P52: [W1] ^|
R52: (F3) [W7] +Q52^0.5
V52: [W1] ^|
X52: (F3) [W7] +W52^0.5
AB52: [W1] ^|
AD52: (F3) [W7] +AC52^0.5
AH52: [W1] ^|
AJ52: 98
AK52: 1.819



B53: [W9] ^(Vmstd)
C53: [W41] 'Standard Dry Gas Meter Volume
D53: [W10] ^dscf
F53: (F3) [W9] (17.64*(F27)*F19*(F50)/(F36+460))
H53: (F3) [W9] (17.64*(H27)*H19*(H50)/(H36+460))
J53: (F3) [W9] (17.64*(J27)*J19*(J50)/(J36+460))
L53: (F3) [W9] @AVG(F53..J53)
O53: U [W6] 44
P53: [W1] ^|
R53: (F3) [W7] +Q53^0.5
V53: [W1] ^|
X53: (F3) [W7] +W53^0.5
AB53: [W1] ^|
AD53: (F3) [W7] +AC53^0.5
AH53: [W1] ^|
AJ53: 99
AK53: 1.875
B54: [W9] ^(Md)
C54: [W41] 'Dry Gas Molecular Weight
D54: [W10] ^lb/lb-mole
F54: (F2) [W9] (0.44*(F45)+0.32*(F44)+0.28*(F46+F47/10000))
H54: (F2) [W9] (0.44*(H45)+0.32*(H44)+0.28*(H46+H47/10000))
J54: (F2) [W9] (0.44*(J45)+0.32*(J44)+0.28*(J46+J47/10000))
L54: (F2) [W9] @AVG(F54..J54)
O54: U [W6] 45
P54: [W1] ^|
R54: (F3) [W7] +Q54^0.5
V54: [W1] ^|
X54: (F3) [W7] +W54^0.5
AB54: [W1] ^|
AD54: (F3) [W7] +AC54^0.5
AH54: [W1] ^|
AJ54: 100
AK54: 1.932
B55: [W9] ^(Ms)
C55: [W41] 'Wet Gas Molecular Weight
D55: [W10] ^lb/lb-mole
F55: (F2) [W9] (F54*(1-((F58*F51)+((-F58+1)*F52))/100))+18*(((F58*F51)+((-F58+1)*F52))/100)
H55: (F2) [W9] (H54*(1-((H58*H51)+((-H58+1)*H52))/100))+18*(((H58*H51)+((-H58+1)*H52))/100)
J55: (F2) [W9] (J54*(1-((J58*J51)+((-J58+1)*J52))/100))+18*(((J58*J51)+((-J58+1)*J52))/100)
L55: (F2) [W9] @AVG(F55..J55)
O55: U [W6] 46
P55: [W1] ^|
R55: (F3) [W7] +Q55^0.5
V55: [W1] ^|
X55: (F3) [W7] +W55^0.5
AB55: [W1] ^|
```

```
AD55: (F3) [W7] +AC55^0.5
AH55: [W1] ^|
AJ55: 101
AK55: 1.992
B56: [W9] ^(vs)
C56: [W41] 'Stack Gas Velocity
D56: [W10] ^ft/s
F56: (F2) [W9] (85.49*(F42)*(F43)*((F35+460)/((F50)*(F55)))^0.5)
H56: (F2) [W9] (85.49*(H42)*(H43)*((H35+460)/((H50)*(H55)))^0.5)
J56: (F2) [W9] (85.49*(J42)*(J43)*((J35+460)/((J50)*(J55)))^0.5)
L56: (F1) [W9] @AVG(F56..J56)
O56: U [W6] 47
P56: [W1] ^|
```

```
R56: (F3) [W7] +Q56^0.5
V56: [W1] ^|
X56: (F3) [W7] +W56^0.5
AB56: [W1] ^|
AD56: (F3) [W7] +AC56^0.5
AH56: [W1] ^|
AJ56: 102
AK56: 2.052
B57: [W9] ^(A)
C57: [W41] 'Stack Area
D57: [W10] ^ft2
F57: (F2) [W9] (+F39/24)^2*@PI+(F40*F41/144)
H57: (F2) [W9] (+H39/24)^2*@PI+(H40*H41/144)
J57: (F2) [W9] (+J39/24)^2*@PI+(J40*J41/144)
O57: U [W6] 48
P57: [W1] ^|
R57: (F3) [W7] +Q57^0.5
V57: [W1] ^|
X57: (F3) [W7] +W57^0.5
AB57: [W1] ^|
AD57: (F3) [W7] +AC57^0.5
AH57: [W1] ^|
AJ57: 103
AK57: 2.114
A58: U [W1] ||
F58: (H) [W9] +F51<=F52
H58: (H) [W9] +H51<=H52
J58: (H) [W9] +J51<=J52
O58: [W6] \-
P58: [W1] ^|
Q58: (F4) [W6] \-
R58: (F4) [W7] \-
S58: (F2) [W6] \-
T58: [W8] \-
U58: [W6] \-
V58: [W1] ^|
W58: (F4) [W6] \-
X58: (F3) [W7] \-
Y58: [W6] \-
Z58: [W8] \-
AA58: [W6] \-
AB58: [W1] ^|
AC58: (F4) [W6] \-
AD58: (F3) [W7] \-
AE58: [W6] \-
AF58: [W8] \-
AG58: [W6] \-
AH58: [W1] ^|
AJ58: 104
```

```
AK58: 2.178
A59: U [W1] ||
B59: [W9] ^(Qsd)
C59: [W41] 'Volumetric Gas Flow Rate
D59: [W10] ^dscfs
F59: (F0) [W9] (F$57)*F$56*(1-((F$58*F51)+((-F58+1)*F52))/100)*528/(460+F35)*((F32+(F33/13.6))/29.92)
H59: (F0) [W9] (H$57)*H$56*(1-((H$58*H51)+((-H58+1)*H52))/100)*528/(460+H35)*((H32+(H33/13.6))/29.92)
J59: (F0) [W9] (J$57)*J$56*(1-((J$58*J51)+((-J58+1)*J52))/100)*528/(460+J35)*((J32+(J33/13.6))/29.92)
L59: (F0) [W9] @AVG(F59..J59)
O59: [W6] ^AVGS
P59: [W1] ^|

R59: (F3) [W7] @SUM(R10..R57)/$U$4
S59: (F2) [W6] @SUM(S10..S57)/$U$4
T59: (F1) [W8] @SUM(T10..T57)/$U$4
U59: (F1) [W6] @SUM(U10..U57)/$U$4
V59: [W1] ^|
X59: (F3) [W7] @SUM(X10..X57)/$U$4
Y59: (F2) [W6] @SUM(Y10..Y57)/$U$4
Z59: (F1) [W8] @SUM(Z10..Z57)/$U$4
AA59: (F1) [W6] @SUM(AA10..AA57)/$U$4
AB59: [W1] ^|
AD59: (F3) [W7] @SUM(AD10..AD57)/$U$4
AE59: (F2) [W6] @SUM(AE10..AE57)/$U$4
AF59: (F1) [W8] @SUM(AF10..AF57)/$U$4
AG59: (F1) [W6] @SUM(AG10..AG57)/$U$4
AH59: [W1] ^|
AJ59: 105
AK59: 2.243
B60: [W9] ^(Qsd)
C60: [W41] 'Volumetric Gas Flow Rate
D60: [W10] ^dscfm
F60: (,0) [W9] @ROUND(60*F59,-2)
H60: (,0) [W9] @ROUND(60*H59,-2)
J60: (,0) [W9] @ROUND(60*J59,-2)
L60: (,0) [W9] @AVG(F60..J60)
O60: [W6] \-
P60: [W1] ^|
Q60: (F4) [W6] \-
R60: (F4) [W7] \-
S60: [W6] \-
T60: [W8] \-
U60: [W6] \-
V60: [W1] ^|
W60: (F4) [W6] \-
X60: (F3) [W7] \-
Y60: [W6] \-
Z60: [W8] \-
AA60: [W6] \-
AB60: [W1] ^|
AC60: (F4) [W6] \-
AD60: (F3) [W7] \-
AE60: [W6] \-
AF60: [W8] \-
AG60: [W6] \-
AH60: [W1] ^|
AJ60: 106
AK60: 2.31
A61: U [W1] ||
B61: [W9] ^(Qsd)
C61: [W41] 'Volumetric Gas Flow Rate
D61: [W10] ^dscfh
F61: (S2) [W9] @ROUND(60*F60,-4)
```

```
H61: (S2) [W9] @ROUND(60*H60,-4)
J61: (S2) [W9] @ROUND(60*J60,-4)
L61: (S2) [W9] @AVG(F61..J61)
AJ61: 107
AK61: 2.379
B62: [W9] ^(Qa)
C62: [W41] 'Volumetric Gas Flow Rate
D62: [W10] ^acfm
F62: (,0) [W9] @ROUND(60*F56*F57,-2)

H62: (,0) [W9] @ROUND(60*H56*H57,-2)
J62: (,0) [W9] @ROUND(60*J56*J57,-2)
L62: (,0) [W9] @AVG(F62..J62)
AJ62: 108
AK62: 2.449
A63: U [W1] ||
B63: [W9] ^(%EA)
C63: [W41] 'Percent Excess Air
D63: [W10] ^%
F63: (F1) [W9] 100*(F44-(0.05*F45))/((0.264*F46)-F44+(0.5*(F47/10^4)))
H63: (F1) [W9] 100*(H44-(0.05*H45))/((0.264*H46)-H44+(0.5*(H47/10^4)))
J63: (F1) [W9] 100*(J44-(0.05*J45))/((0.264*J46)-J44+(0.5*(J47/10^4)))
L63: (F1) [W9] @AVG(F63..J63)
AJ63: 109
AK63: 2.921
B64: [W9] ^(I)
C64: [W41] 'Isokinetic Variation
D64: [W10] ^%
F64: (F1) [W9] (0.0945*(F35+460)*F53/((F50)*F56*((0.5*F37)^2*3.1417/144)*F28*(1-F51/100)))
H64: (F1) [W9] (0.0945*(H35+460)*H53/((H50)*H56*((0.5*H37)^2*3.1417/144)*H28*(1-H51/100)))
J64: (F1) [W9] (0.0945*(J35+460)*J53/((J50)*J56*((0.5*J37)^2*3.1417/144)*J28*(1-J51/100)))
AJ64: 110
AK64: 2.596
AJ65: 111
AK65: 2.672
AJ66: 112
AK66: 2.749
AJ67: 113
AK67: 2.829
C68: [W41] 'HEXAVALENT CHROMIUM Emissions Analysis
AJ68: 114
AK68: 2.911
AJ69: 115
AK69: 2.995
C70: [W41] 'Volume in Impinger
D70: [W10] ^mL
F70: [W9] 448
H70: [W9] 498
J70: [W9] 527
AJ70: 116
AK70: 3.081
C71: [W41] 'Concentration of Chromium in KOH Impinger
D71: [W10] ^mg/L
E71: [W2] '
F71: [W9] 0.00151
G71: [W2] '<
H71: [W9] 0.0015
I71: [W2] '
J71: [W9] 0.00159
AJ71: 117
AK71: 3.169
C72: [W41] 'Total Chromium Recovered
D72: [W10] ^mg
```

```
E72: [W2] (E71)
F72: [W9] (F70*F71/1000)
G72: [W2] (G71)
H72: [W9] (H70*H71/1000)
I72: [W2] (I71)
J72: [W9] (J70*J71/1000)
AJ72: 118

AK72: 3.259
C73: [W41] 'Volume of Blank
D73: [W10] ^ml
F73: [W9] 0
H73: [W9] 0
J73: [W9] 0
AJ73: 119
AK73: 3.351
C74: [W41] 'Concentration of Chromium in blank
D74: [W10] ^mg/L
F74: [W9] 0
H74: [W9] 0
J74: [W9] 0
AJ74: 120
AK74: 3.446
AJ75: 121
AK75: 3.543
C76: [W41] 'Concentration of Chromium in Gas Sample
D76: [W10] ^mg/CMeter
E76: [W2] (E72)
F76: [W9] ((F72-(F73*F74/1000))*35.3145/F53)
G76: [W2] (G72)
H76: [W9] ((H72-(H73*H74/1000))*35.3145/H53)
I76: [W2] (I72)
J76: [W9] ((J72-(J73*J74/1000))*35.3145/J53)
K76: [W2] '<
L76: [W9] ((F76+H76+J76)/3)
AJ76: 122
AK76: 3.642
AJ77: 123
AK77: 3.744
C78: [W41] 'Total Flow of Chromium in Stack
D78: [W10] ^Lbs./hr.
E78: [W2] (E76)
F78: [W9] ((F76/454000)*F61/35.3145)
G78: [W2] (G76)
H78: [W9] ((H76/454000)*H61/35.3145)
I78: [W2] (I76)
J78: [W9] ((J76/454000)*J61/35.3145)
K78: [W2] '<
L78: [W9] ((F78+H78+J78)/3)
AJ78: 124
AK78: 3.848
AJ79: 125
AK79: 3.954
AJ80: 126
AK80: 4.063
AJ81: 127
AK81: 4.174
AJ82: 128
AK82: 4.289
AJ83: 129
AK83: 4.406
AJ84: 130
AK84: 4.525
```

AJ85: 131
AK85: 4.647
AJ86: 132
AK86: 4.772
AJ87: 133

AK87: 4.9
AJ88: 134
AK88: 5.031
AJ89: 135
AK89: 5.165
AJ90: 136
AK90: 5.302
AJ91: 137
AK91: 5.442
AJ92: 138
AK92: 5.585
AJ93: 139
AK93: 5.732
AJ94: 140
AK94: 2.881
AJ95: 141
AK95: 6.034
AJ96: 142
AK96: 6.19
AJ97: 143
AK97: 6.38
AJ98: 144
AK98: 6.513
AJ99: 145
AK99: 6.68
AJ100: 146
AK100: 6.85
AJ101: 147
AK101: 7.024
AJ102: 148
AK102: 7.202
AJ103: 149
AK103: 7.384
AJ104: 150
AK104: 7.569
AJ105: 151
AK105: 7.759
AJ106: 152
AK106: 7.952
AJ107: 153
AK107: 8.15
AJ108: 154
AK108: 8.351
AJ109: 155
AK109: 8.557
AJ110: 156
AK110: 8.767
AJ111: 157
AK111: 8.981
AJ112: 158
AK112: 9.2
AJ113: 159
AK113: 9.424
AJ114: 160
AK114: 9.652
AJ115: 161
AK115: 9.885

AJ116: 162
AK116: 10.12
AJ117: 163

AK117: 10.36
AJ118: 164
AK118: 10.61
AJ119: 165
AK119: 10.86
AJ120: 166
AK120: 11.12
AJ121: 167
AK121: 11.38
AJ122: 168
AK122: 11.65
AJ123: 169
AK123: 11.92
AJ124: 170
AK124: 12.2
AJ125: 171
AK125: 12.48
AJ126: 172
AK126: 12.77
AJ127: 173
AK127: 13.07
AJ128: 174
AK128: 13.37
AJ129: 175
AK129: 13.67
AJ130: 176
AK130: 13.98
AJ131: 177
AK131: 14.3
AJ132: 178
AK132: 14.62
AJ133: 179
AK133: 14.96
AJ134: 180
AK134: 15.29
AJ135: 181
AK135: 15.63
AJ136: 182
AK136: 15.98
AJ137: 183
AK137: 16.34
AJ138: 184
AK138: 16.7
AJ139: 185
AK139: 17.07
AJ140: 186
AK140: 17.44
AJ141: 187
AK141: 17.82
AJ142: 188
AK142: 18.21
AJ143: 189
AK143: 18.61
AJ144: 1+AJ143
AK144: 19.01
AJ145: 1+AJ144
AK145: 19.42
AJ146: 1+AJ145
AK146: 19.84

AJ147: 1+AJ146

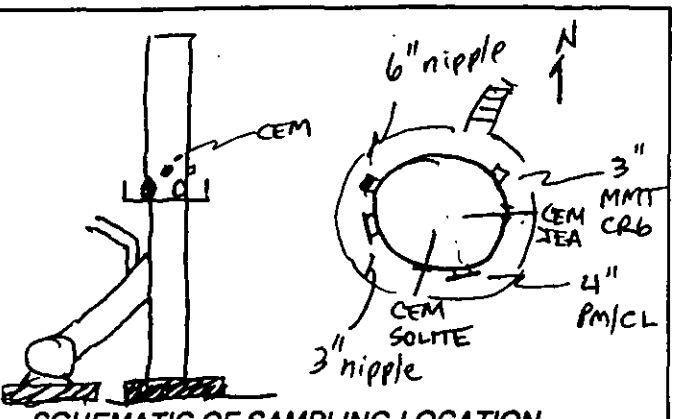
AK147: 20.27
AJ148: 1+AJ147
AK148: 20.7
AJ149: 1+AJ148
AK149: 21.14
AJ150: 1+AJ149
AK150: 21.5
AJ151: 1+AJ150
AK151: 22.05
AJ152: 1+AJ151
AK152: 22.52
AJ153: 1+AJ152
AK153: 22.99
AJ154: 1+AJ153
AK154: 23.47
AJ155: 1+AJ154
AK155: 23.96
AJ156: 1+AJ155
AK156: 24.46
AJ157: 1+AJ156
AK157: 24.97
AJ158: 1+AJ157
AK158: 25.48
AJ159: 1+AJ158
AK159: 26
AJ160: 1+AJ159
AK160: 26.53
AJ161: 1+AJ160
AK161: 27.07
AJ162: 1+AJ161
AK162: 27.62
AJ163: 1+AJ162
AK163: 28.18
AJ164: 1+AJ163
AK164: 28.75

Appendix B

Field Sampling Data Sheets

EPA METHOD 1
TRAVERSE POINT LOCATION FOR CIRCULAR DUCTS

PLANT Solite A.F. Old
CITY ARVONIA STATE VA
SAMPLING LOCATION KILN #7 OUTLET
INSIDE OF FAR WALL TO OUTSIDE OF NIPPLE, (DISTANCE A) 54 1/2"
INSIDE OF NEAR WALL TO OUTSIDE OF NIPPLE, (DISTANCE B) 3"
NEAREST UPSTREAM DISTURBANCE JUNCTION
DISTURBANCE 13'10"
NEAREST DOWNSTREAM DISTURBANCE EXIT
DISTURBANCE ~ 36'
SAMPLER Jeb DATE 6/3/92



SCHEMATIC OF SAMPLING LOCATION

TRAVERSE POINT NUMBER	FRACTION OF STACK I.D.	STACK I.D.	PRODUCT OF COLUMNS 2 AND 3 (TO NEAREST 1/8-INCH)	DISTANCE B	TRAVERSE DISTANCE FROM OUTSIDE OF NIPPLE (SUM OF COLUMNS 4 & 5)
1	0.021	51.5"	1.082 1 1/8"	3"	4-1/8"
2	0.067	↓	3.451 3 1/2"	↓	6-1/2"
3	0.118		6.077 6 1/8"		9-1/8"
4	0.177		9.116 9 1/8"		12-1/8"
5	0.25		12.875 12 7/8"		15-7/8"
6	0.356		18.334 18 3/8"		21-3/8"
7	0.644		33.166 33 1/8"		36-1/8"
8	0.75		38.625 38 5/8"		41-5/8"
9	0.823		42.385 42 3/8"		45-3/8"
10	0.882		45.423 45 3/8"		48-3/8"
11	0.933		48.050 48"		51"
12	0.979	↓	50.419 50 3/8"	↓	53-3/8"

THIS SHEET FOR PM/CL TRAIN PROBE
ADD 3" TO MMT & CR6

epa1circ.wk1

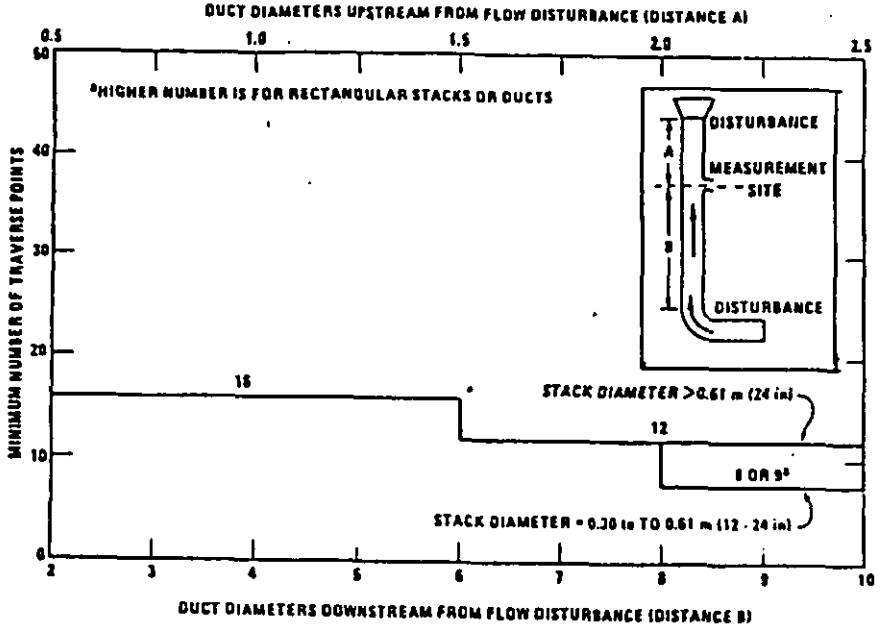


Figure 1-2. Minimum number of traverse points for velocity (nonparticulate) traverses.

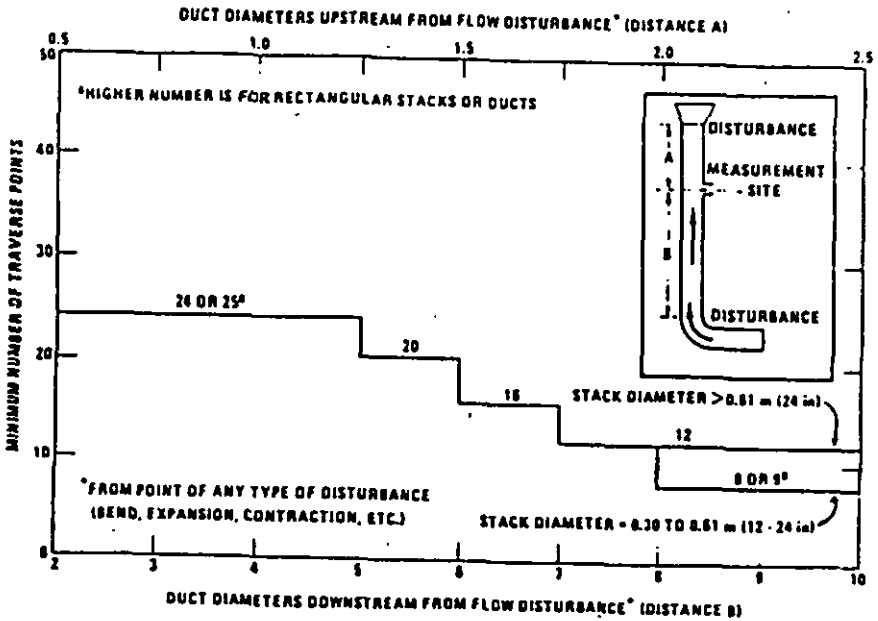


Figure 1-1. Minimum number of traverse points for particulate traverses.

CIRCULAR DUCTS

Traverse point number on a diameter	Number of Points in Traverse (Percent of stack diameter from inside wall to traverse point)					
	2	4	6	8	10	12
1	14.6	6.7	4.4	3.2	2.6	2.1
2	85.4	25.0	14.6	10.5	8.2	6.7
3		75.0	29.6	19.4	14.6	11.8
4		93.3	70.4	32.3	22.6	17.7
5			85.4	67.7	34.2	25.0
6			95.6	80.6	65.8	35.6
7				89.5	77.4	64.4
8				96.8	85.4	75.0
9					91.8	82.3
10					97.4	88.2
11						93.3
12						97.9

2.3.1 Circular Stacks. Locate the traverse points on two perpendicular diameters according to Table 1-2 and the example shown in Figure 1-3. Any equation (for examples, see Citations 2 and 3 in the Bibliography) that gives the same values as those in Table 1-2 may be used in lieu of Table 1-2.

For particulate traverses, one of the diameters must be in a plane containing the greatest expected concentration variation, e.g., after bends, one diameter shall be in the plane of the bend. This requirement becomes less critical as the distance from the disturbance increases; therefore, other diameter locations may be used, subject to approval of the Administrator.

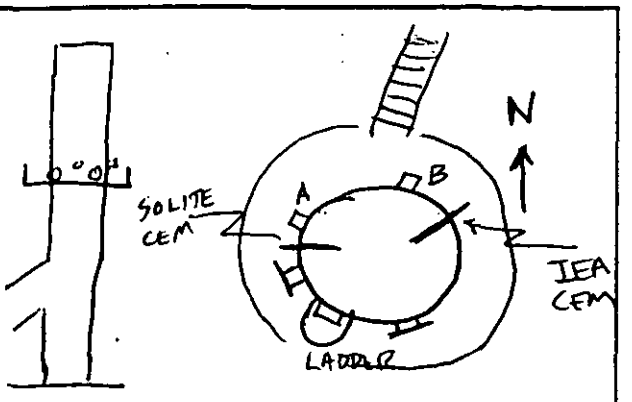
2.3.1.1 Stacks With Diameters Greater Than 0.61 m (24 in.). When any of the traverse points as located in Section 2.3.1 fall within 2.5 cm (1.00 in.) of the stack walls, relocate them away from the stack walls to: (1) a distance of 2.5 cm (1.00 in.); or (2) a distance equal to the nozzle inside diameter, whichever is larger. These relocated traverse points (on each end of a diameter) shall be the "adjusted" traverse points.

Whenever two successive traverse points are combined to form a single adjusted traverse point, treat the adjusted point as two separate traverse points, both in the sampling (or velocity measurement) procedure, and in recording the data.

2.3.1.2 Stacks With Diameters Equal to or Less Than 0.61 m (24 in.). Follow the procedure in Section 2.3.1.1, noting only that any "adjusted" points should be relocated away from the stack walls to: (1) a distance of 1.3 cm (0.50 in.); or (2) a distance equal to the nozzle inside diameter, whichever is larger.

EPA METHOD 1
TRAVERSE POINT LOCATION FOR CIRCULAR DUCTS

PLANT Solite AFOld
CITY Arvonia STATE VA
SAMPLING LOCATION Kiln #8 BAGHOUSE EXIT
INSIDE OF FAR WALL TO OUTSIDE OF NIPPLE, (DISTANCE A) 58"
INSIDE OF NEAR WALL TO OUTSIDE OF NIPPLE, (DISTANCE B) 6"
NEAREST UPSTREAM DISTURBANCE 13'10"
DISTURBANCE JUNCTION
NEAREST DOWNSTREAM DISTURBANCE 36'
DISTURBANCE STACK EXIT
SAMPLER JP DATE 6/2/92

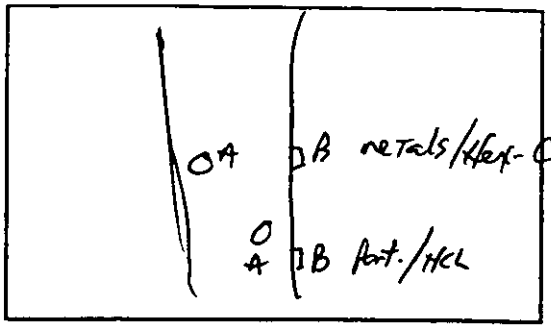


SCHEMATIC OF SAMPLING LOCATION

TRAVERSE POINT NUMBER	FRACTION OF STACK I.D.	STACK I.D.	PRODUCT OF COLUMNS 2 AND 3 (TO NEAREST 1/8-INCH)		DISTANCE B	TRAVERSE DISTANCE FROM OUTSIDE OF NIPPLE (SUM OF COLUMNS 4 & 5)
1	0.021	52"	1.092	1 1/16	6"	7 1/16
2	0.067	↓	3.484	3 7/16	↓	9 7/16
3	0.118		6.136	6 1/8		12 1/8
4	0.177		9.204	9 3/16		15 3/16
5	0.25		13.0	13		19"
6	0.356		18.512	18 1/2		24 1/2
7	0.644		33.5	33 1/2		39 1/2
8	0.75		29.25	39 1/4		45 1/4
9	0.823		42.796	42 3/4		48 3/4
10	0.882		45.864	45 7/8		51 7/8
11	0.933		48.516	48 1/2		54 1/2
12	0.979	↓	50.908	50 7/8	↓	56 7/8

PRELIMINARY VELOCITY TRAVERSE
EPA METHOD 2

PLANT/CLIENT Solite
SOURCE Kiln #7 Stack
DATE 6-4-97
STACK I.D. (inches) 51 ½
BAROMETRIC PRESSURE (in. Hg)
STACK GAUGE PRESSURE (in. H2O) -.41
OPERATORS PB
PITOT NO. | TYPE | COEFF



TRAVERSE POINT LAYOUT SCHEMATIC

TRAVERSE POINT NUMBER	VELOCITY HEAD (in. H2O)	STACK TEMP (°F)
A 1	0.52	270
2	0.53	307
3	0.43	323
4	0.41	333
5	0.39	337
6	0.36	340
7	0.32	343
8	0.31	344
9	0.30	345
10	0.32	346
11	0.32	346
12	0.35	348
AVERAGE	SQRT .6136	331.8

TRAVERSE POINT NUMBER	VELOCITY HEAD (in. H2O)	STACK TEMP (°F)
B 1	0.37	321
2	0.41	325
3	0.41	340
4	0.40	333
5	0.40	336
6	0.38	340
7	0.36	342
8	0.34	344
9	0.34	347
10	0.33	347
11	0.37	346
12	0.42	347
AVERAGE	SQRT .614	

POST PITOT LEAK CHECK PASSED [✓] FAILED [ ] .377

MEASUREMENT DEVICE
MICROMETER [ ]
0-10" MANOMETER [X]
MAGNEHELIC [ ]
.6136 OTHER [ ] EXPLAIN:
.376

338.4 °F
.6137

prevelo.wk1

VELOCITY TRAVERSE DATA SHEET

Plant	City	State	Run Date
Solite	Arvonia	Va	6-4-92

Sampling Location	Clock Time
Kiln Stack 7	2215

Run No.	Operator	Ambient Temp °F	Barometric Pressure in. Hg	Static Pressure in. H_2O
	JAD DS	74	29.83	-.34 to -.33

Molecular Wt.	Side A I.D. inches	Side B I.D. inches	Pitot Tube C_p
	51.5	51.5	.84

FIELD DATA

Traverse Point Number	Velocity Head Δp in. H_2O	Stack Temperature °F	Δp at 0° reference	Angle α which yields a null Δp
1	0.40			1°
2	0.47			3°
3	0.44			2°
4	0.41			4°
5	0.33			4°
6	0.28			8°
7	0.29			11°
8	0.25			0°
9	0.30			2°
10	0.35			12°
11	0.29			5°
12	0.27			0°
Avg $\sqrt{\Delta p}$ =		Avg	Avg α =	

1.267

Average of α must be <10° to be acceptable.

$$v_s = 85.49\ C_p\ (\sqrt{\Delta p})_{avg}\ \sqrt{(T_{s(avg)}/P_sM_s)}\ \text{ft/sec}$$

velotrav.fds

VELOCITY TRAVERSE DATA SHEET

Plant	City	State	Run Date
Solite, Arvonia Va	Arvonia	Va	6-4-92

Sampling Location	Clock Time
Kiln stack #7	2225

Run No.	Operator	Ambient Temp °F	Barometric Pressure in. Hg	Static Pressure in. H_2O
	JAD PS	74	29.85	-.95

Molecular Wt.	Side A I.D. inches	Side B I.D. inches	Pitot Tube C_p
	51.5	51.5	

FIELD DATA

Traverse Point Number	Velocity Head Δp in. H_2O	Stack Temperature °F	Δp at 0° reference	Angle α which yields a null Δp
1 A	.50			10°
2	.58			20°
3	.50			10°
4	.42			3°
5	.37			1°
6	.27			5°
7	.25			0°
8	.27			90
9	.26			4°
10	.26			7°
11	.23			3°
12	.19			10°
Avg $\sqrt{\Delta p}$ =		Avg	Avg α =	5.1°

Average of α must be <10° to be acceptable.

$$v_s = 85.49\ C_p\ (\sqrt{\Delta p})_{avg}\ \sqrt{(T_{s(avg)}/P_sM_s)}\ ft/sec$$

velotrav.fds

VELOCITY TRAVERSE DATA SHEET

Plant	City	State	Run Date
Solite, Arvonia Va	Arvonia	Va	6-3-92

Sampling Location	Clock Time
Kiln # 8 Stack	1515

Run No.	Operator	Ambient Temp °F	Barometric Pressure in. Hg	Static Pressure in. H_2O
	JAB PS	84	30.00	-.48

Molecular Wt.	Side A I.D. inches	Side B I.D. inches	Pitot Tube C_p
	52"	52"	.84

FIELD DATA

Traverse Point Number	Velocity Head Δp in. H_2O	Stack Temperature °F	Δp at 0° reference	Angle α which yields a null Δp
1 A	0.38	358	0	11
2	0.55			6
3	0.53			2
4	0.39			3
5	0.36			4
6	0.30			2
7	0.28			1
8	0.29			0
9	0.31			12
10	0.37			17
11	0.30			10
12	0.36			20
Avg $\sqrt{\Delta p}$ =		Avg	Avg α =	

Average of α must be <10° to be acceptable.

$$v_s = 85.49\ C_p\ (\sqrt{\Delta p})_{avg}\ \sqrt{(T_{s(avg)}/P_sM_s)}\ \text{ft/sec}$$

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pg 2

VELOCITY TRAVERSE DATA SHEET

Plant	City	State	Run Date
Solite, Arvonia Va	Arvonia	Va	6-3-92

Sampling Location	Clock Time
Kiln #8 stack	15:15

Run No.	Operator	Ambient Temp °F	Barometric Pressure in. Hg	Static Pressure in. H_2O
	TAB PS	84	30.90	-0.32

Molecular Wt.	Side A I.D. inches	Side B I.D. inches	Pitot Tube C_p
	52	52	.84

FIELD DATA

Traverse Point Number	Velocity Head Δp in. H_2O	Stack Temperature °F	Δp at 0° reference	Angle α which yields a null Δp
1 ~~A~~ B	0.29	358	0	21
2	0.33			0
3	0.36			12
4	0.37			8
5	0.33			7
6	0.30			4
7	0.27			3
8	0.31			11
9	0.36			12
10	0.45			6
11	0.52			13
12	0.37			10
Avg $\sqrt{\Delta p}$ =		Avg	Avg α =	8.10

Average of α must be <10° to be acceptable.

$$v_s = 85.49\ C_p\ (\sqrt{\Delta p})_{avg}\ \sqrt{(T_{s(avg)}/P_sM_s)}\ ft/sec$$

velotrav.fds

EPA METHOD 0012 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-4-96	No. 7 Kiln Exhaust Stack	Metals	1

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
GAB	29.85	-.41	75	21	51.5	.84	5' Glass	.309	A

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) In. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) In. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
10	R-2 (1)	1.65	1.067	P-1	P-1			16	.009	16	.002	5.1

EPA METHOD 3

		RUN 1	RUN 2	RUN 3	AVG	AMBIENT
Collection Method	15.1 %O2					
Analysis Method	4.1 %CO2					

PITOT SYSTEM LEAK-CHECK: INITIAL ✓ FINAL ✓

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
B1	0	10:30	728.179	.51	2.61	334	242	250		62	79	4
2	2.5		730.4	.54	2.75	340	245	244		44	86	4
3	5		732.9	.45	2.2	340	242	248		44	86	4
4	7.5		734.9	.52	2.6	340	246	247		45	86	4
5	10		737.1	.46	2.35	341	249	244		47	87	4
6	12.5		739.25	.38	1.93	340	254	246		48	87	4
7	15		741.25	.30	1.53	339	254	247		48	87	3
8	17.5		743.0	.35	1.78	340	257	248		49	87	3
9	20		744.83	.41	2.09	339	247	248		49	87	4
10	22.5		746.83	.45	2.2	339	248	249		49	88	4
11	25		748.9	.47	2.39	339	249	250		49	88	4
12	27.5	11:00	751.07	.48	2.44	338	245	250		49	88	5
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC in. Hg

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EPA METHOD 0012 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-4-92	No. 7 Kiln Exhaust Stack	Metals	1

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
A 1	30	11:05	753.245	.42	3.16	333	245	251		58	85	5
2	32.5		756.041	.65	3.31	344	247	252		43	83	5
3	35		758.188	.62	3.66	344	254	250		42	83	6
4	37.5		760.658	.52	2.65	344	254	252		42	85 86	5
5	40		763.010	.45	2.29	343	252	252		43	85 86	4
6	42.5		765.218	.330	1.68	341	252	252		42	85 86	35
7	45		767.0	.28	1.42	339	250	251		42	88	3
8	47.5		768.7	.30	1.53	339	251	249		43	88	3
9	30		770.45	.31	1.58	339	252	251		43	85	4
10	52.5		772.25	.33	1.68	337	248	252		43	89	4
11	55		774.05	.30	1.53	336	247	251		43	89	3
12	57.5	11:35	775.8	.33	1.68	337	251	250		43	89	4
			777.06									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC in.Hg
		.652	2.21	340	Sheet Checked By:	86.6	

B-9

EPA METHOD 0013 TESTING FIELD DATA Metals

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-4-92	No. 7 Kiln Exhaust Stack	~~Hexavalent Chromium~~	2

OPERATORS	BAROM PRESS (In. Hg)	STATIC PRESS (In. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
JAB	29.85	-.41	73	22	51.5	.84	5' Glass	.276	

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) In. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) In. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
10	R2D1	1.65	1.067	D-2	D-2			12	.010	.6"	.006	2.85

EPA METHOD 3

			RUN 1	RUN 2	RUN 3	AVG	AMBIENT
Collection Method	14.7	%O2					
Analysis Method	4.3	%CO2					

PITOT SYSTEM LEAK CHECK INITIAL	PITOT SYSTEM LEAK CHECK FINAL
✓	✓

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
B-1	0	843.956	843.956	.38	1.08	333	242	244		60	85	2.5
2	2.5		845.5	.42	1.19	341	243	246		56	85	2.5
3	5		847.1	.41	1.17	342	245	245		52	86	2.5
4	7.5		848.6	.39	1.1	342	244	244		52	86	2.5
5	10		850.1	.33	.94	342	252	245		53	87	2.5
6	12.5		851.5	.24	.74	341	255	245		55	87	2
7	15		852.75	.24	.68	340	256	247		54	87	2
8	17.5		853.93	.29	.82	341	253	246		53	88	2
9	20		855.2	.32	.91	341	254	248		53	89	2
10	22.5		856.57	.33	.94	341	253	247		50	89	2.5
11	25		857.98	.34	.969	341	255	249		50	89	2.5
12	27.5	1900	859.44	.35	.997	340	258	248		50	89	2.5
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC In. Hg

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EPA METHOD 0012 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-4-92	No. 7 Kiln Exhaust Stack	Metals	2

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1	30	1905	860.837	.47	1.23	342	251	252		58	86	3
2	32.5		862.48	.48	1.36	344	254	251		44	89	3
3	35		864.1	.48	1.34	344	253	252		43	92	3
4	37.5		865.72	.41	1.16	344	255	253		45	92	3
5	40		867.25	.31	.88	343	254	252		46	92	2.5
6	42.5		868.63	.25	.71	341	250	251		46	92	2
7	45		869.85	.22	.627	340	254	252		46	92	2
8	47.5		871.0	.22	.627	339	255	251		46	92	2
9	50		872.15	.24	.68	338	257	250		46	94	2
10	52.5		873.34	.27	.769	338	254	250		46	94	2
11	55		874.6	.28	.798	337	259	254		46	94	2
12	57.5		875.9	.20	.57	339	252	255		46	94	1.5
~~X~~	60		877.008									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC In.Hg
		.569	.93	341	Sheet Checked By:	89.6	

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EPA METHOD 0012 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-4-92	No. 7 Kiln Exhaust Stack	Metals	3

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
JAB	29.85	-.85	73	18	51.5	.84	5' Glass	.309	

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) in. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) in. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
10	8201	1.65	1.067	D-1	D-1			10	.001	9	.005	5.1

EPA METHOD 3

		RUN 1	RUN 2	RUN 3	AVG	AMBIENT
Collection Method	14.6 %O2					
Analysis Method	4.5 %CO2					

PITOT SYSTEM LEAK CHECK: INITIAL ✓ FINAL

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
D 1	0	21,15	908,726	.52	2.65	337	242	239		66	83	7
2	2.5		911,0	.49	2,49	338	242	243		50	89	7
3	5		913,2	.46	2,34	339	245	248		48	90	7
4	7.5		915,35	.41	2.09	339	249	244		48	90	7
5	10		917,41	.33	1,68	338	253	243		50	90	6
6	12,5		919,27	.25	1,27	336	253	242		52	91	6
7	15		920,9	.27	1,37	336	256	241		54	91	5
8	17.5		922,55	.31	1,58	336	253	245		55	91	6
9	20		924,28	.33	1,68	336	251	247		55	91	6
10	22.5		926,1	.35	1,78	336	251	247		54	91	6
11	25		927,95	.32	1,63	336	253	247		54	91	6
12	27.5	21,45	929,78	.26	1,32	336	255	247		56	91	5
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC in.Hg

B-12

EPA METHOD 0012 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-4-92	No. 7 Kiln Exhaust Stack	Metals	3

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1	30	21:42.5	931.452	.46	1.341	332	249	246		59	91	8
2	32.5		933.5	.47	2.39	338	250	247		52	91	8
3	35		935.65	.40	2.04	338	231	250		51	91	7.5
4	37.5		937.7	.38	1.93	338	253	250		50	91	7
5	40		939.65	.31	1.58	336	254	249		53	90	6
6	42.5		941.45	.24	1.2	335	253	250		54	90	5
7	45		943.0	.23	1.17	333	239	250		55	90	4
8	47.5		944.5	.18	.91	332	256	249		55	90	4
9	50		945.9	.26	1.32	332	254	251		54	91	5
10	52.5		947.48	.28	1.42	334	255	244		54	91	5
11	55		949.15	.24	1.2	332	252	246		54	91	5
12	57.5		950.75	.29	1.48	331	251	250		54	91	5
	60	22:17.5	952.424									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC In.Hg
		.573	1.7	336	Sheet Checked By:	90.4	

GMH GMH GMH GMH

B-13

EPA METHOD 0013 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-4-92	No. 7 Kiln Exhaust Stack	Hexavalent Chromium	1

OPERATORS	BAROM PRESS (In. Hg)	STATIC PRESS (In. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
PS	29.8	-.41	78	—	51.5	.84	5' TFE	.276	

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) In. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) In. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
10	M-10	1.85	.998	Hex 1	Hex 1		NA	10.0	0.000	5.0	0.000	3.77

EPA METHOD 3	RUN 1	RUN 2	RUN 3	AVG	AMBIENT	PITOT SYSTEM LEAK CHECK INITIAL	PITOT SYSTEM LEAK CHECK FINAL
Collection Method 15.1 %O2						✓	✓
Analysis Method 4.1 %CO2							

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
B1	0	1151	349.179	0.55	2.04	327				68	92	3.0
2	2.5		351.12	0.60	2.2	352				61	92	3.0
3	5		352.96	0.45	1.7	353				54	93	3.0
4	7.5		354.69	0.48	1.8	353				50	93	3.0
5	10		356.47	0.42	1.6	354				51	94	3.0
6	12.5		358.17	0.34	1.3	353				53	94	3.0
7	15		359.71	0.28	1.03	352				54	94	2.0
8	17.5		361.18	0.28	1.03	349				54	94	2.0
9	20		362.58	0.32	1.2	348				54	94	3.0
10	22.5		364.09	0.30	1.1	345				56	94	3.0
11	25		365.60	0.29	1.1	342				57	94	2.5
12	27.5		367.11	0.31	1.2	339				57	93	2.5
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC In.Hg

B-1-H

EPA METHOD 0013 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA		No. 7 Kiln Exhaust Stack	Hexavalent Chromium	1

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
A1	30	1221/1226	368.655	0.42	1.6	331				61	91	2.0
2	32.5		370.20	0.41	1.52	342				52	91	2.0
3	35		371.77	0.46	1.7	342				52	91	3.0
4	37.5		373.47	0.44	1.6	349				53	92	3.0
5	40		375.17	0.39	1.4	350				56	92	3.0
6	42.5		376.79	0.34	1.3	350				59	92	3.0
7	45		378.39	0.29	1.07	349				58	92	2.5
8	47.5		379.84	0.28	1.03	347				57	92	2.5
9	50		381.29	0.30	1.1	346				57	91	2.5
10	52.5		382.74	0.32	1.2	347				58	91	2.0
11	55		384.19	0.34	1.3	347				58	91	2.0
12	57.5		385.78	0.35	1.3	334				58	91	2.0
	60	1256	387.371									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC In.Hg
		.607	1.39	346	Sheet Checked By:	92.4	

B-15

EPA METHOD 0013 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/4-92	No. 7 Kiln Exhaust Stack	Hexavalent Chromium	2

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
JAB	29.85	-.41	93	NA	51.5	.84	5' TFE	.262	

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) In. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) In. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
10	R201	1.65	1.067	Hex 2	Hex 2			12	.002	6	.002	2.65

EPA METHOD 3				RUN 1	RUN 2	RUN 3	AVG	AMBIENT	PITOT SYSTEM LEAK CHECK INITIAL	PITOT SYSTEM LEAK CHECK FINAL
Collection Method	14.9	14.9	%O2							
Analysis Method	4.3	4.3	%CO2							

B-16

Start 14:13

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1	0	1400	777.749	.38	1.07	343	345	343		60	78	3.5
2	2.5	1402:30	779.2	.46	1.22	342	—	—		51	80	4
3	5	1405, Fan 14:15	780.75	.35	.93	342	—	—		58	81	3.5
4	7.5		782.2	.43	1.18	345	—	—		48	82	3
5	10		783.7	.36	.954	345	—	—		46	85	3
6	12.5		785.18	.19	.50	341	—	—		47	86	2
7	15		786.3	.28	.74	343	—	—		48	86	3
8	17.5		789.44	.30	.79	345	—	—		48	86	3.5
9	20		788.7	.3	.79	345	—	—		49	86	3.5
10	22.5		789.97	.42	1.11	345	—	—		44	86	4
11	25		791.5	.46	1.21	347	—	—		44	86	4
12	27.5	1448	792.94	.38	1.0	344	—	—		43	86	4
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC In.Hg

EPA METHOD 0013 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA		No. 7 Kiln Exhaust Stack	Hexavalent Chromium	2

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (In. H2O)	ΔH ORIFICE (In. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (In. Hg)
A 1	30	1445	794.391	.48	1.27	348	—	—		48	87	4
2	32.5		796.0	.55	1.45	349	—	—		46	87	5
3	35		797.6	.44	1.1	349	—	—		45	88	3
4	37.5		799.15	.38	1.0	348	—	—		45	88	5
5	40		800.6	.25	.66	345	—	—		47	88	4
6	42.5		801.77	.24	.636	343	—	—		47	88	3
7	45		802.95	.24	.69	342	—	—		48	88	3
8	47.5		804.14	.27	.71	339	—	—		48	88	3
9	50		805.35	.28	.74	340	—	—		48	88	3
10	52.5	1500 stop	806.63	.30	.79	340	—	—		48	88	3
11	55	1537 start	807.9	.30	.79	340	—	—		55	84	3
12	57.5	1540	809.15	.30	.79	339	—	—		49	86	3
		1542	810.424				—	—				

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC In.Hg
		.585	.92	344	Sheet Checked By:	85.7	

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EPA METHOD 0013 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA		No. 7 Kiln Exhaust Stack	Hexavalent Chromium	3

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
JAB	29.85	-.41	73	NA	51.5	.84	5' TFE	.262	7

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) in. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) in. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
	R2D1	1.65	1.067	Hex 1	Hex 1			10	.010	9	.009	2.65

EPA METHOD 3

			RUN 1	RUN 2	RUN 3	AVG	AMBIENT	PITOT SYSTEM LEAK CHECK INITIAL	PITOT SYSTEM LEAK CHECK FINAL
Collection Method	14.3	%O2							
Analysis Method	4.4	%CO2							

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1 B	0	19:52	(877.213)	.41	1.08	336	—	—		61	90	3
2	2.5		878.7	.40	1.06	339	—	—		57	90	3
3	5		880.1	.34	.961	338	—	—		49	92	3
4	7.5		881.49	.29	.748	338	—	—		49	92	3
5	10		882.75	.24	.63	338	—	—		51	92	3
6	12.5		883.9	.25	.66	337	—	—		51	92	2
7	15		885.15	.25	.66	337	~	—		52	92	2
8	17.5		886.28	.27	.71	336	~	-		51	92	2
9	20		887.5	.29	.77	335	~	—		51	92	2
10	22.5		888.76	.31	.82	335	~	-		51	92	2.5
11	25		890.08	.26	.69	338	—	—		51	92	2
12	27.5	20:22	891.3	.22	.58	339	~	—		51	92	2
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC in. Hg

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EPA METHOD 0013 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA		No. 7 Kiln Exhaust Stack	Hexavalent Chromium	3

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1A	30	20:25	892.413	.36	.95	342	—	—		53	92	3
2	32.5		893.8	.53	1.4	342	—	—		53	92	3.5
3	35		895.4	.48	1.27	341	—	—		50	92	3.5
4	37.5		896.95	.34	.95	340	—	—		50	92	3
5	40		898.35	.36	.95	341	—	—		52	92	3
6	42.5		899.75	.28	.74	340	—	—		55	92	3
7	45		901.02	.21	.55	338	—	—		56	92	2
8	47.5		902.12	.29	.77	338	—	—		57	92	3
9	50		903.35	.31	.82	338	—	—		55	91	2.5
10	52.5		904.7	.32	.84	339	—	—		55	91	3
11	55		906.0	.28	.74	339	—	—		55	91	2.5
12	57.5		907.27	.29	.77	335	—	—		55	91	2.5
	60	20:55	908.573				—	—				

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC In.Hg
		.559	.84	338	Sheet Checked By:	91.7	

B-19

EPA METHOD 0050 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/4/92	No. 7 Kiln Exhaust Stack	Particulate/Chlorides	1

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
PS	29.85	-.41	73°	198	51.5	.84	5' Glass	.260"	S-3

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) In. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) In. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
10	M-10	1.88	.998	S-C	S-C		N/A	10.0	0.001	5.0	0.000	2.91

EPA METHOD 3			RUN 1	RUN 2	RUN 3	AVG	AMBIENT	PITOT SYSTEM LEAK CHECK INITIAL	PITOT SYSTEM LEAK CHECK FINAL
Collection Method	14%/15.0	%O2							
Analysis Method	4.1	%CO2							

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
A1	0	0920	280.825	~~0.49~~ 0.59	~~1.4~~ 1.7	349	233	259		59	79	2.0
2	5		284.17	0.60	1.7	349	257	263		49	80	2.0
3	10		287.55	0.57	1.6	349	259	262		48	82	2.0
4	15		290.81	0.48	1.4	349	255	261		49	83	2.0
5	20		293.99	0.32	0.93	347	255	260		51	84	1.0
6	25		296.69	0.29	0.84	349	255	260		52	86	1.0
7	30		299.26	0.28	0.81	345	261	260		53	86	1.0
8	35		301.76	0.26	0.76	344	254	259		53	87	1.0
9	40		304.18	0.29	0.84	344	260	260		53	87	2.0
10	45		306.73	0.36	1.04	344	254	260		53	88	2.5
11	50		309.51	0.35	1.01	344	259	259		53	89	2.5
12	55		312.27	0.25	0.73	327	260	258		53	89	1.0
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC In. Hg

B-20

EPA METHOD 0050 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/4/92	No. 7 Kiln Exhaust Stack	Particulate/Chlorides	

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
B1	60	1020/1028	314.730	0.29	0.84	337	261	258		60	88	2.5
2	65		317.25	0.41	1.2	342	252	260		50	89	3.0
3	70		320.20	0.40	1.2	342	259	260		49	90	3.0
4	75		323.175	0.35	1.01	344	255	260		50	90	2.5
5	80		326.00	0.32	0.93	345	258	259		51	91	2.5
6	85		328.69	0.31	0.90	345	255	259		52	91	2.5
7	90		331.33	0.30	0.87	346	260	258		53	91	2.5
8	95		333.93	0.34	0.99	347	263	259		52	91	2.5
9	100		336.69	0.42	1.2	350	256	259		52	91	2.5
10	105		339.68	0.46	1.3	352	254	259		52	91	2.5
11	110		342.78	0.47	1.4	351	251	259		53	91	3.0
12	115		345.97	0.42	1.2	324	255	258		53	92	2.5
	120	1128	349.090									
	↓											

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC in.Hg
120	68.265	0.6117	1.10	344	Sheet Checked By:	88.0	3.0

B-21

EPA METHOD 0050 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/4/92	No. 7 Kiln Exhaust Stack	Particulate/Chlorides	2

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
PS	29.85	-.41	73.0	199	51.5	0.84	5' - Glass	.260	J-3

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) In. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) In. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
10	M-10	1.88	0.998	5-C	5-C		N/A	10.0	0.000	5.0	0.000	2.91

EPA METHOD 3

			RUN 1	RUN 2	RUN 3	AVG	AMBIENT
Collection Method	14.8 (dry)	%O2					
Analysis Method	4.4 (dry)	%CO2					

PITOT SYSTEM LEAK CHECK: INITIAL ✓ FINAL ✓

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
A 1	0	~~1400~~ 1400 PS	387.494	0.49	1.4	347	256	260		62	89	1.0
2	5	~~1406~~ 1406 PS	390.71	0.51	1.5	349	256	260		51	90	1.0
3	10	1417-S	393.98	0.53	1.5	350	261	260		52	90	1.0
4	15		397.31	0.49	1.4	352	255	259		52	91	1.0
5	20		400.43	0.30	0.87	351	255	260		53	92	1.0
6	25		403.07	0.34	0.99	352	262	260		54	92	1.0
7	30		405.82	0.34	0.99	348	260	258		54	93	1.0
8	35		408.63	0.36	1.04	349	259	258		55	93	1.0
9	40		411.43	0.35	1.01	349	253	259		54	93	1.0
10	45		414.24	0.36	1.04	349	256	260		55	93	1.0
11	50		417.07	0.37	1.1	349	261	259		56	93	1.0
12	55		419.97	0.37	1.1	346	260	259		56	93	1.0
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC in.Hg
			~~70.409~~ 70.409 ft3									

57 B

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EPA METHOD 0050 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/4/97	No. 7 Kiln Exhaust Stack	Particulate/Chlorides	2

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
B 1	60	1511 / 1517	422.845	0.39	1.1	346	261	257		61	93	1.0
2	65		425.80	0.39	1.1	347	262	260		59	93	1.0
3	70		428.76	0.43	1.2	346	254	259		52	93	1.0
4	75		431.80	0.35	1.01	346	261	260		50	93	1.0
5	80		434.62	0.34	0.99	346	254	260		48	93	1.0
6	85		437.41	0.32	0.93	346	259	258		48	93	1.0
7	90		440.13	0.30	0.87	349	253	259		49	93	1.0
8	95		442.71	0.38	1.1	349	261	259		49	93	1.0
9	100		445.66	0.40	1.2	352	256	259		51	94	1.0
10	105		448.67	0.45	1.3	352	262	259		53	94	1.0
11	110		451.79	0.44	1.3	351	255	259		55	94	1.0
12	115		454.91	0.43	1.2	351	254	259		55	95	1.0
	120	1617	457.903									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC in.Hg
120	70.409	0.6248	1.1	349	Sheet Checked By:	93	1.0

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EPA METHOD 0050 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/4/92	No. 7 Kiln Exhaust Stack	Particulate/Chlorides	3

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
JS	29.85	-.41	73.0	203	51.5	0.84	5 ft glass	.260	J-3

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL In. Hg	TRAIN LEAK CHECK (INITIAL CFM	TRAIN LEAK CHECK (FINAL) In. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
10	M-10	1.88	0.998	5-C	5-C		N/A	10.0	0.000	5.0	0.000	2.91

EPA METHOD 3

			RUN 1	RUN 2	RUN 3	AVG	AMBIENT
Collection Method	14.6	%O2					
Analysis Method	4.4	%CO2					

PITOT SYSTEM LEAK CHECK: INITIAL ✓ FINAL ✓

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
A1	0	1952	458.025	0.39	1.1	~~354~~ 349	256	257		68	91	1.0
2	5		460.92	0.38	1.1	341	256	258		63	91	1.0
3	10		463.83	0.36	1.04	342	255	259		58	91	1.0
4	15		466.64	0.34	0.99	342	261	260		55	92	1.0
5	20		469.39	0.32	0.93	342	263	259		53	92	1.0
6	25		472.06	0.28	0.81	342	259	258		54	93	1.0
7	30		474.57	0.26	0.76	341	260	259		54	93	1.0
8	35		477.04	0.23	0.67	342	257	259		55	94	1.0
9	40		479.36	0.31	0.90	341	262	259		53	93	1.0
10	45		482.03	0.33	0.96	343	253	258		55	94	1.0
11	50		484.67	0.33	0.96	342	258	259		56	94	1.0
12	55		487.41	0.32	0.93	343	253	259		57	94	1.0
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC in.Hg
						341					~~98~~ 94	

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EPA METHOD 0050 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/4/92	No. 7 Kiln Exhaust Stack	Particulate/Chlorides	3

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
B 1	60	2052 / 2058	490.112	0.28	0.81	~~334~~ 333	260	259		63	93	1.0
2	65		492.65	0.27	0.78	336	260	260		58	94	1.0
3	70		495.12	0.27	0.75	336	259	261		57	94	1.0
4	75		497.57	0.29	0.84	339	262	259		54	94	1.0
5	80		500.16	0.26	0.75	340	255	259		52	95	1.0
6	85		502.57	0.26	0.75	340	261	258		52	95	1.0
7	90		505.02	0.25	0.73	340	260	258		53	94	1.0
8	95		507.41	0.23	0.67	341	255	259		53	94	1.0
9	100		509.68	0.27	0.78	342	253	259		55	94	1.0
10	105		512.17	0.33	0.96	344	254	259		55	93	1.0
11	110		514.92	0.37	1.1	346	259	259		54	93	1.0
12	115		517.81	0.38	1.1	345	253	259		54	93	1.0
~~final~~	120	2158	520.702									
~~final~~												

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC In.Hg
		.550	.90	341	Sheet Checked By:	93	

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PARTICULATE / CHLORIDES EPA 0050 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A.F. Olds — Sample Date: 6/4/92

Sample Location: Kiln #7 Exhaust — Recovery Date: 6/4/92

Run No.: 7-1-PMCL — Recovered by: WDB

Filter Number(s): 198

MOISTURE

Impingers	1	2	3	4	5	Silica Gel
Final Weight (ml)	228	125	108	103		760.2 g
Initial Weight (ml)	100	100	100	100		745.8 g
Net Weight	128	25	8	3		14.4 g

Description of impinger water: clear — 10 % spent

Blue — Sil gel color

Total moisture = ~~[illegible]~~ 178.4 g

RECOVERED SAMPLE

Filter container number(s): K7-M5-1-PF — Sealed: ✓

Description of particulate on filter:

Probe rinse container no.	K7-M5-1-FHACE	Liquid level marked/sealed	✓
No container no.	Acetone blank	Liquid level marked/sealed	
H2SO4 Impinger contents container no.	K7-M5-1-H2SO4 IMP Imp 1-3	Liquid level marked/sealed	✓
No container no.	H2SO4 blank	Liquid level marked/sealed	
NaOH Impinger contents container no.	K7-M5-1-NaOH IMP Imp 4-5	Liquid level marked/sealed	✓
No container no.	NaOH blank	Liquid level marked/sealed	

Samples stored and locked: ✓

Remarks:

Relinquished by: W.D. Brumfield — Date: 6-8-92

PARTICULATE / CHLORIDES EPA 0050 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A.F. Old — Sample Date: 6/4/92

Sample Location: Kiln #7 Exhaust — Recovery Date: 6/4/92

Run No.: 7-2-PMCL — Recovered by: W.D.B.

Filter Number(s): 199

MOISTURE

Impingers	1	2	3	4	5	Silica Gel	
Final Weight (ml)	242	120	104	104		758.2	g
Initial Weight (ml)	100	100	100	100		745.1	g
Net Weight (ml)	142	20	4	4		13.1	g

Description of Impinger water: Clear — 10 % spent

Blue — Sil gel color

Total moisture = 183.1 g

RECOVERED SAMPLE

Note – Filter may have negative weight if part of filter recov. in acetone rinse

Filter container number(s): K7-MS-2-PF — Sealed: ✓

Description of particulate on filter: Very light

Probe rinse container no.	K7-MS-2-FHACE	Liquid level marked/sealed	✓
No container no.	Acetone blank	Liquid level marked/sealed	
H2SO4 Impinger contents container no.	K7-MS-2-H2SO4 IMP Imp 1-3	Liquid level marked/sealed	✓
No container no.	H2SO4 blank	Liquid level marked/sealed	
NaOH Impinger contents container no.	K7-MS-2-NaOH IMP Imp 4-5	Liquid level marked/sealed	✓
No container no.	NaOH blank	Liquid level marked/sealed	

Samples stored and locked: ✓

Remarks:

Relinquished by: W.D. Brumfield — Date: 6-8-92

PARTICULATE / CHLORIDES EPA 0050 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A.E. Old — Sample Date: 6/4/92

Sample Location: Kiln #7 Exhaust — Recovery Date: 6/4/92

Run No.: 7-3-PMCL — Recovered by: WDB

Filter Number(s): 203

MOISTURE

Impingers	1	2	3	4	5	Silica Gel	
Final Weight (ml)	244	117	100	100		771.1	g
Initial Weight (ml)	100	100	100	100		764.1	g
Net Weight	144	17	0	0		7.0	g

Description of Impinger water: Clear — 10 % spent

Blue — Sil gel color

Total moisture = 178 g

RECOVERED SAMPLE

Filter container number(s): K7-MS-3-PF — Sealed: ✓

Description of particulate on filter:

Probe rinse container no.	K7-MS-3-FHAR K7-MS-3-FHACE	Liquid level marked/sealed	✓
No container no.	Acetone blank	Liquid level marked/sealed	
H2SO4 Impinger contents container no.	K7-MS-3-H2SO4 IMP ~~K7-MS-3-NaOH IMP~~ Imp 1-3	Liquid level marked/sealed	✓
No container no.	H2SO4 blank	Liquid level marked/sealed	
NaOH Impinger contents container no.	K7-MS-3-NaOH IMP Imp 4-5	Liquid level marked/sealed	✓
No container no.	NaOH blank	Liquid level marked/sealed	

Samples stored and locked: ✓

Remarks:

Relinquished by: W. A. Boynton — Date: 6-8-92

MULTIPLE METALS EPA 0012 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: A.F. Olds, Solite
Sample Date: 6/4/92
Sample Location: Kiln #7
Recovery Date: 6/4/92
Run No.: 7-1-MTL
Recovered by: WDB
Filter Number(s): ~~16~~ 21

MOISTURE

Impingers	1	2	3	4	5	6	Silica Gel	
Final Weight (ml)	170	133	9	103	94	X	674.1	g 658.7
Initial Weight (ml)	100	100	0	100	100	X	~~698.6~~	g ~~695.0~~
Net Weight	70	33	9	3	-6	X	15.8	g

Description of impinger water: clear
10 % spent
Blue Sil gel color

Total moisture = ~~[illegible]~~ 124.8 g

RECOVERED SAMPLE

Filter container number(s): H7-MTL-1-PF
Sealed: Yes
Description of particulate on filter: Very light Weight

Probe rinse container no.	H7-MTL-1-FHACE, H7-MTL-1-FHAR	Liquid level marked/sealed: yes
No container no.	Acetone blank?	Liquid level marked/sealed:
Impingers 1–3 contents container no.	H7-MTL-1-H2O2IMP Imp 1–3	Liquid level marked/sealed: ✓
No container no.	HNO3/H2O2 blank?	Liquid level marked/sealed:
Nitric rinse container no.	H7-MTL-1-BHAR 0.1N HNO3	Liquid level marked/sealed: ✓
Impingers 4–5 contents container no.	H7-MTL-1-HMNOPIMP Imp 4–5	Liquid level marked/sealed: ✓
No container no.	KMnO4 blank?	Liquid level marked/sealed:
HCl rinse container no.	H7-MTL-1-HCL 8N HCl	Liquid level marked/sealed: ✓

Samples stored and locked: ✓
Remarks:
Relinquished by: W.D. Brantley
Date: 6-8-92

MULTIPLE METALS EPA 0012 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A.F. Olds — Sample Date: 6/4/92

Sample Location: Kiln #7 Exhaust — Recovery Date: 6/4/92

Run No.: 7-2-MTL — Recovered by: WMB

Filter Number(s): ~~RT~~ 22

MOISTURE

Impingers	1	2	3	4	5	6	Silica Gel	
Final Weight (ml)	168	118	~~195~~	119	91		680.2	g
Initial Weight (ml)	100	100	0	100	100		~~716.6~~	g 674.1
Net Weight	68	18	5	19	-9		6.1	g

Description of impinger water: Clear — 10 % spent

Blue — Sil gel color

Total moisture = 107.1 g

RECOVERED SAMPLE

Filter container number(s): K7-MTL-2-PF — Sealed: ✓

Description of particulate on filter: Very light

Probe rinse container no.	K7-MTL-2-FHACG K7-MTL-2-FHAR		Liquid level marked/sealed: ✓
No container no.	Acetone blank?		Liquid level marked/sealed:
Impingers 1–3 contents container no.	K7-MTL-2-H2O2IMP	Imp 1–3	Liquid level marked/sealed: ✓
No container no.	HNO3/H2O2 blank?		Liquid level marked/sealed:
Nitric rinse container no.	K7-MTL-2-BHAR	0.1N HNO3	Liquid level marked/sealed: ✓
Impingers 4–5 contents container no.	K7-MTL-2-KMNO4 IMP	Imp 4–5	Liquid level marked/sealed: ✓
No container no.	KMnO4 blank?		Liquid level marked/sealed:
HCl rinse container no.	K7-MTL-2-HCL	8N HCl.	Liquid level marked/sealed: ✓

Samples stored and locked: ✓

Remarks:

Relinquished by: W. A. Burgoyne — Date: 6-8-92

MULTIPLE METALS EPA 0012 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A.F. Old — Sample Date: 6/4/92

Sample Location: Kiln #7 Exhaust — Recovery Date: 6/4/92

Run No.: 7-3-MTL — Recovered by: WDB

Filter Number(s): 16

MOISTURE

Impingers	1	2	3	4	5	6	Silica Gel	
Final Weight (ml)	166	142	8	103	107	X	232.5	g 723.9
Initial Weight (ml)	100	100	0	100	100	X	~~715.1~~	g ~~715.1~~
Net Weight	66	42	8	3	7	X	13.6	g

Description of impinger water: Clear — 15 % spent; Blue — Sil gel color

Total moisture = 139.6 g

RECOVERED SAMPLE

Filter container number(s): #7-MTL-3-PF — Sealed: ✓

Description of particulate on filter:

Probe rinse container no.	#7-MTL-3-PHACE #7-MTL-3-PHAR		Liquid level marked/sealed: ✓
No container no.	Acetone blank?		Liquid level marked/sealed:
Impingers 1–3 contents container no.	#7-MTL-3-H2O2IMP	Imp 1–3	Liquid level marked/sealed: ✓
No container no.	HNO3/H2O2 blank?		Liquid level marked/sealed:
Nitric rinse container no.	#7-MTL-3-BHAR	0.1N HNO3	Liquid level marked/sealed: ✓
Impingers 4–5 contents container no.	#7-MTL-3-KMNO4IMP	Imp 4–5	Liquid level marked/sealed: ✓
No container no.	KMnO4 blank?		Liquid level marked/sealed:
HCl rinse container no.	#7-MTL-3-HCR	8N HCl	Liquid level marked/sealed: ✓

Samples stored and locked: ✓

Remarks:

Relinquished by: W. D. Byrd — Date: 6-8-92

HEXAVALENT CHROMIUM EPA 0013 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite AF Old — Sample Date: 6/4/92

Sample Location: Kiln # 7 — Recovery Date: 6/4/92

Purge 1345

Run No.	KOH Solution Volume Initial	KOH Solution Volume Final	Increase	pH Measure	Filtered?
7-1-CR6	400	416	16	9.5	✓

Silica Gel weight Initial	Silica Gel weight Final	Silica Gel Increase	Total Moisture	Recovered By:
842.9	864.4	21.5	37.5	WDB

Purge 2025-2055

Run No.	KOH Solution Volume Initial	KOH Solution Volume Final	Increase	pH Measure	Filtered?
7-2-CR6	450	443	-7	9.0	✓

Silica Gel weight Initial	Silica Gel weight Final	Silica Gel Increase	Total Moisture	Recovered By:
731.3	757.2	25.9	16.9	WDB

Some sample was lost

Run No.	KOH Solution Volume Initial (mL)	KOH Solution Volume Final	Increase	pH Measure	Filtered?
7-3-CR6	400	452	52	9.5	✓

Silica Gel weight Initial	Silica Gel weight Final	Silica Gel Increase	Total Moisture	Recovered By:
750.1	764.4	14.4	66.4	WDB

Comments:

Relinquished By: W. D. Brumpton — Date: 6-6-92

EPA METHOD 0012 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-2-92	No. 8 Kiln Exhaust Stack	Metals	

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
PS JAB	~~29.78~~ 30.020	.32	85°	0	52"	.84	5' Glass	.313	3

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) in. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) in. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
13.5	Rico Rapi	1.65	1.067	Rico	Rico		NA	15	.008	7	.001	4.94

EPA METHOD 3

Collection Method 15.2 %O2

Analysis Method 4.0 %CO2

	RUN 1	RUN 2	RUN 3	AVG	AMBIENT
%O2					
%CO2					

PITOT SYSTEM LEAK CHECK: INITIAL ✓ FINAL ✓

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1	A0	17:50	564.062	.40	2.61	359	246	246		64	88	3
2	2.5		566.6	.64	3.16	341	249	248		57	89	4
3	5		568.7	.61	3.0	362	250	250		57	89	4
4	7.5		571.55	.51	2.5	361	250	248		61	90	3
5	10		573.4	.42	2.0	361	255	247		62	92	3
6	12.5		575.4	.36	1.77	361	255	247		62	92	3
9	15		577.3	.33	1.63	359	251	249		62	95	3
9	17.5		579.15	.33	1.43	359	248	248		61	95	3
7	20		580.9	.35	1.72	358	250	248		62	95	3
10	22.5		582.75	.34	1.77	351	249	249		60	95	3
1	25		584.6	.36	1.77	350	249	248		60	96	3
12	27.5	18:20	586.5	.35	1.72	348	253	248		61	96	3
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC in. Hg
	37											

EPA METHOD 0012 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA		No. 8 Kiln Exhaust Stack	Metals	1

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (In. H2O)	ΔH ORIFICE (In. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (In. Hg)
1	30	18.20	588.329	.55	2.7	359	248	251		65	90	3
2	32.5		590.6	.56	2.76	340	250	249		65	92	3
3	35		592.95	.51	2.5	340	252	251		66	93	3
4	37.5		595.2	.41	2.0	360	251	250		64	94	3
5	40		597.2	.32	1.58	359	250	256		65	95	2
6	42.5		599.0	.29	1.43	359	253	250		64	95	2
7	45		600.75	.32	1.58	357	254	250		64	95	2
8	47.5		602.5	.35	1.72	357	250	251		62	96	3
9	50		604.35	.30	1.48	358	250	251		63	96	2
10	52.5		606.1	.41	2.02	352	249	250		63	96	3
11	55		608.05	.35	1.72	350	248	245		62	97	2
12	57.5		609.85	.35	1.72	350	251	249		62	97	2
~~13~~	60	1900	611.713									
~~14~~												

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC In.Hg
60		.637	2.02	357	Sheet Checked By:	93.7	

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EPA METHOD 0012 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-2-92	No. 8 Kiln Exhaust Stack	Metals	2

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
JAB	30.02	-.32	78		52"	.84	5' Glass	.309	4

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL in. Hg	TRAIN LEAK CHECK (INITIAL CFM	TRAIN LEAK CHECK (FINAL) in. Hg	TRAIN LEAK CHECK (FINAL) CFM	5.15 K FACTOR
13.5	R2-01	1.65	1.067	perco				10	.003	10	.002	4.69

EPA METHOD 3

		RUN 1	RUN 2	RUN 3	AVG	AMBIENT
Collection Method	15.5 %O2					
Analysis Method	3.8 %CO2					

PITOT SYSTEM LEAK CHECK INITIAL	PITOT SYSTEM LEAK CHECK FINAL
✓	

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1 B	0	22:40	613.232	.56	~~3.29~~ 2.8	362	248	247		66	85	4
2	2.5		take 2	~~.54~~ .5	~~3.3~~ 2.8	362	250	251		64	86	~~4~~
3	5		618.0	.60	3.0	~~364~~ 362	253	249		59	87	4
4	7.5		620.5	.4	2.0	364	252	251		56	87	3
5	10		622.45	.4	2.0	~~364~~ 362	250	252		53	87	3
6	12.5		624.45	0.31	1.6	364	251	251		53	87	3
7	15		626.25	.40	2.0	362	254	250		52	87	3
8	17.5		628.2	.43	2.2	362	254	249		52	~~88~~ 87	3
9	20		630.5	~~.46~~ .37	1.9	360	252	251		52	88	3
10	22.5		632.3	.46	2.34	360	250	250		53	89	~~4~~ 3
11	25		634.3	.32	1.4	360	255	250		51	89	3
12	27.5	23:10	636.2	.28	1.4	360	256	251		51	89	2
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC in.Hg
	30			~~.644~~	~~2.14~~	~~362~~					~~87~~	

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EPA METHOD 0012 TEST ... G FIELD DATA

PLANT AND CITY	DATE	SAMPLING L ...ATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-2-92	No. 8 Kiln Exhaust Stack	Metals	2

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1 A	30	23:20	637.887	.52	2.67	359	252	258		63	85	4
2	32.5		640.15	.49	2.52	363	251	255		48	86	4
3	35		642.4	.59	3.0	365	258	258		48	87	4
4	37.5		644.8	.51	2.6	365	255	259		50	87	4
5	40		647.1	.41	2.1	365	257	258		51	87	4
6	42.5		649.1	.34	1.75	363	256	256		51	87	3
7	45		651.0	.27	1.39	364	252	257		53	87	3
8	47.5		652.7	.35	1.8	362	254	256		53	87	3
9	50		654.6	.35	1.8	362	255	255		53	87	3
10	52.5		656.5	.41	2.1	362	256	257		53	87	3
11	55		658.5	.35	1.8	361	257	254		53	87	3
12	57.5		660.45	.40	2.0	360	256	257		53	87	3
	60		662.370									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC in.Hg
60		.644	2.14	362	Sheet Checked By:	87.1	
		MSH	MSH	MSH		MSH	

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EPA METHOD 0012 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-3-92	No. 8 Kiln Exhaust Stack	Metals	3

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
JAB	30.02	.32	75		52	.84	5' Glass	.296	SS3

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) in. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) in. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
~~13.5~~	~~WTC~~	1.65	1.067				—	10	.001	7	.001	4.31

10 ~~09~~

EPA METHOD 3			RUN 1	RUN 2	RUN 3	AVG	AMBIENT	PITOT SYSTEM LEAK CHECK INITIAL	PITOT SYSTEM LEAK CHECK FINAL
Collection Method	15.2	%O2						✓	
Analysis Method	3.9	%CO2							

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1	0	10:15	662.502	.53	2.28	353	243	248		62	87	3
2	2.5		664.6	.51	2.19	354	249	248		50	88	3
3	5		666.6	.37	1.59	351	250	251		49	89	2
4	7.5		668.4	.39	1.68	353	250	248		49	91	2
5	10		670.25	.33	1.42	353	250	249		49	92	2
6	12.5		671.95	.27	1.16	353	251	250		49	92	2
7	15		673.5	.34	1.46	352	252	248		52	94	2
8	17.5		675.2	.30	1.29	353	250	248		55	95	2
9	20		676.8	.42	1.81	351	250	249		55	95	2
10	22.5		678.65	.45	1.93	350	249	251		57	96	2
11	25		680.6	.44	1.89	350	251	252		58	96	2
12	27.5	10:45	682.5	.31	1.3	349	252	250		58	97	2
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC in.Hg
	30											

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EPA METHOD 0012 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-3-92	No. 8 Kiln Exhaust Stack	Metals	3

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (In. H2O)	ΔH ORIFICE (In. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (In. Hg)
1	30	11:10	684.203	.53	1.41	340	249	246		62	97	2
2	32.5		685.9	.56	1.49	354	250	251		50	97	2
3	35		687.6	.55	1.46	355	251	248		43	98	2
4	37.5		689.35	.47	1.25	355	252	250		43	98	2
5	40		690.95	.38	1.0	354	251	249		45	99	2
6	42.5		692.4	.36	.96	354	252	249		45	100	2
7	45		693.85	.31	.82	353	250	250		45	100	1
8	47.5		695.1	.31	.82	353	251	249		45	120	1
9	50		696.5	.34	.907	349	250	251		45	100	1
10	52.5		697.9	.37	.987	349	252	251		45	100	2
11	55		699.3	.39	1.04	348	249	252		47	100	2
12	57.5		700.8	.39	1.04	344	252	251		49	100	2
	60	11:40	702.267									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC In.Hg
60		.630	1.38	351		95.9	

Sheet Checked By: _____

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EPA METHOD 0013 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-2-92	No. 8 Kiln Exhaust Stack	Hexavalent Chromium	1

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
JAB	~~29.78~~	-.32	85		52"	.84	5' Glass	~~.303~~ .296	H-28

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) in. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) in. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
13.5	m-11	~~1.95~~ 1.9	1.000	Hex 1	Hex 1			15	.001	6	.010	3.44

EPA METHOD 3

			RUN 1	RUN 2	RUN 3	AVG	AMBIENT	PITOT SYSTEM LEAK CHECK INITIAL	PITOT SYSTEM LEAK CHECK FINAL
Collection Method	15.6	%O2							
Analysis Method	2.8	%CO2							

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1 B	0.0	1413	50.675	.53	1.82	364	~~364~~	—		66	85	3
2	2.5		52.1	.56	1.92	364	—	—		62	84	4
3	5.0		53.4	.54	1.85	364	—	—		63	84	5
4	7.5		55.61	.40	1.37	366	—	—		63	86	5
5	10.0		57.25	.32	1.1	367	—	—		64	87	4
6	12.5		58.75	.29	.99	365	—	—		64	89	4
7	15.0		60.15	.29	.99	365	—	—		63	90	4
8	17.5		61.7	.30	1.0	366	—	—		64	~~90~~ 90	4
9	20.0		63.0	.34	1.16	365	—	—		64	90	4
10	22.5		64.5	.36	1.23	364	—	—		63	90	4
11	25.0		66.4	.39	1.34	367	—	—		63	92	4
12	27.0		67.9	.39	1.34	361	—	—		63	90	4
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC in.Hg
	~~30~~ 27.0											

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EPA METHOD 0013 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-2-92	No. 8 Kiln Exhaust Stack	Hexavalent Chromium	1

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1 A	30.0	16 56	69.178	.41	1.41	367	—	—		65	96	4
2	32.5		70.75	.5	1.72	368	—	—		66	88	5
3	35.0		72.5	.5	1.72	376	—	—		66	88	5
4	37.5		74.3	.45	1.54	369	—	—		63	88	4
5	40.0		75.95	.37	1.27	367	—	—		63	89	4
6	42.5		77.5	.31	1.06	367	—	—		65	90	3
7	45.0		78.9	.31	1.06	366	—	—		65	90	3
8	47.5		80.4	.29	1.0	366	—	—		64	90	3
9	50.0		81.7	.29	1.0	365	—	—		65	90	3
10	52.5		83.2	.33	1.13	366	—	—		64	90	3
11	55.0		84.5	.35	1.2	365	—	—		64	90	3
12	57.5		86.0	.38	1.3	364	—	—		63	90	3
	60.0	17 26	87.569				—	—				

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC in.Hg
60		.616	1.31	366	Sheet Checked By:	88.8	
		MDH	MDH	MDH		MDH	

0489

EPA METHOD 0013 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-2-92	No. 8 Kiln Exhaust Stack	Hexavalent Chromium	1 2 3

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE #1 Diameter	NOZZLE #1 ID No.
JAB	29.77	.32	85		52"	.84	5' Glass	.276	H-28

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) in. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) in. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
13.5	M-1	1.9	1.0	Hex 1	Hex 2			.007	12" Hg	5	.005	~~2.74~~ 3.0

EPA METHOD 3			RUN 1	RUN 2	RUN 3	AVG	AMBIENT	PITOT SYSTEM LEAK CHECK INITIAL	PITOT SYSTEM LEAK CHECK FINAL
Collection Method	15.4	%O2						✓	
Analysis Method	3.9	%CO2							

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1	0	10:45	87.770	.59	1.8	368	—	—		59	79	3
2	2.5		89.5	.57	1.7	368	—	—		53	79	5
3	5		91.2	.57	1.7	369	—	—		53	79	5
4	7.5		93.0	.55	1.59	369	—	—		56	79	5
5	10		94.8	~~.37~~ .37	1.13	369	—	—		56	79	3
6	12.5		96.23	.28	.85	369	—	—		57	79	2
7	15		97.55	.28	.95	366	—	—		58	80	2
8	17.5		98.8	.36	1.1	365	—	—		59	81	3
9	20		100.25	.38	1.14	366	—	—		59	81	3
10	22.5		101.9	.42	1.28	366	—	—		60	80	3
11	25		103.2	.42	1.28	362	—	—		60	80	3
12	~~30~~ 27.5		104.9	.36	1.1	359	—	—		60	80	2
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC In.Hg
				~~.637~~ .37	~~1.26~~ .91	~~365~~					~~79.7~~	

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EPA METHOD 0013 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-2-92	No. 8 Kiln Exhaust Stack	Hexavalent Chromium	2

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1	30	21:20	106,162	.49	1.5	366	—	—		59	78	3
2	32.5		107.75	.56	1.7	367	—	—		60	78	3
3	35		109,45	.56	1.7	365	—	—		61	78	3
4	37.5		111.2	.48	1.46	369	—	—		61	79	3
5	40		112.8	.38	1.16	368	—	—		63	80	2
6	42.5		114.3	.32	X0.979	366	—	—		64	80	2
7	45		115.7	.30	.91	366	—	—		64	80	2
8	47.5		117.0	.29	.88	365	—	—		65	80	2
9	50		118.3	.33	1.0	365	—	—		64	81	2
10	52.5		119,65	.37	1.13	365	—	—		65	81	2
11	55		121.15	.37	1.13	365	—	—		65	80	2
12	57.5		122.64	.37	1.13	365	—	—		66	81	2
	60	21:50	124,163									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC in.Hg
		.637	1.26	366		79.7	
		gmdH	gmdH	gmdH		gmdH	

Sheet Checked By: _____

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EPA METHOD 0013 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-3-97	No. 8 Kiln Exhaust Stack	Hexavalent Chromium	3

OPERATORS	BAROM PRESS (In. Hg)	STATIC PRESS (In. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
JAB	30.00	.32	75	X	52"	.84	5' Glass	.276	H-28

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL In. Hg	TRAIN LEAK CHECK (INITIAL CFM	TRAIN LEAK CHECK (FINAL) In. Hg	TRAIN LEAK CHECK (FINAL) CFM	3.81 K FACTOR
10	M-11	1.9	1.00	Hex 1	Hex 1			10	.005	7	.010	3.46

EPA METHOD 3			RUN 1	RUN 2	RUN 3	AVG	AMBIENT	PITOT SYSTEM LEAK CHECK INITIAL	PITOT SYSTEM LEAK CHECK FINAL
Collection Method	15.0	%O2							
Analysis Method	4.0	%CO2							

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1	0	12:25	124.753	0.40	1.524	361	—	—		64	90	3
2	2.5		126.4	.41	1.56	361	—	—		63	91	3
3	5		128.05	.37	1.40	360	—	—		55	91	3
4	7.5		129.65	.31	1.18	361	—	—		56	91	3
5	10		131.3	.26	.99	361	—	—		57	91	3
6	12.5		132.65	.25	.95	361	—	—		56	91	3
7	15		134.02	.28	1.0	362	—	—		55	93	3
8	17.5		135.44	.30	1.14	358	—	—		54	94	3
9	20		136.95	.32	1.2	356	—	—		54	94	3
10	22.5		138.4	.34	1.29	355	—	—		54	94	3
11	25.0		139.95	.32	1.20	352	—	—		54	94	3
12	27.5	12:55	141.4	.30	1.1	350	—	—		54	94	3
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC In.Hg

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EPA METHOD 0013 TEST[illegible]G FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6-3-92	No. 8 Kiln Exhaust Stack	Hexavalent Chromium	3

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
1	30	1300	142.857	.41	1.56	350	←	—		62	95	3
2	32.5		144.45	.47	1.79	350	—	"		52	95	3
3	35		146.2	.44	1.67	361	—	—		50	95	3
4	37.5		147.94	.38	1.44	361	—	—		50	95	3
5	40		149.55	.31	1.18	361	—	—		50	95	3
6	42.5		151.0	.29	1.1	360	—	—		53	96	3
7	45		152.44	.27	1.0	360	—	—		55	94	3
8	47.5		153.85	.29	1.18	360	—	—		57	96	3
9	50		155.3	.30	1.14	358	—	—		58	96	2
10	52.5		156.74	.32	1.21	359	—	—		59	96	2
11	55		158.25	.30	1.14	358	—	—		59	96	2
12	57.5		159.63	.31	1.18	356	—	—		59	96	2
1	60	1330	161.169									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC in.Hg
		.573	1.26	358	Sheet Checked By:	94.0	

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EPA METHOD 0050 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/2/92	No. 8 Kiln Exhaust Stack	Particulate/Chlorides	1

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
RB JAB	~~29.47~~ ~~30.02~~	.32	85	~~PQ~~ @197	52"	0.84	5FT - Glass	.260	

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) In. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) In. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
13.5	~~orig~~ M10	1.88	.998	5C	5C	5ST	N/A	10.0	0.000	5.0	0.001	2.68 ~~2.68~~

EPA METHOD 3 ~~2.153~~

		RUN 1	RUN 2	RUN 3	AVG	AMBIENT
Collection Method	15.5 %O2					
Analysis Method	3.8 %CO2					

PITOT SYSTEM LEAK CHECK	
INITIAL ✓	FINAL

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
A 1	0	1612	068.021	0.52	1.39	361	257	260		65	86	3.0
2	5		071.180	0.46	1.23	358	264	260		65	86	2.0
3	10		074.15	0.52	1.39	364	261	260		64	87	3.0
4	15		077.37	0.50	1.34	366	256	258		61	89	2.5
5	20		080.51	0.41	1.09	365	264	259		59	90	2.0
6	25		083.56	0.35	0.94	364	263	260		59	90	2.0
7	30		086.25	0.30	0.80	366	259	260		58	90	1.0
8	35		088.71	0.31	0.83	367	254	259		53	91	1.0
9	40		091.24	0.32	0.86	368	256	259		51	91	1.0
10	45		093.802	0.34	0.91	368	256	259		52	92	1.0
11	50		096.47	0.40	1.07	368	263	259		51	92	1.0
12	55		099.25	0.39	1.04	355	255	260		50	93	1.0
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC In.Hg

S4-8

EPA METHOD 0050 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/2/92	No. 8 Kiln Exhaust Stack	Particulate/Chlorides	1

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
B 1	60	1711/1715	102.014	0.33	0.88	351	255	258		61	92	1.0
2	65		104.58	0.35	0.94	351	257	259		52	92	1.0
3	70		107.24	0.37	0.99	360	262	259		49	93	1.5
4	75		110.04	0.40	1.07	360	259	259		50	93	2.0
5	80		112.68	0.40	1.07	362	263	260		49	93	2.0
6	85		115.45	0.36	0.96	364	263	258		50	93	2.0
7	90		118.18	0.33	0.88	365	257	258		50	93	1.5
8	95		120.91	0.32	0.86	367	252	258		50	93	1.0
9	100		123.41	0.35	0.94	367	260	260		50	93	2.0
10	105		126.08	0.40	1.07	369	259	259		50	93	2.0
11	110		128.88	0.36	0.96	369	256	260		50	93	1.5
12	115		131.65	0.50	1.34	369	260	259		51	93	2.5
	120	1818	134.666									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC in.Hg
120	66.645	0.6200	1.04	364	Sheet Checked By:	91	3.0

9/7-B

EPA METHOD 0050 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/2/92	No. 8 Kiln Exhaust Stack	Particulate/Chlorides	2

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
PS	30.02	.32	85	Q196 M7	52"	.84	5' Glass	.263	2

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) in. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) in. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
~~13.5~~ 10.0	M10	~~2.153~~	~~1.002~~	5	5		N/A	10.0	0.006	5.0	0.001	~~3.21~~ 3.08

EPA METHOD 3 1.88 .998

		RUN 1	RUN 2	RUN 3	AVG	AMBIENT	PITOT SYSTEM LEAK CHECK INITIAL	PITOT SYSTEM LEAK CHECK FINAL
Collection Method	15.5 %O2							
Analysis Method	3.8 %CO2							

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
A 1	0	2047	135.155	0.57	1.8	369	263	258		63	83	2.0
2	5		138.99	0.60	1.8	369	263	260		47	83	2.0
3	10		142.69	0.59	1.8	368	257	259		47	83	2.0
4	15		146.34	0.60	1.8	369	264	259		50	84	2.0
5	20		149.95	0.45	1.4	369	255	259		51	84	2.0
6	25		153.27	0.41	1.3	369	261	259		51	83	1.0
7	30		156.31	0.35	1.07	367	259	259		52	83	1.0
8	35		159.14	0.33	1.01	367	262	259		52	83	1.0
9	40		161.89	0.31	0.95	369	259	259		52	83	1.0
10	45		164.55	0.35	1.07	368	260	259		53	83	1.0
11	50		167.33	0.39	1.2	369	259	259		52	83	1.0
12	55		170.28	0.37	1.1	363	257	259		52	83	1.0
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC In.Hg

4-8

EPA METHOD 0050 TEST[illegible]G FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/2/92	No. 8 Kiln Exhaust Stack	Particulate/Chlorides	2

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
B 1	60	2147/2211	173.395	0.40	1.2	361	258	361		63	81	1.0
2	65		176.31	0.39	1.2	361	262	260		53	81	1.0
3	70		179.33	0.37	1.1	361	260	259		52	81	1.0
4	75		182.22	0.49	1.5	362	258	259		53	82	2.0
5	80		185.54	0.51	1.6	363	256	259		52	82	2.0
6	85		189.96	0.48	1.5	364	257	259		51	82	2.0
7	90		192.30	0.41	1.3	366	256	259		52	82	2.0
8	95		195.43	0.40	1.2	367	262	259		53	82	2.0
9	100		198.43	0.37	1.1	368	254	259		52	81	2.0
10	105		201.33	0.44	1.4	369	261	259		53	82	2.5
11	110		204.56	0.59	1.8	369	258	259		52	82	3.0
12	115		208.15	0.66	2.0	364	257	259		52	82	3.0
	120	2311	211.938									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC In.Hg
	76.783	0.6678	1.4	366		82.4	3.0

Sheet Checked By: _____

gmdh gmdh

B-48

EPA METHOD 0050 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/3/92	No. 8 Kiln Exhaust Stack	Particulate/Chlorides	3

OPERATORS	BAROM PRESS (in. Hg)	STATIC PRESS (in. H2O)	AMBIENT TEMP (°F)	FILTER TYPE & FILTER NUMBER(S)	STACK ID (in.)	PITOT TUBE Cp	PROBE LENGTH AND MATERIAL	NOZZLE Diameter	NOZZLE ID No.
PS	30.00	.32	89	Q195	52"	.84	5ft-glass	.260	.260

ASSUMED MOISTURE (%)	DGM BOX NO.	DGM ΔH@	DGM CAL FACTOR (Y)	STACK THERM NO.	STACK PITOT NO.	IMPINGER THERM NO.	ORSAT NO.	TRAIN LEAK CHECK (INITIAL) in. Hg	TRAIN LEAK CHECK (INITIAL) CFM	TRAIN LEAK CHECK (FINAL) in. Hg	TRAIN LEAK CHECK (FINAL) CFM	K FACTOR
10.0	M10	~~2.153~~ 1.98	~~1.002~~ .998	5	5		N/A	10.0	0.000	5.0	0.000	~~3.07~~ 2.86

EPA METHOD 3

	RUN 1	RUN 2	RUN 3	AVG	AMBIENT
Collection Method (%O2)	15.1				
Analysis Method (%CO2)	3.9				

PITOT SYSTEM LEAK CHECK	
INITIAL	FINAL

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
A 1	0	1016	212.050	0.50	1.4	357	258	259		58	93	3.0
2	5		215.14	0.47	1.3	354	257	260		57	95	3.0
3	10		218.28	0.54	1.5	356	264	260		55	97	3.0
4	15		221.63	0.51	1.4	360	257	259		56	98	3.0
5	20		224.88	0.38	1.1	361	255	259		57	99	3.0
6	25		227.80	0.32	0.92	361	260	259		53	100	3.0
7	30		230.54	0.25	0.72	357	258	259		52	100	2.5
8	35		232.95	0.24	0.69	358	260	259		52	101	2.5
9	40		235.31	0.28	0.8	359	255	259		51	101	2.5
10	45		237.80	0.30	0.86	358	260	258		50	101	2.5
11	50		240.41	0.39	1.1	359	256	259		49	100	3.0
12	55		243.30	0.40	1.1	355	256	258		49	100	3.0
	TOTAL TIME		DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F					AVG DGM °F	MAX VAC In.Hg

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EPA METHOD 0050 TESTING FIELD DATA

PLANT AND CITY	DATE	SAMPLING LOCATION	SAMPLE TYPE	RUN NUMBER
Solite A.F. Old plant, Arvonia, VA	6/8/92	No. 8 Kiln Exhaust Stack	Particulate/Chlorides	3

TRAVERSE POINT NUMBER	ELAPSED TEST TIME (min)	CLOCK TIME (24-hr)	GAS METER READING Vm (ft3)	ΔP VELOCITY HEAD (in. H2O)	ΔH ORIFICE (in. H2O)	STACK TEMP (°F)	PROBE TEMP (°F)	FILTER OVEN TEMP (°F)		SIL GEL IMPINGER TEMP (°F)	DGM IN/OUT TEMP (°F)	SAMPLE TRAIN VACUUM (in. Hg)
B 1	60	1116 E / 1123 S	246.160	0.36	1.02	348	261	258		68	99	3.0
2	65		248.93	0.36	1.02	352	263	259		47	98	3.0
3	70		251.69	0.37	1.05	353	257	259		48	98	3.0
4	75		254.50	0.38	1.1	355	256	260		48	98	3.0
5	80		257.31	0.36	1.02	356	261	260		50	98	3.0
6	85		260.17	0.35	1.0	356	263	259		51	98	3.0
7	90		262.92	0.32	0.91	359	254	258		52	98	3.0
8	95		265.44	0.32	0.91	360	252	256		52	98	3.0
9	100		268.22	0.36	1.02	364	253	259		53	97	3.0
10	105		271.04	0.42	1.2	362	261	260		53	97	3.0
11	110		274.06	0.50	1.4	361	258	258		54	97	3.0
12	115	~~1224~~	277.30	0.52	1.5	358	257	259		54	97	3.0
	120	1224	280.664									

TOTAL TIME	DGM VOLUME	AVG SQRT ΔP	AVG ΔH	AVG STACK °F		AVG DGM °F	MAX VAC In.Hg
		.615	1.09	358	Sheet Checked By:	98.3	
		mdH	mdH	mdH		mdH	

B-50

MULTIPLE METALS EPA 0012 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A. F. Old — Sample Date: 6-2-92

Sample Location: No. 8 Kiln Exhaust — Recovery Date: 6/2-/92

Run No.: 8-1-MTL — Recovered by: [signature]

Filter Number(s): 14

MOISTURE

Impingers	1	2	3	4	5	6	Silica Gel	
Final Weight	153	132	3	98	109		245.0	g
Initial Weight	~~200~~	~~200~~	MT	~~200~~	~~200~~		232.1	g
Net Weight	53	32	3	-2	9		12.9	g

Description of impinger water: clear — 5% spent

Sil gel color: blue

Total moisture = 107.1 g

RECOVERED SAMPLE

Filter container number(s): K8 MTL-1-PF — Sealed: ✓

Description of particulate on filter: very light

Probe rinse container no.	K8-MTL-1-FRACE K8-MTL-1-FHAR	Liquid level marked/sealed: ✓
NA container no.	Acetone blank?	Liquid level marked/sealed
Impingers 1–3 contents container no.	K8-MTL-1-H2O2 IMP Imp 1–3	Liquid level marked/sealed: ✓
container no.	HNO3/H2O2 blank? K8-MTL-BK-H2O2	Liquid level marked/sealed: ✓
Nitric rinse container no.	K8-MTL-1-BHAR 0.1N HNO3	Liquid level marked/sealed: ✓
Impingers 4–5 contents container no.	K8-MTL-1-KMNO4 IMP Imp 4–5	Liquid level marked/sealed: ✓
NA container no.	KMnO4 blank?	Liquid level marked/sealed
HCl rinse container no.	K8-MTL-1-HCL 8N HCl	Liquid level marked/sealed: ✓

Samples stored and locked: ✓

Remarks:

Relinquished by: [signature] — Date: 6-8-92

MULTIPLE METALS EPA 0012 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A.F. Olds — Sample Date: 6/2/92

Sample Location: Kiln #8 — Recovery Date: 6/3/92

Run No.: R 8-2-MTL — Recovered by: WSH

Filter Number(s): 15

MOISTURE

Impingers	1	2	3	4	5	6	Silica Gel	
Final Weight	133	144	4	204	81	X	245.8	g
Initial Weight	100	100	MT	200	100	X	231.1	g
Net Weight	33	44	4	4	-19		14.7	g

Description of impinger water: clear — 10 % spent

Blue — Sil gel color 48 33

Total moisture = 80.7 g

RECOVERED SAMPLE

Filter container number(s): K8 MTL-2-PF — Sealed: ✓

Description of particulate on filter: Very light load

~~K8 MTL 2 FH ACE~~

Probe rinse container no.	K8 MTL-2-FHAR	Liquid level marked/sealed ✓
N/A container no.	Acetone blank?	Liquid level marked/sealed
Impingers 1–3 contents container no.	K8 MTL-2-H2O2IMP Imp 1–3	Liquid level marked/sealed ✓
N/A container no.	HNO3/H2O2 blank?	Liquid level marked/sealed
Nitric rinse container no.	K8 MTL-2-BHAR 0.1N HNO3	Liquid level marked/sealed ✓
Impingers 4–5 contents container no.	K8 MTL-2-KMnO4IMP Imp 4–5	Liquid level marked/sealed ✓
N/A container no.	KMnO4 blank?	Liquid level marked/sealed
HCl rinse container no.	K8 MTL-2-HCl 8N HCl	Liquid level marked/sealed ✓

Samples stored and locked: ✓

Remarks:

Relinquished by: W. D. Brumfield — Date: 6-8-92

R-52

MULTIPLE METALS EPA 0012 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A.F. Olds — Sample Date: 6/3/92

Sample Location: Kiln #8 — Recovery Date: 6/3/92

Run No.: B-3-MTL — Recovered by: _____

Filter Number(s): 13

MOISTURE

Impingers	1	2	3	4	5	6	Silica Gel
Final Weight (ml)	145	116	31	111	90	X	740.2 g
Initial Weight (ml)	100	100	MT	100	100	X	~~726.9~~ g 726.9
Net Weight	45	16	31	11	-10		13.3 g

Description of impinger water: Clear — 10% % spent

Blue Sil gel color

Total moisture = 106.3 g

RECOVERED SAMPLE

Filter container number(s): K8-Mtl-3-PF — Sealed ✓

Description of particulate on filter: Very light weight

Probe rinse container no.	~~K8-Mtl-3-FHAR~~ K8-mtl-3-FHAR	Liquid level marked/sealed ✓
6/3/92 Acetone blank? container no.	K8-mtl-BlkFH/ACE	Liquid level marked/sealed ✓
Impingers 1–3 contents container no.	K8-mtl-3-~~H2O2IMP~~ Imp 1-3	Liquid level marked/sealed ✓
6/3/92 HNO3/H2O2 blank? container no.	K8-mtl-Blk-H2O2	Liquid level marked/sealed ✓
Nitric rinse container no.	K8-mtl-3-~~HNO3~~ BHAR 0.1N HNO3	Liquid level marked/sealed ✓
Impingers 4–5 contents container no.	K8-Mtl-3-~~KMnO4~~ Imp 4-5	Liquid level marked/sealed ✓
✓ KMnO4 blank? container no.	K8-Mtl-Blk KMNO4	Liquid level marked/sealed ✓
HCl rinse container no.	K8-Mtl-3-HCl 8N HCl	Liquid level marked/sealed ✓

Samples stored and locked: ✓

Remarks:

Relinquished by: [signature] — Date: 6-8-92

B-53

HEXAVALENT CHROMIUM EPA 0013 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A.F. Old — Sample Date: 6/2/92

Sample Location: Kiln #8 — Recovery Date: 6/2/92

Purge 1808 – 1838

Run No.	KOH Solution Volume Initial	KOH Solution Volume Final	Increase	pH Measure	Filtered?
8-1-CR6	300	303	3	9.0	yes

Silica Gel weight Initial	Silica Gel weight Final	Silica Gel Increase	Total Moisture	
715.1	758.2	43.1	96.1	Recovered By:

Purge 2018 – 2048

Run No.	KOH Solution Volume Initial	KOH Solution Volume Final	Increase	pH Measure	Filtered?
8-2-CR6	300	312	12	9.0	✓

Silica Gel weight Initial	Silica Gel weight Final	Silica Gel Increase	Total Moisture	
722.9	782.8	59.9	71.9	Recovered By:

Purge 1525 1555

Run No.	KOH Solution Volume Initial	KOH Solution Volume Final	Increase	pH Measure	Filtered?
8-3-CR6	400	458	58	8.5	✓

Silica Gel weight Initial	Silica Gel weight Final	Silica Gel Increase	Total Moisture	
739.3	~~739.3~~ 758.3	19.0	77.0	Recovered By:

Comments:

Relinquished By: W. N. Bumgarner — Date: 6-8-92

PARTICULATE / CHLORIDES EPA 0050 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A.F. Old — Sample Date: 6/2/92

Sample Location: Kiln #8 — Recovery Date: 6/2/92

Run No.: 8-1-PMCL — Recovered by:

Filter Number(s): 197

MOISTURE

Impingers	1 (320)	2	3	4	5	Silica Gel
Final Weight			132	72	X	750.5 g
Initial Weight	100	100	100	100	X	734.1 g
Net Weight		120	32	-28	X	~~15.9~~ g

16.4 gm

Description of impinger water: clear — 20 % spent

Blue — Sil gel color

Total moisture = ~~135.5~~ 139.9 g 140.4 gm

RECOVERED SAMPLE

Filter container number(s): K8-M5-2-PF — Sealed: ✓

Description of particulate on filter: very light weight

Probe rinse container no. K8-M5-1-FHACE		Liquid level marked/sealed ✓
N/A container no.	Acetone blank	Liquid level marked/sealed
H2SO4 Impinger contents container no. K8-M5-1-H2SO4IMP	Imp 1–3	Liquid level marked/sealed ✓
N/A container no.	H2SO4 blank	Liquid level marked/sealed
NaOH Impinger contents container no. K8-M5-1-NAOHIMP	Imp 4–5	Liquid level marked/sealed ✓
N/A container no.	NaOH blank	Liquid level marked/sealed

Samples stored and locked ✓

Remarks

Relinquished by W. D. Brynteson — Date 6-8-92

PARTICULATE / CHLORIDES EPA 0050 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A. F. Old — Sample Date: 6-2-92

Sample Location: No. 8 Kiln Exhaust — Recovery Date: 6/3/92

Run No.: 8-2-PMCL — Recovered by: WBH

Filter Number(s): ~~195~~ 196

MOISTURE

Impingers	1	2	3	4	5	Silica Gel	
Final Weight	211	131	102	99	X	753.0	g
Initial Weight mL	100	100	100	100	X	734.1	g
Net Weight	111	31	2	-1	X	18.9	g

Description of impinger water: Clear — 10 % spent

Blue — Sil gel color

143
18.9
161.9

Total moisture = 161.9 g

RECOVERED SAMPLE

Filter container number(s): K8M5-2-PF — Sealed: ✓

Description of particulate on filter: very light weight

Probe rinse container no.	K8M5 2 FHACE	Liquid level marked/sealed	✓
N/A container no.	Acetone blank	Liquid level marked/sealed	
H2SO4 Impinger contents container no.	Imp 1-3	Liquid level marked/sealed	
N/A container no.	H2SO4 blank K8 M5-2-H2SO4IMP	Liquid level marked/sealed	✓
NaOH Impinger contents container no.	K8-M5-2 NaOH H2SO4 IMP Imp 4-5	Liquid level marked/sealed	✓
container no.	NaOH blank K8-M5-BLK-NaOHIMP	Liquid level marked/sealed	✓

Samples stored and locked: ✓

Remarks:

Relinquished by: W. N. Burgess — Date: 6-8-92

PARTICULATE / CHLORIDES EPA 0050 SAMPLE RECOVERY AND INTEGRITY DATA SHEET

Plant: Solite A.F. Old — Sample Date: 6/3/92

Sample Location: Kiln #4 — Recovery Date: 6/3/92

Run No.: K8-3-PMCL — Recovered by: WSH

Filter Number(s): 195

MOISTURE

Impingers	1	2	3	4	5	Silica Gel	
Final Weight	226	121	96	96		761.6	g
Initial Weight (mL)	100	100	100	100		751.1	g
Net Weight	116	21	-4	-4		10.5	g

Description of impinger water: Clear — 10 % spent

Blue — Sil gel color 116 23.5

Total moisture = 139.5 g

RECOVERED SAMPLE

Filter container number(s): K8-M5-3-PF — Sealed: ✓

Description of particulate on filter: Very light weight

Probe rinse container no. K8M5-3-FHACE	Liquid level marked/sealed	✓
K8M5-BLK-FHACE Acetone blank container no.	Liquid level marked/sealed	✓
H2SO4 Impinger contents container no. K8M53-H2SO4 IMP Imp 1-3	Liquid level marked/sealed	✓
container no. H2SO4 blank K8-M5-BLK-H2SO4 IMP	Liquid level marked/sealed	✓
NaOH Impinger contents container no. K8-M5-3 NaOH IMP Imp 4-5	Liquid level marked/sealed	✓
container no. NaOH blank K8-M5-BLK-NaOH IMP	Liquid level marked/sealed	✓

Samples stored and locked: /

Remarks:

Relinquished by: W.A. Bryant — Date: 6-8-92

RAW FEED SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Raw Feed*

LOCATION: *Arvonia, VA*

DATE: *6-4-92* RUN NO.: 7-RFEED-1

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

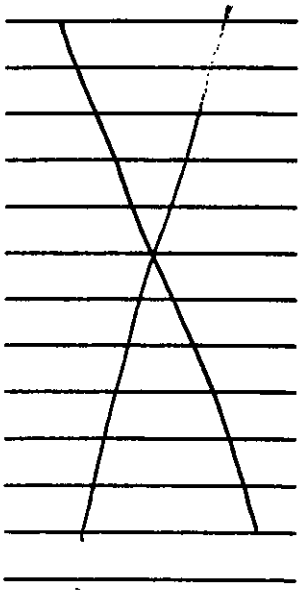
SAMPLER: JWPeters SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the feed belt conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	0920
2	0950
3	1020
4	1048
5	1121
6	1148
7	1220
8	1248
9	
10	
11	
12	

Composite Grab Time



AGGREGATE PRODUCT SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Aggregate Product*

LOCATION: *Arvonia, VA*

DATE: 6-4-92 RUN NO.: 7-PROD-1

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the product pile to place about 100-mL onto the cooling pan. When cool, place sample into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *Record sampling time on field data sheet.*
6. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
7. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	Composite Grab Time
1	0925	
2	0955	
3	1025	
4	1052	
5	1124	
6	1151	
7	1222	
8	1250	
9		
10		
11		
12		

BAGHOUSE DUST SAMPLING DATA SHEET

Metals

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Baghouse Dust*

LOCATION: *Arvonia, VA*

DATE: 6-4-92 RUN NO.: 7-DUST-1

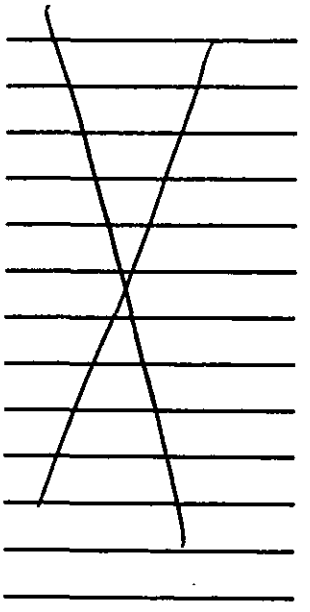
TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

SAMPLER: [illegible] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the dust conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottle from the composite container for metals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	Grab No.	Composite Grab Time
1	1256		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			



single grab from silo

LIQUID WASTE FEED SAMPLING DATA SHEET

Metals, Chlorine, and Physical Parameters

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: LBM

LOCATION: *Arvonia, VA*

DATE: 6-4-92 RUN NO.: 7-2-LBM

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

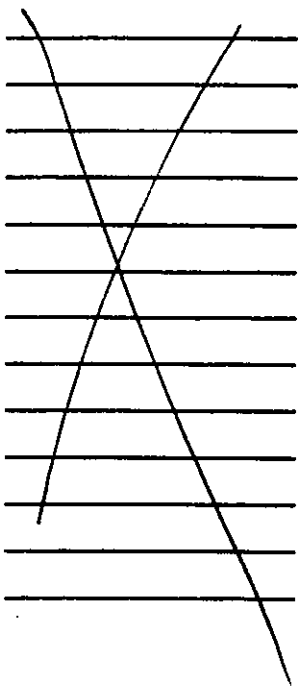
SAMPLER: [illegible] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/physicals sample.

Instructions
1. *Assemble bottles and labels for test run sampling; don protective gear.*
2. *At each 15-minute interval during the test run, collect enough sample from the waste feed tap to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/physicals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	2:15 p.m.
2	2:45 p.m.
3	3:00 P.M
4	3:15 P.M
5	3:45 P.M
6	4:00 P.M
7	4:30 P.M
8	4:45 P.M.
9	5:00 P.M
10	5:15 P.M
11	6:30
12	6:45
	7:00
	7:15
	7:30

Composite Grab Time



B-61

LIQUID WASTE FEED SAMPLING DATA SHEET

Metals, Chlorine, and Physical Parameters

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: LBM ~~Aggregate/Clinker~~

LOCATION: *Arvonia, VA*

DATE: *10-4-92* RUN NO.: 7-1-LBM

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

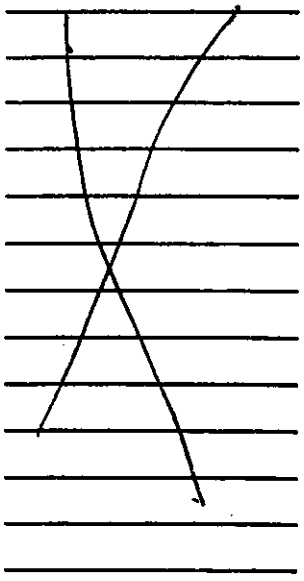
SAMPLER: [redacted] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/physicals sample.

Instructions
1. *Assemble bottles and labels for test run sampling; don protective gear.*
2. *At each 15-minute interval during the test run, collect enough sample from the waste feed tap to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/physicals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	9:20 A.m.
2	9:30 A.m.
3	9:45 A.m.
4	10:00 A.m.
5	10:15 A.m.
6	10:30 A.m.
7	10:45 A.m.
8	11:00 A.m.
9	11:30 A.m.
10	12:00 P.m.
11	12:45 A.m.
12	1:00 A.m.

Composite Grab Time



BAGHOUSE DUST SAMPLING DATA SHEET

Metals

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Baghouse Dust*

LOCATION: *Arvonia, VA*

DATE: 6-4-92 RUN NO.: 7-DUST-2

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the dust conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottle from the composite container for metals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	Composite Grab Time
1		
2	1600	
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

SINGLE GRAB

RAW FEED SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Raw Feed*

LOCATION: *Arvonia, VA*

DATE: 6-4-92 RUN NO.: 7-RFEED-2

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

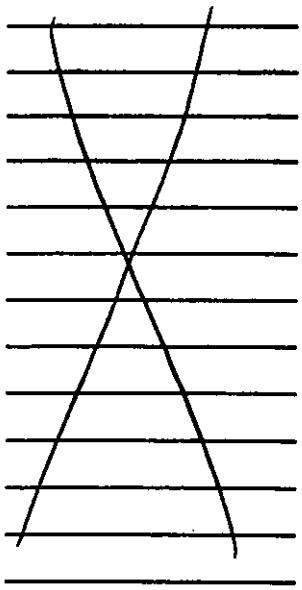
SAMPLER: [illegible] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the feed belt conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	1416
2	1445
3	1516
4	1547
5	1616
6	1646
7	1715
8	1835
9	1905
10	
11	
12	

Composite Grab Time



open space for set-up of MMT rerun #2

AGGREGATE PRODUCT SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Aggregate Product*

LOCATION: *Arvonia, VA*

DATE: 6-4-92 RUN NO.: 7-PROD-2

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

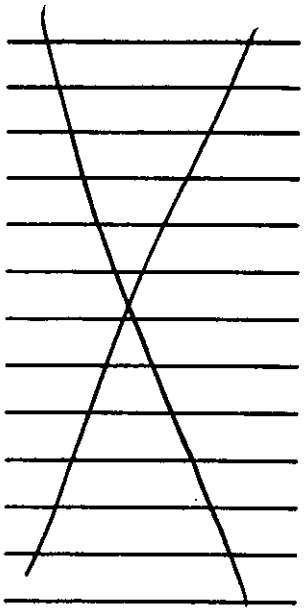
SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the product pile to place about 100-mL onto the cooling pan. When cool, place sample into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *Record sampling time on field data sheet.*
6. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
7. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	1419
2	1447
3	1519
4	1550
5	1619
6	1650
7	1718
8	1840
9	1910
10	
11	
12	

Composite Grab Time



open time for set-up of ~~[illegible]~~ #2 MMT N-run

RAW FEED SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Raw Feed*

LOCATION: *Arvonia, VA*

DATE: 6-4-92 RUN NO.: 7-RFEED-3

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

SAMPLER: JA Roberts SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the feed belt conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	Composite Grab Time
1	1957	
2	2028	
3	2101	
4	2131	
5	2205	
6		
7		
8		
9		
10		
11		
12		

feedds.wk1

AGGREGATE PRODUCT SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Aggregate Product*

LOCATION: *Arvonia, VA*

DATE: 6-4-92 RUN NO.: 7-PROD-3

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the product pile to place about 100-mL onto the cooling pan. When cool, place sample into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *Record sampling time on field data sheet.*
6. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
7. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	Composite Grab Time
1	2000	
2	2031	
3	2104	
4	2134	
5	2210	
6		
7		
8		
9		
10		
11		
12		

LIQUID WASTE FEED SAMPLING DATA SHEET

Metals, Chlorine, and Physical Parameters

LBM

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: ~~Aggregate/Residue~~

LOCATION: *Arvonia, VA*

DATE: 6-4-92 RUN NO.: 7-LBM-3

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

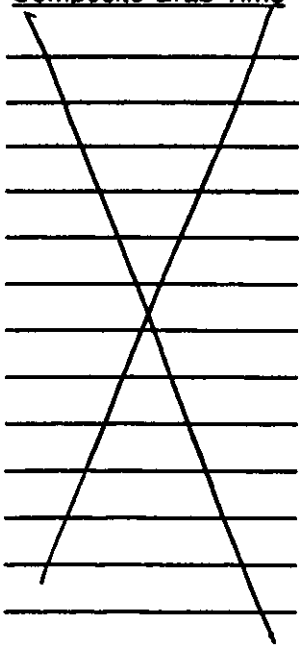
SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/physicals sample.

Instructions
1. *Assemble bottles and labels for test run sampling; don protective gear.*
2. *At each 15-minute interval during the test run, collect enough sample from the waste feed tap to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/physicals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	
1	7:45	X
2	8:00	X
3	8:15	X
4	8:30	X
5	8:45	X
6	9:00	X
7	9:15	X
8	9:30	X
9	9:45	X
10	10:00	X
11	10:15	X
12	10:30	X

Composite Grab Time



BAGHOUSE DUST SAMPLING DATA SHEET

Metals

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Baghouse Dust*

LOCATION: *Arvonia, VA*

DATE: 6-4-92 RUN NO.: 7-DUST-3

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the dust conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottle from the composite container for metals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	Composite Grab Time
1		
2	2215	
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

GRAB ONLY

RAW FEED SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Raw Feed*

LOCATION: *Arvonia, VA*

DATE: 6-2-92 RUN NO.: 8-1-RF

TEST DESCRIPTION: *No. 8 Kiln BIF Compliance Test*

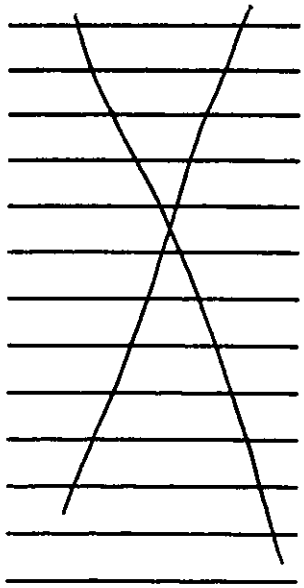
SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the feed belt conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	1620
2	1651
3	1721
4	1752
5	1822
6	1852
7	
8	
9	
10	
11	
12	

Composite Grab Time



AGGREGATE PRODUCT SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Aggregate Product*

LOCATION: *Arvonia, VA*

DATE: 6-2-92 RUN NO.: 8-1-PROD

TEST DESCRIPTION: *No. 8 Kiln BIF Compliance Test*

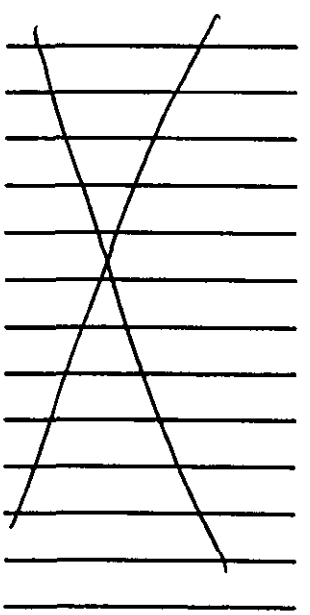
SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the product pile to place about 100-mL onto the cooling pan. When cool, place sample into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *Record sampling time on field data sheet.*
6. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
7. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	1617
2	1648
3	1719
4	1750
5	1820
6	1850
7	
8	
9	
10	
11	
12	

Composite Grab Time



LIQUID WASTE FEED SAMPLING DATA SHEET

Metals, Chlorine, and Physical Parameters

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: LBM ~~Aggregate Product~~

LOCATION: *Arvonia, VA*

DATE: 6-2-92 RUN NO.: 8-1-LBM

TEST DESCRIPTION: *No. 8 Kiln BIF Compliance Test*

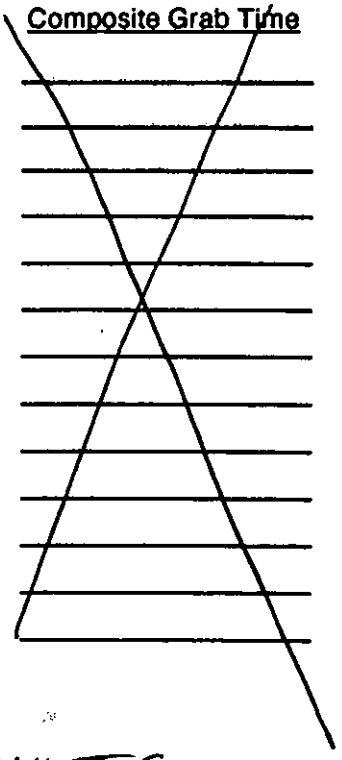
SAMPLER: _____ SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/physicals sample.

Instructions
1. *Assemble bottles and labels for test run sampling; don protective gear.*
2. *At each 15-minute interval during the test run, collect enough sample from the waste feed tap to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/physicals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	4:15
2	4:30
3	4:45
4	5:00
5	5:15
6	5:30
7	5:45
8	6:00
9	6:15
10	6:30
11	6:45
12	

Composite Grab Time



SAMPLE EVERY 15-MINUTES

AGGREGATE PRODUCT SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Aggregate Product*

LOCATION: *Arvonia, VA*

DATE: 6-2-92 RUN NO.: 8-2-PROD

TEST DESCRIPTION: *No. 7 Kiln BIF Compliance Test*

SAMPLER: J. Waters SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the product pile to place about 100-mL onto the cooling pan. When cool, place sample into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *Record sampling time on field data sheet.*
6. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
7. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	Composite Grab Time
1	2045	
2	2116	
3	2147	
4	2219	
5	2246	
6	2319	
7	2345	
8		
9		
10		
11		
12		

RAW FEED SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Raw Feed*

LOCATION: *Arvonia, VA*

DATE: 6-2-92 RUN NO.: 8-2-RFEED

TEST DESCRIPTION: *No. 8 Kiln BIF Compliance Test*

SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the feed belt conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	Composite Grab Time
1	2047	
2	2119	
3	2150	
4	2220	
5	2248	
6	2321	
7	2343	
8		
9		
10		
11		
12		

feedds.wk1

BAGHOUSE DUST SAMPLING DATA SHEET

Metals

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Baghouse Dust*

LOCATION: *Arvonia, VA*

DATE: 6-2-92 RUN NO.: 8-2-BH

TEST DESCRIPTION: *No. 8 Kiln BIF Compliance Test*

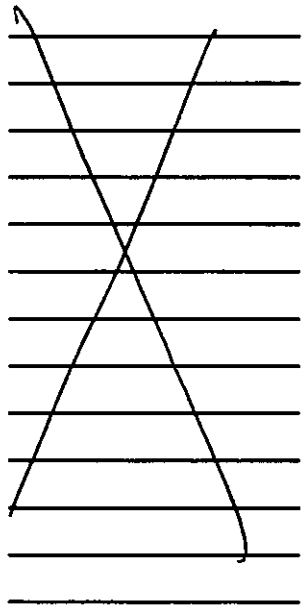
SAMPLER: [illegible] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the dust conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottle from the composite container for metals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	
2	2055
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

Composite Grab Time



LIQUID WASTE FEED SAMPLING DATA SHEET

Metals, Chlorine, and Physical Parameters

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: LBM ~~Aggregate Product~~

LOCATION: *Arvonia, VA*

DATE: 6/2/92 RUN NO.: 8-2-LBM

TEST DESCRIPTION: *No. 8 Kiln BIF Compliance Test*

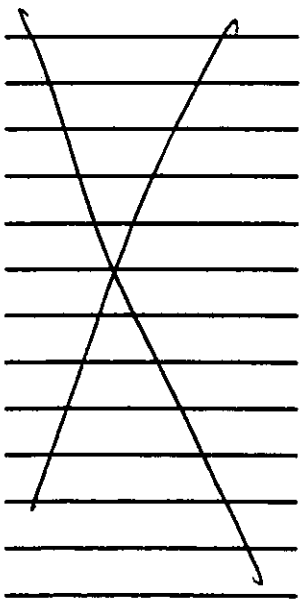
SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/physicals sample.

Instructions
1. *Assemble bottles and labels for test run sampling; don protective gear.*
2. *At each 15-minute interval during the test run, collect enough sample from the waste feed tap to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/physicals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	8:45
2	9:00
3	9:15
4	9:30
5	9:45
6	10:00
7	10:15
8	10:30
9	10:45
10	11:00
11	11:15
12	11:30
	11:45

Composite Grab Time



BAGHOUSE DUST SAMPLING DATA SHEET

Metals

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Baghouse Dust*

LOCATION: *Arvonia, VA*

DATE: 6-2-92 RUN NO.: 8-1-BH

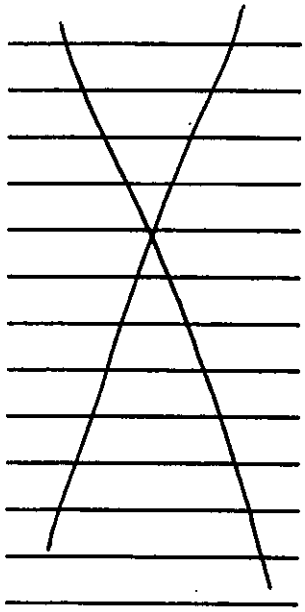
TEST DESCRIPTION: *No. 8 Kiln BIF Compliance Test*

SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the dust conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottle from the composite container for metals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	Grab No.	Composite Grab Time
1		7	
2	2055	8	
3		9	
4		10	
5		11	
6		12	



DM/HCL 1713 port change
Cr+6 1642 " " 1726 end

CLEAN CYCLE @ 1900 hrs
dust moves by vacuum to silo

LIQUID WASTE FEED SAMPLING DATA SHEET

Metals, Chlorine, and Physical Parameters

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: LBM ~~Aggregate Feed~~

LOCATION: *Arvonia, VA*

DATE: 6-3-92 RUN NO.: 8-3-LBM

TEST DESCRIPTION: *No. 8 Kiln BIF Compliance Test*

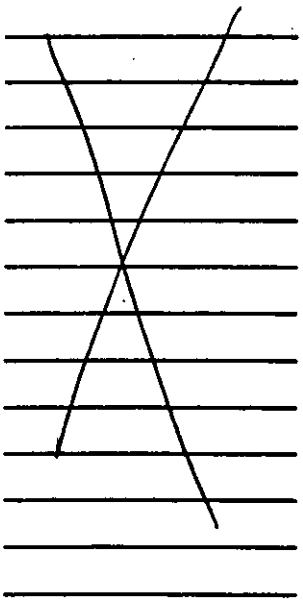
SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/physicals sample.

Instructions
1. *Assemble bottles and labels for test run sampling; don protective gear.*
2. *At each 15-minute interval during the test run, collect enough sample from the waste feed tap to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/physicals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	10:15
2	~~10:30~~
3	10:45
4	11:00
5	11:15
6	11:30
7	11:45
8	~~12:00~~
9	12:15
10	12:30
11	12:45
12	1:00
	1:15
	1:30

Composite Grab Time



AGGREGATE PRODUCT SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Aggregate Product*

LOCATION: *Arvonia, VA*

DATE: 6-3-92 RUN NO.: K8-3-PROD

TEST DESCRIPTION: *No. 8 Kiln BIF Compliance Test*

SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the product pile to place about 100-mL onto the cooling pan. When cool, place sample into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *Record sampling time on field data sheet.*
6. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
7. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	Composite Grab Time
1	1018	
2	1047	
3	1118	
4	1150	
5	1220	
6	1250	
7	1318	
8		
9		
10		
11		
12		

B-79

RAW FEED SAMPLING DATA SHEET

Metals, Chlorine, and Moisture

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Raw Feed*

LOCATION: *Arvonia, VA*

DATE: 6-3-92 RUN NO.: K8-3-RFEED

TEST DESCRIPTION: *No. 8 Kiln BIF Compliance Test*

SAMPLER: [signature] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.
One 500-mL amber glass bottle for chlorine/moisture sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the feed belt conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottles from the composite container for metals and chlorine/moisture. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time	Composite Grab Time
1	1015	
2	1045	
3	1115	
4	1148	
5	1218	
6	1248	
7	1316	
8		
9		
10		
11		
12		

BAGHOUSE DUST SAMPLING DATA SHEET

Metals

FACILITY: *Solite A.F. Old plant* SAMPLE TYPE: *Baghouse Dust*

LOCATION: *Arvonia, VA*

DATE: 6-3-92 RUN NO.: K8-3-DUST

TEST DESCRIPTION: *No. 8 Kiln BIF Compliance Test*

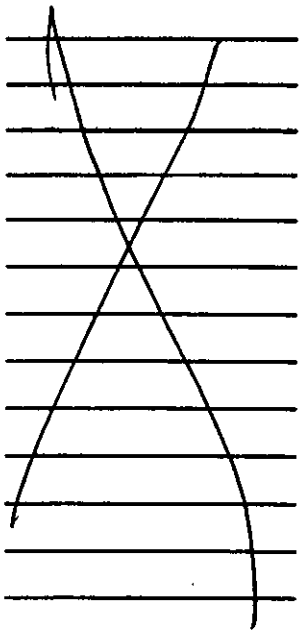
SAMPLER: [illegible] SAMPLE I.D. NO. _____

Equipment: One 32-oz glass wide-mouth bottle for compositing.
One 500-mL amber glass bottle for metals sample.

Instructions
1. *Assemble bottles and labels for test run sampling.*
2. *At each 30-minute interval during the test run, collect enough sample from the dust conveyor to place about 100-mL into the compositing jar.*
3. *Close the sample container after placing sample in bottle.*
4. *Record sampling time on field data sheet.*
5. *At end of test run, fill to 3/4ths the 500-mL sample bottle from the composite container for metals. Affix sample labels to these bottles.*
6. *Deliver the sample containers to the field sample custodian for packaging and shipment.*

Grab No.	Composite Grab Time
1	
2	
3	1200
4	
5	
6	
7	
8	
9	
10	
11	
12	

Composite Grab Time



Baghouse set on dP demand for cleaning cycle
Unable to obtain grabs

Appendix C

Continuous Emission Monitoring Field Data and Recorder Output

CEM CALIBRATION DATA

Plant Name: Solite AF 06
Sampling Location: Kiln 7 — 6/4/92
Project Number: 1391-007 — Rata Runs 1-6 — Rata Runs 7-10 — Rerun Metals #2

	CALIBRATION ERROR			RUN 1 SYSTEM BIAS CHECK				RUN 2 SYSTEM BIAS CHECK				RUN 3 SYSTEM BIAS CHECK			
				Time 8:15		Time 12:35		Time		Time		Time 17:25		Time 19:46	
				PRETEST		POST TEST		PRETEST		POST TEST		PRETEST		POST TEST	
	Cylinder Value	Analyzer Calibration Response	Difference (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)
CO Zero	0	-0.1	0	1.0	0.1	-0.2	-0.12	-0.2	0	-0.2	0	-0.2	0	-0.2	0
CO Low															
CO Mid	297	301	0.4	300	-0.1	298	-0.2	298	-0.3	294	-0.4	298	0	298	0
CO High	598	598	0	598	0										
CO2 Zero	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CO2 Low															
CO2 Mid	10.04	10.1	0.3	10.1	0	10.0	-0.5	10.1	0	10.0	-0.5	10.0	-0.5	10.0	0
CO2 High	10.48	17.0	0	17.0	0										
O2 Zero	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O2 Low															
O2 Mid	12.95	12.8	-0.6	12.8	0	12.8	0	12.8	0	12.8	0	12.8	0	12.8	0
O2 High	21.0	21.0	0	21.0	0										
THC Zero	0			0	0	0.5	0.5	0	0	0.3	0.3	0	0	-0.3	-0.3
THC Low	30.1			30.9	0.8			30.3	0.2	30.6	0.3	30.1	0	29.0	-0.9
THC Mid	50.5			52.1	1.6	53.2	1.1								
THC High	88.5			88.5	0										
NOx Zero															
NOx Low															
NOx Mid															
NOx High															
SO2 Zero															
SO2 Low															
SO2 Mid															
SO2 High															

Span Value	
CO	1000
CO2	20
O2	25
THC	100
NOx	
SO2	

Calibration Correction Factors

	Run 1		Run 2		Run 3	
	Co	Cm	Co	Cm	Co	Cm
CO	0.4	299	-0.2	296	-0.2	298
CO2	0	10.05	0	10.0	0	10.0
O2	0	53.7	0	30.45	0	29.55
THC						
NOx						
SO2						

CEM CALIBRATION DATA

Plant Name: AP Old
Sampling Location: Kiln 7
Project Number: 1381-003

	CALIBRATION ERROR			RUN 1 SYSTEM BIAS CHECK				RUN 2 SYSTEM BIAS CHECK				RUN 3 SYSTEM BIAS CHECK			
				Time 19:46		Time		Time		Time		Time		Time	
				PRETEST		POST TEST		PRETEST		POST TEST		PRETEST		POST TEST	
	Cylinder Value	Analyzer Calibration Response	Difference (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)
CO Zero	0			-0.2	-0.02	-0.2	0								
CO Low															
CO Mid	297			298	0.1	297	-0.1								
CO High	598														
CO2 Zero	0			0	0	0	0								
CO2 Low															
CO2 Mid	10.04			10.0	0	10.0	0								
CO2 High	16.98														
O2 Zero	0			0	0	0	0								
O2 Low															
O2 Mid	12.75			12.8		12.7	-0.4								
O2 High	21.0														
THC Zero	0			0	0	2.6	2.6								
THC Low	30.1			30.1	0	31.3	1.2								
THC Mid	50.5														
THC High	98.7														
NOx Zero															
NOx Low															
NOx Mid															
NOx High															
SO2 Zero															
SO2 Low															
SO2 Mid															
SO2 High															

Span Value	
CO	1000
CO2	20%
O2	25%
THC	100
NOx	
SO2	

Calibration Correction Factors

	Run 1		Run 2		Run 3	
	Co	Cm	Co	Cm	Co	Cm
CO	-0.2	297.5				
CO2	0	10.0				
O2	0	12.75				
THC	1.3	30.7				
NOx						
SO2						

C-2

CEM CALIBRATION DATA

Plant Name AF Old 6/2/92
Sampling Location Kiln B
Project Number 1391-003 GBB

	CALIBRATION ERROR			RUN 1 SYSTEM BIAS CHECK				RUN 2 SYSTEM BIAS CHECK				RUN 3 SYSTEM BIAS CHECK			
				Time 14:15		Time 19:08		Time		Time		Time		Time	
				PRETEST		POST TEST		PRETEST		POST TEST		PRETEST		POST TEST	
	Cylinder Value	Analyzer Calibration Response	Difference (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)
CO Zero	0	-0.2	0	-0.2	0	-0.2	0	-0.3	0	-0.1	0				
CO Low															
CO Mid	297	297	0	296	-0.1	297	0.1	297	0	296	-0.1				
CO High	598	599	0.1	595	-0.4										
CO2 Zero	0	0	0	0	0	0	0	0	0	0	0				
CO2 Low															
CO2 Mid	10.04	10.1	0.3	10.1	0	10.1	0	10.1	0	10.1	0				
CO2 High	16.98	17.0	0	17.0	0										
O2 Zero	0	0	0	0	0	0	0	0	0	0	0				
O2 Low															
O2 Mid	12.99	13.1	0.4	13.1	0	13.0	-0.4	13.0	-0.4	13.0	0				
O2 High	21.0														
THC Zero	0	0	0	0.4	0.4	-0.4	-0.8	0.3	0.3	1.3	1.0				
THC Low	301	299		30.5	0.4										
THC Mid	40.5			50.7	0.2	47.9	-2.8	52.3	1.8	50.8	-1.5				
THC High	99.5			86.2	-2.3										
NOx Zero															
NOx Low															
NOx Mid															
NOx High															
SO2 Zero															
SO2 Low															
SO2 Mid															
SO2 High															

Span Value	
CO	1000 ppm
CO2	20%
O2	25%
THC	100 ppm
NOx	
SO2	

Calibration Correction Factors

	Run 1		Run 2		Run 3	
	Co	Cm	Co	Cm	Co	Cm
CO	-0.2	296.5	-0.15	296.5		
CO2	0	10.1	0	10.1		
O2	0	13.05	0	13.0		
THC	0	49.3	0.8	51.6		
NOx						
SO2						

CEM CALIBRATION DATA

Plant Name: Solite AF Old
Sampling Location: Kiln 8 6B/82 6BB
Project Number: 1781-003 Rata Run 1-6 Rata Run, 7-10

	CALIBRATION ERROR			RUN 1 SYSTEM BIAS CHECK				RUN 2 SYSTEM BIAS CHECK				RUN 3 SYSTEM BIAS CHECK			
				Time 9:00		Time 13:30		Time 14:30		Time 17:00		Time		Time	
				PRETEST		POST TEST		PRETEST		POST TEST		PRETEST		POST TEST	
	Cylinder Value	Analyzer Calibration Response	Difference (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)	System Response	System Bias (% of Span)	System Response	Drift (% of Span)
CO Zero	0	-0.1	0	-0.1	0	-0.2	0	-0.2	0	-0.3	0				
CO Low															
CO Mid	297	296	-0.1	296	0	298	0.2	298	0.2	301	0.3				
CO High	598	599	0.1	598	-0.1										
CO2 Zero	0	0	0	0	0	0	0	0	0	0	0				
CO2 Low															
CO2 Mid	10.04	10.1	0.3	10.1	0	10.1	0	10.1	0	10.1	0				
CO2 High	16.98	17.0	0												
O2 Zero	0	0	0	0	0	0	0	0	0	0	0				
O2 Low															
O2 Mid	12.95	12.8	-1.2	12.9	0.4	12.8	-0.4	12.8	0	12.8	0				
O2 High	21	21.0	0												
THC Zero	0			0.1	0.1	0.9	0.8								
THC Low	30.1			31.2	1.1	32.6	1.4								
THC Mid	90.5			52.2	1.7										
THC High	88.5			98.6	0.1										
NOx Zero															
NOx Low															
NOx Mid															
NOx High															
SO2 Zero															
SO2 Low															
SO2 Mid															
SO2 High															

Span Value	
CO	1000
CO2	20%
O2	25%
THC	100
NOx	
SO2	

Calibration Correction Factors

	Run 1		Run 2		Run 3	
	Co	Cm	Co	Cm	Co	Cm
CO	-0.15	297	-0.25	299.5		
CO2	0	10.1	0	10.1		
O2	0	12.85	0	12.8		
THC	0.5	31.9				
NOx						
SO2						

Kiln 7	Run 1	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
09:22	15.2	4	5	1.1	12.2	2.7		
09:23	15.2	4	4.5	1.1	11	2.7		
09:24	15.5	3.8	4.5	1.1	11.5	2.8		
09:25	14.8	4.3	5.1	1	11.6	2.4		
09:26	15.0	4.2	4.8	1.1	11.4	2.5		
09:27	15.1	4.1	5.8	1.1	14.1	2.6		
09:28	15.1	4.1	4.5	1.1	10.8	2.6		
09:29	15.0	4.1	3.9	1.1	9.2	2.6		
09:30	15.1	4.1	3.9	1.1	9.4	2.7		
09:31	15.1	4.1	4.6	1.2	11.1	2.8		
09:32	15.0	4.2	5	1.2	11.8	2.7		
09:33	15.0	4.1	4.5	1.2	10.7	2.7		
09:34	15.1	4.1	4.6	1.2	11.1	2.8		
09:35	15.0	4.2	4.6	1.2	10.8	2.8		
09:36	15.0	4.1	5	1.2	11.8	2.8		
09:37	15.2	4	5	1.2	12.1	2.9		
09:38	15.1	4	4.7	1.2	11.3	2.9		
09:39	15.2	4	3.9	1.2	9.5	2.9		
09:40	15.2	4	4.1	1.2	9.9	2.9		
09:41	15.2	4	5	1.2	12.2	2.9		
09:42	15.0	4.1	5	1.2	11.9	2.9		
09:43	15.1	4.1	5	1.2	11.9	2.9		
09:44	15.0	4.1	5	1.2	11.8	2.8		
09:45	15.1	4.1	5	1.2	11.9	2.9		
09:46	15.0	4.1	4.3	1.2	10.2	2.9		
09:47	15.1	4.1	5	1.2	12	2.9		
09:48	15.2	4	4.5	1.2	10.8	2.9		
09:49	15.1	4.1	4.1	1.2	9.8	2.9		
09:50	15.0	4.1	3.9	1.2	9.2	2.8		
09:51	15.0	4.2	3.9	1.2	9.2	2.8		
09:54	15.0	4.2	3.9	1.3	9.1	3		
09:55	15.0	4.1	3.5	1.3	8.3	3.1		
09:56	15.0	4.1	2.9	1.3	6.9	3.1		
09:57	14.9	4.3	3.3	1.3	7.6	3		
09:58	15.0	4.2	3.8	1.3	8.9	3		
09:59	14.9	4.2	3.8	1.3	8.9	3		
10:00	15.0	4.2	4.2	1.3	9.8	3		
10:01	14.9	4.2	4	1.3	9.2	3		
10:02	14.9	4.2	3.9	1.3	9	3		

Kiln 7	Run 1	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
10:03	14.9	4.2	3.9	1.3	9	3		
10:04	15.0	4.1	3.9	1.3	9.2	3.1		
10:05	15.2	3.9	4.4	1.3	10.7	3.2		
10:06	15.5	3.7	4.4	1.3	11.2	3.3		
10:07	15.3	3.9	4.9	1.3	12.1	3.2		
10:08	15.1	4	4.4	1.3	10.5	3.1		
10:09	15.4	3.8	3.9	1.3	9.8	3.3		
10:10	15.2	4	4.7	1.3	11.6	3.1		
10:11	14.8	4.3	4.5	1.3	10.4	3		
10:12	14.5	4.7	8.1	1.3	16.9	2.9		
10:13	13.7	5.4	51.8	1.6	98.8	3.1		
10:14	13.5	5.6	107.8	5.2	201.4	9.8		
10:15	13.1	5.8	463.4	4.8	832.5	8.6		
10:16	13.6	5.5	168.5	2.1	320.5	4		
10:17	13.5	5.6	111.8	2.4	208.6	4.5		
10:18	13.7	5.4	111	1.9	213.4	3.6		
10:19	13.8	5.3	34.8	1.8	67.8	3.4		
10:20	13.5	5.5	36.4	1.7	68.8	3.2		
10:21	14.1	5	15.3	1.7	31.2	3.6		
10:22	14.0	5.1	30.3	1.7	61.2	3.4		
10:23	14.0	5.1	10.7	1.6	21.7	3.2	44.1	3.2
10:25	14.6	4.5	7	1.5	15.5	3.4	44.2	3.2
10:26	14.6	4.5	5.6	1.5	12.4	3.3	44.2	3.2
10:27	14.8	4.3	4.1	1.6	9.4	3.6	44.2	3.2
10:28	15.0	4.1	3.9	1.6	9.2	3.8	44.1	3.3
10:29	15.3	3.9	4.1	1.6	10	3.9	44.1	3.3
10:30	15.4	3.8	5	1.6	12.6	4	44.1	3.3
10:31	15.1	4	5	1.6	12	3.8	44.1	3.3
10:32	15.3	3.9	5	1.6	12.4	4	44.1	3.4
10:33	15.8	3.4	5	1.6	13.6	4.4	44.2	3.4
10:34	15.8	3.4	4.1	1.6	11.2	4.4	44.2	3.4
10:35	15.5	3.7	3.9	1.6	10	4	44.2	3.4
10:36	15.1	4.1	3.9	1.5	9.3	3.6	44.2	3.4
10:37	14.8	4.3	4.2	1.5	9.7	3.4	44.1	3.5
10:38	14.6	4.6	4.1	1.5	9	3.3	44.1	3.5
10:39	14.6	4.5	5	1.5	11	3.3	44.1	3.5
10:40	14.4	4.7	10.4	1.5	22.5	3.2	44.3	3.5
10:41	14.6	4.4	11.6	1.5	25.8	3.3	44.5	3.5
10:42	15.1	4	5.9	1.6	14.3	3.9	44.6	3.5

Kiln 7	Run 1	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
10:43	14.6	4.5	33.6	1.7	75.2	3.7	45.7	3.5
10:44	14.9	4.2	17.8	1.6	41.6	3.8	46.2	3.5
10:45	15.1	4.1	4.4	1.6	10.6	3.9	46.2	3.5
10:46	15.2	4	3.9	1.6	9.4	3.9	46.1	3.6
10:47	14.8	4.4	6.8	1.6	15.2	3.7	46.2	3.6
10:48	14.8	4.3	10.2	1.7	23.1	3.8	46.4	3.6
10:49	14.8	4.3	4.9	1.7	11.2	3.8	46.4	3.6
10:50	15.0	4.2	4.4	1.7	10.4	4	46.3	3.6
10:51	15.0	4.1	3.9	1.7	9.2	4	46.3	3.6
10:52	15.0	4.1	4.2	1.6	10.1	3.8	46.3	3.7
10:53	15.2	3.9	3.9	1.6	9.6	3.9	46.3	3.7
10:54	15.3	3.9	3.9	1.6	9.6	3.9	46.3	3.7
10:55	15.3	3.9	3	1.6	7.4	4	46.3	3.7
10:56	15.3	3.9	3.8	1.6	9.4	4	46.3	3.7
10:57	15.3	3.9	4.8	1.7	12	4.1	46.4	3.7
10:58	15.3	3.9	4.9	1.7	12.1	4.2	46.5	3.8
10:59	15.4	3.8	4.9	1.7	12.4	4.3	46.5	3.8
11:00	15.2	4	5	1.7	12.1	4.1	46.6	3.8
11:01	15.2	4	5.9	1.7	14.4	4.1	46.7	3.8
11:02	15.0	4.1	5.1	1.7	11.9	4	46.7	3.8
11:03	15.2	4	3.9	1.7	9.5	4.1	46.7	3.9
11:04	15.1	4	3.9	1.7	9.4	4.1	46.7	3.9
11:05	14.9	4.2	4.2	1.8	9.7	4.1	46.7	3.9
11:06	14.9	4.2	5.9	1.7	13.6	4	46.8	3.9
11:07	15.1	4.1	8.5	1.7	20.4	4.1	46.9	3.9
11:08	14.9	4.2	4.6	1.7	10.6	4	46.9	3.9
11:09	15.1	4.1	3.5	1.7	8.3	4.1	46.9	3.9
11:10	15.1	4.1	3.8	1.7	9.2	4.1	46.9	4.0
11:11	14.8	4.3	3.9	1.7	8.9	3.9	46.8	4.0
11:12	15.0	4.2	3.9	1.7	9.2	4	46.8	4.0
11:13	14.7	4.4	3.9	1.7	8.7	3.8	46.7	4.0
11:14	14.9	4.2	3.4	1.7	7.9	4	45.2	4.0
11:15	15.0	4.1	3.9	1.7	9.2	4	42.0	3.9
11:16	14.7	4.3	7.1	1.7	16.1	3.9	28.3	3.8
11:17	14.9	4.2	5.8	1.7	13.5	4.1	23.2	3.8
11:18	15.1	4	5.7	1.8	13.9	4.2	20.0	3.8
11:19	15.2	4	4.9	1.8	12	4.3	16.6	3.9
11:20	14.9	4.3	4.1	1.7	9.5	4	15.7	3.9

Kiln 7	Run 1	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
11:21	14.9	4.2	4.2	1.7	9.7	4	14.7	3.9
11:22	15.0	4.1	4.5	1.8	10.6	4.2	14.3	3.9
11:23	15.2	4	3.9	1.8	9.5	4.4	13.5	3.9
11:24	15.1	4.1	3.9	1.8	9.4	4.3	13.3	3.9
11:26	15.1	4.1	2.9	1.8	7.1	4.3	13.1	3.9
11:27	15.1	4	4.2	1.8	10.2	4.4	13.1	4.0
11:28	15.3	3.9	3.9	1.8	9.8	4.5	13.1	4.0
11:29	15.2	4	3.9	1.8	9.5	4.4	13.1	4.0
11:30	15.1	4.1	3.9	1.8	9.4	4.2	13.1	4.0
11:31	15.1	4.1	3.7	1.7	8.9	4.2	13.0	4.0
11:32	14.9	4.2	3.9	1.7	9.1	4	13.0	4.0
11:33	15.1	4.0	3.2	1.8	7.7	4.2	12.9	4.0
11:34	15	4.1	3.5	1.8	8.4	4.3	12.8	4.0
11:35	14.9	4.2	4.1	1.8	9.5	4.2	12.8	4.0
11:36	14.9	4.3	3.4	1.8	7.8	4.2	12.7	4.0
11:37	15.0	4.1	2.9	1.8	6.8	4.3	12.7	4.0
11:38	15.1	4.1	3.7	1.8	9	4.4	12.7	4.0
11:39	14.9	4.3	3.9	1.9	9	4.5	12.7	4.0
11:40	14.9	4.2	3.9	1.9	9.1	4.5	12.7	4.1
11:41	14.9	4.2	3.9	1.9	9.1	4.4	12.4	4.1
11:42	15.1	4.1	3.9	1.9	9.3	4.5	12.2	4.1
11:43	15.1	4.1	3.9	1.9	9.3	4.5	12.1	4.1
11:44	14.8	4.4	3.9	1.8	8.9	4.2	11.0	4.1
11:45	14.6	4.5	3.2	1.8	7.1	4.1	10.4	4.1
11:46	15.0	4.2	3.7	1.9	8.6	4.4	10.4	4.1
11:47	15.0	4.2	3.6	1.9	8.3	4.5	10.3	4.1
11:48	15.0	4.2	3.9	1.9	9.2	4.5	10.2	4.2
11:49	15.2	4	4.1	1.9	9.8	4.6	10.0	4.2
11:50	15.2	4	3.9	1.9	9.5	4.6	10.0	4.2
11:51	15.1	4.1	3.7	1.9	8.9	4.5	10.0	4.2
11:52	14.8	4.3	3.7	1.9	8.5	4.4	10.0	4.2
11:53	14.9	4.2	4.9	1.9	11.4	4.4	10.0	4.2
11:54	15.2	4	4.9	1.8	12	4.5	10.0	4.2
11:55	15.3	3.9	4.4	1.8	10.9	4.5	10.0	4.2
11:56	15.1	4.1	3.9	1.8	9.3	4.3	10.1	4.2
11:57	15.0	4.2	4.5	1.8	10.6	4.3	10.1	4.2
11:58	15.2	4	5.3	1.8	12.9	4.4	10.1	4.2
11:59	14.9	4.2	3.9	1.8	9	4.1	10.1	4.2
12:00	14.8	4.3	3.9	1.8	8.9	4	10.0	4.2

Kiln 7	Run 1	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
12:01	15.0	4.1	3.9	1.7	9.2	4	10.0	4.2
12:02	15.1	4.1	4.2	1.7	9.9	4.1	9.9	4.2
12:03	15.1	4.1	4.7	1.7	11.2	4.2	9.9	4.2
12:04	15.2	4	4.6	1.8	11.1	4.3	9.9	4.2
12:05	15.2	4	3.7	1.8	9	4.4	9.9	4.2
12:06	15.0	4.1	3.9	1.8	9.3	4.4	9.9	4.3
12:07	15.2	4	4.3	1.8	10.5	4.5	9.8	4.3
12:08	15.2	4	2.9	1.9	7.1	4.6	9.6	4.3
12:09	15.1	4.1	2.9	1.9	7	4.6	9.5	4.3
12:10	15.4	3.8	2.9	1.9	7.4	4.8	9.5	4.3
12:11	15.3	3.9	2.9	1.9	7.2	4.7	9.5	4.3
12:12	15.5	3.8	2.9	1.9	7.4	4.8	9.5	4.3
12:13	15.3	3.9	2.9	1.5	7.3	3.8	9.4	4.3
12:14	15.3	3.9	2.9	1.1	7.2	2.7	9.4	4.3
12:15	15.3	3.9	2.9	1.1	7.2	2.7	9.4	4.3
12:16	15.4	3.8	2.9	1.3	7.3	3.3	9.4	4.3
12:17	15.2	4	3.3	1.1	8	2.8	9.2	4.2
12:18	15.1	4.1	3.9	0.9	9.3	2.2	9.2	4.2
12:19	14.8	4.4	4.3	1	9.7	2.2	9.1	4.2
12:20	15.1	4.1	5	0.9	12.2	2.2	9.1	4.1
12:21	15.0	4.1	3.9	0.9	9.2	2.1	9.1	4.1
12:22	15.0	4.2	4.2	1	9.8	2.3	9.1	4.1
12:23	15.1	4.1	4	1	9.5	2.4	9.1	4.1
12:24	15.0	4.2	4.3	1.3	10.1	3.1	9.1	4.0
12:25	15.0	4.2	5.5	1.7	12.9	3.9	9.1	4.0
Part. Run	14.9	4.2						
Hex Run	15.1	4.1						
Metals Run	15.1	4.1						
Run Total	15.0	4.2	10.7	1.6	22.2	3.7	26.2	3.9

iln 7	Run 2	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
14:16	14.9	4.2	5.9	1.2	13.6	2.8		
14:17	14.8	4.3	5.2	1.2	11.8	2.7		
14:18	14.6	4.5	5.7	1.2	12.6	2.7		
14:19	14.2	4.8	7.6	1.2	15.9	2.5		
14:20	14.7	4.4	6.1	1.2	13.8	2.6		
14:21	15.2	4	5.8	1.2	14.3	2.9		
14:22	14.9	4.2	5.6	1.2	13	2.8		
14:23	14.9	4.3	6.3	1.2	14.5	2.8		
14:24	15.1	4.0	6.0	1.2	14.4	2.9		
14:25	14.9	4.2	5.1	1.2	12	2.8		
14:26	15.0	4.3	7.2	1.3	16.3	3.1		
14:27	14.3	4.7	40.9	1.3	86.6	2.7		
14:28	15.0	4.2	12.3	1.3	28.5	3		
14:29	14.7	4.4	11	1.3	24.8	2.9		
14:30	14.8	4.3	14.1	1.2	32.1	2.8		
14:31	14.9	4.2	6.7	1.3	15.8	2.9		
14:32	15.0	4.1	5.5	1.3	12.9	3		
14:33	14.8	4.3	5.9	1.2	13.5	2.9		
14:34	14.9	4.2	4.1	1.3	9.7	3		
14:35	14.6	4.5	4.6	1.3	10.1	2.8		
14:36	14.7	4.4	4.3	1.2	9.6	2.8		
14:37	15.1	4.1	5	0.8	11.9	2		
14:38	15.0	4.2	4.1	1.1	9.7	2.6		
14:39	15.0	4.1	13.8	1	32.4	2.3		
14:40	15.0	4.2	5.6	1.1	13.2	2.6		
14:41	15.0	4.2	5.5	0.7	12.9	1.6		
14:42	14.8	4.3	3.9	0.8	8.9	1.9		
14:43	15.1	4.1	4.5	1.3	10.8	3		
14:44	14.8	4.3	5.2	1.3	11.9	3		
14:45	15.2	4	11.1	1.4	27.4	3.4		
14:46	14.9	4.2	11.4	1.3	26.6	3.1		
14:47	15.1	4	8.4	1.4	20.4	3.4		
14:48	14.9	4.3	14.8	1.5	33.4	3.5		
14:49	14.8	4.3	32.4	1.4	73.5	3.2		
14:50	14.9	4.2	8.7	1.4	20.2	3.3		
14:51	15.2	4	9.4	1.4	22.9	3.4		
14:52	15.1	4.1	10.4	1.4	24.5	3.4		
14:53	14.8	4.3	4	1.4	9.2	3.2		
14:54	14.9	4.2	3.8	1.4	8.9	3.3		
14:55	14.7	4.4	5.2	1.4	11.7	3.2		

Kiln 7	Run 2	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
14:56	14.8	4.3	4.8	1.4	11.1	3.2		
14:57	15	4.2	3.8	1.4	9	3.3		
14:58	15.1	4.1	3.8	1.4	9	3.3		
14:59	14.8	4.2	3.8	1.5	8.7	3.4		
15:00	14.9	4.2	3.8	1.4	8.9	3.3		
15:01	15	4.2	3.8	1.4	8.9	3.4		
15:02	14.9	4.2	3.8	1.5	8.9	3.5		
15:03	14.9	4.2	3.8	1.5	8.8	3.5		
15:04	14.6	4.4	5.2	1.5	11.6	3.3		
15:05	14.8	4.4	4.4	1.5	10	3.5		
15:06	14.7	4.4	10.2	1.6	23	3.6		
15:07	14.9	4.2	5.2	1.6	12.1	3.6		
15:08	14.7	4.4	5.2	1.5	11.7	3.4		
15:09	14.8	4.3	6	1.5	13.8	3.5		
15:10	14.5	4.5	5.9	1.5	12.8	3.3		
15:11	14.7	4.4	5.1	1.5	11.5	3.5		
15:12	14.8	4.3	4.2	1.9	9.5	4.4		
15:13	14.7	4.4	3.6	1.8	8.2	4		
15:14	14.7	4.4	3.1	1.7	7	3.8		
15:15	14.8	4.3	3.8	1.7	8.7	3.9	16.7	3.1
15:16	14.9	4.2	11.9	1.7	27.7	3.9	16.9	3.1
15:17	14.5	4.5	8.3	1.7	18.2	3.7	17.0	3.1
15:18	14.9	4.3	4	1.7	9.3	3.9	16.9	3.1
15:19	14.9	4.2	3.8	1.7	8.7	3.9	16.8	3.2
15:20	14.4	4.7	6.8	1.7	14.4	3.6	16.8	3.2
15:21	14.6	4.5	7.3	1.7	15.9	3.7	16.9	3.2
15:22	14.9	4.3	4	1.8	9.2	4.2	16.8	3.2
15:23	14.5	4.5	53	1.8	118.4	4	18.5	3.2
15:24	14.5	4.6	18.2	1.7	39.7	3.7	19.0	3.3
15:25	14.7	4.5	7.7	1.7	17.5	3.8	19.0	3.3
15:26	14.9	4.2	5.4	1.7	12.6	4	19.0	3.3
15:27	14.6	4.5	4.9	1.7	10.8	3.7	17.7	3.3
15:28	14.6	4.5	3.9	1.7	8.7	3.8	17.4	3.3
15:29	14.5	4.6	4.9	1.7	10.7	3.7	17.2	3.3
15:30	14.5	4.5	5.1	1.7	11	3.7	16.8	3.3
15:31	14.6	4.5	3.9	1.7	8.7	3.8	16.7	3.4
15:32	14.6	4.5	3.8	1.7	8.4	3.7	16.6	3.4
15:33	14.6	4.5	3.8	1.6	8.4	3.6	16.5	3.4
15:34	14.7	4.4	5.2	1.6	11.7	3.7	16.6	3.4

'ln 7 Run 2 06/04/92 Corrected to 7% O2Rolling 1-hour Average

Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
15:35	14.7	4.3	3.8	1.6	8.6	3.7	16.5	3.4
15:36	14.7	4.4	4.4	1.6	9.7	3.6	16.5	3.4
15:37	14.8	4.3	3.8	1.6	8.7	3.7	16.5	3.5
15:38	14.7	4.4	3.8	1.6	8.7	3.7	16.5	3.5
15:39	14.6	4.5	5.9	1.7	13.1	3.7	16.1	3.5
15:40	14.7	4.4	7.1	1.6	15.9	3.7	16.2	3.5
15:41	14.9	4.2	3.9	1.7	9.1	3.9	16.1	3.6
15:42	14.9	4.2	3.8	1.7	8.9	3.9	16.1	3.6
15:43	14.8	4.3	4.9	1.7	11.1	3.8	16.1	3.6
15:44	14.7	4.4	5.3	1.7	11.8	3.7	16.1	3.6
15:45	14.7	4.4	6.1	1.6	13.7	3.7	15.9	3.6
15:47	14.6	4.4	6.8	1.7	15.1	3.7	15.7	3.6
15:48	14.6	4.5	6.8	1.7	14.9	3.7	15.6	3.6
15:49	14.5	4.6	8.5	1.7	18.6	3.7	15.4	3.6
15:50	14.4	4.6	10.1	1.7	22	3.7	14.5	3.6
15:51	14.8	4.3	8.4	1.7	19.1	3.9	14.5	3.7
15:52	14.8	4.3	4.9	1.7	11.2	3.8	14.3	3.7
15:53	14.4	4.6	9.4	1.7	20.4	3.8	14.2	3.7
15:54	14.4	4.7	16.4	1.8	35.2	3.8	14.7	3.7
15:55	14.6	4.5	16.5	1.7	36.4	3.8	15.1	3.7
15:56	14.6	4.4	4.8	1.7	10.6	3.8	15.1	3.7
15:57	14.6	4.4	3.9	1.8	8.7	3.9	15.1	3.7
15:58	14.7	4.4	4.9	1.8	11	4	15.1	3.7
15:59	14.4	4.6	7.1	1.8	15.2	3.9	15.2	3.7
16:00	14.6	4.4	8.4	1.8	18.9	4	15.4	3.7
16:01	14.8	4.3	4.9	1.9	11.1	4.2	15.4	3.8
16:02	14.8	4.3	4.2	1.9	9.7	4.2	15.4	3.8
16:03	14.6	4.4	3.8	1.8	8.5	4.1	15.4	3.8
16:04	14.4	4.6	8.2	1.8	17.7	4	15.6	3.8
16:05	14.5	4.6	7.6	1.8	16.7	4	15.6	3.8
16:06	14.8	4.3	6.5	1.8	14.8	4.2	15.7	3.8
16:07	14.5	4.5	6.2	1.9	13.5	4.1	15.6	3.8
16:08	14.6	4.5	7.5	1.9	16.6	4.1	15.6	3.8
16:09	14.4	4.6	12	1.9	25.9	4	15.9	3.8
16:10	14.8	4.3	10.1	1.9	22.9	4.2	16.0	3.8
16:11	14.9	4.1	6.9	1.9	16.1	4.4	16.1	3.9
16:12	14.7	4.4	6.3	1.9	14.2	4.3	16.1	3.9
16:13	14.8	4.3	6.4	1.9	14.6	4.3	16.2	3.9
16:14	14.7	4.3	5.6	1.9	12.5	4.3	16.3	3.9

Kiln 7	Run 2	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
16:15	14.7	4.3	5.9	1.9	13.3	4.3	16.4	3.9
16:16	14.8	4.3	5.9	1.9	13.4	4.3	16.5	3.9
16:17	14.7	4.4	6.6	1.9	14.8	4.2	16.3	3.9
16:18	14.6	4.4	6.9	1.9	15.3	4.3	16.2	3.9
16:19	14.7	4.3	11.7	2	26.6	4.5	16.5	3.9
16:20	14.8	4.3	7.9	2	18	4.4	16.6	3.9
16:21	14.7	4.4	6.9	1.9	15.5	4.4	16.7	3.9
16:22	14.8	4.3	6.8	1.9	15.4	4.4	16.7	4.0
16:23	14.5	4.5	6.8	2	14.8	4.2	16.8	4.0
16:24	14.6	4.5	6.5	2	14.2	4.3	15.0	4.0
16:25	14.7	4.4	6.8	2	15.4	4.4	14.6	4.0
16:26	14.6	4.5	7.1	1.9	15.6	4.3	14.6	4.0
16:27	14.6	4.5	6.2	2	13.8	4.3	14.6	4.0
16:28	14.9	4.2	6.8	1.9	15.7	4.5	14.7	4.0
16:29	14.6	4.5	5.9	1.8	13	4.1	14.8	4.0
16:30	14.7	4.3	5.4	1.8	12.2	4	14.8	4.0
16:31	14.5	4.6	7.3	1.7	15.8	3.7	14.9	4.0
16:32	14.6	4.5	7.6	1.7	16.9	3.8	15.0	4.0
16:33	14.7	4.3	10	1.7	22.8	3.9	15.2	4.0
16:34	14.4	4.6	5.9	1.7	12.7	3.7	15.3	4.0
16:35	14.6	4.4	5	1.7	11	3.7	15.3	4.0
16:36	14.7	4.4	4.9	1.7	11	3.7	15.3	4.0
16:37	14.6	4.5	5.8	1.7	12.7	3.6	15.4	4.0
16:38	14.4	4.6	6.4	1.7	13.8	3.6	15.5	4.0
16:39	14.4	4.6	10.4	1.6	22.5	3.5	15.7	4.0
16:40	14.6	4.4	5.6	1.6	12.4	3.5	15.7	4.0
16:41	14.7	4.4	3.9	1.5	8.8	3.5	15.6	4.0
16:42	14.7	4.3	3.8	1.6	8.5	3.5	15.6	4.0
16:43	14.9	4.2	3.8	1.6	8.8	3.6	15.6	4.0
16:44	15.0	4.1	3.8	1.5	9.0	3.6	15.5	4.0
16:45	15.0	4.1	3.3	1.5	7.7	3.6	15.5	4.0
16:46	14.8	4.3	3.7	1.5	8.3	3.4	15.4	4.0
16:48	14.7	4.3	3.8	1.5	8.6	3.4	15.3	4.0
16:49	14.6	4.4	4.9	1.5	11	3.3	15.2	4.0
16:50	14.7	4.4	4.9	1.5	11.1	3.4	15.1	4.0
16:51	14.7	4.3	4.9	1.5	11	3.4	14.9	4.0
16:52	14.5	4.6	4.9	1.5	10.6	3.3	14.7	3.9
16:53	14.6	4.4	4.9	1.5	10.8	3.4	14.7	3.9
16:54	14.7	4.4	4.9	1.5	11	3.3	14.6	3.9
16:55	14.6	4.5	4.9	1.4	10.8	3.2	14.2	3.9

Kiln 7	Run 2	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
16:56	14.5	4.6	4	1.4	8.7	3	13.7	3.9
16:57	14.6	4.4	3.8	1.3	8.4	3	13.7	3.9
16:58	14.5	4.6	5.7	1.3	12.4	2.9	13.7	3.9
16:59	14.4	4.6	6.5	1.4	14.1	3	13.8	3.9
17:00	14.4	4.6	7.3	1.4	15.7	3	13.8	3.8
17:01	14.7	4.4	5.2	1.4	11.6	3.1	13.7	3.8
17:02	14.4	4.6	7.2	1.3	15.6	2.8	13.7	3.8
17:03	14.3	4.7	6.6	1.3	14	2.8	13.8	3.8
17:04	14.5	4.5	5.1	1.3	11.1	2.9	13.9	3.8
17:05	14.6	4.4	4.6	1.3	10.2	2.9	13.7	3.7
17:06	14.7	4.4	3.8	1.3	8.5	3	13.6	3.7
17:07	14.7	4.3	3.3	1.3	7.5	3	13.5	3.7
17:08	15.0	4.1	2.8	1.4	6.6	3.2	13.4	3.7
17:09	14.8	4.2	2.8	1.4	6.4	3.2	13.2	3.7
17:10	14.7	4.3	2.8	1.3	6.3	3	12.9	3.7
17:11	14.7	4.3	2.9	1.3	6.6	2.9	12.6	3.6
17:12	14.7	4.4	3.8	1.3	8.5	2.9	12.5	3.6
17:13	14.7	4.3	3.8	1.3	8.5	3	12.4	3.6
17:14	14.7	4.3	3.8	1.4	8.5	3.1	12.3	3.6
17:15	14.5	4.6	3.8	1.4	8.2	3	12.2	3.6
17:16	14.7	4.3	3.8	1.3	8.6	3	12.1	3.5
17:17	14.4	4.6	6.5	1.3	14	2.8	12.1	3.5
Part. Run	14.8	4.3						
Hex Run	14.8	4.3						
Run Total	14.7	4.4	6.7	1.6	15.1	3.5	15.4	3.7

Kiln 7	Run 2 Metals Only	06/04/92			Corrected to 7% O2		Rolling 1-hour Averag	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
18:31	14.5	4.5	5.9	0.7	12.8	1.6		
18:32	14.4	4.6	6.7	0.8	14.2	1.6		
18:33	14.6	4.4	6.9	0.8	15.2	1.8		
18:34	14.7	4.4	6.5	0.8	14.4	1.8		
18:35	14.7	4.3	5.5	0.8	12.3	1.8		
18:36	14.8	4.2	4.6	0.8	10.6	1.8		
18:37	14.9	4.2	4.7	0.8	10.8	1.8		
18:38	15.0	4.1	4.9	0.8	11.5	1.8		
18:39	14.7	4.3	5.3	0.8	12	1.8		
18:40	14.9	4.1	5.8	0.8	13.5	1.9		
18:41	15.1	4	5.7	0.8	13.6	1.9		
18:42	14.8	4.3	5.5	0.7	12.5	1.6		
18:43	14.9	4.2	5	0.7	11.6	1.6		
18:44	15.0	4.1	5.5	0.7	12.9	1.6		
18:45	14.9	4.2	5	0.6	11.4	1.5		
18:46	14.7	4.3	5	0.6	11.2	1.4		
18:47	14.8	4.3	4	0.7	9.1	1.5		
18:48	14.8	4.2	4.6	0.7	10.5	1.6		
18:49	15.0	4.1	4.1	0.7	9.6	1.7		
18:50	14.5	4.5	4.9	0.7	10.7	1.5		
18:51	14.7	4.3	4.4	0.7	10	1.6		
18:52	14.5	4.5	4.7	0.7	10.3	1.5		
18:53	14.5	4.6	7.6	0.7	16.3	1.6		
18:54	14.8	4.3	11.6	0.7	26.7	1.7		
18:55	14.4	4.5	6	0.7	13	1.5		
18:56	14.4	4.6	6.4	0.7	13.7	1.5		
18:57	14.7	4.3	6.2	0.7	13.8	1.6		
18:58	14.8	4.2	6	0.7	13.7	1.6		
18:59	14.7	4.3	6.4	0.7	14.4	1.6		
19:00	14.8	4.3	6.8	0.7	15.4	1.6		
19:01	14.7	4.3	6	0.7	13.4	1.5		
19:02	14.9	4.2	6	0.7	13.8	1.5		
19:03	15.0	4.1	6	0.7	14.3	1.6		
19:04	15.0	4.1	6	0.6	14.1	1.5		
19:05	15.0	4.1	6	0.6	14.1	1.5		
19:06	14.9	4.1	5.8	0.7	13.5	1.6		
19:07	14.8	4.3	7.1	0.7	16.2	1.6		
19:08	14.8	4.3	6.9	0.7	15.6	1.6		
19:09	14.7	4.4	6	0.7	13.4	1.5		
19:10	14.7	4.4	7.2	0.6	16.2	1.4		

iln 7	Run 2 Metals Only	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
19:11	14.4	4.6	10.1	0.7	21.6	1.4		
19:12	14.6	4.4	9.4	0.6	20.9	1.4		
19:13	14.5	4.5	6.9	0.6	15	1.4		
19:14	14.3	4.7	8.7	0.7	18.3	1.4		
19:15	14.5	4.5	8.7	0.7	18.8	1.4		
19:16	14.4	4.6	6.7	0.7	14.4	1.4		
19:17	14.4	4.6	7.5	0.6	16.2	1.4		
19:18	14.4	4.6	7.1	0.6	15.3	1.4		
19:19	14.4	4.7	8.6	0.6	18.4	1.4		
19:20	14.6	4.5	7.6	0.7	16.7	1.5		
19:21	14.5	4.5	8.5	0.8	18.5	1.7		
19:22	14.6	4.4	9	0.7	20	1.6		
19:23	14.9	4.2	7.4	0.7	17	1.5		
19:24	15.1	4	7.5	0.6	17.9	1.5		
19:25	14.9	4.1	7.9	0.6	18.4	1.4		
19:26	15.2	3.9	6.7	0.6	16.3	1.5		
19:27	15.2	4	6	0.6	14.5	1.5		
19:28	14.9	4.2	6	0.7	13.8	1.5		
19:29	14.8	4.3	6	0.7	13.7	1.5		
19:30	14.8	4.2	6.4	0.6	14.6	1.5		
19:31	14.5	4.5	7.2	0.6	15.8	1.4		
19:32	14.3	4.7	6.2	0.6	13.1	1.3		
19:33	14.4	4.6	6.1	0.7	13	1.4		
19:34	14.6	4.4	8	0.7	17.6	1.5		
19:35	14.4	4.6	7.9	0.7	16.9	1.4		
Metals Run	14.7	4.3						

Kiln 7	Run 3	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
19:55	14.5	4.5	12.8	1.1	27.8	2.4		
19:56	14.4	4.6	10.2	1.1	21.9	2.3		
19:57	14.3	4.7	10.3	1	21.8	2.2		
19:58	14.3	4.7	12.1	1	25.7	2.1		
19:59	14.4	4.6	8.6	1	18.5	2.2		
20:00	14.5	4.6	7.9	1	17.1	2.1		
20:01	14.6	4.4	7.4	1	16.4	2.2		
20:02	14.6	4.5	7.4	1	16.2	2.1		
20:03	14.5	4.5	7.7	1	16.9	2.2		
20:04	14.5	4.5	7.4	1	16.1	2.1		
20:05	14.5	4.5	7.5	1	16.5	2.2		
20:06	14.6	4.5	8	1	17.7	2.2		
20:07	14.5	4.5	8.2	1	17.9	2.3		
20:08	14.6	4.4	7.1	1.1	15.6	2.4		
20:09	14.5	4.5	6.9	1.1	14.9	2.3		
20:10	14.6	4.4	6.9	1.1	15.3	2.4		
20:11	14.5	4.5	6.9	1.1	15	2.4		
20:12	14.4	4.6	6.3	1.1	13.4	2.4		
20:13	14.5	4.5	5.9	1.2	12.8	2.6		
20:14	14.5	4.6	5.9	1.2	12.7	2.5		
20:15	14.5	4.5	5.4	1.1	11.8	2.4		
20:16	14.5	4.5	5.2	1.1	11.4	2.3		
20:17	14.5	4.5	5.9	1	12.8	2.2		
20:18	14.5	4.6	5.9	1	12.7	2.2		
20:19	14.4	4.7	5.9	1	12.5	2.1		
20:20	14.5	4.6	5.9	1	12.7	2.2		
20:21	14.1	4.9	6.2	1	12.8	2.1		
20:22	14.1	4.9	6.9	1	14.1	2		
20:23	14.3	4.8	6.9	1	14.5	2.1		
20:24	14.5	4.6	6.9	1	14.9	2.2		
20:25	14.4	4.5	6.9	1	14.8	2.2		
20:26	14.6	4.4	6.6	1	14.7	2.3		
20:27	14.6	4.5	5.9	1	12.9	2.2		
20:28	14.3	4.8	5.9	0.9	12.4	2		
20:29	14.1	4.9	6.7	0.9	13.8	1.9		
20:30	14.5	4.5	6.5	0.9	13.9	2		
20:31	14.6	4.5	6.7	1	14.8	2.1		
20:32	14.6	4.5	7.1	1	15.5	2.2		
20:33	14.6	4.4	9.2	1.1	20.3	2.4		

Kiln 7	Run 3	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
20:34	14.8	4.3	6.9	1.1	15.7	2.5		
20:35	14.5	4.5	6.9	1.1	15.2	2.4		
20:36	14.5	4.5	8.6	1.2	18.6	2.5		
20:37	14.5	4.5	9.3	1.1	20.3	2.4		
20:38	14.8	4.3	11.1	1.1	25.1	2.5		
20:39	14.6	4.4	12.8	1.1	28.4	2.4		
20:41	14.7	4.4	8.8	1	19.7	2.2		
20:42	14.5	4.6	7.8	0.9	16.9	2		
20:43	14.5	4.5	6.9	0.9	15	2		
20:44	14.7	4.4	6.8	0.9	15.2	2		
20:45	14.8	4.2	5.9	0.9	13.5	2.1		
20:46	14.9	4.2	6.2	0.9	14.4	2.2		
20:47	14.7	4.3	5.9	0.9	13.3	2.1		
20:48	14.9	4.2	5.9	1	13.8	2.2		
20:49	14.9	4.2	6	1	13.8	2.3		
20:50	15	4.1	6	1	14.3	2.3		
20:51	14.6	4.4	7.6	0.9	17	2.1		
20:52	14.8	4.2	6.8	1	15.5	2.2		
20:53	14.7	4.3	6.3	1	14.2	2.2		
20:54	14.7	4.3	6	1	13.5	2.3	16.0	2.2
20:55	14.8	4.3	6	1	13.6	2.3	15.8	2.2
20:56	14.7	4.4	6.3	1	14.2	2.3	15.7	2.2
20:57	14.7	4.4	6.6	1.1	14.7	2.4	15.6	2.2
20:58	14.8	4.3	6.6	1.1	15	2.5	15.4	2.2
20:59	14.3	4.7	11.8	1.1	24.8	2.3	15.5	2.2
21:00	14.6	4.4	7.7	1	16.9	2.3	15.5	2.2
21:01	14.7	4.4	5.8	1	13	2.3	15.4	2.2
21:02	14.5	4.5	6.2	1	13.6	2.2	15.4	2.2
21:03	14.4	4.6	6.9	1	14.8	2.1	15.3	2.2
21:04	14.7	4.4	6	1	13.4	2.2	15.3	2.2
21:05	14.5	4.5	7	0.9	15.3	2.1	15.3	2.2
21:06	14.7	4.4	6.6	0.9	14.7	2.1	15.2	2.2
21:07	14.7	4.4	5.9	1	13.1	2.2	15.1	2.2
21:08	14.8	4.2	5.9	0.9	13.5	2.1	15.1	2.2
21:09	14.7	4.3	7.2	0.9	16.3	2.1	15.1	2.2
21:10	14.8	4.2	7.3	0.9	16.7	2.1	15.2	2.2
21:11	14.8	4.2	6.9	0.9	15.8	2.1	15.2	2.2
21:12	14.8	4.3	6.4	0.9	14.5	2	15.2	2.2

Kiln 7	Run 3	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
21:13	14.8	4.2	6	0.9	13.8	2.2	15.2	2.2
21:14	15.1	4	6	1	14.3	2.4	15.2	2.2
21:15	14.9	4.2	6	1	13.9	2.3	15.3	2.2
21:16	14.8	4.3	6	1	13.6	2.3	15.3	2.2
21:17	14.7	4.3	6	1	13.4	2.2	15.3	2.2
21:18	14.6	4.5	6	1	13.1	2.2	15.3	2.2
21:19	14.6	4.4	5.4	1	12	2.1	15.3	2.2
21:20	14.6	4.4	5	1	11.1	2.1	15.3	2.2
21:21	14.6	4.4	5.6	1	12.4	2.2	15.3	2.2
21:22	14.4	4.6	7.5	1.1	15.9	2.3	15.3	2.2
21:23	14.5	4.5	7.8	1	17.1	2.1	15.4	2.2
21:24	14.6	4.4	6.9	0.9	15.2	2.1	15.4	2.2
21:25	14.5	4.5	6.1	0.9	13.2	2	15.3	2.2
21:26	14.5	4.6	5	0.9	10.8	2	15.3	2.2
21:27	14.6	4.4	5.4	1	12	2.1	15.3	2.2
21:28	14.4	4.6	6.1	0.9	13	1.9	15.3	2.2
21:29	14.5	4.5	5.6	1	12.3	2.1	15.2	2.2
21:30	14.6	4.5	6.2	1	13.6	2.2	15.2	2.2
21:31	14.6	4.4	6.3	1	13.8	2.2	15.2	2.2
21:32	14.5	4.6	5.9	1	12.9	2.1	15.2	2.2
21:33	14.5	4.5	5.5	1	11.9	2.2	15.0	2.2
21:34	14.6	4.5	5	1.1	10.9	2.4	14.9	2.2
21:35	14.6	4.4	5.1	1.5	11.3	3.2	14.9	2.2
21:36	14.6	4.5	5.9	1.7	12.9	3.8	14.8	2.2
21:37	14.7	4.3	5.9	1.8	13.2	4	14.7	2.3
21:38	14.8	4.3	5.9	1.8	13.4	4.2	14.5	2.3
21:39	14.7	4.3	5.9	2	13.3	4.5	14.2	2.3
21:40	14.8	4.3	5.9	2.1	13.3	4.8	14.1	2.4
21:41	14.8	4.2	5.9	2.3	13.4	5.2	14.0	2.4
21:42	14.8	4.3	6.7	2.6	15.2	5.9	14.0	2.5
21:43	14.8	4.2	6.4	2.7	14.7	6.2	14.0	2.6
21:44	14.6	4.4	5.5	2.9	12.1	6.3	14.0	2.6
21:45	14.7	4.4	4.9	3	11	6.6	14.0	2.7
21:46	14.5	4.6	5.4	3.2	11.6	6.8	13.9	2.8
21:47	14.6	4.4	5.3	3.2	11.6	7	13.9	2.9
21:48	14.5	4.5	5	3.3	10.9	7.1	13.8	3.0
21:49	14.5	4.5	5.9	3.3	12.8	7	13.8	3.0
21:50	14.3	4.7	5.9	3	12.5	6.3	13.7	3.1
21:51	14.4	4.5	5.9	2.6	12.7	5.6	13.7	3.2
21:52	14.7	4.3	5.4	2.3	12.2	5.3	13.7	3.2

Kiln 7	Run 3	06/04/92			Corrected to 7% O2		Rolling 1-hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
21:53	14.4	4.6	5.9	2.1	12.7	4.6	13.6	3.3
21:54	14.2	4.8	6.2	2	12.9	4.1	13.6	3.3
21:55	14.5	4.5	6.1	1.9	13.2	4.1	13.6	3.3
21:56	14.6	4.4	5.6	1.9	12.3	4.1	13.6	3.3
21:57	14.6	4.4	4.9	2	10.8	4.4	13.5	3.4
21:58	14.6	4.4	4.9	2.1	10.9	4.8	13.3	3.4
21:59	14.8	4.2	4.9	2.3	11.2	5.3	13.2	3.5
22:00	14.8	4.2	4.9	2.5	11.2	5.8	13.1	3.5
22:01	14.8	4.2	5.7	2.8	13	6.4	13.1	3.6
22:02	14.8	4.3	6.2	3.1	14	7.1	13.1	3.7
22:03	14.6	4.4	6.4	3.4	14.2	7.6	13.1	3.8
22:04	14.8	4.3	6.9	3.8	15.6	8.7	13.1	3.9
22:05	14.4	4.6	6.9	4.2	14.8	9.1	13.1	4.0
22:06	14.4	4.6	7.1	4.5	15.1	9.7	13.2	4.1
22:07	14.3	4.7	5.9	4.2	12.6	9	13.2	4.2
22:08	14	5	5.9	3.8	11.9	7.7	13.1	4.3
22:09	14.2	4.7	5.9	3.6	12.3	7.4	13.0	4.4
22:10	14.3	4.6	7.3	3.3	15.6	7	13.0	4.5
22:12	14.6	4.4	7.5	2.9	16.5	6.5	13.0	4.6
22:13	14.4	4.6	6.9	2.7	14.7	5.8	13.1	4.7
22:14	14.5	4.5	6.9	2.6	15	5.7	13.1	4.7
22:15	14.4	4.6	6.2	2.6	13.2	5.5	13.1	4.8
22:16	14.4	4.5	5.9	2.6	12.7	5.7	13.0	4.8
22:17	14.9	4.2	5.4	2.7	12.4	6.3	13.0	4.9
22:18	14.9	4.2	4.9	2.9	11.3	6.7	13.0	5.0
22:19	15.1	4	4.9	3.2	11.6	7.6	13.0	5.1
22:20	15.1	4	4.9	3.4	11.7	8.1	13.0	5.2
22:21	15	4.1	5.8	3.5	13.7	8.3	13.0	5.3
22:22	14.7	4.4	6.9	3.7	15.5	8.3	13.0	5.4
22:23	14.5	4.5	6.9	3.9	14.9	8.3	13.0	5.5
22:24	14.7	4.3	6.9	4	15.4	9	13.0	5.6
Part. Run	14.6	4.5						
Hex Run	14.5	4.5						
Metals Run	14.6	4.4						
Run Total	14.6	4.4	6.6	1.6	14.5	3.6	14.3	3.0

Kiln 8 Run 1 06/02/92

Time	Oxygen	CO2	CO	THC	Corrected to 7% O2 CO	Corrected to 7% O2 THC	Rolling 1-Hour Averages CO	Rolling 1-Hour Averages THC
16:11	15.3	3.9	1.9	1.4	4.7	3.4		
16:12	15.4	3.9	1.9	1.4	4.8	3.4		
16:13	16.1	3.3	1.9	1.4	5.5	4.2		
16:14	15.3	3.9	1.9	1.3	4.8	3.4		
16:15	16.0	3.5	1.9	1.5	5.4	4.1		
16:16	15.6	3.8	1.9	2.3	5	6		
16:17	15.3	4	1.9	2.2	4.7	5.5		
16:18	15.4	3.9	1.9	2.2	4.8	5.5		
16:19	15.3	4	1.9	2.2	4.7	5.4		
16:20	15.5	3.8	1.9	2.2	4.9	5.7		
16:21	15.8	3.5	1.9	2.2	5.2	6.1		
16:22	15.7	3.7	1.9	2.2	5.1	5.9		
16:23	15.7	3.6	1.9	2.1	5.1	5.8		
16:24	15.8	3.6	1.9	2.1	5.2	5.8		
16:25	15.6	3.7	1.9	2.1	5	5.6		
16:26	15.7	3.6	1.9	2.1	5.1	5.7		
16:27	15.6	3.7	1.9	2.1	5	5.7		
16:28	15.8	3.6	1.9	2.1	5.2	5.7		
16:29	15.8	3.6	1.9	2.1	5.1	5.7		
16:30	15.9	3.5	1.9	2.1	5.3	5.9		
16:31	15.8	3.6	1.9	2.1	5.2	5.8		
16:32	15.7	3.6	1.9	2	5.1	5.4		
16:33	15.8	3.6	1.9	1.8	5.2	4.9		
16:34	15.7	3.6	1.9	1.6	5.1	4.3		
16:35	16.1	3.4	1.9	1.5	5.5	4.4		
16:36	15.7	3.6	1.9	1.4	5.1	3.8		
16:37	15.6	3.7	1.9	1.4	5	3.6		
16:38	15.7	3.7	1.9	1.3	5	3.5		
16:39	15.5	3.9	1.9	1.2	4.9	3.2		
16:40	15.5	3.8	1.9	1.2	4.9	3.1		
16:44	15.4	3.9	1.9	2	4.8	5		
16:45	15.3	4	1.9	1.9	4.7	4.7		
16:46	15.2	4	1.9	1.9	4.7	4.6		
16:47	15.4	3.9	1.9	1.8	4.8	4.5		
16:48	15.3	3.9	1.9	1.7	4.7	4.2		
16:49	15.3	4	1.9	1.7	4.7	4.3		
16:50	15.3	3.9	1.9	1.8	4.8	4.4		
16:51	15.3	3.9	1.9	1.8	4.7	4.4		
16:52	15.5	3.8	1.9	1.7	4.9	4.4		
16:53	15.7	3.7	1.9	1.7	5.1	4.4		
16:54	15.6	3.8	1.9	1.6	5	4.2		
16:55	15.4	3.9	1.9	1.5	4.8	3.8		
16:56	15.3	3.9	1.9	1.5	4.8	3.8		
16:57	15.3	4	1.9	1.5	4.7	3.7		
16:58	15.5	3.8	1.9	1.5	4.9	3.9		
16:59	15.4	3.8	1.9	1.5	4.8	3.8		
17:00	15.6	3.7	1.9	1.5	5	3.9		

Kiln 8 Run 1 06/02/92

Time	Oxygen	CO2	CO	THC	Corrected to 7% O2 CO	Corrected to 7% O2 THC	Rolling 1-Hour Averages CO	Rolling 1-Hour Averages THC
17:01	15.5	3.8	1.9	1.6	4.9	4		
17:02	15.5	3.8	1.9	1.5	4.9	3.9		
17:03	15.5	3.8	1.9	1.5	4.9	3.8		
17:04	16.0	3.4	1.9	1.5	5.4	4.1		
17:05	15.4	3.9	1.9	1.4	4.8	3.5		
17:06	15.3	4	1.9	1.3	4.7	3.2		
17:07	15.0	4.2	1.9	1.3	4.5	3.1		
17:08	15.0	4.2	1.9	1.3	4.5	3.1		
17:09	15.3	3.9	1.9	1.4	4.8	3.4		
17:10	15.6	3.7	1.9	1.4	5	3.6		
17:11	15.7	3.7	1.9	1.4	5	3.6		
17:12	15.5	3.8	1.9	1.3	4.9	3.3		
17:13	15.6	3.8	1.9	1.2	4.9	3.2	4.9	4.4
17:15	15.3	3.9	1.9	1.2	4.7	3	4.9	4.4
17:16	15.6	3.8	1.9	1.2	4.9	3.1	4.9	4.4
17:17	15.3	3.9	1.9	1.2	4.8	3	4.9	4.4
17:18	15.4	3.9	1.9	1.2	4.8	3	4.9	4.4
17:19	15.3	4	1.9	1.1	4.7	2.7	4.9	4.3
17:20	15.4	3.9	1.9	1.1	4.8	2.8	4.9	4.3
17:21	15.4	3.9	1.9	1.1	4.8	2.8	4.9	4.2
17:22	15.5	3.8	1.9	1.1	4.9	2.8	4.9	4.2
17:23	15.9	3.5	1.9	1.1	5.3	3.1	4.9	4.2
17:24	15.7	3.7	1.9	1.1	5.1	2.9	4.9	4.1
17:25	16.2	3.2	1.9	1.1	5.6	3.3	4.9	4.1
17:26	15.9	3.5	1.9	1.1	5.3	3.1	4.9	4.0
17:27	15.4	3.9	1.9	1.1	4.8	2.7	4.9	4.0
17:28	15.6	3.7	1.9	1.1	5	2.9	4.9	3.9
17:29	15.6	3.8	1.9	1.1	4.9	2.9	4.9	3.9
17:30	15.4	3.9	1.9	1.1	4.8	2.7	4.9	3.8
17:31	15.4	3.9	1.9	1.1	4.8	2.8	4.9	3.8
17:32	15.4	3.8	1.9	1.1	4.8	2.8	4.9	3.7
17:33	15.4	3.9	1.9	1.1	4.8	2.8	4.9	3.7
17:34	15.5	3.8	1.9	1.1	4.9	2.8	4.9	3.6
17:35	15.5	3.8	1.9	1.1	4.9	2.7	4.9	3.6
17:36	15.6	3.8	1.9	1.1	5	2.9	4.9	3.5
17:37	15.4	3.9	1.9	1.1	4.8	2.7	4.9	3.5
17:38	15.5	3.8	1.9	1.1	4.9	2.8	4.9	3.5
17:39	15.3	4	1.9	1.1	4.7	2.6	4.9	3.4
17:40	15.3	4	1.9	1.1	4.7	2.6	4.9	3.4
17:41	15.3	4	1.9	1.1	4.7	2.6	4.9	3.4
17:42	15.4	3.9	1.9	1.1	4.8	2.7	4.9	3.4
17:43	15.4	3.9	1.7	1	4.4	2.7	4.9	3.4
17:44	15.3	3.9	1.4	1	3.5	2.6	4.8	3.4
17:45	15.6	3.7	1.6	1	4	2.6	4.8	3.3
17:46	15.4	3.9	1.6	1	3.9	2.6	4.8	3.3
17:47	15.3	3.9	1.9	1	4.7	2.5	4.8	3.3
17:48	15.3	4	1.2	1	3.1	2.5	4.8	3.2

Kiln 8 Run 1 06/02/92

Time	Oxygen	CO2	CO	THC	Corrected to 7% O2 CO	THC	Rolling 1-Hour Averages CO	THC
17:49	15.4	3.9	1.9	1	4.8	2.5	4.8	3.2
17:50	15.3	4	1.9	1	4.7	2.4	4.8	3.2
17:51	15.2	4	1.9	1	4.6	2.4	4.8	3.1
17:52	15.2	4	1.9	1	4.6	2.4	4.8	3.1
17:53	15.4	3.9	1.9	0.9	4.8	2.3	4.8	3.1
17:54	15.3	3.9	1.9	0.9	4.7	2.3	4.8	3.0
17:55	15.5	3.8	1.7	0.9	4.4	2.4	4.8	3.0
17:56	15.4	3.9	1.1	0.9	2.7	2.3	4.7	3.0
17:57	15.2	4.1	0.9	0.9	2.2	2.2	4.7	3.0
17:58	15.2	4.1	0.9	0.9	2.2	2.2	4.6	2.9
17:59	15.4	3.9	0.9	0.9	2.3	2.3	4.6	2.9
18:00	15.2	4	0.9	0.9	2.2	2.2	4.6	2.9
18:01	15.1	4.1	0.9	0.9	2.2	2.2	4.5	2.9
18:02	15.1	4.1	0.9	0.9	2.2	2.1	4.5	2.8
18:03	15.1	4.1	0.9	0.8	2.1	1.9	4.4	2.8
18:04	15.2	4	0.9	0.8	2.2	2	4.4	2.8
18:05	15.6	3.8	0.9	0.9	2.3	2.3	4.3	2.7
18:06	15.6	3.7	0.9	0.9	2.3	2.3	4.3	2.7
18:07	15.5	3.8	0.9	0.9	2.3	2.3	4.2	2.7
18:08	15.5	3.7	0.9	0.9	2.3	2.3	4.2	2.7
18:09	15.5	3.8	0.9	0.9	2.3	2.3	4.2	2.7
18:10	15.2	4	0.9	0.8	2.2	2.1	4.1	2.6
18:11	15.2	4.1	0.9	0.8	2.2	1.9	4.1	2.6
18:12	15.0	4.1	0.9	0.8	2.1	1.9	4.0	2.6
18:13	15.0	4.2	0.9	0.8	2.1	1.9	4.0	2.6
18:14	15.2	4.1	0.9	0.8	2.2	1.9	3.9	2.5
18:15	15.1	4.1	0.9	0.8	2.1	1.9	3.9	2.5
18:16	15.1	4.1	0.9	0.8	2.2	1.9	3.8	2.5
18:17	15.5	3.8	0.9	0.8	2.3	2.1	3.8	2.5
18:18	15.3	4	1.1	0.8	2.7	2	3.8	2.5
18:19	15.3	3.9	1.2	0.8	3.1	2	3.7	2.5
18:20	15.2	4	1.1	0.8	2.6	2	3.7	2.4
18:21	15.2	4.1	1.2	0.8	3	1.8	3.7	2.4
18:22	15.1	4.1	0.9	0.7	2.1	1.7	3.6	2.4
18:23	15.2	4.1	0.9	0.7	2.2	1.7	3.6	2.4
18:24	15.1	4.1	0.9	0.7	2.2	1.7	3.5	2.4
18:25	15.1	4.1	1.8	0.7	4.2	1.8	3.5	2.3
18:26	15.0	4.1	1.9	0.7	4.5	1.7	3.5	2.3
18:27	15.1	4.1	1.7	0.7	4.1	1.7	3.5	2.3
18:28	15.1	4.1	0.9	0.7	2.2	1.7	3.4	2.3
18:29	15.1	4.1	0.9	0.7	2.1	1.7	3.4	2.3
18:30	15.0	4.2	0.9	0.7	2.1	1.7	3.3	2.2
18:31	15.2	4.1	0.9	0.7	2.2	1.7	3.3	2.2
18:32	15.1	4.1	0.9	0.7	2.2	1.7	3.3	2.2
18:33	15.2	4.1	0.9	0.7	2.2	1.6	3.2	2.2
18:34	15.4	3.9	0.9	0.6	2.3	1.6	3.2	2.2
18:35	15.6	3.8	0.9	0.6	2.3	1.6	3.1	2.2
18:36	15.5	3.8	0.9	0.7	2.3	1.8	3.1	2.1
18:37	15.6	3.7	0.9	0.7	2.3	1.8	3.0	2.1

In 8	Run 1	06/02/92			Corrected to 7% O2		Rolling 1-Hour Averages	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
18:38	15.4	3.9	1.1	0.7	2.7	1.7	3.0	2.1
18:39	15.3	4	0.9	0.6	2.2	1.6	3.0	2.1
18:40	15.1	4.1	1.1	0.6	2.6	1.5	2.9	2.1
18:41	15.1	4.1	1.3	0.7	3	1.7	2.9	2.0
18:42	15.1	4.1	1.9	0.7	4.5	1.7	2.9	2.0
18:43	15.0	4.2	1.9	0.7	4.5	1.7	2.9	2.0
18:44	15.0	4.2	1.9	0.7	4.5	1.6	2.9	2.0
18:46	14.9	4.2	1.7	0.7	4	1.6	2.9	2.0
18:47	15.0	4.2	1	0.7	2.3	1.7	2.9	2.0
18:48	15.0	4.2	0.9	0.7	2.1	1.6	2.8	2.0
18:49	15.0	4.2	0.9	0.6	2.1	1.4	2.8	1.9
18:50	15.0	4.2	0.9	0.6	2.1	1.5	2.8	1.9
18:51	15.0	4.2	0.9	0.7	2.1	1.6	2.7	1.9
18:52	14.7	4.4	0.9	0.6	2	1.4	2.7	1.9
18:53	15.1	4.1	0.9	0.7	2.2	1.7	2.6	1.9
18:54	15.5	3.7	0.9	0.7	2.3	1.7	2.6	1.9
18:55	15.6	3.7	0.9	0.6	2.4	1.6	2.6	1.9
18:56	15.5	3.8	0.9	0.6	2.3	1.5	2.5	1.8
18:57	15.6	3.7	1	0.6	2.7	1.5	2.5	1.8
18:58	15.5	3.8	0.9	0.5	2.3	1.3	2.5	1.8
18:59	15.4	3.8	0.9	0.5	2.3	1.3	2.5	1.8
19:00	15.3	4	0.9	0.5	2.2	1.2	2.5	1.8
Part. Run	15.5	3.8						
:x Run	15.5	3.8						
ıetals Run	15.2	4.0						
Run Total	15.4	3.9	1.6	1.2	3.9	3.0	4.0	2.9

Kiln 8	Run 2	06/02/92			Corrected to 7% O2		Rolling 1-Hour Averages	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
20:46	15.7	3.7	0.9	1.3	2.4	3.5		
20:47	15.7	3.7	0.9	1.3	2.4	3.5		
20:48	15.6	3.8	0.9	1.3	2.3	3.4		
20:49	15.6	3.7	0.9	1.3	2.4	3.4		
20:50	15.6	3.7	1.1	1.3	2.9	3.4		
20:51	15.6	3.7	0.9	1.2	2.4	3.2		
20:52	15.6	3.7	0.9	1.2	2.4	3.3		
20:53	15.5	3.8	0.9	1.3	2.3	3.3		
20:54	15.6	3.7	0.9	1.3	2.4	3.4		
20:55	15.7	3.7	0.9	1.3	2.4	3.4		
20:56	16.1	3.3	0.9	1.2	2.6	3.5		
20:57	15.9	3.5	0.9	1.2	2.5	3.3		
20:58	15.8	3.6	0.9	1.2	2.5	3.3		
20:59	15.7	3.7	0.9	1.2	2.4	3.2		
21:01	15.6	3.8	0.9	1.2	2.4	3.2		
21:02	15.5	3.8	0.9	1.2	2.3	3.1		
21:03	15.5	3.8	0.9	1.2	2.3	2.9		
21:12	15.5	3.8	1	1.8	2.6	4.6		
21:13	15.5	3.8	1	1.9	2.6	4.9		
21:14	15.4	3.9	1	2	2.5	4.9		
21:15	15.4	3.9	1	2	2.5	5.1		
21:16	15.9	3.5	1	1.9	2.8	5.2		
21:17	15.8	3.5	1	1.9	2.8	5.2		
21:18	15.1	4.1	1.4	1.9	3.2	4.5		
21:19	15.2	4	9.3	1.8	23.5	4.4		
21:20	15.7	3.6	1.4	1.8	3.7	5		
21:21	15.6	3.7	1	1.9	2.6	5		
21:22	15.6	3.7	1	1.8	2.7	4.8		
21:23	16.4	3	1.3	1.8	4	5.9		
21:24	15.6	3.7	1.4	1.9	3.6	5.1		
21:25	15.3	3.9	1	1.9	2.5	4.8		
21:26	15.7	3.6	1	1.9	2.8	5.4		
21:27	15.1	4	1	2	2.4	4.8		
21:28	16.4	3.1	1	1.9	3.2	6.2		
21:29	15.5	3.8	1	1.8	2.6	4.7		
21:30	15.1	4.1	1	1.8	2.4	4.4		
21:31	14.9	4.2	1	1.9	2.3	4.3		
21:32	14.9	4.3	1	2	2.3	4.7		
21:33	15.0	4.1	1	2.2	2.4	5.2		
21:34	15.4	3.8	2.2	2.1	5.7	5.3		
21:35	15.1	4.2	2	1.7	5.2	4.3		
21:36	14.3	4.8	4.7	1.7	9.9	3.5		
21:37	14.5	4.6	1.2	1.8	2.6	3.8		
21:38	14.5	4.6	1	1.7	2.2	3.7		
21:39	14.5	4.6	1	1.8	2.2	4		
21:40	14.5	4.6	1	1.9	2.2	4.1		

Kiln 8 Run 2 06/02/92

Time	Oxygen	CO2	CO	THC	Corrected to 7% O2 CO	Corrected to 7% O2 THC	Rolling 1-Hour Averages CO	Rolling 1-Hour Averages THC
21:41	14.7	4.4	1	1.9	2.2	4.4		
21:42	15.1	4.1	1	2	2.4	4.7		
21:43	15.2	4	1	1.9	2.4	4.6		
21:44	15.2	4	1	2	2.4	4.8		
21:45	15.5	3.7	1.8	2.1	4.9	5.4		
21:46	15.4	3.9	7.6	1.9	18.9	4.8		
21:47	15.8	3.5	1.3	2	3.5	5.3		
21:48	15.7	3.6	1	2	2.7	5.3		
21:49	15.7	3.6	1	1.9	2.7	5.1		
21:50	15.8	3.6	1	1.9	2.7	5.2		
21:51	15.9	3.5	1	1.9	2.8	5.4		
21:52	15.7	3.7	1	1.9	2.7	5.2		
21:53	15.0	4.2	1	1.8	2.3	4.1		
21:54	15.1	4.1	1	1.9	2.4	4.5	3.5	4.4
21:55	14.9	4.2	1	1.9	2.4	4.5	3.5	4.4
21:56	15.1	4.1	2	1.9	4.8	4.5	3.5	4.4
21:57	15.1	4.1	1.5	2	3.6	4.8	3.5	4.4
21:58	15.5	3.8	1	2	2.6	5.3	3.5	4.5
21:59	15.2	4	1	2.1	2.5	5.1	3.5	4.5
22:00	15.4	3.9	1	2	2.5	4.9	3.5	4.5
22:01	15.3	4	1	2.1	2.5	5.2	3.5	4.6
22:02	15.5	3.8	1	2.1	2.6	5.5	3.5	4.6
22:03	15.6	3.7	1	2.1	2.6	5.6	3.5	4.6
22:04	15.8	3.5	1	1.8	2.8	5	3.5	4.7
22:05	15.8	3.6	1	1.8	2.7	4.9	3.6	4.7
22:06	15.3	3.9	1	1.7	2.5	4.2	3.6	4.7
22:07	16.0	3.3	1	1.9	2.8	5.3	3.6	4.7
22:08	16.4	3	1	1.6	3.1	5	3.6	4.8
22:09	16.1	3.3	1	1.7	2.9	4.9	3.6	4.8
22:10	16.1	3.3	1	1.8	2.9	5.1	3.6	4.8
22:11	16.5	2.9	1	1.7	3.2	5.5	3.6	4.9
22:13	15.5	3.9	1	1.7	2.6	4.3	3.6	4.9
22:14	15.1	4.1	1	1.7	2.4	4.2	3.6	4.8
22:15	16.7	2.6	1	1.8	3.4	6.2	3.6	4.9
22:16	17.6	2	1	1.9	4.2	8	3.6	4.9
22:17	15.3	4.1	1	1.9	2.7	5.1	3.6	4.9
22:18	14.8	4.3	1	2.1	2.3	4.8	3.6	4.9
22:19	15.6	3.7	1	1.8	2.6	4.8	3.6	4.9
22:20	15.2	4	1	1.8	2.5	4.5	3.3	4.9
22:21	15.7	3.6	1	1.9	2.7	5.2	3.3	4.9
22:22	15.8	3.6	1	1.8	2.7	4.9	3.3	4.9
22:23	15.6	3.7	1	1.8	2.6	4.9	3.3	4.9
22:24	15.2	4	1	2	2.5	4.8	3.2	4.9
22:25	15.4	3.8	1	2.3	2.5	5.7	3.2	4.9
22:26	15.6	3.7	1	2.2	2.6	5.8	3.2	4.9
22:27	15.7	3.6	1	2.2	2.7	5.9	3.2	4.9
22:28	15.5	3.8	1	2.2	2.6	5.6	3.2	5.0

Kiln 8	Run 2	06/02/92			Corrected to 7% O2		Rolling 1-Hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
22:29	15.3	3.9	1	2.2	2.5	5.5	3.2	4.9
22:30	16.1	3.2	1	2.2	2.9	6.4	3.2	5.0
22:31	16.5	3.0	1.0	2.2	3.1	6.7	3.2	5.0
22:32	16.4	3.0	1.0	2.1	3.1	6.5	3.2	5.0
22:33	16.1	3.3	1.0	2.1	2.9	6	3.2	5.1
22:34	16.3	3.1	1.0	2.1	3.0	6.4	3.3	5.1
22:35	16.5	2.9	1	2.1	3.2	6.7	3.2	5.1
22:36	16.5	2.9	1	2.1	3.2	6.7	3.2	5.1
22:37	16.3	3.1	1	2.1	3	6.4	3.1	5.2
22:38	16.3	3.1	1	2.2	3	6.6	3.1	5.2
22:39	16.6	2.8	1	2.2	3.2	7.1	3.1	5.3
22:40	16.5	3	1	2.2	3.1	7	3.1	5.3
22:41	15.7	3.6	1	2.2	2.7	5.9	3.1	5.4
22:42	15.4	3.8	1	2.3	2.5	5.8	3.1	5.4
22:43	15.8	3.5	1	2.3	2.7	6.3	3.1	5.4
22:44	15.7	3.6	1	2.3	2.7	6.1	3.1	5.5
22:45	15.3	4	1	2.3	2.5	5.6	3.1	5.5
22:46	15.1	4.1	1	2.2	2.4	5.2	3.1	5.5
22:47	15.4	3.9	1	2.3	2.5	5.7	2.8	5.5
22:48	15.4	3.8	1	2.3	2.5	5.9	2.8	5.5
22:49	15.5	3.8	1	2.3	2.6	5.8	2.8	5.5
22:50	15.0	4.1	1	2.2	2.4	5.3	2.8	5.5
22:51	15.3	3.9	1	2.3	2.5	5.8	2.8	5.5
22:52	15.4	3.8	1	2.3	2.5	5.9	2.8	5.5
22:53	15.3	3.9	1	2.3	2.5	5.8	2.8	5.5
22:54	15.0	4.2	1	2.3	2.4	5.4	2.8	5.6
22:55	15.0	4.1	1	2.2	2.4	5.3	2.8	5.6
22:56	15.4	3.9	1	2.3	2.5	5.7	2.8	5.6
22:57	15.4	3.8	1	2.2	2.5	5.6	2.7	5.6
22:58	15.3	4	1	2.2	2.5	5.4	2.7	5.6
22:59	15.1	4	1	2.2	2.4	5.2	2.7	5.6
23:00	15.4	3.8	1	2.2	2.5	5.5	2.7	5.6
23:01	15.4	3.8	1	2.2	2.5	5.5	2.7	5.6
23:02	15.4	3.9	1	2.1	2.5	5.3	2.7	5.6
23:03	15.1	4.1	1	2.1	2.4	5.1	2.7	5.6
23:04	15.3	3.9	1	2.2	2.5	5.5	2.7	5.6
23:05	15.4	3.8	1	2.2	2.5	5.5	2.7	5.6
23:06	15.4	3.8	1	2.1	2.5	5.4	2.7	5.6
23:07	15.2	4	1	2.1	2.4	5.2	2.7	5.7
23:08	15.2	3.9	1	2.2	2.5	5.4	2.7	5.7
23:09	15.5	3.8	1	2.2	2.6	5.6	2.7	5.7
23:10	15.4	3.8	1	2.2	2.6	5.6	2.7	5.7
23:11	15.4	3.9	1	2.2	2.5	5.6	2.7	5.7
23:12	15.3	3.9	1	2.3	2.5	5.6	2.7	5.7
23:20	15.2	4	1	2.1	2.4	5.1	2.7	5.7
23:21	15.4	3.9	1	2.2	2.5	5.4	2.7	5.7
23:22	15.4	3.8	1	2.2	2.5	5.6	2.7	5.7
23:23	15.5	3.8	1	2.2	2.6	5.7	2.6	5.7

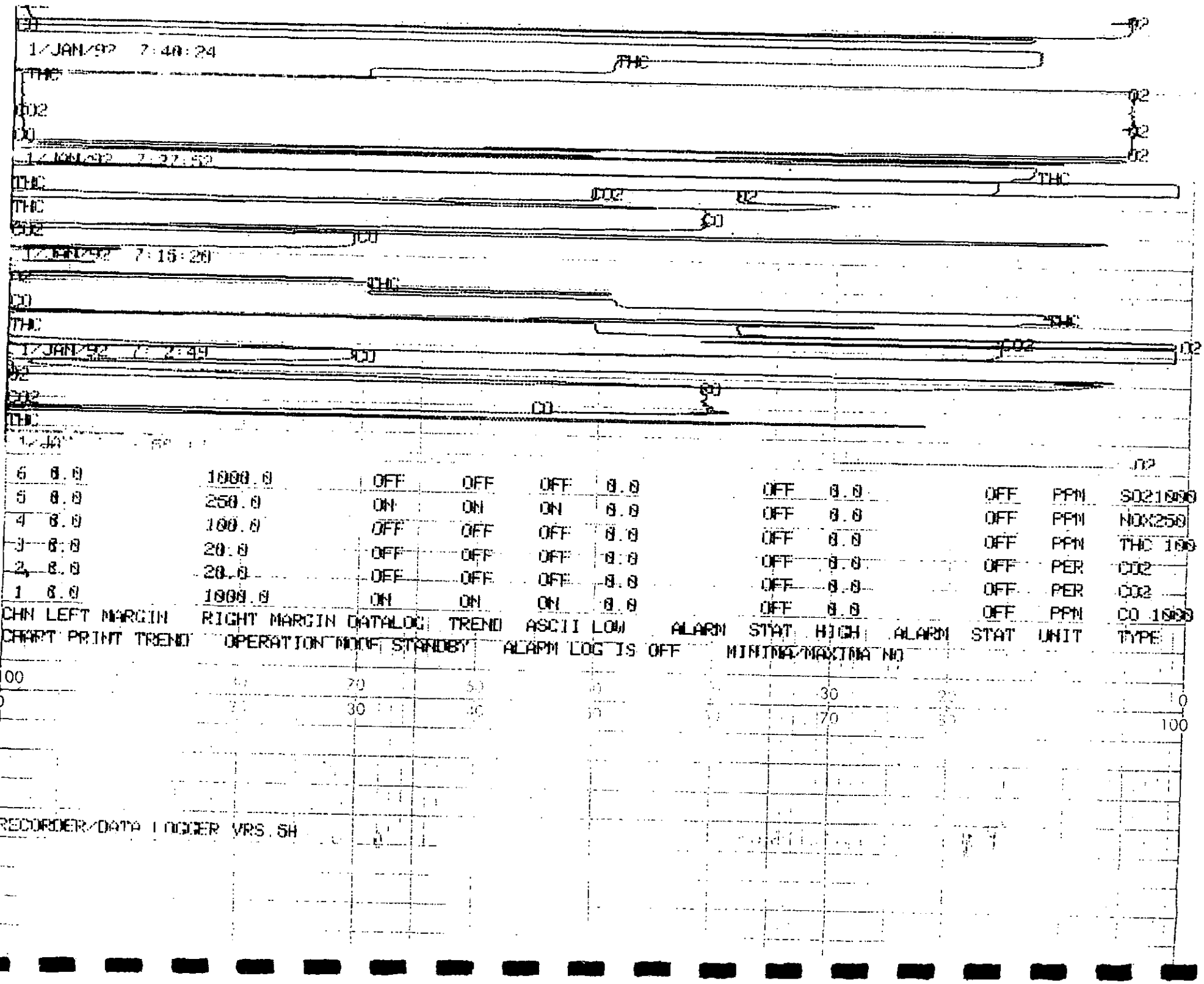
In 8	Run 2	06/02/92			Corrected to 7% O2		Rolling 1-Hour Averages	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
23:24	15.3	4	1	2.2	2.5	5.4	2.6	5.7
23:25	15.4	3.8	1	2.3	2.5	5.6	2.6	5.7
23:26	15.6	3.7	1	2.3	2.6	5.9	2.6	5.7
23:27	15.7	3.6	1	2.3	2.7	6.1	2.6	5.7
23:28	15.6	3.7	1	2.2	2.6	5.8	2.6	5.7
23:29	15.5	3.8	1	2.2	2.6	5.6	2.6	5.8
23:30	15.7	3.6	1	2.2	2.7	5.9	2.6	5.8
23:31	15.8	3.5	1	2.2	2.7	6	2.6	5.8
23:32	15.7	3.6	1	2.2	2.7	5.9	2.6	5.8
23:33	15.2	4	1	2.1	2.5	5.2	2.6	5.8
23:34	15.5	3.7	1	2.2	2.6	5.6	2.6	5.8
23:35	15.7	3.6	1	2.2	2.7	5.8	2.6	5.8
23:36	15.7	3.6	1	2.2	2.7	5.8	2.6	5.8
23:37	15.3	3.9	1	2.2	2.5	5.5	2.6	5.8
23:38	15.4	3.8	1	2.2	2.5	5.6	2.6	5.8
23:39	15.6	3.6	1	2.2	2.6	5.9	2.6	5.7
23:40	15.6	3.6	1	2.3	2.6	6	2.6	5.7
23:41	15.5	3.8	1	2.3	2.6	5.8	2.6	5.7
23:42	15.4	3.8	1	2.3	2.5	5.7	2.6	5.7
23:43	15.7	3.6	1	2.3	2.7	6	2.6	5.7
23:44	15.8	3.6	1	2.3	2.7	6.1	2.6	5.7
23:45	15.7	3.6	1	2.2	2.7	6	2.6	5.7
23:46	15.4	3.9	1	2.2	2.5	5.6	2.6	5.7
23:47	15.7	3.6	1	2.2	2.7	5.9	2.5	5.7
23:48	15.7	3.6	1	2.2	2.7	6	2.5	5.7
23:49	15.7	3.6	1	2.2	2.7	5.9	2.6	5.7
Part. Run	15.5	3.7						
Hex Run	15.4	3.9						
Metals Run	15.5	3.8						
Run Total	15.5	3.7	1.1	2.0	3.0	5.2	3.0	5.3

Kiln 8	Run 3	06/03/92			Corrected to 7% O2		Rolling 1-Hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
10:16	15.2	3.8	1	1.4	2.4	3.4		
10:17	15.1	3.9	1	1.4	2.4	3.3		
10:18	15.2	3.8	1	1.4	2.4	3.4		
10:19	15.2	3.9	1	1.4	2.4	3.3		
10:20	15.2	3.9	1	1.4	2.4	3.4		
10:21	15.1	4	1	1.4	2.4	3.3		
10:22	14.7	4.2	1	1.4	2.3	3.1		
10:23	15.0	4	1	1.4	2.4	3.2		
10:24	15.1	3.9	1	1.4	2.4	3.3		
10:25	15.0	4	1	1.4	2.4	3.2		
10:26	14.8	4.2	1	1.3	2.3	3		
10:27	14.8	4.1	1	1.3	2.3	3.1		
10:28	15.1	3.9	1	1.5	2.4	3.7		
10:29	15.2	3.8	1	1.7	2.4	4		
10:30	15.0	4	1	1.6	2.4	3.8		
10:31	15.0	4	1	1.5	2.3	3.5		
10:32	15.2	3.8	1	1.5	2.5	3.7		
10:33	15.4	3.7	1	1.5	2.5	3.7		
10:34	15.2	3.8	1	1.4	2.5	3.5		
10:35	15.0	4	1	1.4	2.4	3.4		
10:36	15.3	3.7	1	2.5	2.5	6.2		
10:37	15.4	3.7	1	2.6	2.5	6.6		
10:38	15.4	3.7	1	1.9	2.5	4.7		
10:39	15.1	3.9	1	1.8	2.4	4.3		
10:40	15.2	3.8	1	1.8	2.4	4.3		
10:41	15.4	3.6	1	1.7	2.5	4.3		
10:42	15.4	3.7	1	1.7	2.5	4.2		
10:43	15.3	3.8	1	1.6	2.5	4		
10:44	15.1	3.9	1	1.6	2.4	3.9		
10:45	15.2	3.8	1	1.8	2.4	4.3		
10:46	15.0	4	1	1.8	2.4	4.2		
10:47	14.9	4.1	1	1.6	2.3	3.8		
10:48	14.7	4.2	1	1.7	2.3	3.8		
10:49	14.9	4.1	1	1.7	2.3	3.9		
10:50	14.9	4.1	1	1.8	2.3	4.1		
10:51	14.9	4.1	1	1.7	2.3	3.8		
10:52	14.9	4.1	1	1.6	2.3	3.7		
10:53	15.0	4	1	1.6	2.4	3.9		
10:54	15.2	3.8	1	1.6	2.5	4		
10:55	15.1	3.9	1	1.6	2.4	3.8		
10:56	14.8	4.1	1	1.6	2.3	3.7		
10:57	14.9	4.1	1	1.6	2.3	3.6		
10:58	15.0	4	0.9	1.6	2.1	3.7		
10:59	14.9	4	0.9	1.6	2.1	3.7		
11:00	14.9	4.1	0.9	1.6	2.1	3.7		
11:01	14.8	4.2	0.9	1.6	2	3.6		
11:02	15.0	4	0.9	1.6	2.1	3.7		
11:03	14.8	4.2	0.9	1.5	2	3.4		

Kiln 8	Run 3	06/03/92			Corrected to 7% O2		Rolling 1-Hour Averages	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
11:04	14.7	4.2	0.9	1.6	2	3.5		
11:05	14.7	4.2	0.9	1.5	2	3.4		
11:06	14.8	4.1	0.9	1.5	2.1	3.5		
11:07	15.1	3.9	0.9	1.5	2.2	3.7		
11:08	15.2	3.8	0.9	1.5	2.2	3.7		
11:09	15.0	4	0.9	1.5	2.1	3.5		
11:10	15.0	4	0.9	1.5	2.1	3.5		
11:11	15.1	3.9	0.9	1.6	2.1	3.8		
11:12	15.1	3.9	0.9	1.6	2.2	3.8		
11:13	15.1	4.0	0.9	1.6	2.1	3.8		
11:14	15.1	3.9	0.9	1.6	2.2	3.8		
11:15	15.2	3.8	0.9	1.9	2.2	4.5	2.3	3.8
11:17	15.1	3.9	0.9	1.7	2.2	4.1	2.3	3.8
11:18	14.9	4.1	0.9	1.7	2.1	3.8	2.3	3.8
11:19	15.1	3.9	0.9	1.6	2.2	3.9	2.3	3.8
11:20	15.1	3.9	0.9	1.6	2.1	3.8	2.3	3.8
11:21	15.1	3.9	0.9	1.6	2.2	3.8	2.3	3.8
11:22	15.2	3.9	0.9	1.6	2.2	3.9	2.3	3.8
11:23	15.2	3.8	0.9	1.6	2.2	3.9	2.3	3.9
11:24	15.2	3.8	0.9	1.6	2.2	4	2.3	3.9
11:25	15.1	3.9	0.9	1.6	2.2	3.9	2.3	3.9
11:26	15.1	3.9	0.9	1.6	2.2	3.9	2.3	3.9
11:27	15.1	3.9	0.9	1.6	2.2	3.8	2.3	3.9
11:28	15.0	4	0.9	1.6	2.1	3.8	2.3	3.9
11:29	15.1	3.9	0.9	1.6	2.1	3.9	2.3	3.9
11:30	15.1	4	0.9	1.6	2.1	3.8	2.3	3.9
11:31	15.1	3.9	0.9	1.6	2.2	3.8	2.3	3.9
11:32	15.2	3.9	0.9	1.6	2.2	3.9	2.3	3.9
11:33	15.2	3.9	0.9	1.6	2.2	3.9	2.2	3.9
11:34	15.1	3.9	0.9	1.6	2.2	3.9	2.2	3.9
11:35	15.2	3.9	0.9	1.6	2.2	4	2.2	3.9
11:36	15.1	3.9	0.9	1.7	2.2	4	2.2	4.0
11:37	15.2	3.8	0.9	1.7	2.2	4.1	2.2	3.9
11:38	15.1	3.9	0.9	1.7	2.2	4.1	2.2	3.9
11:39	14.9	4.1	0.9	1.7	2.1	3.9	2.2	3.9
11:40	15.0	4	0.9	1.6	2.1	3.8	2.2	3.9
11:41	14.9	4.1	0.9	1.6	2.1	3.7	2.2	3.8
11:42	15.0	4	0.9	1.6	2.1	3.7	2.2	3.8
11:43	15.0	4	0.9	1.6	2.1	3.8	2.2	3.8
11:44	15.1	3.9	0.9	1.6	2.2	3.9	2.2	3.8
11:45	15.1	3.9	0.9	1.6	2.2	3.9	2.2	3.8
11:46	15.1	3.9	0.9	1.7	2.2	4.2	2.2	3.8
11:47	15.2	3.8	0.9	1.8	2.2	4.4	2.2	3.8
11:48	15.1	3.9	0.9	1.7	2.2	4.1	2.2	3.8
11:49	15.1	3.9	0.9	1.7	2.2	4.1	2.2	3.8
11:50	15.2	3.9	0.9	1.7	2.2	4.1	2.2	3.8
11:51	15.1	3.9	0.9	1.7	2.2	4.1	2.2	3.8

Kiln 8	Run 3	06/03/92			Corrected to 7% O2		Rolling 1-Hour Average	
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
11:52	15.1	3.9	0.9	1.7	2.2	4.1	2.2	3.8
11:53	15.1	3.9	0.9	1.8	2.1	4.2	2.2	3.9
11:54	15.1	3.9	0.9	1.8	2.2	4.3	2.2	3.9
11:55	15.0	4	0.9	1.8	2.1	4.2	2.2	3.9
11:56	14.9	4.1	0.9	1.7	2.1	4	2.2	3.9
11:57	14.9	4.1	0.9	1.7	2.1	3.9	2.2	3.9
11:58	15.0	4	0.9	1.8	2.1	4.2	2.1	3.9
11:59	15.1	3.9	0.9	1.9	2.2	4.5	2.1	3.9
12:00	15.1	3.9	0.9	2	2.2	4.7	2.2	3.9
12:01	15.2	3.9	0.9	2	2.2	5	2.2	3.9
12:02	15.1	3.9	0.9	2.1	2.2	5	2.2	4.0
12:03	15.2	3.9	0.9	2.1	2.2	5	2.2	4.0
12:04	15.1	4	0.9	1.9	2.1	4.4	2.2	4.0
12:05	15.1	3.9	0.9	1.8	2.2	4.3	2.2	4.0
12:06	15.0	4	0.9	1.8	2.1	4.2	2.2	4.0
12:07	15.1	3.9	0.9	1.8	2.2	4.4	2.2	4.0
12:08	15.0	4	0.9	1.8	2.1	4.3	2.2	4.0
12:09	14.9	4.1	0.9	1.8	2.1	4.1	2.2	4.1
12:10	14.9	4.1	0.9	1.8	2.1	4.2	2.2	4.1
12:11	14.9	4	0.9	1.8	2.1	4.2	2.2	4.1
12:12	15.0	4	0.9	1.9	2.1	4.4	2.2	4.1
12:13	15.0	4	0.9	1.8	2.1	4.3	2.2	4.1
12:14	15.1	3.9	0.9	1.8	2.2	4.4	2.2	4.1
12:15	15.2	3.9	0.9	1.8	2.2	4.4	2.2	4.1
12:16	15.1	3.9	0.9	1.8	2.2	4.3	2.2	4.1
12:17	15.2	3.9	0.9	1.9	2.2	4.7	2.2	4.1
12:18	15.1	3.9	0.9	2	2.2	4.7	2.2	4.1
12:19	15.0	4	0.9	1.8	2.1	4.3	2.2	4.1
12:20	15.0	4	0.9	1.8	2.1	4.2	2.2	4.2
12:21	15.1	3.9	0.9	1.9	2.1	4.5	2.2	4.2
12:22	15.1	3.9	0.9	1.9	2.2	4.6	2.2	4.2
12:23	15.1	3.9	0.9	2.1	2.1	4.9	2.2	4.2
12:24	14.7	4.2	0.9	1.9	2	4.4	2.2	4.2
12:25	14.9	4.1	0.9	1.9	2.1	4.4	2.2	4.2
12:26	14.9	4.1	0.9	1.9	2.1	4.5	2.2	4.2
12:27	15.0	4	0.9	1.9	2.1	4.6	2.2	4.2
12:28	15.1	4	0.9	1.9	2.1	4.5	2.2	4.2
12:29	15.0	4	0.9	1.9	2.1	4.4	2.2	4.2
12:30	15.0	4	0.9	1.9	2.1	4.4	2.2	4.3
12:31	15.1	3.9	0.9	2	2.1	4.7	2.1	4.3
12:32	15.0	4	0.9	1.8	2.1	4.3	2.1	4.3
12:33	15.0	4	0.9	1.8	2.1	4.3	2.1	4.3
12:34	15.0	4	0.9	1.9	2.1	4.6	2.1	4.3
12:35	15.1	4	0.9	1.9	2.1	4.4	2.1	4.3
12:36	14.9	4.1	0.9	1.8	2.1	4.1	2.1	4.3
12:37	15.1	3.9	0.9	1.8	2.2	4.2	2.1	4.3
12:38	14.8	4.2	0.9	1.7	2	4	2.1	4.3
12:39	14.9	4.1	0.9	1.8	2.1	4.1	2.1	4.3

In 8 Run 3 06/03/92					Corrected to 7% O2	Rolling 1-Hour Averages		
Time	Oxygen	CO2	CO	THC	CO	THC	CO	THC
12:40	14.9	4.1	0.9	1.9	2.1	4.4	2.1	4.3
12:41	14.9	4.1	0.9	2	2.1	4.6	2.1	4.3
12:42	14.9	4	0.9	2	2.1	4.8	2.1	4.4
12:43	15.0	4	0.9	2	2.1	4.8	2.1	4.4
12:44	15.2	3.9	0.9	1.9	2.2	4.6	2.1	4.4
12:45	15.1	3.9	0.9	1.8	2.2	4.4	2.1	4.4
12:46	15.1	3.9	0.9	1.8	2.2	4.3	2.1	4.4
12:54	14.9	4	0.9	1.8	2.1	4.3	2.1	4.4
12:55	14.9	4.1	0.9	1.8	2.1	4.3	2.1	4.4
12:56	14.9	4	0.9	1.8	2.1	4.3	2.1	4.4
12:57	15.1	4	0.9	1.9	2.1	4.6	2.1	4.4
12:58	15.1	4	0.9	2.1	2.1	5	2.1	4.4
12:59	15.0	4	0.9	2	2.1	4.7	2.1	4.4
13:00	15.0	4	0.9	2	2.1	4.6	2.1	4.4
13:01	14.9	4.1	0.9	1.9	2.1	4.5	2.1	4.4
13:02	14.9	4.1	0.9	2	2.1	4.6	2.1	4.4
13:03	14.9	4.1	0.9	1.9	2.1	4.4	2.1	4.5
13:04	15.1	3.9	0.9	1.9	2.1	4.6	2.1	4.5
13:05	15.0	4	0.9	2	2.1	4.7	2.1	4.5
13:06	15.1	3.9	0.9	1.9	2.2	4.5	2.1	4.5
13:07	15.0	4	0.9	1.9	2.1	4.5	2.1	4.5
13:08	15.0	4	0.9	1.9	2.1	4.3	2.1	4.5
13:09	14.9	4.1	0.9	1.8	2.1	4.2	2.1	4.4
13:10	15.0	4	0.9	1.8	2.1	4.4	2.1	4.4
13:11	15.1	3.9	0.9	1.8	2.1	4.4	2.1	4.4
13:12	15.0	4	0.9	1.8	2.1	4.4	2.1	4.4
13:13	15.1	3.9	0.9	1.8	2.1	4.4	2.1	4.4
13:14	15.1	4	0.9	1.8	2.1	4.3	2.1	4.4
13:15	15.2	3.9	0.9	1.9	2.2	4.6	2.1	4.4
13:16	15.1	4	0.9	1.8	2.1	4.4	2.1	4.4
13:17	15.0	4	0.9	1.8	2.1	4.3	2.1	4.5
13:18	15.0	4	0.9	1.9	2.1	4.6	2.1	4.5
13:19	15.1	4	0.9	2	2.1	4.8	2.1	4.5
13:20	15.0	4	0.9	2	2.1	4.6	2.1	4.5
13:21	15.0	4	0.9	2	2.1	4.8	2.1	4.5
13:22	15.0	4	0.9	1.9	2.1	4.5	2.1	4.5
13:23	15.1	4	0.9	1.9	2.1	4.5	2.1	4.5
Part. Run	15.1	3.9						
Hex Run	15.0	4.0						
Metals Run	15.1	3.9						
Run Total	15.0	4.0	0.9	1.7	2.2	4.1	2.2	4.1


1/JAN/92 7:40:24
THC
1/JAN/92 7:37:52
1/JAN/92 7:15:20
1/JAN/92 7:2:44
6 8.0 1000.0 OFF OFF OFF 8.0 OFF 8.0 OFF PPM SO21000
5 8.0 250.0 ON ON ON 8.0 OFF 8.0 OFF PPM NOX250
4 8.0 100.0 OFF OFF OFF 8.0 OFF 8.0 OFF PPM THC 100
3 8.0 20.0 OFF OFF OFF 8.0 OFF 8.0 OFF PPM
2 8.0 20.0 OFF OFF OFF 8.0 OFF 8.0 OFF PER CO2
1 8.0 1000.0 ON ON ON 8.0 OFF 8.0 OFF PER CO2
CHN LEFT MARGIN RIGHT MARGIN DATALOG TREND ASCII LOW ALARM STAT HIGH ALARM STAT UNIT TYPE
CHART PRINT TREND OPERATION MODE STANDBY ALARM LOG IS OFF MINIMA/MAXIMA NO
100
0
RECORDER/DATA LOGGER VRS.SH

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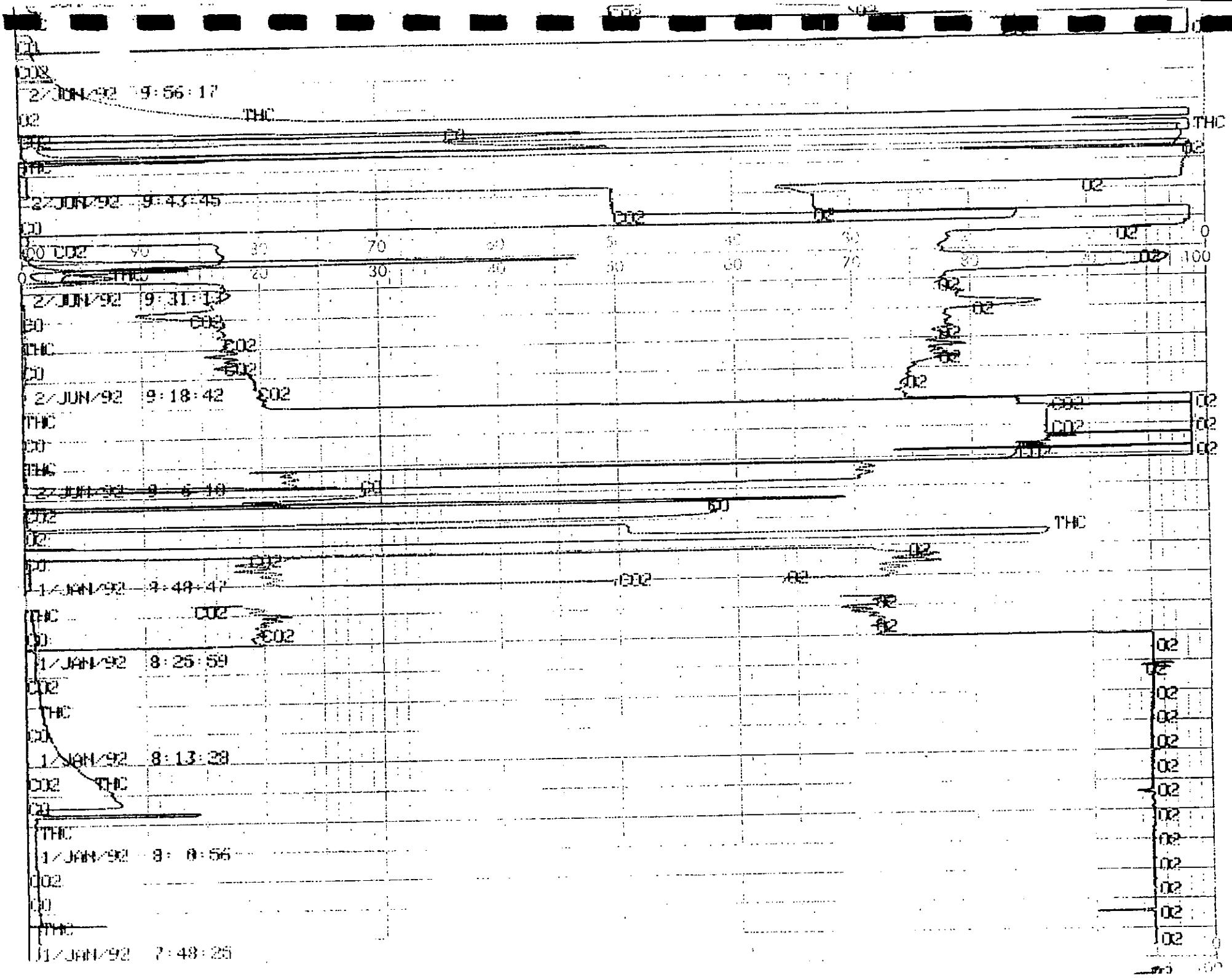
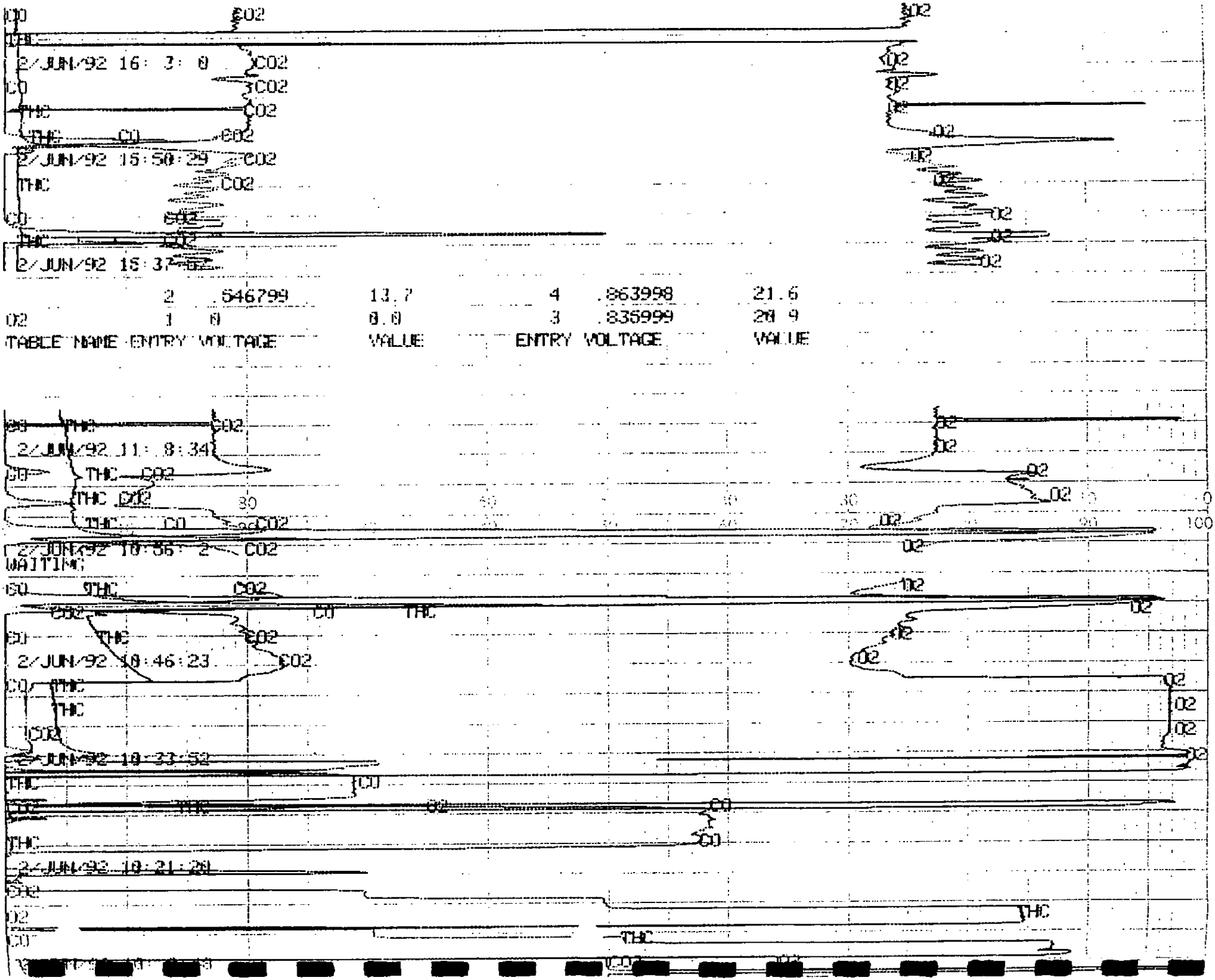
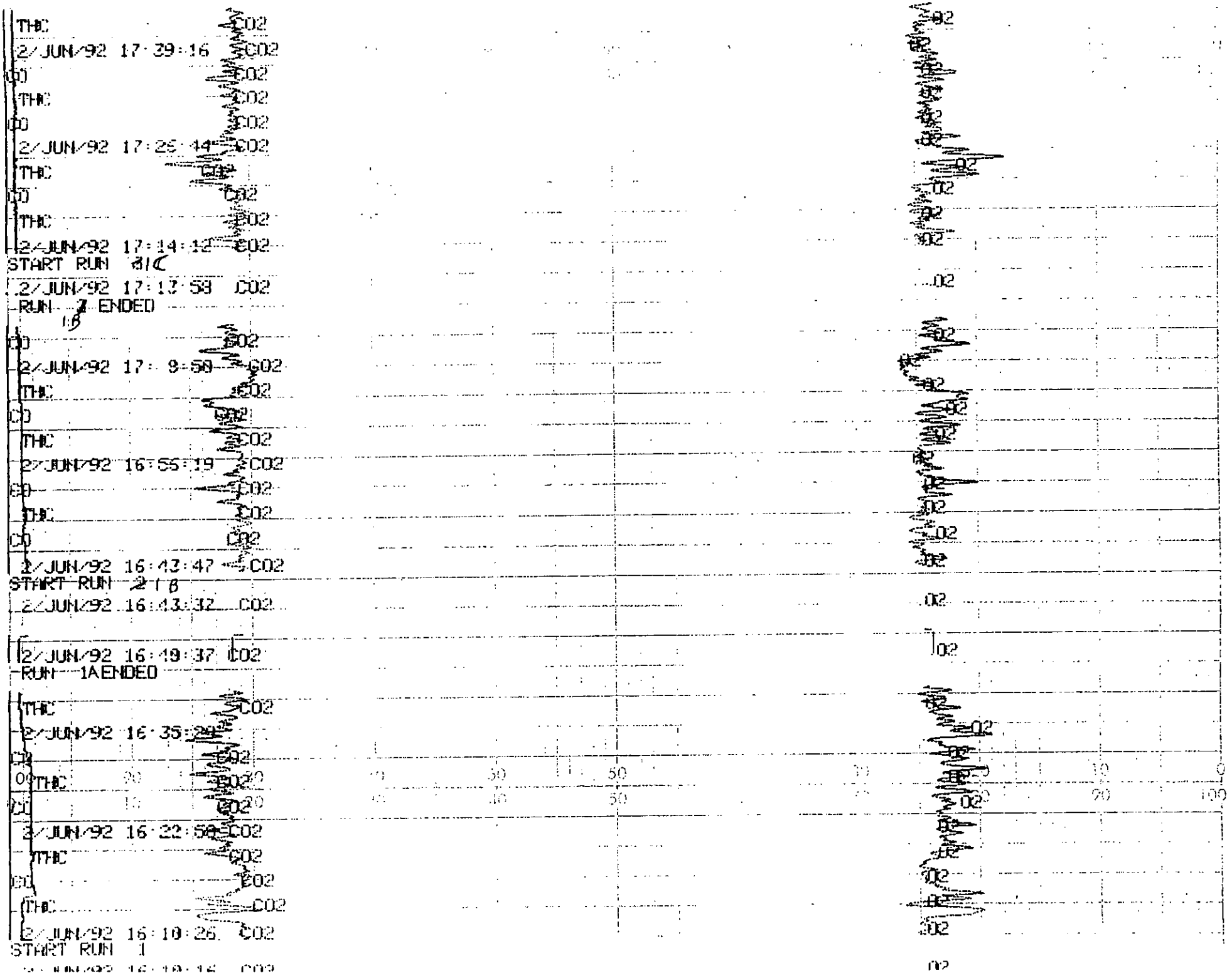
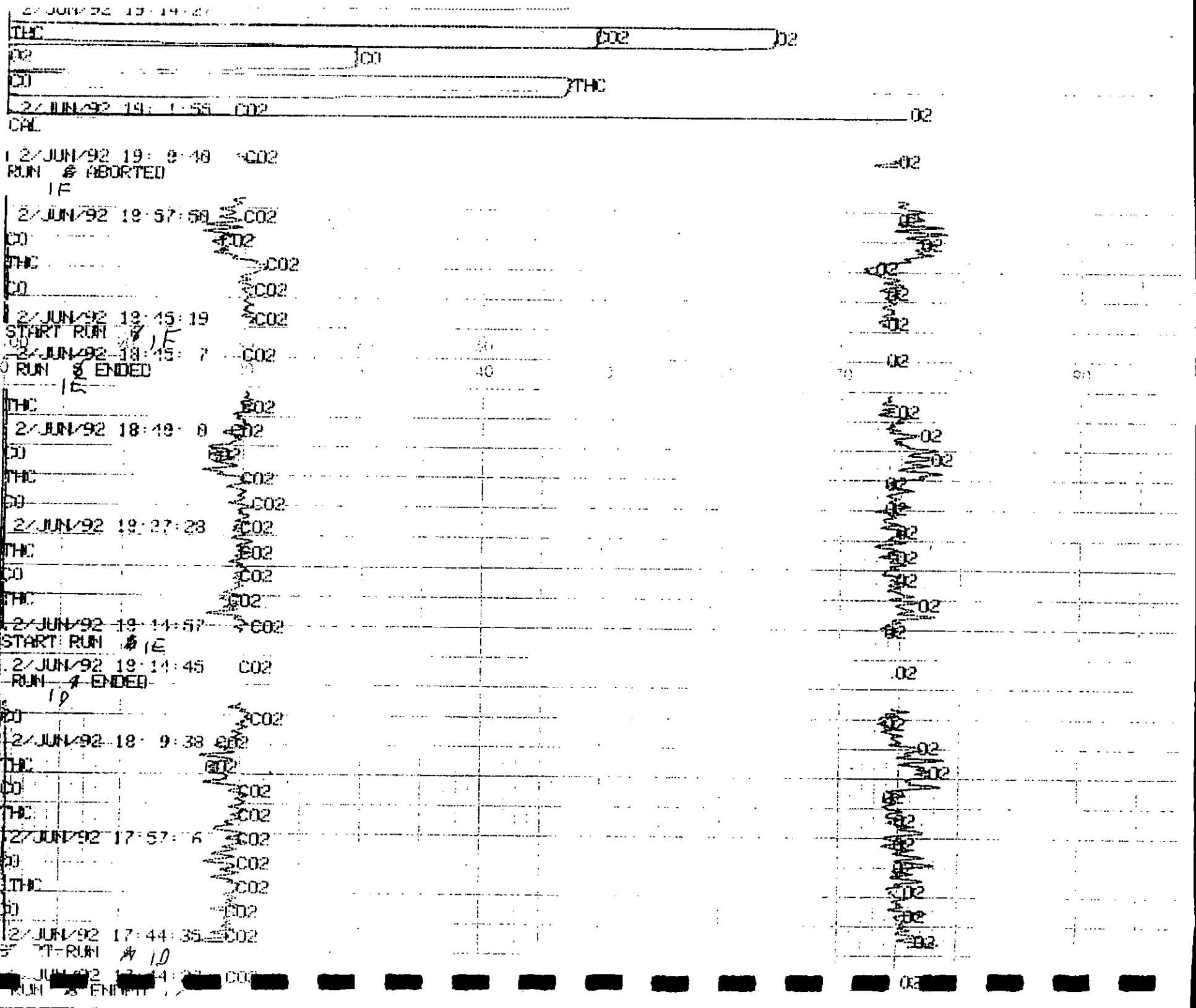
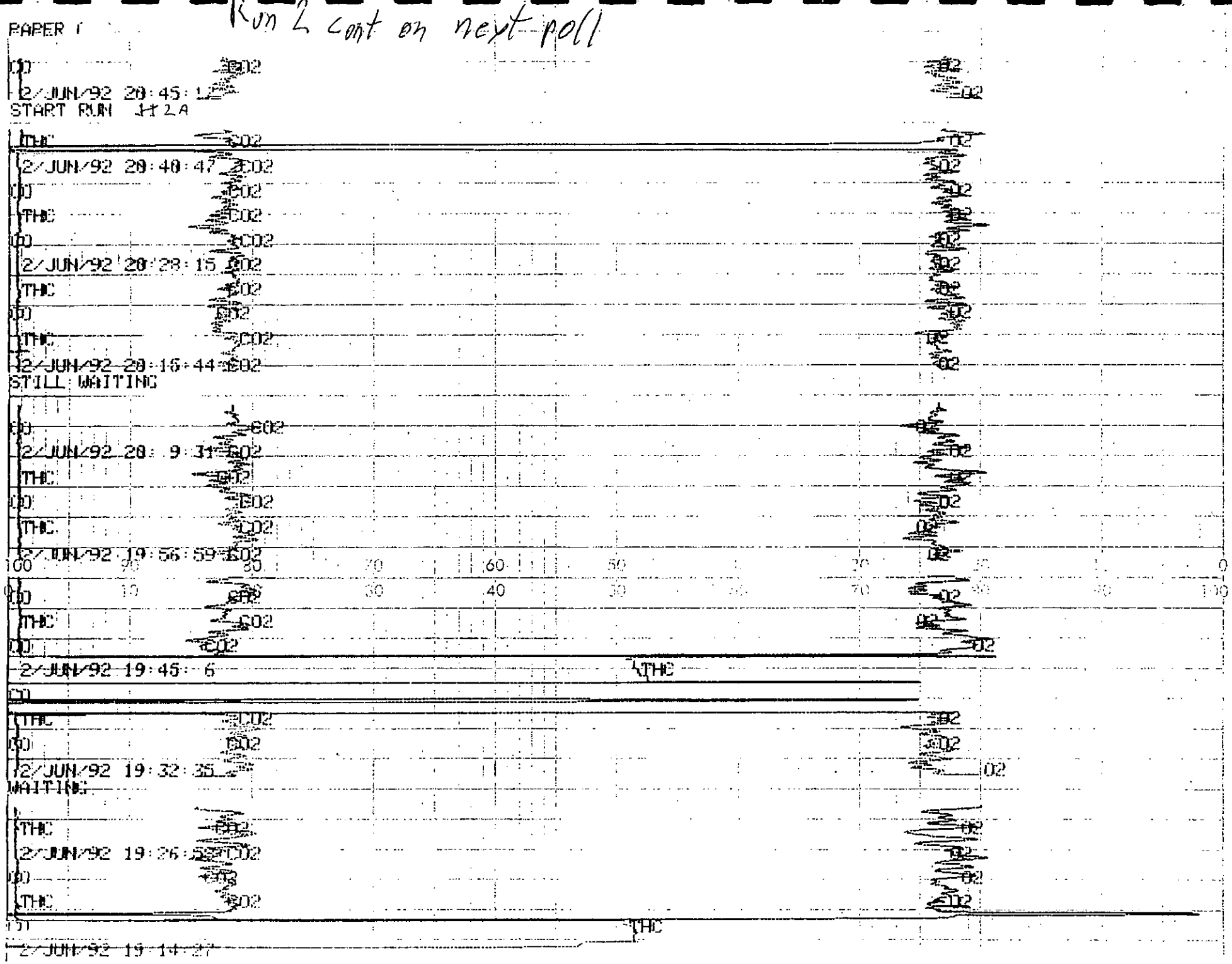

2/JUN/92 9:56:17
THC
2/JUN/92 9:43:45
THC
2/JUN/92 9:31:13
THC
2/JUN/92 9:18:42
THC
2/JUN/92 9: 6:10
THC
1/JAN/92 8:48:47
THC
1/JAN/92 8:25:59
THC
1/JAN/92 8:13:28
THC
1/JAN/92 8: 0:56
THC
1/JAN/92 7:48:25


2/JUN/92 16: 3: 0
2/JUN/92 15:50:29
2/JUN/92 15:37
2/JUN/92 11: 8:34
2/JUN/92 10:56: 2
WAITING
2/JUN/92 10:46:23
2/JUN/92 10:33:52
2/JUN/92 10:21:29
CO2
THC
CO
02
2 .546799 13.7 4 .863998 21.6
02 1 0 0.0 3 .835999 28.9
TABLE NAME ENTRY VOLTAGE VALUE ENTRY VOLTAGE VALUE


THC
2/JUN/92 17:29:16
THC
2/JUN/92 17:25:44
THC
2/JUN/92 17:14:12
START RUN 3/C
2/JUN/92 17:13:59
RUN 3 ENDED
2/JUN/92 17:9:59
THC
THC
2/JUN/92 16:55:19
THC
2/JUN/92 16:43:47
START RUN 2/B
2/JUN/92 16:43:32
2/JUN/92 16:39:37
RUN 1A ENDED
THC
2/JUN/92 16:35:29
THC
2/JUN/92 16:22:58
THC
THC
2/JUN/92 16:10:26
START RUN 1
CO2


THC
CO2
O2
CO
CAL
2/JUN/92 19: 0:40 CO2
RUN # ABORTED
2/JUN/92 19:57:50 CO2
2/JUN/92 19:45:19
START RUN # 11
2/JUN/92 18:45: 7 CO2
RUN # ENDED
2/JUN/92 18:18: 0 CO2
2/JUN/92 19:27:28 CO2
2/JUN/92 19:14:57 CO2
START RUN # 10
2/JUN/92 19:14:45 CO2
RUN # ENDED
2/JUN/92 18: 9:38 CO2
2/JUN/92 17:57: 6 CO2
2/JUN/92 17:44:35 CO2
START RUN # 10

Run 2 cont on next roll



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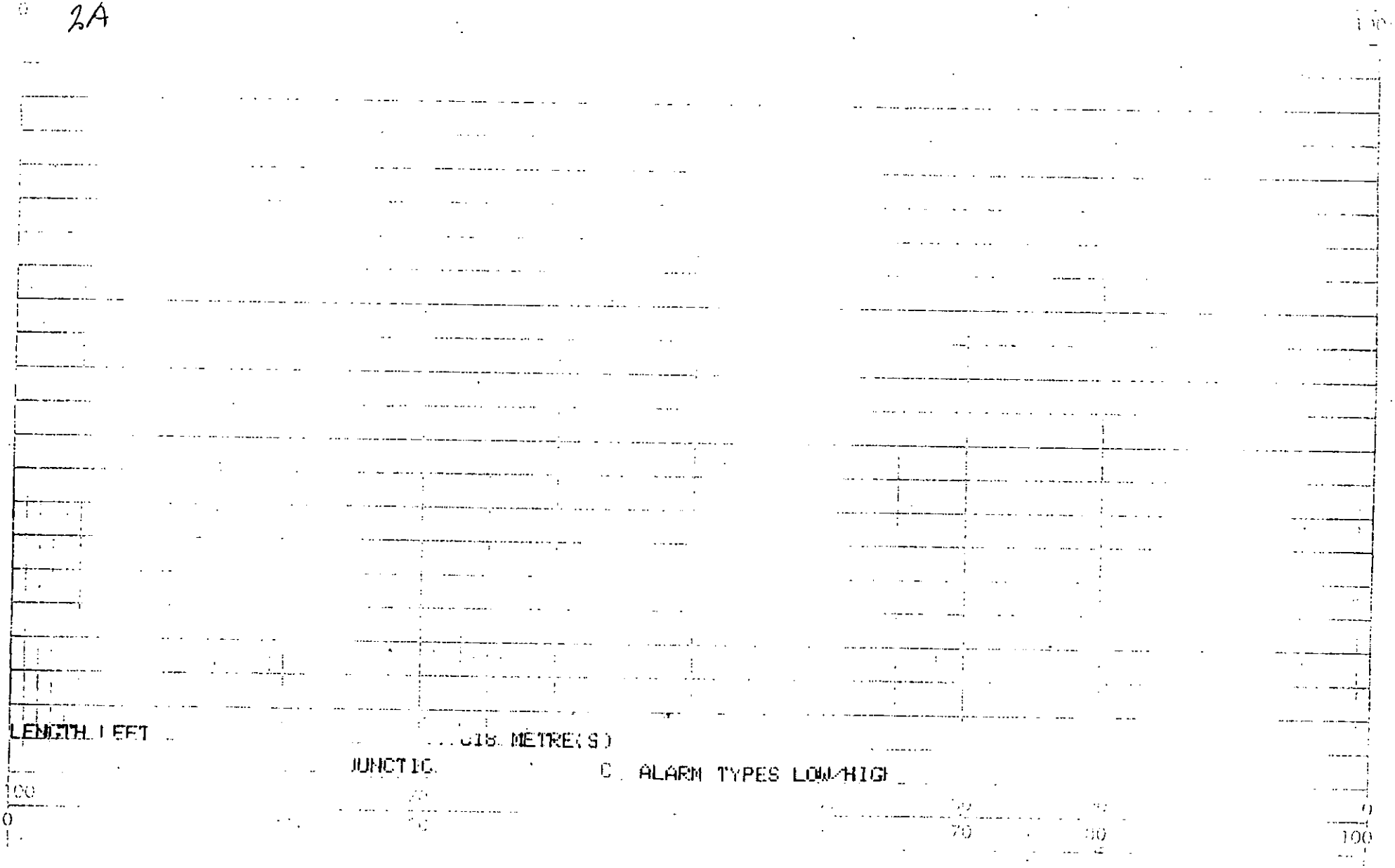
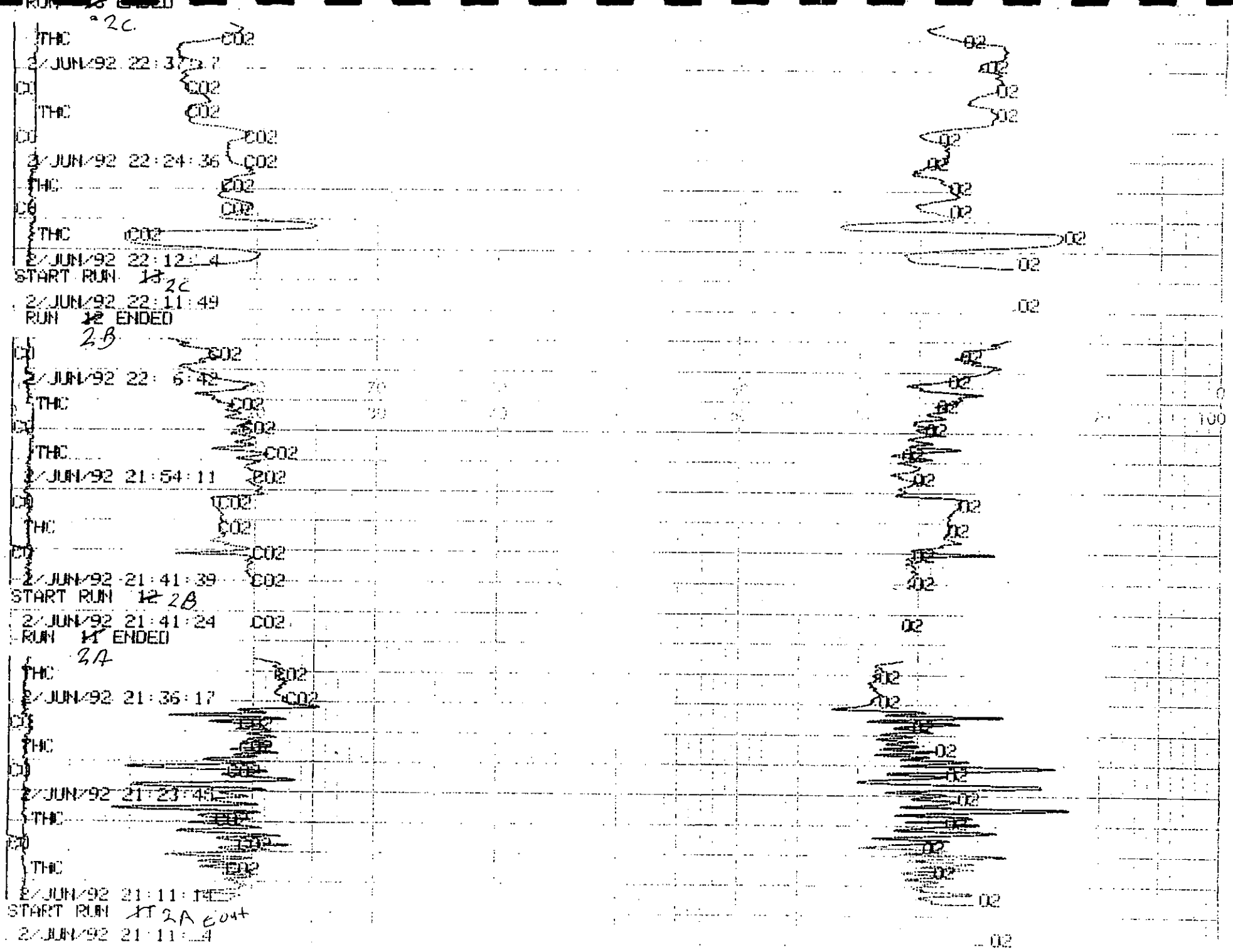
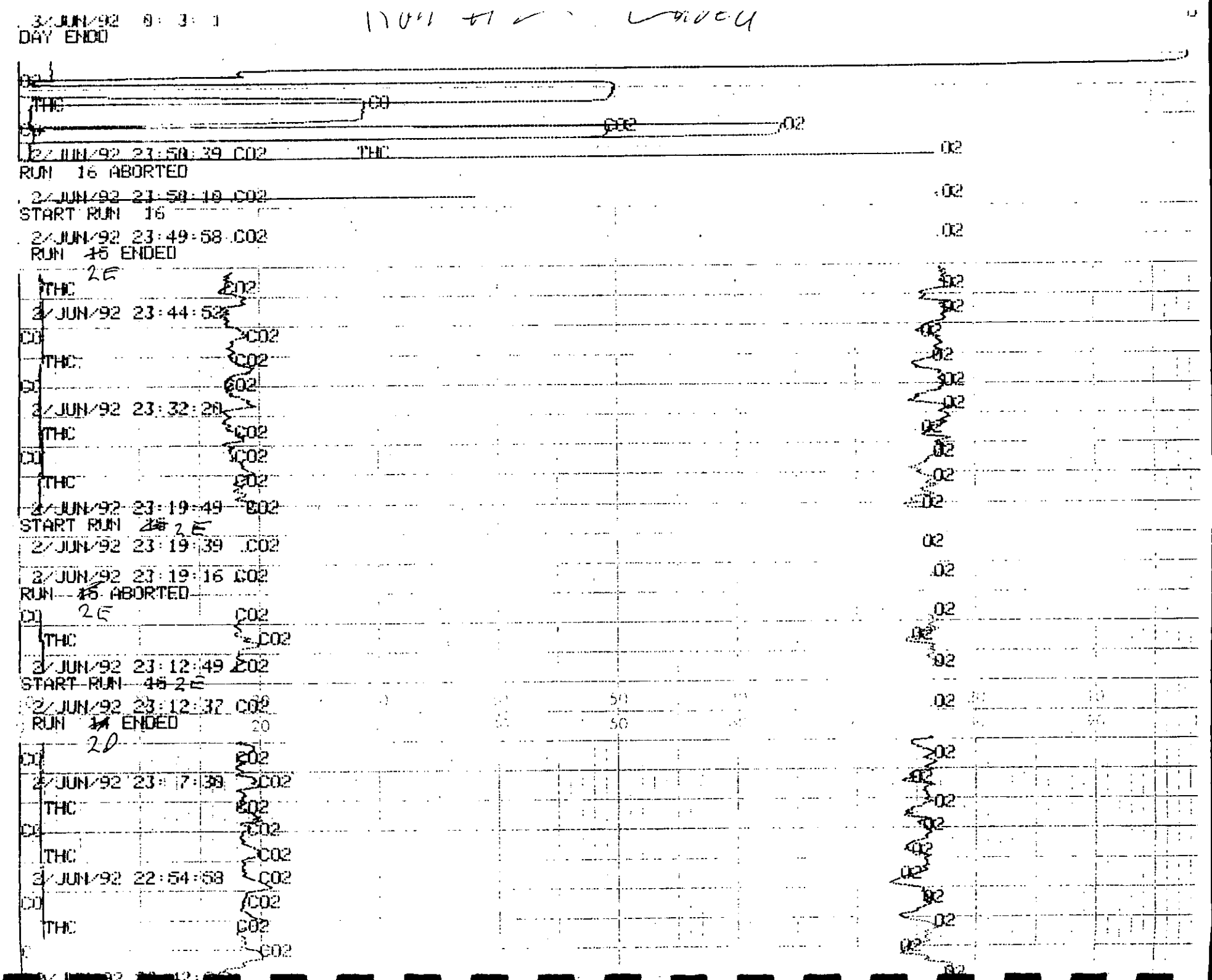
LENGTH LEFT ON PRESENT ROLL IS .21776 METRE(S)
184/DEC/91 21: 6:36 COLD JUNCTION IS 31.8 C ALARM TYPES LOW/HIGH
PAPER OUT

RECORDER/DATA LOGGER VRS 5H
RUN 1 ABORTED
2A




RUN 2C ENDED
2C
THC
CO2
2/JUN/92 22:3
2/JUN/92 22:24:36
2/JUN/92 22:12:4
START RUN 2C
2/JUN/92 22:11:49
RUN 2C ENDED
2B
2/JUN/92 22: 6:42
2/JUN/92 21:54:11
2/JUN/92 21:41:39
START RUN 2B
2/JUN/92 21:41:24
RUN 2B ENDED
2A
2/JUN/92 21:36:17
2/JUN/92 21:23:45
2/JUN/92 21:11:14
START RUN 2A
2/JUN/92 21:11:4
O2
70
0
100

C-40


3/JUN/92 0:3:1
DAY ENDED
THC
CO
CO2
2/JUN/92 23:50:39 CO2
RUN 16 ABORTED
2/JUN/92 23:50:19 CO2
START RUN 16
2/JUN/92 23:49:58 CO2
RUN 15 ENDED
25
THC
CO2
2/JUN/92 23:44:52
2/JUN/92 23:32:28
2/JUN/92 23:19:49
START RUN 25
2/JUN/92 23:19:39 CO2
2/JUN/92 23:19:16 CO2
RUN 15 ABORTED
2/JUN/92 23:12:49
START RUN 25
2/JUN/92 23:12:32 CO2
RUN 14 ENDED
20
2/JUN/92 23:7:39
3/JUN/92 22:54:58
50
02

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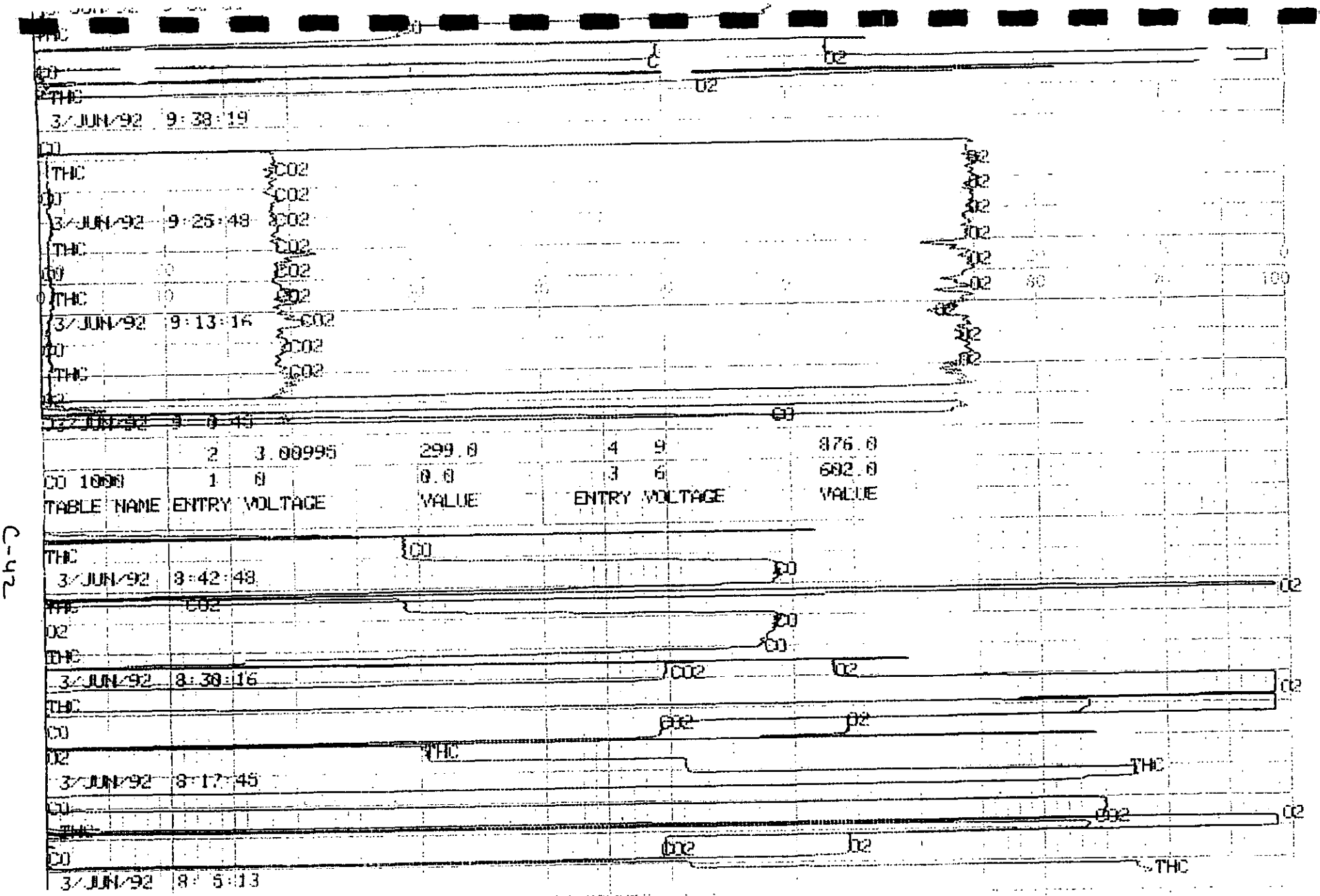

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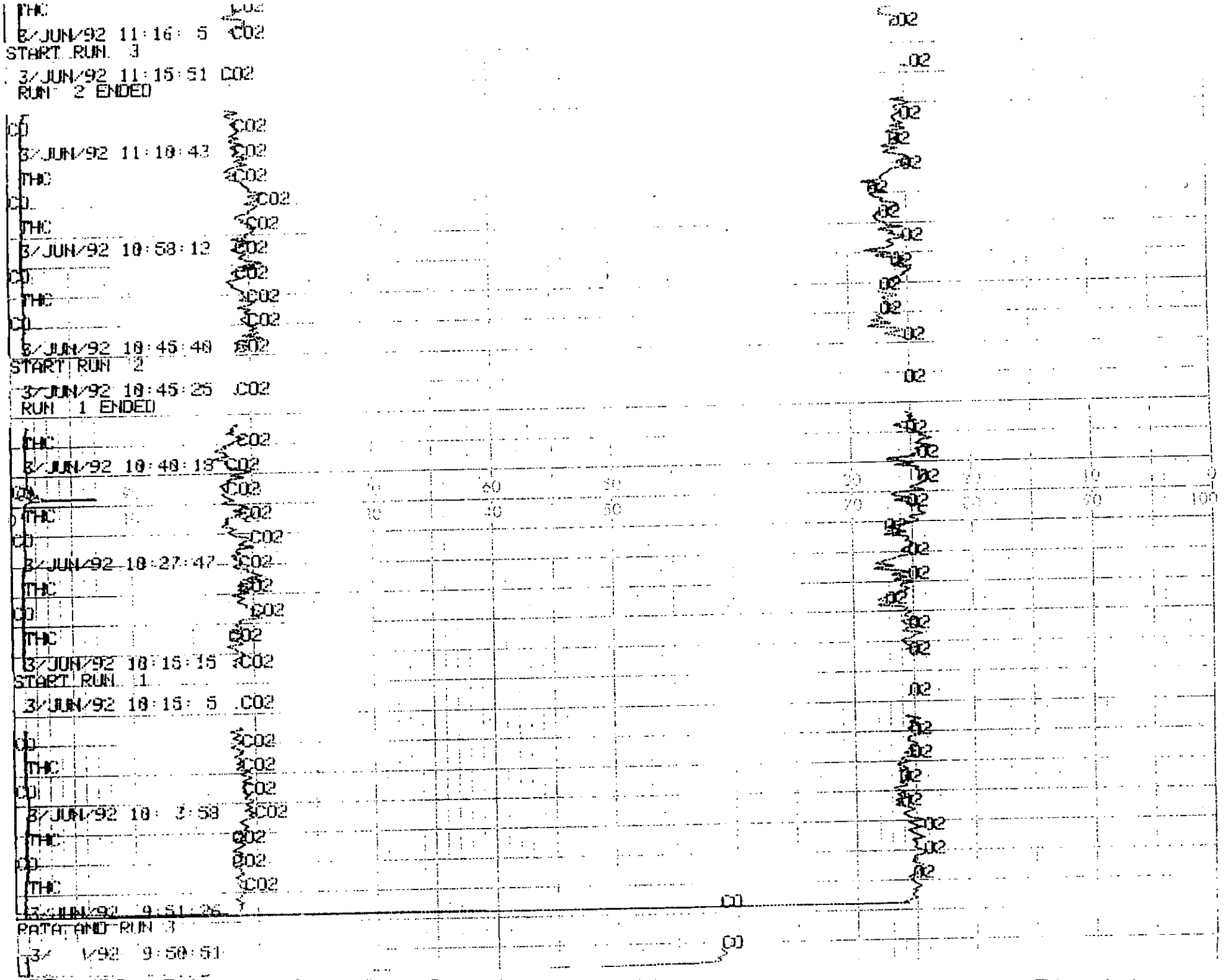
R... H.7_ Final


THC
3/JUN/92 11:16: 5 CO2
START RUN 3
3/JUN/92 11:15:51 CO2
RUN 2 ENDED
CO
3/JUN/92 11:10:43
THC
CO
THC
3/JUN/92 10:58:12
CO
THC
CO
3/JUN/92 10:45:40
START RUN 2
3/JUN/92 10:45:25 CO2
RUN 1 ENDED
THC
3/JUN/92 10:40:18 CO2
THC
CO
3/JUN/92 10:27:47
THC
CO
THC
3/JUN/92 10:15:15 CO2
START RUN 1
3/JUN/92 10:15: 5 CO2
CO
THC
CO
3/JUN/92 10: 3:53
THC
CO
THC
3/JUN/92 9:51:26
RATA AND RUN 3
3/ /92 9:50:51

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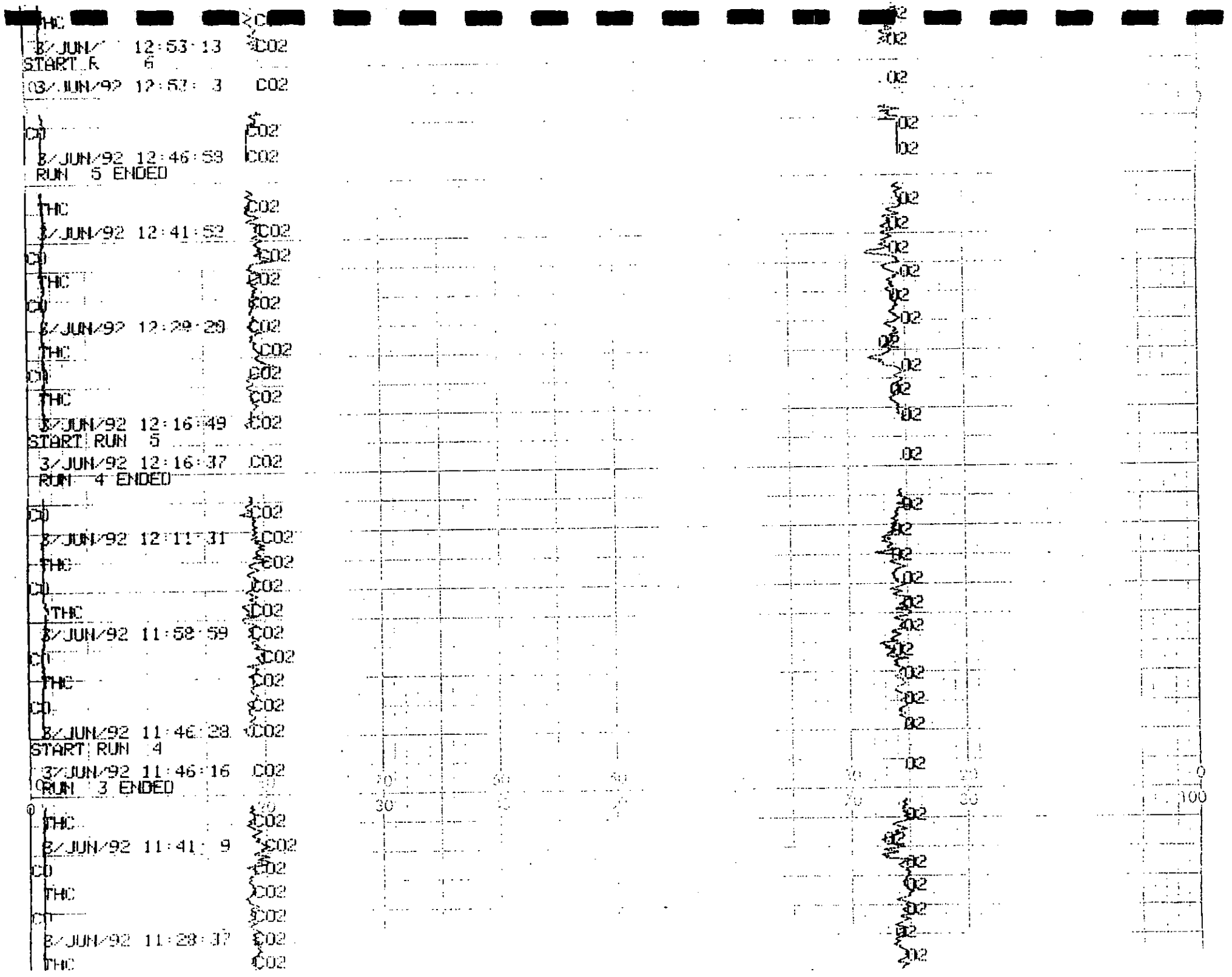
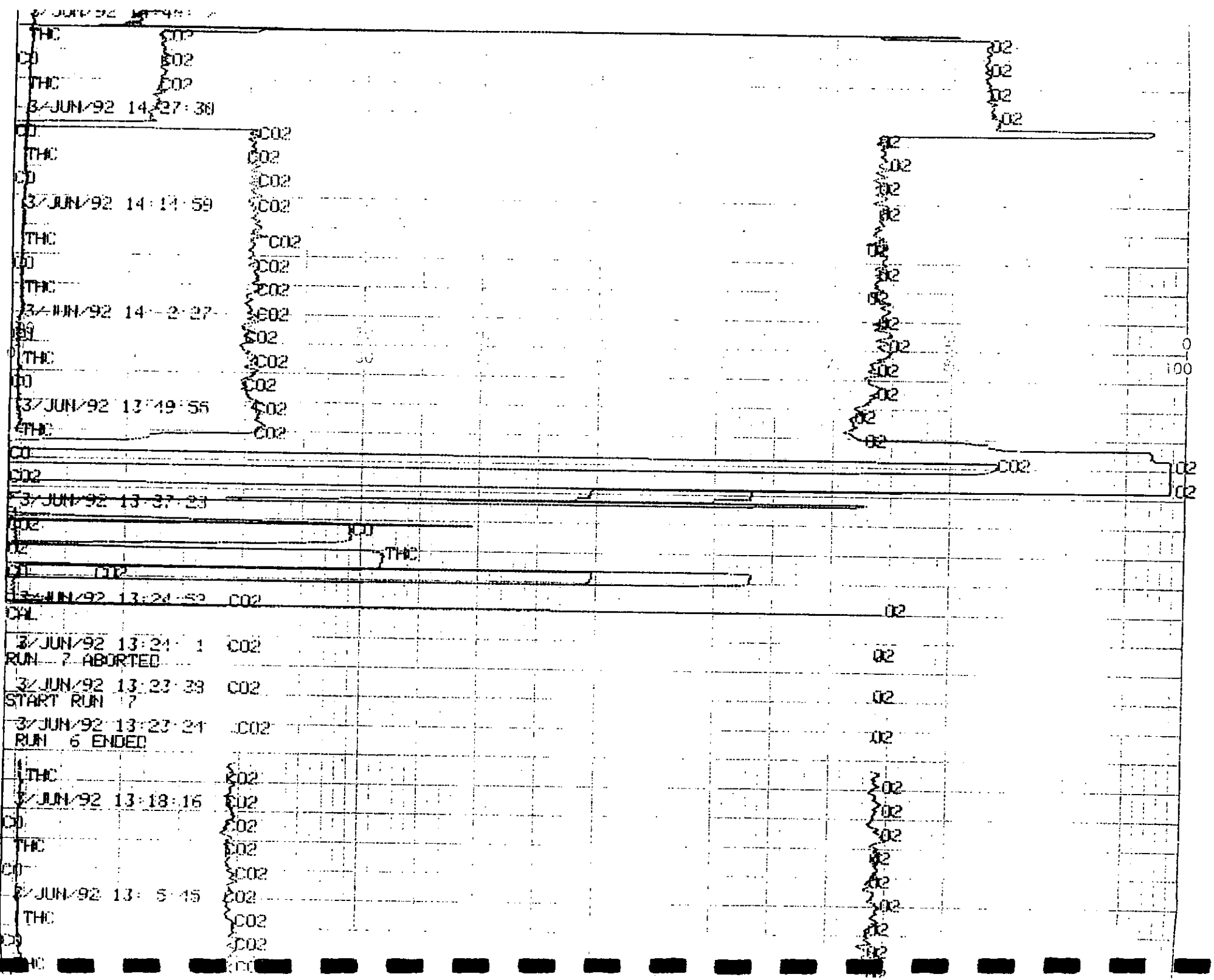
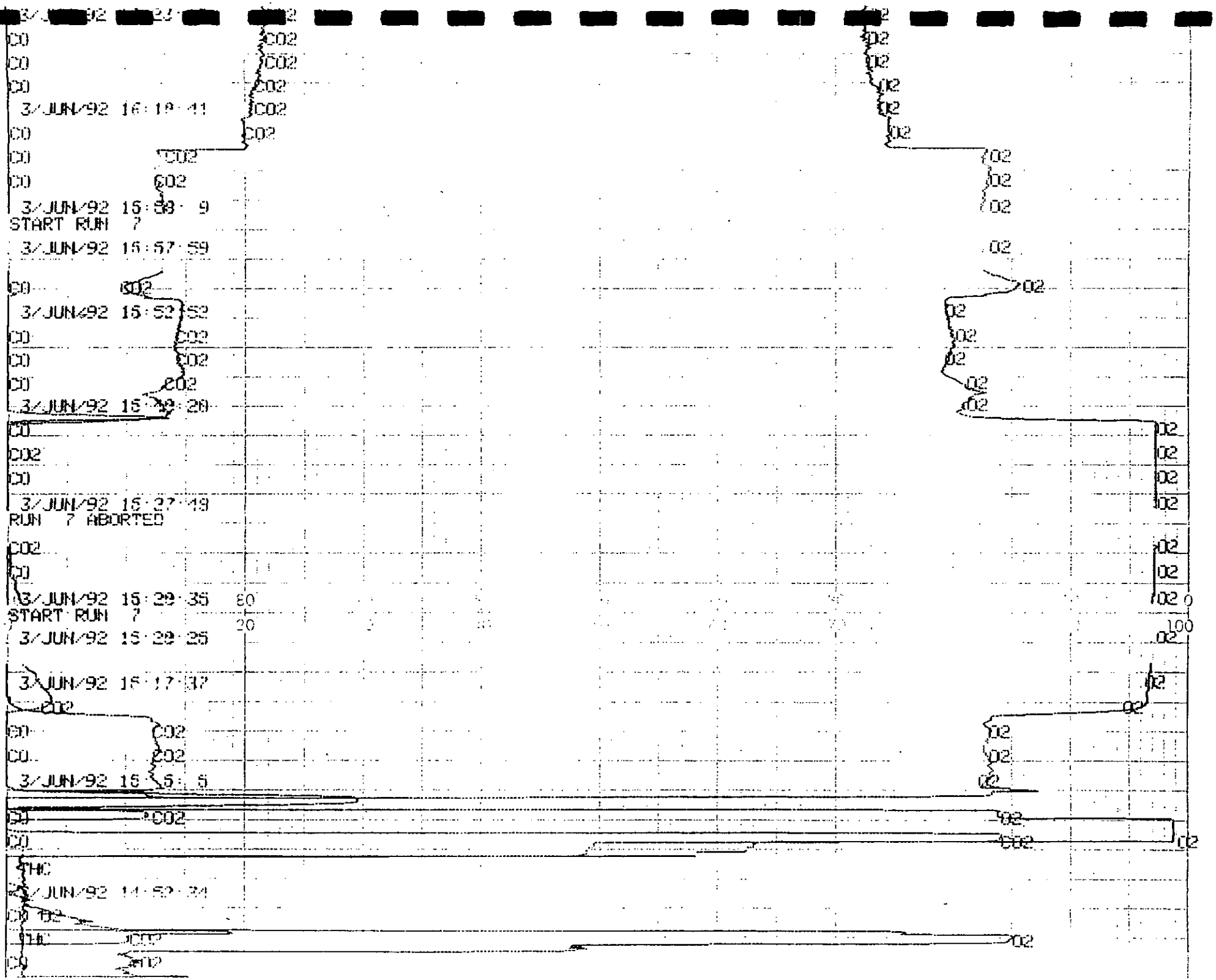
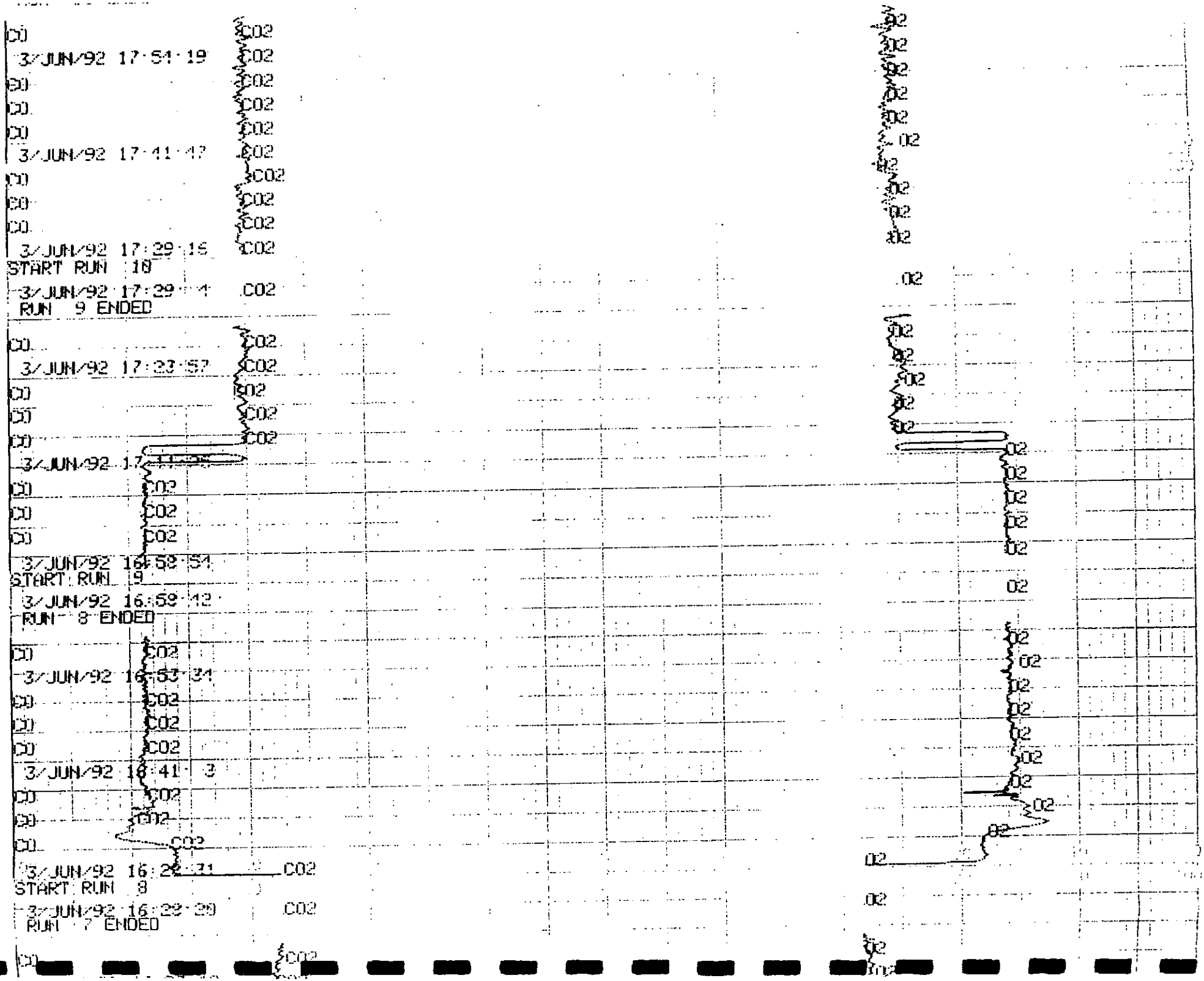

THC
3/JUN/92 12:53:13
START R 6
03/JUN/92 12:52: 3
CO
3/JUN/92 12:46:58
RUN 5 ENDED
THC
3/JUN/92 12:41:52
CO
THC
CO
3/JUN/92 12:29:29
THC
CO
THC
3/JUN/92 12:16:49
START RUN 5
3/JUN/92 12:16:37
RUN 4 ENDED
CO
3/JUN/92 12:11:31
THC
CO
THC
3/JUN/92 11:58:59
CO
THC
CO
3/JUN/92 11:46:28
START RUN 4
3/JUN/92 11:46:16
RUN 3 ENDED
THC
3/JUN/92 11:41: 9
CO
THC
CO
3/JUN/92 11:28:37
THC
CO2
70
60
50
40
30
20
10
0
100

C-44

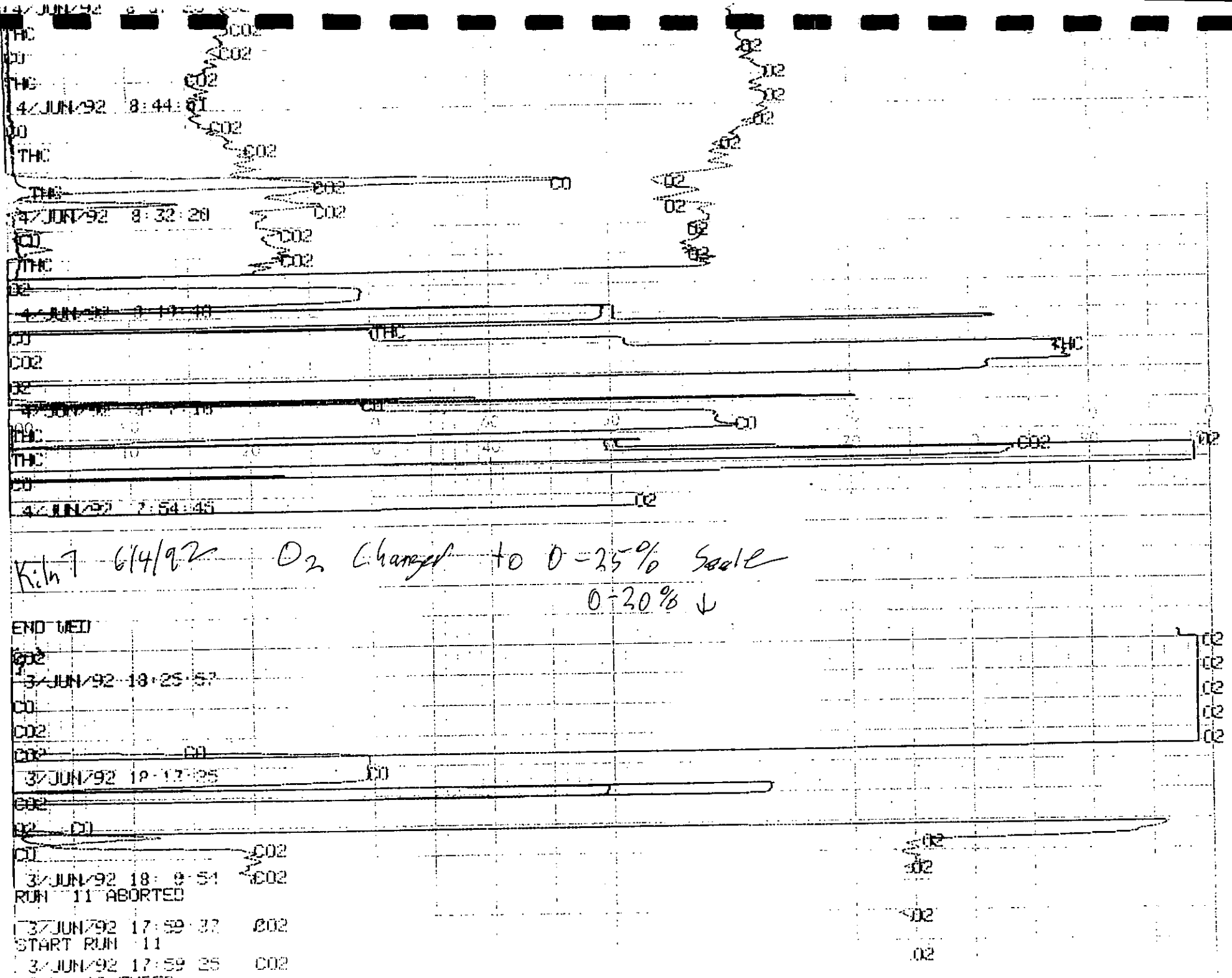

THC
CO2
3/JUN/92 14:27:38
3/JUN/92 14:14:59
3/JUN/92 14:2:27
3/JUN/92 13:49:55
3/JUN/92 13:37:23
3/JUN/92 13:24:53
3/JUN/92 13:24:1
RUN 7 ABORTED
3/JUN/92 13:23:39
START RUN 7
3/JUN/92 13:23:24
RUN 6 ENDED
3/JUN/92 13:18:16
3/JUN/92 13:5:15
0
100

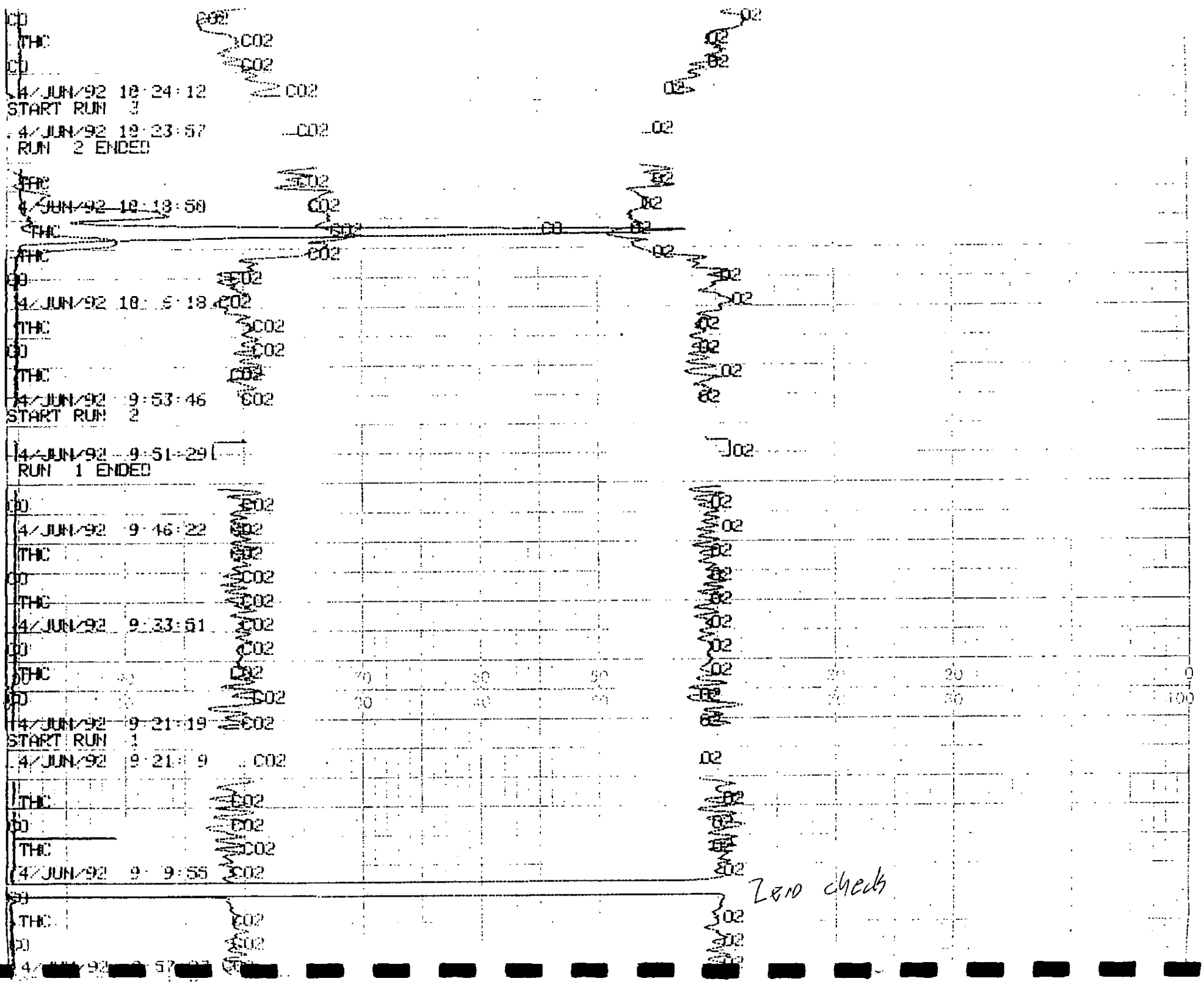

3/JUN/92 16:19:41
3/JUN/92 15:58: 9
START RUN 7
3/JUN/92 15:57:59
3/JUN/92 15:52:52
3/JUN/92 15:39:20
3/JUN/92 15:37:49
RUN 7 ABORTED
3/JUN/92 15:29:35
START RUN 7
3/JUN/92 15:29:25
3/JUN/92 15:17:37
3/JUN/92 15: 5: 5
3/JUN/92 14:52:34
CO
CO2
THC
80
20
100
0

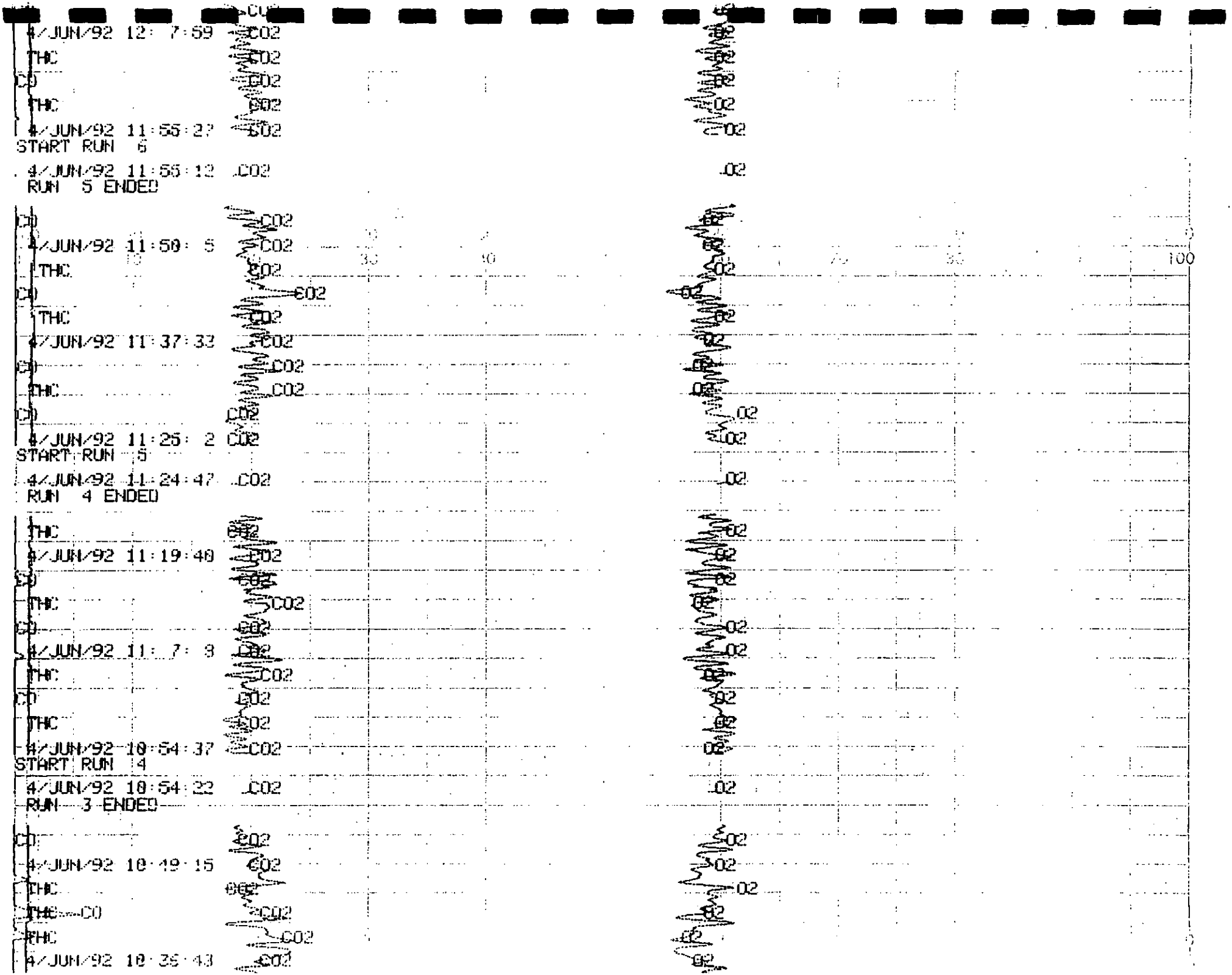
C-49


3/JUN/92 17:51:19
3/JUN/92 17:41:47
3/JUN/92 17:29:16
START RUN 10
3/JUN/92 17:29:41
RUN 9 ENDED
3/JUN/92 17:23:57
3/JUN/92 16:52:51
START RUN 9
3/JUN/92 16:59:12
RUN 8 ENDED
3/JUN/92 16:53:31
3/JUN/92 16:41:3
3/JUN/92 16:22:31
START RUN 8
3/JUN/92 16:22:39
RUN 7 ENDED

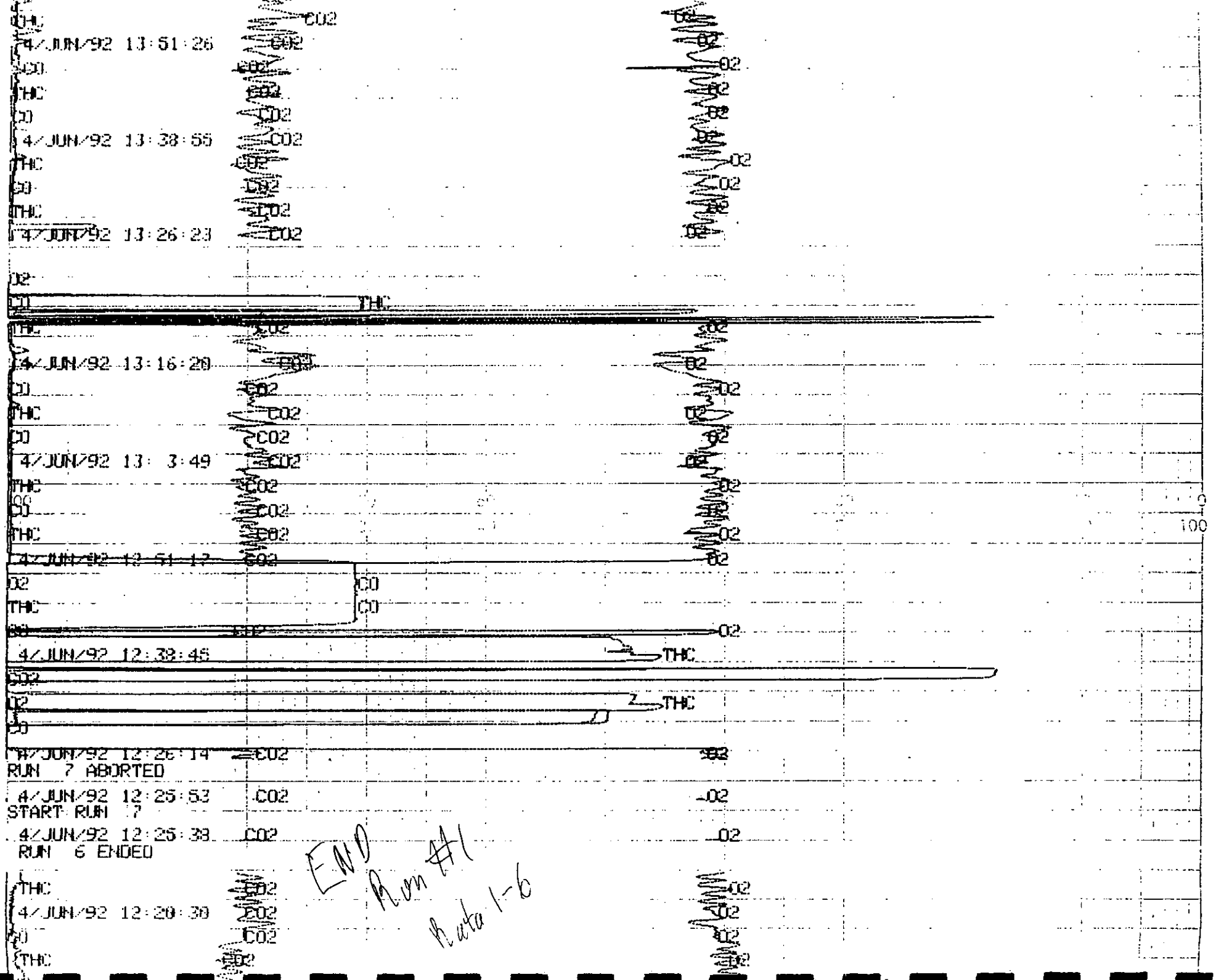
C-47


4/JUN/92 8:44:01
4/JUN/92 8:32:28
4/JUN/92 7:54:45
Kiln 7 6/4/92 O2 Changed to 0-25% Scale
0-20% ↓
END WEI
3/JUN/92 18:25:57
3/JUN/92 18:17:25
3/JUN/92 18: 9:54
RUN 11 ABORTED
3/JUN/92 17:59:37
START RUN 11
3/JUN/92 17:59:25
RUN 10 ENDED

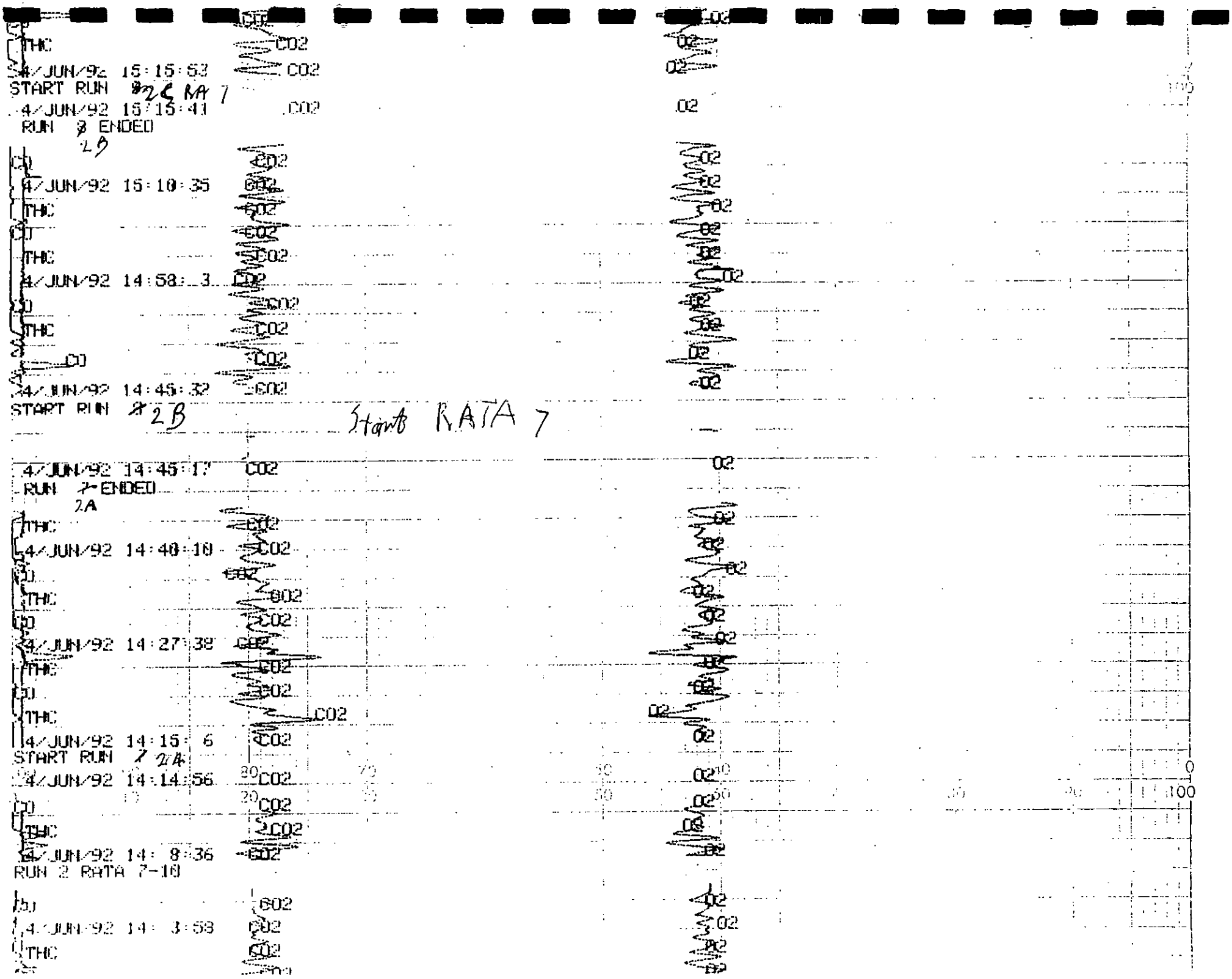

THC
CO2
4/JUN/92 10:24:12
START RUN 3
4/JUN/92 10:23:57
RUN 2 ENDED
4/JUN/92 10:13:50
4/JUN/92 10:5:18
4/JUN/92 9:53:46
START RUN 2
4/JUN/92 9:51:29
RUN 1 ENDED
4/JUN/92 9:46:22
4/JUN/92 9:33:51
4/JUN/92 9:21:19
START RUN 1
4/JUN/92 9:21:9
4/JUN/92 9:9:55
Zero checks


4/JUN/92 12: 7:59
THC
CO
THC
4/JUN/92 11:55:27
START RUN 6
4/JUN/92 11:55:12
RUN 5 ENDED
CO
4/JUN/92 11:50: 5
THC
CO
THC
4/JUN/92 11:37:33
CO
THC
CO
4/JUN/92 11:25: 2
START RUN 5
4/JUN/92 11:24:47
RUN 4 ENDED
THC
4/JUN/92 11:19:40
CO
THC
CO
4/JUN/92 11: 7: 3
THC
CO
THC
4/JUN/92 10:54:37
START RUN 4
4/JUN/92 10:54:22
RUN 3 ENDED
CO
4/JUN/92 10:49:15
THC
THC CO
THC
4/JUN/92 10:36:43
30
90
30
100

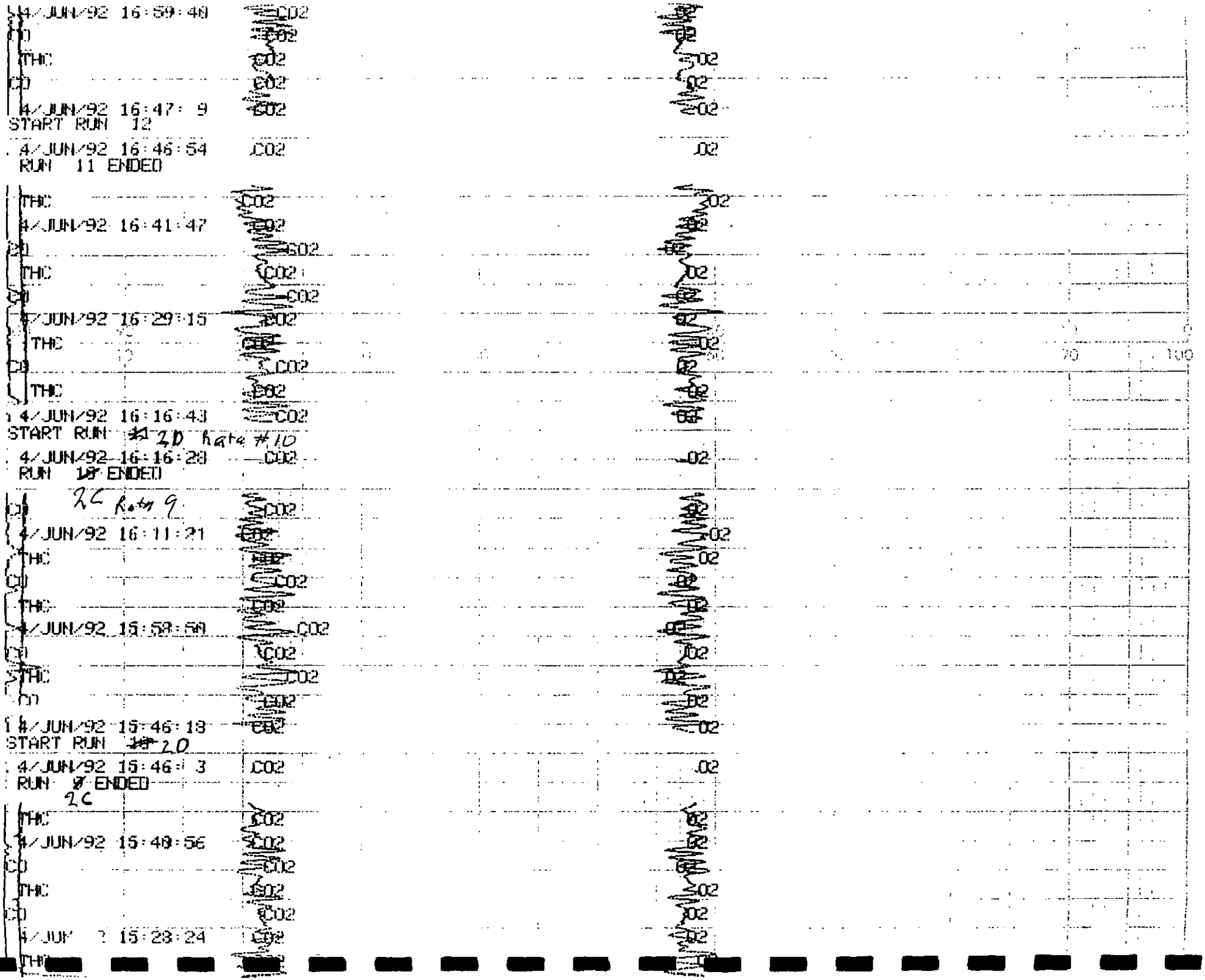
C-50


4/JUN/92 13:51:26
4/JUN/92 13:38:55
4/JUN/92 13:26:23
4/JUN/92 13:16:20
4/JUN/92 13: 3:49
4/JUN/92 12:51:17
4/JUN/92 12:38:45
4/JUN/92 12:26:14
RUN 7 ABORTED
4/JUN/92 12:25:53
START RUN 7
4/JUN/92 12:25:38
RUN 6 ENDED
4/JUN/92 12:20:30
THC
CO2
CO
O2
100
END Run #1 Rate 1-6

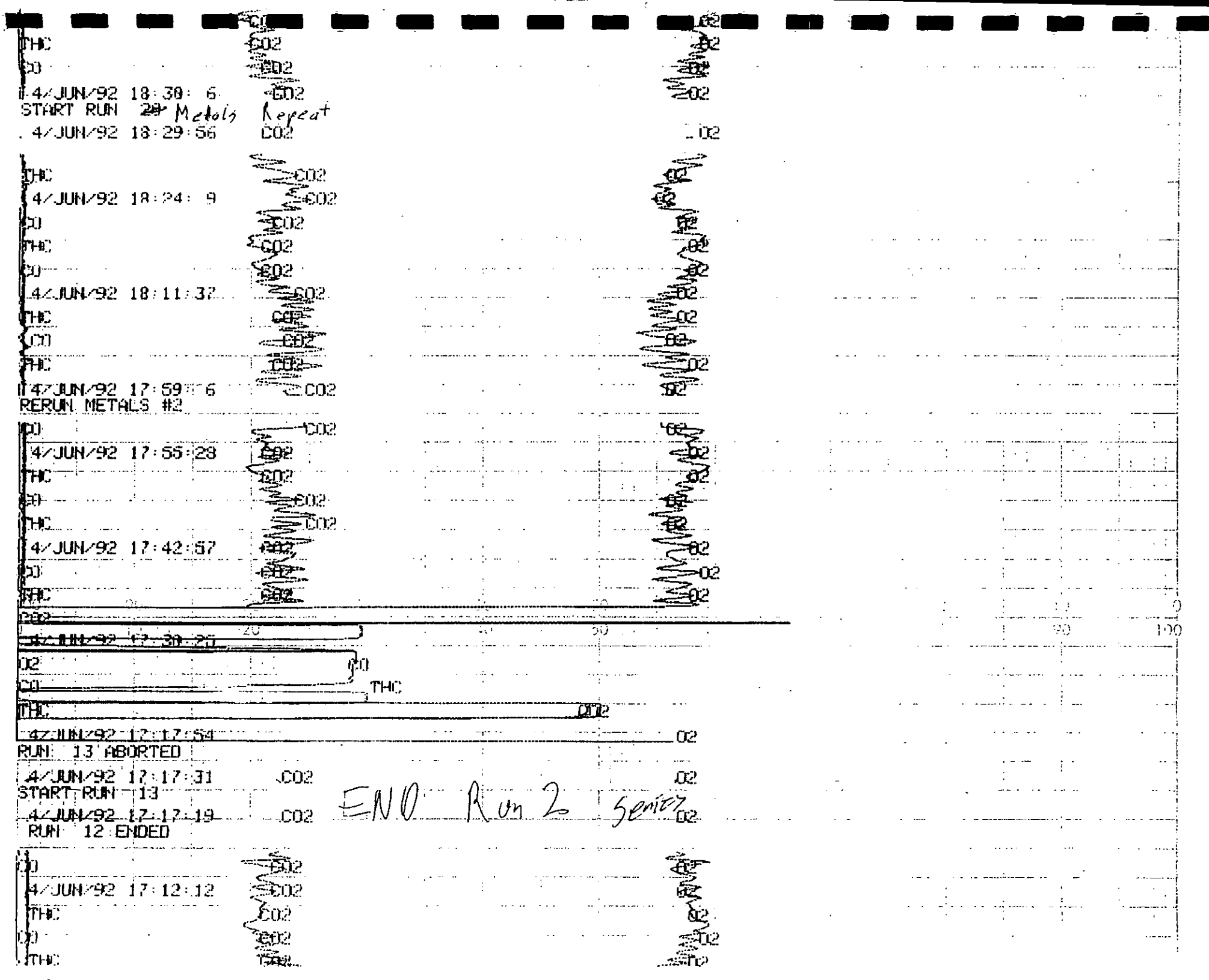
C-51

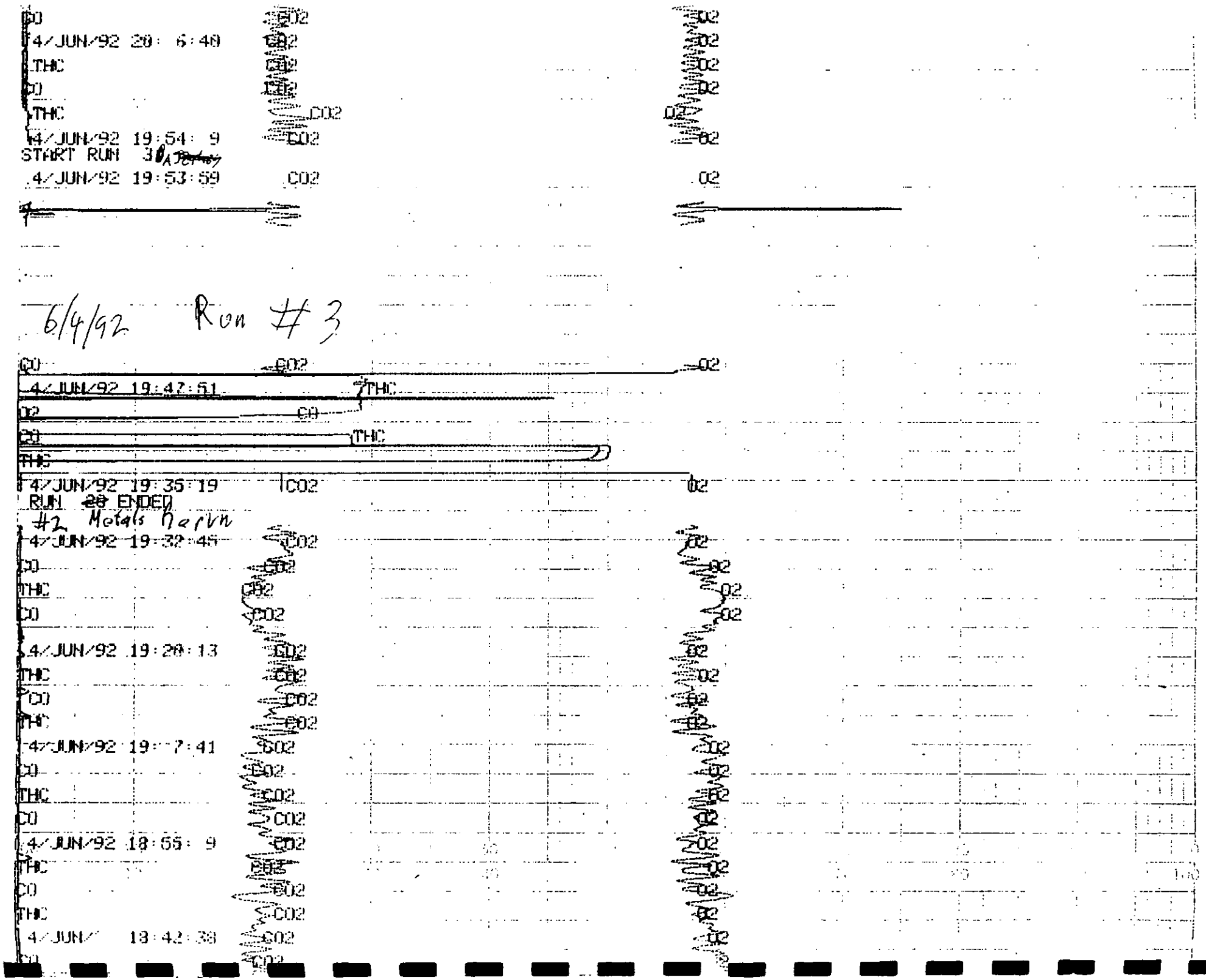

THC
4/JUN/92 15:15:53
START RUN #2C MA 7
4/JUN/92 15:15:41
RUN # ENDED
2B
4/JUN/92 15:10:35
THC
THC
4/JUN/92 14:58:3
THC
4/JUN/92 14:45:32
START RUN #2B
Start RATA 7
4/JUN/92 14:45:17
RUN # ENDED
2A
THC
4/JUN/92 14:40:10
THC
4/JUN/92 14:27:32
THC
THC
4/JUN/92 14:15:6
START RUN # 2A
4/JUN/92 14:14:56
THC
4/JUN/92 14:8:36
RUN 2 RATA 7-10
4/JUN/92 14:3:58
THC
CO2
O2

C-52

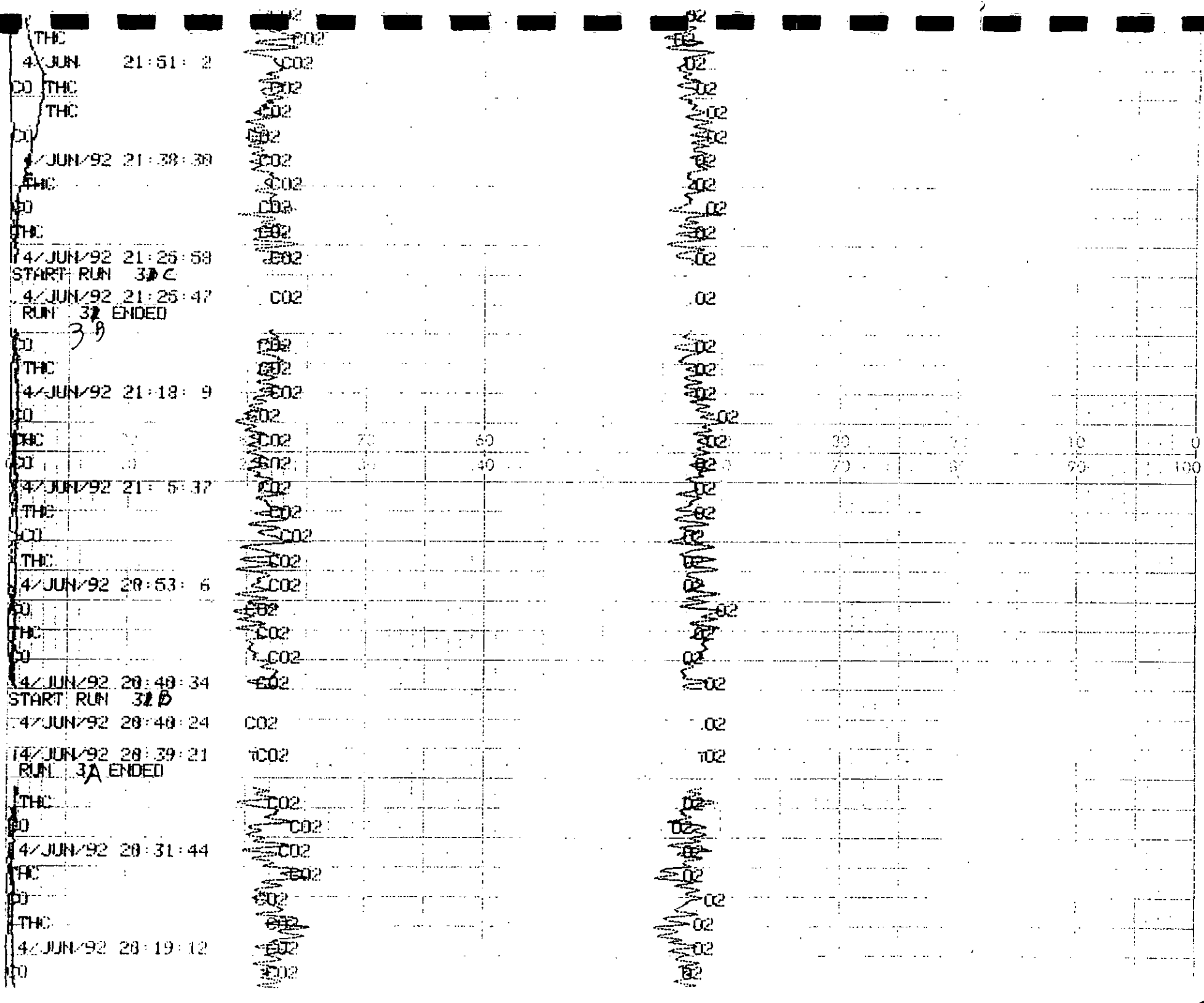

4/JUN/92 16:59:48
THC
CO
4/JUN/92 16:47: 9
START RUN 12
4/JUN/92 16:46:54
RUN 11 ENDED
THC
4/JUN/92 16:41:47
THC
CO
4/JUN/92 16:29:15
THC
THC
4/JUN/92 16:16:43
START RUN #1 2D Rate #10
4/JUN/92 16:16:28
RUN 10 ENDED
2C Rate 9
4/JUN/92 16:11:21
THC
CO
THC
4/JUN/92 15:58:50
THC
CO
4/JUN/92 15:46:18
START RUN 2D
4/JUN/92 15:46: 3
RUN 9 ENDED
2C
THC
4/JUN/92 15:40:56
CO
THC
CO
4/JUN/92 15:28:24
THC
CO2
O2
70
100

C-S3

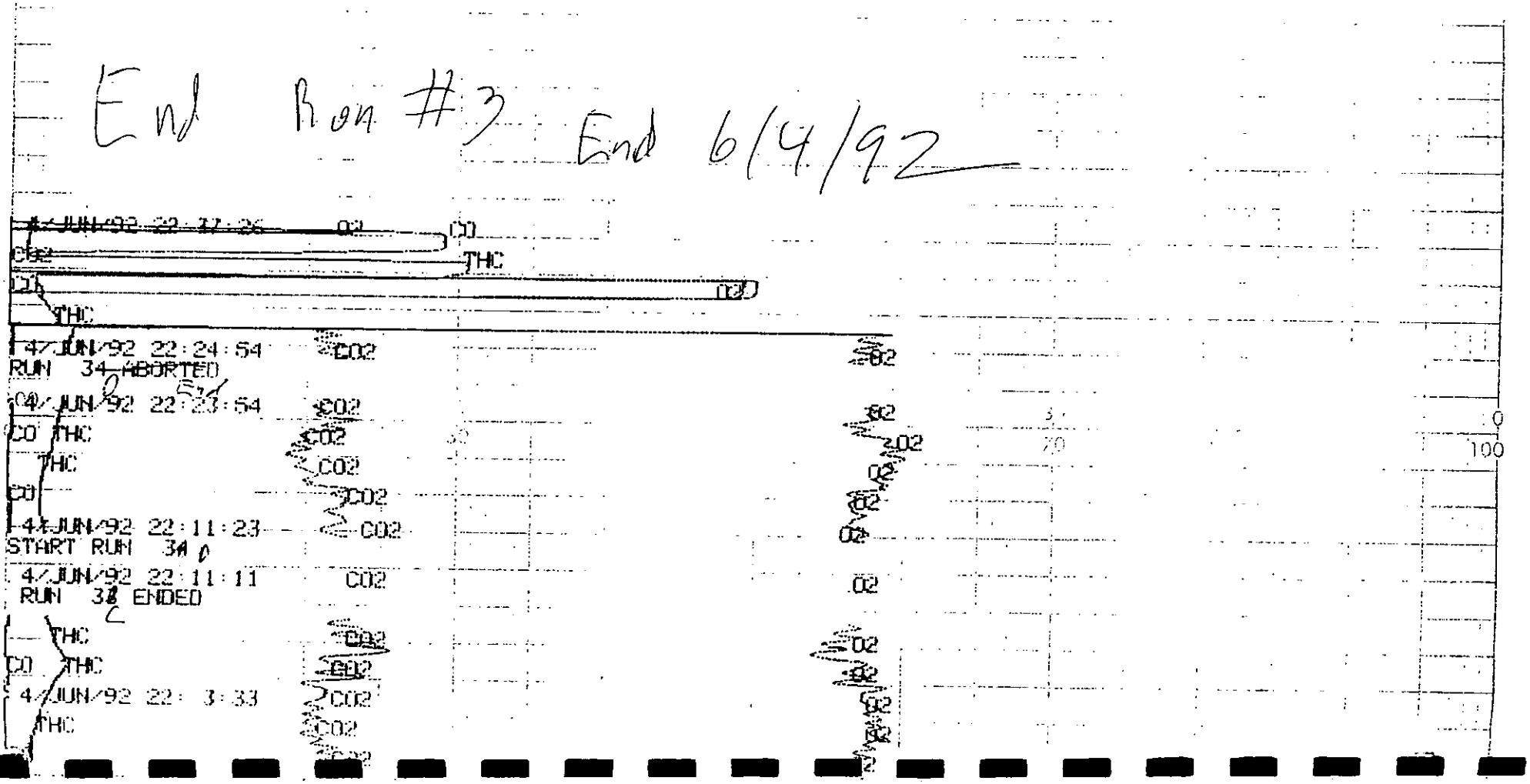

THC
CO2
O2
4/JUN/92 18:30: 6
START RUN 2# Metals Repeat
4/JUN/92 18:29:56
4/JUN/92 18:24: 9
4/JUN/92 18:11:32
4/JUN/92 17:59: 6
RERUN METALS #2
4/JUN/92 17:55:28
4/JUN/92 17:42:57
4/JUN/92 17:30:25
4/JUN/92 17:17:54
RUN 13 ABORTED
4/JUN/92 17:17:31
START RUN 13
4/JUN/92 17:17:19
RUN 12 ENDED
4/JUN/92 17:12:12
END Run 2 Series
20
30
90
100


CO
4/JUN/92 20: 6:48
THC
CO
THC
4/JUN/92 19:54: 9
START RUN 3
4/JUN/92 19:53:59
CO2
O2
6/4/92 Run #3
CO
CO2
O2
4/JUN/92 19:47:51
THC
O2
CO
CO
THC
THC
4/JUN/92 19:35:19
RUN 2 ENDED
#2 Metals Run
4/JUN/92 19:32:45
CO
THC
CO
4/JUN/92 19:20:13
THC
CO
THC
4/JUN/92 19: 7:41
CO
THC
CO
4/JUN/92 18:55: 9
THC
CO
THC
4/JUN/ 18:42:38
CO

C-55


THC
4/JUN 21:51: 2
CO THC
THC
CO
4/JUN/92 21:38:30
THC
CO
THC
4/JUN/92 21:25:58
START RUN 3C
4/JUN/92 21:25:47
RUN 3B ENDED
CO
THC
4/JUN/92 21:18: 9
CO
THC
CO
4/JUN/92 21: 5:37
THC
CO
THC
4/JUN/92 20:53: 6
CO
THC
CO
4/JUN/92 20:40:34
START RUN 3B
4/JUN/92 20:40:24
4/JUN/92 20:39:21
RUN 3A ENDED
THC
CO
4/JUN/92 20:31:44
THC
CO
THC
4/JUN/92 20:19:12
CO
CO2
O2
80
40
20
0
100

End Run #3 End 6/4/92



LS-C

AP-42 Section 11.20
Reference 19
Report Sect. 4
Reference 26
PART II OF II

Appendix D

Analytical Reports and Chain-of-Custody Records

PART II of II
SOLITE CORPORATION
A.F. OLD PLANT
ARVONIA, VA
REPORT DATE: 8/8/92

Clean Air Engineering

500 W Wood St • Palatine, IL 60067 • 708-991-3300

June 22, 1992

IEA
3000 Weston Pkwy.
Cary, N.C. 27513
ATTN: JAMES PETERS.

Dear Mr.Peters:

In regards to our phone call concerning Quality Assurance - Quality Control, I have enclosed several Quality Control documents. Please note:

Calibration Curve of Chloride Standards
Chromatographic Data Reduction Spreadsheet
Chromatograms of Standards
Chromatograms of Audit Sample and DI Water Blank
Chromatograms of Samples
Duplicate and Spike Chromatograms of Samples

If you have any questions concerning the data submitted or if you need further assistance, please do not hesitate to contact me at (708)991-3300 ext. 2057.

Sincerely,
CAE ANALYTICAL

Tarek Gharib
Analytical Chemist

Enclosures

JUNE 22, 1992

IEA
3000 Weston Pkwy.
Cary, N.C. 27513
ATTN: JAMES PETERS

Report Date: 6/22/92
Lab/Project#: 26070
P.O. #: 1381-003

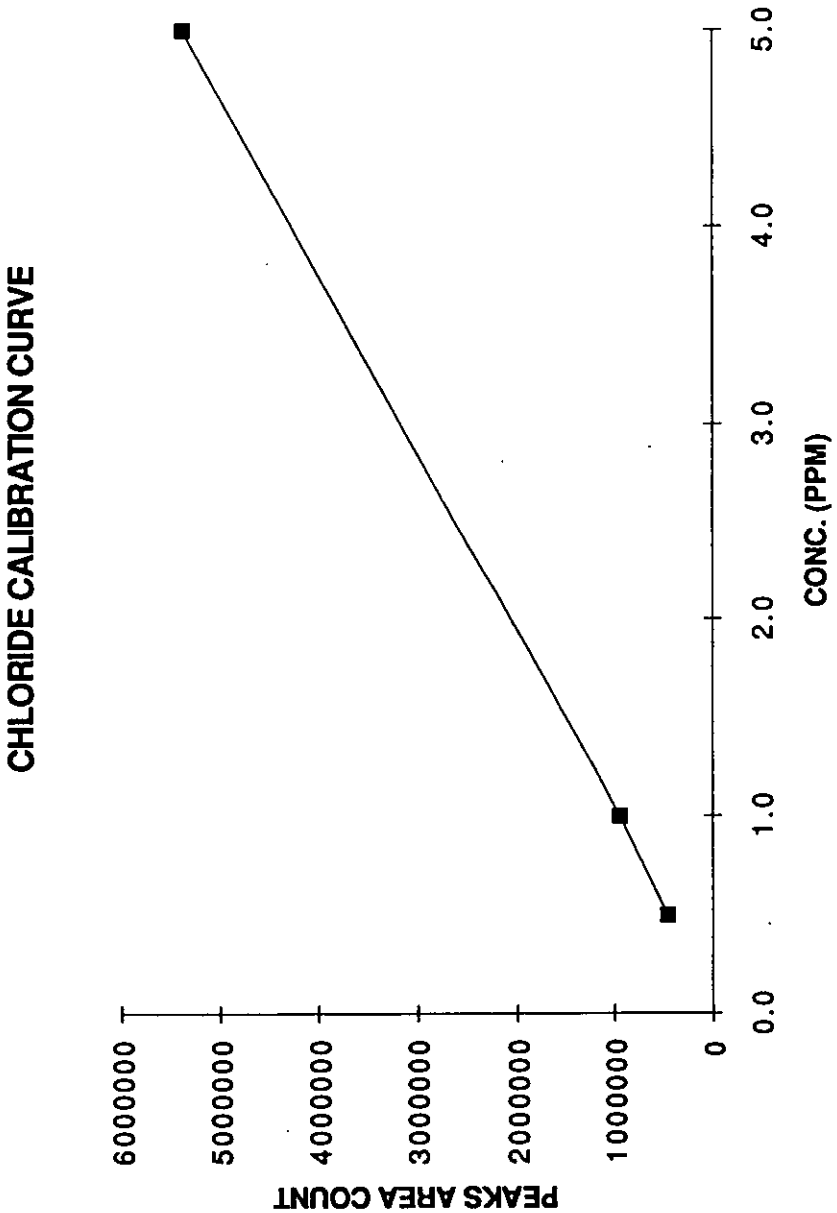
Sampling Date: Unknown
Sampler (s): Unknown
Sample Identification: 20 liquid samples identified as:

IEA 1-20

Methodology: Samples were analyzed in accordance with EPA BIF METHOD.
(Determination of HYDROGEN CHLORIDE /CHLORINE Emissions.....Ion Chromatographic Method).

Date (s) of analyses: 6/18/92 , 6/19/92

ENCLOSED ARE CHROMATOGRAMS AND QA/QC DOCUMENTATION .


CHLORIDE CALIBRATION CURVE
PEAKS AREA COUNT
6000000
5000000
4000000
3000000
2000000
1000000
0
0.0
1.0
2.0
3.0
4.0
5.0
CONC. (PPM)

CERTIFICATE OF ANALYSIS

CUSTOMER:	IEA	**DATE RECEIVED:**	6/10/92
SAMPLE TYPE:	LIQUIDS	**JOB/P.O. NUMBER:**	1381-003
PARAMETERS:	CL-	**DATE REPORTED:**	6/22/92
MARKS:	26070 01-20	**DETECTION LIMIT:**	0.05mg/L

LAB ID#	CLIENT SAMPLE ID	SAMPLE VOL.(ml)	CONC. Cl- (mg/L)	TOTAL Cl- (mg)
26070-01	8-1-INLET-HCL	42	3.01	0.13
26070-02	8-1-INLET-CL2	47	1.50	0.07
26070-03	8-2-INLET-HCL	46	141.98	6.5
26070-04	8-2-INLET-CL2	47	2.41	0.11
26070-05	8-3-INLET-HCL	42	137.97	5.8
26070-06	8-3-INLET-CL2	63	1.23	0.08

SPIKE: 26070-03
%RECOVERY: 99

Analyst: _____ **Reviewed by:** _____
Tarek Gharib
Analytical Chemist

CERTIFICATE OF ANALYSIS

CUSTOMER:	IEA	**DATE RECEIVED:**	6/10/92
SAMPLE TYPE:	LIQUIDS	**JOB/P.O. NUMBER:**	1381-003
PARAMETERS:	CL-	**DATE REPORTED:**	6/22/92
MARKS:	26070 01-20	**DETECTION LIMIT:**	0.05mg/L

LAB ID#	CLIENT SAMPLE ID	SAMPLE VOL.(ml)	CONC. Cl- (mg/L)	TOTAL Cl- (mg)
26070-07	K8-M5-1-BLK-H2SO4	198	<0.05	
26070-08	K8-M5-1-BLK-NaOH	198	<0.05	
26070-09	K8-M5-1-H2SO4 IMP	315	3269.39	1030
26070-10	K8-M5-2-H2SO4 IMP	375	3021.40	1133
26070-11	K8-M5-3-H2SO4 IMP	367	2782.76	1021
26070-12	K8-M5-1-NaOH IMP	220	5.48	1.21
26070-13	K8-M5-2-NaOH IMP	217	12.37	2.68
26070-14	K8-M5-3-NaOH IMP	237	7.56	1.79
26070-15	K7-M5-1-H2SO4 IMP	382	4804.56	1835
26070-16	K7-M5-2-H2SO4 IMP	448	4198.69	1881
26070-17	K7-M5-3-H2SO4 IMP	425	3978.54	1691
26070-18	K7-M5-1-NaOH IMP	226	11.07	2.50
26070-19	K7-M5-2-NaOH IMP	303	4.75	1.44
26070-20	K7-M5-3-NaOH IMP	280	4.24	1.19

SPIKE:	26070-13	
%RECOVERY:	97	
DUPLICATE:	26070-09	26070-16
%DEVIATION:	3.0	0.2

Analyst: _____ **Reviewed by:** _____

Tarek Gharib
Analytical Chemist

```
 READY
DATE " 6/18/92
TIME " 10:30
Memory Module / Replay Software 1.00  Installed.
AT= 1024
CS= .5
PT=10000
FI= 1.      FE= 1.      MN= 0.
PRESS 'ENTER' TO SKIP ENTRY
STORAGE MENU? (Y=YES, 'ENTER'=NO)

            FUNCTION NUMBER=

FILE NAME=" IEA
TIME        FUNCTION  VALUE
TT= .1      TF=" PM   TV= 1
TT= 15      TF=" ER   TV= 1
TT=

METHOD NUMBER:MN= 5
IF NV=0 THEN NO CALIB
IF NV=1 THEN NORMAL CALIB
IF NV>1 THEN MULTI-LEVEL CALIB
NUMBER OF LEVELS:NV=
COMPONENT TABLE...
RET TIME        RESP FACT       NAME
RT=
RRT REF PEAK:RP(I)=
SAMPLE TABLE...
ANALYST:AN=" TAREK
INJECTIONS/SAMPLE:RA=
SAMPLES BETWEEN CALIB:CI=
CONC UNITS:CU="
SAM IDX   NAME          SAM AMT     SCALE FACTOR
SI=
END OF DIALOG


CHANNEL A     INJECT  06/18/92 10:32:07  STORED TO BIN #   1
                PM 1


DATA SAVED TO BIN #   1


IEA                              06/18/92 10:32:07     CH= "A"  PS=  1.

FILE  1.     METHOD  5.     RUN'  1     INDEX   1            BIN   1

ANALYST: TAREK


NAME                  CONC      RT      AREA BC     RF


TOTALS                0.
```

CHANNEL A INJECT 06/18/92 10:35:59 STORED TO BIN # 2

peak height 10mm .5 ppm

DATA SAVED TO BIN # 2

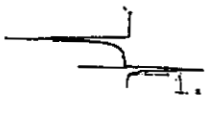
IEA 06/18/92 10:35:59 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 2 INDEX 2 BIN 2

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.61	458692	01	
TOTALS	0.		458692		

CHANNEL A INJECT 06/18/92 10:39:12 STORED TO BIN # 3



peak height 10mm .5 ppm

DATA SAVED TO BIN # 3

IEA 06/18/92 10:39:12 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 3 INDEX 3 BIN 3

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.61	460180	01	
TOTALS	0.		460180		

CHANNEL A INJECT 06/18/92 10:42:00 STORED TO BIN # 4

peak height 22 mm ppm

DATA SAVED TO BIN # 4

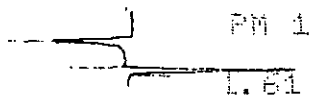
IEA 06/18/92 10:42:00 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 4 INDEX 4 BIN 4

ANALYST: TAREK

1		0.	1.61	949202 01
TOTALS		0.		949202

CHANNEL A INJECT 06/18/92 10:55:44 STORED TO BIN # 5



peak height 22 mm 1ppm

DATA SAVED TO BIN # 5

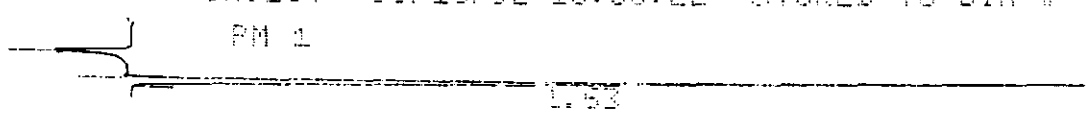
IEA 06/18/92 10:55:44 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 5 INDEX 5 BIN 5

ANALYST: TAREK

NAME	CONC	RT	AREA BC	RF
1	0.	1.61	95263. 0	
TOTALS	0.		95263.	

CHANNEL A INJECT 06/18/92 10:58:22 STORED TO BIN # 6



5.3ppm

DATA SAVED TO BIN # 6 peak height 125 mm

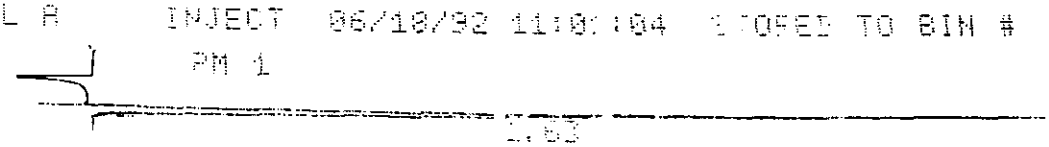
IEA 06/18/92 10:58:22 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 5 INDEX 6 BIN 6

ANALYST: TAREK

NAME	CONC	RT	AREA BC	RF
1	0.	1.63	375021 01	
TOTALS	0.		375021	

CHANNEL A INJECT 06/18/92 11:01:04 STORED TO BIN # 7



5.3ppm

DATA SAVED TO BIN # 7 peak height 125 mm

IEA 06/18/92 11:01:04 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 7 INDEX 7 BIN 7

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.63	5375587	01	
TOTALS	0.		5375587		

CHANNEL A INJECT 06/18/92 11:03:52 STORED TO BIN # 8

PM 1

DATA SAVED TO BIN # 8

IEA 06/18/92 11:03:52 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 8 INDEX 8 BIN 8

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
TOTALS	0.				

CHANNEL A INJECT 06/18/92 11:07:26 STORED TO BIN # 9

PM 1

1.62

DATA SAVED TO BIN # 9

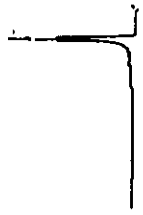
Audit Sample

IEA 06/18/92 11:07:26 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 9 INDEX 9 BIN 9

ANALYST: TAREK

IE	CONC	RT	AREA	BC	RF
1	0.	1.62	1763927	01	
TOTALS	0.		1763927		



DATA SAVED TO BIN # 10

IEA 06/18/92 11:10:19 CH= "A" PS= 1.

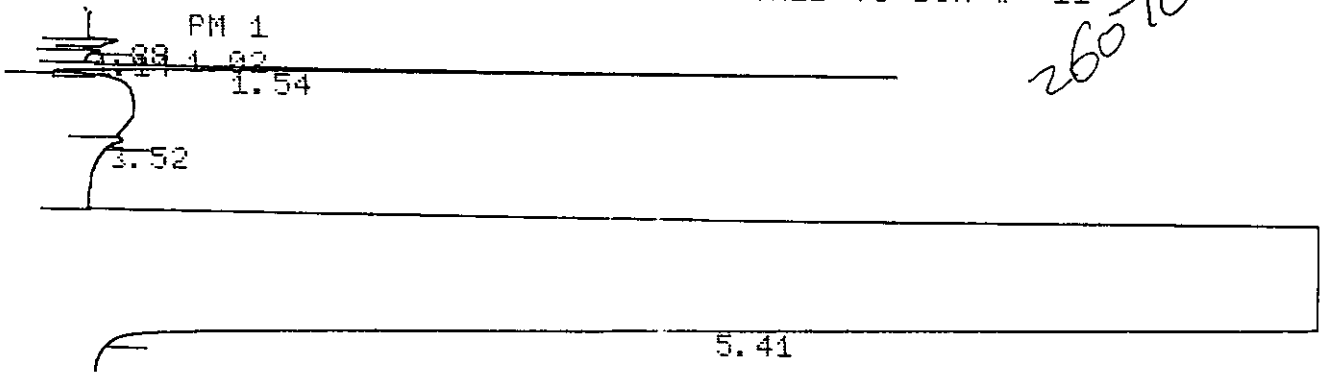
FILE 1. METHOD 5. RUN 10 INDEX 10 BIN 10

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
TOTALS	0.				

CHANNEL A INJECT 06/18/92 11:16:19 STORED TO BIN # 11

26070-01



DATA SAVED TO BIN # 11

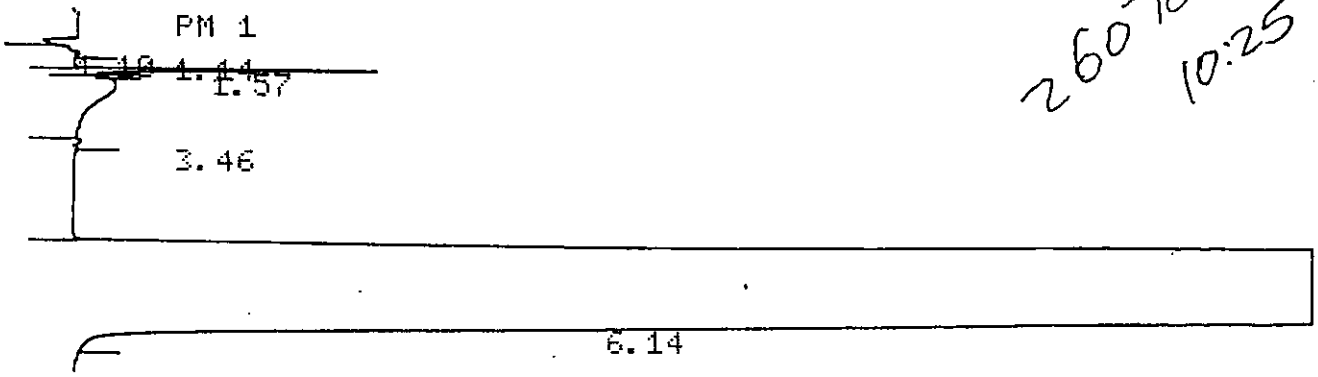
IEA 06/18/92 11:16:19 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 11 INDEX 11 BIN 11

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.88	267595	02	
2	0.	1.02	108243	02	
3	0.	1.14	88599	03	
4	0.	1.54	3852546	03	
5	0.	3.52	149271	01	
6	0.	5.41	311424528	01	
TOTALS	0.		315890782		

CHANNEL A INJECT 06/18/92 11:26:26 STORED TO BIN # 12



26070-01
10:25

DATA SAVED TO BIN # 12

IEA 06/18/92 11:26:26 CH= "A" PS= 1.

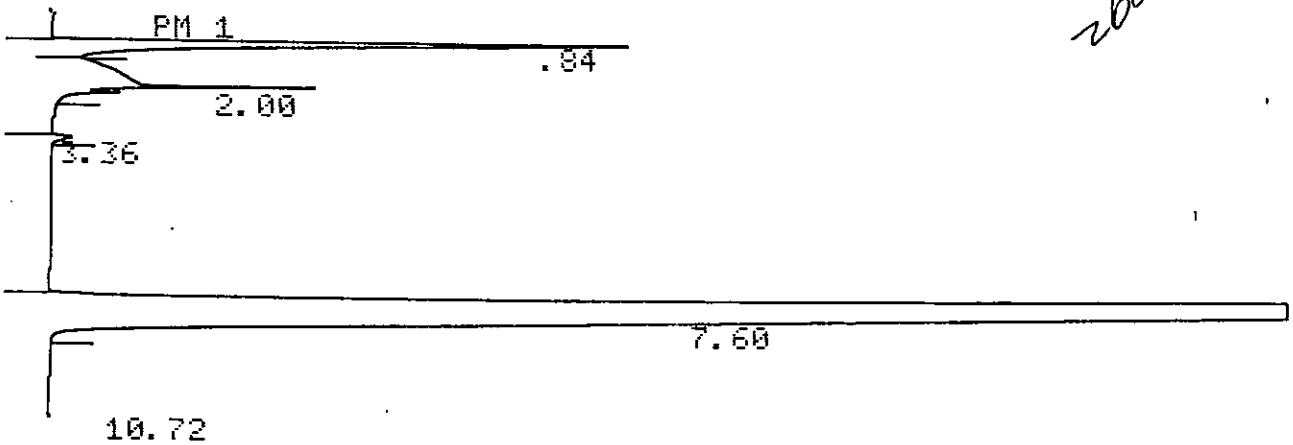
FILE 1. METHOD 5. RUN 12 INDEX 12 BIN 12

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.1	104989	02	
2	0.	1.14	79537	03	
3	0.	1.57	1176612	01	
4	0.	3.46	64439	01	
5	0.	6.14	230873208	01	
TOTALS	0.		232298785		

CHANNEL A INJECT 06/18/92 11:37:27 STORED TO BIN # 13

26010-02



DATA SAVED TO BIN # 13

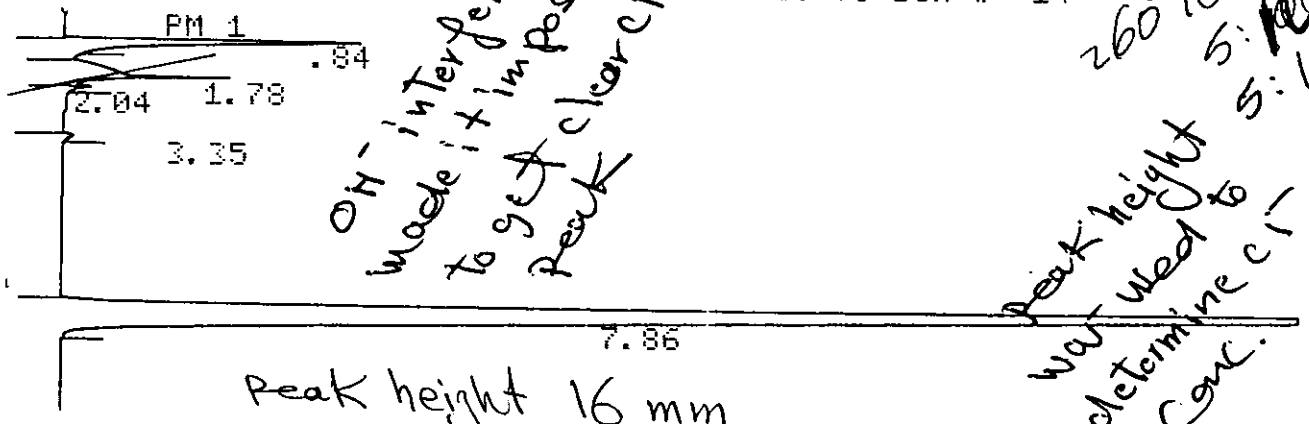
IEA 06/18/92 11:37:27 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 13 INDEX 13 BIN 13

ANALYST: TAREK

3	0.	3.36	216110 01
4	0.	7.6	66072374 01
TOTALS	0.		76959616

CHANNEL A INJECT 06/18/92 12:45:56 STORED TO BIN # 14



26070-02 5:10

DATA SAVED TO BIN # 14

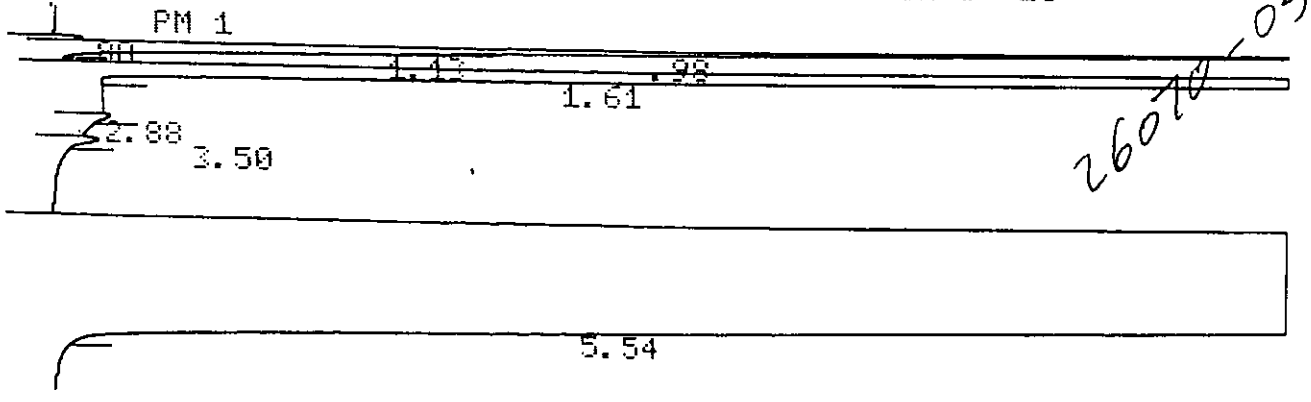
IEA 06/18/92 12:45:56 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 14 INDEX 14 BIN 14

ANALYST: TAREK

NAME	CONC	RT	AREA BC	RF
1	0.	0.84	3211583 01	
2	0.	1.78	2062089 02	
3	0.	2.04	156079 03	
4	0.	3.35	109856 01	
5	0.	7.86	41411701 01	
TOTALS	0.		46951308	

CHANNEL A INJECT 06/18/92 12:57:29 STORED TO BIN # 15



26070-03

DATA SAVED TO BIN # 15

IEA 06/18/92 12:57:29 CH= "A" PS= 1.

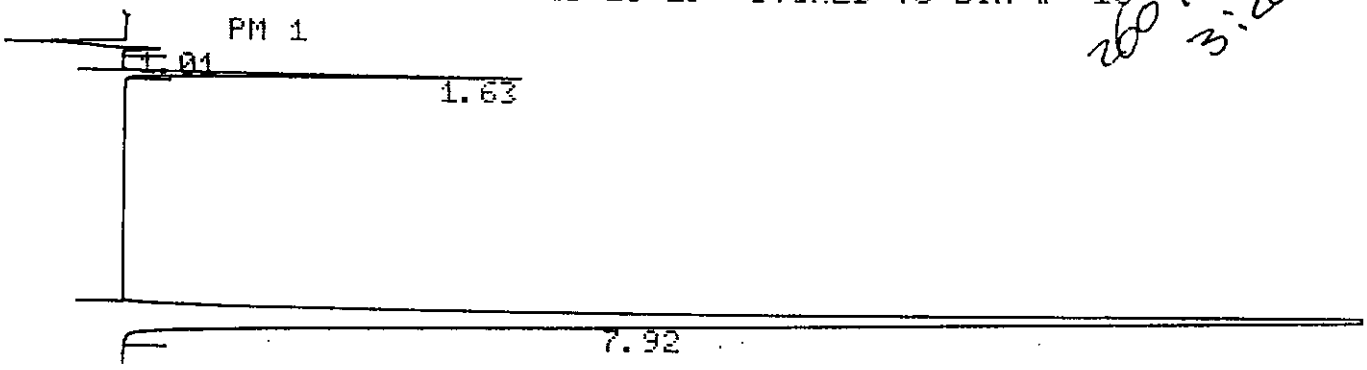
FILE 1. METHOD 5. RUN 15 INDEX 15 BIN 15

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.88	177635	02	
2	0.	0.98	12346483	02	
3	0.	1.13	2956833	03	
4	0.	1.61	30548839	01	
5	0.	2.88	127141	01	
6	0.	3.5	277010	01	
7	0.	5.54	303916756	01	
TOTALS	0.		350350697		

CHANNEL A INJECT 06/18/92 13:10:29 STORED TO BIN # 16

26-10-03
3:200



DATA SAVED TO BIN # 16

IEA 06/18/92 13:10:29 CH= "A" PS= 1.

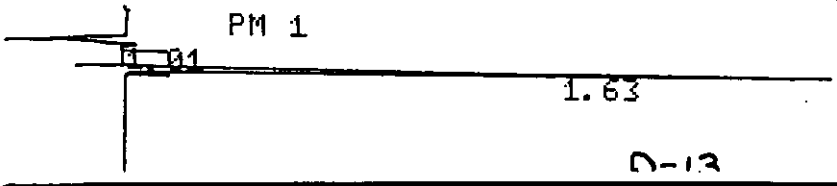
FILE 1. METHOD 5. RUN 16 INDEX 16 BIN 16

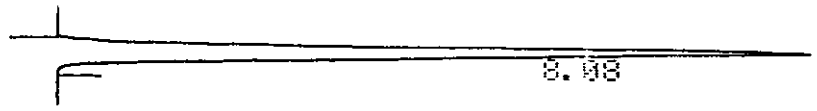
ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.01	726675	01	
2	0.	1.63	2080560	01	
3	0.	7.92	37152016	01	
TOTALS	0.		39959251		

NNEL A INJECT 06/18/92 13:20:19 STORED TO BIN # 17

26-10-03
3:200
x
5RPM





DATA SAVED TO BIN # 17

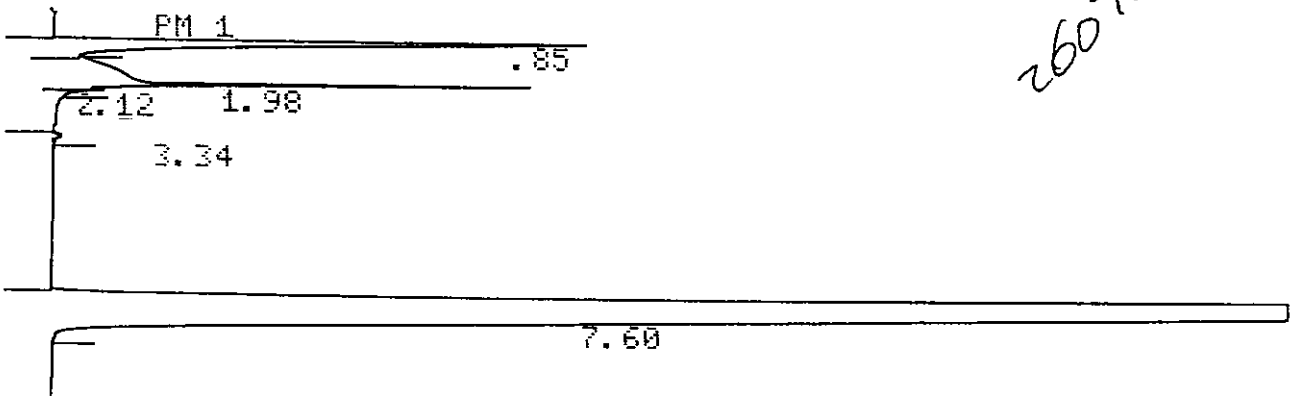
IEA 06/18/92 13:20:19 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 17 INDEX 17 BIN 17

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.01	510646	01	
2	0.	1.63	3711078	01	
3	0.	8.08	17948853	01	
TOTALS	0.		22170577		

CHANNEL A INJECT 06/18/92 13:30:39 STORED TO BIN # 18



DATA SAVED TO BIN # 18

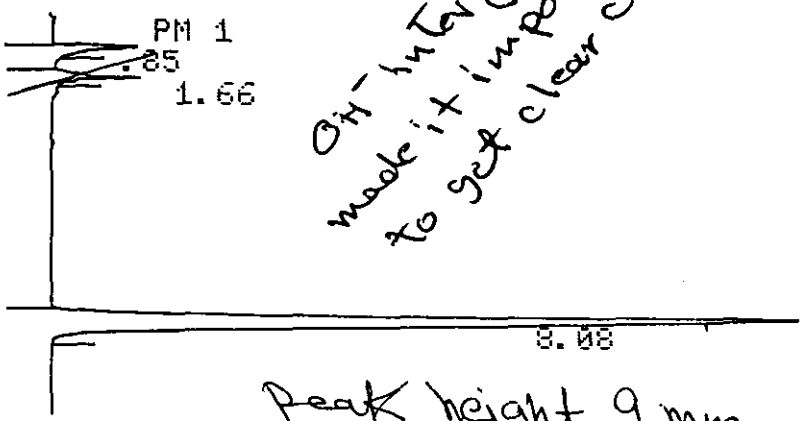
IEA 06/18/92 13:30:39 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 18 INDEX 18 BIN 18

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.85	6358842	01	
2	0.	1.98	4296917	02	
3	0.	2.12	253595	03	
4	0.	3.34	97588	01	
5	0.	7.6	68802302	01	
TOTALS	0.		79809244		

CHANNEL A INJECT 06/18/92 13:41:37 STORED TO BIN # 19



OH- interfered, made it impossible to get clear CT

260 nm 5.i peak height was used to determine conc

Peak height 9 mm

DATA SAVED TO BIN # 19

IEA 06/18/92 13:41:37 CH= "A" PS= 1.

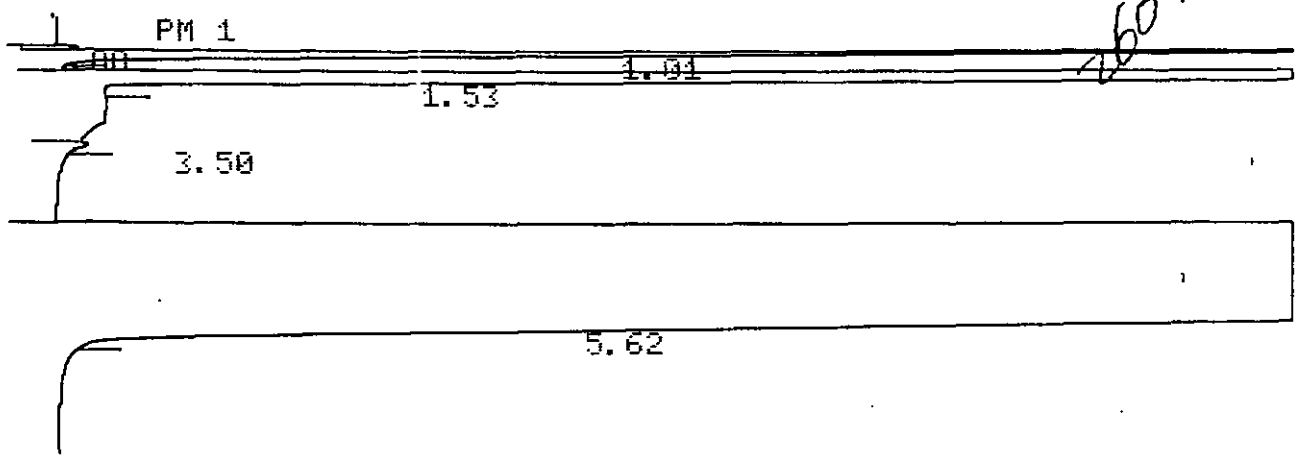
FILE 1. METHOD 5. RUN 19 INDEX 19 BIN 19

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.85	919363	01	
2	0.	1.66	795951	01	
3	0.	8.08	17870541	01	
TOTALS	0.		19585855		

CHANNEL A INJECT 06/18/92 13:58:53 STORED TO BIN # 20

60-70-05



DATA SAVED TO BIN # 20

IEA 06/18/92 13:58:53 CH= "A" PS= 1.

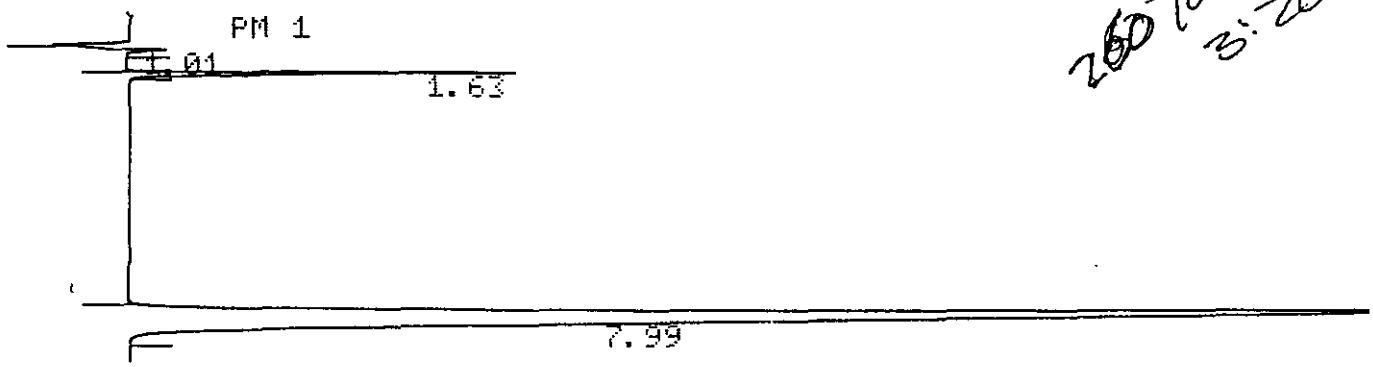
LE 1. METHOD 5. RUN 20 INDEX 20 BIN 20

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF

4	0.	3.5	158064 01
5	0.	5.62297324699	01
TOTALS	0.		345178578

CHANNEL A INJECT 06/18/92 14:11:06 STORED TO BIN # 21



DATA SAVED TO BIN # 21

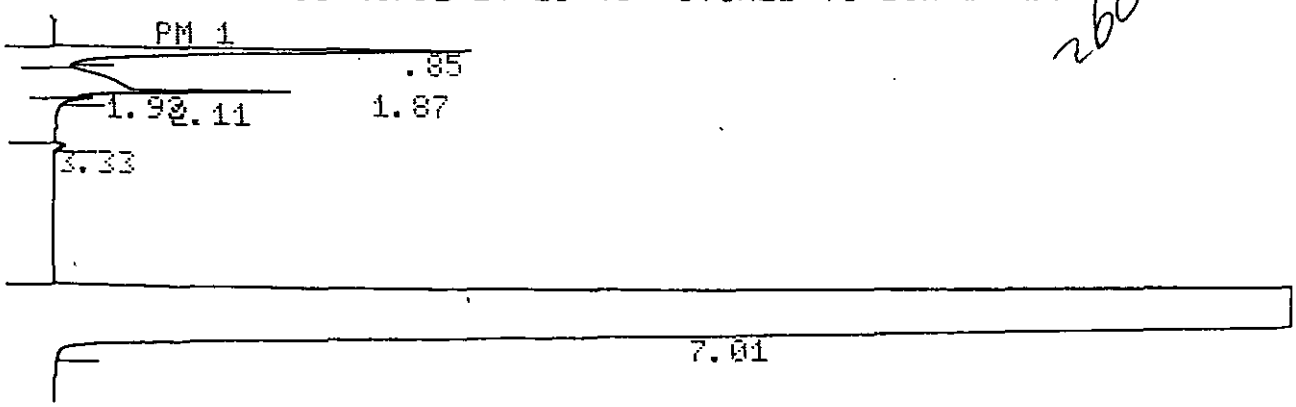
IEA 06/18/92 14:11:06 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 21 INDEX 21 BIN 21

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.01	775695	01	
2	0.	1.63	2021795	01	
3	0.	7.99	34094943	01	
TOTALS	0.		36892433		

CHANNEL A INJECT 06/18/92 14:20:46 STORED TO BIN # 22



DATA SAVED TO BIN # 22

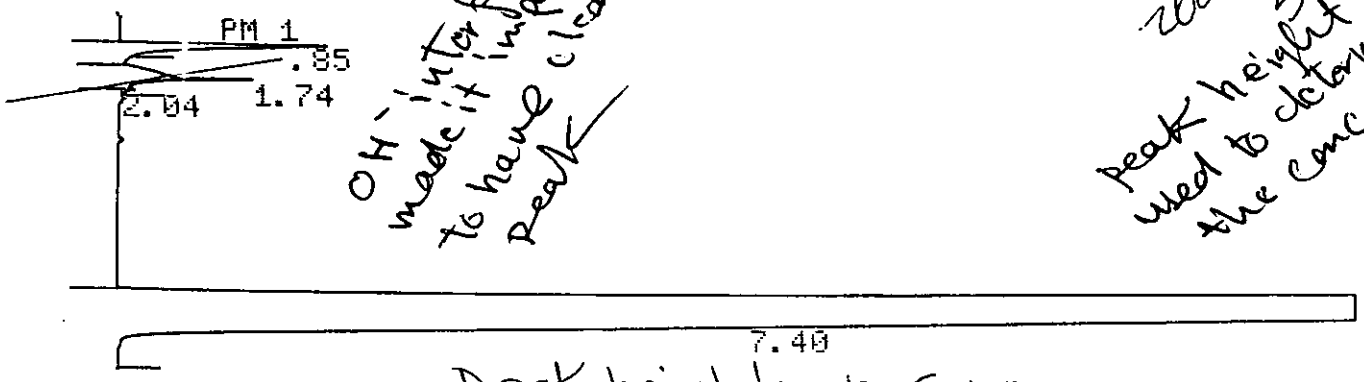
IEA 06/18/92 14:20:46 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 22 INDEX 22 BIN 22

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.85	4877836	01	
2	0.	1.87	1877774	02	
3	0.	1.92	1286109	02	
4	0.	2.11	214232	03	
5	0.	3.33	102025	01	
6	0.	7.01	135058537	01	
TOTALS	0.		143416513		

CHANNEL A INJECT 06/18/92 14:31:33 STORED TO BIN # 23



OH - interference made it impossible to have clear of peak

26070-06
5:10
peak height was used to determine the conc.

Peak height 12.5 mm

DATA SAVED TO BIN # 23

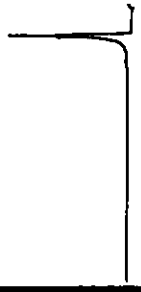
IEA 06/18/92 14:31:33 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 23 INDEX 23 BIN 23

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.85	2293947	01	
2	0.	1.74	1641720	02	
3	0.	2.04	86923	03	
4	0.	7.4	94342370	01	
TOTALS	0.		98364960		

CHANNEL A INJECT 06/18/92 14:42:19 STORED TO BIN # 24



IEA 06/18/92 14:42:19 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 24 INDEX 24 BIN 24

ANALYST: TAREK

NAME	CONC	RT	AREA BC	RF
TOTALS	0.			

```
 READY
DATE " 6/19/92
TIME " 10:00
M ory Module / Replay Software 1.00  Installed.
AT= 1024
CS= .5
PT=10000
FI= 1.      FE= 1.      MN= 0.
PRESS 'ENTER' TO SKIP ENTRY
STORAGE MENU? (Y=YES, 'ENTER'=NO)

           FUNCTION NUMBER=

FILE NAME=" IEA
TIME        FUNCTION  VALUE
TT= .1      TF=" PM   TV= 1
TT= 15      TF=" ER   TV= 1
TT=

METHOD NUMBER:MN= 5
IF NV=0 THEN NO CALIB
IF NV=1 THEN NORMAL CALIB
IF NV>1 THEN MULTI-LEVEL CALIB
NUMBER OF LEVELS:NV=
COMPONENT TABLE...
RET TIME        RESP FACT        NAME
RT=
RRT REF PEAK:RP(I)=
SAMPLE TABLE...
A. .LYST:AN=" TAREK
INJECTIONS/SAMPLE:RA=
SAMPLES BETWEEN CALIB:CI=
CONC UNITS:CU="
SAM IDX   NAME           SAM AMT     SCALE FACTOR
SI=
END OF DIALOG

CHANNEL A      INJECT  06/19/92 10:01:58  STORED TO BIN #   1
                PM 1

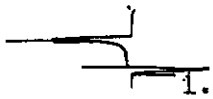
DATA SAVED TO BIN #   1

IEA                              ,06/19/92 10:01:58     CH= "A"  PS=  1.
FILE  1.      METHOD  5.      RUN   1      INDEX   1              BIN   1
ANALYST: TAREK

NAME                  CONC       RT       AREA BC      RF

TOTALS                0.
```

CHANNEL A INJECT 06/19/92 10:06:46 STORED TO BIN # 2



Peak height 10 mm .5 PPM

DATA SAVED TO BIN # 2

IEA 06/19/92 10:06:46 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 2 INDEX 2 BIN 2

ANALYST: TAREK

NAME	CONC	RT	AREA BC	RF
1	0.	1.63	462537 01	
TOTALS	0.		462537	

CHANNEL A INJECT 06/19/92 10:09:25 STORED TO BIN # 3

Peak height 21.5 mm 1 PPM

DATA SAVED TO BIN # 3

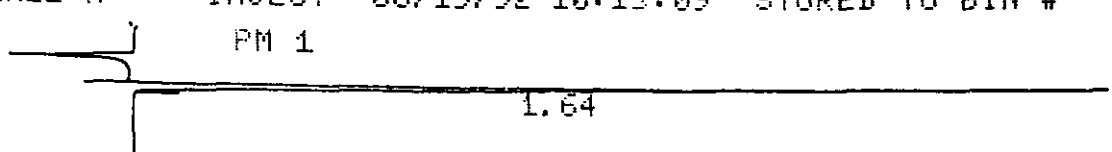
IEA 06/19/92 10:09:25 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 3 INDEX 3 BIN 3

ANALYST: TAREK

NAME	CONC	RT	AREA BC	RF
1	0.	1.63	935452 01	
TOTALS	0.		935452	

CHANNEL A INJECT 06/19/92 10:13:09 STORED TO BIN # 4



5 PPM

Peak height 128 mm

DATA SAVED TO BIN # 4

IEA 06/19/92 10:13:09 CH= "A" PS= 1.

NAME	CONC	RT	AREA	BC	RF
1	0.	1.64	5419449	01	
TOTALS	0.		5419449		

CHANNEL A INJECT 06/19/92 10:17:23 STORED TO BIN # 5

PM 1

D.I.

DATA SAVED TO BIN # 5

IEA 06/19/92 10:17:23 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 5 INDEX 5 BIN 5

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
TOTALS	0.				

CHANNEL A INJECT 06/19/92 10:22:39 STORED TO BIN # 6

26-10-07

PM 1

.87

1.50 1.42

3.56

5.24

DATA SAVED TO BIN # 6

IEA 06/19/92 10:22:39 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 6 INDEX 6 BIN 6

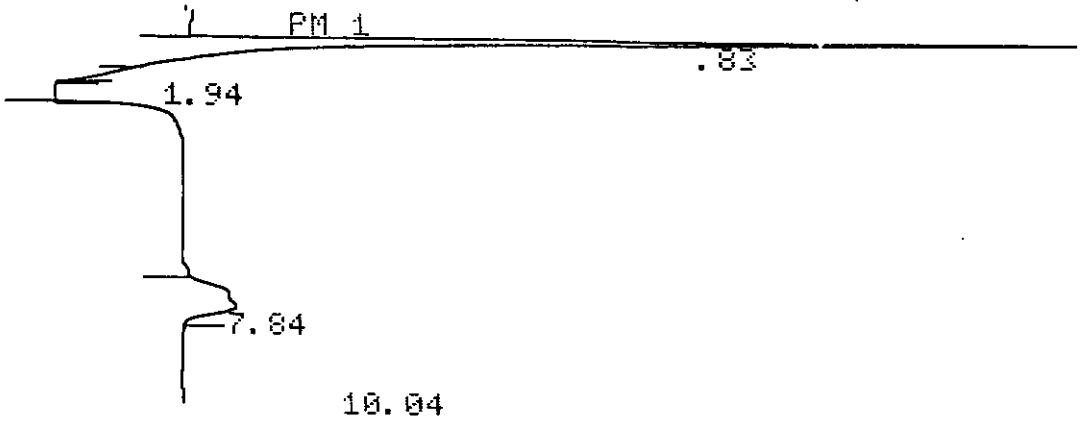
ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.87	832679	01	

2	0.	1.42	108347	02
3	0.	1.5	874891	03
4	0.	3.56	534217	01
5	0.	5.24	310982815	01
TOTALS	0.		313332949	

CHANNEL A INJECT 06/19/92 10:32:11 STORED TO BIN # 7

26010-08



DATA SAVED TO BIN # 7

IEA 06/19/92 10:32:11 CH= "A" PS= 1.

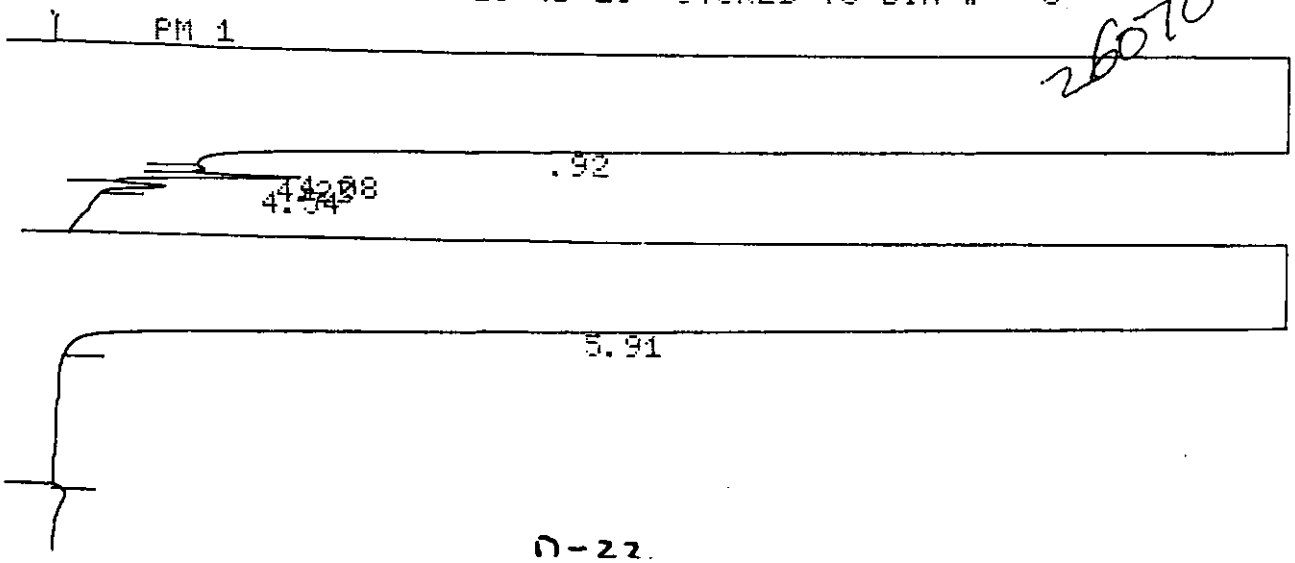
FILE 1. METHOD 5. RUN 7 INDEX 7 BIN 7

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.83	13898555	08	
2	0.	1.94	143788	05	
3	0.	7.84	3125884	01	
TOTALS	0.		17168227		

CHANNEL A INJECT 06/19/92 10:43:26 STORED TO BIN # 8

26010-09



IEA 06/19/92 10:43:26 CH= "A" PS= 1.

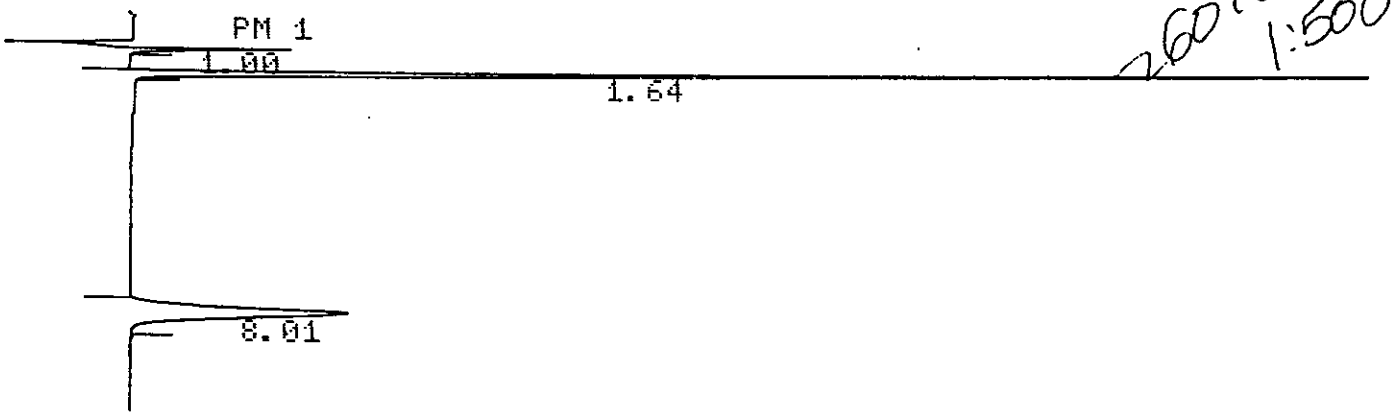
FILE 1. METHOD 5. RUN 8 INDEX 8 BIN 8

AN /ST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.92277937946		02	
2	0.	4.08	2030402	02	
3	0.	4.23	2312629	02	
4	0.	4.54	841177	03	
5	0.	5.91250854710		01	
TOTALS	0.		533976864		

CHANNEL A. INJECT 06/19/92 11:04:07 STORED TO BIN # 9

26070-09
1:500



DATA SAVED TO BIN # 9

IEA 06/19/92 11:04:07 CH= "A" PS= 1.

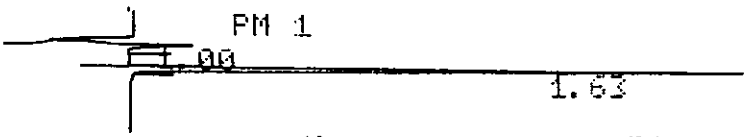
FILE 1. METHOD 5. RUN 9 INDEX 9 BIN 9

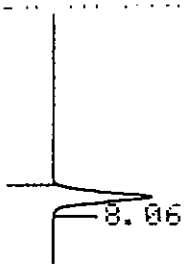
ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.	1264794	01	
2	0.	1.64	7530316	01	
3	0.	8.01	5330418	01	
TOTALS	0.		14125528		

CHANNEL A INJECT 06/19/92 11:15:59 STORED TO BIN # 10

26070-09
1:1000





DATA SAVED TO BIN # 10

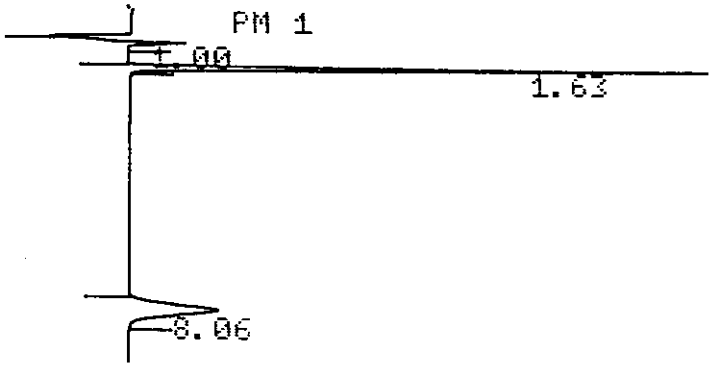
IEA 06/19/92 11:15:59 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 10 INDEX 10 BIN 10

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.	1033303	01	
2	0.	1.63	3291379	01	
3	0.	8.06	2444307	01	
TOTALS	0.		6768989		

CHANNEL A INJECT 06/19/92 11:26:33 STORED TO BIN # 11



2610-09 1:1000 Duf

DATA SAVED TO BIN # 11

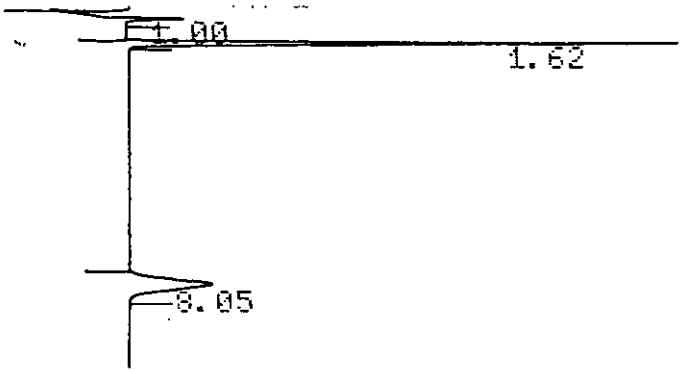
IEA 06/19/92 11:26:33 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 11 INDEX 11 BIN 11

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.	969476	01	
2	0.	1.63	3096561	01	
3	0.	8.06	2220646	01	
TOTALS	0.		6286683		

2-10



DATA SAVED TO BIN # 12

IEA 06/19/92 11:37:17 CH= "A" PS= 1.

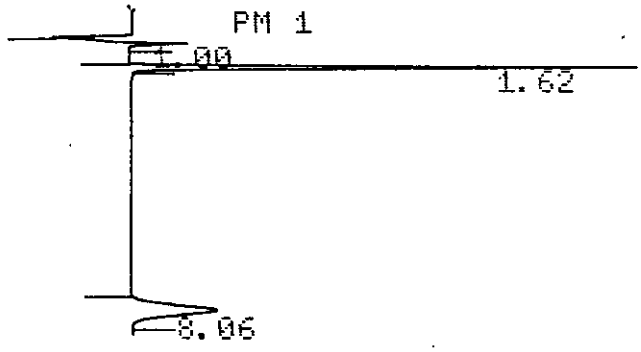
FILE 1. METHOD 5. RUN 12 INDEX 12 BIN 12

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.	957654	01	
2	0.	1.62	2951708	01	
3	0.	8.05	2078039	01	
TOTALS	0.		5987401		

CHANNEL A INJECT 06/19/92 11:53:53 STORED TO BIN # 13

PM 1



DATA SAVED TO BIN # 13

IEA 06/19/92 11:53:53 CH= "A" PS= 1.

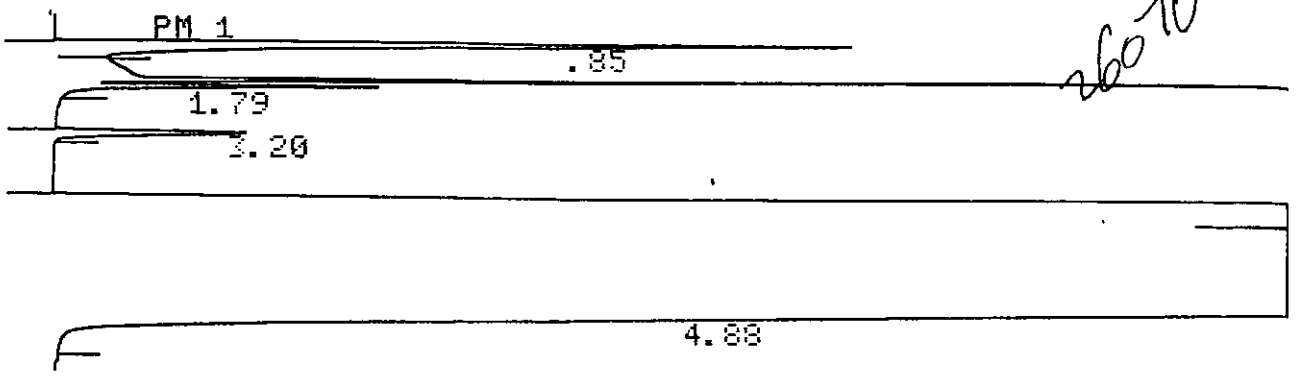
FILE 1. METHOD 5. RUN 13 INDEX 13 BIN 13

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.	963402	01	
2	0.	1.62	2718564	01	
3	0.	8.06	2127205	01	
TOTALS	0.		5809171		

CHANNEL A INJECT 06/19/92 12:40:50 STORED TO BIN # 14

26070-12



DATA SAVED TO BIN # 14

IEA 06/19/92 12:40:50 CH= "A" PS= 1.

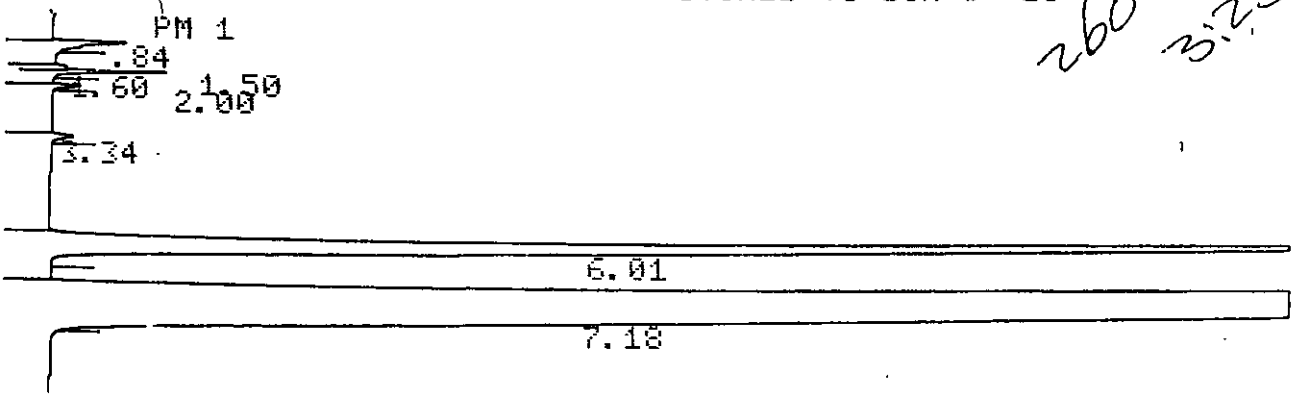
FILE 1. METHOD 5. RUN 14 INDEX 14 BIN 14

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.85	9174001	01	
2	0.	1.79	8790813	01	
3	0.	3.2	2140209	01	
4	0.	4.88	347813840	01	
TOTALS	0.		367918863		

CHANNEL A INJECT 06/19/92 12:50:53 STORED TO BIN # 15

26070-12
3:25



DATA SAVED TO BIN # 15

IEA 06/19/92 12:50:53 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 15 INDEX 15 BIN 15

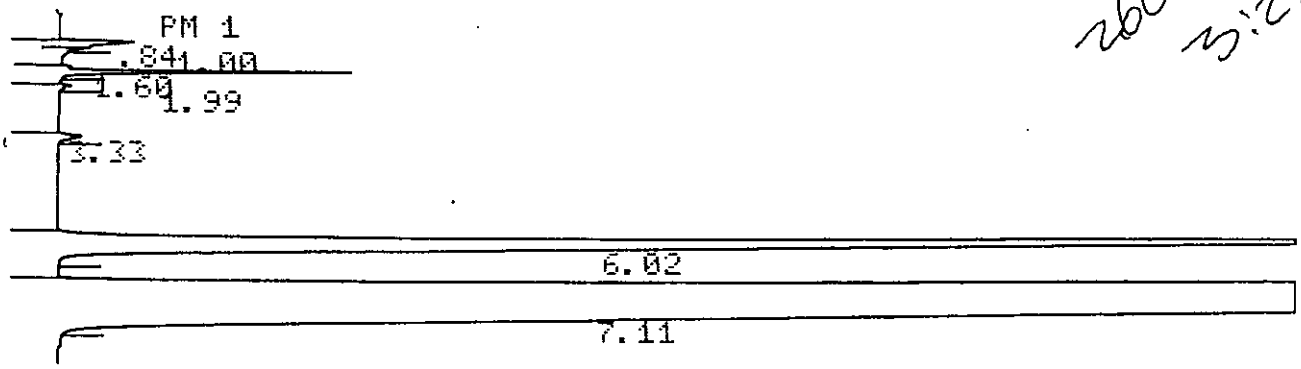
ANALYST: TAREK

1	0.	0.84	763921	01
2	0.	1.5	97342	02
3	0.	1.6	642764	03
4	0.	2.	199211	01
5	0.	3.34	236057	01
6	0.	6.01	30838402	01
	0.	7.18	98292097	01

TOTALS 0. 131069794

26010-13 5:25

CHANNEL A INJECT 06/19/92 13:01:24 STORED TO BIN # 16



DATA SAVED TO BIN # 16

TEA 06/19/92 13:01:24 CH= "A" PS= 1.

FI 1. METHOD 5. RUN 16 INDEX 16 BIN 16

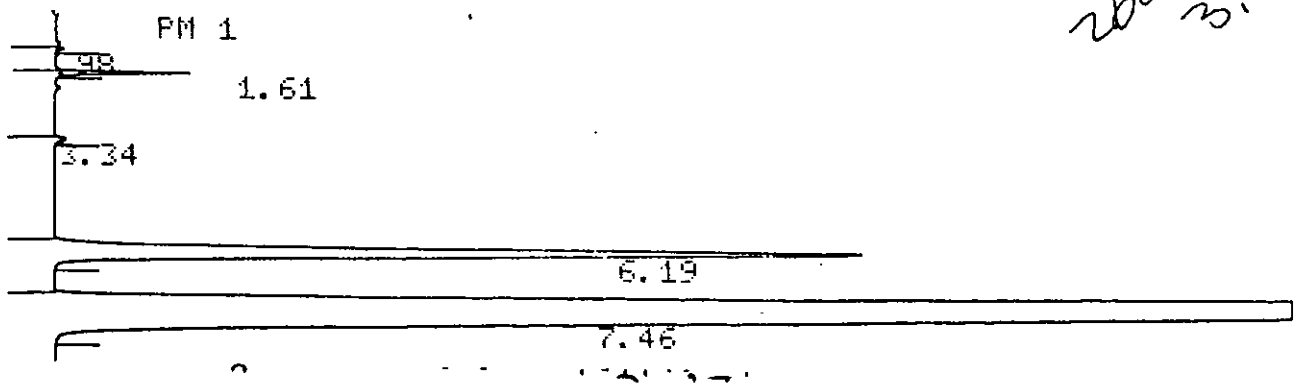
ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.84	613075	02	
2	0.	1.	187002	03	
3	0.	1.6	1692118	01	
4	0.	1.99	90144	01	
5	0.	3.33	240510	01	
6	0.	6.02	30675716	01	
7	0.	7.11	107520506	01	

TOTALS 0. 141019071

26010-13 5:50

CHANNEL A INJECT 06/19/92 13:11:23 STORED TO BIN # 17



DATA SAVED TO BIN # 17

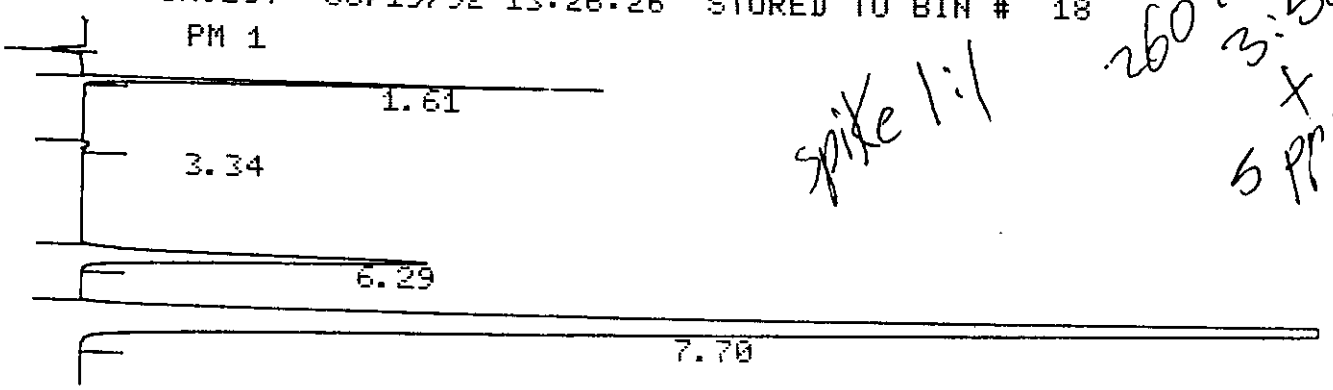
IEA 06/19/92 13:11:23 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 17 INDEX 17 BIN 17

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.98	36776	01	
2	0.	1.61	724975	01	
3	0.	3.34	108230	01	
4	0.	6.19	15360005	01	
5	0.	7.46	73375762	01	
TOTALS	0.		89605748		

CHANNEL A INJECT 06/19/92 13:26:26 STORED TO BIN # 18



spike 1:1

260 10-13 3:50 + 5 ppm

DATA SAVED TO BIN # 18

IEA 06/19/92 13:26:26 CH= "A" PS= 1.

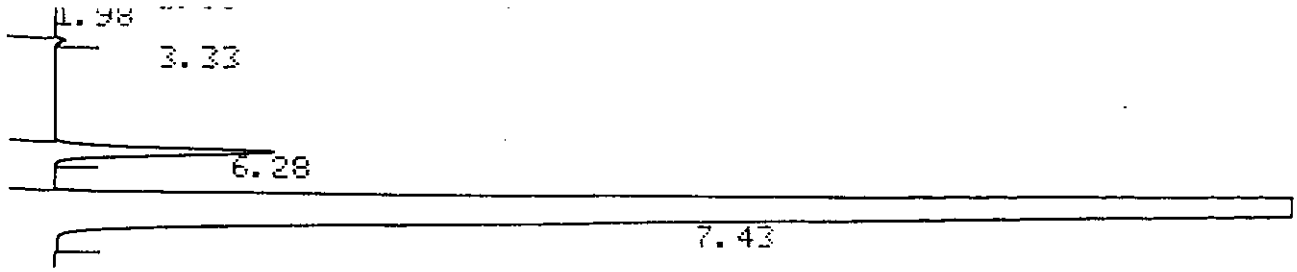
FILE 1. METHOD 5. RUN 18 INDEX 18 BIN 18

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.61	2967606	01	
2	0.	3.34	80387	01	
3	0.	6.29	6584557	01	
4	0.	7.7	48702019	01	
TOTALS	0.		58334569		

CHANNEL A INJECT 06/19/92 13:36:47 STORED TO BIN # 19

10-14 60



DATA SAVED TO BIN # 19

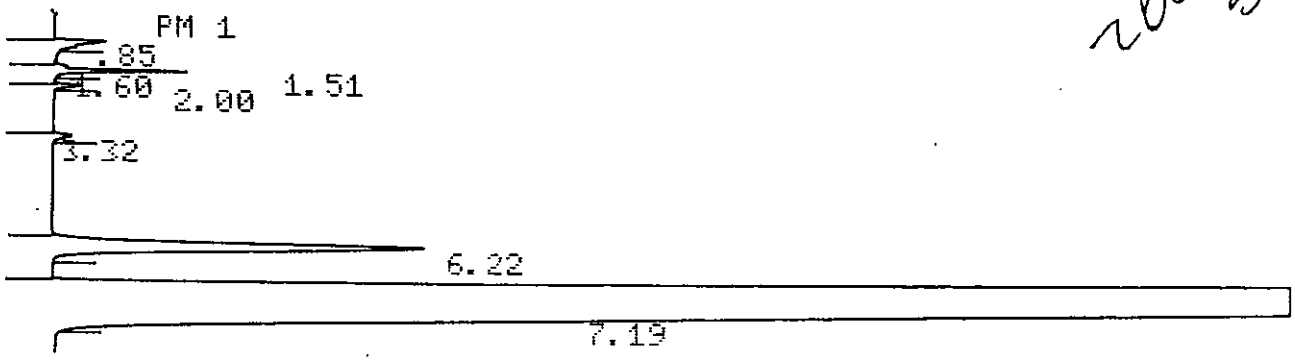
IEA 06/19/92 13:36:47 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 19 INDEX 19 BIN 19

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.98	34331	01	
2	0.	1.58	467219	02	
3	0.	1.98	112069	03	
4	0.	3.33	95661	01	
5	0.	6.28	4115196	01	
6	0.	7.43	75643200	01	
TOTALS	0.		80467676		

CHANNEL A INJECT 06/19/92 13:46:57 STORED TO BIN # 20



DATA SAVED TO BIN # 20

IEA 06/19/92 13:46:57 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 20 INDEX 20 BIN 20

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.85	568625	01	
2	0.	1.51	81058	02	
3	0.	1.6	738980	03	
4	0.	2.	165912	01	
5	0.	7.22	474470	01	

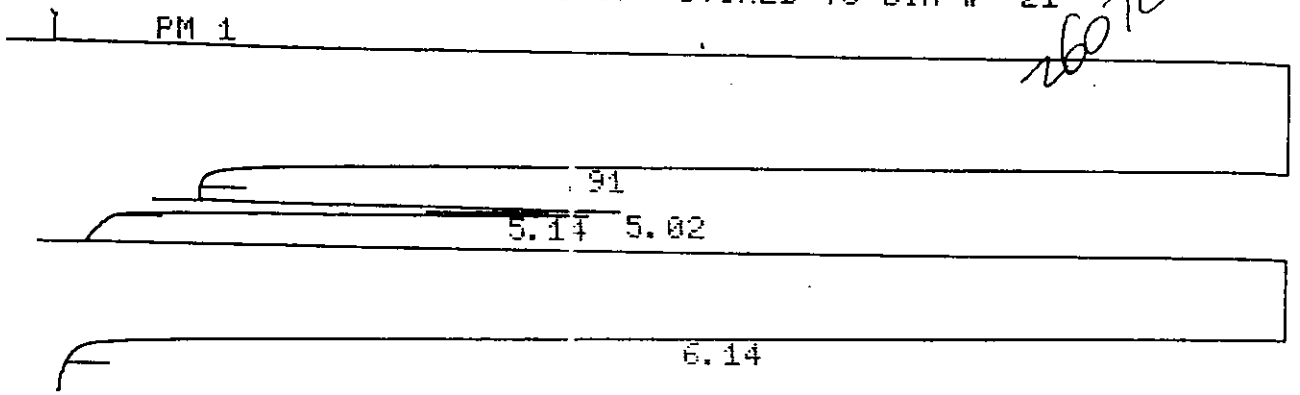
DATA SAVED TO BIN # 20

26070-14
5:50

6	0.	6.22	6804762 01
7	0.	7.19	99663961 01
TOTALS	0.		108197768

CHANNEL A INJECT 06/19/92 13:56:37 STORED TO BIN # 21

2610-15



DATA SAVED TO BIN # 21

IEA 06/19/92 13:56:37 CH= "A" PS= 1.

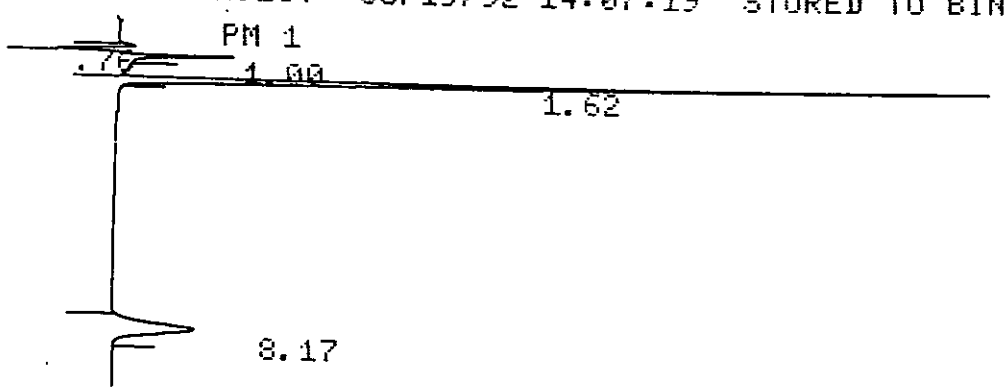
FILE 1. METHOD 5. RUN 21 INDEX 21 BIN 21

ANALYST: TAREK

NAME	CONC	RT	AREA BC	RF
1	0.	0.91	308936525 01	
2	0.	5.02	3830761 02	
3	0.	5.14	4056658 03	
4	0.	6.14	242087693 01	
TOTALS	0.		558911637	

CHANNEL A INJECT 06/19/92 14:07:19 STORED TO BIN # 22

2610-15
1:1000



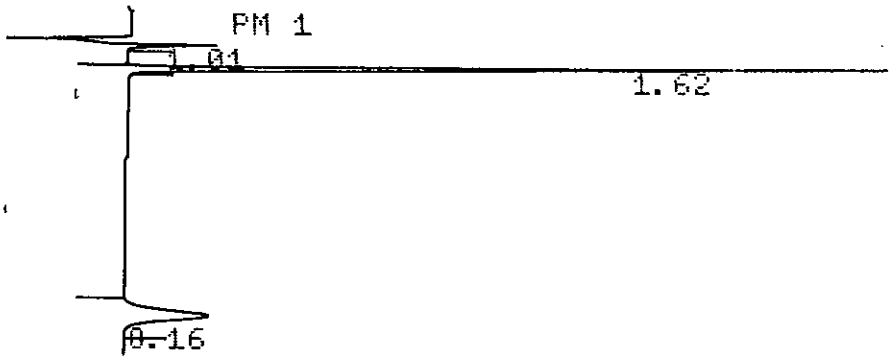
DATA SAVED TO BIN # 22

IEA 06/19/92 14:07:19 CH= "A" PS= 1.

NAME	CONC	RT	AREA	BC	RF
1	0.	0.76	415654	02	
	0.	1.	1239013	03	
	0.	1.62	4693732	01	
4	0.	8.17	2127971	01	
TOTALS	0.		8476370		

2670-16
1:1000

CHANNEL A INJECT 06/19/92 14:17:47 STORED TO BIN # 23



DATA SAVED TO BIN # 23

IEA 06/19/92 14:17:47 CH= "A" PS= 1.

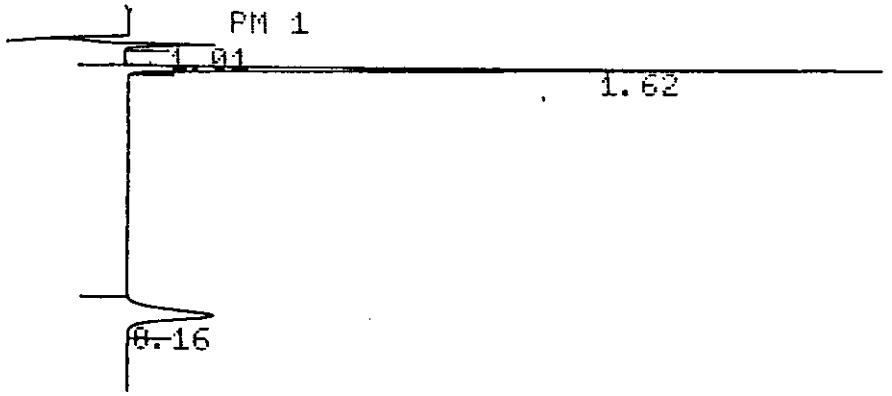
FILE 1. METHOD 5. RUN 23 INDEX 23 BIN 23

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.01	931754	01	
2	0.	1.62	4108021	01	
3	0.	8.16	2291097	01	
TOTALS	0.		7330872		

2670-16
1:1000
D4P

CHANNEL A INJECT 06/19/92 14:27:28 STORED TO BIN # 24



DATA SAVED TO BIN # 24

IEA 06/19/92 14:27:28 CH= "A" PS= 1.

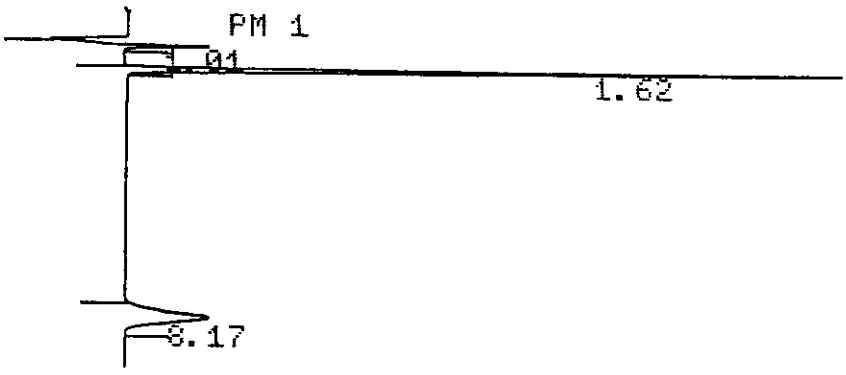
FILE 1. METHOD 5. RUN 24 INDEX 24 BIN 24

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.01	893861	01	
2	0.	1.62	4095649	01	
3	0.	8.16	2304952	01	
TOTALS	0.		7294462		

2670-17
1:1000

CHANNEL A INJECT 06/19/92 14:38:22 STORED TO BIN # 25



DATA SAVED TO BIN # 25

IEA 06/19/92 14:38:22 CH= "A" PS= 1.

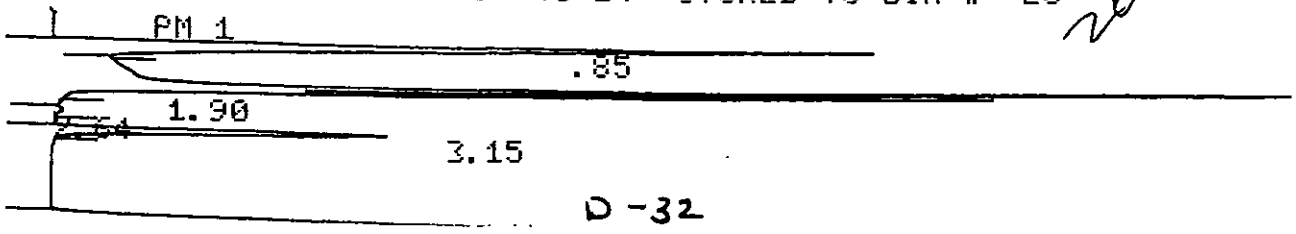
FILE 1. METHOD 5. RUN 25 INDEX 25 BIN 25

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.01	885792	01	
2	0.	1.62	3886767	01	
3	0.	8.17	2168483	01	
TOTALS	0.		6941042		

2670-18

CHANNEL A INJECT 06/19/92 14:48:24 STORED TO BIN # 26



5.55

DATA SAVED TO BIN # 26

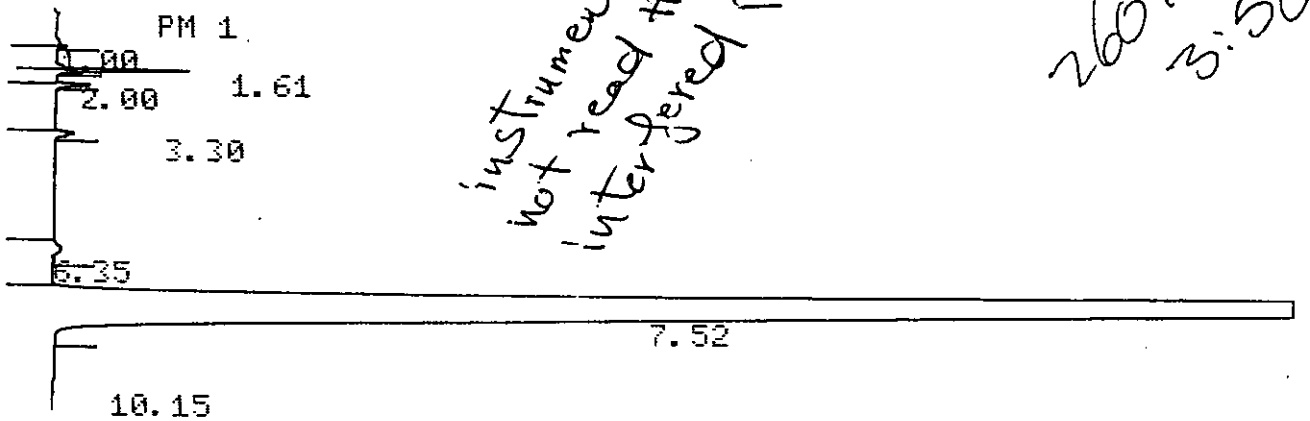
EA 06/19/92 14:48:24 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 26 INDEX 26 BIN 26

NALYST: TAREK

AME	CONC	RT	AREA	BC	RF
1	0.	0.85	9809490	01	
2	0.	1.9	15193754	01	
3	0.	2.64	75990	01	
4	0.	3.15	3611979	01	
5	0.	5.55	285996050	01	
TOTALS	0.		314687263		

CHANNEL A INJECT 06/19/92 14:59:34 STORED TO BIN # 27



instrument did not read the interfered peak

26-10-18
3:50

ATA SAVED TO BIN # 27

EA 06/19/92 14:59:34 CH= "A" PS= 1.

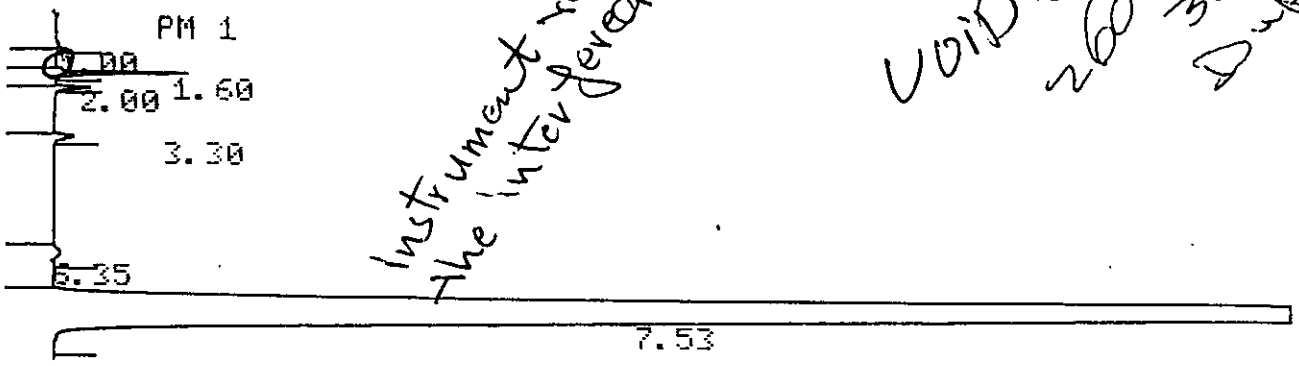
LE 1. METHOD 5. RUN 27 INDEX 27 BIN 27

ANALYST: TAREK

AME	CONC	RT	AREA	BC	RF
1	0.	1.	52333	01	
2	0.	1.61	648790	01	
3	0.	2.	230801	01	
4	0.	3.3	196096	01	
5	0.	6.35	197323	01	
6	0.	7.52	69834010	01	
TALS	0.		71159353		

OK

CHANNEL A INJECT 06/19/92 15:10:42 STORED TO BIN # 28



Instrument read the interval Lea

VOID 26070-1 3:50 D

DATA SAVED TO BIN # 28

IEA 06/19/92 15:10:42 CH= "A" PS= 1.

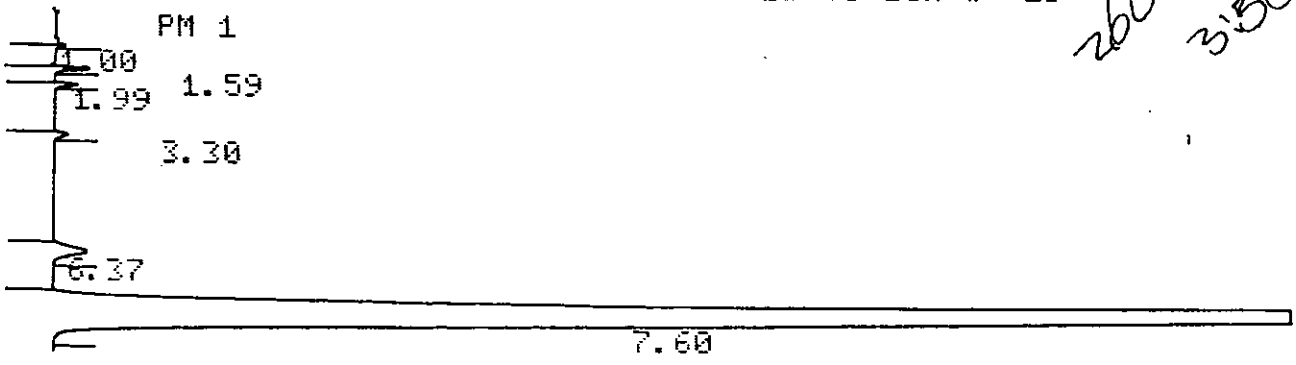
FILE 1. METHOD 5. RUN 28 INDEX 28 BIN 28

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	1.	54206	01	
2	0.	1.6	759594	01	
3	0.	2.	230892	01	
4	0.	3.3	190007	01	
5	0.	6.35	168561	01	
6	0.	7.53	69545580	01	
TOTALS	0.		70948840		

CHANNEL A INJECT 06/19/92 15:22:05 STORED TO BIN # 29

26070-19 3:50



DATA SAVED TO BIN # 29

IEA 06/19/92 15:22:05 CH= "A" PS= 1.

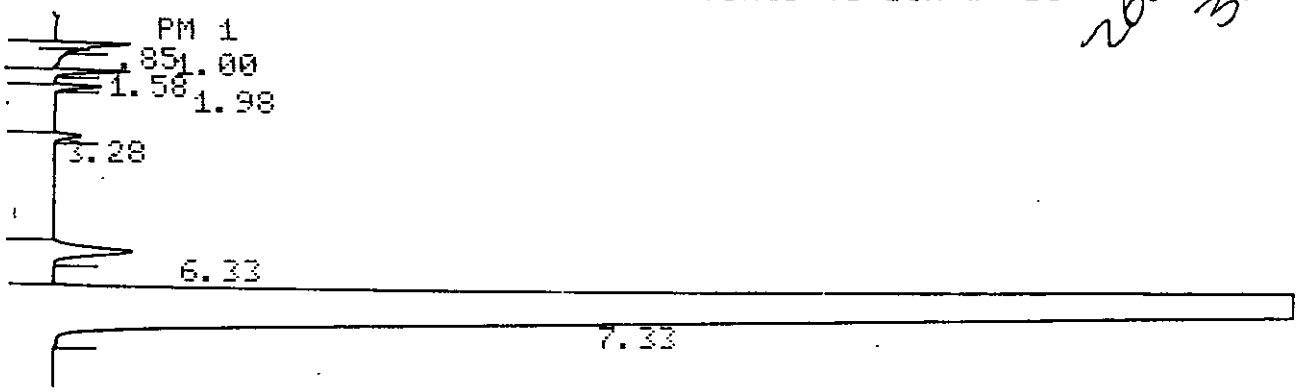
FILE 1. METHOD 5. RUN 29 INDEX 29 BIN 29

ANALYST: TAREK

2	0.	1.59	286721	01
3	0.	1.99	168328	01
4	0.	3.3	132574	01
5	0.	6.37	709740	01
6	0.	7.6	61169807	01
TOT S	0.		62513412	

2607D-19
3:25

CHANNEL A INJECT 06/19/92 15:31:31 STORED TO BIN # 30



DATA SAVED TO BIN # 30

DEA 06/19/92 15:31:31 CH= "A" PS= 1.

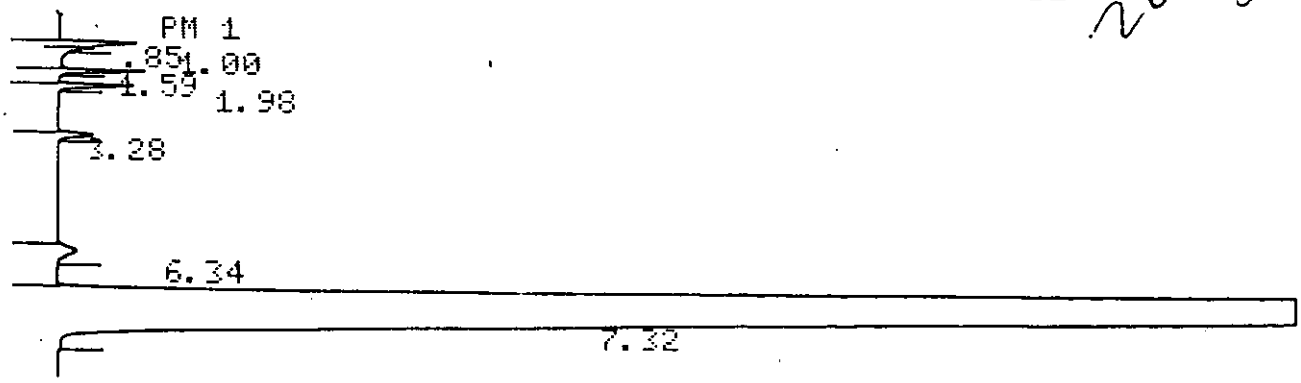
FILE 1. METHOD 5. RUN 30 INDEX 30 BIN 30

ANI ST: TAREK

NAME		CONC	RT	AREA	BC	RF
	1	0.	0.85	607579	02	
	2	0.	1.	198132	03	
	3	0.	1.58	556505	01	
	4	0.	1.98	361611	01	
	5	0.	3.28	279694	01	
	6	0.	6.33	1593946	01	
	7	0.	7.33	91118890	01	
TOTALS		0.		94716357		

2607D-20
3:25

CHANNEL A INJECT 06/19/92 15:42:18 STORED TO BIN # 31



Chromatographic Data Reduction
IEA
PROJECT NO. 1381-003

JUNE 18, 1992

STANDARDS:	CHLORIDE			
PPM		0.5	1.0	5.0
Run 1		458692	949202	5375021
Run 2		460180	952631	5375587
STD check		462537	935452	5419449
AVERAGE:		460470	945762	5390019
Deviation (%)		0.34	0.78	0.39
Response Factor		1.09E-06	1.06E-06	9.28E-07
AVE RESPONSE FACTOR	1.02E-06			
		%RSD	6.73	

SAMPLES	CHLORIDE				
RUN	26070-01	26070-02	26070-03	26070-04	26070
Run 1	1176612		2080560		202
Run 2					
AVERAGE:	1176612	ERR	2080560	ERR	202
Deviation:(%)	0.00	ERR	0.00	ERR	
Volume (ml)	42	47	46	47	
PPM	3.01	ERR	141.98	ERR	13
Dilution Factor	2.5	2	66.7	5	
Total mg	0.13	ERR	6.53	ERR	

AUDIT	INTERNAL AUDIT	SPIKE 1: [26070-08(3:200) + 5ppm STD]	SPIKE 2: 26070-13(3:50) + 5ppm STD]
AREA	1763927	AREA SPIKE 3711078	AREA SPIKE 2967606
CHECK AREA		AREA STD 5390019	AREA STD 5390013
AVG	1763927	AREA SAMPLE 2080560	AREA SAMPL 724975
PPM DETECTED	1.81		
PPM EXPECTED	1.77	% RECOVERY 99.1	% RECOVERY 96.7
% ERROR	1.9		

)-05	26070-06	26070-07	26070-08	26070-09	26070-10	26070-11	26070-12	26070-13	26070-14	26070-15	2607
1795		0	0	3291379	2951708	2718564	642764	724975	738980	4693732	410
				3096561							409
1795	ERR	0	0	3193970	2951708	2718564	642764	724975	738980	4693732	410
1.00	ERR	ERR	ERR	3.05	0.00	0.00	0.00	0.00	0.00	0.00	
42	63	198	198	315	375	367	220	217	237	382	
7.97	ERR	0.00	0.00	3269.39	3021.40	2782.76	5.48	12.37	7.56	4804.56	419
56.7	2	1	1	1000	1000	1000	8.3	16.7	10	1000	
5.79	ERR	0.00	0.00	1029.86	1133.03	1021.27	1.21	2.68	1.79	1885.34	188

12-39

	26070-17	26070-18	26070-19	26070-20
	3886767	648790	556505	496518
	3886767	648790	556505	496518
	0.00	0.00	0.00	0.00
	425	226	303	280
	3978.54	11.07	4.75	4.24
	1000	16.7	8.3	8.3
	1690.88	2.50	1.44	1.19

Analyst T. GHARIB

DATE 6-19-92

Chromatographic Data Reduction
IER
PROJECT NO. 1381-003

JUNE 22, 1992

STANDARDS: CHLORIDE			
PPM	0.50	0.1	5.0
Run 1 (PEAK HEIGHT mm)	10	22	125
Run 2 (PEAK HEIGHT mm)	10	22	125
STD check	10	21.5	128
AVERAGE:	10	22	126
Deviation (%)	0.00	1.08	1.12

IEA 06/19/92 15:42:18 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 31 INDEX 31 BIN 31

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
1	0.	0.85	631671	02	
2	0.	1.	225473	03	
3	0.	1.59	496518	01	
4	0.	1.98	540306	01	
5	0.	3.28	326325	01	
6	0.	6.34	366321	01	
7	0.	7.32	93277283	01	
TOTALS	0.		95863897		

CHANNEL A INJECT 06/19/92 15:52:34 STORED TO BIN # 32

PM 1

DATA SAVED TO BIN # 32

IEA 06/19/92 15:52:34 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 32 INDEX 32 BIN 32

ANALYST: TAREK

NAME	CONC	RT	AREA	BC	RF
TOTALS	0.				

CONC.	PEAK HEIGHT
0.5	10.00
1	21.83
5	126.00

Regression Output

Constant
Std Err of Y Est
R Squared
No. of Observations
Degrees of Freedom

X Coefficient(s)
Std Err of Coef.

Y = MX

Y =CONC.
M =SLOPE
X =PEAK HEIGHT
b =CONSTANT

0.133855
0.030380
0.999924
3.000000
1.000000

SAMPLE	SAMPLE PEAK HEIGHT (mm)	PPM DIL. SAMPLE	DIL.FACTOR	PPM SAMPLE	VOL. (mL)	TOTAL (mg)
26070-02	16	0.75	2	1.50	47	0.
26070-04	9	0.48	5	2.41	47	0.
26070-06	12.5	0.62	2	1.23	63	0.

38
37

b

ANALYST

DATE

D-42

:L-

07

11

08

T. GUARTOS

6-22-92

RESEARCH TRIANGLE INSTITUTE

Center for Environmental Measurements and Quality Assurance

July 1, 1992

Mr. James A. Peters
IEA, Inc.
P.O. Box 12846
RTP, NC 27709

Dear James,

Enclosed are the Chromium (VI) analysis results as determined by ion chromatography, for the impinger samples received on June 9, 1992 for RTI Project No. 91C-4848-02J, IEA Inc., P.O. No. FS 1040.

If you have any questions, please call me at 919-541-6569 or Peter Grohse at 919-541-6897.

Sincerely,

Kate K. Luk, Ph.D.

Ref: 91C-4848-02J
cc: W. Gutknecht
P. Grohse
C. Decker
N. Riggs

Post Office Box 12194 Research Triangle Park, North Carolina 27709-2194
Telephone 919 541-6914 Fax: 919 541-5929

RTI Project No. : 4848-02J

Samples : Impinger Samples
Company : IEA, Inc. (P.O. # FS 1040)
Analyte : Cr(VI)
Method of Analysis : Ion Chromatography / Post Column Reaction for Cr(VI)
Samples Received : 6-9-92
Report Date : 7-1-92

Sample	Total Volume mL	Cr(VI) ug/mL	Total Cr(VI) ug
K8-CR6-1-KOH	289	ND	ND
K8-CR6-2-KOH	348	0.00202	0.703
K8-CR6-3-KOH	476	ND	ND
K8-CR6-BLK-KOH	259	ND	ND
K8-CR6-BLK-H2O	209	ND	ND
K7-CR6-1-KOH	448	0.00151	0.676
K7-CR6-2-KOH	498	ND	ND
K7-CR6-3-KOH	527	0.00159	0.838

Detection Limit 0.0015

ND : Non-detectable; less than detection limit

Total Cr(VI), ug = Cr(VI), ug/mL • Total Volume, mL

RTI Project No. : 4848-02U

Samples : QC for Impinger Samples
Company : IEA, Inc. (P.O. # FS 1040)
Analyte : Cr(VI)
Method of Analysis : Ion Chromatography / Post Column Reaction for Cr(VI)
Samples Received : 6-9-92
Report Date : 7-1-92

Calibration Check Sample

Sample	Cr(VI) ug/mL Measured	Cr(VI) ug/mL Expected
QC	0.00903	0.0100
QC	0.00973	0.0100

Results of Blank, Duplicate, and Spike Analysis

Sample	Cr(VI) ug/mL Measured	Spike Cr(VI) ug/mL Measured	Spike Cr(VI) ug/mL Expected	Spike Cr(VI) % Recovery
RTI DIW Blk	ND	--	--	--
K8-CR6-2-KOH Dup	0.00214	--	--	--
K7-CR6-3-KOH Spk	--	0.0105	0.0100	105

TRIANGLE LABORATORIES, INC.

PO BOX 13485
RTP, NC 27709

ANALYSIS REPORT

MULTI METALS TRAINS

PREPARED FOR:

IEA
120 Southcenter St.
Suite 200
Morrisville, NC 27560

(919) 460-0852
Fax (919) 460-1785

Patricia Chagaris
Inorganic Report Generation

W H Wadlin
Dr. William H. Wadlin
Inorganic Laboratory Manager

Quality Assurance

June 30, 1992

TRIANGLE LABORATORIES of RTP, INC.
PO BOX 13485
RTP, NC 27709

INORGANICS ANALYSIS REPORT

TLI PROJECT #: 21122
CLIENT: IEA
DATE RECIEVED: 06/09/92
DATE REPORTED: 06/30/92

MULTI METAL SAMPLES

RESULTS REPORTED IN TOTAL ug

CLIENT SAMPLE ID	Ag	As	Ba	Be	Cd	Cr	Pb	Sb	Tl
K7-IN-1 FH	17.4	34,300	18,500	977	27,800	6,709	454,000	22,040	7.50
K7-IN-1 BH	< .926	300	51.2	12.2	817	25.3	8190	1,390	2.59
K7-IN-2 FH	17.4	40,400	3,650	1,560	38,500	7,731	654,000	27,900	5.50
K7-IN-2 BH	< 1.03	133	31.4	4.67	339	8.31	3,960	877	1.99
K7-IN-3 FH	17.4	40,400	3,080	971	42,200	8,354	525,000	29,300	6.10
K7-IN-3 BH	< .992	10.0	3.34	.389	30.0	< 1.70	263	699	.595
K8-IN-1 FH	22.1	27,900	8,580	739	37,700	5,154	656,000	942	7.30
K8-IN-1 BH	< .969	22.8	7.89	.817	56.7	< 1.66	907	7.03	1.02
K8-IN-2 FH	12.4	13,300	4,850	601	15,900	6,841	116,000	377	7.00
K8-IN-2 BH	< .959	7.66	4.44	1.10	21.0	< 1.64	146	16.4	< .274
K8-IN-3 FH	14.0	15,200	5,410	484	15,900	3,214	259,000	433	3.20
K8-IN-3 BH	< .969	98.1	24.2	5.24	150	6.08	2,174	10.1	.360
K7-MTL-1 FH	< .700	3.39	14.2	.442	10.5	7.38	135	7.43	< .200
K7-MTL-1 BH	< .980	.448	3.23	.302	3.32	< 1.68	5.63	189	< .280
K7-MTL-2 FH	1.08	16.6	18.6	.536	18.0	8.70	593	16.2	< .200
K7-MTL-2 BH	< 1.03	1.68	< 2.95	.513	1.64	< 1.77	9.93	103	.723
K7-MTL-3 FH	< .700	20.4	18.2	.424	17.3	7.87	247	24.5	< .200
K7-MTL-3 BH	< .933	1.15	3.43	.389	1.44	< 1.60	10.3	101	< .267
K8-MTL-1 FH	1.09	31.3	37.0	1.01	43.3	50.3	901	4.04	< .200
K8-MTL-1 BH	< 1.05	5.19	12.9	.320	4.41	< 1.80	11.7	6.99	.960
K8-MTL-2 FH	1.41	59.2	43.0	2.42	65.3	34.4	1,026	8.53	< .200
K8-MTL-2 BH	< .969	1.34	< 2.77	< .277	1.00	< 1.66	11.5	5.57	.595
K8-MTL-3 FH	.733	75.9	42.2	1.91	47.8	19.2	1,100	26.1	< .200
K8-MTL-3 BH	< .969	1.41	< 2.77	.416	1.86	< 1.66	11.6	4.38	.789
K8-MTL-BLK FH	< .700	2.59	7.87	< .200	.609	1.60	574	4.00	< .200
K8-MTL-BLK BH	< 1.40	4.92	< 4.00	< .400	< .800	< 2.40	16.8	3.88	< .400

Hg RESULTS

	K7-IN-1FH	K7-IN-1BH	K7-IN-2FH	K7-IN-2BH	K7-IN-3FH	K7-IN-3BH
AVG TOTAL ug	.600	5.33	.600	3.10	.800	3.06
%RPD	.00%	46.20%	.00%	.00%	.00%	22.2%

	K8-IN-1FH	K8-IN-1BH	K8-IN-2FH	K8-IN-2BH	K8-IN-3FH	K8-IN-3BH
AVG TOTAL ug	.700	16.6	.600	18.9	.400	3.60
%RPD	28.6%	.00%	.00%	3.92%	.00%	200%

	K7-MTL-1FH	K7-MTL-1BH	K7-MTL-1 5A	K7-MTL-1 5B	K7-MTL-1 5C
AVG TOTAL ug	.600	<1.40	.403	2.80	1.68
%RPD	.00%	N/A	28.6%	.00%	.00%

	K7-MTL-2FH	K7-MTL-2BH	K7-MTL-2 5A	K7-MTL-2 5B	K7-MTL-2 5C
AVG TOTAL ug	.600	<1.24	.570	2.70	1.68
%RPD	.00%	N/A	33.3%	.00%	.00%

	K7-MTL-3FH	K7-MTL-3BH	K7-MTL-3 5A	K7-MTL-3 5B	K7-MTL-3 5C
AVG TOTAL ug	.600	<1.60	.625	1.89	1.68
%RPD	.00%	N/A	.00%	22.2%	.00%

	K8-MTL-1FH	K8-MTL-1BH	K8-MTL-1 5A	K8-MTL-1 5B	K8-MTL-1 5C
AVG TOTAL ug	.600	10.5	1.40	5.25	2.16
%RPD	.00%	5.71%	.00%	9.52%	22.2%

	K8-MTL-2FH	K8-MTL-2BH	K8-MTL-2 5A	K8-MTL-2 5B	K8-MTL-2 5C
AVG TOTAL ug	.500	17.3	.740	7.35	1.89
%RPD	.00%	16.7%	.00%	9.52%	22.2%

	K8-MTL-3FH	K8-MTL-3BH	K8-MTL-3 5A	K8-MTL-3 5B	K8-MTL-3 5C
AVG TOTAL ug	.600	16.2	1.32	4.56	2.10
%RPD	.00%	4.44%	18.2%	.00%	.00%

	K8-MTL-BLKFH	K8-MTL-BLKBH	K8-MTL-BLK 5A	K8-MTL-BLK 5B	K8-MTL-BLK 5C
AVG TOTAL ug	.600	1.20	.720	1.90	2.10
%RPD	.00%	.00%	.00%	.00%	.00%

Hg %REC QC SUMMARY

	%REC
K7-IN-BH(S)	114%
K7-MTL-1 5A(S)	102%
K7-MTL-1 5B(S)	114%
K7-MTL-1 5C(S)	110%

POST DIGESTION SPIKE QC SUMMARY

CLIENT SAMPLE ID		Tl
K7-MTL-1FH(S)	%REC	86.2%
K7-IN-1BH(S)	%REC	26.0%

DUPLICATE QC SUMMARY

CLIENT SAMPLE ID		Ag	Ba	Be	Cd	Cr	Pb
K8-MTL-BLK FH(D)	%RPD	N/A	6.39%	N/A	200%	200%	2.12%
K8-MTL-BLK BH(D)		N/A	N/A	N/A	N/A	N/A	N/A

FILTER PARTICULATE WEIGHTS (WEIGHT MEASUREMENTS ARE IN GRAMS)

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K7-IN-1			
57.037.3	.87	.5068	.3632
.4	.844	.5041	.3399
.4	.788	.5086	.2794
.4	.713	.4658	.2472
TOTAL FOR RUN:			1.23

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K7-IN-2			
57.037.4	.993	.4985	.4945
.4	.972	.4656	.5064
TOTAL FOR RUN:			1.00

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K7-IN-3			
57.037.5	1.036	.4706	.5654
.5	.901	.4557	.4453
TOTAL FOR RUN:			1.01

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K8-IN-1			
57.037.55	.987	.5123	.4747
.57	1.039	.5087	.5303
TOTAL FOR RUN:			1.01

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K8-IN-2			
57.037.62	.811	.5037	.3073
.64	.924	.5103	.4137
.60	.944	.5063	.4377
TOTAL FOR RUN:			1.16

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K8-IN-3			
57.037.66	.819	.5038	.3152
.68	.943	.5026	.4404
.70	.704	.5057	.1983
TOTAL FOR RUN:			.954

ACETONE PARTICULATE WEIGHTS (WEIGHT MEASUREMENTS ARE IN GRAMS)

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K7-IN-1			
57.037.3	78.796	66.749	12.0

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K7-IN-2			
57.037.4	70.986	66.831	4.16

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K7-IN-3			
57.037.4	69.16	65.436	3.72

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K7-MTL-1			
57.037.4	67.536	67.528	.008

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K7-MTL-2			
57.037.1	65.249	65.244	.005

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K7-MTL-3			
57.037.1	66.6	66.595	.005

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K8-IN-1			
57.037.54	85.976	69.995	16.0

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K8-IN-2			
57.037.59	88.544	68.765	19.8

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K8-IN-3			
57.037.65	81.637	65.517	16.1

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K8-MTL-1			
57.037.22	69.693	69.682	.011

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K8-MTL-2			
57.037.28	65.821	65.809	.012

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K8-MTL-3			
57.037.34	76.013	76.008	.005

	FINAL WEIGHT	TARE WEIGHT	grams PARTICULATE
K8-MTL-BLK			
57.037.132	64.77	64.768	.002

CALCULATIONS

MMTL TRAINS:

ICP & GFAA

$$\text{FH \& BH TOTAL ug} = \frac{[\text{ug/L}] * (\text{mL TV/mL USED}) * (\text{mL FV} * \text{DF})}{1000}$$

FV=FINAL VOLUME DF=DILUTION FACTOR
WT=WEIGHT TV=TOTAL VOLUME
BV=BEGINNING VOLUME

Hg

MMTL Trains:

FH TOTAL ug = [ug/L] * (ml FV/ml aliquot) * MPV * (DF)

BH TOTAL ug = [ug/L] * (ml TV/ml aliquot) * MPV * (DF)

MPV = Mercury Preparation Volume, which is always 0.1L

$$\%\text{RPD} = \frac{|\text{SR} - \text{DR}|}{(\text{SR} + \text{DR})/2} * 100$$

$$\text{POSTDIGESTION \%REC} = \frac{\text{SSC} - \text{SC}}{\text{SA}} * 100$$

SC=SAMPLE CONCENTRATION(ug/L)
SSC=SPIKE SAMPLE CONCENTRATION(ug/L)
SA=SPIKE ADDED
DR=DUPLICATE RESULT

TRIANGLE LABORATORIES of RTP, INC.

PO BOX 13485
RTP, NC 27709

Project: 21122
IEA

Date in: 09-Jun-92
Date out: 30-Jun-92

CASE NARRATIVE

Overview

This project involves the analysis of 13 Multi-Metals Trains, one of which was a Train Blank for Ag, As, Ba, Be, Cd, Cr, Hg, Pb, Sb, and Tl. Particulate weights were also required for the Filters and Acetone Rinses. The Multi-Metal analysis was conducted according to the protocol described in sections 5-7 of the EPA Draft Document *"Methodology for the Determination of Metals Emissions in Exhaust Gases from Hazardous Waste Incineration and Similar Combustion Processes."*

Preparation

Samples were prepared by microwave and hotplate digestion, as required by the contract. A detailed flow chart of the procedure is included in the report showing the volumes received and used for all analyses.

Analysis

Ag, Ba, Be, Cd, and Cr were determined by Inductively Coupled Plasma (ICP) Emission Spectroscopy, as well as samples that had high concentrations of As, Pb and Sb. Tl and samples with low concentrations of As, Pb mad Sb were determined by Graphite Furnace Atomic Absorption (GFAA).

Due to the matrix interferences of samples, MSA's were required for Tl BH samples and samples with low concentrations of As, Pb, and Sb.

Results

%RPD:

The %RPD for Cd and Cr is 200% since Cd and Cr were detected in the sample and not in the duplicate. However, in these cases the Cd and Cr concentration is less than four times the detection limit, therefore this is not considered a valid QC parameter. All other %RPD for detected analytes were within control limits of 25%.

%REC:

The only analyte that required a postdigestion spike was Tl. The FH spike was within control limits of 75-125%, while the BH spike was not. Per method requirements the BH samples wer reanalyzed by MSA for Tl.

Hg data:

All of the spike recoveries were within control limits of 75-125%. The %RPD that are out of control limits of 25% follow the same criteria as the Cd and Cr %RPD. They are not valid QC parameters due to the fact that the Hg concentrations in the samples are less the four times the detection limit.

DESCRIPTION OF ABBREVIATIONS

ICV=Initial Calibration Verification
ICB=Initial Calibration Blank
CCV=Continuing Calibration Verification
CCB=Continuing Calibration Blank
PBW=Preparation Blank Water
PBS=Preparation Blank Soil
LCS=Laboratory Control Spike
ICSA=Interference Check Sample(Solution A) I=Initial F=Final
ICSAB=Interference Check Sample(Solution AB) I=Initial F=Final
Solution A contains common interferents, while Solution AB contains the interferents plus the analyte in question.
CRDL=Contract Required Detection Limit (for CLP)
IDL=Instrument Detection Limit
CRI=CRDL Standard for ICP I=Initial F=Final
CRA=CRDL Standard for AA I=Initial F=Final
%RPD=Relative Percent Difference
%REC=% Recovery
SPK=Spike
AMT=Amount
BLK=Blank
MSA=Method of Standard Additions

ICP MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
PROJECT #: 21122

ANALYTE: Ag
ug/L IDL: 7

CLIENT #	SAMPID	EL	PEAKINT	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR	TOTAL ug RESULT	%RPD
K7-IN-1 FH	57.037.38	Ag	.34190	17.3600	1	1	100	10	17.4	
K7-IN-1 BH	57.037.41	Ag	.06610	2.6510	410	310	100	1 <	.926	
K7-IN-1 BH(L)	57.037.41 L	Ag	.04210	1.3670	410	310	100	5 <	4.63	
K7-IN-2 FH	57.037.45	Ag	.34200	17.3680	1	1	100	10	17.4	
K7-IN-2 BH	57.037.48	Ag	.05820	2.2280	310	210	100	1 <	1.03	
K7-IN-3 FH	57.037.50	Ag	.34280	17.4070	1	1	100	10	17.4	
K7-IN-3 BH	57.037.53	Ag	.04340	1.4360	340	240	100	1 <	.992	
K8-IN-1 FH	57.037.55	Ag	.43150	22.1410	1	1	100	10	22.1	
K8-IN-1 BH	57.037.58	Ag	.06910	2.8070	360	260	100	1 <	.969	
K8-IN-2 FH	57.037.60	Ag	.24890	12.3970	1	1	100	10	12.4	
K8-IN-2 BH	57.037.63	Ag	.05610	2.1140	370	270	100	1 <	.959	
K8-IN-3 FH	57.037.66	Ag	.27940	14.0280	1	1	100	10	14.0	
K8-IN-3 BH	57.037.69	Ag	.09840	4.3710	360	260	100	1 <	.969	
K7-MTL-1 FH	57.037.75	Ag	.08110	3.4510	1	1	100	1 <	.700	
K7-MTL-1 FH(L)	57.037.75 L	Ag	.10950	4.9610	1	1	100	5 <	3.50	
K7-MTL-1 BH	57.038.6	Ag	.06590	2.6380	350	250	100	1 <	.980	
K7-MTL-2 FH	57.037.86	Ag	.21980	10.8490	1	1	100	1	1.08	
K7-MTL-2 BH	57.037.12	Ag	.05350	1.9790	310	210	100	1 <	1.03	
K7-MTL-3 FH	57.037.94	Ag	.11490	5.2530	1	1	100	1 <	.700	
K7-MTL-3 BH	57.037.18	Ag	.05460	2.0360	400	300	100	1 <	.933	
K8-MTL-1 FH	57.037.99	Ag	.22030	10.8720	1	1	100	1	1.09	
MTL-1 BH	57.037.24	Ag	.05520	2.0690	300	200	100	1 <	1.05	
K8-MTL-2 FH	57.037.114	Ag	.28090	14.1070	1	1	100	1	1.41	
K8-MTL-2 BH	57.037.30	Ag	.06110	2.3840	360	260	100	1 <	.969	
K8-MTL-3 FH	57.037.125	Ag	.15390	7.3300	1	1	100	1	.733	
K8-MTL-3 BH	57.037.36	Ag	.06650	2.6730	360	260	100	1 <	.969	
K8-MTL-BLK FH	57.037.131	Ag	.09460	4.1690	165	165	100	1 <	.700	
K8-MTL-BLK FH(D)	57.037.131D	Ag	.10520	4.7330	165	165	100	1 <	.700	.00%
K8-MTL-BLK BH	57.037.128	Ag	.02470	.4420	200	100	100	1 <	1.40	
K8-MTL-BLK BH(D)	57.037.128D	Ag	.04420	1.4790	200	100	100	1 <	1.40	.00%

STD BLK	Ag	.04800	0.0000
STD 1=25ug/L	Ag	.49050	25.0000
STD 2=100ug/L	Ag	1.89430	100.0000
STD 3=250ug/L	Ag	4.62500	250.0000
STD 4=500ug/L	Ag	9.42840	500.0000
CHECK HS	Ag	9.35420	498.0800
ICV=250ug/L	Ag	4.60890	244.9650
ICB	Ag	.06010	2.3260
ICSAI	Ag	.03110	.7830
ICSABI	Ag	9.51630	506.7260
CCV1	Ag	4.84630	257.6300
CCB1	Ag	.04870	1.7210
CCV2	Ag	4.84940	257.7930
CCB2	Ag	.03140	.7970
CCV3	Ag	4.92750	261.9580
CCB3	Ag	.05070	1.8250
CCV4	Ag	4.98200	264.8660
CCB4	Ag	.03080	.7630
ICSAF	Ag	.05150	1.8690
ICSABF	Ag	10.25760	546.2690

ICP MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
TLI PROJECT #: 21122

ANALYTE: As
ug/L IDL: 150

CLIENT #	SAMPID	EL	PEAKINT	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR		TOTAL ug RESULT	XRPD
K7-IN-1 FH	57.037.38	As	11.47270	34317.8630	1	1	100	10		34318	
K7-IN-1 BH	57.037.41	As	.77740	2268.8310	410	310	100	1		300	
K7-IN-1 BH(L)	57.037.41 L	As	.16450	432.3800	410	310	100	5		286	
K7-IN-2 FH	57.037.45	As	13.49150	40367.4610	1	1	100	10		40367	
K7-IN-2 BH	57.037.48	As	.32040	899.5390	310	210	100	1		133	
K7-IN-3 FH	57.037.50	As	13.50300	40401.8520	1	1	100	10		40402	
K7-IN-3 BH	57.037.53	As	.05230	95.9990	340	240	100	1	<	21.3	*
K8-IN-1 FH	57.037.55	As	9.31530	27853.0900	1	1	100	10		27853	
K8-IN-1 BH	57.037.58	As	.07520	164.7920	360	260	100	1		22.8	
K8-IN-2 FH	57.037.60	As	4.47050	13335.3600	1	1	100	10		13335	
K8-IN-2 BH	57.037.63	As	.04990	88.8060	370	270	100	1	<	20.6	*
K8-IN-3 FH	57.037.66	As	5.07610	15150.0510	1	1	100	10		15150	
K8-IN-3 BH	57.037.69	As	.25670	708.6550	360	260	100	1		98.1	
K7-MTL-1 FH	57.037.75	As	.07000	148.9890	1	1	100	1	<	15.0	*
K7-MTL-1 FH(L)	57.037.75 L	As	.09440	222.1950	1	1	100	5		111	
K7-MTL-1 BH	57.038.6	As	.03570	46.2850	350	250	100	1	<	21.0	*
K7-MTL-2 FH	57.037.86	As	.07570	166.0730	1	1	100	1		16.6	
K7-MTL-2 BH	57.037.12	As	.03160	33.9610	310	210	100	1	<	22.1	*
K7-MTL-3 FH	57.037.94	As	.08840	204.1650	1	1	100	1		20.4	
K7-MTL-3 BH	57.037.18	As	.03110	32.5250	400	300	100	1	<	20.0	*
K8-MTL-1 FH	57.037.99	As	.12450	312.5470	1	1	100	1		31.3	
K8-MTL-1 BH	57.037.24	As	.03190	35.0220	300	200	100	1	<	22.5	*
K8-MTL-2 FH	57.037.114	As	.21790	592.3870	1	1	100	1		59.2	
K8-MTL-2 BH	57.037.30	As	.03330	39.1620	360	260	100	1	<	20.8	*
K8-MTL-3 FH	57.037.125	As	.27340	758.5790	1	1	100	1		75.9	
K8-MTL-3 BH	57.037.36	As	.02740	21.4000	360	260	100	1	<	20.8	*
K8-MTL-BLK FH	57.037.131	As	.06580	136.5290	165	165	100	1	<	15.0	*
K8-MTL-BLK FH(D)	57.037.131D	As	.03030	30.0190	165	165	100	1	<	15.0	.00%*
K8-MTL-BLK BH	57.037.128	As	.02420	11.9430	200	100	100	1	<	30.0	*
K8-MTL-BLK BH(D)	57.037.128D	As	.02170	4.4930	200	100	100	1	<	30.0	.00%*
	STD BLK	As	.02010	0.0000							
	STD 1=500ug/L	As	.19040	500.0000							
	STD 2=1000ug/L	As	.34900	1000.0000							
	STD 3=2000ug/L	As	.68940	2000.0000							
	STD 4=4000ug/L	As	1.35500	4000.0000							
	CHECK HS	As	1.35850	4010.0720							
	ICV	As	.68180	1982.4780							
	ICB	As	.02190	5.1190							
	ICSAI	As	.02320	8.8530							
	ICSABI	As	1.82180	5398.4640							
	CCV1	As	.68890	2003.5910							
	CCB1	As	.02130	3.2490							
	CCV2	As	.69190	2012.5460							
	CCB2	As	.01250	-23.3140							
	CCV3	As	.67630	1965.8000							
	CCB3	As	.02920	26.8480							
	CCV4	As	.69040	2008.1730							
	CCB4	As	.01420	-18.1460							
	ICSAF	As	.03380	40.6660							
	ICSABF	As	1.40780	4157.9210							

*REANALYZED BY MSA ON THE GFAA

GFAA MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
D RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
TLI PROJECT #: 21122

ANALYTE: As
ug/L IDL: 2

MSA RESULTS

CLIENT #	SAMPID	EL	MEANABS	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR	TOTAL ug RESULT
K7-IN-3 BH	57.037.53	As	.20107672	70.8000	340	240	100	1	10.0
K8-IN-2 BH	57.037.63	As	.20200000	55.9000	370	270	100	1	7.66
K7-MTL-1 FH	57.037.75	As	.10661447	33.9000	1	1	100	1	3.39
K7-MTL-1 BH	57.037.6	As	.01169408	3.2000	350	250	100	1	.448
K7-MTL-2 BH	57.037.12	As	.03000000	11.4000	310	210	100	1	1.68
K7-MTL-3 BH	57.037.18	As	.02524745	8.6000	400	300	100	1	1.15
K8-MTL-1 BH	57.037.24	As	.08400000	34.6000	300	200	100	1	5.19
K8-MTL-2 BH	57.037.30	As	.02687265	9.7000	360	260	100	1	1.34
K8-MTL-3 BH	57.037.36	As	.02836743	10.2000	360	260	100	1	1.41
K8-MTL-BLK FH	57.037.131	As	.07500000	25.9000	165	165	100	1	2.59
K8-MTL-BLK BH	57.037.128	As	.05200000	24.6000	200	100	100	1	4.92

ICP MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
TLI PROJECT #: 21122

ANALYTE: Ba
ug/L IDL: 20

CLIENT #	SAMPID	EL	PEAKINT	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR		TOTAL ug RESULT	%RPD
K7-IN-1 FH	57.037.38	Ba	287.76470	18495.8240	1	1	100	10		18496	
K7-IN-1 BH	57.037.41	Ba	6.10540	387.3420	410	310	100	1		51.2	
K7-IN-1 BH(L)	57.037.41 L	Ba	1.29800	78.2610	410	310	100	5		51.8	
K7-IN-2 FH	57.037.45	Ba	56.78900	3645.8990	1	1	100	10		3646	
K7-IN-2 BH	57.037.48	Ba	3.39430	213.0350	310	210	100	1		31.4	
K7-IN-3 FH	57.037.50	Ba	47.94280	3077.1560	1	1	100	10		3077	
K7-IN-3 BH	57.037.53	Ba	.44760	23.5870	340	240	100	1		3.34	
K8-IN-1 FH	57.037.55	Ba	133.46460	8575.5400	1	1	100	10		8576	
K8-IN-1 BH	57.037.58	Ba	.96740	57.0040	360	260	100	1		7.89	
K8-IN-2 FH	57.037.60	Ba	75.52620	4850.5500	1	1	100	10		4851	
K8-IN-2 BH	57.037.63	Ba	.58520	32.4360	370	270	100	1		4.44	
K8-IN-3 FH	57.037.66	Ba	84.22210	5409.6340	1	1	100	10		5410	
K8-IN-3 BH	57.037.69	Ba	2.79530	174.5260	360	260	100	1		24.2	
K7-MTL-1 FH	57.037.75	Ba	2.29280	142.2220	1	1	100	1		14.2	
K7-MTL-1 FH(L)	57.037.75 L	Ba	1.63530	99.9490	1	1	100	5		50.0	
K7-MTL-1 BH	57.038.6	Ba	.44000	23.0990	350	250	100	1		3.23	
K7-MTL-2 FH	57.037.86	Ba	2.97510	186.0870	1	1	100	1		18.6	
K7-MTL-2 BH	57.037.12	Ba	.26430	11.8050	310	210	100	1	<	2.95	
K7-MTL-3 FH	57.037.94	Ba	2.90560	181.6200	1	1	100	1		18.2	
K7-MTL-3 BH	57.037.18	Ba	.48110	25.7420	400	300	100	1		3.43	
K8-MTL-1 FH	57.037.99	Ba	5.83840	370.1710	1	1	100	1		37.0	
K8-MTL-1 BH	57.037.24	Ba	1.41820	85.9920	300	200	100	1		12.9	
K8-MTL-2 FH	57.037.114	Ba	6.77640	430.4760	1	1	100	1		43.0	
K8-MTL-2 BH	57.037.30	Ba	.27790	12.6800	360	260	100	1	<	2.77	
K8-MTL-3 FH	57.037.125	Ba	6.63910	421.6540	1	1	100	1		42.2	
K8-MTL-3 BH	57.037.36	Ba	.24860	10.7920	360	260	100	1	<	2.77	
K8 K8-MTL-BLK FH	57.037.131	Ba	1.30540	78.7350	165	165	100	1		7.87	
K8 K8-MTL-BLK FH(D)	57.037.131D	Ba	1.38620	83.9290	165	165	100	1		8.39	6.39%
K8 K8-MTL-BLK BH	57.037.128	Ba	.04070	-2.5710	200	100	100	1	<	4.00	
K8 K8-MTL-BLK BH(D)	57.037.128D	Ba	.04810	-2.0970	200	100	100	1	<	4.00	.00%

STD BLK	Ba	.04190	0.0000
STD 1=50ug/L	Ba	.82930	50.0000
STD 2=200ug/L	Ba	3.20760	200.0000
STD 3=500ug/L	Ba	7.96490	500.0000
STD 4=1000ug/L	Ba	15.57940	1000.0000
CHECK HS	Ba	15.41980	986.1840
ICV=500ug/L	Ba	7.91850	503.9090
ICB	Ba	.17130	5.8250
ICSAI	Ba	.14930	4.4090
ICSABI	Ba	7.98370	508.0990
CCV1	Ba	8.03840	511.6150
CCB1	Ba	.02560	-3.5450
CCV2	Ba	7.92560	504.3660
CCB2	Ba	.02480	-3.5980
CCV3	Ba	7.54310	479.7700
CCB3	Ba	.10180	1.3550
CCV4	Ba	7.51810	478.1680
CCB4	Ba	.09400	.8510
ICSAF	Ba	.14510	4.1420
ICSABF	Ba	7.78840	495.5420

ICP MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
PROJECT #: 21122

ANALYTE: Be
ug/L IDL: 2

CLIENT #	SAMPID	EL	PEAKINT	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR		TOTAL ug RESULT	%RPD	
K7-IN-1 FH	57.037.38	Be	24.73640	976.8150	1	1	100	10		977		
K7-IN-1 BH	57.037.41	Be	2.32050	92.4560	410	310	100	1		12.2		
K7-IN-1 BH(L)	57.037.41 L	Be	.45830	18.9880	410	310	100	5		12.6		
K7-IN-2 FH	57.037.45	Be	39.53880	1560.8050	1	1	100	10		1561		
K7-IN-2 BH	57.037.48	Be	.92130	37.2540	310	210	100	1		5.50		*
K7-IN-3 FH	57.037.50	Be	24.57830	970.5790	1	1	100	10		971		
K7-IN-3 BH	57.037.53	Be	.08750	4.3580	340	240	100	1		.617		*
K8-IN-1 FH	57.037.55	Be	18.70560	738.8890	1	1	100	10		739		
K8-IN-1 BH	57.037.58	Be	.19100	8.4410	360	260	100	1		1.17		*
K8-IN-2 FH	57.037.60	Be	15.21200	601.0550	1	1	100	10		601		
K8-IN-2 BH	57.037.63	Be	.28990	12.3460	370	270	100	1		1.69		*
K8-IN-3 FH	57.037.66	Be	12.23450	483.5880	1	1	100	10		484		
K7-MTL-1 FH	57.037.75	Be	.08900	4.4190	1	1	100	1		.442		
K7-MTL-1 FH(L)	57.037.75 L	Be	.02480	1.8860	1	1	100	5	<	1.00		
K7-MTL-1 BH	57.038.6	Be	.03160	2.1540	350	250	100	1		.302		
K7-MTL-2 FH	57.037.86	Be	.12960	6.0220	1	1	100	1		.602		*
K7-MTL-2 BH	57.037.12	Be	.06500	3.4730	310	210	100	1		.513		
K7-MTL-3 FH	57.037.94	Be	.12510	5.8420	1	1	100	1		.584		*
K7-MTL-3 BH	57.037.18	Be	.05100	2.9180	400	300	100	1		.389		
K8-MTL-1 FH	57.037.99	Be	.33380	14.0770	1	1	100	1		1.41		*
K8-MTL-1 BH	57.037.24	Be	.03110	2.1360	300	200	100	1		.320		
MTL-2 FH	57.037.114	Be	.80030	32.4810	1	1	100	1		3.25		*
K8-MTL-2 BH	57.037.30	Be	.01730	1.5890	360	260	100	1	<	.277		
K8-MTL-3 FH	57.037.125	Be	.64420	26.3220	1	1	100	1		2.63		*
K8-MTL-3 BH	57.037.36	Be	.05310	3.0020	360	260	100	1		.416		
	STD BLK	Be	.01330	0.0000								
	STD 1=10ug/L	Be	.27890	10.0000								
	STD 2=20ug/L	Be	.54030	20.0000								
	STD 3=250ug/L	Be	6.03800	250.0000								
	STD 4=500ug/L	Be	12.78520	500.0000								
	CHECK HS	Be	12.86360	508.4050								
	ICV=250ug/L	Be	6.18270	244.8310								
	ICB	Be	.01020	1.3100								
	ICSAI	Be	-.57010	-21.5840								
	ICSABI	Be	12.89840	509.7790								
	CCV1	Be	6.08610	241.0170								
	CCB1	Be	.03050	2.1120								
	CCV2	Be	6.24220	247.1760								
	CCB2	Be	.01810	1.6210								
	CCV3	Be	7.65340	302.8530	**							
	CCB3	Be	.03060	2.1170								
	CCV4	Ba	7.51810	478.1680								
	CCB4	Ba	.09400	.8510								
	ICSAF	Ba	.14510	4.1420								
	ICSABF	Ba	7.78840	495.5420								

*RERAN DUE TO BAD CCV
RERAN SAMPLES AFTER THIS CCV(SEE ADDITIONAL SUMMARY SHEET)

ICP MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
TLI PROJECT #: 21122

ANALYTE: Be
ug/L IDL: 2

CLIENT #	SAMPID	EL	PEAKINT	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR		TOTAL ug RESULT	%RPD
K7-IN-2 BH	57.037.48	Be	.86500	31.6450	310	210	100	1		4.67	
K7-IN-3 BH	57.037.53	Be	.08310	2.7450	340	240	100	1		.389	
K8-IN-1 BH	57.037.58	Be	.16830	5.8970	360	260	100	1		.817	
K8-IN-2 BH	57.037.63	Be	.22680	8.0590	370	270	100	1		1.10	
K8-IN-3 BH	57.037.69	Be	1.03340	37.8710	360	260	100	1		5.24	
K7-MTL-2 FH	57.037.86	Be	.15370	5.3560	1	1	100	1		.536	
K7-MTL-3 FH	57.037.94	Be	.12340	4.2380	1	1	100	1		.424	
K8-MTL-1 FH	57.037.99	Be	.28100	10.0610	1	1	100	1		1.01	
K8-MTL-2 FH	57.037.114	Be	.66460	24.2390	1	1	100	1		2.42	
K8-MTL-3 FH	57.037.125	Be	.52630	19.1290	1	1	100	1		1.91	
K8-MTL-BLK FH	57.037.131	Be	.02970	.7710	165	165	100	1	<	.200	
K8-MTL-BLK FH(D)	57.037.131D	Be	.01260	.1420	165	165	100	1	<	.200	N/A
K8-MTL-BLK BH	57.037.128	Be	.01440	.2090	200	100	100	1	<	.400	
K8-MTL-BLK BH(D)	57.037.128D	Be	.01030	.0540	200	100	100	1	<	.400	N/A
	STD BLK	Be	.03700	0.0000							
	STD 1=10ug/L	Be	.30670	10.0000							
	STD 2=20ug/L	Be	.60330	20.0000							
	STD 3=250ug/L	Be	6.56010	250.0000							
	STD 4=500ug/L	Be	13.64050	500.0000							
	CHECK HS	Be	13.48200	497.9730							
	ICV=250ug/L	Be	6.22860	229.8860							
	ICB	Be	.01850	.3610							
	ICSAI	Be	-.61990	-23.2350							
	ICSABI	Be	12.73470	470.3520							
	CCV3	Be	6.28000	231.7850							
	CCB3	Be	.01110	.0850							
	CCV4	Be	7.49690	276.7630							
	CCB4	Be	.02550	.6200							
	ICSAF	Be	-.75140	-28.0960							
	ICSABF	Be	15.52190	573.3690							
	CCV4	Ba	7.51810	478.1680							
	CCB4	Ba	.09400	.8510							
	ICSAF	Ba	.14510	4.1420							
	ICSABF	Ba	7.78840	495.5420							

ICP MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
PROJECT #: 21122

ANALYTE: Cd
ug/L IDL: 4

CLIENT #	SAMPID	EL	PEAKINT	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR		TOTAL ug RESULT	%RPD
K7-IN-1 FH	57.037.38	Cd	231.10170	27809.1350	1	1	100	10		27809	
K7-IN-1 BH	57.037.41	Cd	51.33470	6173.6950	410	310	100	1		817	
K7-IN-1 BH(L)	57.037.41 L	Cd	10.04160	1203.9570	410	310	100	5		796	
K7-IN-2 FH	57.037.45	Cd	320.02410	38511.1800	1	1	100	10		38511	
K7-IN-2 BH	57.037.48	Cd	19.14450	2289.5130	310	210	100	1		339	
K7-IN-3 FH	57.037.50	Cd	350.44080	42171.9140	1	1	100	10		42172	
K7-IN-3 BH	57.037.53	Cd	1.79930	211.9730	340	240	100	1		30.0	
K8-IN-1 FH	57.037.55	Cd	313.40480	37714.5390	1	1	100	10		37715	
K8-IN-1 BH	57.037.58	Cd	3.44090	409.5460	360	260	100	1		56.7	
K8-IN-2 FH	57.037.60	Cd	132.34440	15923.4250	1	1	100	10		15923	
K8-IN-2 BH	57.037.63	Cd	1.31000	153.0900	370	270	100	1		21.0	
K8-IN-3 FH	57.037.66	Cd	131.84660	15863.5230	1	1	100	10		15864	
K8-IN-3 BH	57.037.69*	Cd	10.45900	1254.1980	360	260	100	1		174	*
K7-MTL-1 FH	57.037.75	Cd	.91460	105.4960	1	1	100	1		10.5	
K7-MTL-1 FH(L)	57.037.75 L	Cd	.20970	20.6680	1	1	100	5		10.3	
K7-MTL-1 BH	57.038.6	Cd	.23510	23.7270	350	250	100	1		3.32	
K7-MTL-2 FH	57.037.86	Cd	1.53440	180.1010	1	1	100	1		18.0	
K7-MTL-2 BH	57.037.12	Cd	.13030	11.1050	310	210	100	1		1.64	
K7-MTL-3 FH	57.037.94	Cd	1.47630	173.0990	1	1	100	1		17.3	
K7-MTL-3 BH	57.037.18	Cd	.12740	10.7630	400	300	100	1		1.44	
K8-MTL-1 FH	57.037.99	Cd	3.63830	433.3100	1	1	100	1		43.3	
K8-MTL-1 BH	57.037.24	Cd	.28240	29.4180	300	200	100	1		4.41	
K8-MTL-2 FH	57.037.114	Cd	5.46730	653.4320	1	1	100	1		65.3	
K8-MTL-2 BH	57.037.30	Cd	.09770	7.1900	360	260	100	1		1.00	
K8-MTL-3 FH	57.037.125	Cd	4.38660	523.3670	1	1	100	1		52.3	*
K8-MTL-3 BH	57.037.36	Cd	.14980	13.4550	360	260	100	1		1.86	
K8-MTL-BLK FH	57.037.131	Cd	.08570	5.7390	165	165	100	1		.574	*
K8-MTL-BLK FH(D)	57.037.131D	Cd	.08900	6.1330	165	165	100	1		.613	6.64%*
K8-MTL-BLK BH	57.037.128	Cd	.03240	-.6770	200	100	100	1	<	.800	*
K8-MTL-BLK BH(D)	57.037.128D	Cd	.02800	-1.2030	200	100	100	1	<	.800	.00%*

STD BLK	Cd	.03240	0.0000
STD 1=10ug/L	Cd	.10940	10.0000
STD 2=20ug/L	Cd	.19680	20.0000
STD 3=250ug/L	Cd	2.16360	250.0000
STD 4=500ug/L	Cd	4.16880	500.0000
CHECK HS	Cd	4.18360	498.9300
ICV=250ug/L	Cd	2.12780	251.5080
ICB	Cd	.03270	-.6400
ICSAI	Cd	.21800	21.6650
ICSABI	Cd	8.35330	1000.7640
CCV1	Cd	2.18270	258.1240
CCB1	Cd	.03850	.0550
CCV2	Cd	2.16550	256.0560
CCB2	Cd	.03140	-.7900
CCV3	Cd	2.23630	264.5710 **
CCB3	Cd	.03370	-.5170
CCV4	Cd	2.79000	331.2150
CCB4	Cd	.02910	-1.0710
ICSAF	Cd	.24730	25.1920
ICSABF	Cd	11.01650	1321.2910

*RERAN DUE TO BAD CCV
**RERAN SAMPLES AFTER THIS CCV(SEE ADDITIONAL SUMMARY SHEET)

ICP MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
TLI PROJECT #: 21122

ANALYTE: Cd
ug/L IDL: 4

CLIENT #	SAMPID	EL	PEAKINT	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR		TOTAL ug RESULT	%RPD
K8-IN-3 BH	57.037.69	Cd	9.55570	1083.5520	360	260	100	1		150	
K8-MTL-3 FH	57.037.125	Cd	4.23900	478.3170	1	1	100	1		47.8	
K8-MTL-BLK FH	57.037.131	Cd	.09060	6.0850	165	165	100	1		.609	
K8-MTL-BLK FH(D)	57.037.131D	Cd	.05730	2.2890	165	165	100	1	<	.400	200%
K8-MTL-BLK BH	57.037.128	Cd	.03930	.2470	200	100	100	1	<	.800	
K8-MTL-BLK BH(D)	57.037.128D	Cd	.03860	.1610	200	100	100	1	<	.800	.00%
	STD BLK	Cd	.04080	0.0000							
	STD 1=10ug/L	Cd	.10970	10.0000							
	STD 2=20ug/L	Cd	.20330	20.0000							
	STD 3=250ug/L	Cd	2.27440	250.0000							
	STD 4=500ug/L	Cd	4.40960	500.0000							
	CHECK HS	Cd	4.33350	489.0780							
	ICV=250ug/L	Cd	2.18950	245.0110							
	ICB	Cd	.03620	-.1060							
	ICSAI	Cd	.23050	22.0090							
	ICSABI	Cd	8.53020	966.8080							
	CCV4	Cd	2.23330	249.9990							
	CCB4	Cd	.03040	-.7650							
	ICSAF	Cd	.19910	18.4400							
	ICSABF	Cd	8.46110	958.9430							

ICP MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
TLI PROJECT #: 21122

ANALYTE: Cr
ug/L IDL: 12

CLIENT #	SAMPID	EL	PEAKINT	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR		TOTAL ug RESULT	%RPD
K7-IN-1 FH	57.037.38	Cr	63.24270	6709.2200	1	1	100	10		6709	
K7-IN-1 BH	57.037.41	Cr	2.00710	191.6410	410	310	100	1		25.3	
K7-IN-1 BH(L)	57.037.41 L	Cr	.54210	35.7150	410	310	100	5		23.6	
K7-IN-2 FH	57.037.45	Cr	72.84710	7731.4540	1	1	100	10		7731	
K7-IN-2 BH	57.037.48	Cr	.73520	56.2670	310	210	100	1		8.31	
K7-IN-3 FH	57.037.50	Cr	78.69350	8353.7180	1	1	100	10		8354	
K7-IN-3 BH	57.037.53	Cr	.18810	-1.9670	340	240	100	1	<	1.70	
K8-IN-1 FH	57.037.55	Cr	48.63390	5154.3320	1	1	100	10		5154	
K8-IN-1 BH	57.037.58	Cr	.20010	-.6820	360	260	100	1	<	1.66	
K8-IN-2 FH	57.037.60	Cr	64.48410	6841.3490	1	1	100	10		6841	
K8-IN-2 BH	57.037.63	Cr	.21130	.5060	370	270	100	1	<	1.64	
K8-IN-3 FH	57.037.66	Cr	30.40200	3213.8390	1	1	100	10		3214	
K8-IN-3 BH	57.037.69	Cr	.61880	43.8780	360	260	100	1		6.08	
K7-MTL-1 FH	57.037.75	Cr	.89980	73.7800	1	1	100	1		7.38	
K7-MTL-1 FH(L)	57.037.75 L	Cr	.43430	24.2410	1	1	100	5		12.1	
K7-MTL-1 BH	57.038.6	Cr	.15100	-5.9140	350	250	100	1	<	1.68	
K7-MTL-2 FH	57.037.86	Cr	1.02420	87.0200	1	1	100	1		8.70	
K7-MTL-2 BH	57.037.12	Cr	.15430	-5.5600	310	210	100	1	<	1.77	
K7-MTL-3 FH	57.037.94	Cr	.94630	78.7290	1	1	100	1		7.87	
MTL-3 BH	57.037.18	Cr	.25330	4.9790	400	300	100	1	<	1.60	
K8-MTL-1 FH	57.037.99	Cr	4.92780	502.5080	1	1	100	1		50.3	
K8-MTL-1 BH	57.037.24	Cr	.16830	-4.0750	300	200	100	1	<	1.80	
K8-MTL-2 FH	57.037.114	Cr	3.43930	344.0740	1	1	100	1		34.4	
K8-MTL-2 BH	57.037.30	Cr	.18060	-2.7670	360	260	100	1	<	1.66	
K8-MTL-3 FH	57.037.125	Cr	2.01210	192.1760	1	1	100	1		19.2	
K8-MTL-3 BH	57.037.36	Cr	.14360	-6.6990	360	260	100	1	<	1.66	
K8-MTL-BLK FH	57.037.131	Cr	.35720	16.0340	165	165	100	1		1.60	
K8-MTL-BLK FH(D)	57.037.131D	Cr	.30610	10.5960	165	165	100	1	<	1.20	200%
K8-MTL-BLK BH	57.037.128	Cr	.09570	-11.7960	200	100	100	1	<	2.40	
K8-MTL-BLK BH(D)	57.037.128D	Cr	.10830	-10.4570	200	100	100	1	<	2.40	.00%
	STD BLK	Cr	.25370	0.0000							
	STD 1=20ug/L	Cr	.24550	20.0000							
	STD 2=40ug/L	Cr	.45910	40.0000							
	STD 3=500ug/L	Cr	5.04660	500.0000							
	STD 4=1000ug/L	Cr	9.53580	1000.0000							
	CHECK HS	Cr	9.41130	979.7030							
	ICV=500ug/L	Cr	4.92910	502.6460							
	ICB	Cr	.26680	6.4110							
	ICSAI	Cr	.08330	-13.1170							
	ICSABI	Cr	4.91490	501.1260							
	CCV1	Cr	4.85380	494.6260							
	CCB1	Cr	.26670	6.4030							
	CCV2	Cr	4.99040	509.1630							
	CCB2	Cr	.29580	9.4970							
	CCV3	Cr	5.03950	514.3950							
	CCB3	Cr	.27930	7.7410							
	CCV4	Cr	5.22530	534.1670							
	CCB4	Cr	.29820	9.7570							
	ICSAF	Cr	.10470	-10.8370							
	ICSABF	Cr	5.21900	533.5010							

CVAA MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA

ANALYTE: Hg
ug/L IDL: .2
PREDIGESTION SPK AMT: 5 ug

DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
TLI PROJECT #: 21122

FH SAMPLES

CLIENT #	SAMPID	EL	MEAN ABS	(in bottle) ug/L CONCENTRATION	ml TV	ml FV	ml ALIQUOT	POST DIG DIL FACTOR	TOTAL ug RESULT	%RPD
K7-IN-1FH	7IN1 FH	Hg	.01223916	.3000	N/A	100	5	1	.600	
K7-IN-1FH(D)	7IN1 FH D	Hg	.01314205	.3000	N/A	100	5	1	.600	.00%
K7-IN-2FH	7IN2 FH	Hg	.01294140	.3000	N/A	100	5	1	.600	
K7-IN-2FH(D)	7IN2 FH D	Hg	.01354333	.3000	N/A	100	5	1	.600	.00%
K7-IN-3FH	7IN3 FH	Hg	.01544943	.4000	N/A	100	5	1	.800	
K7-IN-3FH(D)	7IN3 FH D	Hg	.01544943	.4000	N/A	100	5	1	.800	.00%
K8-IN-1FH	8IN1 FH	Hg	.01304173	.3000	N/A	100	5	1	.600	
K8-IN-1FH(D)	8IN1 FH D	Hg	.01374397	.4000	N/A	100	5	1	.800	28.6%
K8-IN-2FH	8IN2 FH	Hg	.01173755	.3000	N/A	100	5	1	.600	
K8-IN-2FH(D)	8IN2 FH D	Hg	.01103531	.3000	N/A	100	5	1	.600	.00%
K8-IN-3FH	8IN3 FH	Hg	.00922953	.2000	N/A	100	5	1	.400	
K8-IN-3FH(D)	8IN3 FH D	Hg	.00892856	.2000	N/A	100	5	1	.400	.00%
K7-MTL-1FH	7M1 FH	Hg	.01103531	.3000	N/A	100	5	1	.600	
K7-MTL-1FH(D)	7M1 FH D	Hg	.01093498	.3000	N/A	100	5	1	.600	.00%
K7-MTL-2FH	7M2 FH	Hg	.01013242	.3000	N/A	100	5	1	.600	
K7-MTL-2FH(D)	7M2 FH D	Hg	.00983145	.3000	N/A	100	5	1	.600	.00%
K7-MTL-3FH	7M3 FH D	Hg	.01043338	.3000	N/A	100	5	1	.600	
K7-MTL-3FH(D)	7M3 FH	Hg	.00993177	.3000	N/A	100	5	1	.600	.00%
K8-MTL-1FH	8M1 FH	Hg	.01243980	.3000	N/A	100	5	1	.600	
K8-MTL-1FH(D)	8M1 FH D	Hg	.01173755	.3000	N/A	100	5	1	.600	.00%
K8-MTL-2FH	8M2 FH	Hg	.01153691	.3000	N/A	100	5	1	.600	
K8-MTL-2FH(D)	8M2 FH D	Hg	.00973113	.2000	N/A	100	5	1	.400	40.0%
K8-MTL-3FH	8M3 FH	Hg	.00993177	.3000	N/A	100	5	1	.600	
K8-MTL-3FH(D)	8M3 FH D	Hg	.01023274	.3000	N/A	100	5	1	.600	.00%
K5-MTL-BLK FH	8MB FH	Hg	.00993177	.3000	N/A	100	5	1	.600	
K5-MTL-BLK FH(D)	8MB FH D	Hg	.01083466	.3000	N/A	100	5	1	.600	.00%

STD BLK	Hg	.00401284	0.0000
STD 1=0.50ug/L	Hg	.01865970	0.0000
STD 2=1.00ug/L	Hg	.03882422	1.0000
STD 3=2.00ug/L	Hg	.08075840	1.9000
STD 4=5.00ug/L	Hg	.19241568	4.6000
STD 5=10.0ug/L	Hg	.36767647	9.3000
ICV=5.0ug/L	Hg	.19281696	5.1000
ICB	Hg	.00361155	.1000
CCV1	Hg	.19713077	5.2000
CCB2	Hg	.00682182	.2000
CCV2	Hg	.18709867	4.9000
CCB2	Hg	.01334269	.3000
CCV3	Hg	.20365163	5.4000
CCB3	Hg	.00912921	.2000

CVAA MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA

ANALYTE: Hg
ug/L IDL: .2
PREDIGESTION SPK AMT: 5 ug

DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
TLI PROJECT #: 21122

BH SAMPLES

CLIENT #	SAMPID	EL	MEAN ABS	(in bottle) ug/L CONCENTRATION	ml TV	ml FV	ml ALIQUOT	POST DIG DIL FACTOR		TOTAL ug RESULT	%RPD	%REC
K7-IN-1BH	57.037.41BH	Hg	.02518057	.8000	410	N/A	5	1		6.56		
K7-IN-1BH(D)	57.037.41BH D	Hg	.01464686	.5000	410	N/A	5	1		4.10	46.2%	
K7-IN-1BH(S)	57.037.41BH S	Hg	.19943815	6.5000	410	N/A	5	1				114%
K7-IN-2BH	57.037.48BH	Hg	.01645264	.5000	310	N/A	5	1		3.10		
K7-IN-2BH(D)	57.037.48BH D	Hg	.01454654	.5000	310	N/A	5	1		3.10	.00%	
K7-IN-3BH	57.037.53BH	Hg	.01575039	.5000	340	N/A	5	1		3.40		
K7-IN-3BH(D)	57.037.53BH D	Hg	.01384429	.4000	340	N/A	5	1		2.72	22.2%	
K8-IN-1BH	57.037.58BH	Hg	.07162919	2.3000	360	N/A	5	1		16.6		
K8-IN-1BH(D)	57.037.58BH D	Hg	.07102726	2.3000	360	N/A	5	1		16.6	.00%	
K8-IN-2BH	57.037.63BH	Hg	.07905294	2.6000	370	N/A	5	1		19.2		
K8-IN-2BH(D)	57.037.63BH D	Hg	.07584267	2.5000	370	N/A	5	1		18.5	3.92%	
K8-IN-3BH	57.037.69BH	Hg	.02648474	.9000	360	N/A	5	1		6.48		
K8-IN-3BH(D)	57.037.69BH D	Hg	.00361155	.1000	360	N/A	5	1	<	1.44	200%	
K7-MTL-1BH	57.037.6BH	Hg	-.00973110	-.3000	350	N/A	5	1	<	1.40		
K7-MTL-1BH(D)	57.037.6BH D	Hg	-.01173750	-.4000	350	N/A	5	1	<	1.40	N/A	
K7-MTL-2BH	57.037.12BH	Hg	-.00441410	-.1000	310	N/A	5	1	<	1.24		
K7-MTL-2BH(D)	57.037.12BH D	Hg	-.00411310	-.1000	310	N/A	5	1	<	1.24	N/A	
-MTL-3BH	57.037.18BH	Hg	-.00752400	-.2000	400	N/A	5	1	<	1.60		
a7-MTL-3BH(D)	57.037.18BH D	Hg	-.00632020	-.2000	400	N/A	5	1	<	1.60	N/A	
K8-MTL-1BH	57.037.24BH	Hg	.05688200	1.8000	300	N/A	5	1		10.8		
K8-MTL-1BH(D)	57.037.24BH D	Hg	.05156499	1.7000	300	N/A	5	1		10.2	5.71%	
K8-MTL-2BH	57.037.30BH	Hg	.03982743	1.3000	360	N/A	5	2		18.7		
K8-MTL-2BH(D)	57.037.30BH D	Hg	.03400881	1.1000	360	N/A	5	2		15.8	16.7%	
K8-MTL-3BH	57.037.36BH	Hg	.06691410	2.2000	360	N/A	5	1		15.8		
K8-MTL-3BH(D)	57.037.36BH D	Hg	.07182983	2.3000	360	N/A	5	1		16.6	4.44%	
K5-MTL-BLK BH	57.037.128BH	Hg	.00993177	.3000	200	N/A	5	1		1.20		
K5-MTL-BLK BH(D)	57.037.128BH D	Hg	.00772471	.3000	200	N/A	5	1		1.20	.00%	

STD BLK	Hg	.02839084	.8000
STD 1=0.50ug/L	Hg	.00732343	.2000
STD 2=1.00ug/L	Hg	.02879212	2.0000
STD 3=2.00ug/L	Hg	.06119581	2.3000
STD 4=5.00ug/L	Hg	.15991167	5.4000
STD 5=10.0ug/L	Hg	.30547745	9.7000
ICV=5.0ug/L	Hg	.13553367	4.4000
ICB	Hg	-.00060190	0.0000
CCV1=2.0ug/L	Hg	.06390447	2.1000
CCB1	Hg	-.00120380	0.0000
CCV2=5ug/L	Hg	.15509627	5.0000
CCB2	Hg	.00220706	.1000
CCV3=5ug/L	Hg	.16723511	5.4000
CCB3	Hg	.00090288	0.0000

CVAA MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA

ANALYTE: Hg
ug/L IDL: .2
PREDIGESTION SPK AMT: 5 ug

DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
TLI PROJECT #: 21122

IMPINGERS

CLIENT #	SAMPID	EL	MEAN ABS	(in bottle) ug/L CONCENTRATION	ml TV	ml FV	ml ALIQUOT	POST DIG DIL FACTOR	TOTAL ug RESULT	%RPD	%REC
K7-MTL-1 5A	57.037.3	Hg	.01003210	.3000	23	N/A	2	1	.345		
K7-MTL-1 5A(D)	57.037.3D	Hg	.01163723	.4000	23	N/A	2	1	.460	28.6%	
K7-MTL-1 5A(S)	57.037.3 S	Hg	.16803768	5.4000	23	N/A	5	1			102%
K7-MTL-1 5B	57.037.2	Hg	.01695424	.5000	280	N/A	5	1	2.80		
K7-MTL-1 5B(D)	57.037.2D	Hg	.01544943	.5000	280	N/A	5	1	2.80	.00%	
K7-MTL-1 5B(S)	57.037.2S	Hg	.19341889	6.2000	280	N/A	5	1			114%
K7-MTL-1 5C	57.037.1	Hg	.01183787	.4000	210	N/A	5	1	1.68		
K7-MTL-1 5C(D)	57.037.1D	Hg	.01143659	.4000	210	N/A	5	1	1.68	.00%	
K7-MTL-1 5C(S)	57.037.1S	Hg	.18398871	5.9000	210	N/A	5	1			110%
K7-MTL-2 5A	57.037.9	Hg	.02126805	.7000	19	N/A	2	1	.665		
K7-MTL-2 5A(D)	57.037.9D	Hg	.01575039	.5000	19	N/A	2	1	.475	33.3%	
K7-MTL-2 5B	57.037.8	Hg	.01585071	.5000	270	N/A	5	1	2.70		
K7-MTL-2 5B(D)	57.037.8D	Hg	.01575039	.5000	270	N/A	5	1	2.70	.00%	
K7-MTL-2 5C	57.037.7	Hg	.01123595	.4000	210	N/A	5	1	1.68		
K7-MTL-2 5C(D)	57.037.7D	Hg	.01364365	.4000	210	N/A	5	1	1.68	.00%	
K7-MTL-3 5A	57.037.15	Hg	.01595103	.5000	25	N/A	2	1	.625		
K7-MTL-3 5A(D)	57.037.15D	Hg	.01615168	.5000	25	N/A	2	1	.625	.00%	
K7-MTL-3 5B	57.037.14	Hg	.01314205	.4000	210	N/A	5	1	1.68		
K7-MTL-3 5B(D)	57.037.14D	Hg	.01464686	.5000	210	N/A	5	1	2.10	22.2%	
K7-MTL-3 5C	57.037.13	Hg	.01384429	.4000	210	N/A	5	1	1.68		
K7-MTL-3 5C(D)	57.037.13D	Hg	.01344301	.4000	210	N/A	5	1	1.68	.00%	
K8-MTL-1 5A	57.037.21	Hg	.01464686	.5000	140	N/A	5	1	1.40		
K8-MTL-1 5A(D)	57.037.21D	Hg	.01494782	.5000	140	N/A	5	1	1.40	.00%	
K8-MTL-1 5B	57.037.20	Hg	.03330657	1.1000	250	N/A	5	1	5.50		
K8-MTL-1 5B(D)	57.037.20D	Hg	.03119983	1.0000	250	N/A	5	1	5.00	9.52%	
K8-MTL-1 5C	57.037.19	Hg	.01494782	.5000	240	N/A	5	1	2.40		
K8-MTL-1 5C(D)	57.037.19D	Hg	.01384429	.4000	240	N/A	5	1	1.92	22.2%	
K8-MTL-2 5A	57.037.27	Hg	.01314205	.4000	37	N/A	2	1	.740		
K8-MTL-2 5A(D)	57.037.27D	Hg	.01274076	.4000	37	N/A	2	1	.740	.00%	
K8-MTL-2 5B	57.037.26	Hg	.03350721	1.1000	350	N/A	5	1	7.70		
K8-MTL-2 5B(D)	57.037.26D	Hg	.02999597	1.0000	350	N/A	5	1	7.00	9.52%	
K8-MTL-2 5C	57.037.25	Hg	.01424558	.5000	210	N/A	5	1	2.10		
K8-MTL-2 5C(D)	57.037.25D	Hg	.01344301	.4000	210	N/A	5	1	1.68	22.2%	
K8-MTL-3 5A	57.037.33	Hg	.01715489	.6000	120	N/A	5	1	1.44		
K8-MTL-3 5A(D)	57.037.33D	Hg	.01675360	.5000	120	N/A	5	1	1.20	18.2%	
K8-MTL-3 5B	57.037.32	Hg	.03611556	1.2000	190	N/A	5	1	4.56		
K8-MTL-3 5B(D)	57.037.32D	Hg	.03792133	1.2000	190	N/A	5	1	4.56	.00%	
K8-MTL-3 5C	57.037.31	Hg	.01404494	.5000	210	N/A	5	1	2.10		
K8-MTL-3 5C(D)	57.037.31D	Hg	.01404494	.5000	210	N/A	5	1	2.10	.00%	
K8-MTL-BLK 5A	57.037.129	Hg	.01364365	.4000	90	N/A	5	1	.720		
K8-MTL-BLK 5A(D)	57.037.129D	Hg	.01284108	.4000	90	N/A	5	1	.720	.00%	
K8-MTL-BLK 5B	57.037.127	Hg	.01544943	.5000	190	N/A	5	1	1.90		
K8-MTL-BLK 5B(D)	57.037.127D	Hg	.01474718	.5000	190	N/A	5	1	1.90	.00%	
K8-MTL-BLK 5C	57.037.126	Hg	.01444622	.5000	210	N/A	5	1	2.10		
K8-MTL-BLK 5C(D)	57.037.126D	Hg	.01404494	.5000	210	N/A	5	1	2.10	.00%	

STD BLK	Hg	.01274076	.4000
STD 1=0.50ug/L	Hg	.01384429	.4000
STD 2=1.00ug/L	Hg	.02849116	1.0000
STD 3=2.00ug/L	Hg	.06019260	2.1000
STD 4=5.00ug/L	Hg	.16031296	5.4000
STD 5=10.0ug/L	Hg	.30778483	9.7000
ICV=5.0ug/L	Hg	.15118375	4.9000
ICB	Hg	.00822632	.3000
CCV1	Hg	.16111553	5.2000
CCB1	Hg	.01855938	.6000
CCV2	Hg	.16101521	5.2000
CCB2	Hg	.01835874	.6000
CCB3	Hg	.01906099	.6000
CCV3	Hg	.15800558	5.1000
CCV4	Hg	.16031296	5.2000
CCB4	Hg	.02056580	.7000

TRIANGLE LABORATORIES of RTP, INC.
PO BOX 13485
RTP, NC 27709

INORGANICS ANALYSIS REPORT

TLI PROJECT #: 21122
CLIENT: IEA
DATE RECIEVED: 06/09/92
DATE REPORTED: 06/30/92

MULTI METAL SAMPLES

RESULTS REPORTED IN TOTAL ug

CLIENT SAMPLE ID	Ag	As	Ba	Be	Cd	Cr	Pb	Sb	Tl
K7-IN-1 FH	17.4	34,300	18,500	977	27,800	6,709	454,000	22,040	7.50
K7-IN-1 BH	< .926	300	51.2	12.2	817	25.3	8190	1,390	2.59
K7-IN-2 FH	17.4	40,400	3,650	1,560	38,500	7,731	654,000	27,900	5.50
K7-IN-2 BH	< 1.03	133	31.4	4.67	339	8.31	~~8.31~~ 3,960	877	1.99
K7-IN-3 FH	17.4	40,400	3,080	971	42,200	8,354	525,000	29,300	6.10
K7-IN-3 BH	< .992	10.0	3.34	.389	30.0	< 1.70	263	699	.595
K8-IN-1 FH	22.1	27,900	8,580	739	37,700	5,154	656,000	942	7.30
K8-IN-1 BH	< .969	22.8	7.89	.817	56.7	< 1.66	907	7.03	1.02
K8-IN-2 FH	12.4	13,300	4,850	601	15,900	6,841	116,000	377	7.00
K8-IN-2 BH	< .959	7.66	4.44	1.10	21.0	< 1.64	146	16.4	< .274
K8-IN-3 FH	14.0	15,200	5,410	484	15,900	3,214	259,000	433	3.20
K8-IN-3 BH	< .969	98.1	24.2	5.24	150	6.08	2,174	10.1	.360
K7-MTL-1 FH	< .700	3.39	14.2	.442	10.5	7.38	135	7.43	< .200
K7-MTL-1 BH	< .980	.448	3.23	.302	3.32	< 1.68	5.63	189	< .280
K7-MTL-2 FH	1.08	16.6	18.6	.536	18.0	8.70	593	16.2	< .200
K7-MTL-2 BH	< 1.03	1.68	< 2.95	.513	1.64	< 1.77	9.93	103	.723
K7-MTL-3 FH	< .700	20.4	18.2	.424	17.3	7.87	247	24.5	< .200
K7-MTL-3 BH	< .933	1.15	3.43	.389	1.44	< 1.60	10.3	101	< .267
K8-MTL-1 FH	1.09	31.3	37.0	1.01	43.3	50.3	901	4.04	< .200
K8-MTL-1 BH	< 1.05	5.19	12.9	.320	4.41	< 1.80	11.7	6.99	.960
K8-MTL-2 FH	1.41	59.2	43.0	2.42	65.3	34.4	1,026	8.53	< .200
K8-MTL-2 BH	< .969	1.34	< 2.77	< .277	1.00	< 1.66	11.5	5.57	.595
K8-MTL-3 FH	.733	75.9	42.2	1.91	47.8	19.2	1,100	26.1	< .200
K8-MTL-3 BH	< .969	1.41	< 2.77	.416	1.86	< 1.66	11.6	4.38	.789
K8-MTL-BLK FH	< .700	2.59	7.87	< .200	.609	1.60	574	4.00	< .200
K8-MTL-BLK BH	< 1.40	4.92	< 4.00	< .400	< .800	< 2.40	16.8	3.88	< .400

ICP MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
PROJECT #: 21122

ANALYTE: Pb
ug/L IDL: 100

CLIENT #	SAMPID	EL	PEAKINT	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR		TOTAL ug RESULT	%RPD	
K7-IN-1 FH	57.037.38	Pb	290.21420	453587.7800	1	1	100	10		453588		
K7-IN-1 BH	57.037.41	Pb	39.62700	61885.8400	410	310	100	1		8185		
K7-IN-1 BH(L)	57.037.41 L	Pb	7.93200	12342.1530	410	310	100	5		8162		
K7-IN-2 FH	57.037.45	Pb	418.63340	654324.3700	1	1	100	10		654324		
K7-IN-2 BH	57.037.48	Pb	17.19700	26824.6330	310	210	100	1		3960		
K7-IN-3 FH	57.037.50	Pb	336.10440	525320.3700	1	1	100	10		525320		
K7-IN-3 BH	57.037.53	Pb	1.22570	1859.3180	340	240	100	1		263		
K8-IN-1 FH	57.037.55	Pb	419.92050	656336.3100	1	1	100	10		656336		
K8-IN-1 BH	57.037.58	Pb	4.22860	6553.2790	360	260	100	1		907		
K8-IN-2 FH	57.037.60	Pb	74.10540	115780.2500	1	1	100	10		115780		
K8-IN-2 BH	57.037.63	Pb	.71730	1064.7330	370	270	100	1		146		
K8-IN-3 FH	57.037.66	Pb	165.46200	258583.1000	1	1	100	10		258583		
K8-IN-3 BH	57.037.69	Pb	10.08140	15702.0290	360	260	100	1		2174		
K7-MTL-1 FH	57.037.75	Pb	.89950	1349.4780	1	1	100	1		135		
K7-MTL-1 FH(L)	57.037.75 L	Pb	.58060	851.0670	1	1	100	5		426		
K7-MTL-1 BH	57.038.6	Pb	.18670	235.2100	350	250	100	1		32.9		*
K7-MTL-2 FH	57.037.86	Pb	3.82940	5929.2890	1	1	100	1		593		
K7-MTL-2 BH	57.037.12	Pb	.18590	233.9870	310	210	100	1		34.5		*
K7-MTL-3 FH	57.037.94	Pb	1.61920	2474.4170	1	1	100	1		247		
K7-MTL-3 BH	57.037.18	Pb	.17870	222.7620	400	300	100	1		29.7		*
K8-MTL-1 FH	57.037.99	Pb	5.79880	9007.7730	1	1	100	1		901		
MTL-1 BH	57.037.24	Pb	.36570	515.0680	300	200	100	1		77.3		*
no-MTL-2 FH	57.037.114	Pb	6.59790	10256.8610	1	1	100	1		1026		
K8-MTL-2 BH	57.037.30	Pb	.08780	80.6380	360	260	100	1	<	13.8		*
K8-MTL-3 FH	57.037.125	Pb	7.07240	10998.5350	1	1	100	1		1100		
K8-MTL-3 BH	57.037.36	Pb	.13240	150.4030	360	260	100	1		20.8		*
K8-MTL-BLK FH	57.037.131	Pb	3.70950	5741.8110	165	165	100	1		574		
K8-MTL-BLK FH(D)	57.037.131D	Pb	3.78800	5864.6140	165	165	100	1		586	2.12%	
K8-MTL-BLK BH	57.037.128	Pb	.03480	-2.1010	200	100	100	1	<	20.0		*
K8-MTL-BLK BH(D)	57.037.128D	Pb	.01910	-26.7700	200	100	100	1	<	20.0	.00%	*

STD BLK	Pb	.02940	0.0000
STD 1=250ug/L	Pb	.19240	250.0000
STD 2=500ug/L	Pb	.36960	500.0000
STD 3=1000ug/L	Pb	.67570	1000.0000
STD 4=2000ug/L	Pb	1.31280	2000.0000
CHECK HS	Pb	1.29960	1974.9580
ICV=1000ug/L	Pb	.67270	994.9430
ICB	Pb	.03110	-8.0190
ICSAI	Pb	-.09220	-200.6890
ICSABI	Pb	1.26960	1927.9780
CCV1	Pb	.73810	1097.1620
CCB1	Pb	.02350	-19.7730
CCV2	Pb	.65890	973.3270
CCB2	Pb	.02220	-21.7880
CCV3	Pb	.67330	995.9250
CCB3	Pb	.02410	-18.9100
CCV4	Pb	.67910	1004.9530
CCB4	Pb	.03410	-3.2190
ICSAF	Pb	-.08930	-196.1010
ICSABF	Pb	1.08270	1635.7940

*REANALYZED BY MSA ON GFAA

GFAA MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
TLI PROJECT #: 21122

ANALYTE: Pb
ug/L IDL: 2

MSA RESULTS

CLIENT #	SAMPID	EL	MEANABS	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR	TOTAL ug RESULT
K7-MTL-1 BH	57.037.6	Pb	.05686863	40.2000	350	250	100	1	5.63
K7-MTL-2 BH	57.037.12	Pb	.10851388	67.3000	310	210	100	1	9.93
K7-MTL-3 BH	57.037.18	Pb	.12397335	77.3000	400	300	100	1	10.3
K8-MTL-1 BH	57.037.24	Pb	.12799622	77.9000	300	200	100	1	11.7
K8-MTL-2 BH	57.037.30	Pb	.13537650	82.9000	360	260	100	1	11.5
K8-MTL-3 BH	57.037.36	Pb	.13563734	83.6000	360	260	100	1	11.6
K8-MTL-BLK BH	57.037.128	Pb	.13801494	83.9000	200	100	100	1	16.8

ICP MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
PROJECT #: 21122

ANALYTE: Sb
ug/L IDL: 100

CLIENT #	SAMPID	EL	PEAKINT	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR		TOTAL ug RESULT	%RPD	
K7-IN-1 FH	57.037.38	Sb	6.00020	22038.7850	1	1	100	10		22039		
K7-IN-1 BH	57.037.41	Sb	2.87290	10532.9210	410	310	100	1		1393		
K7-IN-1 BH(L)	57.037.41 L	Sb	.57470	2077.4800	410	310	100	5		1374		
K7-IN-2 FH	57.037.45	Sb	7.58380	27865.1640	1	1	100	10		27865		
K7-IN-2 BH	57.037.48	Sb	1.62500	5941.6430	310	210	100	1		877		
K7-IN-3 FH	57.037.50	Sb	7.97490	29304.0920	1	1	100	10		29304		
K7-IN-3 BH	57.037.53	Sb	1.35100	4933.4760	340	240	100	1		699		
K8-IN-1 FH	57.037.55	Sb	.26600	941.8390	1	1	100	10		942		
K8-IN-1 BH	57.037.58	Sb	.03080	76.3570	360	260	100	1	<	13.8		*
K8-IN-2 FH	57.037.60	Sb	.11260	377.3180	1	1	100	10		377		
K8-IN-2 BH	57.037.63	Sb	.02350	49.6940	370	270	100	1	<	13.7		*
K8-IN-3 FH	57.037.66	Sb	.12780	433.2600	1	1	100	10		433		
K8-IN-3 BH	57.037.69	Sb	.02700	62.4390	360	260	100	1	<	13.8		*
K7-MTL-1 FH	57.037.75	Sb	.03890	106.4060	1	1	100	1		10.6		*
K7-MTL-1 FH(L)	57.037.75 L	Sb	.08100	261.1600	1	1	100	5		131		*
K7-MTL-1 BH	57.038.6	Sb	.37780	1353.2270	350	250	100	1		189		
K7-MTL-2 FH	57.037.86	Sb	.05400	161.9120	1	1	100	1		16.2		
K7-MTL-2 BH	57.037.12	Sb	.19990	698.4130	310	210	100	1		103.1		
K7-MTL-3 FH	57.037.94	Sb	.07650	244.5520	1	1	100	1		24.5		
K7-MTL-3 BH	57.037.18	Sb	.21660	760.1450	400	300	100	1		101.4		
K8-MTL-1 FH	57.037.99	Sb	-.01300	-84.8980	1	1	100	1	<	10.0		*
MTL-1 BH	57.037.24	Sb	.02320	48.3640	300	200	100	1	<	15.0		*
K8-MTL-2 FH	57.037.114	Sb	.03080	76.3810	1	1	100	1	<	10.0		*
K8-MTL-2 BH	57.037.30	Sb	.00960	-1.4500	360	260	100	1	<	13.8		*
K8-MTL-3 FH	57.037.125	Sb	.08110	261.4090	1	1	100	1		26.1		
K8-MTL-3 BH	57.037.36	Sb	.01600	22.0370	360	260	100	1	<	13.8		*
K8-MTL-BLK FH	57.037.131	Sb	-.01670	-98.2450	165	165	100	1	<	10.0		*
K8-MTL-BLK FH(D)	57.037.131D	Sb	.03400	88.3750	165	165	100	1	<	10.0	.00%	*
K8-MTL-BLK BH	57.037.128	Sb	.01390	14.3000	200	100	100	1	<	20.0		*
K8-MTL-BLK BH(D)	57.037.128D	Sb	.01640	23.4470	200	100	100	1	<	20.0	.00%	*

STD BLK	Sb	.02340	0.0000
STD 1=100ug/L	Sb	.03350	100.0000
STD 2=400ug/L	Sb	.11230	400.0000
STD 3=1000ug/L	Sb	.27230	1000.0000
STD 4=2000ug/L	Sb	.55990	2000.0000
CHECK HS	Sb	.57120	2064.6460
ICV=1000ug/L	Sb	.29730	1056.7360
ICB	Sb	.01860	31.7170
ICSAI	Sb	.00240	-28.1820
ICSABI	Sb	.56960	2058.5720
CCV1	Sb	.28830	1023.8300
CCB1	Sb	.00530	-17.3740
CCV2	Sb	.27700	982.1470
CCB2	Sb	.01410	15.1640
CCV3	Sb	.29520	1049.2980
CCB3	Sb	.01350	12.5960
CCV4	Sb	.28750	1020.9760
CCB4	Sb	.01510	18.6260
ICSAF	Sb	.00080	-33.8640
ICSABF	Sb	.60580	2191.9060

*REANALYZED BY MSA ON GFAA

GFAA MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA
DATE RECEIVED: 06/09/92
DATE REPORTED: 06/30/92
TLI PROJECT #: 21122

ANALYTE: Sb
ug/L IDL: 5

MSA RESULTS

CLIENT #	SAMPID	EL	MEANABS	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR	TOTAL ug RESULT
K8-IN-1 BH	57.037.58	Sb	.04321828	50.8000	360	260	100	1	7.03
K8-IN-2 BH	57.037.63	Sb	.09111487	119.6000	370	270	100	1	16.4
K8-IN-3 BH	57.037.69	Sb	.06301496	72.9000	360	260	100	1	10.1
K7-MTL-1 FH	57.037.75	Sb	.05994179	74.3000	1	1	100	1	7.43
K8-MTL-1 FH	57.037.99	Sb	.03800828	40.4000	1	1	100	1	4.04
K8-MTL-1 BH	57.037.24	Sb	.03982074	46.6000	300	200	100	1	6.99
K8-MTL-2 FH	57.037.114	Sb	.06760632	85.3000	1	1	100	1	8.53
K8-MTL-2 BH	57.037.30	Sb	.03450039	40.2000	360	260	100	1	5.57
K8-MTL-3 BH	57.037.36	Sb	.02703651	31.6000	360	260	100	1	4.38
K8-MTL-BLK FH	57.037.131	Sb	.03281834	40.0000	165	165	100	1	4.00
K8-MTL-BLK BH	57.037.128	Sb	.01764646	19.4000	200	100	100	1	3.88

GFAA MMTL ANALYTE SUMMARY REPORT

CLIENT: IEA

ANALYTE: Tl

ug/L IDL: 2

DATE RECEIVED: 06/04/92

POST DIGEST SPK: 50 ug/L

REPORTED: 06/30/92

IEA PROJECT #: 21122

CLIENT #	SAMPID	EL	MEAN ABS	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR		TOTAL ug RESULT	%REC	
K7-IN-1FH	57.037.38	Tl	.02395163	7.5000	1	1	100	10		7.50		
K7-IN-1BH	57.037.41	Tl	.02295511	7.2000	410	310	100	1		.952		
K7-IN-1BH(S)	57.037.41 SPK	Tl	.06102860	20.2000	410	310	100	1		2.67	26.0%	*
K7-IN-2FH	57.037.45	Tl	.01777019	5.5000	1	1	100	10		5.50		
K7-IN-2BH	57.037.48	Tl	.00486556	1.5000	310	210	100	1	<	.295		*
K7-IN-3FH	57.037.50	Tl	.01963783	6.1000	1	1	100	10		6.10		
K8-IN-1FH	57.037.55	Tl	.02317080	7.3000	1	1	100	10		7.30		
K8-IN-2FH	57.037.60	Tl	.02235486	7.0000	1	1	100	10		7.00		
K8-IN-3FH	57.037.66	Tl	.01026785	3.2000	1	1	100	10		3.20		
K7-MTL-1FH	57.037.75	Tl	-.01330420	-4.0000	1	1	100	1	<	.200		
K7-MTL-1FH(S)	57.037.75 SPK	Tl	.11002371	39.1000	1	1	100	1		3.91	86.2%	
K7-MTL-1BH	57.037.6	Tl	.01778524	5.5000	350	250	100	1		.770		*
K7-MTL-2BH	57.037.12	Tl	.01791064	5.6000	310	210	100	1		.827		*
K7-MTL-3BH	57.037.18	Tl	.01318719	4.1000	400	300	100	1		.547		*
K8-MTL-1BH	57.037.24	Tl	.01519027	4.7000	300	200	100	1		.705		*
K8-MTL-2BH	57.037.30	Tl	-.00319680	-1.0000	360	260	100	1	<	.277		*
K8-MTL-3BH	57.037.36	Tl	-.00653750	-2.0000	360	260	100	1	<	.277		*
	STD BLK	Tl	.01452982	4.3000								
	STD 1=10ug/L	Tl	.02700641	8.0000								
	STD 2=20ug/L	Tl	.06580890	24.4000								
	STD 3=40ug/L	Tl	.11956257	29.1000								
	STD 4=100ug/L	Tl	.22034504	67.4000								
	ICV=60ug/L	Tl	.16123257	62.0000								
	ICB	Tl	.02679741	8.5000								
	CCV1	Tl	.14968395	56.5000								
	CCB2	Tl	.02795946	8.8000								
	CCV1	Tl	.14685657	55.2000								
	CCB2	Tl	.02540796	8.0000								

*BH SPK FAILED POSTDIGESTION SPK %REC OF 75-125%: BH SAMPLES REANALYZED BY MSA

K7-MTL-2FH	57.037.86	Tl	-.00538550	-2.0000	1	1	100	1	<	.200	
K7-MTL-3FH	57.037.94	Tl	-.00506280	-1.8000	1	1	100	1	<	.200	
K8-MTL-1FH	57.037.99	Tl	-.00584200	-2.1000	1	1	100	1	<	.200	
K8-MTL-2FH	57.037.114	Tl	-.00767120	-2.8000	1	1	100	1	<	.200	
K8-MTL-3FH	57.037.125	Tl	-.00650580	-2.4000	1	1	100	1	<	.200	
K8-MTL-BLKFH	57.037.131	Tl	-.01403320	-5.1000	1	1	100	1	<	.200	
	STD BLK	Tl	.00247625	.8000							
	STD 1=10ug/L	Tl	.02340656	7.4000							
	STD 2=20ug/L	Tl	.05645397	24.1000							
	STD 3=40ug/L	Tl	.11864129	31.8000							
	STD 4=100ug/L	Tl	.24612420	65.7000							
	ICV=60ug/L	Tl	.18585636	70.7000							
	ICB	Tl	.01347645	4.9000							
	CCV1	Tl	.17128306	64.9000							
	CCB1	Tl	.00216358	.8000							

CLIENT #	SAMPID	EL	MEAN ABS	ug/L CONCENTRATION	ml TV	ml USED	ml FV	DIL FACTOR		TOTAL ug RESULT
K7-IN-1BH	57.037.41	Tl	.01789057	19.6000	410	310	100	1		2.59
K7-IN-2BH	57.037.48	Tl	.02200000	13.5000	310	210	100	1		1.99
K7-IN-3BH	57.037.53	Tl	.01000000	4.2000	340	240	100	1		.595
K8-IN-1BH	57.037.58	Tl	.00896535	7.4000	360	260	100	1		1.02
K8-IN-2BH	57.037.63	Tl	-.00000000	-.1000	370	270	100	1	<	.274
K8-IN-3BH	57.037.69	Tl	.00390583	2.6000	360	260	100	1		.360
K7-MTL-1BH	57.037.6	Tl	-.00235080	-1.7000	350	250	100	1	<	.280
K7-MTL-2BH	57.037.12	Tl	.01000000	4.9000	310	210	100	1		.723
K7-MTL-3BH	57.037.18	Tl	-.00326710	-2.3000	400	300	100	1	<	.267
K8-MTL-1BH	57.037.24	Tl	.01200000	6.4000	300	200	100	1		.960
K8-MTL-2BH	57.037.30	Tl	.01000000	4.3000	360	260	100	1		.595
K8-MTL-3BH	57.037.36	Tl	.01300000	5.7000	360	260	100	1		.789
K8-MTL-BLKBH	57.037.128	Tl	.00200000	1.7000	200	100	100	1	<	.400

DATE: 10-15-92

(910) 544-5729

RUN #: K7-MTL-1

ANALYTES			
ICP	GFAA	FLAA	CVAA
Ba, Be, Cd, Cr, Ag	Pb Sb As Tl		Hg

① Filter

label 57.037.75

Microwave dig. with conc. HF and conc HNO3

② Acetone Rinse

label 57.37.4

Volume all ml

Dessicate to dryness and redissolve in 10ml con HNO3

Microwave dig. with conc. HF and conc. HNO3

Label: _____

③ HNO3 Rinse

label 57.037.5

Volume all ml

Reduce volume to 20 ml on hotplate

Combine digestates

Front Half Digestate

Dilute to 100 mls

label 57.037 MI-FH

Volume 100 ml

For Metals

_____ ml

(for digest spike on FH)

For Hg

label _____

Volume _____ ml

Aliquot _____ ml

(No spike required)

④ Back Half Impinger

label 57.037.6

Volume 350 ml

For Metals

label 57.037.6

Volume 250 ml

Reduce volume to 20 ml on hotplate

Hotplate dig with HNO3 and H2O2

Dilute to 100 mls

label 57.037.6

Volume 100 ml

For Hg

label 57.037.6

Volume 100 ml

Sample

label 57.037.6 BI

Volume 100 ml

Aliquot 5 ml

Aliquot B 5 ml

Spike

(For MS Hg only)

label _____

Volume _____ ml

Aliq. _____

Spk. _____ ml of _____

dil. to _____ ml

final spk conc. added _____

⑤A Hg Impingers

KMnO4

label 57.037.3

Volume 75 ml

Aliquot A 5

Aliquot B 5

⑤B

HCl

label 57.37.2

Volume 180 ml

Aliquot A 5

Aliquot B 5

⑤C

label 57.37.1

Volume 210 ml

Aliquot A 5

Aliquot B 5

(Duplicate Analysis of Each)

Particulate optional for "MTL" series Runs.

* June 17

* June 18

* June 16

* June 30

1, 3, 5 (RO-5) for aliquots used for FH-1

D-75

Project # : 21122
Client : DEECO / IEA
Date : 6-15-92

TRIANGLE LABS of RTP
(919) 544-5729

Run # : K7-MTL-2

Analytes			
ICP	GFAA	FLAA	CVAA

① Filter
label 57.37.86
Microwave dig. with conc. HF and conc HNO3

② Acetone Rinse
label 57.37.10
Volume all ml
Dessicate to dryness and redissolve in 10ml con HNO3
Microwave dig. with conc. HF and conc. HNO3
Label : _____

③ HNO3 Rinse
label 57.37.11
Volume all ml
Reduce volume to 20 ml on hotplate

Combine digestates

Front Half Digestate
Dilute to 100 mls
label .86 7M2-FH
Volume 100 ml

For Metals
label _____
Volume _____ ml
(One post digest sp (FH)

For Hg
label _____
Volume _____ ml
Aliquot _____ ml
(No spike required)

④ Back Half Impinger
label 57.37.12
Volume 310 ml (T) 0.23

For Metals
label 57.037.12
Volume 210 ml
Reduce volume to 20 ml on hotplate
Hotplate dig with HNO3 and H2O2
Dilute to 100 mls
label 57.037.12
Volume 100 ml

For Hg * June 16
label 57.037.12(Hg)
Volume 100 ml

Sample
label 57.037.12(Hg)
Volume 100 ml
Aliquot 5 ml
Alq. B 5 ml

Spike
(One BH Hg spike)
label _____
Volume _____ ml
Aliq. _____
Spk. _____ ml of _____
dil. to _____ ml
final spk conc. added _____

5A
label 57.37.9
Volume 19 ml
Aliquot A 9
Aliquot B 9
* June 16 8 ml

5B Hg Impingers
KMnO4
label 57.37.8
Volume 270 ml (T) 280
Aliquot A 5
Aliquot B 5

5C
HCl
label 57.37.7
Volume 210 ml (T) 220
Aliquot A 5
Aliquot B 5

(Duplicate Analysis of Each)

D-77

5-20-92

Project # : 2160

Client : DEECO / IEA

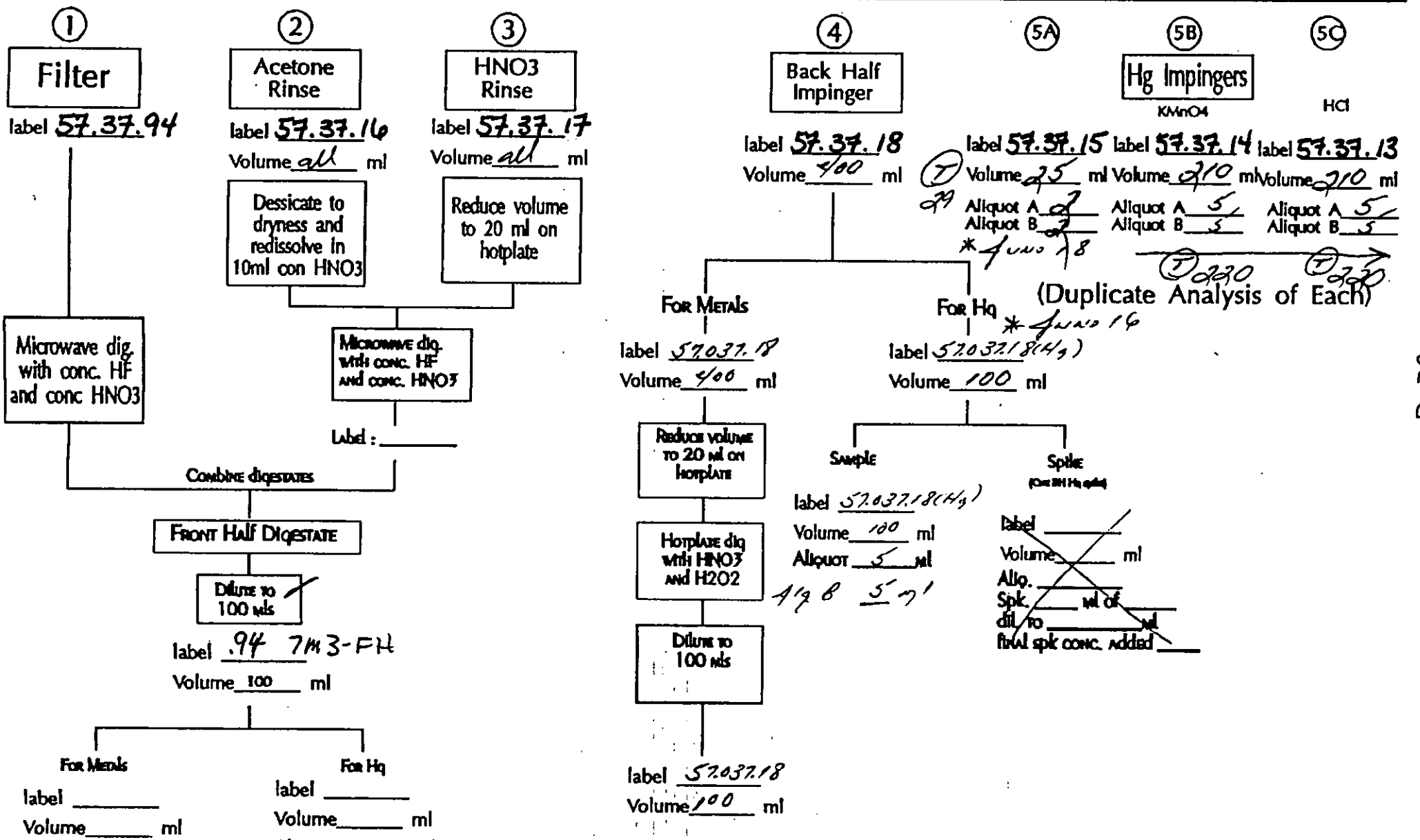
Date : 6-15-92

TRIANGLE LABS of RTP

(919) 544-3729

Run # : K7-MTL-3

Analytes			
ICP	GFAA	FLAA	CVAA



D-78

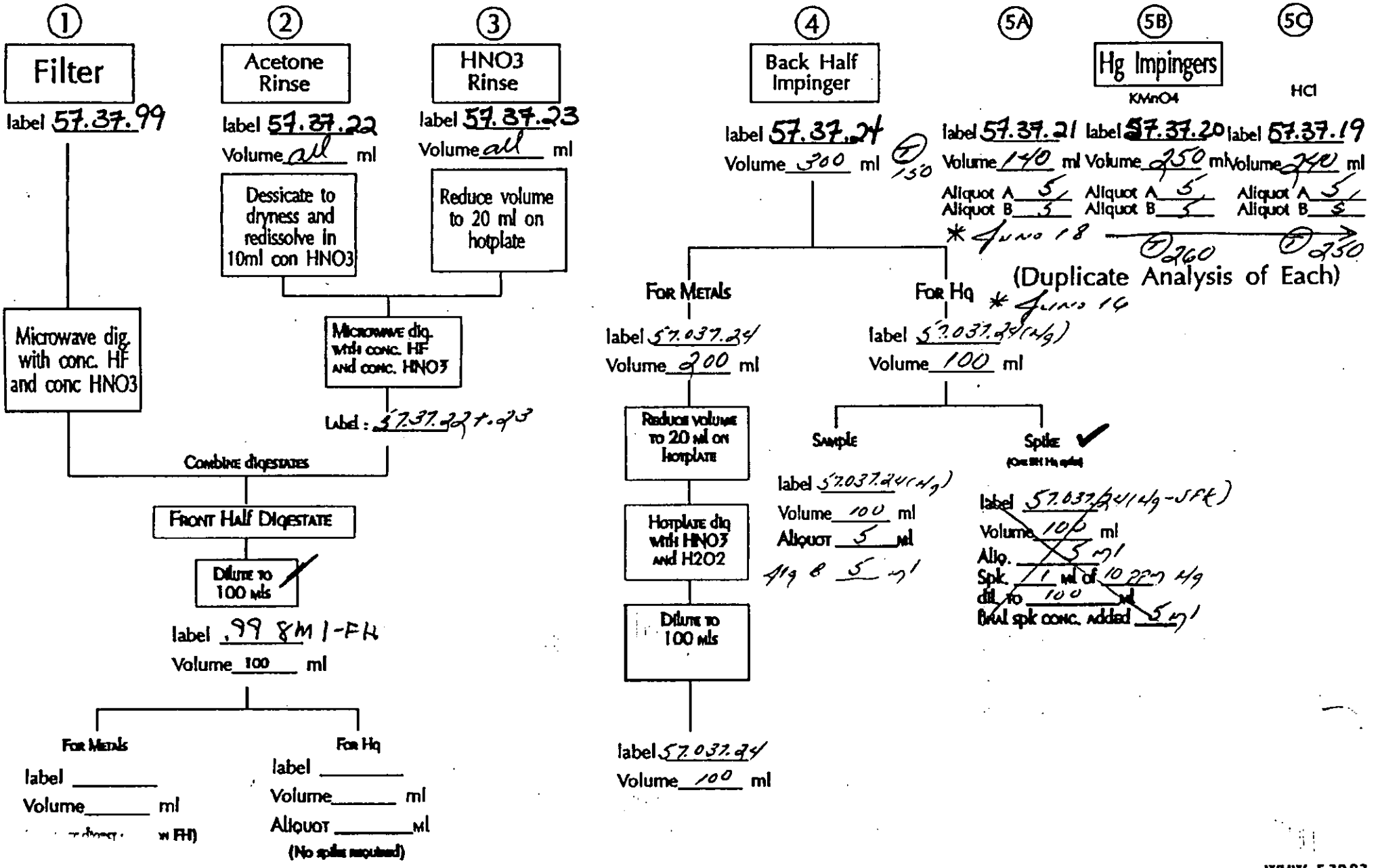
WHW 5-20-92

Project # : 21122
Client : DEECO / IEA
Date : 6-15-92

TRIANGLE LABS of RTP
(919) 544-5729

Run # : K8-MTL-1

Analytes			
ICP	GFAA	FLAA	CVAA



D-79

W/HW 5-20-92

[redacted] TRIANGLE LABS of RTP [redacted]
(919) 54[redacted]5729

CLIENT DEECO / IEA
DATE : 6-15-92
RUN # : K8-MTL-2

ANALYTES			
ICP	GFAA	FLAA	CVAA

① Filter
label 57.37.114
Microwave dig. with conc. HF and conc HNO3

② Acetone Rinse
label 57.37.28
Volume all ml
Dessicate to dryness and redissolve in 10ml con HNO3
Microwave dig. with conc. HF and conc. HNO3
Label : 57.37.28 f. 29

③ HNO3 Rinse
label 57.37.29
Volume all ml
Reduce volume to 20 ml on hotplate

Combine digestates
Front Half Digestate
Dilute to 100 mls
label 114 F8M2 FH
Volume 100 ml

For Metals
label _____
Volume _____ ml
(One post digest spike on FH)

For Hg
label _____
Volume _____ ml
Aliquot _____ ml
(No spike required)

④ Back Half Impinger
label 57.37.30
Volume 360 ml (T 41)

For Metals
label 57.037.30
Volume 260 ml
Reduce volume to 20 ml on hotplate
Hotplate dig with HNO3 and H2O2
Dilute to 100 mls
label 57.037.30
Volume 100 ml

For Hg
label 57.037.30 (Hg) *June 16
Volume 100 ml

Sample
label 57.037.30 (Hg)
Volume 100 ml
Aliquot 5 ml
Hg B 5 ml

Spike
(One BH Hg spike)
label _____
Volume _____ ml
Aliq. _____
Spk. _____ ml of _____
dil. to _____ ml
final spk conc. added _____

5A Hg Impingers
KMnO4
label 57.37.27
Volume 37 ml
Aliquot A 5
Aliquot B 5
*June 18
(T 360)

5B
label 57.37.26
Volume 350 ml
Aliquot A 5
Aliquot B 5
(T 370)

5C HCl
label 57.37.25
Volume 210 ml
Aliquot A 5
Aliquot B 5

(Duplicate Analysis of Each)

080-D

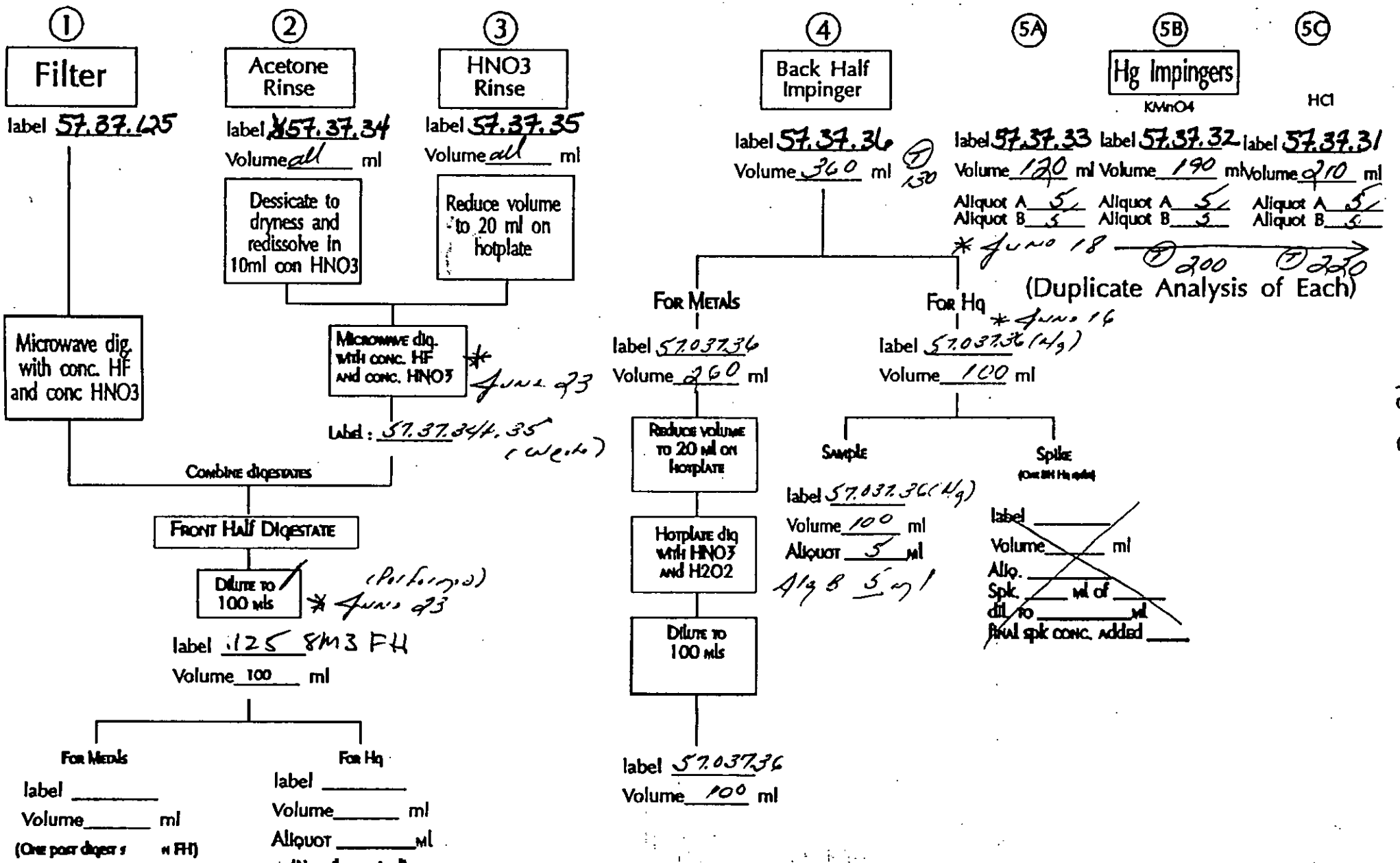
WHW 5-20-92

Project # : 21122
Client : DEECO / IEA
Date : 6-15-92

TRIANGLE LABS of RTP
(919) 544-5729

Run # : KB-MTL-3

Analytes			
ICP	GFAA	FLAA	CVAA



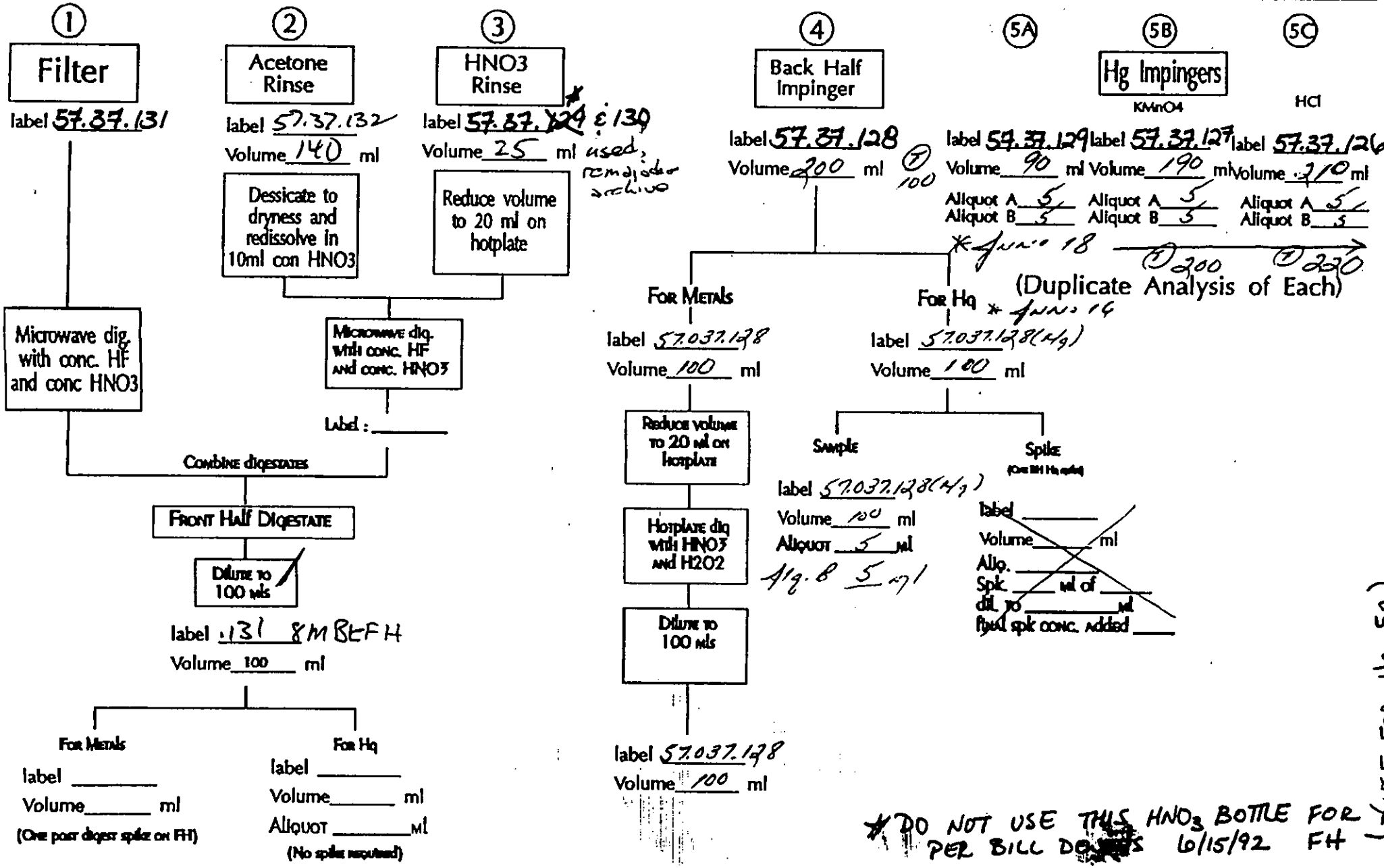
D-8

Project # : 2182
Client : DEED / IEA
Date : 6-15-92

TRIANGLE LABS of RTP
(919) 544-5729

Run # : KB - MTL - BLANK

Analytes			
ICP	GFAA	FLAA	CVAA



D-82

* DO NOT USE THIS HNO_3 BOTTLE FOR ANY ACETONE BLK PER BILL DOWNS 6/15/92 FH

WHW 5-20-92

Project # : 21122
Client : DEECO/ IEA
Date : 6-15-92

ALL SIX filters to Dessicator 6/15/92 5:00 PM BW

TRIANGLE LABS of RTP
(919) 544-5729

Run # : K7-IN-1

Analytes

ICP	GFAA	FLAA	CVAA

(1) Filter
label 57.37.38 .40 .42 .43
weigh *See pg. Log Book for wts.
Microwave dig. with conc. HF and conc HNO3

(2) Acetone Rinse
label 57.37.37
Volume 184 ml
Dessicate to dryness and redissolve in 10ml con HNO3
Microwave dig. with conc. HF and conc. HNO3
Label : _____

(3) HNO3 Rinse
label 57.37.39
Volume all ml
Reduce volume to 20 ml on hotplate

Combine digestates

Front Half Digestate
Dilute to 100 mls
label 38 IN1-FH
Volume 100 ml

For Metals
label _____
Volume _____ ml
(One post digest spike in FH)

For Hg
label _____
Volume _____ ml
Aliquot _____ ml
(No spike required)

(4) Back Half Impinger
label 57.37.41
Volume 410 ml

For Metals
label 57.37.41
Volume 310 ml
Reduce volume to 20 ml on hotplate
Hotplate dig with HNO3 and H2O2
Dilute to 100 mls
label 57.37.41
Volume 100 ml

For Hg (Duplicate Analysis of Each) *June 16
label 57.37.41
Volume 100 ml

Sample
label 57.37.41 (Hg)
Volume 100 ml
Aliquot 5 ml
Alq. B. 5 ml

Spike ✓
label 57.37.41
Volume 100 ml
Aliq. 5 ml
Spk. 1 ml of 10 ppm (Hg)
dil. to 100 ml
final spk conc. added 5 ml

(5A) label _____ Volume _____ ml
Aliquot A _____
Aliquot B _____

(5B) Hg Impingers
KMnO4
label _____ Volume _____ ml
Aliquot A _____
Aliquot B _____

(5C) HCl
label _____ Volume _____ ml
Aliquot A _____
Aliquot B _____

083-0

PROJECT # [redacted]

CLIENT . DEECO / IEA

DATE : 6-15-92

TRIANGLE LABS of RTP

(919) 544-[redacted]729

RUN # : K7-IN-2

ANALYTES			
ICP	GFAA	FLAA	CVAA

(1) Filter

label 57.37.45 .47

weigh

Microwave dig. with conc. HF and conc HNO3

(2) Acetone Rinse

label 57.37.44

Volume 104 ml

weigh

Dessicate to dryness and redissolve in 10ml con HNO3

(3) HNO3 Rinse

label 57.37.46

Volume all ml

Reduce volume to 20 ml on hotplate

Microwave dig. with conc. HF and conc. HNO3

Label : _____

Combine digestates

Front Half Digestate

Dilute to 100 mls

label .45 7IN 2-F-H

Volume 100 ml

For Metals	For Hg
label _____	label _____
Volume _____ ml	Volume _____ ml
(One post digest spike on FH)	Aliquot _____ ml
	(No spike required)

(4) Back Half Impinger

label 57.37.48

Volume 210 ml

For Metals

label 57.037.48

Volume 210 ml

Reduce volume to 20 ml on hotplate

Hotplate dig with HNO3 and H2O2

Dilute to 100 mls

label 57.037.48

Volume 100 ml

For Hg

label 57.037.48

Volume 100 ml

Sample

label 57.037.48

Volume 100 ml

Aliquot 5 ml

Aliq. B 5 ml

Spike

label 57.037.48 (Hg-Spk)

Volume 100 ml

Aliq. 5 ml

Spk. 1 ml of 10 ppm Hg

dil. to 100 ml

final spk conc. added 5 ng

(5A) (5B) (5C)

Hg Impingers

KMnO4

HCl

label _____	label _____	label _____
Volume _____ ml	Volume _____ ml	Volume _____ ml
Aliquot A _____	Aliquot A _____	Aliquot A _____
Aliquot B _____	Aliquot B _____	Aliquot B _____

(Duplicate Analysis of Each)

* Aliq. 10

T8-D

WHW 5-20-92

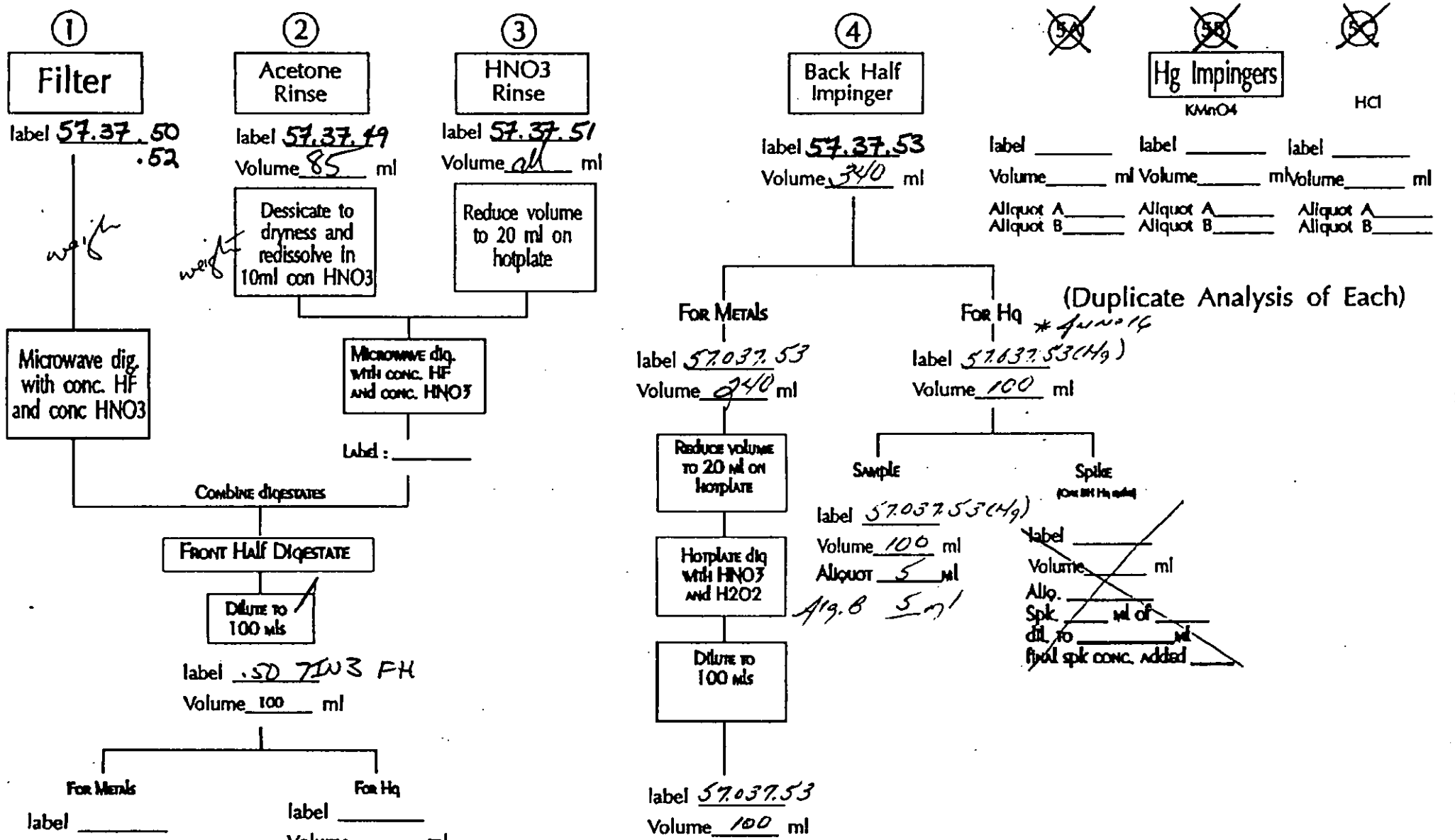
Project # : 21122
Client : DEECO / IEA
Date : 6-15-92

TRIANGLE LABS of RTP
(919) 544-5729

Run # : K7-IN-3

Analytes

ICP	GFAA	FLAA	CVAA



D-85

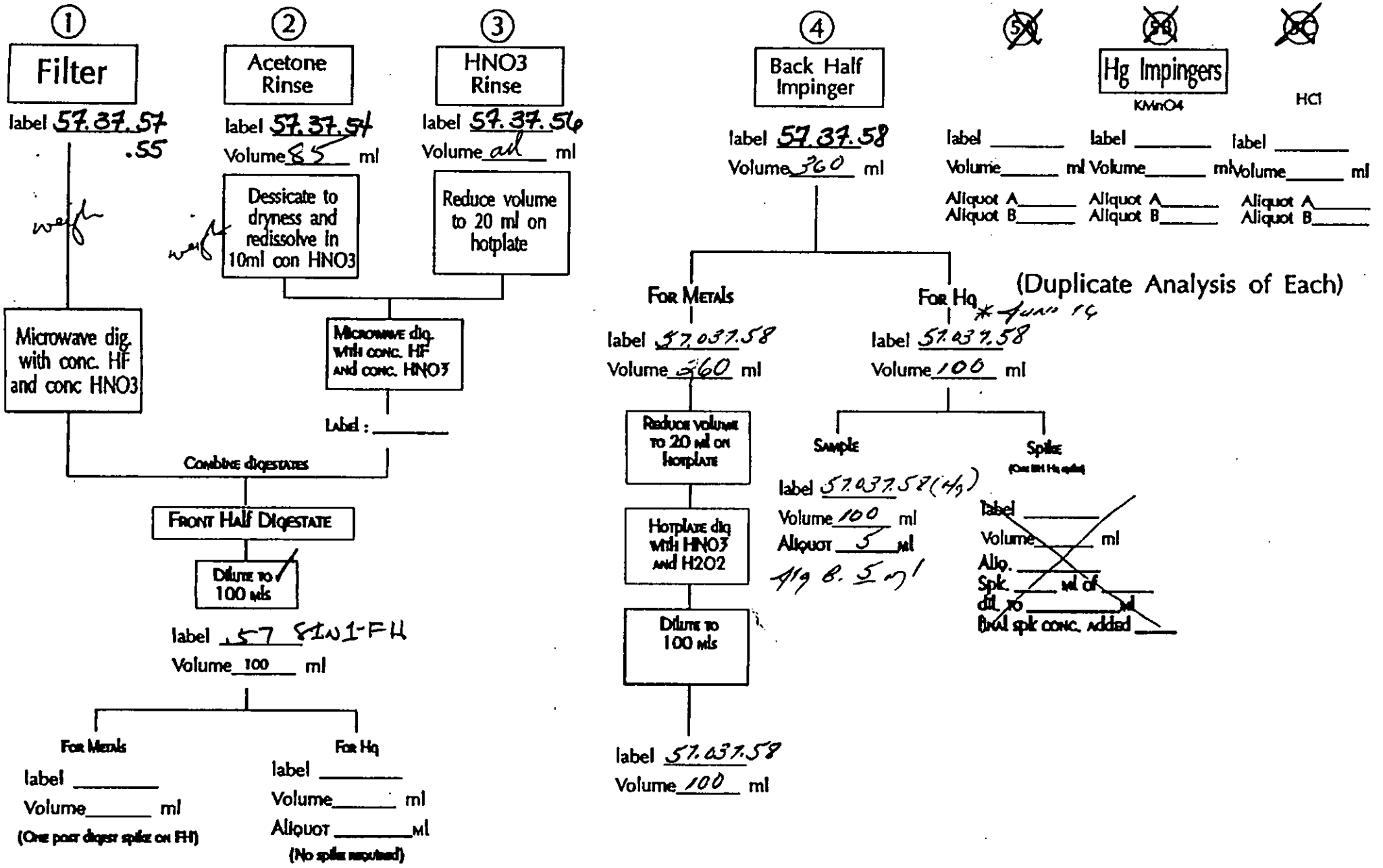
WHW 5-20-92

Project # : [redacted]
Client : DEECD / IEA
Date : 6-15-92

TRIANGLE LABS of RTP
(919) 544-[redacted]729

Run # : KB-IN-1

Analytes			
ICP	GFAA	FLAA	CVAA



98-0

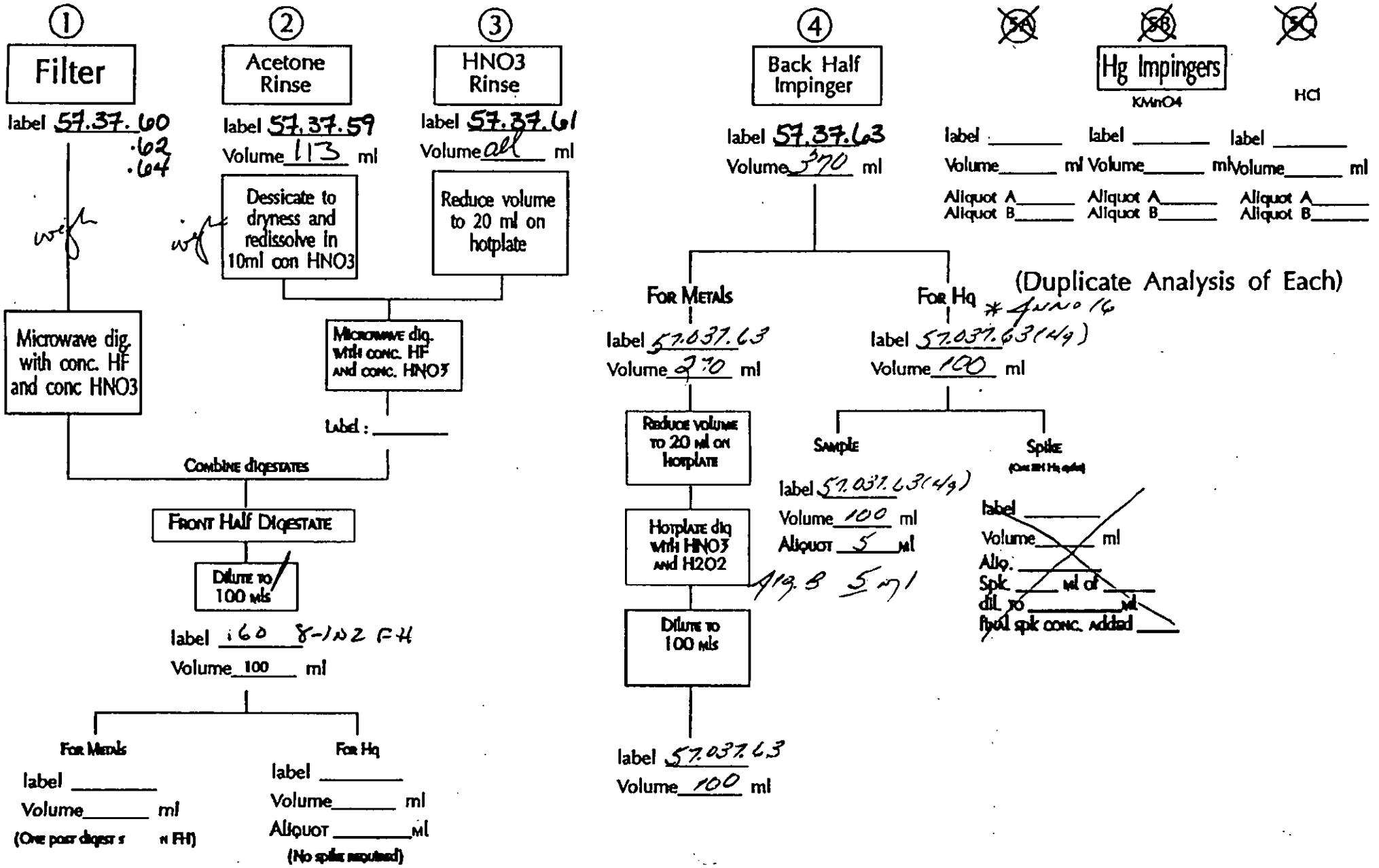
WHW 5-20-92

Project # : 21122
Client : DEHCD / IEA
Date : 6-15-91

TRIANGLE LABS of RTP
(919) 544-5729

Run # : K8-IN-2

Analytes			
ICP	GFAA	FLAA	CVAA



D-87

WHW 5-20-92

Project # [redacted] 21 [redacted]

Client: DEECO / IEA

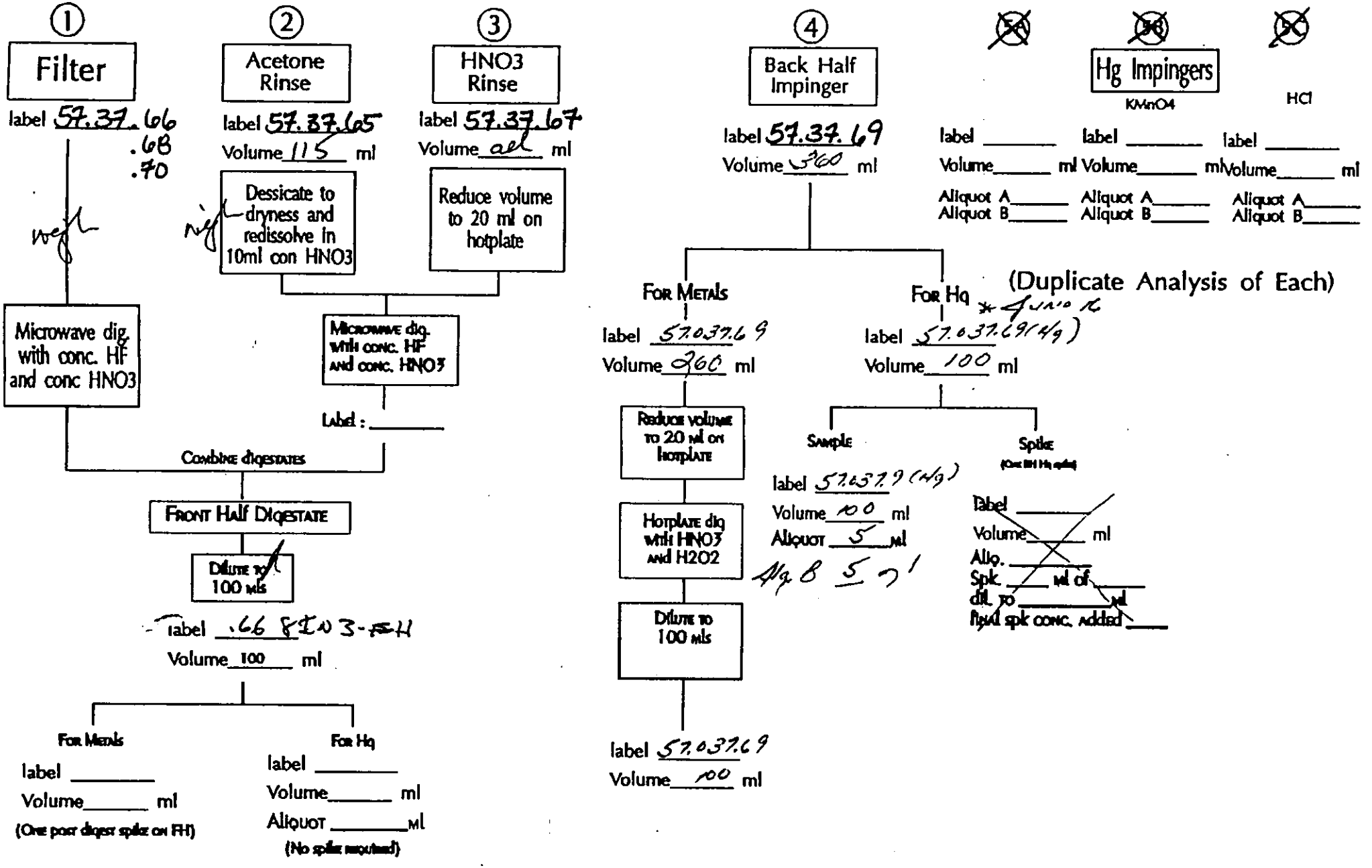
Date: 6-15-92

TRIANGLE LABS of RTP

(919) 544-[redacted]729

Run #: KB-IN-3

Analytes			
ICP	GFAA	FLAA	CVAA



(Duplicate Analysis of Each)

D-88

WHW 5-20-92

TRIANGLE LABORATORIES OF RTP
Memorandum

To: Bob Smith
From: Bill Wadlin BW
Date: June 17, 1992
Subject: Samples returned to IEA

Refer to the chain of custody for project 21122. The client has informed us that 39 of those samples were sent to us by mistake, and were supposed to go to another lab.

Yesterday an agent of IEA took them. We have annotated the original chain of custody document and the IEA chain of custody document accordingly.

The samples in question are:

56.37.71-74
76-80
81-85
87-93
95-98
100-113
115-124

Please remove these from the LIMP system. I don't think they were ever on the accounting daily "orders" list, but you may check about that.

PURCHASE REQUISITION

VENDOR:	Triangle Labs of RTP
ADDRESS:	801-10 Capitola Dr
	Durham NC 27713
	Attn: Bill Wallin
PHONE:	919/544-5729
	FAX 5491

SHIP TO:	IEA Inc.
ADDRESS:	6184 Daleview Rd
	Cincinnati OH 45247
ATT'N TO:	J. Peters

REQ. NO.	16673
P.O. NO.	FS1041
Date:	5/29/92
Requestor:	J.A. Peters

To be filled out by Purchasing

	Qty	Description	Catalog No.	Catalog Page	Est. Price	Per	Exact Price	$ Total	Shipping Location
1	13	Multi-metals from sample sets						$	
2		for BIF metals (Sb, As, Ba, Be, Cd, Cr, Pb, Ag, Tl)							
		9 x $24 = $216			216				
4		Hg			195				
5		Sample prep			100				
					$351	ea			
7									
8					13 X	491.00			
9			75.00					6,385.0	
10									
11									
12									
13									

Confirmation from

per mercury should be 5 x 35 = 175 per x 13

Comments: Request Pb done by GFAAS!!

Total $ 6.383.00

Date Needed	Department	G/L Code	Purpose/Use
6/29/92	192-22	4170	Solite AF Old BIF Test (1381-003)
Rush Date	AFE No.		

Requested By: James A. Peters (Signatures required b...)

Approved By

Supervisor

Dept. Mgr.

Director or V.P. (if needed)

V.P. or Pres. (if needed)

Completed By Purchasing Department

Date Ordered	Date Expected
6-4-92	6-29-92

Contact: Bill

FOB	Ship Via	Terms
	☐ UPS ☐ Del. ☐ FED. EX	☐ NET 30 ☐ VISA

CHAIN OF CUSTODY RECORD

iea — an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

NO: 32196

REGULATORY CLASSIFICATION - PLEASE SPECIFY
☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

COMPANY: Triangle Labs

PROJECT #: 1381-003
PROJECT NAME: Solite AF Old BIF Test
SAMPLERS: (SIGNATURE)

SAMPLE I.D. #	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
	6/6/92				K8-In-1A-PM-BIF	1			Particulate + BIF metals
					K8-In-1B-PM-BIF	1			BIF metals
					K8-In-1C-BIF	1			BIF metals
					K8-In-1A-PF	1	3		Particulate and BIF metals
					K8-In-1B-PF	1			

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
James Burd	6/9-92		Marcus Hurst	6/9/92	1:57
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			Robert Hall	6-9-92	1500

IEA QUOTE NO.
IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)
P.O. NO.

REMARKS ON SAMPLE RECEIPT
☑ BOTTLE INTA
☐ PRESERVED
☐ CHILLED
☑ CUSTODY SEALS
☑ SEALS INTACT
☐ SEE REMARKS

IEA REMARKS

FIELD REMARKS

CHAIN OF CUSTODY RECORD

NO: 34196

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

REGULATORY CLASSIFICATION - PLEASE SPECIFY
☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER

COMPANY: Triangle Labs

Page 1 of 3

PROJECT # | PROJECT NAME: 1381-003 | Holt AFOW BIF Test

SAMPLERS (SIGNATURE):

SAMPLE I.D.	DATE	TIME	GRAB	COMP	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
	6/8/92				K8-In-1A-PM-BIF	1			Particulate + BIF metals
					K8-In-1B-PM-BIF	1			BIF metals
					K8-In-1C-BIF	1			BIF metals
					K8-In-1A-PF	1		3	Particulate and BIF metals
					K8-In-1B-PF	1		3	

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
James Burd	6/9-92		Marcus Hunt	6/9/92	1457
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR IEA BY	DATE	TIME
			Robert Hall	6-9-92	1500

IEA QUOTE NO.

IEA RUSH NO.

PROJECT MANAGER (PLEASE PRINT)

P.O. NO.

REMARKS ON SAMPLE RECEIPT

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

IEA REMARKS

SUB REMARKS

29.C

CHAIN OF CUSTODY RECORD

NO: 32197

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

REGULATORY CLASSIFICATION - PLEASE SPECIFY
☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

Page 2 of 3

COMPANY: Triangle Labs

PROJECT #: 1381-003
PROJECT NAME: Holt AF Old BIF Test
SAMPLERS: (SIGNATURE)

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
	6/2				KB-In-2A-PM-BIF	1			Particulate & BIF metals
					KB-In-2B-PM-BIF	1			BIF Metals
					KB-In-2C-BIF	1			BIF Metals
					KB-In-2A-PF	1			
			Composite		KB-In-2B-PF	1			Particulate & BIF Metals
					KB-In-2C-PF	1			

BIF metals does not include Hg

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
James Burd	6/9-92		Marcus Brow	6/1/92	3:57
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY:	DATE	TIME
			Robert Hall	6-9-92	1500

IEA QUOTE NO.
IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)
P.O. NO.

REMARKS ON SAMPLE RECEIPT | IEA REMARKS | FIELD REMARKS

☑ BOTTLE INTA ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

CHAIN OF CUSTODY RECORD

NO: 32197

iea — an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

REGULATORY CLASSIFICATION - PLEASE SPECIFY
☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER

Page 2 of 3

COMPANY: Triangle Labs

PROJECT #: 138-003 PROJECT NAME: Holt AFB B17 Salt

SAMPLERS (SIGNATURE):

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
	6/2				K8-In-2A-PM-BIF	1			Particulate & BIF Metals (BIF metals does not include Hg)
					K8-In-2B-PM-BIF	1			BIF Metals
					K8-In-2C-BIF	1			BIF Metals
					K8-In-2A-PF	12			
			Comp'd		K8-In-2B-PF	15			Particulate & BIF Metals
					K8-In-2C-PF	1			

76-C

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
James Bunt	6/9-92		Maureen Brow	6/11/92	1511
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			Robert Hall	6-9-92	1500

IEA QUOTE NO.

IEA RUSH NO.

PROJECT MANAGER (PLEASE PRINT)

P.O. NO.

REMARKS ON SAMPLE RECEIPT

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

IEA REMARKS

FIELD REMARKS

CHAIN OF CUSTODY RECORD

NO: 32198

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

Page 3 of 3

COMPANY: Triangle Labs

PROJECT #: 1381-003

PROJECT NAME: Holt AF Old B17 Test

SAMPLERS (SIGNATURE):

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS
	6/3				K8-In-3A-PM-BIF	1			Particulate & BIF metals
					K8-In-3B-PM-BIF	1			BIF metals
					K8-In-3C-BIF	1			BIF metals
					K8-In-3A-PF	1			Particulate & BIF metals
					K8-In-3B-PF	1			
					K8-In-3C-PF	1			

BIF metals - does not include Hg

Combine

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
James Burt	6/9-92		Maxine Dixon	6/10/92	3:51
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			Robert Hall	6-9-92	1500

IEA QUOTE NO.

IEA RUSH NO.

PROJECT MANAGER (PLEASE PRINT)

P.O. NO.

REMARKS ON SAMPLE RECEIPT

☑ BOTTLE INTA
☐ PRESERVED
☐ CHILLE
☑ CUSTODY SEALS
☑ SEALS INTACT
☐ SEE REMARKS

IEA REMARKS

FIELD REMARKS

CHAIN OF CUSTODY RECORD

NO: 32198

an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER

Page 3 of 3

COMPANY: Triangle Labs

PROJECT #: 1381-003

PROJECT NAME: Volvo AF 010 B17 Test

SAMPLERS (SIGNATURE):

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
	6/3				K8-In-3A-PM-BIF	1			Particulate & BIF metals
					K8-In-3B-PM-BIF	1			BIF metals
					K8-In-3C-BIF	1			BIF metals
				Combined	K8-In-3A-PF	1			Particulate & BIF metals
					K8-In-3B-PF	1			
					K8-In-3C-PF	1			

- BIF metals does not include Hg
- Hg

D-69

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
James Burch	6/9-92		Marcus Dixon	6/9/92	3:51
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			Robert Hall	6-9-92	1500

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	P.O. NO.

REMARKS ON SAMPLE RECEIPT

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

IEA REMARKS

FIELD REMARKS

CHAIN OF CUSTODY RECORD

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

NO: 32194

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

COMPANY: Triangle labs

PROJECT #: 1381-003 | PROJECT NAME: Holt AFOW BIF Test

SAMPLERS (SIGNATURE):

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
	6/4				K7-In-3A-PM-BIF	1			Particulate & BIF metals
					K7-In-3B-PM-BIF	1			BIF Metals
					K7-In-3C-BIF	1			BIF metals
				Combine	K7-In-3A-PF	1		3	Particulate & BIF Metals
				Combine	K7-In-3B-PF	1			

BIF metals does not include Hg

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Jerry Davis	6/4-92		Marcus Brow	6/17/92	3:50
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
W.W. Wade No 80	6/4/92		Robert Hall	6-9-92	1500

IEA QUOTE NO.

IEA RUSH NO.

PROJECT MANAGER (PLEASE PRINT)

P.O. NO.

REMARKS ON SAMPLE RECEIPT

☑ BOTTLE INTA ☐ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ WILLE ☐ SEE REMARKS

IEA REMARKS

FIELD REMARKS

L6-97

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 32194

REGULATORY CLASSIFICATION - PLEASE SPECIFY
☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER

COMPANY: Triangle Labs

Page 1 of 3

PROJECT #: 1381-003 PROJECT NAME: Holt AF Old BIF Plant

SAMPLERS (SIGNATURE):

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
	6/4				K7-In-3A-PM-BIF	1			Particulate & BIF metals
					K7-In-3B-PM-BIF	1			BIF metals
					K7-In-3C-BIF	1			BIF metals
					K7-In-3A-PF	1		3	Particulate & BIF metals
					K7-In-3B-PF	1			

(Gypsum)

BIF metals does not include Hg

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
[signature]	6/4/92		Marcia Brown	6/5/92	8:30
[signature]	6/4/92	08	Robert Hall	6-5-92	1500

IEA QUOTE NO.

IEA RUSH NO.

PROJECT MANAGER (PLEASE PRINT)

P.O. NO.

REMARKS ON SAMPLE RECEIPT

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

IEA REMARKS

CLIENT REMARKS

CHAIN OF CUSTODY RECORD

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

NO: 32195

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

COMPANY NAME: Triangle Labs

PROJECT #	PROJECT NAME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
1381-003	Solite AF Oil BIF Test				BIF metals (no Hg)
SAMPLERS: (SIGNATURE)					

SAMPLE I.D.	DATE	TIME		STATION LOCATION	# OF CONTAINERS	SOIL	WATER	REQUESTED PARAMETERS
	6/4			K7-In-2A-PM-BIF	1			Particulate & BIF metals
				K7-In-2B-PM-BIF	1			BIF metals
				K7-In-2C-BIF	1			BIF metals
			Composite	K7-In-2A-PF	2			Particulate & BIF metals
				K7-In-2B-PF				

D-99

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME
James Baird	6/9-92		Marcus Bro	6/9/92	1:50
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY:	DATE	TIME
W.H. Walker NO FAX	6/10/92		Robert Hall	6-9-92	1500

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	P.O. NO.

REMARKS ON SAMPLE RECEIPT | IEA REMARKS | FIELD REMARKS

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☑ SEE REMARKS

CHAIN OF CUSTODY RECORD

NO: 32,95

iea — [illegible] environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

REGULATORY CLASSIFICATION - PLEASE SPECIFY
☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER

COMPANY: Triangle Labs

Page 2 of 3

PROJECT #: 18-L003
PROJECT NAME: Lolite AF Oil BIF Test
SAMPLERS (SIGNATURE):

SAMPLE #	DATE	TIME	COMP	GRAB	STATION/LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
									BIF metals (no Hg)
	6/4				K7-I$_n$-2A-PM-BIF	1			Particulate & BIF metals
					K7-I$_n$-2B-PM-BIF	1			BIF metals
					K7-I$_n$-2C-BIF	1			BIF metals
					K7-I$_n$-2A-PF	1			Particulate & BIF metals
					K7-I$_n$-2B-PF	1			

Courtesy

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Mary Bard	6/9/92		Marcus Tio	6/9/92	7:50
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
Edward Nowak	6/10/92		Robert Hall	6/9/92	1500

IEA QUOTE NO.
IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)
P.O. NO.

REMARKS ON SAMPLE RECEIPT
☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

LAB REMARKS

FIELD REMARKS

0010

CHAIN OF CUSTODY RECORD

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

NO: 32193

REGULATORY CLASSIFICATION - PLEASE SPECIFY
☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

COMPANY: Triangle labs

PROJECT #: 1381-003 PROJECT NAME: Solite AF Old BIF Test

SAMPLERS: (SIGNATURE)

SAMPLE I.D.	DATE	TIME	GRAB	COMP	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
	6/4				K7-In-1A-PM-BIF	1			Particulate & BIF Metals
					K7-In-1B-PM-BIF	1			BIF Metals
					K7-In-1C-BIF	1			BIF Metals
				Grab	K7-In-1A-PF	1			
					K7-In-1B-PF	1			Particulate & BIF Metals
					K7-In-1C-PF	1			
					K7-In-1D-PF	1			

BIF metals does not include Hg

D-101

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME
James Davis	6/9-92			6/9/92	3:49
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY:	DATE	TIME
	6/10/92		Robert Hall	6/5/92	1500

IEA QUOTE NO.

IEA RUSH NO.

PROJECT MANAGER (PLEASE PRINT)

P.O. NO.

REMARKS ON SAMPLE RECEIPT

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

IEA REMARKS

FIELD REMARKS

CHAIN OF CUSTODY RECORD

NO: 32,93

environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

REGULATORY CLASSIFICATION - PLEASE SPECIFY
☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER

COMPANY: Triangle Labs

Page 3 of 3

PROJECT # | PROJECT NAME: 1384-003 | Solite AF Old BIF Test

SAMPLERS (SIGNATURE):

SAMPLE #	DATE	TIME	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
	6/4		K7-In-1A-PM-BIF	1			Particulate & BIF Metals
			K7-In-1B-PM-BIF	1			BIF Metals
			K7-In-1C-BIF	1			BIF Metals
			K7-In-1A-PF	1			
			K7-In-1B-PF	1			Particulate & BIF Metals
			K7-In-1C-PF	1			
			K7-In-1D-PF	1			

BIF Metals does not include Hg

Changed

D-102

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	6/9-92		[signature]	6/9/92	3:48
[signature]	6/10-92		[signature]	6/9/92	1500

IEA QUOTE NO.

IEA RUSH NO.

PROJECT MANAGER (PLEASE PRINT)

P.O. NO.

REMARKS ON SAMPLE RECEIPT

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

LAB REMARKS

FIELD REMARKS

CHAIN OF CUSTODY RECORD

NO: 32163

iea — an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

REGULATORY CLASSIFICATION - PLEASE SPECIFY
☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

Page 1 of 3

COMPANY: Triangle Labs

PROJECT #: 1381-003
PROJECT NAME: Solite A.F. Old BIF Test
SAMPLERS: (SIGNATURE)

SAMPLE FIELD ID	DATE	TIME	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS: BIF Metals include Hg
	6/4		K7-MTL-1-HCL	1			Hg
			K7-MTL-2-HCL	1			Hg
			K7-MTL-3-HCL	1			Hg
			K7-MTL-1-KMNO4IMP	1			Hg
			K7-MTL-2-KMNO4IMP	1			Hg
			K7-MTL-3-KMNO4IMP	1			Hg
			K7-MTL-1-BHAR	1			~~Hg~~ BIF Metals
			K7-MTL-2-BHAR	1			BIF Metals ~~including Hg~~
			K7-MTL-3-BHAR	1			BIF Metal

Eric Hudson NO BW 6-16-92

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME
James Barr	6/4-92		Maria Bros	6/4/92	3:17
~~Kimberly Kelly~~ NO BW 6-16-92			Robert Hall	6-9-92	1500

IEA QUOTE NO.
IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)
P.O. NO.

REMARKS ON SAMPLE RECEIPT
☐ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☑ SEE REMARKS

IEA REMARKS

FIELD REMARKS

D-103

iea — [illegible] environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 32164

REGULATORY CLASSIFICATION - PLEASE SPECIFY
☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

COMPANY: Triangle labs

PROJECT #: 1361-003
PROJECT NAME: Solite A.F. Old BIF Test
SAMPLERS (SIGNATURE):

SAMPLE I.D.#	DATE	TIME	GRAB	COMP	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS: BIF metals include Hg
	6/4				H7-MTL-1-FHACE ✓	1			Particulate + BIF metal
					H7-MTL-2-FHACE ✓	1			Particulate + BIF metals
					H7-MTL-3-FHACE ✓	1			Particulate + BIF Metals
					H7-MTL-1-FHAR ✓	1			BIF metals
					H7-MTL-2-FHAR ✓	1			BIF metals
					H7-MTL-3-FHAR ✓	1			BIF metals
					H7-MTL-1-H2O2IMP	1			BIF metals
					H7-MTL-2-H2O2IMP	1			BIF metals
					H7-MTL-3-H2O2IMP	1			BIF Metals

Eric Hudson 6-16-92

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Jayne Bank	6/9-92		[illegible]	6/9/92	3:16
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
Jim Bond / Jay Smith	6-12-92		Robert Hall	6-5-92	1500

IEA QUOTE NO.:
IEA RUSH NO.:
PROJECT MANAGER (PLEASE PRINT):
P.O. NO.:

REMARKS ON SAMPLE RECEIPT:
☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

IEA REMARKS:

FIELD REMARKS:

D-101

CHAIN OF CUSTODY RECORD

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

NO: 32165

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

COMPANY: Triangle Labs

PROJECT #	PROJECT NAME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
1381-003	Solite A.F. Old Bif Test				

SAMPLERS: (SIGNATURE)

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	SOIL	WATER	REQUESTED PARAMETERS
	6/4				K7-MTL-1-PF	1			Particulate + BIF Metals
	↓				K7-MTL-2-PF	1			Particulate + BIF metals
					K7-MTL-3-PF	1			Particulate + BIF metals

D-105

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
James Bard	6/9-92		Maura Bro	6/11/92	3:15
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
				6-9-92	1500

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	P.O. NO.

REMARKS ON SAMPLE RECEIPT

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☑ SEE REMARKS

IEA REMARKS

FIELD REMARKS

CHAIN OF CUSTODY RECORD

NO: 32166

environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

COMPANY: Triangle Labs

Page 1 of 3

PROJECT #: 1381-003

PROJECT NAME: Solite AF Old BIF Test

SAMPLERS: (SIGNATURE)

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
	6/2		X		KS-MTL-1-PF	1			Particulate + BIF Metals
	1		X		KS-MTL-2-PF	1			Particulate + BIF metals
	6/3		X		KS-MTL-3-PF	1			Particulate + BIF metals
	~~1~~		X		~~KS-MTL-BLK-PF~~	1			~~Particulate + BIF metals~~

9-10-0

Eric Hilton NOBW 6-16-92

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Lamont Bass	6/9-92		Marcia Bro	6/11/92	3:20
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
Linda Wiggins BW	6-12-92		Robert Hall	6-12-92	1500

IEA QUOTE NO.

IEA RUSH NO.

PROJECT MANAGER (PLEASE PRINT)

P.O. NO.

REMARKS ON SAMPLE RECEIPT

IEA REMARKS

FIELD REMARKS

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

CHAIN OF CUSTODY RECORD

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

NO: 32157

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

COMPANY: Triangle labs

PROJECT #: 1381-003

PROJECT NAME: Solite AF Old B17 Test

SAMPLERS: (SIGNATURE)

SAMPLE I.D.	DATE	TIME	GRAB	COMP	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS
	6/2				K8-MTL-1-H2O2INP	1			BIF Metals
	"				K8-MTL-2-H2O2INP	1			BIF Metals
	6/3				K8-MTL-3-H2O2INP	1			BIF Metals
	6/2				K8-MTL-1-KMNO4INP	1			Hg
	"				K8-MTL-2-KMNO4INP	1			Hg
	6/3				K8-MTL-3-KMNO4INP	1			Hg
	6/2				K8-MTL-1-BHAR	1			BIF Metals
	"				K8-MTL-2-BHAR	1			BIF Metals
	6/3				K8-MTL-3-BHAR	1			BIF Metals

No BW 6-10-92

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY:	DATE	TIME
Laura Baird	6/9		Marcia Provo	6/11/92	3:20
No BW 6-5-92			Robert Hall	6-5-92	1500

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**

REMARKS ON SAMPLE RECEIPT: IEA REMARKS: FIELD REMARKS:

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

D-107

iea an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 32162

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

COMPANY: Triangle labs

PROJECT #	PROJECT NAME	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS
1381-003	Solite AF Old BIF Set				BIF Metals Include Hg
SAMPLERS: (SIGNATURE)					

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	SOIL	WATER	REQUESTED PARAMETERS
	6/2				K8-MTL-1-HCL	1			Hg
	↓				K8-MTL-2-HCL	1			Hg
	6/3				K8-MTL-3-HCL	1			Hg
	6/2				K8-MTL-1-FHACE	1			Particulate + BIF metals
	↓				K8-MTL-2-FHACE	1			Particulate + BIF metals
	6/3				K8-MTL-3-FHACE	1			Particulate + BIF metals
	6/2				K8-MTL-1-FHAR	1			BIF Metals
	↓				K8-MTL-2-FHAR	1			BIF metals
	6/3				K8-MTL-3-FHAR	1			BIF metals
					NO BS				

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
James Burch	6/9		Marcus Brow	6/9/92	3:18
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY:	DATE	TIME
NO BS					
[illegible]	6-10-92		Robert Hall	6-9-92	1500

IEA QUOTE NO.

IEA RUSH NO.

PROJECT MANAGER (PLEASE PRINT)

P.O. NO.

REMARKS ON SAMPLE RECEIPT

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☐ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

IEA REMARKS

FIELD REMARKS

8-10-92

CHAIN OF CUSTODY RECORD

NO: 32172

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

Page 1 of 1

COMPANY: Triangle Labs

PROJECT #: 1381-003 PROJECT NAME: Schlitz AF Old BIF Test

SAMPLERS (SIGNATURE):

SAMPLE I.D.	DATE	TIME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	STATION LOCATION	REQUESTED PARAMETERS
	6/3					K8-Mtl-BIK-HNO3	BIF Metals
	6/3					K8-mtl-BIK-KMNO4	Hg
	6/3					K8-mtl-BIK-HCl	Hg
	6/3					K8-Mtl-BIK-PF	Particulate & BIF Metals
	6/3					K8-mtl-BIK-HNO3	BIF Metals
	6/3					K8-mtl-BIK-H2O2	BIF Metals

D-100

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
James Barrick	6/4/92		Marcia Bro	6/7/92	09:19
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			Robert Hall	6-9-92	1500

IEA QUOTE NO.

IEA RUSH NO.

PROJECT MANAGER (PLEASE PRINT)

P.O. NO.

REMARKS ON SAMPLE RECEIPT

☑ BOTTLE INTACT ☑ CUSTODY SEALS
☐ PRESERVED ☑ SEALS INTACT
☐ CHILLED ☐ SEE REMARKS

IEA REMARKS

FIELD REMARKS

Custody Seal (Present) / Absent // (Intact) / Not Intact — TLI Project Number : 21122 — Boo

Chain of Custody (Present) / Absent

Sample Tags (Present) / Absent — Client: IEAM : IEA, INC.

Sample Tag Numbers (Listed) / Not Listed on Chain of Custody

SHO Forms Present / (Absent) — Date Received : 06/09/92 : By Robert Hall Rec

Ice Chest/Styro Cooler/(Cardboard Box) Dry Ice Ice (Ambient) : Carrier and Number : HAND CARRIED : 37

Sample ID TLI	Sample ID Client	Matrix	Storage Location	To Lab Date/Initial	To Storage Date/Initial	To Lab Date/Initial
57-37-1	K7-MTL-1	HCL	METAL LAB			
57-37-2		KMNO4 IMP	METAL LAB			
57-37-3		BHAR	METAL LAB			
57-37-4		FHACE	METAL LAB			
57-37-5		FHAR	METAL LAB			
57-37-6		H2O2 IMP	METAL LAB			
57-37-7	K7-MTL-2	HCL	METAL LAB			
57-37-8		KMNO4 IMP	METAL LAB			
57-37-9		BHAR	METAL LAB			
57-37-10		FHACE	METAL LAB			
57-37-11		FHAR	METAL LAB			
57-37-12		H2O2 IMP	METAL LAB			
57-37-13	K7-MTL-3	HCL	METAL LAB			
57-37-14		KMNO4 IMP	METAL LAB			
57-37-15		BHAR	METAL LAB			
57-37-16		FHACE	METAL LAB			
57-37-17		FHAR	METAL LAB			

Receiving Remarks:

Archive Remarks:

TRIANGLE LABORATORIES OF RTP, INC.--CHAIN OF CUSTODY---REVISED 03/06/9

Custody Seal	Present / Absent / Intact / Not Intact	TLI Project Number: 21127	Book
Chain of Custody	Present / Absent		
Sample Tags	Present / Absent	Client: IEAGI / IEA, INC.	57
Sample Tag Numbers	Listed / Not Listed on Chain of Custody		
SMO Forms	Present / Absent	Date Received: 06/09/92 By:	Page
Ice Chest/Styro Cooler/Cardboard Box	Dry Ice / Ice / Ambient	Carrier and Number: HAND CARRIED	37

Sample ID TLI	Sample ID Client	Matrix	Storage Location	To Lab Date/Initial	To Storage Date/Initial	To Lab Date/Initial
57-37-18		H2O2 IMP	METAL LAB			
57-37-19	K8-MTL-1	HCL	METAL LAB			
57-37-20		KMNO4	METAL LAB			
57-37-21		BHAR	METAL LAB			
57-37-22		FHACE	METAL LAB			
57-37-23		FHAR	METAL LAB			
57-37-24		H2O2 IMP	METAL LAB			
57-37-25	K8-MTL-2	HCL	METAL LAB			
37-26		KMNO4 IMP	METAL LAB			
57-37-27		BHAR	METAL LAB			
57-37-28		FHACE	METAL LAB			
57-37-29		FHAR	METAL LAB			
57-37-30		H2O2 IMP	METAL LAB			
57-37-31	K8-MTL-3	HCL	METAL LAB			
57-37-32		KMNO4 IMP	METAL LAB			
57-37-33		BHAR	METAL LAB			
57-37-34		FHACE	METAL LAB			

Receiving Remarks:

Archive Remarks:

TRIANGLE LABORATORIES OF RTP, INC.--CHAIN OF CUSTODY---REVISED 03/06/92

Custody Seal	Present / Absent // Intact / Not Intact	TLI Project Number	21122
Chain of Custody	Present / Absent		
Sample Tags	Present / Absent	Client: IEA01	IEA, INC.
Sample Tag Numbers	Listed / Not Listed on Chain of Custody		
SHO Forms	Present / Absent	Date Received	06/09/92 By: Robert Hall

Ice Chest/Styro Cooler/Cardboard Box Dry Ice Ice Ambient Carrier and Number: HAND CARRIED

Sample ID TLI	Sample ID Client	Matrix	Storage Location	To Lab Date/Initial	To Storage Date/Initial	To Lab Date/Initial
57-37-35		FHAR	METAL LAB			
57-37-36	K6-MTL-3	H202 IMP	METAL LAB			
57-37-37	K7-IN-1A	PM-BIF	METAL LAB			
57-37-38	7-1A	INLET	METAL LAB			
57-37-39	1B	PM-BIF	METAL LAB			
57-37-40	7-1B	INLET	METAL LAB			
57-37-41	1C	BIF	METAL LAB			
57-37-42	7-1C	INLET	METAL LAB			
57-37-43	7-1D	INLET	METAL LAB			
57-37-44	K7-IN-2A	PM-BIF	METAL LAB			
57-37-45	7-2A	INLET	METAL LAB			
57-37-46	2B	PM-BIF	METAL LAB			
57-37-47	7-2B	INLET	METAL LAB			
57-37-48	2C	BIF	METAL LAB			
57-37-49	K-7-IN-3A	PM-BIF	METAL LAB			
57-37-50	7-3A	INLET	METAL LAB			
57-37-51	3B	PM-BIF	METAL LAB			

Receiving Remarks:

Archive Remarks:

Custody Seal	Present / Absent // Intact / Not Intact	TLI Project Number : 21122	Book
Chain of Custody	Present / Absent		
Able Tags	Present / Absent	Client: IEA01 : IEA, INC.	57
Sample Tag Numbers	Listed / Not Listed on Chain of Custody		
SWO Forms	Present / Absent	Date Received : 06/09/92 . By:	Page
Ice Chest/Styro Cooler/Cardboard Box	Dry Ice Ice Ambient	Carrier and Number : HAND CARRIED	37

Sample ID TLI	Sample ID Client	Matrix	Storage Location	To Lab Date/Initial	To Storage Date/Initial	To Lab Date/Initial
57-37-52	7-3B	INLET	METAL LAB			
57-37-53	3C	BIF	METAL LAB			
57-37-54	K8-IN-1A	PM-BIF	METAL LAB			
57-37-55	8-1A	INLET	METAL LAB			
57-37-56	1B	PM-BIF	METAL LAB			
57-37-57	8-1B	INLET	METAL LAB			
57-37-58	1C	BIF	METAL LAB			
57-37-59	K8-IN-2A	PM-BIF	METAL LAB			
37-60	8-2A	INLET	METAL LAB			
57-37-61	K8-IN-2B	PM-BIF	METAL LAB			
57-37-62	8-2B	INLET	METAL LAB			
57-37-63	2C	BIF	METAL LAB			
57-37-64	8-2C	INLET	METAL LAB			
57-37-65	K8-IN-3A	PM-BIF	METAL LAB			
57-37-66	8-3A	INLET	METAL LAB			
57-37-67	3B	PM-BIF	METAL LAB			
57-37-68	8-3B	INLET	METAL LAB			

Receiving Remarks:

Archive Remarks:

TRIANGLE LABORATORIES OF RTP, INC.--CHAIN OF CUSTODY---REVISED 03/06/92

Custody Seal	Present / Absent // Intact / Not Intact	TLI Project Number	21122
Chain of Custody	Present / Absent		
Sample Tags	Present / Absent	Client: IEA01	IEA, INC.
Sample Tag Numbers	Listed / Not Listed on Chain of Custody		
SMO Forms	Present / Absent	Date Received	06/09/92 By
Ice Chest/Styro Cooler/Cardboard Box	Dry Ice Ice Ambient	Carrier and Number	HAND CARRIED

Sample ID TLI	Sample ID Client	Matrix	Storage Location	To Lab Date/Initial	To Storage Date/Initial	To Lab Date/Initial
57-37-69	3C	BIF	METAL LAB			
57-37-70	8-3C	INLET	METAL LAB			
57-37-71	K7-PROD-1MTL	SOLID	METAL LAB			
57-37-72	K7-DUST-1MTL	SOLID	METAL LAB			
57-37-73	K7-LBM 1MTL	LIQUID	METAL LAB			
57-37-74	RFEED	SOLID	METAL LAB			
57-37-75	MTL-1-PF	FILTER	METAL LAB	Returned to IEA		
57-37-76	K7-PROD-1PHYS	SOLID	METAL LAB			
57-37-77	LBM	LIQUID	METAL LAB			
57-37-78	RFEED	SOLID	METAL LAB			
57-37-79	K7-RFEED-2PHYS	SOLID	METAL LAB			
57-37-80	PROD	SOLID	METAL LAB			
57-37-81	LBM	LIQUID	METAL LAB			
57-37-82	K7-RFEED-2MTL	SOLID	METAL LAB			
57-37-83	PROD	SOLID	METAL LAB			
57-37-84	LBM	LIQUID	METAL LAB			
57-37-85	K7-DUST-2MTL	SOLID	METAL LAB			

Receiving Remarks:

Archive Remarks:

Custody Seal	Present / Absent / Intact / Not Intact	TLI Project Number : 21122	Book
Chain of Custody	Present / Absent		
Sample Tags	Present / Absent	Client: IEA01 IEA, INC.	57
Sample Tag Numbers	Listed / Not Listed on Chain of Custody		
SHO Forms	Present / Absent	Date Received : 06/09/92 By: Robert Hall	Page
Ice Chest/Styro Cooler/Cardboard Box	Dry Ice Ice Ambient	Carrier and Number : HAND CARRIED	37

Sample ID TLI	Sample ID Client	Matrix	Storage Location	To Lab Date/Initial	To Storage Date/Initial	To Lab Date/Initial
57-37-86	HTL-2PF	FILTER	METAL LAB			
57-37-87	K7-RFEED-3PHYS	SOLID	METAL LAB			
57-37-88	LBH	LIQUID	METAL LAB			
57-37-89	PROD	SOLID	METAL LAB			
57-37-90	K7-RFEED-3HTL	SOLID	METAL LAB			
57-37-91	PROD	SOLID	METAL LAB			
57-37-92	LMB	LIQUID	METAL LAB			
57-37-93	DUST	SOLID	METAL LAB			
57-37-94	HTL-3PF	FILTER	METAL LAB			
57-37-95	K8-RFEED-1HTL	SOLID	METAL LAB			
57-37-96	LBH	LIQUID	METAL LAB			
57-37-97	K8-DUST-1HTL	SOLID	METAL LAB			
57-37-98	PROD	FILTER	METAL LAB			
57-37-99	HTL-1PF	FILTER	METAL LAB			
57-37-100	K8-LBH-1PHYS	SOLID	METAL LAB			
57-37-101	PROD	SOLID	METAL LAB			
57-37-102	RFEED	SOLID	METAL LAB			

Returned to IEA

Receiving Remarks:	Archive Remarks:

Custody Seal	Present / Absent // Intact / Not Intact	TLI Project Number	81122
Chain of Custody	Present / Absent		
Sample Tags	Present / Absent	Client: IEA01	IEA, INC.
Sample Tag Numbers	Listed / Not Listed on Chain of Custody		
SHO Forms	Present / Absent	Date Received	06/09/92 By

Ice Chest/Styro Cooler/Cardboard Box Dry Ice Ice Ambient | Carrier and Number: HAND CARRIED

Sample ID TLI	Sample ID Client	Matrix	Storage Location	To Lab Date/Initial	To Storage Date/Initial	To Lab Date/Initial
57-37-103	K8-RFEED-2D MTL	SOLID	METAL LAB			
57-37-104	LBM	LIQUID	METAL LAB			
57-37-105	PROD	SOLID	METAL LAB			
57-37-106	DUST	SOLID	METAL LAB			
57-37-107	K8-PROD-2PHYS	SOLID	METAL LAB			
57-37-108	RFEED	SOLID	METAL LAB			
57-37-109	K8-LBM-2PHYS	LIQUID	METAL LAB			
57-37-110	K8-LBM-2MTL	LIQUID	METAL LAB			
57-37-111	RFEED	SOLID	METAL LAB			
57-37-112	DUST	SOLID	METAL LAB			
57-37-113	PROD	SOLID	METAL LAB			
57-37-114	K8-RFEED-2D-PHYS	SOLID	METAL LAB			
57-37-115	PROD	SOLID	METAL LAB			
57-37-116	LBM	LIQUID	METAL LAB			
57-37-117	K8-LBM-3PHYS	LIQUID	METAL LAB			
57-37-118	PROD	SOLID	METAL LAB			
57-37-119	RFEED	SOLID	METAL LAB			

Returned to IEA

Receiving Remarks:

Archive Remarks:

Custody Seal	Present / Absent / Intact / Not Intact	TLI Project Number	21122	Book
Chain of Custody	Present / Absent			
Sample Tags	Present / Absent	Client: IEA01	IEA, INC.	57
Sample Tag Numbers	Listed / Not Listed on Chain of Custody			
SMO Forms	Present / Absent	Date Received	06/09/92 By [signature]	Page
Ice Chest/Styro Cooler/Cardboard Box	Dry Ice Ice Ambient	Carrier and Number	HAND CARRIED	37

Sample ID TLI	Sample ID Client	Matrix	Storage Location	To Lab Date/Initial	To Storage Date/Initial	To Lab Date/Initial
57-37-120	K8-RFEED-3HTL	SOLID	METAL LAB			
57-37-121	K8-PROD-3HTL	SOLID	METAL LAB			
57-37-122	LHB	LIQUID	METAL LAB			
57-37-123	DUST	SOLID	METAL LAB			
57-37-124	HTL-3PF	FILTER	METAL LAB			
57-37-125	K8-HTL-BLK	HCL	METAL LAB			
57-37-126		KMNO4	METAL LAB			
57-37-127		H2O2	METAL LAB			
37-128		HNO3	METAL LAB			
57-37-129		HNO3	METAL LAB			
57-37-130	HTL-BLANK PF	FILTER	METAL LAB			

Returned to IEA

Receiving Remarks:	Archive Remarks:

TRIANGLE LABORATORIES OF RTP, INC.--CHAIN OF CUSTODY---REVISED 03/06/92

```
06/25/92 13:47
wcal standard   rep   1  Ba_        em     113340.6 conc 50.00
                rep   2  Ba_        em     117527.4 conc 50.00
                rep   3  Ba_        em     113791.6 conc 50.00
wcal standard
06/25/92 13:48
    Ba_         av  114886.5             sd  2298.118 %cv    2.00 conc    50.00

06/25/92 13:48
sc blank        rep   1  Ba_        em       203.6
06/25/92 13:49
blank           rep   1  Ba_        ratio   0.0447
                rep   2  Ba_        ratio   0.0418
                rep   3  Ba_        ratio   0.0393
blank
06/25/92 13:50
    Ba_         av    0.0419             sd   0.00274 %cv    6.53

06/25/92 13:51
#1 standard     rep   1  Ba_        ratio   0.8336 conc 50.00
                rep   2  Ba_        ratio   0.8313 conc 50.00
                rep   3  Ba_        ratio   0.8230 conc 50.00
#1 standard
06/25/92 13:51
    Ba_         av    0.8293             sd   0.00555 %cv    0.67 conc    50.00

06/25/92 13:52
#2 standard     rep   1  Ba_        ratio   3.2181 conc 200.00
                rep   2  Ba_        ratio   3.1880 conc 200.00
                rep   3  Ba_        ratio   3.2169 conc 200.00
#2 standard
06/25/92 13:52
    Ba_         av    3.2076             sd   0.01703 %cv    0.53 conc   200.00

06/25/92 13:53
#3 standard     rep   1  Ba_        ratio   7.9173 conc 500.00
                rep   2  Ba_        ratio   8.0241 conc 500.00
                rep   3  Ba_        ratio   7.9532 conc 500.00
#3 standard
06/25/92 13:53
    Ba_         av    7.9649             sd   0.05439 %cv    0.68 conc   500.00

06/25/92 13:54
#4 standard     rep   1  Ba_        ratio  15.5754 conc 1000.00
                rep   2  Ba_        ratio  15.5717 conc 1000.00
                rep   3  Ba_        ratio  15.5911 conc 1000.00
#4 standard
06/25/92 13:54
    Ba_         av   15.5794             sd   0.01029 %cv    0.07 conc   1000.0

06/25/92 13:55
CHECK HS        rep   1  Ba_        conc    986.90 ug/L
                rep   2  Ba_        conc    987.60 ug/L
                rep   3  Ba_        conc    984.05 ug/L
CHECK HS
06/25/92 13:55
    Ba_         av    986.18 ug/L        sd     1.879 %cv    0.19

06/25/92 13:56
ICV             rep   1  Ba_        conc    504.42 ug/L
```

	rep	2	Ba_	conc	503.12	ug/L	
	rep	3	Ba_	conc	504.19	ug/L	
ICV							
06/25/92 13:57							
Ba_	av	503.91	ug/L	sd	0.691	%cv	0.14
06/25/92 13:57							
ICB	rep	1	Ba_	conc	-0.84	ug/L	
	rep	2	Ba_	conc	21.07	ug/L	
	rep	3	Ba_	conc	-2.75	ug/L	
ICB							
06/25/92 13:58							
Ba_	av	5.82	ug/L	sd	13.235	%cv	227.2
06/25/92 13:59							
ICSAI	rep	1	Ba_	conc	3.58	ug/L	
	rep	2	Ba_	conc	6.05	ug/L	
	rep	3	Ba_	conc	3.60	ug/L	
ICSAI							
06/25/92 13:59							
Ba_	av	4.41	ug/L	sd	1.422	%cv	32.26
06/25/92 14:00							
ICSABI	rep	1	Ba_	conc	508.35	ug/L	
	rep	2	Ba_	conc	506.80	ug/L	
	rep	3	Ba_	conc	509.15	ug/L	
ICSABI							
06/25/92 14:00							
Ba_	av	508.10	ug/L	sd	1.194	%cv	0.23
06/25/92 14:01							
57.037.38	rep	1	Ba_	conc	18128.72	ug/L	
K1-IN-1FH	rep	2	Ba_	conc	18589.50	ug/L	
	rep	3	Ba_	conc	18769.25	ug/L	
57.037.38							
06/25/92 14:02							
Ba_	av	18495.82	ug/L	sd	330.381	%cv	1.79
06/25/92 14:02							
57.038.6	rep	1	Ba_	conc	24.70	ug/L	
K7-MTL-1BH	rep	2	Ba_	conc	22.56	ug/L	
	rep	3	Ba_	conc	22.03	ug/L	
57.038.6							
06/25/92 14:03							
Ba_	av	23.10	ug/L	sd	1.416	%cv	6.13
06/25/92 14:03							
57.037.45	rep	1	Ba_	conc	3643.59	ug/L	
K7-IN-2FH	rep	2	Ba_	conc	3624.61	ug/L	
	rep	3	Ba_	conc	3669.50	ug/L	
57.037.45							
06/25/92 14:04							
Ba_	av	3645.90	ug/L	sd	22.532	%cv	0.62
06/25/92 14:05							
57.037.12	rep	1	Ba_	conc	8.46	ug/L	
K7-MTL-2BH	rep	2	Ba_	conc	7.97	ug/L	
	rep	3	Ba_	conc	18.99	ug/L	
57.037.12							
06/25/92 14:05							

Ba_	av	11.81	ug/L		sd	6.223	%cv	52.72
06/25/92 14:06								
57.037.50	rep	1	Ba_	conc	3053.98	ug/L		
K7-IN-3FH	rep	2	Ba_	conc	3085.95	ug/L		
	rep	3	Ba_	conc	3091.53	ug/L		
57.037.50								
06/25/92 14:06								
Ba_	av	3077.16	ug/L		sd	20.263	%cv	0.66
06/25/92 14:07								
57.037.18	rep	1	Ba_	conc	37.16	ug/L		
K7-MTL-3BH	rep	2	Ba_	conc	22.59	ug/L		
	rep	3	Ba_	conc	17.48	ug/L		
57.037.18								
06/25/92 14:07								
Ba_	av	25.74	ug/L		sd	10.210	%cv	39.66
06/25/92 14:08								
57.037.55	rep	1	Ba_	conc	8572.03	ug/L		
K8-IN-1FH	rep	2	Ba_	conc	8633.15	ug/L		
	rep	3	Ba_	conc	8521.44	ug/L		
57.037.55								
06/25/92 14:08								
Ba_	av	8575.54	ug/L		sd	55.935	%cv	0.65
06/25/92 14:09								
57.037.24	rep	1	Ba_	conc	72.86	ug/L		
K8-~~INT~~MTL-1BH	rep	2	Ba_	conc	169.10	ug/L		
	rep	3	Ba_	conc	16.01	ug/L		
57.037.24								
06/25/92 14:10								
Ba_	av	85.99	ug/L		sd	77.386	%cv	89.99
06/25/92 14:10								
CCV1	rep	1	Ba_	conc	509.85	ug/L		
	rep	2	Ba_	conc	511.26	ug/L		
	rep	3	Ba_	conc	513.74	ug/L		
CCV1								
06/25/92 14:11								
Ba_	av	511.61	ug/L		sd	1.970	%cv	0.39
06/25/92 14:12								
CCB1	rep	1	Ba_	conc	-3.21	ug/L		
	rep	2	Ba_	conc	-3.76	ug/L		
	rep	3	Ba_	conc	-3.66	ug/L		
CCB1								
06/25/92 14:12								
Ba_	av	-3.55	ug/L		sd	0.295	%cv	8.33
06/25/92 14:13								
57.037.60	rep	1	Ba_	conc	4868.53	ug/L		
K8-IN-2FH	rep	2	Ba_	conc	4867.66	ug/L		
	rep	3	Ba_	conc	4815.46	ug/L		
57.037.60								
06/25/92 14:13								
Ba_	av	4850.55	ug/L		sd	30.394	%cv	0.63
06/25/92 14:14								
57.037.30	rep	1	Ba_	conc	11.36	ug/L		
K8-MTL-2BH								

	rep	2	Ba_	conc	14.11	ug/L	
	rep	3	Ba_	conc	12.57	ug/L	
57.037.30							
06/25/92 14:15							
Ba_	av		12.68	ug/L	sd	1.381 %cv	10.89
06/25/92 14:15							
57.037.66	rep	1	Ba_	conc	5418.39	ug/L	
K8-IN-3FH	rep	2	Ba_	conc	5404.55	ug/L	
	rep	3	Ba_	conc	5405.95	ug/L	
57.037.66							
06/25/92 14:16							
Ba_	av		5409.63	ug/L	sd	7.619 %cv	0.14
06/25/92 14:17							
57.037.36	rep	1	Ba_	conc	10.12	ug/L	
K8-MR-3BH	rep	2	Ba_	conc	11.28	ug/L	
	rep	3	Ba_	conc	10.99	ug/L	
57.037.36							
06/25/92 14:17							
Ba_	av		10.79	ug/L	sd	0.603 %cv	5.59
06/25/92 14:18							
57.037.75	rep	1	Ba_	conc	141.87	ug/L	
K7-MR-1FH	rep	2	Ba_	conc	141.92	ug/L	
	rep	3	Ba_	conc	142.88	ug/L	
57.037.75							
06/25/92 14:18							
Ba_	av		142.22	ug/L	sd	0.571 %cv	0.40
06/25/92 14:19							
57.037.41	rep	1	Ba_	conc	386.10	ug/L	
K7-MR-1BH	rep	2	Ba_	conc	388.75	ug/L	
	rep	3	Ba_	conc	387.18	ug/L	
57.037.41							
06/25/92 14:19							
Ba_	av		387.34	ug/L	sd	1.335 %cv	0.34
06/25/92 14:20							
57.037.75 L	rep	1	Ba_	conc	100.53	ug/L	
	rep	2	Ba_	conc	98.73	ug/L	
	rep	3	Ba_	conc	100.59	ug/L	
57.037.75 L							
06/25/92 14:20							
Ba_	av		99.95	ug/L	sd	1.060 %cv	1.06
06/25/92 14:21							
57.037.41 L	rep	1	Ba_	conc	78.52	ug/L	
	rep	2	Ba_	conc	77.97	ug/L	
	rep	3	Ba_	conc	78.29	ug/L	
57.037.41 L							
06/25/92 14:21							
Ba_	av		78.26	ug/L	sd	0.278 %cv	0.36
06/25/92 14:22							
CCV2	rep	1	Ba_	conc	499.67	ug/L	
	rep	2	Ba_	conc	506.03	ug/L	
	rep	3	Ba_	conc	507.40	ug/L	
C							
06/25/92 14:23							

Ba_	av	504.37 ug/L			sd	4.125 %cv	0.82	
06/25/92 14:24								
CCB2	rep	1	Ba_	conc	-3.34 ug/L			
	rep	2	Ba_	conc	-3.55 ug/L			
	rep	3	Ba_	conc	-3.91 ug/L			
CCB2								
06/25/92 14:24								
Ba_	av	-3.60 ug/L			sd	0.287 %cv	7.97	
06/25/92 14:25								
57.037.86	rep	1	Ba_	conc	182.14 ug/L			
K7-MTL-2FH	rep	2	Ba_	conc	189.76 ug/L			
	rep	3	Ba_	conc	186.36 ug/L			
57.037.86								
06/25/92 14:25								
Ba_	av	186.09 ug/L			sd	3.820 %cv	2.05	
06/25/92 14:26								
57.037.48	rep	1	Ba_	conc	212.66 ug/L			
K7-IN-2BH	rep	2	Ba_	conc	213.51 ug/L			
	rep	3	Ba_	conc	212.94 ug/L			
57.037.48								
06/25/92 14:26								
Ba_	av	213.03 ug/L			sd	0.436 %cv	0.20	
06/25/92 14:27								
57.037.94	rep	1	Ba_	conc	182.56 ug/L			
K7-MTL-3FH	rep	2	Ba_	conc	180.52 ug/L			
	rep	3	Ba_	conc	181.78 ug/L			
57.037.94								
06/25/92 14:28								
Ba_	av	181.62 ug/L			sd	1.032 %cv	0.57	
06/25/92 14:28								
57.037.53	rep	1	Ba_	conc	23.81 ug/L			
K7-IN-3BH	rep	2	Ba_	conc	23.42 ug/L			
	rep	3	Ba_	conc	23.53 ug/L			
57.037.53								
06/25/92 14:29								
Ba_	av	23.59 ug/L			sd	0.202 %cv	0.86	
06/25/92 14:29								
57.037.99	rep	1	Ba_	conc	368.82 ug/L			
K8-MTL-1FH	rep	2	Ba_	conc	372.13 ug/L			
	rep	3	Ba_	conc	369.56 ug/L			
57.037.99								
06/25/92 14:30								
Ba_	av	370.17 ug/L			sd	1.736 %cv	0.47	
06/25/92 14:31								
57.037.58	rep	1	Ba_	conc	57.52 ug/L			
K8-IN-1BH	rep	2	Ba_	conc	56.66 ug/L			
	rep	3	Ba_	conc	56.84 ug/L			
57.037.58								
06/25/92 14:31								
Ba_	av	57.00 ug/L			sd	0.453 %cv	0.80	
06/25/92 14:32								
57.037.114	rep	1	Ba_	conc	426.88 ug/L			
K8-MTL-2FH								

```
                rep   2  Ba_          conc     433.84 ug/L
                rep   3  Ba_          conc     430.71 ug/L
57.037.114
06/25/92 14:32
    Ba_         av     430.48 ug/L          sd      3.486 %cv    0.81

06  5/92 14:33
57.037.63       rep   1  Ba_          conc      31.59 ug/L
KB-1N-2 BH      rep   2  Ba_          conc      31.26 ug/L
                rep   3  Ba_          conc      34.46 ug/L
57.037.63
06/25/92 14:33
    Ba_         av      32.44 ug/L          sd      1.757 %cv    5.42

06/25/92 14:34
CCV3            rep   1  Ba_          conc     480.69 ug/L
                rep   2  Ba_          conc     479.64 ug/L
                rep   3  Ba_          conc     478.98 ug/L
CCV3
06/25/92 14:34
    Ba_         av     479.77 ug/L          sd      0.864 %cv    0.18

06/25/92 14:35
CCB3            rep   1  Ba_          conc      -2.40 ug/L
                rep   2  Ba_          conc      -3.60 ug/L
                rep   3  Ba_          conc      10.06 ug/L
CCB3
06/25/92 14:36
    Ba_         av       1.35 ug/L          sd      7.564 %cv  558.4

06/25/92 14:37
57 037.125      rep   1  Ba_          conc     406.03 ug/L
KB-MR-3FH       rep   2  Ba_          conc     422.68 ug/L
                rep   3  Ba_          conc     436.25 ug/L
57.037.125
06/25/92 14:37
    Ba_         av     421.65 ug/L          sd     15.135 %cv   3.59

06/25/92 14:38
57.037.69       rep   1  Ba_          conc     175.82 ug/L
KB-1N-3BH       rep   2  Ba_          conc     174.01 ug/L
                rep   3  Ba_          conc     173.75 ug/L
57.037.69
06/25/92 14:38
    Ba_         av     174.53 ug/L          sd      1.128 %cv    0.65

06/25/92 14:39
57.037.131      rep   1  Ba_          conc      78.39 ug/L
KB-MR-BIKFH     rep   2  Ba_          conc      78.26 ug/L
                rep   3  Ba_          conc      79.56 ug/L
57.037.131
06/25/92 14:39
    Ba_         av      78.74 ug/L          sd      0.719 %cv    0.91

06/25/92 14:40
57.037.128      rep   1  Ba_          conc      -2.41 ug/L
                rep   2  Ba_          conc      -2.56 ug/L
KR-MR-BIK BH    rep   3  Ba_          conc      -2.74 ug/L
5   37.128
06/25/92 14:40
```

06/25/92 14:41
57.037.131D rep 1 Ba_ conc 83.99 ug/L
rep 2 Ba_ conc 83.07 ug/L
rep 3 Ba_ conc 84.73 ug/L
57.037.131D
06/25/92 14:42
Ba_ av 83.93 ug/L sd 0.829 %cv 0.99

06/25/92 14:42
57.037.128D rep 1 Ba_ conc -3.29 ug/L
rep 2 Ba_ conc -0.98 ug/L
rep 3 Ba_ conc -2.02 ug/L
57.037.128D
06/25/92 14:43
Ba_ av -2.10 ug/L sd 1.159 %cv 55.27

06/25/92 14:43
CCV4 rep 1 Ba_ conc 475.41 ug/L
rep 2 Ba_ conc 477.02 ug/L
rep 3 Ba_ conc 482.08 ug/L
CCV4
06/25/92 14:44
Ba_ av 478.17 ug/L sd 3.483 %cv 0.73

06/25/92 14:45
CCB4 rep 1 Ba_ conc 9.09 ug/L
rep 2 Ba_ conc -3.30 ug/L
rep 3 Ba_ conc -3.24 ug/L
CCB4
06/25/92 14:45
Ba_ av 0.85 ug/L sd 7.138 %cv 838.4

06/25/92 14:46
ICSAF rep 1 Ba_ conc 6.59 ug/L
rep 2 Ba_ conc 3.08 ug/L
rep 3 Ba_ conc 2.75 ug/L
ICSAF
06/25/92 14:46
Ba_ av 4.14 ug/L sd 2.129 %cv 51.40

06/25/92 14:47
ICSABF rep 1 Ba_ conc 495.62 ug/L
rep 2 Ba_ conc 489.26 ug/L
rep 3 Ba_ conc 501.75 ug/L
ICSABF
06/25/92 14:48
Ba_ av 495.54 ug/L sd 6.241 %cv 1.26

```
06/24/92 14:15
xcal standard   rep   1  Be_          em      15164.6 conc 10.00
                rep   2  Be_          em      15108.6 conc 10.00
                rep   3  Be_          em      14892.7 conc 10.00
wcal standard
06/24/92 14:16
     Be_        av  15055.27              sd   143.581 %cv   0.95 conc   10.00

06/24/92 14:17
sc blank        rep   1  Be_          em       318.4
06/24/92 14:18
blank           rep   1  Be_          ratio   0.0113
                rep   2  Be_          ratio   0.0173
                rep   3  Be_          ratio   0.0113
blank
06/24/92 14:18
     Be_        av    0.0133              sd   0.00349 %cv  26.18

06/24/92 14:19
#1 standard     rep   1  Be_          ratio   0.2804 conc 10.00
                rep   2  Be_          ratio   0.2726 conc 10.00
                rep   3  Be_          ratio   0.2838 conc 10.00
#1 standard
06/24/92 14:19
     Be_        av    0.2789              sd   0.00575 %cv   2.06 conc   10.00

06/24/92 14:20
#2 standard     rep   1  Be_          ratio   0.5552 conc 20.00
                rep   2  Be_          ratio   0.5233 conc 20.00
                rep   3  Be_          ratio   0.5424 conc 20.00
#2 standard
06/24/92 14:21
     Be_        av    0.5403              sd   0.01608 %cv   2.98 conc   20.00

06/24/92 14:21
#3 standard     rep   1  Be_          ratio   6.0797 conc 250.00
                rep   2  Be_          ratio   6.0341 conc 250.00
                rep   3  Be_          ratio   6.0002 conc 250.00
#3 standard
06/24/92 14:22
     Be_        av    6.0380              sd   0.03989 %cv   0.66 conc  250.00

06/24/92 14:23
#4 standard     rep   1  Be_          ratio  12.7969 conc 500.00
                rep   2  Be_          ratio  12.7604 conc 500.00
                rep   3  Be_          ratio  12.7982 conc 500.00
#4 standard
06/24/92 14:23
     Be_        av   12.7852              sd   0.02150 %cv   0.17 conc  500.00

06/24/92 14:24
CHECK HS        rep   1  Be_          conc    508.02 ug/L
                rep   2  Be_          conc    507.82 ug/L
                rep   3  Be_          conc    509.38 ug/L
CHECK HS
06/24/92 14:24
     Be_        av    508.40 ug/L           sd     0.847 %cv   0.17

06/24/92 14:25
ICV             rep   1  Be_          conc    244.33 ug/L
```

	rep	2	Be_	conc	245.52	ug/L		
	rep	3	Be_	conc	244.65	ug/L		
ICV								
06/24/92 14:26								
Be_	av	244.83	ug/L	sd	0.620	%cv	0.25	
06/24/92 14:26								
ICB	rep	1	Be_	conc	1.32	ug/L		
	rep	2	Be_	conc	1.30	ug/L		
	rep	3	Be_	conc	1.31	ug/L		
ICB								
06/24/92 14:27								
Be_	av	1.31	ug/L	sd	0.011	%cv	0.83	
06/24/92 14:28								
ICSAI	rep	1	Be_	conc	-21.11	ug/L		window edge
	rep	2	Be_	conc	-21.02	ug/L		window edge
	rep	3	Be_	conc	-22.62	ug/L		window edge
ICSAI								
06/24/92 14:28								
Be_	av	-21.58	ug/L	sd	0.903	%cv	4.18	
06/24/92 14:29								
ICSABI	rep	1	Be_	conc	511.44	ug/L		
	rep	2	Be_	conc	512.00	ug/L		
	rep	3	Be_	conc	505.90	ug/L		
ICSABI								
06/24/92 14:29								
Be_	av	509.78	ug/L	sd	3.373	%cv	0.66	
06/24/92 14:30								
57.037.38	rep	1	Be_	conc	978.47	ug/L		
	rep	2	Be_	conc	976.86	ug/L		
	rep	3	Be_	conc	975.12	ug/L		
57.037.38								
06/24/92 14:31								
Be_	av	976.82	ug/L	sd	1.672	%cv	0.17	
06/24/92 14:32								
57.038.6	rep	1	Be_	conc	3.18	ug/L		
	rep	2	Be_	conc	2.31	ug/L		
	rep	3	Be_	conc	0.97	ug/L		
57.038.6								
06/24/92 14:32								
Be_	av	2.15	ug/L	sd	1.115	%cv	51.74	
06/24/92 14:33								
57.037.45	rep	1	Be_	conc	1568.87	ug/L		
	rep	2	Be_	conc	1522.86	ug/L		
	rep	3	Be_	conc	1590.68	ug/L		
57.037.45								
06/24/92 14:33								
Be_	av	1560.80	ug/L	sd	34.619	%cv	2.22	
06/24/92 14:34								
57.037.12	rep	1	Be_	conc	3.44	ug/L		
	rep	2	Be_	conc	5.41	ug/L		
	rep	3	Be_	conc	1.57	ug/L		
57.037.12								
06/24/92 14:35								

```
    Be_          av      3.47 ug/L          sd      1.921 %cv   55.31

06/24/92 14:35
57.037.50        rep   1  Be_          conc     970.42 ug/L
                 rep   2  Be_          conc     974.26 ug/L
                 rep   3  Be_          conc     967.06 ug/L
5:  37.50
06/24/92 14:36
    Be_          av    970.58 ug/L          sd      3.606 %cv    0.37

06/24/92 14:37
57.037.18        rep   1  Be_          conc       2.54 ug/L
                 rep   2  Be_          conc       4.35 ug/L
                 rep   3  Be_          conc       1.87 ug/L
57.037.18
06/24/92 14:37
    Be_          av      2.92 ug/L          sd      1.283 %cv   43.95

06/24/92 14:38
57.037.55        rep   1  Be_          conc     739.29 ug/L
                 rep   2  Be_          conc     742.69 ug/L
                 rep   3  Be_          conc     734.69 ug/L
57.037.55
06/24/92 14:38
    Be_          av    738.89 ug/L          sd      4.016 %cv    0.54

06/24/92 14:39
57.037.24        rep   1  Be_          conc       3.56 ug/L
                 rep   2  Be_          conc       1.45 ug/L
                 rep   3  Be_          conc       1.41 ug/L
57.037.24
06/24/92 14:40
    Be_          av      2.14 ug/L          sd      1.230 %cv   57.58

06/24/92 14:41
CCV1             rep   1  Be_          conc     242.82 ug/L
                 rep   2  Be_          conc     240.49 ug/L
                 rep   3  Be_          conc     239.74 ug/L
CCV1
06/24/92 14:41
    Be_          av    241.02 ug/L          sd      1.605 %cv    0.67

06/24/92 14:42
CCB1             rep   1  Be_          conc       1.86 ug/L
                 rep   2  Be_          conc       3.00 ug/L
                 rep   3  Be_          conc       1.47 ug/L
CCB1
06/24/92 14:42
    Be_          av      2.11 ug/L          sd      0.794 %cv   37.62

06/24/92 14:43
57.037.60        rep   1  Be_          conc     595.12 ug/L
                 rep   2  Be_          conc     604.78 ug/L
                 rep   3  Be_          conc     603.27 ug/L
57.037.60
06/24/92 14:44
    Be_          av    601.06 ug/L          sd      5.192 %cv    0.86

06/24/92 14:44
57.037.30        rep   1  Be_          conc       1.20 ug/L
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```
                rep   2  Be_          conc       1.49 ug/L
                rep   3  Be_          conc       2.08 ug/L
57.037.30
06/24/92 14:45
    Be_         av      1.59 ug/L          sd      0.450 %cv   28.29

06/24/92 14:46
57.037.66       rep   1  Be_          conc     493.90 ug/L
                rep   2  Be_          conc     477.65 ug/L
                rep   3  Be_          conc     479.21 ug/L
57.037.66
06/24/92 14:46
    Be_         av    483.59 ug/L          sd      8.966 %cv    1.85

06/24/92 14:47
57.037.36       rep   1  Be_          conc       3.31 ug/L
                rep   2  Be_          conc       4.61 ug/L
                rep   3  Be_          conc       1.09 ug/L
57.037.36
06/24/92 14:47
    Be_         av      3.00 ug/L          sd      1.783 %cv   59.40

06/24/92 14:48
57.037.75       rep   1  Be_          conc       4.58 ug/L
                rep   2  Be_          conc       4.24 ug/L
                rep   3  Be_          conc       4.43 ug/L
57.037.75
06/24/92 14:49
    Be_         av      4.42 ug/L          sd      0.168 %cv    3.81

06/24/92 14:49
57.037.41       rep   1  Be_          conc      91.61 ug/L
                rep   2  Be_          conc      92.09 ug/L
                rep   3  Be_          conc      93.67 ug/L
57.037.41
06/24/92 14:50
    Be_         av     92.46 ug/L          sd      1.083 %cv    1.17

06/24/92 14:51
57.037.75 L     rep   1  Be_          conc       1.61 ug/L
                rep   2  Be_          conc       1.70 ug/L
                rep   3  Be_          conc       2.35 ug/L
57.037.75 L
06/24/92 14:51
    Be_         av      1.89 ug/L          sd      0.403 %cv   21.37

06/24/92 14:52
57.037.41 L     rep   1  Be_          conc      18.63 ug/L
                rep   2  Be_          conc      19.19 ug/L
                rep   3  Be_          conc      19.15 ug/L
57.037.41 L
06/24/92 14:52
    Be_         av     18.99 ug/L          sd      0.314 %cv    1.65

06/24/92 14:53
CCV2            rep   1  Be_          conc     249.48 ug/L
                rep   2  Be_          conc     248.02 ug/L
                rep   3  Be_          conc     244.03 ug/L
CCV2
06/24/92 14:54
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```
    Be_          av    247.18 ug/L          sd      2.822 %cv    1.14

06/24/92 14:55
CCB2             rep   1  Be_          conc       1.83 ug/L
                 rep   2  Be_          conc       1.77 ug/L
                 rep   3  Be_          conc       1.27 ug/L
C\
06/24/92 14:55
    Be_          av      1.62 ug/L          sd      0.309 %cv   19.05

06/24/92 14:56
57.037.86        rep   1  Be_          conc       5.52 ug/L
                 rep   2  Be_          conc       6.74 ug/L
                 rep   3  Be_          conc       5.81 ug/L
57.037.86
06/24/92 14:57
    Be_          av      6.02 ug/L          sd      0.639 %cv   10.61

06/24/92 14:57
57.037.48        rep   1  Be_          conc      37.87 ug/L
                 rep   2  Be_          conc      36.95 ug/L
                 rep   3  Be_          conc      36.95 ug/L
57.037.48
06/24/92 14:58
    Be_          av     37.25 ug/L          sd      0.532 %cv    1.43

06/24/92 14:59
57.037.94        rep   1  Be_          conc       5.64 ug/L
                 rep   2  Be_          conc       5.77 ug/L
                 rep   3  Be_          conc       6.12 ug/L
57.037.94
0[illegible]'24/92 14:59
    Be_          av      5.84 ug/L          sd      0.246 %cv    4.22

06/24/92 15:00
57.037.53        rep   1  Be_          conc       4.53 ug/L
                 rep   2  Be_          conc       4.27 ug/L
                 rep   3  Be_          conc       4.27 ug/L
57.037.53
06/24/92 15:00
    Be_          av      4.36 ug/L          sd      0.152 %cv    3.49

06/24/92 15:01
57.037.99        rep   1  Be_          conc      13.12 ug/L
                 rep   2  Be_          conc      13.88 ug/L
                 rep   3  Be_          conc      15.23 ug/L
57.037.99
06/24/92 15:02
    Be_          av     14.08 ug/L          sd      1.070 %cv    7.60

06/24/92 15:02
57.037.58        rep   1  Be_          conc       8.22 ug/L
                 rep   2  Be_          conc       8.34 ug/L
                 rep   3  Be_          conc       8.76 ug/L
57.037.58
06/24/92 15:03
    Be_          av      8.44 ug/L          sd      0.285 %cv    3.37

\  24/92 15:04
57.037.114       rep   1  Be_          conc      31.90 ug/L
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```
                rep   2  Be_          conc      32.09 ug/L
                rep   3  Be_          conc      33.46 ug/L
57.037.114
06/24/92 15:04
    Be_         av      32.48 ug/L          sd      0.849 %cv    2.61

06/24/92 15:05
57.037.63       rep   1  Be_          conc      12.36 ug/L
                rep   2  Be_          conc      12.18 ug/L
                rep   3  Be_          conc      12.50 ug/L
57.037.63
06/24/92 15:05
    Be_         av      12.35 ug/L          sd      0.162 %cv    1.31

06/24/92 15:06
CCV3            rep   1  Be_          conc     301.46 ug/L
                rep   2  Be_          conc     302.05 ug/L
                rep   3  Be_          conc     305.05 ug/L
CCV3
06/24/92 15:07
    Be_         av     302.85 ug/L          sd      1.927 %cv    0.64

06/24/92 15:08
CCB3            rep   1  Be_          conc       2.96 ug/L
                rep   2  Be_          conc       1.32 ug/L
                rep   3  Be_          conc       2.07 ug/L
CCB3
06/24/92 15:08
    Be_         av       2.12 ug/L          sd      0.823 %cv   38.86

06/24/92 15:09
57.037.125      rep   1  Be_          conc      25.39 ug/L
                rep   2  Be_          conc      26.49 ug/L
06/24/92 15:10
57.037.125      rep   3  Be_          conc      27.08 ug/L
```

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06/24/92 15:15
vcal standard   rep   1  Be_          em      16129.1 conc 10.00
                rep   2  Be_          em      15981.9 conc 10.00
                rep   3  Be_          em      16062.9 conc 10.00
vcal standard
06/24/92 15:15
     Be_        av  16057.97              sd    73.760 %cv   0.46 conc   10.00

06/24/92 15:16
sc blank        rep   1  Be_          em       507.4
06/24/92 15:17
blank           rep   1  Be_          ratio   0.0325
                rep   2  Be_          ratio   0.0150
                rep   3  Be_          ratio   0.0635
blank
06/24/92 15:17
     Be_        av    0.0370              sd   0.02455 %cv  66.28

06/24/92 15:18
#1 standard     rep   1  Be_          ratio   0.3162 conc 10.00
                rep   2  Be_          ratio   0.3071 conc 10.00
                rep   3  Be_          ratio   0.2967 conc 10.00
#1 standard
06/24/92 15:19
     Be_        av    0.3067              sd   0.00974 %cv   3.17 conc   10.00

06/24/92 15:19
#2 standard     rep   1  Be_          ratio   0.6057 conc 20.00
                rep   2  Be_          ratio   0.6001 conc 20.00
                rep   3  Be_          ratio   0.6043 conc 20.00
#2 standard
06/24/92 15:20
     Be_        av    0.6033              sd   0.00290 %cv   0.48 conc   20.00

06/24/92 15:21
#3 standard     rep   1  Be_          ratio   6.3908 conc 250.00
                rep   2  Be_          ratio   6.6517 conc 250.00
                rep   3  Be_          ratio   6.6378 conc 250.00
#3 standard
06/24/92 15:21
     Be_        av    6.5601              sd   0.14679 %cv   2.24 conc  250.00

06/24/92 15:22
#4 standard     rep   1  Be_          ratio  13.7047 conc 500.00
                rep   2  Be_          ratio  13.6187 conc 500.00
                rep   3  Be_          ratio  13.5981 conc 500.00
#4 standard
06/24/92 15:23
     Be_        av   13.6405              sd   0.05653 %cv   0.41 conc  500.00

06/24/92 15:23
CHECK HS        rep   1  Be_          conc    495.47 ug/L
                rep   2  Be_          conc    499.46 ug/L
                rep   3  Be_          conc    498.99 ug/L
CHECK HS
06/24/92 15:24
     Be_        av    497.97 ug/L         sd     2.181 %cv   0.44

06/24/92 15:24
ICV             rep   1  Be_          conc    233.73 ug/L
```

	rep	2	Be_	conc	229.47	ug/L		
	rep	3	Be_	conc	226.46	ug/L		
ICV								
06/24/92 15:25								
Be_	av	229.89	ug/L	sd	3.655	%cv	1.59	
06/24/92 15:26								
ICB	rep	1	Be_	conc	0.16	ug/L		
	rep	2	Be_	conc	0.51	ug/L		
	rep	3	Be_	conc	0.41	ug/L		
ICB								
06/24/92 15:26								
Be_	av	0.36	ug/L	sd	0.181	%cv	50.29	
06/24/92 15:27								
ICSAI	rep	1	Be_	conc	-22.41	ug/L		window edge
	rep	2	Be_	conc	-23.92	ug/L		window edge
	rep	3	Be_	conc	-23.37	ug/L		window edge
ICSAI								
06/24/92 15:28								
Be_	av	-23.23	ug/L	sd	0.766	%cv	3.30	
06/24/92 15:28								
ICSABI	rep	1	Be_	conc	472.93	ug/L		
	rep	2	Be_	conc	465.39	ug/L		
	rep	3	Be_	conc	472.73	ug/L		
ICSABI								
06/24/92 15:29								
Be_	av	470.35	ug/L	sd	4.297	%cv	0.91	
06/24/92 15:30								
57.037.86	rep	1	Be_	conc	6.00	ug/L		
	rep	2	Be_	conc	5.06	ug/L		
	rep	3	Be_	conc	5.01	ug/L		
57.037.86								
06/24/92 15:30								
Be_	av	5.36	ug/L	sd	0.562	%cv	10.49	
06/24/92 15:31								
57.037.48	rep	1	Be_	conc	31.74	ug/L		
	rep	2	Be_	conc	31.40	ug/L		
	rep	3	Be_	conc	31.79	ug/L		
57.037.48								
06/24/92 15:31								
Be_	av	31.64	ug/L	sd	0.211	%cv	0.67	
06/24/92 15:32								
57.037.94	rep	1	Be_	conc	3.91	ug/L		
	rep	2	Be_	conc	4.14	ug/L		
	rep	3	Be_	conc	4.66	ug/L		
57.037.94								
06/24/92 15:33								
Be_	av	4.24	ug/L	sd	0.388	%cv	9.15	
06/24/92 15:34								
57.037.53	rep	1	Be_	conc	2.81	ug/L		
	rep	2	Be_	conc	2.70	ug/L		
	rep	3	Be_	conc	2.73	ug/L		
57.037.53								
06/24/92 15:34								

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    Be_          av       2.74 ug/L          sd       0.060 %cv    2.19

06/24/92 15:35
57.037.99        rep   1  Be_          conc       9.96 ug/L
                 rep   2  Be_          conc       9.96 ug/L
                 rep   3  Be_          conc      10.26 ug/L
57   .7.99
06/24/92 15:35
    Be_          av      10.06 ug/L          sd       0.177 %cv    1.76

06/24/92 15:36
57.037.58        rep   1  Be_          conc       5.86 ug/L
                 rep   2  Be_          conc       6.10 ug/L
                 rep   3  Be_          conc       5.73 ug/L
57.037.58
06/24/92 15:37
    Be_          av       5.90 ug/L          sd       0.191 %cv    3.23

06/24/92 15:37
57.037.114       rep   1  Be_          conc      24.17 ug/L
                 rep   2  Be_          conc      24.04 ug/L
                 rep   3  Be_          conc      24.51 ug/L
57.037.114
06/24/92 15:38
    Be_          av      24.24 ug/L          sd       0.241 %cv    0.99

06/24/92 15:39
57.037.63        rep   1  Be_          conc       7.91 ug/L
                 rep   2  Be_          conc       8.14 ug/L
                 rep   3  Be_          conc       8.12 ug/L
57.037.63
06/24/92 15:39
    Be_          av       8.06 ug/L          sd       0.127 %cv    1.57

06/24/92 15:40
CCV3             rep   1  Be_          conc     226.11 ug/L
                 rep   2  Be_          conc     233.99 ug/L
                 rep   3  Be_          conc     235.26 ug/L
CCV3
06/24/92 15:41
    Be_          av     231.78 ug/L          sd       4.958 %cv    2.14

06/24/92 15:41
CCB3             rep   1  Be_          conc      -0.04 ug/L
                 rep   2  Be_          conc       0.14 ug/L
                 rep   3  Be_          conc       0.16 ug/L
CCB3
06/24/92 15:42
    Be_          av       0.09 ug/L          sd       0.107 %cv  125.0

06/24/92 15:43
57.037.125       rep   1  Be_          conc      18.91 ug/L
                 rep   2  Be_          conc      18.92 ug/L
                 rep   3  Be_          conc      19.56 ug/L
57.037.125
06/24/92 15:43
    Be_          av      19.13 ug/L          sd       0.370 %cv    1.94

06/24/92 15:44
57.037.69        rep   1  Be_          conc      38.14 ug/L
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```
                rep   2  Be_          conc      37.10 ug/L
                rep   3  Be_          conc      38.38 ug/L
57.037.69
06/24/92 15:45
    Be_         av     37.87 ug/L          sd      0.682 %cv    1.80

06/24/92 15:45
57.037.131      rep   1  Be_          conc      -0.55 ug/L           window edge
                rep   2  Be_          conc       0.52 ug/L
                rep   3  Be_          conc       2.35 ug/L
57.037.131
06/24/92 15:46
    Be_         av      0.77 ug/L          sd      1.467 %cv  190.2

06/24/92 15:47
57.037.128      rep   1  Be_          conc       0.22 ug/L
                rep   2  Be_          conc       0.05 ug/L
                rep   3  Be_          conc       0.36 ug/L
57.037.128
06/24/92 15:47
    Be_         av      0.21 ug/L          sd      0.153 %cv  73.16

06/24/92 15:48
57.037.131D     rep   1  Be_          conc       0.61 ug/L
                rep   2  Be_          conc       0.08 ug/L
                rep   3  Be_          conc      -0.27 ug/L           window edge
57.037.131D
06/24/92 15:48
    Be_         av      0.14 ug/L          sd      0.443 %cv  311.1

06/24/92 15:49
57.037.128D     rep   1  Be_          conc       0.00 ug/L
                rep   2  Be_          conc       0.09 ug/L
                rep   3  Be_          conc       0.08 ug/L
57.037.128D
06/24/92 15:50
    Be_         av      0.05 ug/L          sd      0.051 %cv  93.24

06/24/92 15:51
CCV4            rep   1  Be_          conc     275.50 ug/L
                rep   2  Be_          conc     276.16 ug/L
                rep   3  Be_          conc     278.63 ug/L
CCV4
06/24/92 15:51
    Be_         av     276.76 ug/L          sd      1.651 %cv   0.60

06/24/92 15:52
CCB4            rep   1  Be_          conc       0.73 ug/L
                rep   2  Be_          conc       0.82 ug/L
                rep   3  Be_          conc       0.31 ug/L
CCB4
06/24/92 15:52
    Be_         av      0.62 ug/L          sd      0.273 %cv  44.07

06/24/92 15:53
ICSAF           rep   1  Be_          conc     -27.96 ug/L           window edge
                rep   2  Be_          conc     -27.56 ug/L           window edge
                rep   3  Be_          conc     -28.76 ug/L           window edge
ICSAF
06/24/92 15:54
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```
    Be_          av     -28.10 ug/L          sd      0.612 %cv    2.18

06/24/92 15:54
ICSABF           rep    1   Be_          conc     569.90 ug/L
                 rep    2   Be_          conc     574.04 ug/L
                 rep    3   Be_          conc     576.16 ug/L
IC.  3F
06/24/92 15:55
    Be_          av     573.37 ug/L          sd      3.183 %cv    0.56
```

```
06/24/92 11:58
wcal standard   rep   1  Cd_        em      11419.5 conc 10.00
                rep   2  Cd_        em      11580.0 conc 10.00
                rep   3  Cd_        em      11400.8 conc 10.00
wcal standard
06/24/92 11:58
    Cd_         av  11466.76            sd    98.497 %cv   0.86 conc    10.00

06/24/92 11:59
sc blank        rep   1  Cd_        em       1275.1
06/24/92 12:00
blank           rep   1  Cd_        ratio    0.0092
                rep   2  Cd_        ratio    0.0493
                rep   3  Cd_        ratio    0.0386
blank
06/24/92 12:00
    Cd_         av    0.0324            sd   0.02073 %cv  64.03

06/24/92 12:01
#1 standard     rep   1  Cd_        ratio    0.1198 conc 10.00
                rep   2  Cd_        ratio    0.0898 conc 10.00
                rep   3  Cd_        ratio    0.1187 conc 10.00
#1 standard
06/24/92 12:01
    Cd_         av    0.1094            sd   0.01702 %cv  15.56 conc   10.00

06/24/92 12:02
#2 standard     rep   1  Cd_        ratio    0.1776 conc 20.00
                rep   2  Cd_        ratio    0.2153 conc 20.00
                rep   3  Cd_        ratio    0.1975 conc 20.00
#2 standard
06/24/92 12:02
    Cd_         av    0.1968            sd   0.01886 %cv   9.59 conc   20.00

06/24/92 12:03
#3 standard     rep   1  Cd_        ratio    2.2294 conc 250.00
                rep   2  Cd_        ratio    2.1623 conc 250.00
                rep   3  Cd_        ratio    2.0991 conc 250.00
#3 standard
06/24/92 12:03
    Cd_         av    2.1636            sd   0.06515 %cv   3.01 conc  250.00

06/24/92 12:04
#4 standard     rep   1  Cd_        ratio    4.1978 conc 500.00
                rep   2  Cd_        ratio    4.1421 conc 500.00
                rep   3  Cd_        ratio    4.1665 conc 500.00
#4 standard
06/24/92 12:04
    Cd_         av    4.1688            sd   0.02789 %cv   0.67 conc  500.00

06/24/92 12:05
CHECK HS        rep   1  Cd_        conc     502.70 ug/L
                rep   2  Cd_        conc     491.86 ug/L
                rep   3  Cd_        conc     502.24 ug/L
CHECK HS
06/24/92 12:05
    Cd_         av    498.93 ug/L       sd     6.132 %cv   1.23

06/24/92 12:06
ICV             rep   1  Cd_        conc     250.58 ug/L
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```
                rep   2  Cd_          conc     245.93 ug/L
                rep   3  Cd_          conc     258.02 ug/L
ICV
06/24/92 12:06
    Cd_         av    251.51 ug/L          sd      6.098 %cv    2.42

06/24/92 12:07
ICB             rep   1  Cd_          conc       0.36 ug/L
                rep   2  Cd_          conc      -1.35 ug/L
                rep   3  Cd_          conc      -0.93 ug/L
ICB
06/24/92 12:08
    Cd_         av     -0.64 ug/L          sd      0.892 %cv  139.4

06/24/92 12:08
ICSAI           rep   1  Cd_          conc      17.74 ug/L
                rep   2  Cd_          conc      22.96 ug/L
                rep   3  Cd_          conc      24.29 ug/L
ICSAI
06/24/92 12:09
    Cd_         av     21.66 ug/L          sd      3.459 %cv  15.97

06/24/92 12:09
ICSABI          rep   1  Cd_          conc     996.39 ug/L
                rep   2  Cd_          conc     993.86 ug/L
                rep   3  Cd_          conc    1012.04 ug/L
ICSABI
06/24/92 12:10
    Cd_         av   1000.76 ug/L          sd      9.851 %cv    0.98

06/24/92 12:10
57.037.38       rep   1  Cd_          conc   27805.18 ug/L
                rep   2  Cd_          conc   27902.04 ug/L
                rep   3  Cd_          conc   27720.19 ug/L
57.037.38
06/24/92 12:11
    Cd_         av  27809.13 ug/L          sd     90.990 %cv    0.33

06/24/92 12:12
57.038.6        rep   1  Cd_          conc       8.08 ug/L
                rep   2  Cd_          conc      12.86 ug/L
                rep   3  Cd_          conc      50.24 ug/L
57.038.6
06/24/92 12:12
    Cd_         av     23.73 ug/L          sd     23.082 %cv  97.28

06/24/92 12:13
57.037.45       rep   1  Cd_          conc   38660.07 ug/L
                rep   2  Cd_          conc   38556.61 ug/L
                rep   3  Cd_          conc   38316.86 ug/L
57.037.45
06/24/92 12:13
    Cd_         av  38511.18 ug/L          sd    176.054 %cv    0.46

06/24/92 12:14
57.037.12       rep   1  Cd_          conc      32.30 ug/L
                rep   2  Cd_          conc       0.28 ug/L
                rep   3  Cd_          conc       0.74 ug/L
57.037.12
06/24/92 12:14
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```
    Cd_          av     11.11 ug/L          sd    18.358 %cv   165.3

06/24/92 12:15
57.037.50        rep   1  Cd_          conc  42262.18 ug/L
                 rep   2  Cd_          conc  42152.45 ug/L
                 rep   3  Cd_          conc  42101.13 ug/L
57.037.50
06/24/92 12:15
    Cd_          av  42171.91 ug/L          sd    82.271 %cv    0.20

06/24/92 12:16
57.037.18        rep   1  Cd_          conc     18.87 ug/L
                 rep   2  Cd_          conc      9.65 ug/L
                 rep   3  Cd_          conc      3.77 ug/L
57.037.18
06/24/92 12:16
    Cd_          av     10.76 ug/L          sd     7.613 %cv   70.73

06/24/92 12:17
57.037.55        rep   1  Cd_          conc  38005.38 ug/L
                 rep   2  Cd_          conc  37335.38 ug/L
                 rep   3  Cd_          conc  37802.85 ug/L
57.037.55
06/24/92 12:17
    Cd_          av  37714.54 ug/L          sd   343.615 %cv    0.91

06/24/92 12:18
57.037.24        rep   1  Cd_          conc      4.62 ug/L
                 rep   2  Cd_          conc     79.61 ug/L
                 rep   3  Cd_          conc      4.02 ug/L
57.037.24
06/24/92 12:18
    Cd_          av     29.42 ug/L          sd    43.468 %cv   147.7

06/24/92 12:19
CCV1             rep   1  Cd_          conc    257.15 ug/L
                 rep   2  Cd_          conc    256.99 ug/L
                 rep   3  Cd_          conc    260.24 ug/L
CCV1
06/24/92 12:20
    Cd_          av    258.12 ug/L          sd     1.832 %cv    0.71

06/24/92 12:20
CCB1             rep   1  Cd_          conc     -0.05 ug/L
                 rep   2  Cd_          conc      1.07 ug/L
                 rep   3  Cd_          conc     -0.85 ug/L          window edge
CCB1
06/24/92 12:21
    Cd_          av      0.06 ug/L          sd     0.964 %cv  1742.

06/24/92 12:21
57.037.60        rep   1  Cd_          conc  15811.08 ug/L
                 rep   2  Cd_          conc  16131.20 ug/L
                 rep   3  Cd_          conc  15827.99 ug/L
57.037.60
06/24/92 12:22
    Cd_          av  15923.42 ug/L          sd   180.141 %cv    1.13

06/24/92 12:23
57.037.30        rep   1  Cd_          conc     17.72 ug/L
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                rep   2  Cd_          conc       2.15 ug/L
                rep   3  Cd_          conc       1.69 ug/L
57.037.30
06/24/92 12:23
    Cd_         av       7.19 ug/L          sd      9.124 %cv   126.8

06/  /92 12:24
57.037.66       rep   1  Cd_          conc   15837.76 ug/L
                rep   2  Cd_          conc   15754.96 ug/L
                rep   3  Cd_          conc   15997.84 ug/L
57.037.66
06/24/92 12:24
    Cd_         av   15863.52 ug/L          sd    123.472 %cv    0.78

06/24/92 12:25
57.037.36       rep   1  Cd_          conc       4.58 ug/L
                rep   2  Cd_          conc       3.29 ug/L
                rep   3  Cd_          conc      32.50 ug/L
57.037.36
06/24/92 12:25
    Cd_         av      13.45 ug/L          sd     16.508 %cv   122.6

06/24/92 12:26
57.037.75       rep   1  Cd_          conc     100.52 ug/L
                rep   2  Cd_          conc     106.81 ug/L
                rep   3  Cd_          conc     109.16 ug/L
57.037.75
06/24/92 12:26
    Cd_         av     105.50 ug/L          sd      4.469 %cv    4.24

06/24/92 12:27
57.037.41       rep   1  Cd_          conc    6179.22 ug/L
                rep   2  Cd_          conc    6199.21 ug/L
                rep   3  Cd_          conc    6142.65 ug/L
57.037.41
06/24/92 12:27
    Cd_         av    6173.70 ug/L          sd     28.683 %cv    0.46

06/24/92 12:28
57.037.75 L     rep   1  Cd_          conc      18.07 ug/L
                rep   2  Cd_          conc      14.66 ug/L
                rep   3  Cd_          conc      29.27 ug/L
57.037.75 L
06/24/92 12:28
    Cd_         av      20.67 ug/L          sd      7.643 %cv   36.98

06/24/92 12:29
57.037.41 L     rep   1  Cd_          conc    1202.61 ug/L
                rep   2  Cd_          conc    1206.65 ug/L
                rep   3  Cd_          conc    1202.61 ug/L
57.037.41 L
06/24/92 12:29
    Cd_         av    1203.96 ug/L          sd      2.330 %cv    0.19

06/24/92 12:30
CCV2            rep   1  Cd_          conc     257.65 ug/L
                rep   2  Cd_          conc     254.86 ug/L
                rep   3  Cd_          conc     255.65 ug/L
CC
06/24/92 12:31
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    Cd_          av    256.06 ug/L          sd      1.437 %cv    0.56

06/24/92 12:31
CCB2             rep   1  Cd_          conc      -1.20 ug/L
                 rep   2  Cd_          conc       0.13 ug/L
                 rep   3  Cd_          conc      -1.30 ug/L
CCB2
06/24/92 12:32
    Cd_          av     -0.79 ug/L          sd      0.795 %cv  100.5

06/24/92 12:33
57.037.86        rep   1  Cd_          conc     178.74 ug/L
                 rep   2  Cd_          conc     180.50 ug/L
                 rep   3  Cd_          conc     181.07 ug/L
57.037.86
06/24/92 12:33
    Cd_          av    180.10 ug/L          sd      1.214 %cv    0.67

06/24/92 12:34
57.037.48        rep   1  Cd_          conc    2298.40 ug/L
                 rep   2  Cd_          conc    2300.73 ug/L
                 rep   3  Cd_          conc    2299.41 ug/L
57.037.48
06/24/92 12:34
    Cd_          av   2299.51 ug/L          sd      1.165 %cv    0.05

06/24/92 12:35
57.037.94        rep   1  Cd_          conc     177.34 ug/L
                 rep   2  Cd_          conc     171.74 ug/L
                 rep   3  Cd_          conc     170.22 ug/L
57.037.94
06/24/92 12:35
    Cd_          av    173.10 ug/L          sd      3.749 %cv    2.17

06/24/92 12:36
57.037.53        rep   1  Cd_          conc     210.49 ug/L
                 rep   2  Cd_          conc     217.48 ug/L
                 rep   3  Cd_          conc     207.94 ug/L
57.037.53
06/24/92 12:36
    Cd_          av    211.97 ug/L          sd      4.939 %cv    2.33

06/24/92 12:37
57.037.99        rep   1  Cd_          conc     427.06 ug/L
                 rep   2  Cd_          conc     431.73 ug/L
                 rep   3  Cd_          conc     441.14 ug/L
57.037.99
06/24/92 12:37
    Cd_          av    433.31 ug/L          sd      7.171 %cv    1.65

06/24/92 12:38
57.037.58        rep   1  Cd_          conc     401.38 ug/L
                 rep   2  Cd_          conc     414.79 ug/L
                 rep   3  Cd_          conc     412.47 ug/L
57.037.58
06/24/92 12:38
    Cd_          av    409.55 ug/L          sd      7.165 %cv    1.75

06/24/92 12:39
57.037.114       rep   1  Cd_          conc     654.51 ug/L
```

```
                rep   2  Cd_          conc     650.86 ug/L
                rep   3  Cd_          conc     654.93 ug/L
57.037.114
06/24/92 12:39
    Cd_         av    653.43 ug/L          sd      2.237 %cv    0.34

0(  4/92 12:40
57.037.63       rep   1  Cd_          conc     150.99 ug/L
                rep   2  Cd_          conc     154.12 ug/L
                rep   3  Cd_          conc     154.15 ug/L
57.037.63
06/24/92 12:41
    Cd_         av    153.09 ug/L          sd      1.817 %cv    1.19

06/24/92 12:41
CCV3            rep   1  Cd_          conc     268.17 ug/L
                rep   2  Cd_          conc     260.71 ug/L
                rep   3  Cd_          conc     264.83 ug/L
CCV3
06/24/92 12:42
    Cd_         av    264.57 ug/L          sd      3.735 %cv    1.41

06/24/92 12:43
CCB3            rep   1  Cd_          conc      -1.12 ug/L
                rep   2  Cd_          conc      -0.38 ug/L
                rep   3  Cd_          conc      -0.06 ug/L
CCB3
06/24/92 12:43
    Cd_         av     -0.52 ug/L          sd      0.546 %cv  105.4

06/24/92 12:44
5? 037.125      rep   1  Cd_          conc     517.96 ug/L
                rep   2  Cd_          conc     518.41 ug/L
                rep   3  Cd_          conc     533.73 ug/L
57.037.125
06/24/92 12:44
    Cd_         av    523.37 ug/L          sd      8.980 %cv    1.72

06/24/92 12:45
57.037.69       rep   1  Cd_          conc    1240.95 ug/L
                rep   2  Cd_          conc    1259.67 ug/L
                rep   3  Cd_          conc    1261.98 ug/L
57.037.69
06/24/92 12:45
    Cd_         av   1254.20 ug/L          sd     11.532 %cv    0.92

06/24/92 12:46
57.037.131      rep   1  Cd_          conc       5.26 ug/L
                rep   2  Cd_          conc       6.78 ug/L
                rep   3  Cd_          conc       5.17 ug/L
57.037.131
06/24/92 12:46
    Cd_         av       5.74 ug/L          sd      0.906 %cv   15.78

06/24/92 12:47
57.037.128      rep   1  Cd_          conc      -0.82 ug/L
                rep   2  Cd_          conc      -0.86 ug/L
                rep   3  Cd_          conc      -0.35 ug/L
(  037.128
06/24/92 12:47
```

```
    Cd_         av     -0.68 ug/L         sd      0.283 %cv   41.74

06/24/92 12:48
57.037.131D     rep   1  Cd_         conc       2.38 ug/L
                rep   2  Cd_         conc       8.69 ug/L
                rep   3  Cd_         conc       7.32 ug/L
57.037.131D
06/24/92 12:48
    Cd_         av      6.13 ug/L         sd      3.319 %cv   54.11

06/24/92 12:49
57.037.128D     rep   1  Cd_         conc      -2.09 ug/L
                rep   2  Cd_         conc      -2.10 ug/L
                rep   3  Cd_         conc       0.58 ug/L
57.037.128D
06/24/92 12:49
    Cd_         av     -1.20 ug/L         sd      1.545 %cv   128.4

06/24/92 12:50
CCV4            rep   1  Cd_         conc     324.57 ug/L
                rep   2  Cd_         conc     335.84 ug/L
                rep   3  Cd_         conc     333.24 ug/L
CCV4
06/24/92 12:51
    Cd_         av    331.22 ug/L         sd      5.897 %cv    1.78

06/24/92 12:51
CCB4            rep   1  Cd_         conc      -0.51 ug/L
                rep   2  Cd_         conc      -1.72 ug/L
                rep   3  Cd_         conc      -0.98 ug/L
CCB4
06/24/92 12:52
    Cd_         av     -1.07 ug/L         sd      0.612 %cv   57.14

06/24/92 12:53
ICSAF           rep   1  Cd_         conc      24.55 ug/L
                rep   2  Cd_         conc      28.26 ug/L
                rep   3  Cd_         conc      22.76 ug/L
ICSAF
06/24/92 12:53
    Cd_         av     25.19 ug/L         sd      2.805 %cv   11.14

06/24/92 12:54
ICSABF          rep   1  Cd_         conc    1319.86 ug/L
                rep   2  Cd_         conc    1318.31 ug/L
                rep   3  Cd_         conc    1325.70 ug/L
ICSABF
06/24/92 12:54
    Cd_         av   1321.29 ug/L         sd      3.899 %cv    0.30
```

```
06/24/92 13:15
wcal standard   rep   1  Cd_          em      11476.9 conc 10.00
                rep   2  Cd_          em      11667.1 conc 10.00
                rep   3  Cd_          em      12012.7 conc 10.00
wcal standard
06/24/92 13:15
    Cd_         av  11718.91              sd    271.598 %cv   2.32 conc    10.00

06/24/92 13:16
sc blank        rep   1  Cd_          em       1459.2
06/24/92 13:17
blank           rep   1  Cd_          ratio    0.0460
                rep   2  Cd_          ratio    0.0318                 window edge
                rep   3  Cd_          ratio    0.0445
blank
06/24/92 13:17
    Cd_         av    0.0408              sd   0.00782 %cv  19.17

06/24/92 13:18
#1 standard     rep   1  Cd_          ratio    0.1151 conc 10.00
                rep   2  Cd_          ratio    0.0940 conc 10.00
                rep   3  Cd_          ratio    0.1199 conc 10.00
#1 standard
06/24/92 13:19
    Cd_         av    0.1097              sd   0.01379 %cv  12.58 conc    10.00

06/24/92 13:19
#2 standard     rep   1  Cd_          ratio    0.2164 conc 20.00
                rep   2  Cd_          ratio    0.1856 conc 20.00
                rep   3  Cd_          ratio    0.2080 conc 20.00
#2 standard
06/24/92 13:20
    Cd_         av    0.2033              sd   0.01595 %cv   7.84 conc    20.00

06/24/92 13:20
#3 standard     rep   1  Cd_          ratio    2.2429 conc 250.00
                rep   2  Cd_          ratio    2.2922 conc 250.00
                rep   3  Cd_          ratio    2.2881 conc 250.00
#3 standard
06/24/92 13:21
    Cd_         av    2.2744              sd   0.02733 %cv   1.20 conc   250.00

06/24/92 13:21
#4 standard     rep   1  Cd_          ratio    4.3875 conc 500.00
                rep   2  Cd_          ratio    4.4053 conc 500.00
                rep   3  Cd_          ratio    4.4360 conc 500.00
#4 standard
06/24/92 13:22
    Cd_         av    4.4096              sd   0.02450 %cv   0.56 conc   500.00

06/24/92 13:22
CHECK HS        rep   1  Cd_          conc     484.64 ug/L
                rep   2  Cd_          conc     493.49 ug/L
                rep   3  Cd_          conc     489.11 ug/L
CHECK HS
06/24/92 13:23
    Cd_         av    489.08 ug/L         sd     4.423 %cv   0.90

0   24/92 13:24
ICV             rep   1  Cd_          conc     256.57 ug/L
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```
                rep   2  Cd_          conc     246.88 ug/L
                rep   3  Cd_          conc     231.59 ug/L
ICV
06/24/92 13:29
    Cd_         av     245.01 ug/L          sd     12.595 %cv    5.14

06/24/92 13:30
ICB             rep   1  Cd_          conc       0.36 ug/L
                rep   2  Cd_          conc       0.75 ug/L
                rep   3  Cd_          conc      -1.43 ug/L
ICB
06/24/92 13:30
    Cd_         av      -0.11 ug/L          sd      1.161 %cv  1095.

06/24/92 13:31
ICSAI           rep   1  Cd_          conc      23.76 ug/L
                rep   2  Cd_          conc      20.71 ug/L
                rep   3  Cd_          conc      21.55 ug/L
ICSAI
06/24/92 13:31
    Cd_         av      22.01 ug/L          sd      1.579 %cv    7.18

06/24/92 13:32
ICSABI          rep   1  Cd_          conc     964.52 ug/L
                rep   2  Cd_          conc     976.02 ug/L
                rep   3  Cd_          conc     959.88 ug/L
ICSABI
06/24/92 13:32
    Cd_         av     966.81 ug/L          sd      8.312 %cv    0.86

06/24/92 13:33
57.037.125      rep   1  Cd_          conc     482.89 ug/L
                rep   2  Cd_          conc     475.04 ug/L
                rep   3  Cd_          conc     477.02 ug/L
57.037.125
06/24/92 13:34
    Cd_         av     478.32 ug/L          sd      4.080 %cv    0.85

06/24/92 13:34
57.037.69       rep   1  Cd_          conc    1076.14 ug/L
                rep   2  Cd_          conc    1089.60 ug/L
                rep   3  Cd_          conc    1084.92 ug/L
57.037.69
06/24/92 13:35
    Cd_         av    1083.55 ug/L          sd      6.834 %cv    0.63

06/24/92 13:35
57.037.131      rep   1  Cd_          conc       6.57 ug/L
                rep   2  Cd_          conc       6.51 ug/L
                rep   3  Cd_          conc       5.18 ug/L
57.037.131
06/24/92 13:36
    Cd_         av       6.08 ug/L          sd      0.788 %cv   12.95

06/24/92 13:36
57.037.128      rep   1  Cd_          conc       0.80 ug/L
                rep   2  Cd_          conc       1.41 ug/L
                rep   3  Cd_          conc      -1.47 ug/L
57.037.128
06/24/92 13:37
```

```
    Cd_          av       0.25 ug/L          sd      1.521 %cv  615.1

06/24/92 13:38
57.037.131D      rep   1  Cd_          conc       2.64 ug/L
                 rep   2  Cd_          conc       2.18 ug/L
                 rep   3  Cd_          conc       2.04 ug/L
57  7.131D
06/ 4/92 13:38
    Cd_          av       2.29 ug/L          sd      0.315 %cv  13.77

06/24/92 13:39
57.037.128D      rep   1  Cd_          conc       0.38 ug/L
                 rep   2  Cd_          conc       0.08 ug/L
                 rep   3  Cd_          conc       0.02 ug/L
57.037.128D
06/24/92 13:39
    Cd_          av       0.16 ug/L          sd      0.191 %cv  118.7

06/24/92 13:40
CCV4             rep   1  Cd_          conc     247.48 ug/L
                 rep   2  Cd_          conc     251.05 ug/L
                 rep   3  Cd_          conc     251.47 ug/L
CCV4
06/24/92 13:40
    Cd_          av     250.00 ug/L          sd      2.196 %cv   0.88

06/24/92 13:41
CCB4             rep   1  Cd_          conc      -2.30 ug/L
                 rep   2  Cd_          conc      -0.51 ug/L
                 rep   3  Cd_          conc       0.51 ug/L
CCB4
06/24/92 13:41
    Cd_          av      -0.76 ug/L          sd      1.425 %cv  186.4

06/24/92 13:42
ICSAF            rep   1  Cd_          conc      18.37 ug/L
                 rep   2  Cd_          conc      18.78 ug/L
                 rep   3  Cd_          conc      18.17 ug/L
ICSAF
06/24/92 13:42
    Cd_          av      18.44 ug/L          sd      0.314 %cv   1.70

06/24/92 13:43
ICSABF           rep   1  Cd_          conc     971.89 ug/L
                 rep   2  Cd_          conc     954.77 ug/L
                 rep   3  Cd_          conc     950.17 ug/L
ICSABF
06/24/92 13:43
    Cd_          av     958.94 ug/L          sd     11.443 %cv   1.19
```

```
06/24/92 16:05
wcal standard   rep   1  Cr_        em      17069.3 conc 20.00
 "    "         rep   2  Cr_        em      16551.7 conc 20.00
                rep   3  Cr_        em      17177.0 conc 20.00
wcal standard
06/24/92 16:06
    Cr_         av  16932.66             sd   334.263 %cv   1.97 conc   20.00

06/24/92 16:08
sc blank        rep   1  Cr_        em       1772.8
06/24/92 16:10
blank           rep   1  Cr_        ratio    0.2456
                rep   2  Cr_        ratio    0.2844
                rep   3  Cr_        ratio    0.2311
blank
06/24/92 16:10
    Cr_         av    0.2537             sd   0.02758 %cv  10.87

06/24/92 16:12
#1 standard     rep   1  Cr_        ratio    0.2354 conc 20.00
                rep   2  Cr_        ratio    0.2577 conc 20.00
                rep   3  Cr_        ratio    0.2432 conc 20.00
#1 standard
06/24/92 16:13
    Cr_         av    0.2455             sd   0.01129 %cv   4.60 conc   20.00

06/24/92 16:14
#2 standard     rep   1  Cr_        ratio    0.4355 conc 40.00
                rep   2  Cr_        ratio    0.4618 conc 40.00
                rep   3  Cr_        ratio    0.4802 conc 40.00
#2 standard
06/24/92 16:15
    Cr_         av    0.4591             sd   0.02247 %cv   4.89 conc   40.00

06/24/92 16:17
#3 standard     rep   1  Cr_        ratio    5.0551 conc 500.00
                rep   2  Cr_        ratio    5.0494 conc 500.00
                rep   3  Cr_        ratio    5.0352 conc 500.00
#3 standard
06/24/92 16:17
    Cr_         av    5.0466             sd   0.01026 %cv   0.20 conc  500.00

06/24/92 16:19
#4 standard     rep   1  Cr_        ratio    9.5110 conc 1000.00
                rep   2  Cr_        ratio    9.5087 conc 1000.00
                rep   3  Cr_        ratio    9.5877 conc 1000.00
#4 standard
06/24/92 16:20
    Cr_         av    9.5358             sd   0.04495 %cv   0.47 conc  1000.0

06/24/92 16:22
CHECK HS        rep   1  Cr_        conc     963.37 ug/L
                rep   2  Cr_        conc     978.01 ug/L
                rep   3  Cr_        conc     997.72 ug/L
CHECK HS
06/24/92 16:22
    Cr_         av    979.70 ug/L        sd    17.236 %cv   1.76

06/24/92 16:24
ICV             rep   1  Cr_        conc     500.14 ug/L
```

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                rep   2  Cr_          conc     504.59 ug/L
                rep   3  Cr_          conc     503.21 ug/L
ICV
06/24/92 16:24
    Cr_         av    502.65 ug/L          sd      2.275 %cv    0.45

06/24/92 16:26
ICB             rep   1  Cr_          conc       4.52 ug/L
                rep   2  Cr_          conc       6.04 ug/L
                rep   3  Cr_          conc       8.67 ug/L
ICB
06/24/92 16:27
    Cr_         av      6.41 ug/L          sd      2.101 %cv   32.78

06/24/92 16:29
ICSAI           rep   1  Cr_          conc     -11.77 ug/L
                rep   2  Cr_          conc     -14.07 ug/L
                rep   3  Cr_          conc     -13.51 ug/L
ICSAI
06/24/92 16:29
    Cr_         av    -13.12 ug/L          sd      1.196 %cv    9.12

06/24/92 16:31
ICSABI          rep   1  Cr_          conc     497.87 ug/L
                rep   2  Cr_          conc     505.84 ug/L
                rep   3  Cr_          conc     499.67 ug/L
ICSABI
06/24/92 16:32
    Cr_         av    501.13 ug/L          sd      4.179 %cv    0.83

06/24/92 16:34
57.037.38       rep   1  Cr_          conc    6655.57 ug/L
                rep   2  Cr_          conc    6728.71 ug/L
                rep   3  Cr_          conc    6743.38 ug/L
57.037.38
06/24/92 16:34
    Cr_         av   6709.22 ug/L          sd     47.038 %cv    0.70

06/24/92 16:37
57.038.6        rep   1  Cr_          conc      -4.32 ug/L
                rep   2  Cr_          conc      -7.61 ug/L
                rep   3  Cr_          conc      -5.82 ug/L
57.038.6
06/24/92 16:37
    Cr_         av      -5.91 ug/L          sd      1.645 %cv   27.82

06/24/92 16:39
57.037.45       rep   1  Cr_          conc    7744.38 ug/L
                rep   2  Cr_          conc    7623.74 ug/L
                rep   3  Cr_          conc    7826.24 ug/L
57.037.45
06/24/92 16:40
    Cr_         av   7731.45 ug/L          sd    101.866 %cv    1.32

06/24/92 16:42
57.037.12       rep   1  Cr_          conc      -5.44 ug/L
                rep   2  Cr_          conc      -5.53 ug/L
                rep   3  Cr_          conc      -5.72 ug/L
5   37.12
06/24/92 16:42
```

Cr_	av	-5.56 ug/L		sd	0.142 %cv	2.55	
06/24/92 16:45							
57.037.50	rep	1 Cr_	conc	8369.25 ug/L			
	rep	2 Cr_	conc	8284.26 ug/L			
	rep	3 Cr_	conc	8407.64 ug/L			
57.037.50							
06/24/92 16:45							
Cr_	av	8353.72 ug/L		sd	63.137 %cv	0.76	
06/24/92 16:47							
57.037.18	rep	1 Cr_	conc	6.54 ug/L			
	rep	2 Cr_	conc	6.51 ug/L			
	rep	3 Cr_	conc	1.88 ug/L			
57.037.18							
06/24/92 16:48							
Cr_	av	4.98 ug/L		sd	2.682 %cv	53.88	
06/24/92 16:50							
57.037.55	rep	1 Cr_	conc	5168.76 ug/L			
	rep	2 Cr_	conc	5180.92 ug/L			
	rep	3 Cr_	conc	5113.31 ug/L			
57.037.55							
06/24/92 16:51							
Cr_	av	5154.33 ug/L		sd	36.041 %cv	0.70	
06/24/92 16:53							
57.037.24	rep	1 Cr_	conc	-0.26 ug/L			
	rep	2 Cr_	conc	-3.77 ug/L			
	rep	3 Cr_	conc	-8.19 ug/L			
57.037.24							
06/24/92 16:53							
Cr_	av	-4.08 ug/L		sd	3.973 %cv	97.48	
06/24/92 16:55							
CCV1	rep	1 Cr_	conc	493.62 ug/L			
	rep	2 Cr_	conc	496.70 ug/L			
	rep	3 Cr_	conc	493.55 ug/L			
CCV1							
06/24/92 16:56							
Cr_	av	494.63 ug/L		sd	1.799 %cv	0.36	
06/24/92 16:58							
CCB1	rep	1 Cr_	conc	4.37 ug/L			
	rep	2 Cr_	conc	6.94 ug/L			
	rep	3 Cr_	conc	7.90 ug/L			
CCB1							
06/24/92 16:58							
Cr_	av	6.40 ug/L		sd	1.826 %cv	28.51	
06/24/92 17:00							
57.037.60	rep	1 Cr_	conc	6819.30 ug/L			
	rep	2 Cr_	conc	6814.23 ug/L			
	rep	3 Cr_	conc	6890.51 ug/L			
57.037.60							
06/24/92 17:01							
Cr_	av	6841.35 ug/L		sd	42.654 %cv	0.62	
06/24/92 17:03							
57.037.30	rep	1 Cr_	conc	-4.00 ug/L			

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                rep   2  Cr_          conc      -4.64 ug/L
                rep   3  Cr_          conc       0.34 ug/L
57.037.30
06/24/92 17:04
    Cr_         av     -2.77 ug/L          sd      2.709 %cv   97.92

0f  4/92 17:06
57.037.66       rep   1  Cr_          conc    3211.46 ug/L
                rep   2  Cr_          conc    3208.32 ug/L
                rep   3  Cr_          conc    3221.74 ug/L
57.037.66
06/24/92 17:06
    Cr_         av    3213.84 ug/L          sd      7.018 %cv    0.22

06/24/92 17:09
57.037.36       rep   1  Cr_          conc      -6.00 ug/L
                rep   2  Cr_          conc      -9.09 ug/L
                rep   3  Cr_          conc      -5.01 ug/L
57.037.36
06/24/92 17:09
    Cr_         av     -6.70 ug/L          sd      2.126 %cv   31.74

06/24/92 17:11
57.037.75       rep   1  Cr_          conc      68.63 ug/L
                rep   2  Cr_          conc      71.17 ug/L
                rep   3  Cr_          conc      81.53 ug/L
57.037.75
06/24/92 17:12
    Cr_         av      73.78 ug/L          sd      6.835 %cv    9.26

06/24/92 17:14
57.037.41       rep   1  Cr_          conc     195.76 ug/L
                rep   2  Cr_          conc     193.68 ug/L
                rep   3  Cr_          conc     185.48 ug/L
57.037.41
06/24/92 17:15
    Cr_         av     191.64 ug/L          sd      5.435 %cv    2.84

06/24/92 17:17
57.037.75 L     rep   1  Cr_          conc      21.99 ug/L
                rep   2  Cr_          conc      26.89 ug/L
                rep   3  Cr_          conc      23.85 ug/L
57.037.75 L
06/24/92 17:17
    Cr_         av      24.24 ug/L          sd      2.474 %cv   10.20

06/24/92 17:19
57.037.41 L     rep   1  Cr_          conc      37.84 ug/L
                rep   2  Cr_          conc      33.96 ug/L
                rep   3  Cr_          conc      35.34 ug/L
57.037.41 L
06/24/92 17:20
    Cr_         av      35.71 ug/L          sd      1.966 %cv    5.50

06/24/92 17:22
CCV2            rep   1  Cr_          conc     509.37 ug/L
                rep   2  Cr_          conc     512.20 ug/L
                rep   3  Cr_          conc     505.92 ug/L
C
06/24/92 17:22
```

Cr_	av	509.16	ug/L		sd	3.146	%cv	0.62
06/24/92 17:24								
CCB2	rep	1	Cr_	conc	6.65	ug/L		
	rep	2	Cr_	conc	11.46	ug/L		
	rep	3	Cr_	conc	10.38	ug/L		
CCB2								
06/24/92 17:25								
Cr_	av	9.50	ug/L		sd	2.525	%cv	26.59
06/24/92 17:27								
57.037.86	rep	1	Cr_	conc	86.29	ug/L		
	rep	2	Cr_	conc	86.31	ug/L		
	rep	3	Cr_	conc	88.46	ug/L		
57.037.86								
06/24/92 17:27								
Cr_	av	87.02	ug/L		sd	1.244	%cv	1.43
06/24/92 17:30								
57.037.48	rep	1	Cr_	conc	57.19	ug/L		
	rep	2	Cr_	conc	54.86	ug/L		
	rep	3	Cr_	conc	56.75	ug/L		
57.037.48								
06/24/92 17:30								
Cr_	av	56.27	ug/L		sd	1.236	%cv	2.20
06/24/92 17:32								
57.037.94	rep	1	Cr_	conc	80.82	ug/L		
	rep	2	Cr_	conc	76.65	ug/L		
	rep	3	Cr_	conc	78.72	ug/L		
57.037.94								
06/24/92 17:33								
Cr_	av	78.73	ug/L		sd	2.086	%cv	2.65
06/24/92 17:35								
57.037.53	rep	1	Cr_	conc	-4.79	ug/L		
	rep	2	Cr_	conc	0.06	ug/L		
	rep	3	Cr_	conc	-1.17	ug/L		
57.037.53								
06/24/92 17:35								
Cr_	av	-1.97	ug/L		sd	2.524	%cv	128.2
06/24/92 17:37								
57.037.99	rep	1	Cr_	conc	494.44	ug/L		
	rep	2	Cr_	conc	497.62	ug/L		
	rep	3	Cr_	conc	515.47	ug/L		
57.037.99								
06/24/92 17:38								
Cr_	av	502.51	ug/L		sd	11.334	%cv	2.26
06/24/92 17:40								
57.037.58	rep	1	Cr_	conc	-3.87	ug/L		
	rep	2	Cr_	conc	-0.88	ug/L		
	rep	3	Cr_	conc	2.71	ug/L		
57.037.58								
06/24/92 17:40								
Cr_	av	-0.68	ug/L		sd	3.293	%cv	482.7
06/24/92 17:42								
57.037.114	rep	1	Cr_	conc	342.63	ug/L		

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                rep   2  Cr_          conc     339.77 ug/L
                rep   3  Cr_          conc     349.82 ug/L
57.037.114
06/24/92 17:43
    Cr_         av     344.07 ug/L          sd      5.177 %cv    1.50

0(  4/92 17:45
57.037.63       rep   1  Cr_          conc      -0.48 ug/L
                rep   2  Cr_          conc       3.08 ug/L
                rep   3  Cr_          conc      -1.08 ug/L
57.037.63
06/24/92 17:45
    Cr_         av       0.51 ug/L          sd      2.250 %cv  445.0

06/24/92 17:47
CCV3            rep   1  Cr_          conc     517.23 ug/L
                rep   2  Cr_          conc     509.80 ug/L
                rep   3  Cr_          conc     516.15 ug/L
CCV3
06/24/92 17:48
    Cr_         av     514.39 ug/L          sd      4.016 %cv    0.78

06/24/92 17:50
CCB3            rep   1  Cr_          conc       8.55 ug/L
                rep   2  Cr_          conc       8.18 ug/L
                rep   3  Cr_          conc       6.50 ug/L
CCB3
06/24/92 17:50
    Cr_         av       7.74 ug/L          sd      1.092 %cv   14.10

06/24/92 17:52
57 037.125      rep   1  Cr_          conc     184.85 ug/L
                rep   2  Cr_          conc     190.16 ug/L
                rep   3  Cr_          conc     201.52 ug/L
57.037.125
06/24/92 17:53
    Cr_         av     192.18 ug/L          sd      8.516 %cv    4.43

06/24/92 17:55
57.037.69       rep   1  Cr_          conc      42.07 ug/L
                rep   2  Cr_          conc      47.48 ug/L
                rep   3  Cr_          conc      42.08 ug/L
57.037.69
06/24/92 17:55
    Cr_         av      43.88 ug/L          sd      3.118 %cv    7.11

06/24/92 17:57
57.037.131      rep   1  Cr_          conc      15.94 ug/L
                rep   2  Cr_          conc      16.84 ug/L
                rep   3  Cr_          conc      15.33 ug/L
57.037.131
06/24/92 17:58
    Cr_         av      16.03 ug/L          sd      0.762 %cv    4.75

06/24/92 18:00
57.037.128      rep   1  Cr_          conc     -14.07 ug/L
                rep   2  Cr_          conc     -10.46 ug/L
                rep   3  Cr_          conc     -10.87 ug/L
5   )37.128
06/24/92 18:00
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```
    Cr_          av    -11.80 ug/L          sd      1.976 %cv   16.75

06/24/92 18:02
57.037.131D      rep   1  Cr_          conc      11.07 ug/L
                 rep   2  Cr_          conc      10.81 ug/L
                 rep   3  Cr_          conc       9.90 ug/L
57.037.131D
06/24/92 18:03
    Cr_          av     10.60 ug/L          sd      0.616 %cv    5.81

06/24/92 18:05
57.037.128D      rep   1  Cr_          conc      -7.25 ug/L
                 rep   2  Cr_          conc     -12.31 ug/L
                 rep   3  Cr_          conc     -11.80 ug/L
57.037.128D
06/24/92 18:05
    Cr_          av    -10.46 ug/L          sd      2.786 %cv   26.64

06/24/92 18:07
CCV4             rep   1  Cr_          conc     524.56 ug/L
                 rep   2  Cr_          conc     537.40 ug/L
                 rep   3  Cr_          conc     540.54 ug/L
CCV4
06/24/92 18:08
    Cr_          av    534.17 ug/L          sd      8.470 %cv    1.59

06/24/92 18:09
CCB4             rep   1  Cr_          conc      11.10 ug/L
                 rep   2  Cr_          conc       9.40 ug/L
                 rep   3  Cr_          conc       8.77 ug/L
CCB4
06/24/92 18:10
    Cr_          av      9.76 ug/L          sd      1.205 %cv   12.35

06/24/92 18:12
ICSAF            rep   1  Cr_          conc      -9.53 ug/L
                 rep   2  Cr_          conc     -13.44 ug/L
                 rep   3  Cr_          conc      -9.54 ug/L
ICSAF
06/24/92 18:12
    Cr_          av    -10.84 ug/L          sd      2.251 %cv   20.77

06/24/92 18:14
ICSABF           rep   1  Cr_          conc     534.06 ug/L
                 rep   2  Cr_          conc     531.96 ug/L
                 rep   3  Cr_          conc     534.48 ug/L
ICSABF
06/24/92 18:15
    Cr_          av    533.50 ug/L          sd      1.351 %cv    0.25
```

```
06/25/92 11:24
wcal standard   rep   1   Ag_        em      11566.9 conc 25.00
                rep   1   Sb_        em        592.5 conc 100.00
                rep   2   Ag_        em      11774.4 conc 25.00
                rep   2   Sb_        em        610.7 conc 100.00
                rep   3   Ag_        em      12089.9 conc 25.00
                rep   3   Sb_        em        601.1 conc 100.00
wcal standard
06/25/92 11:26
    Ag_         av  11810.39              sd   263.374 %cv   2.23 conc   25.00
    Sb_         av    601.44              sd     9.136 %cv   1.52 conc  100.00

06/25/92 11:27
sc blank        rep   1   Ag_        em       1691.4
                rep   1   Sb_        em        488.3
06/25/92 11:28
blank           rep   1   Ag_        ratio    0.0428
                rep   1   Sb_        ratio    0.0201
                rep   2   Ag_        ratio    0.0449
                rep   2   Sb_        ratio    0.0418
                rep   3   Ag_        ratio    0.0563
                rep   3   Sb_        ratio    0.0084
blank
06/25/92 11:29
    Ag_         av    0.0480              sd   0.00727 %cv  15.16
    Sb_         av    0.0234              sd   0.01698 %cv  72.47

06/25/92 11:31
#1 standard     rep   1   Ag_        ratio    0.4895 conc 25.00
                rep   1   Sb_        ratio    0.0317 conc 100.00
                rep   2   Ag_        ratio    0.4670 conc 25.00
                rep   2   Sb_        ratio    0.0319 conc 100.00
                rep   3   Ag_        ratio    0.5151 conc 25.00
                rep   3   Sb_        ratio    0.0370 conc 100.00
#1 standard
06/25/92 11:32
    Ag_         av    0.4905              sd   0.02406 %cv   4.90 conc   25.00
    Sb_         av    0.0335              sd   0.00301 %cv   8.97 conc  100.00

06/25/92 11:33
#2 standard     rep   1   Ag_        ratio    1.8973 conc 100.00
                rep   1   Sb_        ratio    0.1204 conc 400.00
                rep   2   Ag_        ratio    1.8793 conc 100.00
                rep   2   Sb_        ratio    0.1206 conc 400.00
                rep   3   Ag_        ratio    1.9062 conc 100.00
                rep   3   Sb_        ratio    0.0960 conc 400.00
#2 standard
06/25/92 11:35
    Ag_         av    1.8943              sd   0.01372 %cv   0.72 conc  100.00
    Sb_         av    0.1123              sd   0.01415 %cv  12.60 conc  400.00

06/25/92 11:36
#3 standard     rep   1   Ag_        ratio    4.6206 conc 250.00
                rep   1   Sb_        ratio    0.2809 conc 1000.00
                rep   2   Ag_        ratio    4.6078 conc 250.00
                rep   2   Sb_        ratio    0.2820 conc 1000.00
                rep   3   Ag_        ratio    4.6467 conc 250.00
                rep   3   Sb_        ratio    0.2539 conc 1000.00
#  standard
06/25/92 11:37
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    Ag_          av    4.6250          sd    0.01981 %cv    0.43 conc   250.00
    Sb_          av    0.2723          sd    0.01592 %cv    5.85 conc  1000.0

06/25/92 11:38
#4 standard      rep   1  Ag_     ratio    9.4454 conc 500.00
                 rep   1  Sb_     ratio    0.5529 conc 2000.00
                 rep   2  Ag_     ratio    9.4587 conc 500.00
                 rep   2  Sb_     ratio    0.5614 conc 2000.00
                 rep   3  Ag_     ratio    9.3812 conc 500.00
                 rep   3  Sb_     ratio    0.5653 conc 2000.00
#4 standard
06/25/92 11:40
    Ag_          av    9.4284          sd    0.04144 %cv    0.44 conc   500.00
    Sb_          av    0.5599          sd    0.00633 %cv    1.13 conc  2000.0

06/25/92 11:41
CHECK HS         rep   1  Ag_     conc     494.18 ug/L
                 rep   1  Sb_     conc    2061.91 ug/L
                 rep   2  Ag_     conc     503.61 ug/L
                 rep   2  Sb_     conc    2046.80 ug/L
                 rep   3  Ag_     conc     496.44 ug/L
                 rep   3  Sb_     conc    2085.23 ug/L
CHECK HS
06/25/92 11:42
    Ag_          av     498.08 ug/L        sd     4.925 %cv    0.99
    Sb_          av    2064.65 ug/L        sd    19.358 %cv    0.94

06/25/92 11:43
ICV              rep   1  Ag_     conc     244.61 ug/L
                 rep   1  Sb_     conc    1097.25 ug/L
                 rep   2  Ag_     conc     244.01 ug/L
                 rep   2  Sb_     conc    1097.97 ug/L
                 rep   3  Ag_     conc     246.27 ug/L
                 rep   3  Sb_     conc     974.99 ug/L
ICV
06/25/92 11:45
    Ag_          av     244.96 ug/L        sd     1.170 %cv    0.48
    Sb_          av    1056.74 ug/L        sd    70.795 %cv    6.70

06/25/92 11:46
ICB              rep   1  Ag_     conc       1.30 ug/L
                 rep   1  Sb_     conc      29.38 ug/L
                 rep   2  Ag_     conc       1.58 ug/L
                 rep   2  Sb_     conc      17.81 ug/L
                 rep   3  Ag_     conc       4.09 ug/L
                 rep   3  Sb_     conc      47.95 ug/L
ICB
06/25/92 11:47
    Ag_          av       2.33 ug/L        sd     1.537 %cv   66.08
    Sb_          av      31.72 ug/L        sd    15.205 %cv   47.94

06/25/92 11:49
ICSAI            rep   1  Ag_     conc      -0.20 ug/L
                 rep   1  Sb_     conc      73.12 ug/L
                 rep   2  Ag_     conc       0.12 ug/L
                 rep   2  Sb_     conc     -25.21 ug/L
                 rep   3  Ag_     conc       2.43 ug/L
                 rep   3  Sb_     conc    -132.45 ug/L          window edge
ICSAI
06/25/92 11:50
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    Ag_          av       0.78 ug/L          sd      1.432 %cv   182.8
    Sb_          av     -28.18 ug/L          sd    102.820 %cv   364.8

 06/25/92 11:51
ICSABI           rep   1  Ag_          conc     500.64 ug/L
                 rep   1  Sb_          conc    2004.35 ug/L
                 rep   2  Ag_          conc     513.74 ug/L
                 rep   2  Sb_          conc    2053.29 ug/L
                 rep   3  Ag_          conc     505.80 ug/L
                 rep   3  Sb_          conc    2118.07 ug/L
 ICSABI
 06/25/92 11:53
    Ag_          av     506.73 ug/L          sd      6.596 %cv    1.30
    Sb_          av    2058.57 ug/L          sd     57.043 %cv    2.77

 06/25/92 11:54
 57.037.38       rep   1  Ag_          conc      12.86 ug/L
                 rep   1  Sb_          conc   21828.59 ug/L
                 rep   2  Ag_          conc      20.55 ug/L
                 rep   2  Sb_          conc   22126.60 ug/L
                 rep   3  Ag_          conc      18.67 ug/L
                 rep   3  Sb_          conc   22161.17 ug/L
 57.037.38
  06/25/92 11:55
    Ag_          av      17.36 ug/L          sd      4.009 %cv   23.09
    Sb_          av   22038.79 ug/L          sd    182.854 %cv    0.83

 06/25/92 11:56
 57.038.6        rep   1  Ag_          conc       1.64 ug/L
                 rep   1  Sb_          conc    1321.38 ug/L
                 rep   2  Ag_          conc       3.32 ug/L
                 rep   2  Sb_          conc    1327.47 ug/L
                 rep   3  Ag_          conc       2.95 ug/L
                 rep   3  Sb_          conc    1410.83 ug/L
 57.038.6
 06/25/92 11:58
    Ag_          av       2.64 ug/L          sd      0.885 %cv   33.56
    Sb_          av    1353.23 ug/L          sd     49.978 %cv    3.69

 06/25/92 11:59
  57.037.45      rep   1  Ag_          conc      11.97 ug/L
                 rep   1  Sb_          conc   27180.63 ug/L
                 rep   2  Ag_          conc      16.86 ug/L
                 rep   2  Sb_          conc   28379.18 ug/L
                 rep   3  Ag_          conc      23.27 ug/L
                 rep   3  Sb_          conc   28035.69 ug/L
 57.037.45
  06/25/92 12:00
    Ag_          av      17.37 ug/L          sd      5.663 %cv   32.61
    Sb_          av   27865.16 ug/L          sd    617.204 %cv    2.21

 06/25/92 12:01
 57.037.12       rep   1  Ag_          conc       1.50 ug/L
                 rep   1  Sb_          conc     662.79 ug/L
                 rep   2  Ag_          conc       1.33 ug/L
                 rep   2  Sb_          conc     707.94 ug/L
                 rep   3  Ag_          conc       3.10 ug/L
                 rep   3  Sb_          conc     724.51 ug/L
 5   /37.12
 06/25/92 12:03
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Ag_	av	1.98	ug/L		sd	0.976	%cv	49.31
Sb_	av	698.41	ug/L		sd	31.940	%cv	4.57

06/25/92 12:04

57.037.50	rep	1	Ag_	conc	17.26	ug/L
	rep	1	Sb_	conc	29676.60	ug/L
	rep	2	Ag_	conc	14.19	ug/L
	rep	2	Sb_	conc	29258.87	ug/L
	rep	3	Ag_	conc	20.77	ug/L
	rep	3	Sb_	conc	28976.80	ug/L

57.037.50
06/25/92 12:05

Ag_	av	17.41	ug/L		sd	3.294	%cv	18.92
Sb_	av	29304.09	ug/L		sd	352.087	%cv	1.20

06/25/92 12:06

57.037.18	rep	1	Ag_	conc	0.96	ug/L
	rep	1	Sb_	conc	803.98	ug/L
	rep	2	Ag_	conc	3.00	ug/L
	rep	2	Sb_	conc	745.94	ug/L
	rep	3	Ag_	conc	2.15	ug/L
	rep	3	Sb_	conc	730.51	ug/L

57.037.18
06/25/92 12:08

Ag_	av	2.04	ug/L		sd	1.023	%cv	50.22
Sb_	av	760.14	ug/L		sd	38.741	%cv	5.10

06/25/92 12:09

57.037.55	rep	1	Ag_	conc	22.91	ug/L
	rep	1	Sb_	conc	902.30	ug/L
	rep	2	Ag_	conc	20.13	ug/L
	rep	2	Sb_	conc	872.82	ug/L
	rep	3	Ag_	conc	23.38	ug/L
	rep	3	Sb_	conc	1050.40	ug/L

57.037.55
06/25/92 12:10

Ag_	av	22.14	ug/L		sd	1.757	%cv	7.94
Sb_	av	941.84	ug/L		sd	95.165	%cv	10.10

06/25/92 12:12

57.037.24	rep	1	Ag_	conc	2.71	ug/L
	rep	1	Sb_	conc	9.15	ug/L
	rep	2	Ag_	conc	1.81	ug/L
	rep	2	Sb_	conc	42.64	ug/L
	rep	3	Ag_	conc	1.69	ug/L
	rep	3	Sb_	conc	93.30	ug/L

57.037.24
06/25/92 12:13

Ag_	av	2.07	ug/L		sd	0.561	%cv	27.11
Sb_	av	48.36	ug/L		sd	42.368	%cv	87.60

06/25/92 12:14

CCV1	rep	1	Ag_	conc	259.82	ug/L
	rep	1	Sb_	conc	1014.70	ug/L
	rep	2	Ag_	conc	259.26	ug/L
	rep	2	Sb_	conc	1025.01	ug/L
	rep	3	Ag_	conc	253.81	ug/L
	rep	3	Sb_	conc	1031.78	ug/L

CCV1
06/25/92 12:16

	Ag_	av	257.63	ug/L		sd	3.321 %cv	1.29
	Sb_	av	1023.83	ug/L		sd	8.604 %cv	0.84
06/25/92 12:17								
CCB1		rep	1	Ag_	conc	1.71	ug/L	
		rep	1	Sb_	conc	-32.79	ug/L	
		rep	2	Ag_	conc	0.33	ug/L	
		rep	2	Sb_	conc	-11.49	ug/L	
		rep	3	Ag_	conc	3.12	ug/L	
		rep	3	Sb_	conc	-7.85	ug/L	
CCB1								
06/25/92 12:18								
	Ag_	av	1.72	ug/L		sd	1.392 %cv	80.91
	Sb_	av	-17.37	ug/L		sd	13.474 %cv	77.55
06/25/92 12:20								
57.037.60		rep	1	Ag_	conc	12.76	ug/L	
		rep	1	Sb_	conc	375.22	ug/L	
		rep	2	Ag_	conc	13.09	ug/L	
		rep	2	Sb_	conc	343.49	ug/L	
		rep	3	Ag_	conc	11.34	ug/L	
		rep	3	Sb_	conc	413.24	ug/L	
57.037.60								
06/25/92 12:21								
	Ag_	av	12.40	ug/L		sd	0.927 %cv	7.48
	Sb_	av	377.32	ug/L		sd	34.924 %cv	9.26
06/25/92 12:22								
57.037.30		rep	1	Ag_	conc	2.43	ug/L	
		rep	1	Sb_	conc	28.57	ug/L	
		rep	2	Ag_	conc	2.19	ug/L	
		rep	2	Sb_	conc	-92.65	ug/L	window edge
		rep	3	Ag_	conc	2.53	ug/L	
		rep	3	Sb_	conc	59.73	ug/L	
57.037.30								
06/25/92 12:23								
	Ag_	av	2.38	ug/L		sd	0.172 %cv	7.19
	Sb_	av	-1.45	ug/L		sd	80.500 %cv	5552.
06/25/92 12:25								
57.037.66		rep	1	Ag_	conc	13.82	ug/L	
		rep	1	Sb_	conc	446.80	ug/L	
		rep	2	Ag_	conc	13.13	ug/L	
		rep	2	Sb_	conc	465.49	ug/L	
		rep	3	Ag_	conc	15.13	ug/L	
		rep	3	Sb_	conc	387.49	ug/L	
57.037.66								
06/25/92 12:26								
	Ag_	av	14.03	ug/L		sd	1.020 %cv	7.27
	Sb_	av	433.26	ug/L		sd	40.721 %cv	9.40
06/25/92 12:27								
57.037.36		rep	1	Ag_	conc	2.15	ug/L	
		rep	1	Sb_	conc	5.54	ug/L	
		rep	2	Ag_	conc	2.15	ug/L	
		rep	2	Sb_	conc	14.59	ug/L	
		rep	3	Ag_	conc	3.72	ug/L	
		rep	3	Sb_	conc	45.98	ug/L	
037.36								
06/25/92 12:28								

Ag_	av	2.67	ug/L		sd	0.906	%cv	33.89
Sb_	av	22.04	ug/L		sd	21.224	%cv	96.31

06/25/92 12:30

57.037.75	rep	1	Ag_	conc	2.03	ug/L
	rep	1	Sb_	conc	116.65	ug/L
	rep	2	Ag_	conc	3.88	ug/L
	rep	2	Sb_	conc	68.44	ug/L
	rep	3	Ag_	conc	4.44	ug/L
	rep	3	Sb_	conc	134.13	ug/L

57.037.75
06/25/92 12:31

Ag_	av	3.45	ug/L		sd	1.259	%cv	36.47
Sb_	av	106.41	ug/L		sd	34.020	%cv	31.97

06/25/92 12:32

57.037.41	rep	1	Ag_	conc	1.70	ug/L
	rep	1	Sb_	conc	10611.97	ug/L
	rep	2	Ag_	conc	3.31	ug/L
	rep	2	Sb_	conc	10591.86	ug/L
	rep	3	Ag_	conc	2.94	ug/L
	rep	3	Sb_	conc	10394.94	ug/L

57.037.41
06/25/92 12:33

Ag_	av	2.65	ug/L		sd	0.841	%cv	31.71
Sb_	av	10532.92	ug/L		sd	119.921	%cv	1.14

06/25/92 12:35

57.037.75 L	rep	1	Ag_	conc	4.54	ug/L
	rep	1	Sb_	conc	480.59	ug/L
	rep	2	Ag_	conc	8.54	ug/L
	rep	2	Sb_	conc	185.73	ug/L
	rep	3	Ag_	conc	1.80	ug/L
	rep	3	Sb_	conc	117.16	ug/L

57.037.75 L
06/25/92 12:36

Ag_	av	4.96	ug/L		sd	3.388	%cv	68.30
Sb_	av	261.16	ug/L		sd	193.101	%cv	73.94

06/25/92 12:37

57.037.41 L	rep	1	Ag_	conc	3.09	ug/L
	rep	1	Sb_	conc	1985.80	ug/L
	rep	2	Ag_	conc	0.35	ug/L
	rep	2	Sb_	conc	2067.55	ug/L
	rep	3	Ag_	conc	0.66	ug/L
	rep	3	Sb_	conc	2179.09	ug/L

57.037.41 L
06/25/92 12:38

Ag_	av	1.37	ug/L		sd	1.497	%cv	109.4
Sb_	av	2077.48	ug/L		sd	97.023	%cv	4.67

06/25/92 12:40

CCV2	rep	1	Ag_	conc	255.61	ug/L
	rep	1	Sb_	conc	1004.04	ug/L
	rep	2	Ag_	conc	261.57	ug/L
	rep	2	Sb_	conc	1033.87	ug/L
	rep	3	Ag_	conc	256.20	ug/L
	rep	3	Sb_	conc	908.53	ug/L

CCV2
06/25/92 12:41

Ag_	av	257.79	ug/L		sd	3.285	%cv	1.27
Sb_	av	982.15	ug/L		sd	65.479	%cv	6.67

06/25/92 12:42

CCB2	rep	1	Ag_	conc	1.69	ug/L
	rep	1	Sb_	conc	-13.94	ug/L
	rep	2	Ag_	conc	0.26	ug/L
	rep	2	Sb_	conc	18.48	ug/L
	rep	3	Ag_	conc	0.44	ug/L
	rep	3	Sb_	conc	40.95	ug/L

CCB2
06/25/92 12:44

Ag_	av	0.80	ug/L		sd	0.780	%cv	97.85
Sb_	av	15.16	ug/L		sd	27.593	%cv	181.9

06/25/92 12:45

57.037.86	rep	1	Ag_	conc	13.96	ug/L
	rep	1	Sb_	conc	207.01	ug/L
	rep	2	Ag_	conc	8.69	ug/L
	rep	2	Sb_	conc	103.50	ug/L
	rep	3	Ag_	conc	9.89	ug/L
	rep	3	Sb_	conc	175.23	ug/L

57.037.86
06/25/92 12:47

Ag_	av	10.85	ug/L		sd	2.764	%cv	25.48
Sb_	av	161.91	ug/L		sd	53.020	%cv	32.75

06/25/92 12:48

57.037.48	rep	1	Ag_	conc	1.86	ug/L
	rep	1	Sb_	conc	6055.90	ug/L
	rep	2	Ag_	conc	1.54	ug/L
	rep	2	Sb_	conc	5821.05	ug/L
	rep	3	Ag_	conc	3.28	ug/L
	rep	3	Sb_	conc	5947.98	ug/L

57.037.48
06/25/92 12:49

Ag_	av	2.23	ug/L		sd	0.929	%cv	41.69
Sb_	av	5941.64	ug/L		sd	117.554	%cv	1.98

06/25/92 12:50

57.037.94	rep	1	Ag_	conc	6.01	ug/L
	rep	1	Sb_	conc	311.09	ug/L
	rep	2	Ag_	conc	3.53	ug/L
	rep	2	Sb_	conc	219.17	ug/L
	rep	3	Ag_	conc	6.22	ug/L
	rep	3	Sb_	conc	203.39	ug/L

57.037.94
06/25/92 12:52

Ag_	av	5.25	ug/L		sd	1.494	%cv	28.45
Sb_	av	244.55	ug/L		sd	58.164	%cv	23.78

06/25/92 12:53

57.037.53	rep	1	Ag_	conc	2.84	ug/L
	rep	1	Sb_	conc	4855.83	ug/L
	rep	2	Ag_	conc	0.12	ug/L
	rep	2	Sb_	conc	4842.24	ug/L
	rep	3	Ag_	conc	1.35	ug/L
	rep	3	Sb_	conc	5102.35	ug/L

5 037.53
06/25/92 12:54

Ag_	av	1.44	ug/L	sd	1.365	%cv	95.07	
Sb_	av	4933.48	ug/L	sd	146.407	%cv	2.97	
06/25/92 12:55								
57.037.99	rep	1	Ag_	conc	12.60	ug/L		
	rep	1	Sb_	conc	-290.65	ug/L		window edge
	rep	2	Ag_	conc	11.11	ug/L		
	rep	2	Sb_	conc	163.94	ug/L		
	rep	3	Ag_	conc	8.91	ug/L		
	rep	3	Sb_	conc	-127.98	ug/L		window edge
57.037.99								
06/25/92 12:57								
Ag_	av	10.87	ug/L	sd	1.854	%cv	17.05	
Sb_	av	-84.90	ug/L	sd	230.334	%cv	271.3	
06/25/92 12:58								
57.037.58	rep	1	Ag_	conc	3.61	ug/L		
	rep	1	Sb_	conc	-6.54	ug/L		window edge
	rep	2	Ag_	conc	1.77	ug/L		
	rep	2	Sb_	conc	147.12	ug/L		
	rep	3	Ag_	conc	3.04	ug/L		
	rep	3	Sb_	conc	88.49	ug/L		
57.037.58								
06/25/92 12:59								
Ag_	av	2.81	ug/L	sd	0.940	%cv	33.49	
Sb_	av	76.36	ug/L	sd	77.547	%cv	101.5	
06/25/92 13:00								
57.037.114	rep	1	Ag_	conc	17.32	ug/L		
	rep	1	Sb_	conc	131.89	ug/L		
	rep	2	Ag_	conc	8.34	ug/L		
	rep	2	Sb_	conc	43.57	ug/L		
	rep	3	Ag_	conc	16.66	ug/L		
	rep	3	Sb_	conc	53.68	ug/L		
57.037.114								
06/25/92 13:02								
Ag_	av	14.11	ug/L	sd	5.002	%cv	35.46	
Sb_	av	76.38	ug/L	sd	48.340	%cv	63.29	
06/25/92 13:03								
57.037.63	rep	1	Ag_	conc	1.19	ug/L		
	rep	1	Sb_	conc	87.18	ug/L		
	rep	2	Ag_	conc	2.92	ug/L		
	rep	2	Sb_	conc	29.27	ug/L		
	rep	3	Ag_	conc	2.23	ug/L		
	rep	3	Sb_	conc	32.63	ug/L		
57.037.63								
06/25/92 13:04								
Ag_	av	2.11	ug/L	sd	0.868	%cv	41.08	
Sb_	av	49.69	ug/L	sd	32.505	%cv	65.41	
06/25/92 13:05								
CCV3	rep	1	Ag_	conc	262.69	ug/L		
	rep	1	Sb_	conc	1064.73	ug/L		
	rep	2	Ag_	conc	262.38	ug/L		
	rep	2	Sb_	conc	1065.50	ug/L		
	rep	3	Ag_	conc	260.81	ug/L		
	rep	3	Sb_	conc	1017.67	ug/L		
CCV3								
06/25/92 13:07								

	Ag_	av	261.96	ug/L		sd	1.008 %cv	0.38
	Sb_	av	1049.30	ug/L		sd	27.397 %cv	2.61
06/25/92 13:08								
CCB3		rep	1	Ag_	conc	2.66	ug/L	
		rep	1	Sb_	conc	-18.44	ug/L	
		rep	2	Ag_	conc	1.89	ug/L	
		rep	2	Sb_	conc	7.56	ug/L	
		rep	3	Ag_	conc	0.92	ug/L	
		rep	3	Sb_	conc	48.66	ug/L	
CCB3								
06/25/92 13:09								
	Ag_	av	1.82	ug/L		sd	0.870 %cv	47.68
	Sb_	av	12.60	ug/L		sd	33.833 %cv	268.6
06/25/92 13:11								
57.037.125		rep	1	Ag_	conc	5.41	ug/L	
		rep	1	Sb_	conc	357.33	ug/L	
		rep	2	Ag_	conc	10.89	ug/L	
		rep	2	Sb_	conc	44.51	ug/L	
		rep	3	Ag_	conc	5.69	ug/L	
		rep	3	Sb_	conc	382.39	ug/L	
57.037.125								
06/25/92 13:12								
	Ag_	av	7.33	ug/L		sd	3.084 %cv	42.07
	Sb_	av	261.41	ug/L		sd	188.260 %cv	72.02
06/25/92 13:13								
57.037.69		rep	1	Ag_	conc	5.12	ug/L	
		rep	1	Sb_	conc	61.13	ug/L	
		rep	2	Ag_	conc	4.10	ug/L	
		rep	2	Sb_	conc	19.11	ug/L	
		rep	3	Ag_	conc	3.90	ug/L	
		rep	3	Sb_	conc	107.08	ug/L	
57.037.69								
06/25/92 13:15								
	Ag_	av	4.37	ug/L		sd	0.656 %cv	15.00
	Sb_	av	62.44	ug/L		sd	43.996 %cv	70.46
06/25/92 13:16								
57.037.131		rep	1	Ag_	conc	1.84	ug/L	
		rep	1	Sb_	conc	-126.91	ug/L	window edge
		rep	2	Ag_	conc	6.70	ug/L	
		rep	2	Sb_	conc	-216.33	ug/L	window edge
		rep	3	Ag_	conc	3.96	ug/L	
		rep	3	Sb_	conc	48.50	ug/L	window edge
57.037.131								
06/25/92 13:17								
	Ag_	av	4.17	ug/L		sd	2.438 %cv	58.49
	Sb_	av	-98.25	ug/L		sd	134.720 %cv	137.1
06/25/92 13:18								
57.037.128		rep	1	Ag_	conc	-0.13	ug/L	
		rep	1	Sb_	conc	24.12	ug/L	
		rep	2	Ag_	conc	0.42	ug/L	
		rep	2	Sb_	conc	-1.86	ug/L	
		rep	3	Ag_	conc	1.04	ug/L	
		rep	3	Sb_	conc	20.65	ug/L	
5 37.128								
06/25/92 13:20								

	Ag_	av		0.44	ug/L		sd	0.582	%cv	131.8	
	Sb_	av		14.30	ug/L		sd	14.106	%cv	98.64	
06/25/92 13:21											
57.037.131D		rep	1	Ag_		conc	4.37	ug/L			
		rep	1	Sb_		conc	4.17	ug/L			window edge
		rep	2	Ag_		conc	5.08	ug/L			
		rep	2	Sb_		conc	92.52	ug/L			
		rep	3	Ag_		conc	4.75	ug/L			
		rep	3	Sb_		conc	168.43	ug/L			
57.037.131D											
06/25/92 13:22											
	Ag_	av		4.73	ug/L		sd	0.355	%cv	7.49	
	Sb_	av		88.38	ug/L		sd	82.210	%cv	93.02	
06/25/92 13:23											
57.037.128D		rep	1	Ag_		conc	1.66	ug/L			
		rep	1	Sb_		conc	15.65	ug/L			
		rep	2	Ag_		conc	1.16	ug/L			window edge
		rep	2	Sb_		conc	27.01	ug/L			
		rep	3	Ag_		conc	1.62	ug/L			
		rep	3	Sb_		conc	27.68	ug/L			
57.037.128D											
06/25/92 13:25											
	Ag_	av		1.48	ug/L		sd	0.278	%cv	18.77	
	Sb_	av		23.45	ug/L		sd	6.758	%cv	28.82	
06/25/92 13:26											
CCV4		rep	1	Ag_		conc	258.65	ug/L			
		rep	1	Sb_		conc	1026.44	ug/L			
		rep	2	Ag_		conc	268.14	ug/L			
		rep	2	Sb_		conc	1002.52	ug/L			
		rep	3	Ag_		conc	267.82	ug/L			
		rep	3	Sb_		conc	1033.97	ug/L			
CCV4											
06/25/92 13:27											
	Ag_	av		264.87	ug/L		sd	5.389	%cv	2.03	
	Sb_	av		1020.98	ug/L		sd	16.424	%cv	1.61	
06/25/92 13:29											
CCB4		rep	1	Ag_		conc	0.53	ug/L			
		rep	1	Sb_		conc	1.21	ug/L			
		rep	2	Ag_		conc	-0.18	ug/L			window edge
		rep	2	Sb_		conc	43.50	ug/L			
		rep	3	Ag_		conc	1.95	ug/L			
		rep	3	Sb_		conc	11.16	ug/L			window edge
CCB4											
06/25/92 13:30											
	Ag_	av		0.76	ug/L		sd	1.086	%cv	142.2	
	Sb_	av		18.63	ug/L		sd	22.113	%cv	118.7	
06/25/92 13:31											
ICSAF		rep	1	Ag_		conc	2.18	ug/L			
		rep	1	Sb_		conc	-122.15	ug/L			window edge
		rep	2	Ag_		conc	1.70	ug/L			
		rep	2	Sb_		conc	-22.91	ug/L			
		rep	3	Ag_		conc	1.73	ug/L			
		rep	3	Sb_		conc	43.47	ug/L			
ICSAF											
06/25/92 13:32											

Ag_	av	1.87	ug/L	sd	0.267	%cv	14.26
Sb_	av	-33.86	ug/L	sd	83.353	%cv	246.1

06/25/92 13:34

ICSABF	rep	1	Ag_	conc	539.78	ug/L
	rep	1	Sb_	conc	2266.27	ug/L
	rep	2	Ag_	conc	541.24	ug/L
	rep	2	Sb_	conc	2158.19	ug/L
	rep	3	Ag_	conc	557.79	ug/L
	rep	3	Sb_	conc	2151.26	ug/L

ICSABF
06/25/92 13:35

Ag_	av	546.27	ug/L	sd	10.003	%cv	1.83
Sb_	av	2191.91	ug/L	sd	64.496	%cv	2.94

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06/25/92 09:02
wcal standard   rep   1   As_        em       1024.7 conc 500.00
                rep   1   Pb_        em        866.3 conc 250.00
                rep   2   As_        em       1099.0 conc 500.00
                rep   2   Pb_        em        941.4 conc 250.00
                rep   3   As_        em       1142.2 conc 500.00
                rep   3   Pb_        em       1004.5 conc 250.00
wcal standard
06/25/92 09:03
    As_         av   1088.64              sd    59.451 %cv   5.46 conc  500.00
    Pb_         av    937.40              sd    69.142 %cv   7.38 conc  250.00

06/25/92 09:04
sc blank        rep   1   As_        em        666.4
                rep   1   Pb_        em       1124.7                 window edge
06/25/92 09:05
blank           rep   1   As_        ratio    0.0329
                rep   1   Pb_        ratio    0.0259
                rep   2   As_        ratio    0.0008                 window edge
                rep   2   Pb_        ratio    0.0218
                rep   3   As_        ratio    0.0267
                rep   3   Pb_        ratio    0.0403
blank
06/25/92 09:06
    As_         av    0.0201              sd   0.01701 %cv  84.42
    Pb_         av    0.0294              sd   0.00972 %cv  33.12

06/25/92 09:07
#1 standard     rep   1   As_        ratio    0.1942 conc 500.00
                rep   1   Pb_        ratio    0.1750 conc 250.00
                rep   2   As_        ratio    0.1843 conc 500.00
                rep   2   Pb_        ratio    0.1840 conc 250.00
                rep   3   As_        ratio    0.1928 conc 500.00
                rep   3   Pb_        ratio    0.2183 conc 250.00
#1 standard
06/25/92 09:08
    As_         av    0.1904              sd   0.00536 %cv   2.81 conc  500.00
    Pb_         av    0.1924              sd   0.02284 %cv  11.87 conc  250.00

06/25/92 09:09
#2 standard     rep   1   As_        ratio    0.3418 conc 1000.00
                rep   1   Pb_        ratio    0.3715 conc 500.00
                rep   2   As_        ratio    0.3485 conc 1000.00
                rep   2   Pb_        ratio    0.3802 conc 500.00
                rep   3   As_        ratio    0.3567 conc 1000.00
                rep   3   Pb_        ratio    0.3571 conc 500.00
#2 standard
06/25/92 09:10
    As_         av    0.3490              sd   0.00744 %cv   2.13 conc  1000.0
    Pb_         av    0.3696              sd   0.01165 %cv   3.15 conc  500.00

06/25/92 09:11
#3 standard     rep   1   As_        ratio    0.6907 conc 2000.00
                rep   1   Pb_        ratio    0.6745 conc 1000.00
                rep   2   As_        ratio    0.6777 conc 2000.00
                rep   2   Pb_        ratio    0.6708 conc 1000.00
                rep   3   As_        ratio    0.6999 conc 2000.00
                rep   3   Pb_        ratio    0.6818 conc 1000.00
#3 standard
06/25/92 09:12
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    As_          av    0.6894              sd    0.01114 %cv    1.62 conc   2000.0
    Pb_          av    0.6757              sd    0.00562 %cv    0.83 conc   1000.0

06/25/92 09:13
#4 standard      rep   1  As_        ratio    1.3642 conc 4000.00
                 rep   1  Pb_        ratio    1.3319 conc 2000.00
                 rep   2  As_        ratio    1.3592 conc 4000.00
                 rep   2  Pb_        ratio    1.3079 conc 2000.00
                 rep   3  As_        ratio    1.3416 conc 4000.00
                 rep   3  Pb_        ratio    1.2987 conc 2000.00
#4 standard
06/25/92 09:13
    As_          av    1.3550              sd    0.01188 %cv    0.88 conc   4000.0
    Pb_          av    1.3128              sd    0.01713 %cv    1.30 conc   2000.0

06/25/92 09:14
CHECK HS         rep   1  As_        conc   4025.55 ug/L
                 rep   1  Pb_        conc   1933.77 ug/L
                 rep   2  As_        conc   3970.58 ug/L
                 rep   2  Pb_        conc   1984.41 ug/L
                 rep   3  As_        conc   4034.08 ug/L
                 rep   3  Pb_        conc   2006.69 ug/L
CHECK HS
06/25/92 09:15
    As_          av   4010.07 ug/L         sd     34.461 %cv    0.86
    Pb_          av   1974.96 ug/L         sd     37.368 %cv    1.89

06/25/92 09:16
ICV              rep   1  As_        conc   2043.09 ug/L
                 rep   1  Pb_        conc    961.74 ug/L
                 rep   2  As_        conc   1973.40 ug/L
                 rep   2  Pb_        conc   1018.22 ug/L
                 rep   3  As_        conc   1930.94 ug/L
                 rep   3  Pb_        conc   1004.86 ug/L
ICV
06/25/92 09:17
    As_          av   1982.48 ug/L         sd     56.621 %cv    2.86
    Pb_          av    994.94 ug/L         sd     29.517 %cv    2.97

06/25/92 09:18
ICB              rep   1  As_        conc     10.27 ug/L
                 rep   1  Pb_        conc     -5.04 ug/L
                 rep   2  As_        conc      1.33 ug/L
                 rep   2  Pb_        conc    -13.15 ug/L
                 rep   3  As_        conc      3.77 ug/L
                 rep   3  Pb_        conc     -5.86 ug/L
ICB
06/25/92 09:19
    As_          av      5.12 ug/L         sd      4.621 %cv   90.26
    Pb_          av     -8.02 ug/L         sd      4.462 %cv   55.64

06/25/92 09:20
ICSAI            rep   1  As_        conc     34.83 ug/L
                 rep   1  Pb_        conc   -191.52 ug/L          window edge
                 rep   2  As_        conc     27.80 ug/L
                 rep   2  Pb_        conc   -189.35 ug/L          window edge
                 rep   3  As_        conc    -36.07 ug/L          window edge
                 rep   3  Pb_        conc   -221.19 ug/L          window edge
IC  .I
06/25/92 09:21
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    As_          av      8.85 ug/L          sd     39.064 %cv   441.2
    Pb_          av   -200.69 ug/L          sd     17.792 %cv    8.87

06/25/92 09:22
ICSABI           rep   1  As_          conc    6441.98 ug/L
                 rep   1  Pb_          conc    1719.29 ug/L
                 rep   2  As_          conc    4410.48 ug/L
                 rep   2  Pb_          conc    1120.50 ug/L
                 rep   3  As_          conc    5342.93 ug/L
                 rep   3  Pb_          conc    2944.14 ug/L
ICSABI
06/25/92 09:22          5000,2000 check
    As_          av   5398.46 ug/L          sd  1016.886 %cv   18.84
    Pb_          av   1927.98 ug/L          sd   929.556 %cv   48.21

06/25/92 09:23
57.037.38        rep   1  As_          conc   33644.52 ug/L
                 rep   1  Pb_          conc  443499.53 ug/L
                 rep   2  As_          conc   34551.85 ug/L
                 rep   2  Pb_          conc  455294.03 ug/L
                 rep   3  As_          conc   34757.22 ug/L
                 rep   3  Pb_          conc  461969.78 ug/L
57.037.38
06/25/92 09:24
    As_          av  34317.86 ug/L          sd   592.104 %cv    1.73
    Pb_          av  453587.7 ug/L          sd  9352.603 %cv    2.06

06/25/92 09:25
57.038.6         rep   1  As_          conc      28.57 ug/L
                 rep   1  Pb_          conc     237.86 ug/L
                 rep   2  As_          conc      68.04 ug/L
                 rep   2  Pb_          conc     228.08 ug/L
                 rep   3  As_          conc      42.24 ug/L
                 rep   3  Pb_          conc     239.69 ug/L
57.038.6
06/25/92 09:26
    As_          av     46.29 ug/L          sd    20.041 %cv   43.30
    Pb_          av    235.21 ug/L          sd     6.241 %cv    2.65

06/25/92 09:27
57.037.45        rep   1  As_          conc   39869.03 ug/L
                 rep   1  Pb_          conc  654305.44 ug/L
                 rep   2  As_          conc   41009.12 ug/L
                 rep   2  Pb_          conc  654217.25 ug/L
                 rep   3  As_          conc   40224.24 ug/L
                 rep   3  Pb_          conc  654450.38 ug/L
57.037.45
06/25/92 09:28
    As_          av  40367.46 ug/L          sd   583.384 %cv    1.45
    Pb_          av  654324.3 ug/L          sd   117.711 %cv    0.02

06/25/92 09:29
57.037.12        rep   1  As_          conc     118.73 ug/L
                 rep   1  Pb_          conc     282.31 ug/L
                 rep   2  As_          conc       4.80 ug/L
                 rep   2  Pb_          conc     206.92 ug/L
                 rep   3  As_          conc     -21.64 ug/L
                 rep   3  Pb_          conc     212.73 ug/L
57.037.12
06/25/92 09:30
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    As_          av      33.96 ug/L          sd     74.589 %cv  219.6
    Pb_          av     233.99 ug/L          sd     41.952 %cv  17.93

06/25/92 09:31
57.037.50        rep   1  As_          conc  38999.00 ug/L
                 rep   1  Pb_          conc 514890.50 ug/L
                 rep   2  As_          conc  40878.99 ug/L
                 rep   2  Pb_          conc 527179.88 ug/L
                 rep   3  As_          conc  41327.56 ug/L
                 rep   3  Pb_          conc 533890.63 ug/L
57.037.50
06/25/92 09:31
    As_          av  40401.85 ug/L          sd  1235.432 %cv   3.06
    Pb_          av  525320.3 ug/L          sd  9635.604 %cv   1.83

06/25/92 09:32
57.037.18        rep   1  As_          conc     56.55 ug/L
                 rep   1  Pb_          conc    196.43 ug/L
                 rep   2  As_          conc     43.46 ug/L
                 rep   2  Pb_          conc    267.69 ug/L
                 rep   3  As_          conc     -2.44 ug/L
                 rep   3  Pb_          conc    204.17 ug/L
57.037.18
06/25/92 09:33
    As_          av      32.52 ug/L          sd     30.977 %cv  95.24
    Pb_          av     222.76 ug/L          sd     39.104 %cv  17.55

06/25/92 09:34
57.037.55        rep   1  As_          conc  27806.91 ug/L
                 rep   1  Pb_          conc 647937.69 ug/L
                 rep   2  As_          conc  27838.51 ug/L
                 rep   2  Pb_          conc 663311.31 ug/L
                 rep   3  As_          conc  27913.84 ug/L
                 rep   3  Pb_          conc 657760.00 ug/L
57.037.55
06/25/92 09:35
    As_          av  27853.09 ug/L          sd     54.934 %cv   0.20
    Pb_          av  656336.3 ug/L          sd  7785.036 %cv   1.19

06/25/92 09:36
57.037.24        rep   1  As_          conc     53.57 ug/L
                 rep   1  Pb_          conc    988.72 ug/L
                 rep   2  As_          conc     37.08 ug/L
                 rep   2  Pb_          conc    303.45 ug/L
                 rep   3  As_          conc     14.42 ug/L
                 rep   3  Pb_          conc    253.03 ug/L
57.037.24
06/25/92 09:37
    As_          av      35.02 ug/L          sd     19.652 %cv  56.11
    Pb_          av     515.07 ug/L          sd    410.972 %cv  79.79

06/25/92 09:38
CCV1             rep   1  As_          conc   1996.26 ug/L
                 rep   1  Pb_          conc   1137.67 ug/L
                 rep   2  As_          conc   1966.37 ug/L
                 rep   2  Pb_          conc   1140.51 ug/L
                 rep   3  As_          conc   2048.14 ug/L
                 rep   3  Pb_          conc   1013.31 ug/L

06/25/92 09:39
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    As_          av   2003.59 ug/L          sd     41.373 %cv    2.06
    Pb_          av   1097.16 ug/L          sd     72.632 %cv    6.62

06/25/92 09:40
CCB1             rep   1  As_          conc     -18.35 ug/L
                 rep   1  Pb_          conc     -18.80 ug/L
                 rep   2  As_          conc      20.23 ug/L
                 rep   2  Pb_          conc      -4.42 ug/L
                 rep   3  As_          conc       7.86 ug/L
                 rep   3  Pb_          conc     -36.10 ug/L
CCB1
06/25/92 09:41
    As_          av      3.25 ug/L          sd     19.697 %cv  606.2
    Pb_          av    -19.77 ug/L          sd     15.861 %cv  80.21

06/25/92 09:42
57.037.60        rep   1  As_          conc  13381.12 ug/L
                 rep   1  Pb_          conc 114838.55 ug/L
                 rep   2  As_          conc  13176.05 ug/L
                 rep   2  Pb_          conc 116359.04 ug/L
                 rep   3  As_          conc  13448.91 ug/L
                 rep   3  Pb_          conc 116143.16 ug/L
57.037.60
06/25/92 09:43
    As_          av  13335.36 ug/L          sd    142.071 %cv   1.07
    Pb_          av  115780.2 ug/L          sd    822.648 %cv   0.71

06/25/92 09:44
57.037.30        rep   1  As_          conc      20.67 ug/L
                 rep   1  Pb_          conc     147.14 ug/L
                 rep   2  As_          conc      35.96 ug/L
                 rep   2  Pb_          conc      61.39 ug/L
                 rep   3  As_          conc      60.86 ug/L
                 rep   3  Pb_          conc      33.38 ug/L
57.037.30
06/25/92 09:44
    As_          av     39.16 ug/L          sd     20.285 %cv  51.80
    Pb_          av     80.64 ug/L          sd     59.273 %cv  73.51

06/25/92 09:45
57.037.66        rep   1  As_          conc  14858.99 ug/L
                 rep   1  Pb_          conc 257855.22 ug/L
                 rep   2  As_          conc  15066.02 ug/L
                 rep   2  Pb_          conc 258912.63 ug/L
                 rep   3  As_          conc  15525.14 ug/L
                 rep   3  Pb_          conc 258981.48 ug/L
57.037.66
06/25/92 09:46
    As_          av  15150.05 ug/L          sd    340.935 %cv   2.25
    Pb_          av  258583.1 ug/L          sd    631.314 %cv   0.24

06/25/92 09:47
57.037.36        rep   1  As_          conc      36.55 ug/L
                 rep   1  Pb_          conc     231.37 ug/L
                 rep   2  As_          conc       4.19 ug/L
                 rep   2  Pb_          conc     126.08 ug/L
                 rep   3  As_          conc      23.46 ug/L
                 rep   3  Pb_          conc      93.76 ug/L
57.037.36
06/25/92 09:48
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    As_          av      21.40 ug/L          sd     16.277 %cv   76.06
    Pb_          av     150.40 ug/L          sd     71.955 %cv   47.84

06/25/92 09:49
57.037.75        rep   1  As_          conc     152.34 ug/L
                 rep   1  Pb_          conc    1313.21 ug/L
                 rep   2  As_          conc     173.25 ug/L
                 rep   2  Pb_          conc    1363.01 ug/L
                 rep   3  As_          conc     121.38 ug/L
                 rep   3  Pb_          conc    1372.22 ug/L
57.037.75
06/25/92 09:50
    As_          av     148.99 ug/L          sd     26.093 %cv   17.51
    Pb_          av    1349.48 ug/L          sd     31.749 %cv    2.35

06/25/92 09:51
57.037.41        rep   1  As_          conc    2339.57 ug/L
                 rep   1  Pb_          conc   61813.69 ug/L
                 rep   2  As_          conc    2258.21 ug/L
                 rep   2  Pb_          conc   62139.15 ug/L
                 rep   3  As_          conc    2208.72 ug/L
                 rep   3  Pb_          conc   61704.69 ug/L
57.037.41
06/25/92 09:52
    As_          av    2268.83 ug/L          sd     66.069 %cv    2.91
    Pb_          av   61885.84 ug/L          sd    226.040 %cv    0.37

06/25/92 09:53
57.037.75 L      rep   1  As_          conc     225.74 ug/L
                 rep   1  Pb_          conc     822.48 ug/L
                 rep   2  As_          conc     170.56 ug/L
                 rep   2  Pb_          conc     834.69 ug/L
                 rep   3  As_          conc     270.28 ug/L
                 rep   3  Pb_          conc     896.03 ug/L
57.037.75 L
06/25/92 09:53
    As_          av     222.19 ug/L          sd     49.956 %cv   22.48
    Pb_          av     851.07 ug/L          sd     39.414 %cv    4.63

06/25/92 09:54
57.037.41 L      rep   1  As_          conc     439.78 ug/L
                 rep   1  Pb_          conc   12379.66 ug/L
                 rep   2  As_          conc     431.11 ug/L
                 rep   2  Pb_          conc   12284.42 ug/L
                 rep   3  As_          conc     426.25 ug/L
                 rep   3  Pb_          conc   12362.38 ug/L
57.037.41 L
06/25/92 09:55
    As_          av     432.38 ug/L          sd      6.857 %cv    1.59
    Pb_          av   12342.15 ug/L          sd     50.740 %cv    0.41

06/25/92 09:56
CCV2             rep   1  As_          conc    2040.25 ug/L
                 rep   1  Pb_          conc     938.60 ug/L
                 rep   2  As_          conc    1992.67 ug/L
                 rep   2  Pb_          conc     996.85 ug/L
                 rep   3  As_          conc    2004.72 ug/L
                 rep   3  Pb_          conc     984.53 ug/L
C  2
06/25/92 09:57
```

	As_	av	2012.55	ug/L		sd	24.737	%cv	1.23
	Pb_	av	973.33	ug/L		sd	30.697	%cv	3.15
06/25/92 09:58									
CCB2		rep	1	As_	conc	-4.38	ug/L		
		rep	1	Pb_	conc	-34.98	ug/L		
		rep	2	As_	conc	2.06	ug/L		
		rep	2	Pb_	conc	-12.97	ug/L		
		rep	3	As_	conc	-67.63	ug/L		window edge
		rep	3	Pb_	conc	-17.42	ug/L		
CCB2									
06/25/92 09:59									
	As_	av	-23.31	ug/L		sd	38.510	%cv	165.1
	Pb_	av	-21.79	ug/L		sd	11.641	%cv	53.43
06/25/92 10:00									
57.037.86		rep	1	As_	conc	392.85	ug/L		
		rep	1	Pb_	conc	5839.30	ug/L		
		rep	2	As_	conc	73.12	ug/L		
		rep	2	Pb_	conc	5947.68	ug/L		
		rep	3	As_	conc	32.24	ug/L		
		rep	3	Pb_	conc	6000.89	ug/L		
57.037.86									
06/25/92 10:01									
	As_	av	166.07	ug/L		sd	197.456	%cv	118.9
	Pb_	av	5929.29	ug/L		sd	82.353	%cv	1.39
06/25/92 10:02									
57.037.48		rep	1	As_	conc	918.65	ug/L		
		rep	1	Pb_	conc	26837.76	ug/L		
		rep	2	As_	conc	940.40	ug/L		
		rep	2	Pb_	conc	26643.85	ug/L		
		rep	3	As_	conc	839.57	ug/L		
		rep	3	Pb_	conc	26992.29	ug/L		
57.037.48									
06/25/92 10:03									
	As_	av	899.54	ug/L		sd	53.061	%cv	5.90
	Pb_	av	26824.63	ug/L		sd	174.590	%cv	0.65
06/25/92 10:04									
57.037.94		rep	1	As_	conc	192.66	ug/L		
		rep	1	Pb_	conc	2635.88	ug/L		
		rep	2	As_	conc	282.88	ug/L		
		rep	2	Pb_	conc	2340.00	ug/L		
		rep	3	As_	conc	136.95	ug/L		
		rep	3	Pb_	conc	2447.37	ug/L		
57.037.94									
06/25/92 10:05									
	As_	av	204.16	ug/L		sd	73.641	%cv	36.07
	Pb_	av	2474.42	ug/L		sd	149.779	%cv	6.05
06/25/92 10:06									
57.037.53		rep	1	As_	conc	109.90	ug/L		
		rep	1	Pb_	conc	1886.09	ug/L		
		rep	2	As_	conc	118.74	ug/L		
		rep	2	Pb_	conc	1844.97	ug/L		
		rep	3	As_	conc	59.36	ug/L		
		rep	3	Pb_	conc	1846.90	ug/L		
57.037.53									
06/25/92 10:06									

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    As_          av     96.00 ug/L          sd     32.036 %cv  33.37
    Pb_          av   1859.32 ug/L          sd     23.202 %cv   1.25

06/25/92 10:07
57.037.99        rep   1  As_          conc     262.62 ug/L
                 rep   1  Pb_          conc    8959.01 ug/L
                 rep   2  As_          conc     374.35 ug/L
                 rep   2  Pb_          conc    8999.03 ug/L
                 rep   3  As_          conc     300.67 ug/L
                 rep   3  Pb_          conc    9065.28 ug/L
57.037.99
06/25/92 10:08
    As_          av    312.55 ug/L          sd     56.806 %cv  18.18
    Pb_          av   9007.77 ug/L          sd     53.667 %cv   0.60

06/25/92 10:09
57.037.58        rep   1  As_          conc     208.69 ug/L
                 rep   1  Pb_          conc    6604.39 ug/L
                 rep   2  As_          conc     117.31 ug/L
                 rep   2  Pb_          conc    6528.49 ug/L
                 rep   3  As_          conc     168.37 ug/L
                 rep   3  Pb_          conc    6526.95 ug/L
57.037.58
06/25/92 10:10
    As_          av    164.79 ug/L          sd     45.795 %cv  27.79
    Pb_          av   6553.28 ug/L          sd     44.273 %cv   0.68

06/25/92 10:11
57.037.114       rep   1  As_          conc     691.60 ug/L
                 rep   1  Pb_          conc   10386.56 ug/L
                 rep   2  As_          conc     456.74 ug/L
                 rep   2  Pb_          conc   10167.48 ug/L
                 rep   3  As_          conc     628.82 ug/L
                 rep   3  Pb_          conc   10216.54 ug/L
57.037.114
06/25/92 10:12
    As_          av    592.39 ug/L          sd    121.596 %cv  20.53
    Pb_          av  10256.86 ug/L          sd    114.968 %cv   1.12

06/25/92 10:13
57.037.63        rep   1  As_          conc      84.68 ug/L
                 rep   1  Pb_          conc    1084.21 ug/L
                 rep   2  As_          conc      72.92 ug/L
                 rep   2  Pb_          conc    1049.37 ug/L
                 rep   3  As_          conc     108.82 ug/L
                 rep   3  Pb_          conc    1060.62 ug/L
57.037.63
06/25/92 10:14
    As_          av     88.81 ug/L          sd     18.306 %cv  20.61
    Pb_          av   1064.73 ug/L          sd     17.781 %cv   1.67

06/25/92 10:15
CCV3             rep   1  As_          conc    2001.51 ug/L
                 rep   1  Pb_          conc     985.35 ug/L
                 rep   2  As_          conc    2004.74 ug/L
                 rep   2  Pb_          conc     991.68 ug/L
                 rep   3  As_          conc    1891.15 ug/L
                 rep   3  Pb_          conc    1010.75 ug/L
C  3
06/25/92 10:16
```

As_	av	1965.80	ug/L	sd	64.665	%cv	3.29
Pb_	av	995.93	ug/L	sd	13.219	%cv	1.33

06/25/92 10:17

CCB3	rep	1	As_	conc	58.93 ug/L
	rep	1	Pb_	conc	-10.96 ug/L
	rep	2	As_	conc	10.70 ug/L
	rep	2	Pb_	conc	-14.96 ug/L
	rep	3	As_	conc	10.91 ug/L
	rep	3	Pb_	conc	-30.81 ug/L

CCB3
06/25/92 10:17

As_	av	26.85	ug/L	sd	27.781	%cv	103.4
Pb_	av	-18.91	ug/L	sd	10.498	%cv	55.52

06/25/92 10:19

57.037.125	rep	1	As_	conc	826.40 ug/L
	rep	1	Pb_	conc	10938.16 ug/L
	rep	2	As_	conc	735.74 ug/L
	rep	2	Pb_	conc	11189.25 ug/L
	rep	3	As_	conc	713.61 ug/L
	rep	3	Pb_	conc	10868.20 ug/L

57.037.125
06/25/92 10:19

As_	av	758.58	ug/L	sd	59.764	%cv	7.88
Pb_	av	10998.54	ug/L	sd	168.827	%cv	1.53

06/25/92 10:20

57.037.69	rep	1	As_	conc	724.71 ug/L
	rep	1	Pb_	conc	15757.15 ug/L
	rep	2	As_	conc	749.52 ug/L
	rep	2	Pb_	conc	15652.03 ug/L
	rep	3	As_	conc	651.73 ug/L
	rep	3	Pb_	conc	15696.91 ug/L

57.037.69
06/25/92 10:21

As_	av	708.65	ug/L	sd	50.834	%cv	7.17
Pb_	av	15702.03	ug/L	sd	52.743	%cv	0.34

06/25/92 10:22

57.037.131	rep	1	As_	conc	119.07 ug/L
	rep	1	Pb_	conc	5673.13 ug/L
	rep	2	As_	conc	156.54 ug/L
	rep	2	Pb_	conc	5840.55 ug/L
	rep	3	As_	conc	133.98 ug/L
	rep	3	Pb_	conc	5711.76 ug/L

57.037.131
06/25/92 10:23

As_	av	136.53	ug/L	sd	18.864	%cv	13.82
Pb_	av	5741.81	ug/L	sd	87.662	%cv	1.53

06/25/92 10:24

57.037.128	rep	1	As_	conc	8.01 ug/L
	rep	1	Pb_	conc	10.21 ug/L
	rep	2	As_	conc	-19.25 ug/L
	rep	2	Pb_	conc	-20.30 ug/L
	rep	3	As_	conc	47.07 ug/L
	rep	3	Pb_	conc	3.79 ug/L

57.037.128
06/25/92 10:25

	As_	av	11.94	ug/L	sd	33.338	%cv	279.1
	Pb_	av	-2.10	ug/L	sd	16.084	%cv	765.3
06/25/92 10:26								
57.037.131D	rep	1	As_	conc	128.96	ug/L		
	rep	1	Pb_	conc	5812.03	ug/L		
	rep	2	As_	conc	-45.63	ug/L		window edge
	rep	2	Pb_	conc	5916.03	ug/L		
	rep	3	As_	conc	6.73	ug/L		
	rep	3	Pb_	conc	5865.78	ug/L		
57.037.131D								
06/25/92 10:27								
	As_	av	30.02	ug/L	sd	89.594	%cv	298.4
	Pb_	av	5864.61	ug/L	sd	52.008	%cv	0.89
06/25/92 10:28								
57.037.128D	rep	1	As_	conc	4.21	ug/L		
	rep	1	Pb_	conc	-28.77	ug/L		
	rep	2	As_	conc	-5.15	ug/L		
	rep	2	Pb_	conc	-5.27	ug/L		
	rep	3	As_	conc	14.42	ug/L		
	rep	3	Pb_	conc	-46.28	ug/L		
57.037.128D								
06/25/92 10:28								
	As_	av	4.49	ug/L	sd	9.789	%cv	217.8
	Pb_	av	-26.77	ug/L	sd	20.576	%cv	76.86
06/25/92 10:30								
CCV4	rep	1	As_	conc	2018.19	ug/L		
	rep	1	Pb_	conc	1015.48	ug/L		
	rep	2	As_	conc	1890.80	ug/L		
	rep	2	Pb_	conc	1019.88	ug/L		
	rep	3	As_	conc	2115.52	ug/L		
	rep	3	Pb_	conc	979.50	ug/L		
CCV4								
06/25/92 10:30								
	As_	av	2008.17	ug/L	sd	112.695	%cv	5.61
	Pb_	av	1004.95	ug/L	sd	22.148	%cv	2.20
06/25/92 10:31								
CCB4	rep	1	As_	conc	23.80	ug/L		
	rep	1	Pb_	conc	20.72	ug/L		
	rep	2	As_	conc	-64.49	ug/L		
	rep	2	Pb_	conc	2.36	ug/L		
	rep	3	As_	conc	-13.75	ug/L		
	rep	3	Pb_	conc	-32.73	ug/L		
CCB4								
06/25/92 10:32								
	As_	av	-18.15	ug/L	sd	44.308	%cv	244.1
	Pb_	av	-3.22	ug/L	sd	27.160	%cv	843.8
06/25/92 10:33								
ICSAF	rep	1	As_	conc	12.26	ug/L		
	rep	1	Pb_	conc	-194.97	ug/L		window edge
	rep	2	As_	conc	64.93	ug/L		
	rep	2	Pb_	conc	-210.66	ug/L		window edge
	rep	3	As_	conc	44.81	ug/L		
	rep	3	Pb_	conc	-182.66	ug/L		window edge
1 AF								
06/25/92 10:34								

As_	av	40.67	ug/L	sd	26.578	%cv 65.36
Pb_	av	-196.10	ug/L	sd	14.034	%cv 7.16

06/25/92 10:35

ICSABF	rep	1	As_	conc	4132.77	ug/L
	rep	1	Pb_	conc	1683.22	ug/L
	rep	2	As_	conc	4133.76	ug/L
	rep	2	Pb_	conc	1601.63	ug/L
	rep	3	As_	conc	4207.23	ug/L
	rep	3	Pb_	conc	1622.52	ug/L

ICSABF

06/25/92 10:36

As_	av	4157.92	ug/L	sd	42.709	%cv 1.03
Pb_	av	1635.79	ug/L	sd	42.382	%cv 2.59

AS MSA's

Element File: AS_MSA.GEL Element: As Wavelength: 193.7
Date: 06/24/92 Time: 19:57 Slit: 0.70 L
Data File: 21122B.DAT ID/Wt File: 21122.IDW Lamp Current: 0
Technique: HGA Calib. Type: Method of Add. Energy: 62

As ID: Blank Seq. No.: 00062 A/S Pos.: 0 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 0
Replicate 1 Time: 20:00
Peak Area (A-s): 0.082 Peak Height (A): 0.123
Background Pk Area (A-s): 0.257 Background Pk Height (A): 0.122
Blank Corrected Pk Area (A-s): 0.082

Auto-zero performed.

As ID: 57.037.75 ✓ Seq. No.: 00063 A/S Pos.: 22 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 22
Replicate 1 Time: 20:03
Peak Area (A-s): 0.188 Peak Height (A): 0.142
Background Pk Area (A-s): 0.226 Background Pk Height (A): 0.090
Blank Corrected Pk Area (A-s): 0.107

As ID: Standard 1 Seq. No.: 00064 A/S Pos.: 22 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 22
Replicate 1 Time: 20:07
Peak Area (A-s): 0.254 Peak Height (A): 0.205
Background Pk Area (A-s): 0.192 Background Pk Height (A): 0.077
Blank Corrected Pk Area (A-s): 0.172

As ID: Standard 2 Seq. No.: 00065 A/S Pos.: 22 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 22
Replicate 1 Time: 20:10
Peak Area (A-s): 0.297 Peak Height (A): 0.249
Background Pk Area (A-s): 0.185 Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.216

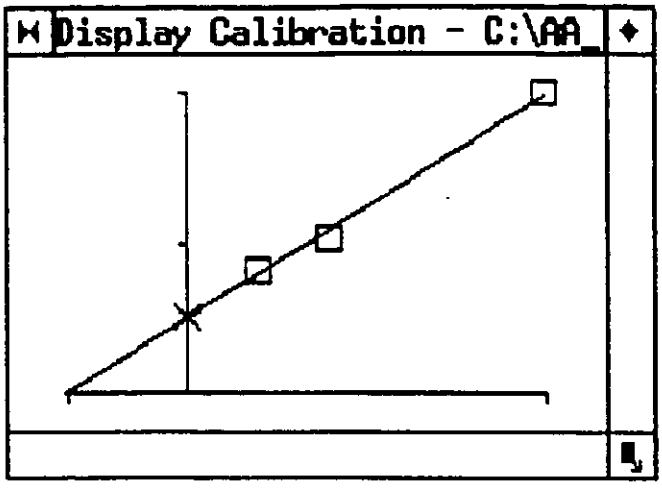
As ID: Standard 3 Seq. No.: 00066 A/S Pos.: 22 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 10 from 22
Replicate 1 Time: 20:14
Peak Area (A-s): 0.508 Peak Height (A): 0.426
Background Pk Area (A-s): 0.186 Background Pk Height (A): 0.062
Blank Corrected Pk Area (A-s): 0.426

As ID: 57.037.75 Seq. No.: 00063 A/S Pos.: 22 Date: 06/24/92

Concentration (ug/L): 33.9

Correlation coefficient: 0.99538 Slope: 0.0031



As ID: 57.037.41 Seq. No.: 00067 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 23
Replicate 1 Time: 20:18
Peak Area (A-s): 3.582 Peak Height (A): 1.645
Background Pk Area (A-s): 0.437 Background Pk Height (A): 0.200
Blank Corrected Pk Area (A-s): 3.500

As ID: Standard 1 Seq. No.: 00068 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 23
Replicate 1 Time: 20:21
Peak Area (A-s): 3.626 Peak Height (A): 1.695
Background Pk Area (A-s): 0.463 Background Pk Height (A): 0.221
Blank Corrected Pk Area (A-s): 3.544

As ID: Standard 2 Seq. No.: 00069 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 23
Replicate 1 Time: 20:25
Peak Area (A-s): 3.621 Peak Height (A): 1.692
Background Pk Area (A-s): 0.465 Background Pk Height (A): 0.229
Blank Corrected Pk Area (A-s): 3.540

As ID: Standard 3 Seq. No.: 00070 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 10 from 23
Replicate 1 Time: 20:28
Peak Area (A-s): 3.746 Peak Height (A): 1.711
Background Pk Area (A-s): 0.467 Background Pk Height (A): 0.222
Blank Corrected Pk Area (A-s): 3.664

Standard abs. & conc. values are not in the same order.
As ID: 57.037.41 Seq. No.: 00067 A/S Pos.: 23 Date: 06/24/92

Concentration (ug/L): --------

As ID: 57.037.86 Seq. No.: 00071 A/S Pos.: 24 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 24
Replicate 1 Time: 20:32
Peak Area (A-s): 0.437 Peak Height (A): 0.326
Background Pk Area (A-s): 0.177 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): 0.355

As ID: Standard 1 Seq. No.: 00072 A/S Pos.: 24 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 24
Replicate 1 Time: 20:36
Peak Area (A-s): 0.347 Peak Height (A): 0.271
Background Pk Area (A-s): 0.152 Background Pk Height (A): 0.073
Blank Corrected Pk Area (A-s): 0.266

As ID: Standard 2 Seq. No.: 00073 A/S Pos.: 24 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 24
Replicate 1 Time: 20:39
Peak Area (A-s): 0.331 Peak Height (A): 0.277
Background Pk Area (A-s): 0.141 Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.250

As ID: Standard 3 Seq. No.: 00074 A/S Pos.: 24 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 10 from 24
Replicate 1 Time: 20:43
Peak Area (A-s): 0.532 Peak Height (A): 0.454
Background Pk Area (A-s): 0.150 Background Pk Height (A): 0.062
Blank Corrected Pk Area (A-s): 0.451

Standard abs. & conc. values are not in the same order.
As ID: 57.037.86 Seq. No.: 00071 A/S Pos.: 24 Date: 06/24/92

Concentration (ug/L): --------

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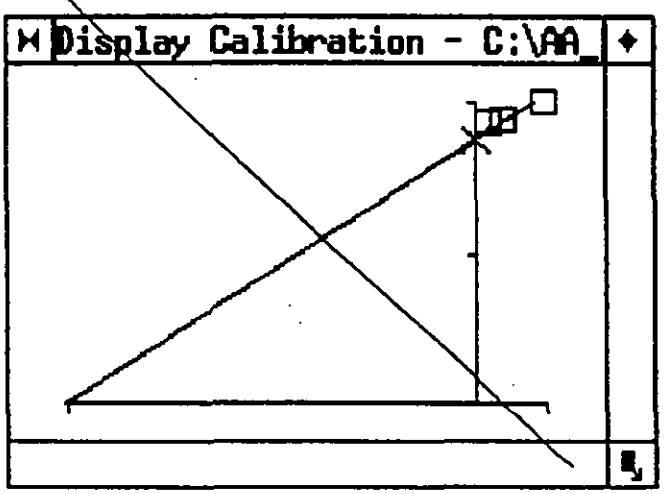
As ID: Standard 3 Seq. No.: 00078 A/S Pos.: 25 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 10 from 25
Replicate 1 Time: 20:57
Peak Area (A-s): 2.321 Peak Height (A): 1.335
Background Pk Area (A-s): 0.268 Background Pk Height (A): 0.123
Blank Corrected Pk Area (A-s): 2.240

Addition concentrations may be too small for good results.
As ID: 57.037.48 Seq. No.: 00075 A/S Pos.: 25 Date: 06/24/92

Concentration (ug/L): 593.5

Correlation coefficient: 0.90860 Slope: 0.0033

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uL dispensed: 5 from 39, 10 from 4, 10 from 26
Replicate 1 Time: 21:11
Peak Area (A-s): 0.527 Peak Height (A): 0.480
Background Pk Area (A-s): 0.138 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.446

Standard abs. & conc. values are not in the same order.
As ID: 57.037.94 Seq. No.: 00079 A/S Pos.: 26 Date: 06/24/92

Concentration (ug/L): ---------

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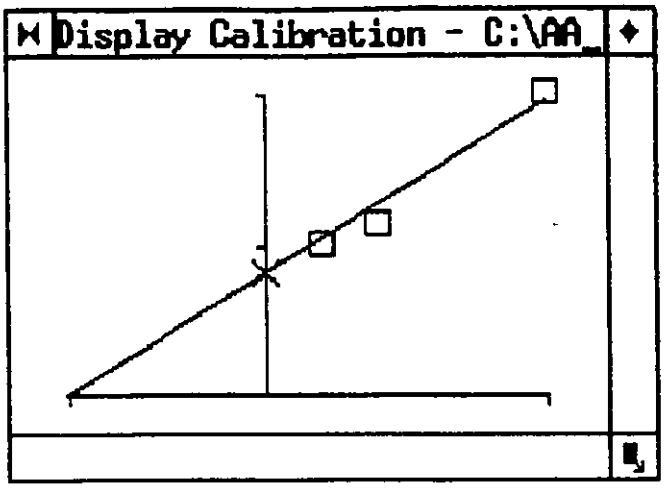


As ID: 57.037.99 Seq. No.: 00087 A/S Pos.: 28 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 28
Replicate 1 Time: 21:29
Peak Area (A-s): 0.571 Peak Height (A): 0.374
Background Pk Area (A-s): 0.192 Background Pk Height (A): 0.067
Blank Corrected Pk Area (A-s): 0.490

As ID: Standard 1 Seq. No.: 00088 A/S Pos.: 28 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 28
Replicate 1 Time: 21:33
Peak Area (A-s): 0.671 Peak Height (A): 0.438
Background Pk Area (A-s): 0.206 Background Pk Height (A): 0.071
Blank Corrected Pk Area (A-s): 0.590

As ID: Standard 2 Seq. No.: 00089 A/S Pos.: 28 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 28
Replicate 1 Time: 21:36
Peak Area (A-s): 0.699 Peak Height (A): 0.456
Background Pk Area (A-s): 0.203 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.617

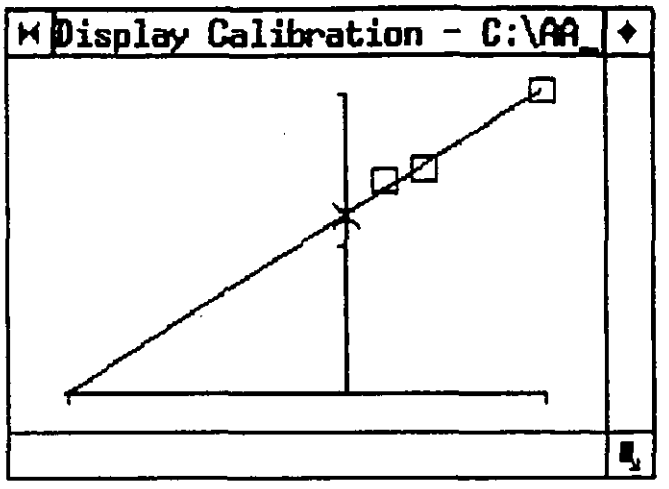
As ID: Standard 3 Seq. No.: 00090 A/S Pos.: 28 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 10 from 28
Replicate 1 Time: 21:40
Peak Area (A-s): 0.914 Peak Height (A): 0.602
Background Pk Area (A-s): 0.227 Background Pk Height (A): 0.072
Blank Corrected Pk Area (A-s): 0.832

The standard additions calibration curve may not be linear.
As ID: 57.037.99 Seq. No.: 00087 A/S Pos.: 28 Date: 06/24/92

Concentration (ug/L): 140.9

Correlation coefficient: 0.98697 Slope: 0.0035



As ID: 57.037.58 Seq. No.: 00091 A/S Pos.: 29 Date: 06/24/92

L dispensed: 10 from 0, 5 from 39, 10 from 29
Replicate 1 Time: 21:44
eak Area (A-s): 0.603 Peak Height (A): 0.389
ackground Pk Area (A-s): 0.162 Background Pk Height (A): 0.063
Blank Corrected Pk Area (A-s): 0.522

s ID: Standard 1 Seq. No.: 00092 A/S Pos.: 29 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 29
eplicate 1 Time: 21:47
eak Area (A-s): 0.654 Peak Height (A): 0.389
Background Pk Area (A-s): 0.127 Background Pk Height (A): 0.053
lank Corrected Pk Area (A-s): 0.572

As ID: Standard 2 Seq. No.: 00093 A/S Pos.: 29 Date: 06/24/92

L dispensed: 5 from 39, 10 from 3, 10 from 29
eplicate 1 Time: 21:51
Peak Area (A-s): 0.693 Peak Height (A): 0.414
ackground Pk Area (A-s): 0.128 Background Pk Height (A): 0.053
lank Corrected Pk Area (A-s): 0.611

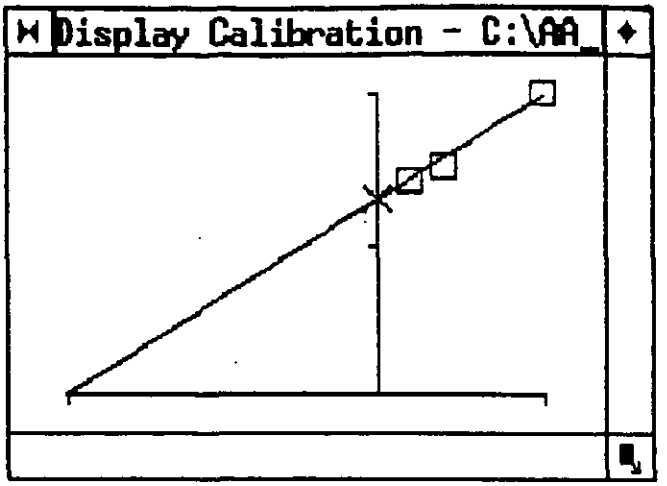
s ID: Standard 3 Seq. No.: 00094 A/S Pos.: 29 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 10 from 29
Replicate 1 Time: 21:54
eak Area (A-s): 0.892 Peak Height (A): 0.538
ackground Pk Area (A-s): 0.140 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.810

s ID: 57.037.58 Seq. No.: 00091 A/S Pos.: 29 Date: 06/24/92

c ntration (ug/L): 186.0

Correlation coefficient: 0.98893 Slope: 0.0028



As ID: 57.037.114 Seq. No.: 00095 A/S Pos.: 30 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 30
Replicate 1 Time: 21:58
Peak Area (A-s): 0.873 Peak Height (A): 0.618
Background Pk Area (A-s): 0.171 Background Pk Height (A): 0.062
Blank Corrected Pk Area (A-s): 0.791

As ID: Standard 1 Seq. No.: 00096 A/S Pos.: 30 Date: 06/24/9

uL dispensed: 5 from 39, 10 from 2, 10 from 30
Replicate 1 Time: 22:02
Peak Area (A-s): 0.985 Peak Height (A): 0.694
Background Pk Area (A-s): 0.184 Background Pk Height (A): 0.076
Blank Corrected Pk Area (A-s): 0.904

As ID: Standard 2 Seq. No.: 00097 A/S Pos.: 30 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 30
Replicate 1 Time: 22:05
Peak Area (A-s): 1.010 Peak Height (A): 0.742
Background Pk Area (A-s): 0.192 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.928

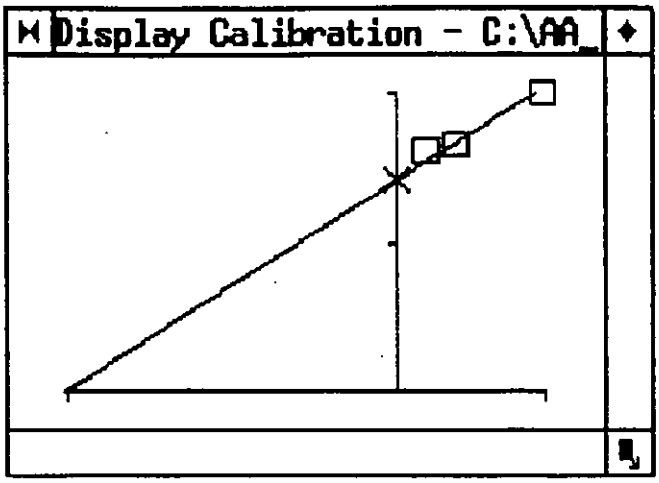
As ID: Standard 3 Seq. No.: 00098 A/S Pos.: 30 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 10 from 30
Replicate 1 Time: 22:09
Peak Area (A-s): 1.207 Peak Height (A): 0.843
Background Pk Area (A-s): 0.200 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 1.125

The standard additions calibration curve may not be linear.
As ID: 57.037.114 Seq. No.: 00095 A/S Pos.: 30 Date: 06/24/92

Concentration (ug/L): 227.3

Correlation coefficient: 0.97521 Slope: 0.0035



As ID: 57.037.63 ? rerun Seq. No.: 00099 A/S Pos.: 31 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 31
Replicate 1 Time: 22:13
Peak Area (A-s): 0.331 Peak Height (A): 0.198
Background Pk Area (A-s): 0.141 Background Pk Height (A): 0.054
Blank Corrected Pk Area (A-s): 0.250

As ID: Standard 1 Seq. No.: 00100 A/S Pos.: 31 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 31
Replicate 1 Time: 22:16
Peak Area (A-s): 0.346 Peak Height (A): 0.203
Background Pk Area (A-s): 0.110 Background Pk Height (A): 0.043
Blank Corrected Pk Area (A-s): 0.264

As ID: Standard 2 Seq. No.: 00101 A/S Pos.: 31 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 31
Replicate 1 Time: 22:20
Peak Area (A-s): 0.377 Peak Height (A): 0.224
Background Pk Area (A-s): 0.106 Background Pk Height (A): 0.043
Blank Corrected Pk Area (A-s): 0.295

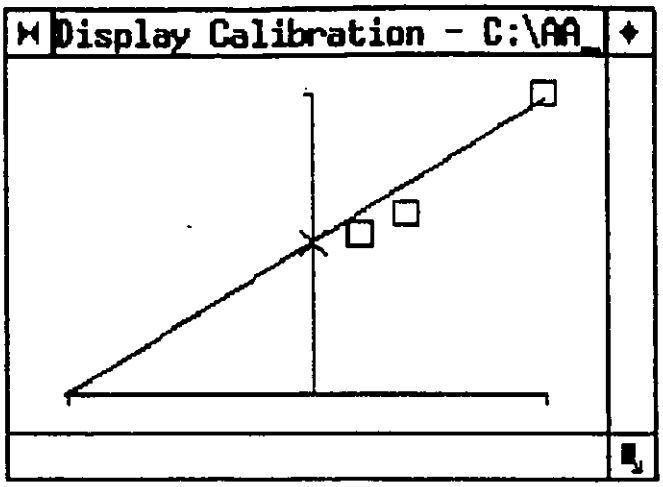
As ID: Standard 3 Seq. No.: 00102 A/S Pos.: 31 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 10 from 31
Replicate 1 Time: 22:24
Peak Area (A-s): 0.578 Peak Height (A): 0.347
Background Pk Area (A-s): 0.113 Background Pk Height (A): 0.051
Blank Corrected Pk Area (A-s): 0.496

The standard additions calibration curve may not be linear.
As ID: 57.037.63 Seq. No.: 00099 A/S Pos.: 31 Date: 06/24/92

Concentration (ug/L): 106.0 rerun

Correlation coefficient: 0.90079 Slope: 0.0024



As ID: 57.037.125 Seq. No.: 00103 A/S Pos.: 32 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 32
Replicate 1 Time: 22:27
Peak Area (A-s): 0.708 Peak Height (A): 0.512
Background Pk Area (A-s): 0.140 Background Pk Height (A): 0.053
Blank Corrected Pk Area (A-s): 0.627

As ID: Standard 1 Seq. No.: 00104 A/S Pos.: 32 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 32
Replicate 1 Time: 22:31
Peak Area (A-s): 0.825 Peak Height (A): 0.655
Background Pk Area (A-s): 0.150 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.743

As ID: Standard 2 Seq. No.: 00105 A/S Pos.: 32 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 32
Replicate 1 Time: 22:35
Peak Area (A-s): 0.847 Peak Height (A): 0.653
Background Pk Area (A-s): 0.146 Background Pk Height (A): 0.055
Blank Corrected Pk Area (A-s): 0.765

As ID: Standard 3 Seq. No.: 00106 A/S Pos.: 32 Date: 06/24/92

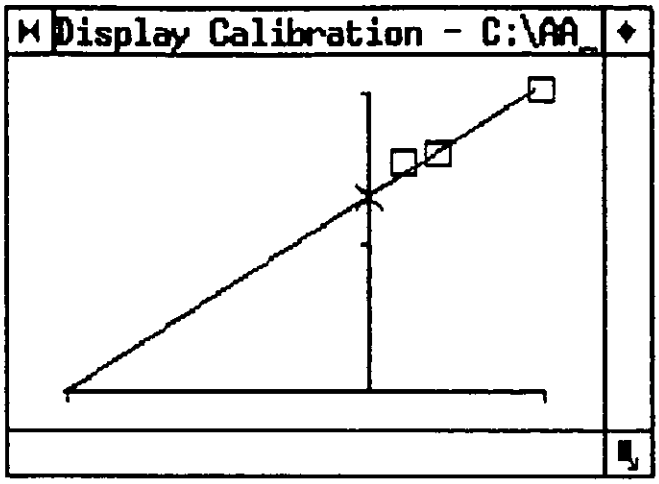
uL dispensed: 5 from 39, 10 from 4, 10 from 32
Replicate 1 Time: 22:38
Peak Area (A-s): 1.052 Peak Height (A): 0.782
Background Pk Area (A-s): 0.161 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.970

The standard additions calibration curve may not be linear.
As ID: 57.037.125 Seq. No.: 00103 A/S Pos.: 32 Date: 06/24/92

Concentration (ug/L): 175.6

Correlation coefficient: 0.97424 Slope: 0.0036

D -184 +84 KCS



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As ID: 57.037.69 Seq. No.: 00107 A/S Pos.: 33 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 33
Replicate 1 Time: 22:42
Peak Area (A-s): 1.743 Peak Height (A): 1.085
Background Pk Area (A-s): 0.218 Background Pk Height (A): 0.105
Blank Corrected Pk Area (A-s): 1.662

As ID: Standard 1 Seq. No.: 00108 A/S Pos.: 33 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 33
Replicate 1 Time: 22:46
Peak Area (A-s): 1.872 Peak Height (A): 1.055
Background Pk Area (A-s): 0.203 Background Pk Height (A): 0.095
Blank Corrected Pk Area (A-s): 1.790

As ID: Standard 2 Seq. No.: 00109 A/S Pos.: 33 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 33
Replicate 1 Time: 22:49
Peak Area (A-s): 1.904 Peak Height (A): 1.080
Background Pk Area (A-s): 0.196 Background Pk Height (A): 0.094
Blank Corrected Pk Area (A-s): 1.822

As ID: Standard 3 Seq. No.: 00110 A/S Pos.: 33 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 10 from 33
Replicate 1 Time: 22:53
Peak Area (A-s): 2.049 Peak Height (A): 1.169
Background Pk Area (A-s): 0.202 Background Pk Height (A): 0.103
Blank Corrected Pk Area (A-s): 1.968

Addition concentrations may be too small for good results.
As ID: 57.037.69 Seq. No.: 00107 A/S Pos.: 33 Date: 06/24/92

Concentration (ug/L): 484.0

Correlation coefficient: 0.92982 Slope: 0.0034
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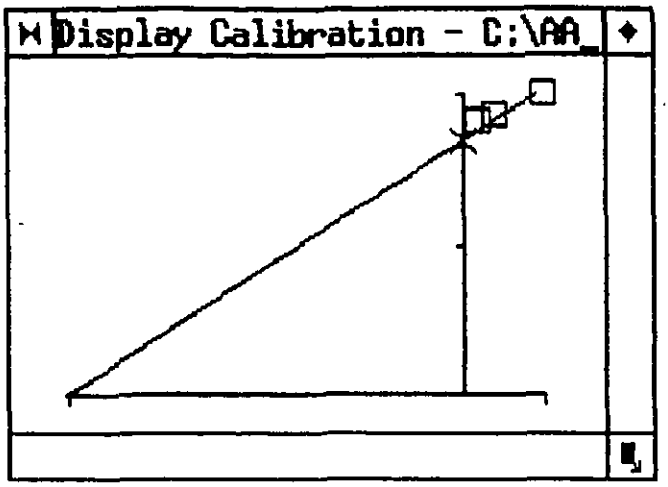
Display Calibration - C:\AA_

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uL dispensed: 10 from 0, 5 from 39, 10 from 35
Replicate 1 Time: 23:11
Peak Area (A-s): 0.057 Peak Height (A): 0.065
Background Pk Area (A-s): 0.086 Background Pk Height (A): 0.040
Blank Corrected Pk Area (A-s): -0.025

As ID: Standard 1 Seq. No.: 00116 A/S Pos.: 35 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 35
Replicate 1 Time: 23:14
Peak Area (A-s): 0.094 Peak Height (A): 0.063
Background Pk Area (A-s): 0.067 Background Pk Height (A): 0.035
Blank Corrected Pk Area (A-s): 0.013

As ID: Standard 2 Seq. No.: 00117 A/S Pos.: 35 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 35
Replicate 1 Time: 23:18
Peak Area (A-s): 0.137 Peak Height (A): 0.098
Background Pk Area (A-s): 0.061 Background Pk Height (A): 0.034
Blank Corrected Pk Area (A-s): 0.055

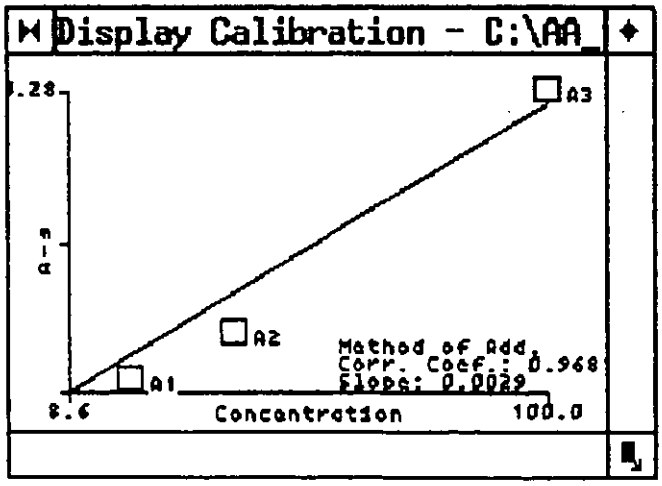
As ID: Standard 3 Seq. No.: 00118 A/S Pos.: 35 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 10 from 35
Replicate 1 Time: 23:22
Peak Area (A-s): 0.357 Peak Height (A): 0.272
Background Pk Area (A-s): 0.071 Background Pk Height (A): 0.041
Blank Corrected Pk Area (A-s): 0.275

The standard additions calibration curve may not be linear.
As ID: 57.037.128 Seq. No.: 00115 A/S Pos.: 35 Date: 06/24/92

Concentration (ug/L): -8.6 rerun

Correlation coefficient: 0.96815 Slope: 0.0029



As ID: ~~56.233.1B~~ Seq. No.: 00119 A/S Pos.: 37 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 37

As ID: 57.037.86 Seq. No.: 00131 A/S Pos.: 24 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 24
Replicate 1 Time: 08:47
Peak Area (A-s): 0.180 Peak Height (A): 0.142
Background Pk Area (A-s): 0.149 Background Pk Height (A): 0.091
Blank Corrected Pk Area (A-s): 0.165

As ID: Standard 1 Seq. No.: 00132 A/S Pos.: 24 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 2, 10 from 24
Replicate 1 Time: 08:50
Peak Area (A-s): 0.234 Peak Height (A): 0.210
Background Pk Area (A-s): 0.138 Background Pk Height (A): 0.099
Blank Corrected Pk Area (A-s): 0.219

As ID: Standard 2 Seq. No.: 00133 A/S Pos.: 24 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 3, 10 from 24
Replicate 1 Time: 08:54
Peak Area (A-s): 0.280 Peak Height (A): 0.251
Background Pk Area (A-s): 0.123 Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.265

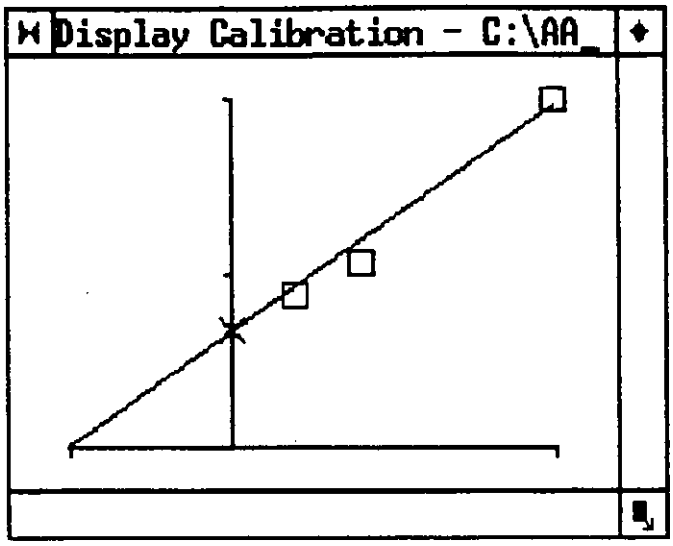
As ID: Standard 3 Seq. No.: 00134 A/S Pos.: 24 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 4, 10 from 24
Replicate 1 Time: 08:58
Peak Area (A-s): 0.516 Peak Height (A): 0.451
Background Pk Area (A-s): 0.127 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.501

The standard additions calibration curve may not be linear.
As ID: 57.037.86 Seq. No.: 00131 A/S Pos.: 24 Date: 06/25/92

Concentration (ug/L): 50.5

Correlation coefficient: 0.98480 Slope: 0.0033



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As ID: 57.037.94 Seq. No.: 00135 A/S Pos.: 26 Date: 06/25/92

L dispensed: 10 from 0, 5 from 39, 10 from 26
Replicate 1 Time: 09:05
Peak Area (A-s): 0.192 Peak Height (A): 0.146
ar round Pk Area (A-s): 0.135 Background Pk Height (A): 0.072
lank Corrected Pk Area (A-s): 0.177

s ID: Standard 1 Seq. No.: 00136 A/S Pos.: 26 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 2, 10 from 26
eplicate 1 Time: 09:08
eak Area (A-s): 0.232 Peak Height (A): 0.210
Background Pk Area (A-s): 0.132 Background Pk Height (A): 0.096
Blank Corrected Pk Area (A-s): 0.217

s ID: Standard 2 Seq. No.: 00137 A/S Pos.: 26 Date: 06/25/92

L dispensed: 5 from 39, 10 from 3, 10 from 26
eplicate 1 Time: 09:12
Peak Area (A-s): 0.275 Peak Height (A): 0.258
Background Pk Area (A-s): 0.113 Background Pk Height (A): 0.057
lank Corrected Pk Area (A-s): 0.260

As ID: Standard 3 Seq. No.: 00138 A/S Pos.: 26 Date: 06/25/92

L dispensed: 5 from 39, 10 from 4, 10 from 26
Replicate 1 Time: 09:15
eak Area (A-s): 0.512 Peak Height (A): 0.477
ackground Pk Area (A-s): 0.118 Background Pk Height (A): 0.059
Blank Corrected Pk Area (A-s): 0.497

he standard additions calibration curve may not be linear.
As ID: 57.037.94 Seq. No.: 00135 A/S Pos.: 26 Date: 06/25/92

oncentration (ug/L): 57.6
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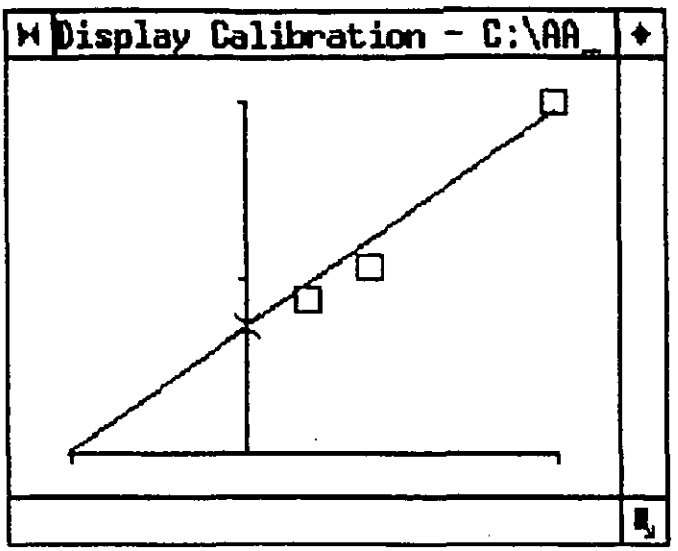


As ID: 57.037.131 Seq. No.: 00139 A/S Pos.: 34 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 34
Replicate 1 Time: 09:19
Peak Area (A-s): 0.071 Peak Height (A): 0.048
Background Pk Area (A-s): 0.094 Background Pk Height (A): 0.062
Blank Corrected Pk Area (A-s): 0.056

As ID: Standard 1 Seq. No.: 00140 A/S Pos.: 34 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 2, 10 from 34
Replicate 1 Time: 09:23
Peak Area (A-s): 0.104 Peak Height (A): 0.091
Background Pk Area (A-s): 0.092 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.089

As ID: Standard 2 Seq. No.: 00141 A/S Pos.: 34 Date: 06/25/92

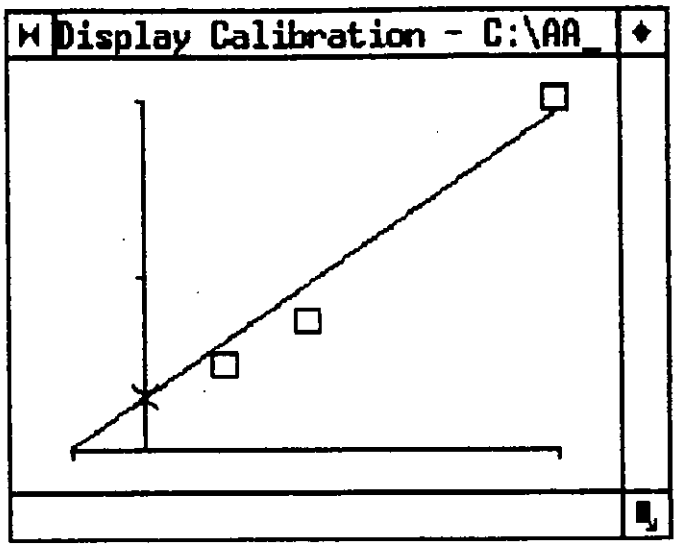
uL dispensed: 5 from 39, 10 from 3, 10 from 34
Replicate 1 Time: 09:27
Peak Area (A-s): 0.153 Peak Height (A): 0.140
Background Pk Area (A-s): 0.088 Background Pk Height (A): 0.055
Blank Corrected Pk Area (A-s): 0.138

As ID: Standard 3 Seq. No.: 00142 A/S Pos.: 34 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 4, 10 from 34
Replicate 1 Time: 09:30
Peak Area (A-s): 0.391 Peak Height (A): 0.351
Background Pk Area (A-s): 0.094 Background Pk Height (A): 0.051
Blank Corrected Pk Area (A-s): 0.376

The standard additions calibration curve may not be linear.
As ID: 57.037.131 Seq. No.: 00139 A/S Pos.: 34 Date: 06/25/92

Concentration (ug/L): 18.1 RERUN


Display Calibration - C:\AA_

Element File: AS_MSA.GEL Element: As Wavelength: 193.7
Date: 06/25/92 Time: 11:02 Slit: 0.70 L
Data File: 21122B.DAT ID/Wt File: 21122.IDW Lamp Current: 0
Technique: HGA Calib. Type: Method of Add. Energy: 62

As ID: Blank Seq. No.: 00161 A/S Pos.: 0 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 0
Replicate 1 Time: 11:05
Peak Area (A-s): 0.004 Peak Height (A): 0.011
Background Pk Area (A-s): 0.139 Background Pk Height (A): 0.064
Blank Corrected Pk Area (A-s): 0.004

Auto-zero performed.

As ID: 57.037.6 Seq. No.: 00162 A/S Pos.: 11 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 11
Replicate 1 Time: 11:08
Peak Area (A-s): 0.016 Peak Height (A): 0.020
Background Pk Area (A-s): 0.266 Background Pk Height (A): 0.118
Blank Corrected Pk Area (A-s): 0.012

As ID: Standard 1 Seq. No.: 00163 A/S Pos.: 11 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 2, 10 from 11
Replicate 1 Time: 11:12
Peak Area (A-s): 0.081 Peak Height (A): 0.064
Background Pk Area (A-s): 0.236 Background Pk Height (A): 0.109
Blank Corrected Pk Area (A-s): 0.076

As ID: Standard 2 Seq. No.: 00164 A/S Pos.: 11 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 3, 10 from 11
Replicate 1 Time: 11:15
Peak Area (A-s): 0.140 Peak Height (A): 0.107
Background Pk Area (A-s): 0.236 Background Pk Height (A): 0.104
Blank Corrected Pk Area (A-s): 0.136

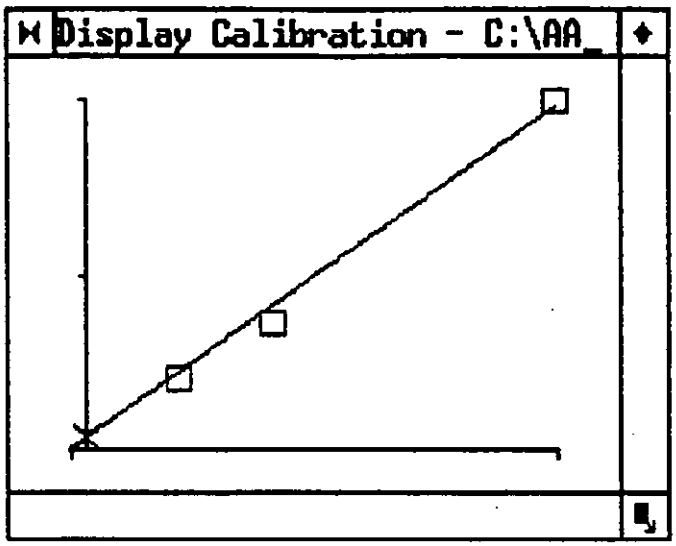
As ID: Standard 3 Seq. No.: 00165 A/S Pos.: 11 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 4, 10 from 11
Replicate 1 Time: 11:19
Peak Area (A-s): 0.385 Peak Height (A): 0.291
Background Pk Area (A-s): 0.238 Background Pk Height (A): 0.103
Blank Corrected Pk Area (A-s): 0.380

The standard additions calibration curve may not be linear.
As ID: 57.037.6 Seq. No.: 00162 A/S Pos.: 11 Date: 06/25/92

Concentration (ug/L): 3.2

Correlation coefficient: 0.99407 Slope: 0.0036



As ID: 57.037.12 Seq. No.: 00166 A/S Pos.: 13 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 13
Replicate 1 Time: 11:23
Peak Area (A-s): 0.048 Peak Height (A): 0.051
Background Pk Area (A-s): 0.269 Background Pk Height (A): 0.118
Blank Corrected Pk Area (A-s): 0.044

As ID: Standard 1 Seq. No.: 00167 A/S Pos.: 13 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 2, 10 from 13
Replicate 1 Time: 11:26
Peak Area (A-s): 0.069 Peak Height (A): 0.060
Background Pk Area (A-s): 0.214 Background Pk Height (A): 0.084
Blank Corrected Pk Area (A-s): 0.064

As ID: Standard 2 Seq. No.: 00168 A/S Pos.: 13 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 3, 10 from 13
Replicate 1 Time: 11:30
Peak Area (A-s): 0.115 Peak Height (A): 0.105
Background Pk Area (A-s): 0.213 Background Pk Height (A): 0.081
Blank Corrected Pk Area (A-s): 0.111

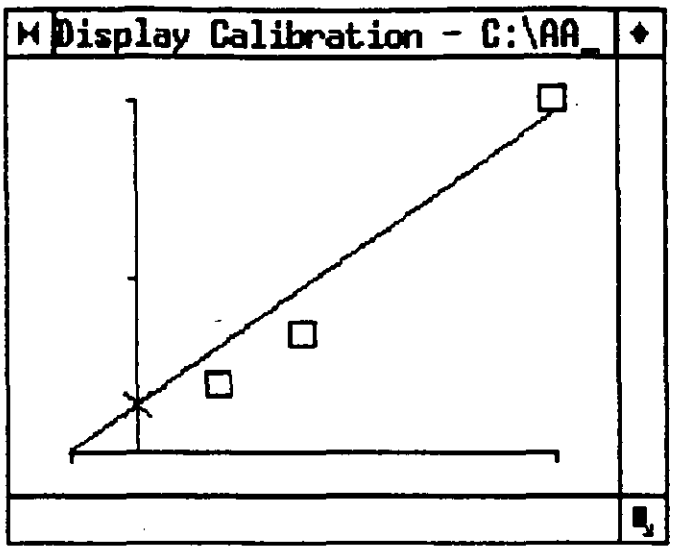
As ID: Standard 3 Seq. No.: 00169 A/S Pos.: 13 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 4, 10 from 13
Replicate 1 Time: 11:33
Peak Area (A-s): 0.340 Peak Height (A): 0.276
Background Pk Area (A-s): 0.222 Background Pk Height (A): 0.085
Blank Corrected Pk Area (A-s): 0.336

The standard additions calibration curve may not be linear.
As ID: 57.037.12 Seq. No.: 00166 A/S Pos.: 13 Date: 06/25/92

Concentration (ug/L): 15.8 RERUN

ID-193



As ID: 57.037.18 ✓ Seq. No.: 00170 A/S Pos.: 15 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 15
Replicate 1 Time: 11:37
Peak Area (A-s): 0.030 Peak Height (A): 0.025
Background Pk Area (A-s): 0.256 Background Pk Height (A): 0.091
Blank Corrected Pk Area (A-s): 0.025

As ID: Standard 1 Seq. No.: 00171 A/S Pos.: 15 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 2, 10 from 15
Replicate 1 Time: 11:41
Peak Area (A-s): 0.070 Peak Height (A): 0.057
Background Pk Area (A-s): 0.224 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): 0.066

As ID: Standard 2 Seq. No.: 00172 A/S Pos.: 15 Date: 06/25/92

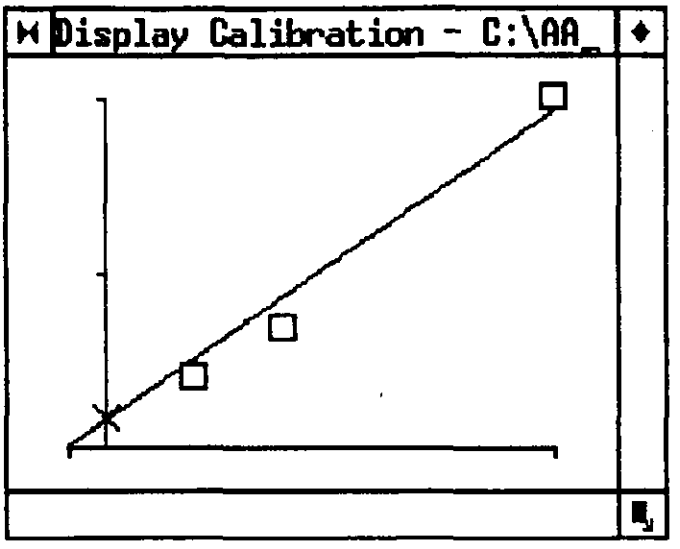
uL dispensed: 5 from 39, 10 from 3, 10 from 15
Replicate 1 Time: 11:44
Peak Area (A-s): 0.116 Peak Height (A): 0.091
Background Pk Area (A-s): 0.225 Background Pk Height (A): 0.077
Blank Corrected Pk Area (A-s): 0.112

As ID: Standard 3 Seq. No.: 00173 A/S Pos.: 15 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 4, 10 from 15
Replicate 1 Time: 11:48
Peak Area (A-s): 0.336 Peak Height (A): 0.250
Background Pk Area (A-s): 0.242 Background Pk Height (A): 0.093
Blank Corrected Pk Area (A-s): 0.332

The standard additions calibration curve may not be linear.
As ID: 57.037.18 Seq. No.: 00170 A/S Pos.: 15 Date: 06/25/92

Concentration (ug/L): 8.6



As ID: 57.037.24 Seq. No.: 00174 A/S Pos.: 17 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 17
Replicate 1 Time: 11:52
Peak Area (A-s): 0.066 Peak Height (A): 0.051
Background Pk Area (A-s): 0.256 Background Pk Height (A): 0.090
Blank Corrected Pk Area (A-s): 0.062

As ID: Standard 1 Seq. No.: 00175 A/S Pos.: 17 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 2, 10 from 17
Replicate 1 Time: 11:56
Peak Area (A-s): 0.104 Peak Height (A): 0.076
Background Pk Area (A-s): 0.238 Background Pk Height (A): 0.106
Blank Corrected Pk Area (A-s): 0.100

As ID: Standard 2 Seq. No.: 00176 A/S Pos.: 17 Date: 06/25/92

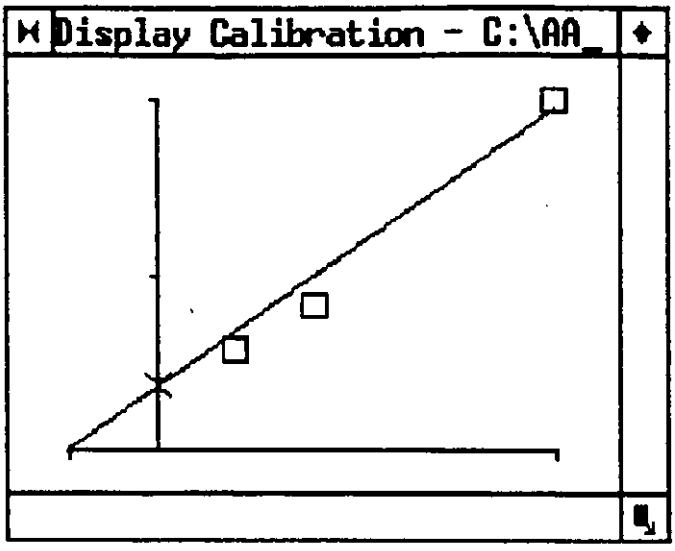
uL dispensed: 5 from 39, 10 from 3, 10 from 17
Replicate 1 Time: 11:59
Peak Area (A-s): 0.146 Peak Height (A): 0.102
Background Pk Area (A-s): 0.223 Background Pk Height (A): 0.097
Blank Corrected Pk Area (A-s): 0.142

As ID: Standard 3 Seq. No.: 00177 A/S Pos.: 17 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 4, 10 from 17
Replicate 1 Time: 12:03
Peak Area (A-s): 0.355 Peak Height (A): 0.234
Background Pk Area (A-s): 0.237 Background Pk Height (A): 0.113
Blank Corrected Pk Area (A-s): 0.350

The standard additions calibration curve may not be linear.
As ID: 57.037.24 Seq. No.: 00174 A/S Pos.: 17 Date: 06/25/92

Concentration (ug/L): 28.4 YCRUN



As ID: 57.037.30 Seq. No.: 00178 A/S Pos.: 19 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 19
Replicate 1 Time: 12:07
Peak Area (A-s): 0.031 Peak Height (A): 0.025
Background Pk Area (A-s): 0.255 Background Pk Height (A): 0.114
Blank Corrected Pk Area (A-s): 0.027

As ID: Standard 1 Seq. No.: 00179 A/S Pos.: 19 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 2, 10 from 19
Replicate 1 Time: 12:10
Peak Area (A-s): 0.072 Peak Height (A): 0.049
Background Pk Area (A-s): 0.222 Background Pk Height (A): 0.127
Blank Corrected Pk Area (A-s): 0.068

As ID: Standard 2 Seq. No.: 00180 A/S Pos.: 19 Date: 06/25/92

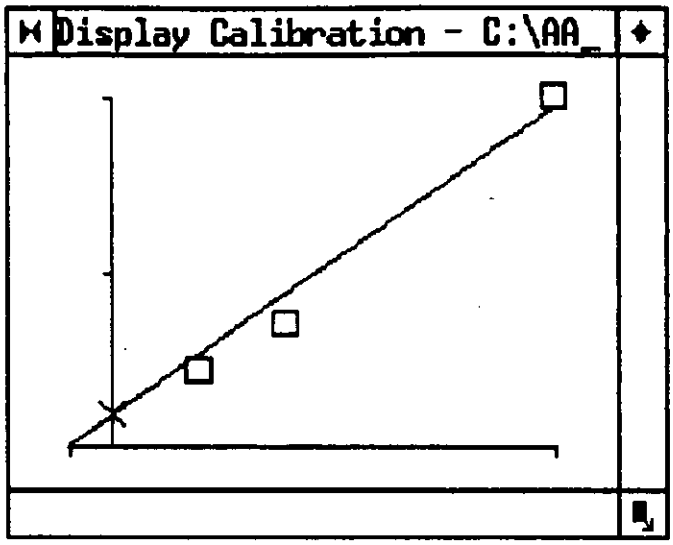
uL dispensed: 5 from 39, 10 from 3, 10 from 19
Replicate 1 Time: 12:14
Peak Area (A-s): 0.114 Peak Height (A): 0.078
Background Pk Area (A-s): 0.223 Background Pk Height (A): 0.127
Blank Corrected Pk Area (A-s): 0.109

As ID: Standard 3 Seq. No.: 00181 A/S Pos.: 19 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 4, 10 from 19
Replicate 1 Time: 12:17
Peak Area (A-s): 0.319 Peak Height (A): 0.209
Background Pk Area (A-s): 0.235 Background Pk Height (A): 0.139
Blank Corrected Pk Area (A-s): 0.315

The standard additions calibration curve may not be linear.
As ID: 57.037.30 Seq. No.: 00178 A/S Pos.: 19 Date: 06/25/92

Concentration (ug/L): 9.7



As ID: 57.037.36 Seq. No.: 00182 A/S Pos.: 21 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 21
Replicate 1 Time: 12:21
Peak Area (A-s): 0.033 Peak Height (A): 0.023
Background Pk Area (A-s): 0.266 Background Pk Height (A): 0.152
Blank Corrected Pk Area (A-s): 0.028

As ID: Standard 1 Seq. No.: 00183 A/S Pos.: 21 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 2, 10 from 21
Replicate 1 Time: 12:25
Peak Area (A-s): 0.071 Peak Height (A): 0.054
Background Pk Area (A-s): 0.238 Background Pk Height (A): 0.158
Blank Corrected Pk Area (A-s): 0.067

As ID: Standard 2 Seq. No.: 00184 A/S Pos.: 21 Date: 06/25/92

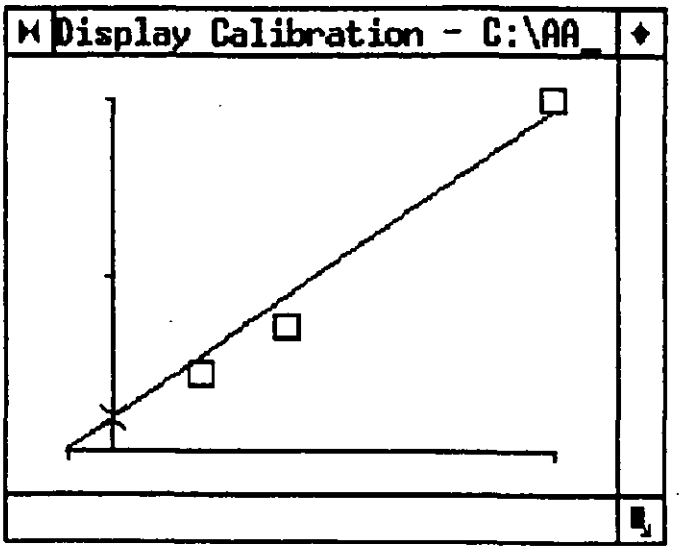
uL dispensed: 5 from 39, 10 from 3, 10 from 21
Replicate 1 Time: 12:29
Peak Area (A-s): 0.114 Peak Height (A): 0.078
Background Pk Area (A-s): 0.242 Background Pk Height (A): 0.177
Blank Corrected Pk Area (A-s): 0.110

As ID: Standard 3 Seq. No.: 00185 A/S Pos.: 21 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 4, 10 from 21
Replicate 1 Time: 12:32
Peak Area (A-s): 0.322 Peak Height (A): 0.215
Background Pk Area (A-s): 0.249 Background Pk Height (A): 0.173
Blank Corrected Pk Area (A-s): 0.317

The standard additions calibration curve may not be linear.
As ID: 57.037.36 Seq. No.: 00182 A/S Pos.: 21 Date: 06/25/92

Concentration (ug/L): 10.2


Display Calibration - C:\AA_

HD MDT
RERUNS

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lement File: AS_MSA.GEL Element: As Wavelength: 193.7
Da 06/30/92 Time: 09:56 Slit: 0.70 L
ata File: RR.DAT ID/Wt File: RR.IDW Lamp Current: 0
echnique: HGA Calib. Type: Method of Add. Energy: 61

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s ID: Blank Seq. No.: 00006 A/S Pos.: 0 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 0
eplicate 1 Time: 09:58
eak Area (A-s): 0.006 Peak Height (A): 0.011
Background Pk Area (A-s): 0.677 Background Pk Height (A): 0.309
Blank Corrected Pk Area (A-s): 0.006

uto-zero performed.

s ID: 57.037.63 Seq. No.: 00007 A/S Pos.: 11 Date: 06/30/92

L dispensed: 15 from 0, 5 from 39, 15 from 11
eplicate 1 Time: 10:02
Peak Area (A-s): 0.208 Peak Height (A): 0.175
Background Pk Area (A-s): 0.863 Background Pk Height (A): 0.352
lank Corrected Pk Area (A-s): 0.202

As ID: Standard 1 Seq. No.: 00008 A/S Pos.: 11 Date: 06/30/92

L .spensed: 5 from 39, 15 from 2, 15 from 11
Replicate 1 Time: 10:05
eak Area (A-s): 0.299 Peak Height (A): 0.250
ackground Pk Area (A-s): 0.545 Background Pk Height (A): 0.327
Blank Corrected Pk Area (A-s): 0.293

s ID: Standard 2 Seq. No.: 00009 A/S Pos.: 11 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 3, 15 from 11
eplicate 1 Time: 10:08
eak Area (A-s): 0.384 Peak Height (A): 0.284
Background Pk Area (A-s): 0.447 Background Pk Height (A): 0.267
lank Corrected Pk Area (A-s): 0.377

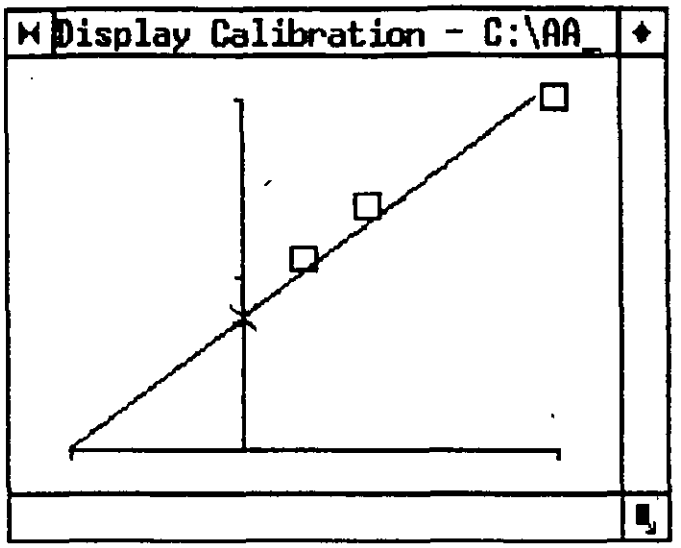
As ID: Standard 3 Seq. No.: 00010 A/S Pos.: 11 Date: 06/30/92

L dispensed: 5 from 39, 15 from 4, 15 from 11
eplicate 1 Time: 10:12
Peak Area (A-s): 0.549 Peak Height (A): 0.394
ackground Pk Area (A-s): 0.400 Background Pk Height (A): 0.229
lank Corrected Pk Area (A-s): 0.543

he standard additions calibration curve may not be linear.
s ID: 57.037.63 Seq. No.: 00007 A/S Pos.: 11 Date: 06/30/92

Co entration (ug/L): 55.9

orrelation coefficient: 0.98092 Slope: 0.0036



As ID: ~~57.037.12~~ RERUN Seq. No.: 00011 A/S Pos.: 12 Date: 06/30/92

uL dispensed: 15 from 0, 5 from 39, 15 from 12
Replicate 1 Time: 10:15
Peak Area (A-s): 0.098 Peak Height (A): 0.066
Background Pk Area (A-s): 0.449 Background Pk Height (A): 0.227
Blank Corrected Pk Area (A-s): 0.092

As ID: Standard 1 Seq. No.: 00012 A/S Pos.: 12 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 2, 15 from 12
Replicate 1 Time: 10:19
Peak Area (A-s): 0.100 Peak Height (A): 0.075
Background Pk Area (A-s): 0.307 Background Pk Height (A): 0.201
Blank Corrected Pk Area (A-s): 0.094

As ID: Standard 2 Seq. No.: 00013 A/S Pos.: 12 Date: 06/30/92

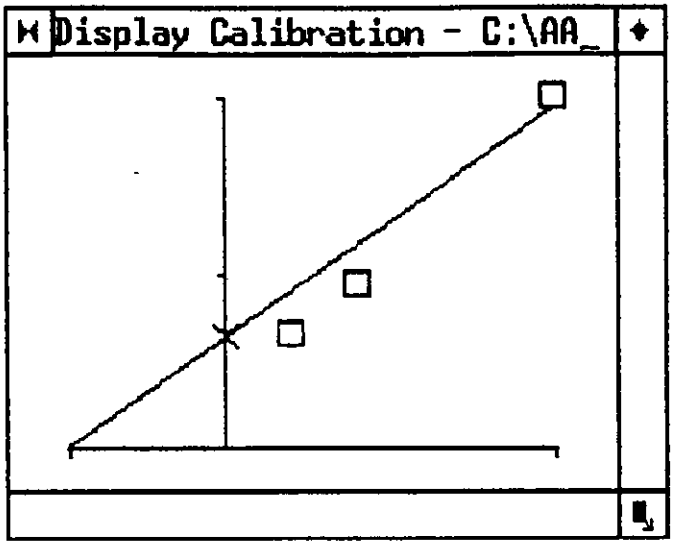
uL dispensed: 5 from 39, 15 from 3, 15 from 12
Replicate 1 Time: 10:22
Peak Area (A-s): 0.142 Peak Height (A): 0.115
Background Pk Area (A-s): 0.300 Background Pk Height (A): 0.188
Blank Corrected Pk Area (A-s): 0.136

As ID: Standard 3 Seq. No.: 00014 A/S Pos.: 12 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 4, 15 from 12
Replicate 1 Time: 10:26
Peak Area (A-s): 0.297 Peak Height (A): 0.233
Background Pk Area (A-s): 0.295 Background Pk Height (A): 0.161
Blank Corrected Pk Area (A-s): 0.291

The standard additions calibration curve may not be linear.
As ID: 57.037.12 Seq. No.: 00011 A/S Pos.: 12 Date: 06/30/92

Concentration (ug/L): 47.8



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As ID: 57.037.24 Seq. No.: 00015 A/S Pos.: 13 Date: 06/30/92

uL dispensed: 15 from 0, 5 from 39, 15 from 13
Replicate 1 Time: 10:29
Peak Area (A-s): 0.090 Peak Height (A): 0.056
Background Pk Area (A-s): 0.356 Background Pk Height (A): 0.161
Blank Corrected Pk Area (A-s): 0.084

As ID: Standard 1 Seq. No.: 00016 A/S Pos.: 13 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 2, 15 from 13
Replicate 1 Time: 10:33
Peak Area (A-s): 0.109 Peak Height (A): 0.089
Background Pk Area (A-s): 0.490 Background Pk Height (A): 0.620
Blank Corrected Pk Area (A-s): 0.102

As ID: Standard 2 Seq. No.: 00017 A/S Pos.: 13 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 3, 15 from 13
Replicate 1 Time: 10:36
Peak Area (A-s): 0.175 Peak Height (A): 0.144
Background Pk Area (A-s): 0.282 Background Pk Height (A): 0.148
Blank Corrected Pk Area (A-s): 0.169

As ID: Standard 3 Seq. No.: 00018 A/S Pos.: 13 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 4, 15 from 13
Replicate 1 Time: 10:39
Peak Area (A-s): 0.339 Peak Height (A): 0.288
Background Pk Area (A-s): 0.274 Background Pk Height (A): 0.138
Blank Corrected Pk Area (A-s): 0.333

The standard additions calibration curve may not be linear.
As ID: 57.037.24 Seq. No.: 00015 A/S Pos.: 13 Date: 06/30/92

Concentration (ug/L): 34.6 ✓
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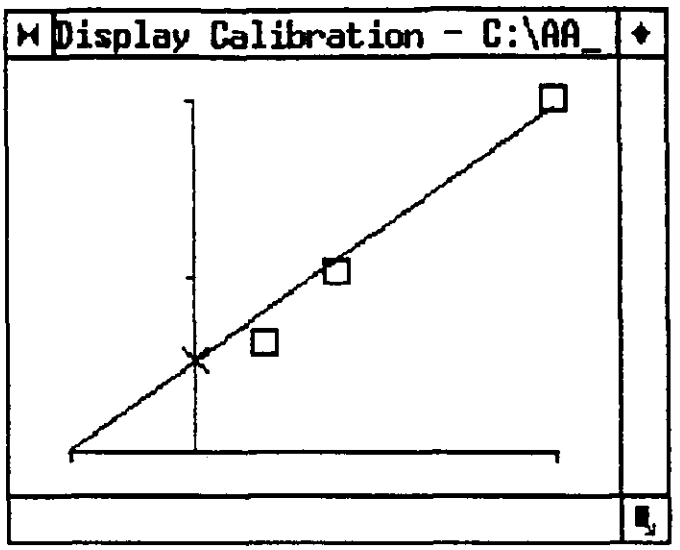


As ID: 57.037.131 Seq. No.: 00019 A/S Pos.: 14 Date: 06/30/92

uL dispensed: 15 from 0, 5 from 39, 15 from 14
Replicate 1 Time: 10:43
Peak Area (A-s): 0.081 Peak Height (A): 0.056
Background Pk Area (A-s): 0.236 Background Pk Height (A): 0.144
Blank Corrected Pk Area (A-s): 0.075

As ID: Standard 1 Seq. No.: 00020 A/S Pos.: 14 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 2, 15 from 14
Replicate 1 Time: 10:47
Peak Area (A-s): 0.124 Peak Height (A): 0.111
Background Pk Area (A-s): 0.200 Background Pk Height (A): 0.189
Blank Corrected Pk Area (A-s): 0.118

As ID: Standard 2 Seq. No.: 00021 A/S Pos.: 14 Date: 06/30/92

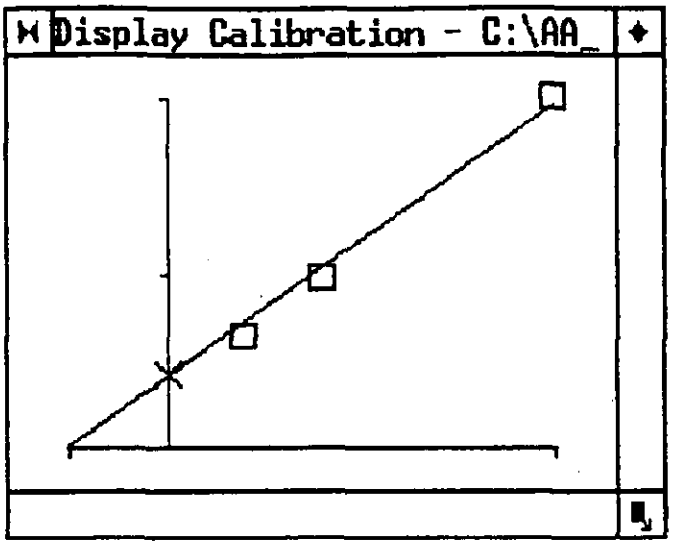
uL dispensed: 5 from 39, 15 from 3, 15 from 14
Replicate 1 Time: 10:50
Peak Area (A-s): 0.185 Peak Height (A): 0.174
Background Pk Area (A-s): 0.192 Background Pk Height (A): 0.187
Blank Corrected Pk Area (A-s): 0.179

As ID: Standard 3 Seq. No.: 00022 A/S Pos.: 14 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 4, 15 from 14
Replicate 1 Time: 10:53
Peak Area (A-s): 0.377 Peak Height (A): 0.348
Background Pk Area (A-s): 0.204 Background Pk Height (A): 0.202
Blank Corrected Pk Area (A-s): 0.371

The standard additions calibration curve may not be linear.
As ID: 57.037.131 Seq. No.: 00019 A/S Pos.: 14 Date: 06/30/92

Concentration (ug/L): 25.9



As ID: 57.037.128 Seq. No.: 00023 A/S Pos.: 15 Date: 06/30/92

uL dispensed: 15 from 0, 5 from 39, 15 from 15
Replicate 1 Time: 10:57
Peak Area (A-s): 0.058 Peak Height (A): 0.040
Background Pk Area (A-s): 0.212 Background Pk Height (A): 0.101
Blank Corrected Pk Area (A-s): 0.052

s ID: Standard 1 Seq. No.: 00024 A/S Pos.: 15 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 2, 15 from 15
eplicate 1 Time: 11:01
eak Area (A-s): 0.106 Peak Height (A): 0.075
Background Pk Area (A-s): 0.269 Background Pk Height (A): 0.461
lank Corrected Pk Area (A-s): 0.100

As ID: Standard 2 Seq. No.: 00025 A/S Pos.: 15 Date: 06/30/92

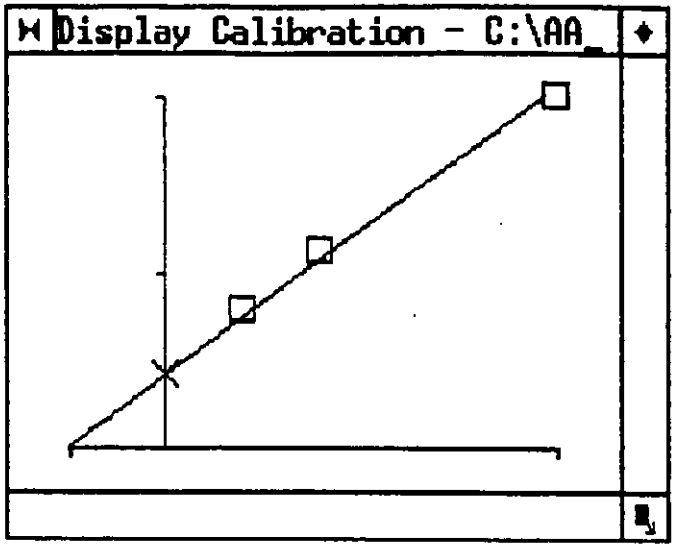
L dispensed: 5 from 39, 15 from 3, 15 from 15
Replicate 1 Time: 11:04
Peak Area (A-s): 0.152 Peak Height (A): 0.097
ackground Pk Area (A-s): 0.184 Background Pk Height (A): 0.099
lank Corrected Pk Area (A-s): 0.145

s ID: Standard 3 Seq. No.: 00026 A/S Pos.: 15 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 4, 15 from 15
eplicate 1 Time: 11:07
eak Area (A-s): 0.265 Peak Height (A): 0.157
Background Pk Area (A-s): 0.265 Background Pk Height (A): 0.449
Bl Corrected Pk Area (A-s): 0.259

he standard additions calibration curve may not be linear.
As ID: 57.037.128 Seq. No.: 00023 A/S Pos.: 15 Date: 06/30/92

oncentration (ug/L): 24.6 ✓


Display Calibration - C:\AA_

As ID: 57.037.12 Seq. No.: 00029 A/S Pos.: 12 Date: 06/30/92

L dispensed: 15 from 0, 5 from 39, 15 from 12
eplicate 1 Time: 11:35
Peak Area (A-s): 0.036 Peak Height (A): 0.030
ackground Pk Area (A-s): 0.362 Background Pk Height (A): 0.138
lank Corrected Pk Area (A-s): 0.030

As ID: Standard 1 Seq. No.: 00030 A/S Pos.: 12 Date: 06/30/92

L dispensed: 5 from 39, 15 from 2, 15 from 12
Replicate 1 Time: 11:39
eak Area (A-s): 0.089 Peak Height (A): 0.072
ackground Pk Area (A-s): 0.327 Background Pk Height (A): 0.187
Blank Corrected Pk Area (A-s): 0.083

s ID: Standard 2 Seq. No.: 00031 A/S Pos.: 12 Date: 06/30/92

L dispensed: 5 from 39, 15 from 3, 15 from 12
eplicate 1 Time: 11:42
eak Area (A-s): 0.138 Peak Height (A): 0.110
Background Pk Area (A-s): 0.314 Background Pk Height (A): 0.173
lank Corrected Pk Area (A-s): 0.131

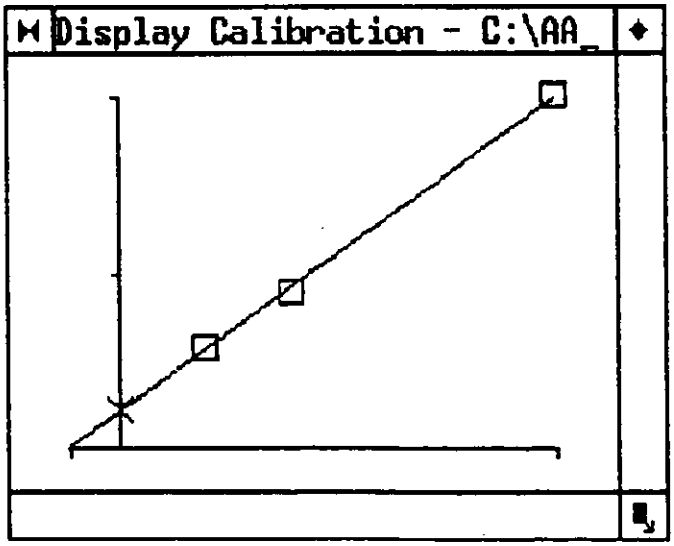
As ID: Standard 3 Seq. No.: 00032 A/S Pos.: 12 Date: 06/30/92

spensed: 5 from 39, 15 from 4, 15 from 12
Rel icate 1 Time: 11:45
Peak Area (A-s): 0.302 Peak Height (A): 0.244
ackground Pk Area (A-s): 0.313 Background Pk Height (A): 0.167
lank Corrected Pk Area (A-s): 0.296

s ID: 57.037.12 Seq. No.: 00029 A/S Pos.: 12 Date: 06/30/92

Concentration (ug/L): 11.4

orrelation coefficient: 0.99954 Slope: 0.0026



Needs .75

Element File: PB_MSA.GEL Element: Pb Wavelength: 283.3
Date: 06/25/92 Time: 12:38 Slit: 0.70 L
Data File: 21122B.DAT ID/Wt File: 21122.IDW Lamp Current: 10
Technique: HGA Calib. Type: Method of Add. Energy: 64

Pb ID: Blank Seq. No.: 00186 A/S Pos.: 0 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 0
Replicate 1 Time: 12:41
Peak Area (A-s): 0.038 Peak Height (A): 0.077
Background Pk Area (A-s): 0.333 Background Pk Height (A): 0.122
Blank Corrected Pk Area (A-s): 0.038

Auto-zero performed.

Pb ID: 57.037.6 ✓ Seq. No.: 00187 A/S Pos.: 11 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 11
Replicate 1 Time: 12:44
Peak Area (A-s): 0.095 Peak Height (A): 0.208
Background Pk Area (A-s): 0.482 Background Pk Height (A): 0.414
Blank Corrected Pk Area (A-s): 0.057

Pb ID: Standard 1 Seq. No.: 00188 A/S Pos.: 11 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 4, 10 from 11
Replicate 1 Time: 12:47
Peak Area (A-s): 0.188 Peak Height (A): 0.435
Background Pk Area (A-s): 0.442 Background Pk Height (A): 0.436
Blank Corrected Pk Area (A-s): 0.151

Pb ID: Standard 2 Seq. No.: 00189 A/S Pos.: 11 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 5, 10 from 11
Replicate 1 Time: 12:50
Peak Area (A-s): 0.297 Peak Height (A): 0.638
Background Pk Area (A-s): 0.507 Background Pk Height (A): 0.394
Blank Corrected Pk Area (A-s): 0.259

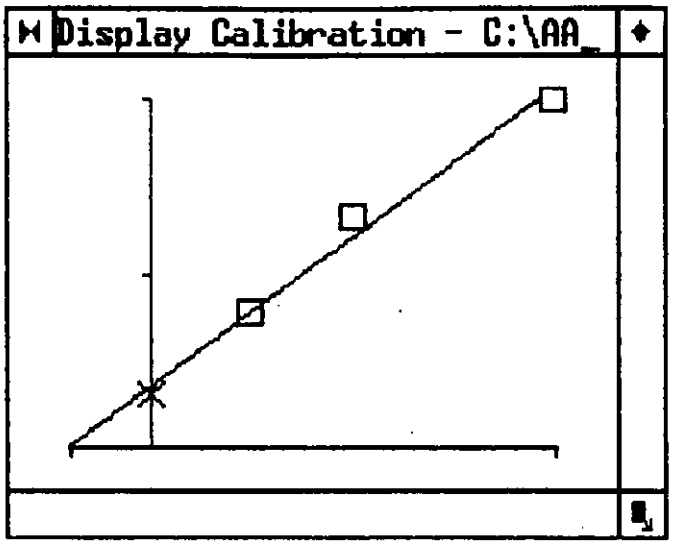
Pb ID: Standard 3 Seq. No.: 00190 A/S Pos.: 11 Date: 06/25/92

uL dispensed: 5 from 38, 20 from 5, 10 from 11
Replicate 1 Time: 12:53
Peak Area (A-s): 0.430 Peak Height (A): 0.819
Background Pk Area (A-s): 0.426 Background Pk Height (A): 0.421
Blank Corrected Pk Area (A-s): 0.392

Pb ID: 57.037.6 Seq. No.: 00187 A/S Pos.: 11 Date: 06/25/92

Concentration (ug/L): 40.2

Correlation coefficient: 0.99371 Slope: 0.0017 Int: 0.068


Display Calibration - C:\AA_

Pb ID: 57.037.12 ✓ Seq. No.: 00191 A/S Pos.: 13 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 13
Replicate 1 Time: 12:58
Peak Area (A-s): 0.146 Peak Height (A): 0.292
Background Pk Area (A-s): 0.575 Background Pk Height (A): 0.473
Blank Corrected Pk Area (A-s): 0.109

Pb ID: Standard 1 Seq. No.: 00192 A/S Pos.: 13 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 4, 10 from 13
Replicate 1 Time: 13:01
Peak Area (A-s): 0.220 Peak Height (A): 0.502
Background Pk Area (A-s): 0.601 Background Pk Height (A): 0.625
Blank Corrected Pk Area (A-s): 0.182

Pb ID: Standard 2 Seq. No.: 00193 A/S Pos.: 13 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 5, 10 from 13
Replicate 1 Time: 13:05
Peak Area (A-s): 0.300 Peak Height (A): 0.661
Background Pk Area (A-s): 0.608 Background Pk Height (A): 0.573
Blank Corrected Pk Area (A-s): 0.262

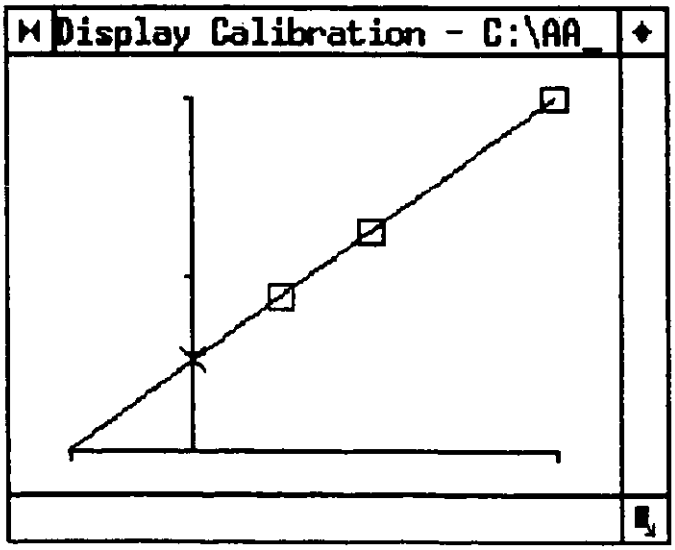
Pb ID: Standard 3 Seq. No.: 00194 A/S Pos.: 13 Date: 06/25/92

uL dispensed: 5 from 38, 20 from 5, 10 from 13
Replicate 1 Time: 13:08
Peak Area (A-s): 0.460 Peak Height (A): 0.900
Background Pk Area (A-s): 0.567 Background Pk Height (A): 0.524
Blank Corrected Pk Area (A-s): 0.422

Pb ID: 57.037.12 Seq. No.: 00191 A/S Pos.: 13 Date: 06/25/92

Concentration (ug/L): 67.3

Correlation coefficient: 0.99985 Slope: 0.0016 Int: 0.106



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b ID: 57.037.18 ✓ Seq. No.: 00195 A/S Pos.: 15 Date: 06/25/92

uL spensed: 10 from 0, 5 from 38, 10 from 15
eplicate 1 Time: 13:12
eak Area (A-s): 0.162 Peak Height (A): 0.325
Background Pk Area (A-s): 0.572 Background Pk Height (A): 0.537
Blank Corrected Pk Area (A-s): 0.124

b ID: Standard 1 Seq. No.: 00196 A/S Pos.: 15 Date: 06/25/92

L dispensed: 10 from 0, 5 from 38, 10 from 4, 10 from 15
eplicate 1 Time: 13:16
Peak Area (A-s): 0.235 Peak Height (A): 0.512
ackground Pk Area (A-s): 0.596 Background Pk Height (A): 0.596
lank Corrected Pk Area (A-s): 0.197

Pb ID: Standard 2 Seq. No.: 00197 A/S Pos.: 15 Date: 06/25/92

L dispensed: 10 from 0, 5 from 38, 10 from 5, 10 from 15
Replicate 1 Time: 13:20
eak Area (A-s): 0.317 Peak Height (A): 0.660
ackground Pk Area (A-s): 0.603 Background Pk Height (A): 0.570
Blank Corrected Pk Area (A-s): 0.279

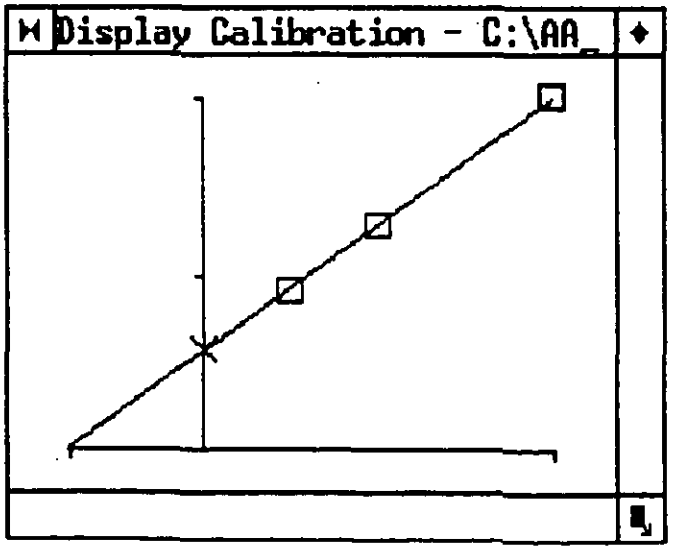
b ID: Standard 3 Seq. No.: 00198 A/S Pos.: 15 Date: 06/25/92

uL dispensed: 5 from 38, 20 from 5, 10 from 15
er icate 1 Time: 13:23
e. Area (A-s): 0.475 Peak Height (A): 0.900
Background Pk Area (A-s): 0.575 Background Pk Height (A): 0.519
lank Corrected Pk Area (A-s): 0.437

Pb ID: 57.037.18 Seq. No.: 00195 A/S Pos.: 15 Date: 06/25/92

oncentration (ug/L): 77.3

Correlation coefficient: 0.99985 Slope: 0.0016 Int: 0.122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Pb ID: 57.037.24 ✓ Seq. No.: 00199 A/S Pos.: 17 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 17
Replicate 1 Time: 13:27
Peak Area (A-s): 0.166 Peak Height (A): 0.319
Background Pk Area (A-s): 0.570 Background Pk Height (A): 0.561
Blank Corrected Pk Area (A-s): 0.128

Pb ID: Standard 1 Seq. No.: 00200 A/S Pos.: 17 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 4, 10 from 17
Replicate 1 Time: 13:31
Peak Area (A-s): 0.220 Peak Height (A): 0.479
Background Pk Area (A-s): 0.587 Background Pk Height (A): 0.580
Blank Corrected Pk Area (A-s): 0.182

Pb ID: Standard 2 Seq. No.: 00201 A/S Pos.: 17 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 5, 10 from 17
Replicate 1 Time: 13:35
Peak Area (A-s): 0.303 Peak Height (A): 0.641
Background Pk Area (A-s): 0.607 Background Pk Height (A): 0.580
Blank Corrected Pk Area (A-s): 0.265

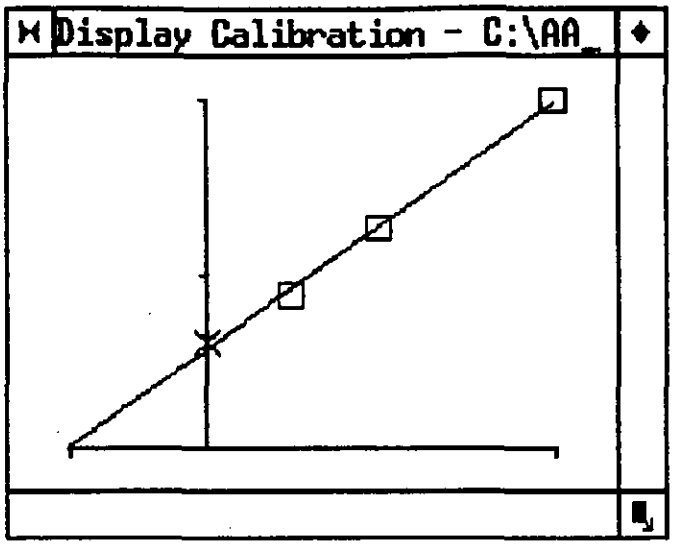
Pb ID: Standard 3 Seq. No.: 00202 A/S Pos.: 17 Date: 06/25/92

uL dispensed: 5 from 38, 20 from 5, 10 from 17
Replicate 1 Time: 13:38
Peak Area (A-s): 0.463 Peak Height (A): 0.871
Background Pk Area (A-s): 0.569 Background Pk Height (A): 0.527
Blank Corrected Pk Area (A-s): 0.425

The standard additions calibration curve may not be linear.
Pb ID: 57.037.24 Seq. No.: 00199 A/S Pos.: 17 Date: 06/25/92

Concentration (ug/L): 77.9

Correlation coefficient: 0.99739 Slope: 0.0015 Int: 0.118



Pb ID: 57.037.30 ✓ Seq. No.: 00203 A/S Pos.: 19 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 19
Replicate 1 Time: 13:42
Peak Area (A-s): 0.173 Peak Height (A): 0.336
Background Pk Area (A-s): 0.567 Background Pk Height (A): 0.563
Blank Corrected Pk Area (A-s): 0.135

Pb ID: Standard 1 Seq. No.: 00204 A/S Pos.: 19 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 4, 10 from 19
Replicate 1 Time: 13:46
Peak Area (A-s): 0.234 Peak Height (A): 0.504
Background Pk Area (A-s): 0.591 Background Pk Height (A): 0.584
Blank Corrected Pk Area (A-s): 0.196

Pb ID: Standard 2 Seq. No.: 00205 A/S Pos.: 19 Date: 06/25/92

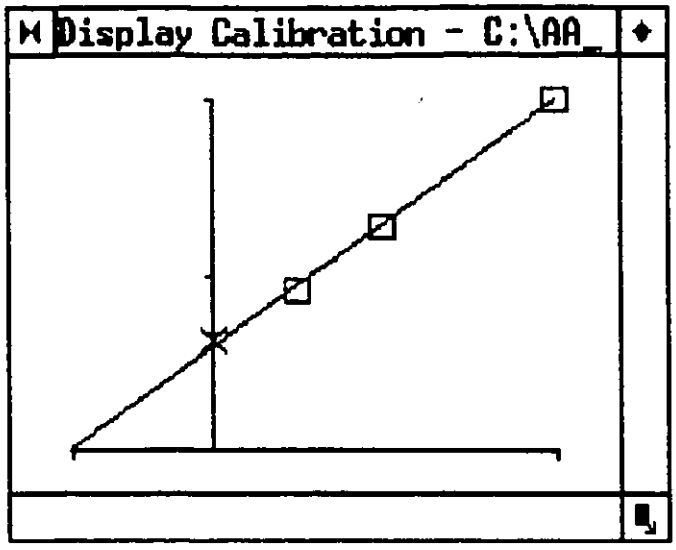
uL dispensed: 10 from 0, 5 from 38, 10 from 5, 10 from 19
Replicate 1 Time: 13:50
Peak Area (A-s): 0.317 Peak Height (A): 0.665
Background Pk Area (A-s): 0.596 Background Pk Height (A): 0.574
Blank Corrected Pk Area (A-s): 0.279

Pb ID: Standard 3 Seq. No.: 00206 A/S Pos.: 19 Date: 06/25/92

uL dispensed: 5 from 38, 20 from 5, 10 from 19
Replicate 1 Time: 13:53
Peak Area (A-s): 0.477 Peak Height (A): 0.887
Background Pk Area (A-s): 0.564 Background Pk Height (A): 0.533
Blank Corrected Pk Area (A-s): 0.439

The standard additions calibration curve may not be linear.
Pb ID: 57.037.30 Seq. No.: 00203 A/S Pos.: 19 Date: 06/25/92

Concentration (ug/L): 82.9



Pb ID: 57.037.36 ✓ Seq. No.: 00207 A/S Pos.: 21 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 21
Replicate 1 Time: 13:57
Peak Area (A-s): 0.173 Peak Height (A): 0.335
Background Pk Area (A-s): 0.555 Background Pk Height (A): 0.567
Blank Corrected Pk Area (A-s): 0.136

Pb ID: Standard 1 Seq. No.: 00208 A/S Pos.: 21 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 4, 10 from 21
Replicate 1 Time: 14:01
Peak Area (A-s): 0.237 Peak Height (A): 0.502
Background Pk Area (A-s): 0.563 Background Pk Height (A): 0.573
Blank Corrected Pk Area (A-s): 0.199

Pb ID: Standard 2 Seq. No.: 00209 A/S Pos.: 21 Date: 06/25/92

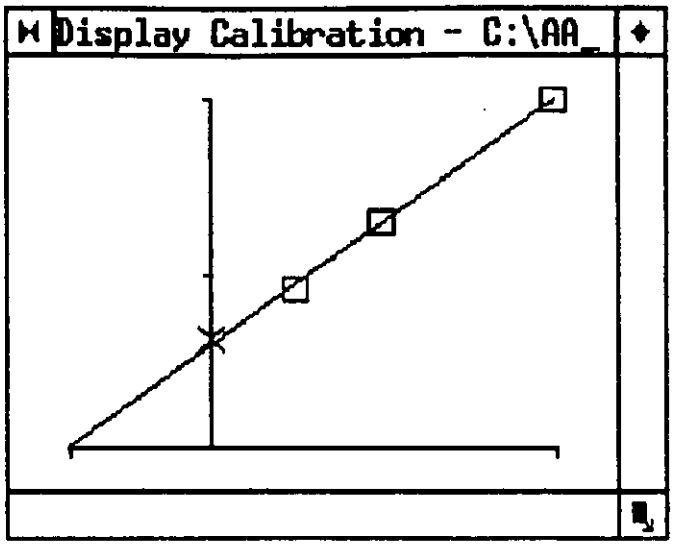
uL dispensed: 10 from 0, 5 from 38, 10 from 5, 10 from 21
Replicate 1 Time: 14:05
Peak Area (A-s): 0.320 Peak Height (A): 0.664
Background Pk Area (A-s): 0.591 Background Pk Height (A): 0.579
Blank Corrected Pk Area (A-s): 0.282

Pb ID: Standard 3 Seq. No.: 00210 A/S Pos.: 21 Date: 06/25/92

uL dispensed: 5 from 38, 20 from 5, 10 from 21
Replicate 1 Time: 14:08
Peak Area (A-s): 0.479 Peak Height (A): 0.903
Background Pk Area (A-s): 0.560 Background Pk Height (A): 0.542
Blank Corrected Pk Area (A-s): 0.441

The standard additions calibration curve may not be linear.
Pb ID: 57.037.36 Seq. No.: 00207 A/S Pos.: 21 Date: 06/25/92

Concentration (ug/L): 83.6



Pb ID: 57.037,75 Zero Seq. No.: 00211 A/S Pos.: 22 Date: 06/25/92

L dispensed: 10 from 0, 5 from 38, 10 from 22
Replicate 1 Time: 14:12
Peak Area (A-s): 1.079 Peak Height (A): 1.266
ar ground Pk Area (A-s): 0.994 Background Pk Height (A): 1.123
Bl. Corrected Pk Area (A-s): 1.041

b ID: Standard 1 Seq. No.: 00212 A/S Pos.: 22 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 4, 10 from 22
eplicate 1 Time: 14:16
eak Area (A-s): 1.187 Peak Height (A): 1.266
Background Pk Area (A-s): 1.132 Background Pk Height (A): 1.309
Blank Corrected Pk Area (A-s): 1.150

Pb ID: Standard 2 Seq. No.: 00213 A/S Pos.: 22 Date: 06/25/92

L dispensed: 10 from 0, 5 from 38, 10 from 5, 10 from 22

Pb ID: 57.037.128 ✓ Seq. No.: 00218 A/S Pos.: 35 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 35

Replicate 1 Time: 14:36
Peak Area (A-s): 0.176 Peak Height (A): 0.323
Background Pk Area (A-s): 0.525 Background Pk Height (A): 0.389
Blank Corrected Pk Area (A-s): 0.138

Pb ID: Standard 1 Seq. No.: 00219 A/S Pos.: 35 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 4, 10 from 35
Replicate 1 Time: 14:40
Peak Area (A-s): 0.232 Peak Height (A): 0.488
Background Pk Area (A-s): 0.555 Background Pk Height (A): 0.511
Blank Corrected Pk Area (A-s): 0.194

Pb ID: Standard 2 Seq. No.: 00220 A/S Pos.: 35 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 38, 10 from 5, 10 from 35
Replicate 1 Time: 14:44
Peak Area (A-s): 0.309 Peak Height (A): 0.647
Background Pk Area (A-s): 0.578 Background Pk Height (A): 0.524
Blank Corrected Pk Area (A-s): 0.272

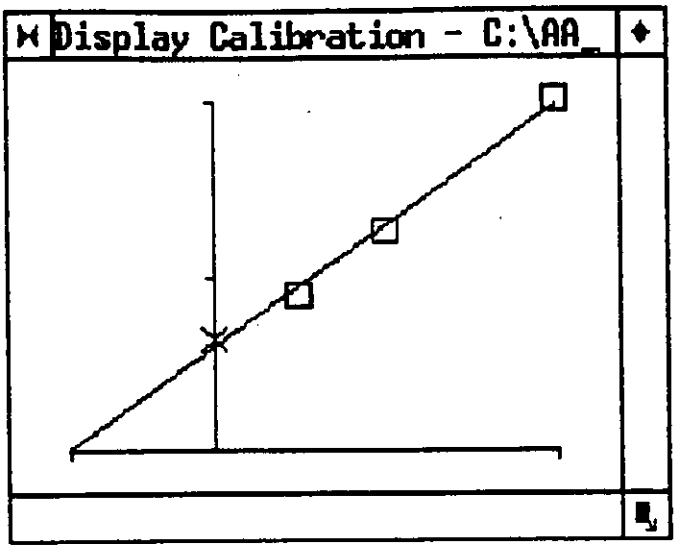
Pb ID: Standard 3 Seq. No.: 00221 A/S Pos.: 35 Date: 06/25/92

uL dispensed: 5 from 38, 20 from 5, 10 from 35
Replicate 1 Time: 14:47
Peak Area (A-s): 0.475 Peak Height (A): 0.906
Background Pk Area (A-s): 0.555 Background Pk Height (A): 0.496
Blank Corrected Pk Area (A-s): 0.437

The standard additions calibration curve may not be linear.
Pb ID: 57.037.128 Seq. No.: 00218 A/S Pos.: 35 Date: 06/25/92

Concentration (ug/L): 83.9

Correlation coefficient: 0.99709 Slope: 0.0015 Int: 0.127


Display Calibration - C:\AA_

Element File: SB_MSA.GEL	Element: Sb	Wavelength: 217.6
Date: 06/25/92	Time: 15:12	Slit: 0.70 L
Data File: 21122B.DAT	ID/Wt File: 21122.IDW	Lamp Current: 20
Technique: HGA	Calib. Type: Method of Add.	Energy: 63

Sb ID: 57.037.24 ✓ Seq. No.: 00225 A/S Pos.: 17 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 17
Replicate 1 Time: 15:15
Peak Area (A-s): 0.040 Peak Height (A): 0.041
Background Pk Area (A-s): 0.323 Background Pk Height (A): 0.295
Blank Corrected Pk Area (A-s): 0.040

Sb ID: Standard 1 Seq. No.: 00226 A/S Pos.: 17 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 7, 10 from 17
Replicate 1 Time: 15:19
Peak Area (A-s): 0.054 Peak Height (A): 0.046
Background Pk Area (A-s): 0.238 Background Pk Height (A): 0.255
Blank Corrected Pk Area (A-s): 0.054

Sb ID: Standard 2 Seq. No.: 00227 A/S Pos.: 17 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 8, 10 from 17
Replicate 1 Time: 15:22
Peak Area (A-s): 0.081 Peak Height (A): 0.068
Background Pk Area (A-s): 0.228 Background Pk Height (A): 0.249
Blank Corrected Pk Area (A-s): 0.081

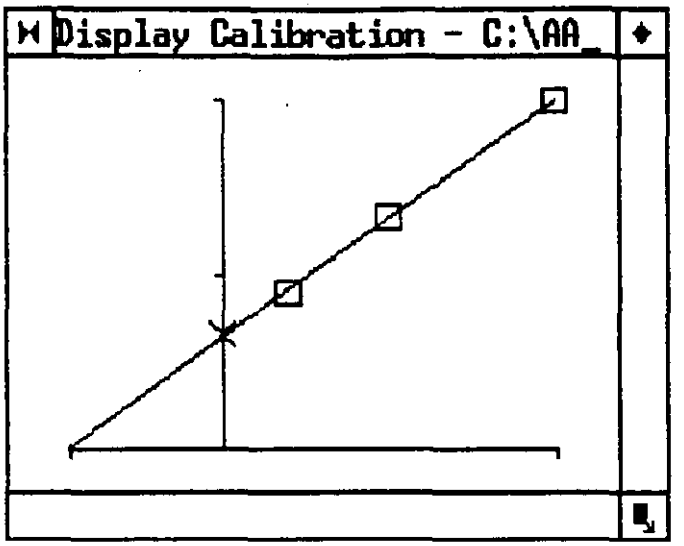
Sb ID: Standard 3 Seq. No.: 00228 A/S Pos.: 17 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 9, 10 from 17
Replicate 1 Time: 15:26
Peak Area (A-s): 0.122 Peak Height (A): 0.097
Background Pk Area (A-s): 0.235 Background Pk Height (A): 0.272
Blank Corrected Pk Area (A-s): 0.122

Sb ID: 57.037.24 Seq. No.: 00225 A/S Pos.: 17 Date: 06/25/92

Concentration (ug/L): 46.6

Correlation coefficient: 0.99965 Slope: 0.0008 Int: 0.039



Sb ID: 57.037.30 ✓ Seq. No.: 00229 A/S Pos.: 19 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 19
Replicate 1 Time: 15:30
Peak Area (A-s): 0.035 Peak Height (A): 0.034
Background Pk Area (A-s): 0.279 Background Pk Height (A): 0.265
Blank Corrected Pk Area (A-s): 0.035

Sb ID: Standard 1 Seq. No.: 00230 A/S Pos.: 19 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 7, 10 from 19
Replicate 1 Time: 15:34
Peak Area (A-s): 0.043 Peak Height (A): 0.036
Background Pk Area (A-s): 0.235 Background Pk Height (A): 0.258
Blank Corrected Pk Area (A-s): 0.043

Sb ID: Standard 2 Seq. No.: 00231 A/S Pos.: 19 Date: 06/25/92

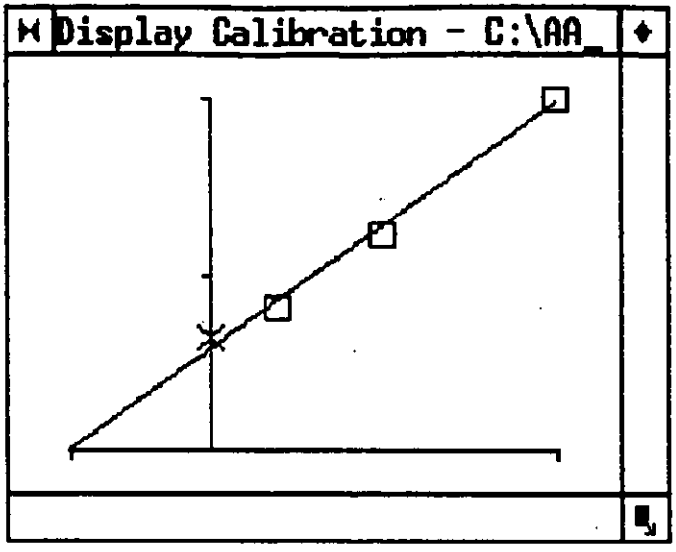
uL dispensed: 5 from 39, 10 from 8, 10 from 19
Replicate 1 Time: 15:37
Peak Area (A-s): 0.067 Peak Height (A): 0.057
Background Pk Area (A-s): 0.219 Background Pk Height (A): 0.235
Blank Corrected Pk Area (A-s): 0.067

Sb ID: Standard 3 Seq. No.: 00232 A/S Pos.: 19 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 9, 10 from 19
Replicate 1 Time: 15:41
Peak Area (A-s): 0.110 Peak Height (A): 0.088
Background Pk Area (A-s): 0.225 Background Pk Height (A): 0.234
Blank Corrected Pk Area (A-s): 0.110

The standard additions calibration curve may not be linear.
Sb ID: 57.037.30 Seq. No.: 00229 A/S Pos.: 19 Date: 06/25/92

Concentration (ug/L): 40.2



Sb ID: 57.037.36 ✓ Seq. No.: 00233 A/S Pos.: 21 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 21
Replicate 1 Time: 15:45
Peak Area (A-s): 0.027 Peak Height (A): 0.023
Background Pk Area (A-s): 0.252 Background Pk Height (A): 0.255
Blank Corrected Pk Area (A-s): 0.027

Sb ID: Standard 1 Seq. No.: 00234 A/S Pos.: 21 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 7, 10 from 21
Replicate 1 Time: 15:48
Peak Area (A-s): 0.038 Peak Height (A): 0.032
Background Pk Area (A-s): 0.217 Background Pk Height (A): 0.235
Blank Corrected Pk Area (A-s): 0.038

Sb ID: Standard 2 Seq. No.: 00235 A/S Pos.: 21 Date: 06/25/92

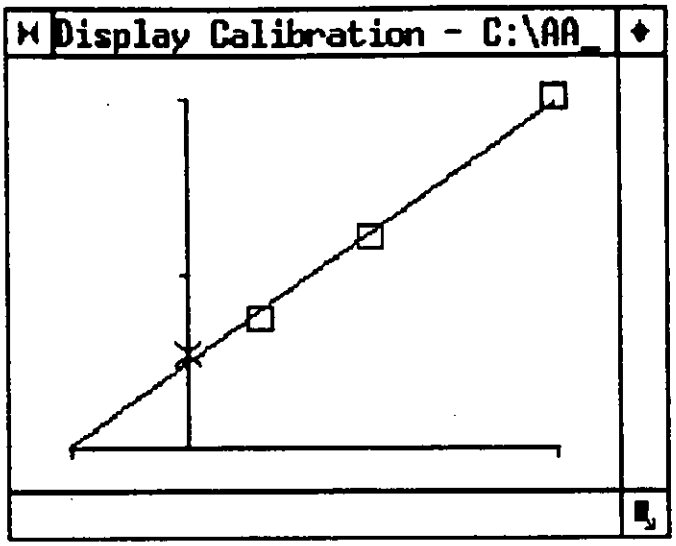
uL dispensed: 5 from 39, 10 from 8, 10 from 21
Replicate 1 Time: 15:52
Peak Area (A-s): 0.062 Peak Height (A): 0.053
Background Pk Area (A-s): 0.212 Background Pk Height (A): 0.210
Blank Corrected Pk Area (A-s): 0.062

Sb ID: Standard 3 Seq. No.: 00236 A/S Pos.: 21 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 9, 10 from 21
Replicate 1 Time: 15:56
Peak Area (A-s): 0.104 Peak Height (A): 0.085
Background Pk Area (A-s): 0.221 Background Pk Height (A): 0.212
Blank Corrected Pk Area (A-s): 0.104

The standard additions calibration curve may not be linear.
Sb ID: 57.037.36 Seq. No.: 00233 A/S Pos.: 21 Date: 06/25/92

Concentration (ug/L): 31.6


Display Calibration - C:\AA_

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==========================================================================
Multi. File: 062492.HMU          Analyst:
Date: 06/24/92                   Time: 16:17
Data File: 21122B.DAT            ID/Wt File: 21122.IDW
==========================================================================
--------------------------------------------------------------------------
Element File: SB_MSA.GEL         Element: Sb                  Wavelength: 217.6
Date: 06/24/92                   Time: 16:19                  Slit: 0.70 L
Data File: 21122B.DAT            ID/Wt File: 21122.IDW        Lamp Current: 20
Technique: HGA                   Calib. Type: Method of Add.  Energy: 63
--------------------------------------------------------------------------
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Sb    ID: Blank                  Seq. No.: 00001    A/S Pos.: 0     Date: 06/24/92

uL dispensed: 5 from 39, 10 from 0
Replicate  1                                  Time: 16:22
Peak Area (A-s): 0.012                        Peak Height (A): 0.023
Background Pk Area (A-s): 0.143               Background Pk Height (A): 0.097
Blank Corrected Pk Area (A-s): 0.012

Auto-zero performed.

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Sb    ID: 57.037.75 ✓            Seq. No.: 00002    A/S Pos.: 22    Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 22
Replicate  1                                  Time: 16:25
Peak Area (A-s): 0.072                        Peak Height (A): 0.048
Background Pk Area (A-s): 0.120               Background Pk Height (A): 0.087
Blank Corrected Pk Area (A-s): 0.060

Sb    ID: Standard 1             Seq. No.: 00003    A/S Pos.: 22    Date: 06/24/92

uL dispensed: 5 from 39, 10 from 7, 10 from 22
Replicate  1                                  Time: 16:29
Peak Area (A-s): 0.098                        Peak Height (A): 0.075
Background Pk Area (A-s): 0.106               Background Pk Height (A): 0.120
Blank Corrected Pk Area (A-s): 0.086

Sb    ID: Standard 2             Seq. No.: 00004    A/S Pos.: 22    Date: 06/24/92

uL dispensed: 5 from 39, 10 from 8, 10 from 22
Replicate  1                                  Time: 16:32
Peak Area (A-s): 0.122                        Peak Height (A): 0.089
Background Pk Area (A-s): 0.106               Background Pk Height (A): 0.125
Blank Corrected Pk Area (A-s): 0.110

Sb    ID: Standard 3             Seq. No.: 00005    A/S Pos.: 22    Date: 06/24/92

uL dispensed: 5 from 39, 10 from 9, 10 from 22
Replicate  1                                  Time: 16:36
Peak Area (A-s): 0.161                        Peak Height (A): 0.111
Background Pk Area (A-s): 0.115               Background Pk Height (A): 0.127
Blank Corrected Pk Area (A-s): 0.149

The standard additions calibration curve may not be linear.
Sb    ID: 57.037.75              Seq. No.: 00002    A/S Pos.: 22    Date: 06/24/9

Concentration (ug/L  ): 74.3
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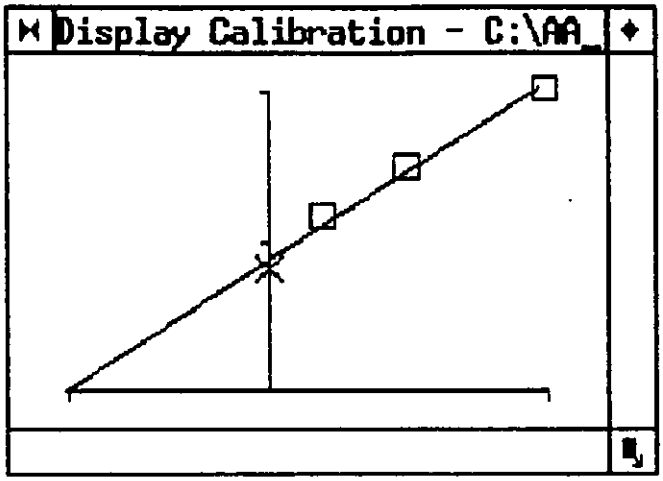
Correlation coefficient: 0.99438 Slope: 0.0009 Int: 0.065



Sb ID: 57.037.41 Seq. No.: 00006 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 23
Replicate 1 Time: 16:40
Peak Area (A-s): 0.718 Peak Height (A): 0.441
Background Pk Area (A-s): 0.945 Background Pk Height (A): 0.481
Blank Corrected Pk Area (A-s): 0.706

Sb ID: Standard 1 Seq. No.: 00007 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 7, 10 from 23
Replicate 1 Time: 16:43
Peak Area (A-s): 0.706 Peak Height (A): 0.447
Background Pk Area (A-s): 0.917 Background Pk Height (A): 0.517
Blank Corrected Pk Area (A-s): 0.695

Sb ID: Standard 2 Seq. No.: 00008 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 8, 10 from 23
Replicate 1 Time: 16:47
Peak Area (A-s): 0.712 Peak Height (A): 0.447
Background Pk Area (A-s): 0.929 Background Pk Height (A): 0.535
Blank Corrected Pk Area (A-s): 0.701

Sb ID: Standard 3 Seq. No.: 00009 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 9, 10 from 23
Replicate 1 Time: 16:50
Peak Area (A-s): 0.712 Peak Height (A): 0.457
Background Pk Area (A-s): 0.911 Background Pk Height (A): 0.511
Blank Corrected Pk Area (A-s): 0.701

Standard abs. & conc. values are not in the same order.
Sb ID: 57.037.41 Seq. No.: 00006 A/S Pos.: 23 Date: 06/24/92

Concentration (ug/L): --------

ICP

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Sb ID: 57.037.86 Seq. No.: 00010 A/S Pos.: 24 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 24
Replicate 1 Time: 16:54
Peak Area (A-s): 0.351 Peak Height (A): 0.258
Background Pk Area (A-s): 0.224 Background Pk Height (A): 0.150
Blank Corrected Pk Area (A-s): 0.339

Sb ID: Standard 1 Seq. No.: 00011 A/S Pos.: 24 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 7, 10 from 24
Replicate 1 Time: 16:57
Peak Area (A-s): 0.211 Peak Height (A): 0.182
Background Pk Area (A-s): 0.156 Background Pk Height (A): 0.133
Blank Corrected Pk Area (A-s): 0.199

Sb ID: Standard 2 Seq. No.: 00012 A/S Pos.: 24 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 8, 10 from 24
Replicate 1 Time: 17:01
Peak Area (A-s): 0.186 Peak Height (A): 0.128
Background Pk Area (A-s): 0.149 Background Pk Height (A): 0.129
Blank Corrected Pk Area (A-s): 0.174

Sb ID: Standard 3 Seq. No.: 00013 A/S Pos.: 24 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 9, 10 from 24
Replicate 1 Time: 17:04
Peak Area (A-s): 0.201 Peak Height (A): 0.130
Background Pk Area (A-s): 0.151 Background Pk Height (A): 0.114
Blank Corrected Pk Area (A-s): 0.189

Standard abs. & conc. values are not in the same order.
Sb ID: 57.037.86 Seq. No.: 00010 A/S Pos.: 24 Date: 06/24/92

Concentration (ug/L): --------

JLP

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Sb ID: 57.037.48 Seq. No.: 00014 A/S Pos.: 25 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 25
Replicate 1 Time: 17:08
Peak Area (A-s): 0.762 Peak Height (A): 0.343
Background Pk Area (A-s): 0.685 Background Pk Height (A): 0.318
Blank Corrected Pk Area (A-s): 0.750

Sb ID: Standard 1 Seq. No.: 00015 A/S Pos.: 25 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 7, 10 from 25
Replicate 1 Time: 17:11
Peak Area (A-s): 0.743 Peak Height (A): 0.391
Background Pk Area (A-s): 0.645 Background Pk Height (A): 0.357
Blank Corrected Pk Area (A-s): 0.731

Sb ID: Standard 2 Seq. No.: 00016 A/S Pos.: 25 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 8, 10 from 25
Replicate 1 Time: 17:15

eak Area (A-s): 0.752 Peak Height (A): 0.392
Background Pk Area (A-s): 0.661 Background Pk Height (A): 0.359
lank Corrected Pk Area (A-s): 0.740

St ID: Standard 3 Seq. No.: 00017 A/S Pos.: 25 Date: 06/24/92

L dispensed: 5 from 39, 10 from 9, 10 from 25
Replicate 1 Time: 17:18
eak Area (A-s): 0.756 Peak Height (A): 0.398
ackground Pk Area (A-s): 0.673 Background Pk Height (A): 0.361
lank Corrected Pk Area (A-s): 0.744

tandard abs. & conc. values are not in the same order.
b ID: 57.037.48 Seq. No.: 00014 A/S Pos.: 25 Date: 06/24/92

oncentration (ug/L): --------

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Replicate  1                              Time: 17:36
Peak Area (A-s): 0.723                    Peak Height (A): 0.254
Background Pk Area (A-s): 0.499           Background Pk Height (A): 0.258
Blank Corrected Pk Area (A-s): 0.712

Sb    ID: Standard 1          Seq. No.: 00023    A/S Pos.: 27    Date: 06/24/92

uL dispensed: 5 from 39, 10 from 7, 10 from 27
Replicate  1                              Time: 17:39
Peak Area (A-s): 0.718                    Peak Height (A): 0.257
Background Pk Area (A-s): 0.467           Background Pk Height (A): 0.267
Blank Corrected Pk Area (A-s): 0.706

Sb    ID: Standard 2          Seq. No.: 00024    A/S Pos.: 27    Date: 06/24/92

uL dispensed: 5 from 39, 10 from 8, 10 from 27
Replicate  1                              Time: 17:43
Peak Area (A-s): 0.703                    Peak Height (A): 0.255
Background Pk Area (A-s): 0.468           Background Pk Height (A): 0.273
Blank Corrected Pk Area (A-s): 0.691

Sb    ID: Standard 3          Seq. No.: 00025    A/S Pos.: 27    Date: 06/24/92

uL dispensed: 5 from 39, 10 from 9, 10 from 27
Replicate  1                              Time: 17:46
Peak Area (A-s): 0.717                    Peak Height (A): 0.255
Background Pk Area (A-s): 0.475           Background Pk Height (A): 0.267
Blank Corrected Pk Area (A-s): 0.705

Standard abs. & conc. values are not in the same order.
Sb    ID: 57.037.53           Seq. No.: 00022    A/S Pos.: 27    Date: 06/24/9

Concentration (ug/L  ): --------

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Sb    ID: 57.037.99           Seq. No.: 00026    A/S Pos.: 28    Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 28
Replicate  1                              Time: 17:49
Peak Area (A-s): 0.352                    Peak Height (A): 0.219
Background Pk Area (A-s): 0.228           Background Pk Height (A): 0.076
Blank Corrected Pk Area (A-s): 0.341

Sb    ID: Standard 1          Seq. No.: 00027    A/S Pos.: 28    Date: 06/24/92

uL dispensed: 5 from 39, 10 from 7, 10 from 28
Replicate  1                              Time: 17:53
Peak Area (A-s): 0.157                    Peak Height (A): 0.153
Background Pk Area (A-s): 0.171           Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.146

Sb    ID: Standard 2          Seq. No.: 00028    A/S Pos.: 28    Date: 06/24/92

uL dispensed: 5 from 39, 10 from 8, 10 from 28
Replicate  1                              Time: 17:56
Peak Area (A-s): 0.151                    Peak Height (A): 0.132
Background Pk Area (A-s): 0.171           Background Pk Height (A): 0.070
Blank Corrected Pk Area (A-s): 0.139
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Sb ID: Standard 3 Seq. No.: 00029 A/S Pos.: 28 Date: 06/24/92

L dispensed: 5 from 39, 10 from 9, 10 from 28
Replicate 1 Time: 18:00
Peak Area (A-s): 0.182 Peak Height (A): 0.125
Background Pk Area (A-s): 0.169 Background Pk Height (A): 0.071
Blank Corrected Pk Area (A-s): 0.170

Standard abs. & conc. values are not in the same order.
Sb ID: 57.037.99 Seq. No.: 00026 A/S Pos.: 28 Date: 06/24/92

Concentration (ug/L): --------

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Sb ID: Standard 1 Seq. No.: 00035 A/S Pos.: 30 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 7, 10 from 30
Replicate 1 Time: 18:20
Peak Area (A-s): 0.087 Peak Height (A): 0.089
Background Pk Area (A-s): 0.151 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.075

Sb ID: Standard 2 Seq. No.: 00036 A/S Pos.: 30 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 8, 10 from 30
Replicate 1 Time: 18:24
Peak Area (A-s): 0.115 Peak Height (A): 0.094
Background Pk Area (A-s): 0.152 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.104

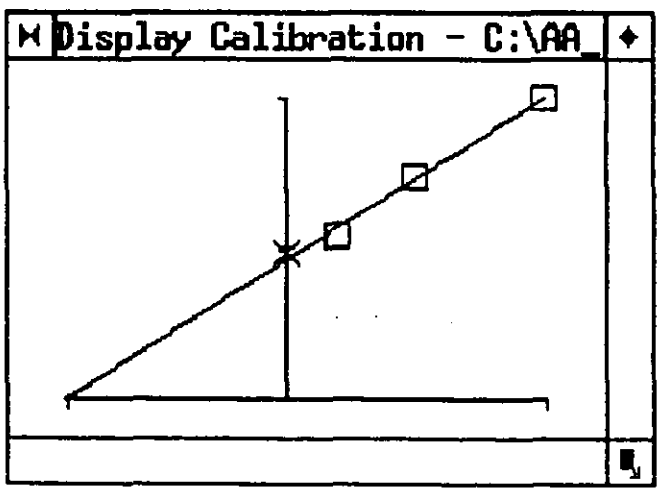
Sb ID: Standard 3 Seq. No.: 00037 A/S Pos.: 30 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 9, 10 from 30
Replicate 1 Time: 18:27
Peak Area (A-s): 0.152 Peak Height (A): 0.100
Background Pk Area (A-s): 0.155 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.141

The standard additions calibration curve may not be linear.
Sb ID: 57.037.114 Seq. No.: 00034 A/S Pos.: 30 Date: 06/24/92

Concentration (ug/L): 85.3 ✓

Correlation coefficient: 0.99536 Slope: 0.0008 Int: 0.065

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uL dispensed: 5 from 39, 10 from 7, 10 from 31
Replicate 1 Time: 18:35
Peak Area (A-s): 0.109 Peak Height (A): 0.076
Background Pk Area (A-s): 0.139 Background Pk Height (A): 0.058
Blank Corrected Pk Area (A-s): 0.097

Sb ID: Standard 2 Seq. No.: 00040 A/S Pos.: 31 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 8, 10 from 31
Replicate 1 Time: 18:38
Peak Area (A-s): 0.129 Peak Height (A): 0.086
Background Pk Area (A-s): 0.139 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.117

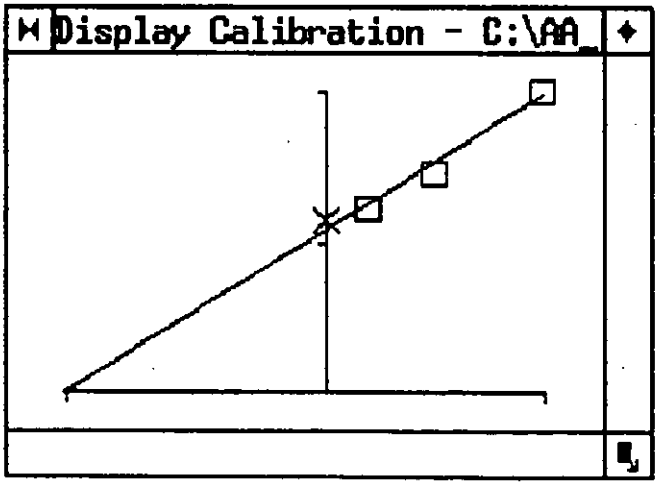
Sb ID: Standard 3 Seq. No.: 00041 A/S Pos.: 31 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 9, 10 from 31
Replicate 1 Time: 18:42
Peak Area (A-s): 0.173 Peak Height (A): 0.116
Background Pk Area (A-s): 0.144 Background Pk Height (A): 0.059
Blank Corrected Pk Area (A-s): 0.161

The standard additions calibration curve may not be linear.
Sb ID: 57.037.63 Seq. No.: 00038 A/S Pos.: 31 Date: 06/24/92

Concentration (ug/L): 119.6 ✓

Correlation coefficient: 0.98855 Slope: 0.0007 Int: 0.086

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Replicate 1 Time: 18:49
Peak Area (A-s): 0.074 Peak Height (A): 0.077
Background Pk Area (A-s): 0.127 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.062

Sb ID: Standard 2 Seq. No.: 00044 A/S Pos.: 32 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 8, 10 from 32
Replicate 1 Time: 18:52
Peak Area (A-s): 0.098 Peak Height (A): 0.073
Background Pk Area (A-s): 0.124 Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.087

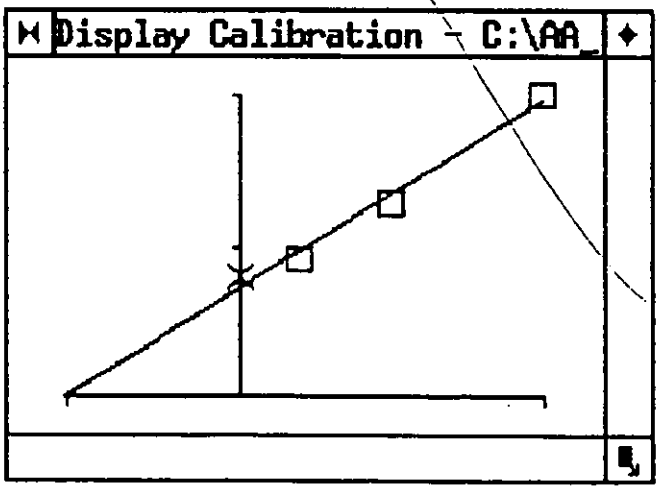
Sb ID: Standard 3 Seq. No.: 00045 A/S Pos.: 32 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 9, 10 from 32
Replicate 1 Time: 18:56
Peak Area (A-s): 0.149 Peak Height (A): 0.105
Background Pk Area (A-s): 0.132 Background Pk Height (A): 0.059
Blank Corrected Pk Area (A-s): 0.137

The standard additions calibration curve may not be linear.
Sb ID: 57.037.125 Seq. No.: 00042 A/S Pos.: 32 Date: 06/24/92

Concentration (ug/L): 57.6

Correlation coefficient: 0.99086 Slope: 0.0008 Int: 0.049

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Peak Area (A-s): 0.083 Peak Height (A): 0.072
Background Pk Area (A-s): 0.190 Background Pk Height (A): 0.124
Blank Corrected Pk Area (A-s): 0.071

Sb ID: Standard 2 Seq. No.: 00048 A/S Pos.: 33 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 8, 10 from 33
Replicate 1 Time: 19:07
Peak Area (A-s): 0.111 Peak Height (A): 0.074
Background Pk Area (A-s): 0.193 Background Pk Height (A): 0.125
Blank Corrected Pk Area (A-s): 0.099

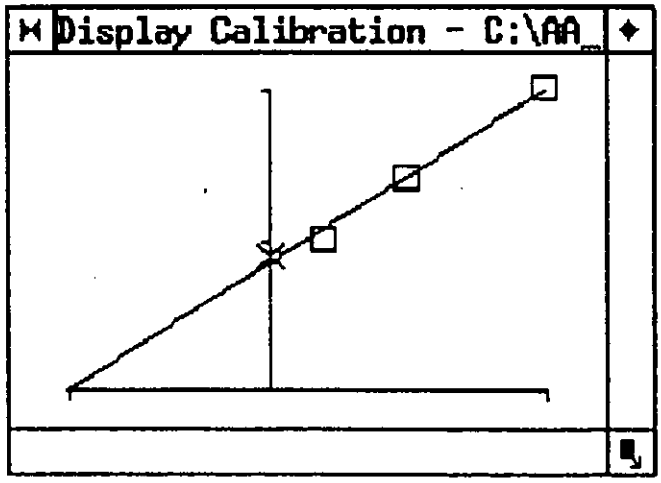
Sb ID: Standard 3 Seq. No.: 00049 A/S Pos.: 33 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 9, 10 from 33
Replicate 1 Time: 19:10
Peak Area (A-s): 0.153 Peak Height (A): 0.102
Background Pk Area (A-s): 0.196 Background Pk Height (A): 0.128
Blank Corrected Pk Area (A-s): 0.141

The standard additions calibration curve may not be linear.
Sb ID: 57.037.69 Seq. No.: 00046 A/S Pos.: 33 Date: 06/24/92

Concentration (ug/L): 72.9 ✓

Correlation coefficient: 0.99510 Slope: 0.0008 Int: 0.059

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Background Pk Area (A-s): 0.112 Background Pk Height (A): 0.076
Blank Corrected Pk Area (A-s): 0.037

Sb ID: Standard 2 Seq. No.: 00052 A/S Pos.: 34 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 8, 10 from 34
Replicate 1 Time: 19:22
Peak Area (A-s): 0.072 Peak Height (A): 0.057
Background Pk Area (A-s): 0.109 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.061

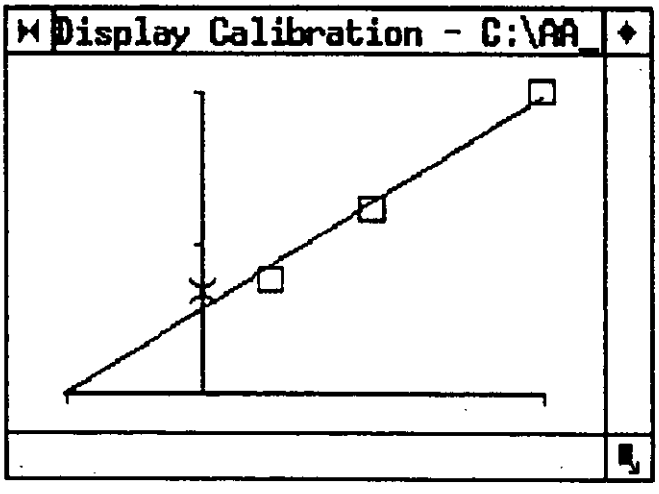
Sb ID: Standard 3 Seq. No.: 00053 A/S Pos.: 34 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 9, 10 from 34
Replicate 1 Time: 19:25
Peak Area (A-s): 0.111 Peak Height (A): 0.084
Background Pk Area (A-s): 0.112 Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.099

The standard additions calibration curve may not be linear.
Sb ID: 57.037.131 Seq. No.: 00050 A/S Pos.: 34 Date: 06/24/92

Concentration (ug/L): 40.0 ✓

Correlation coefficient: 0.98958 Slope: 0.0007 Int: 0.028

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Blank Corrected Pk Area (A-s): 0.032

Sb ID: Standard 2 Seq. No.: 00056 A/S Pos.: 3

uL dispensed: 5 from 39, 10 from 8, 10 from 35
Replicate 1 Time: 19:36
Peak Area (A-s): 0.067 Peak Height (A): 0.0
Background Pk Area (A-s): 0.110 Background Pk Height
Blank Corrected Pk Area (A-s): 0.055

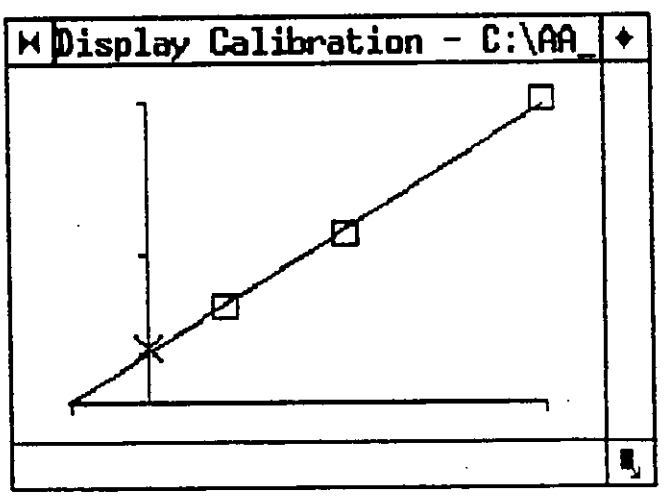
Sb ID: Standard 3 Seq. No.: 00057 A/S Pos.: 3

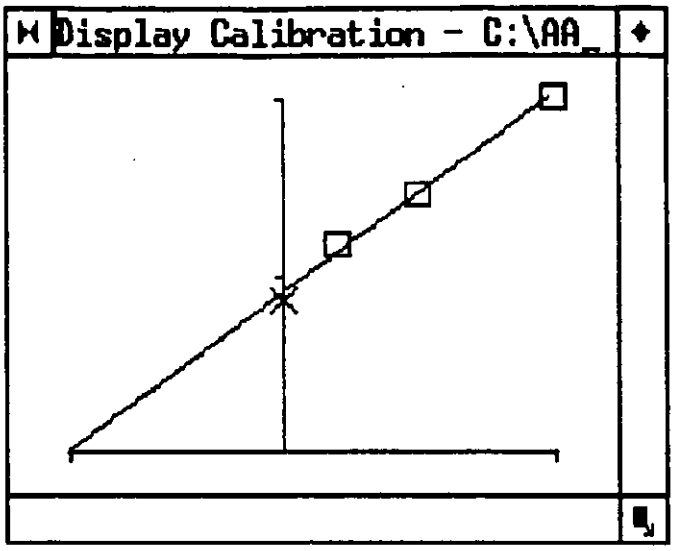
uL dispensed: 5 from 39, 10 from 9, 10 from 35
Replicate 1 Time: 19:40
Peak Area (A-s): 0.112 Peak Height (A): 0.0
Background Pk Area (A-s): 0.111 Background Pk Height
Blank Corrected Pk Area (A-s): 0.100

The standard additions calibration curve may not be linear.
Sb ID: 57.037.128 Seq. No.: 00054 A/S Pos.: 3

Concentration (ug/L): 19.4 ✓

Correlation coefficient: 0.99891 Slope: 0.0008





Sb ID: 57.037.94 Seq. No.: 00148 A/S Pos.: 26 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 26
Replicate 1 Time: 10:06
Peak Area (A-s): 0.071 Peak Height (A): 0.050
Background Pk Area (A-s): 0.121 Background Pk Height (A): 0.097
Blank Corrected Pk Area (A-s): 0.069

Sb ID: Standard 1 Seq. No.: 00149 A/S Pos.: 26 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 7, 10 from 26
Replicate 1 Time: 10:09
Peak Area (A-s): 0.086 Peak Height (A): 0.068
Background Pk Area (A-s): 0.122 Background Pk Height (A): 0.085
Blank Corrected Pk Area (A-s): 0.084

Sb ID: Standard 2 Seq. No.: 00150 A/S Pos.: 26 Date: 06/25/92

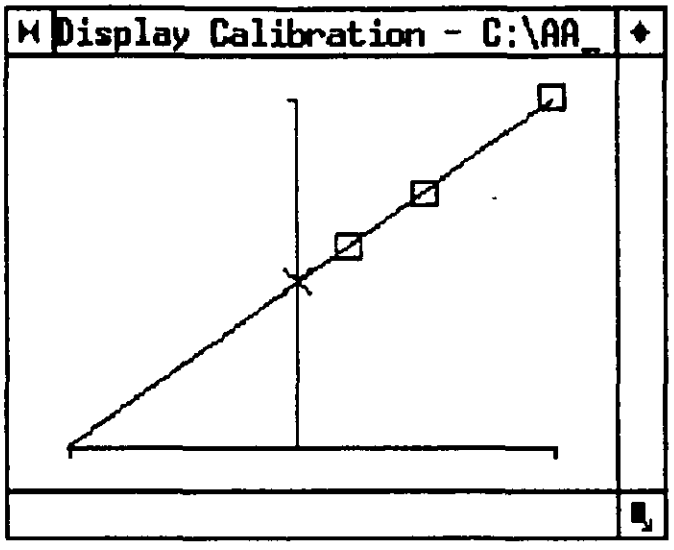
uL dispensed: 5 from 39, 10 from 8, 10 from 26
Replicate 1 Time: 10:13
Peak Area (A-s): 0.108 Peak Height (A): 0.088
Background Pk Area (A-s): 0.120 Background Pk Height (A): 0.096
Blank Corrected Pk Area (A-s): 0.106

Sb ID: Standard 3 Seq. No.: 00151 A/S Pos.: 26 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 9, 10 from 26
Replicate 1 Time: 10:16
Peak Area (A-s): 0.148 Peak Height (A): 0.116
Background Pk Area (A-s): 0.124 Background Pk Height (A): 0.089
Blank Corrected Pk Area (A-s): 0.146

Sb ID: 57.037.94 Seq. No.: 00148 A/S Pos.: 26 Date: 06/25/92

Concentration (ug/L): 89.7



Sb ID: 57.037.99 Seq. No.: 00152 A/S Pos.: 28 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 28
Replicate 1 Time: 10:20
Peak Area (A-s): 0.040 Peak Height (A): 0.023
Background Pk Area (A-s): 0.119 Background Pk Height (A): 0.090
Blank Corrected Pk Area (A-s): 0.038

Sb ID: Standard 1 Seq. No.: 00153 A/S Pos.: 28 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 7, 10 from 28
Replicate 1 Time: 10:24
Peak Area (A-s): 0.046 Peak Height (A): 0.033
Background Pk Area (A-s): 0.105 Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.044

Sb ID: Standard 2 Seq. No.: 00154 A/S Pos.: 28 Date: 06/25/92

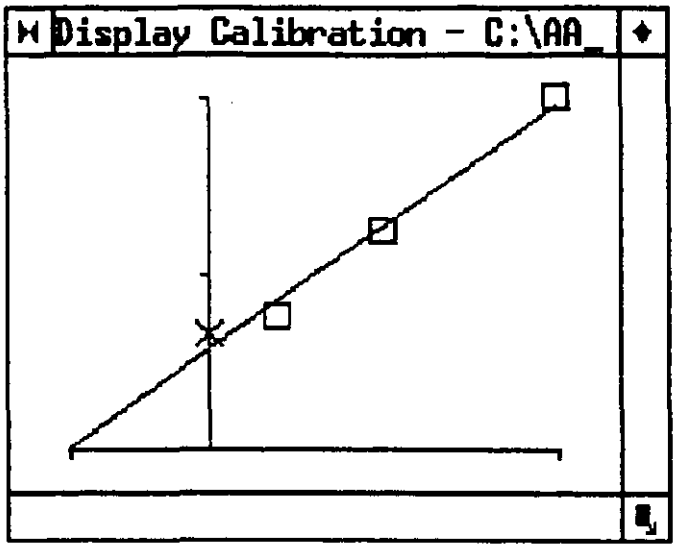
uL dispensed: 5 from 39, 10 from 8, 10 from 28
Replicate 1 Time: 10:27
Peak Area (A-s): 0.073 Peak Height (A): 0.051
Background Pk Area (A-s): 0.107 Background Pk Height (A): 0.071
Blank Corrected Pk Area (A-s): 0.071

Sb ID: Standard 3 Seq. No.: 00155 A/S Pos.: 28 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 9, 10 from 28
Replicate 1 Time: 10:31
Peak Area (A-s): 0.118 Peak Height (A): 0.082
Background Pk Area (A-s): 0.107 Background Pk Height (A): 0.070
Blank Corrected Pk Area (A-s): 0.116

The standard additions calibration curve may not be linear.
Sb ID: 57.037.99 Seq. No.: 00152 A/S Pos.: 28 Date: 06/25/92

Concentration (ug/L): 40.4



Sb ID: 57.037.58 Seq. No.: 00156 A/S Pos.: 29 Date: 06/25/92

uL dispensed: 10 from 0, 5 from 39, 10 from 29
Replicate 1 Time: 10:35
Peak Area (A-s): 0.045 Peak Height (A): 0.031
Background Pk Area (A-s): 0.102 Background Pk Height (A): 0.084
Blank Corrected Pk Area (A-s): 0.043

Sb ID: Standard 1 Seq. No.: 00157 A/S Pos.: 29 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 7, 10 from 29
Replicate 1 Time: 10:38
Peak Area (A-s): 0.056 Peak Height (A): 0.044
Background Pk Area (A-s): 0.086 Background Pk Height (A): 0.087
Blank Corrected Pk Area (A-s): 0.054

Sb ID: Standard 2 Seq. No.: 00158 A/S Pos.: 29 Date: 06/25/92

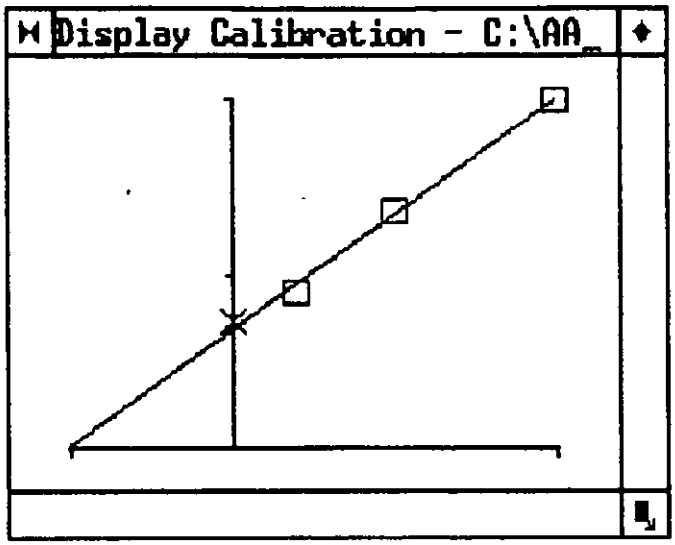
uL dispensed: 5 from 39, 10 from 8, 10 from 29
Replicate 1 Time: 10:42
Peak Area (A-s): 0.084 Peak Height (A): 0.063
Background Pk Area (A-s): 0.086 Background Pk Height (A): 0.087
Blank Corrected Pk Area (A-s): 0.082

Sb ID: Standard 3 Seq. No.: 00159 A/S Pos.: 29 Date: 06/25/92

uL dispensed: 5 from 39, 10 from 9, 10 from 29
Replicate 1 Time: 10:45
Peak Area (A-s): 0.124 Peak Height (A): 0.092
Background Pk Area (A-s): 0.094 Background Pk Height (A): 0.088
Blank Corrected Pk Area (A-s): 0.122

The standard additions calibration curve may not be linear.
Sb ID: 57.037.58 Seq. No.: 00156 A/S Pos.: 29 Date: 06/25/92

Concentration (ug/L): 50.8


Display Calibration - C:\AA_

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Element File: TL_SPK.GEL      Element: Tl                  Wavelength: 276.8
Date: 06/24/92                Time: 00:01                  Slit: 0.70 L
Data File: 21122.DAT          ID/Wt File: 21122.IDW        Lamp Current: 40
Technique: HGA                Calib. Type: Nonlinear       Energy: 53
```

Tl ID: Blank Seq. No.: 00030 A/S Pos.: 0 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 0
Replicate 1 Time: 00:04
Peak Area (A-s): 0.001 Peak Height (A): 0.015
Background Pk Area (A-s): 0.082 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.001

uL dispensed: 10 from 0, 5 from 39, 20 from 0
Replicate 2 Time: 00:07
Peak Area (A-s): 0.000 Peak Height (A): 0.013
Background Pk Area (A-s): 0.110 Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.000

Mean Pk Area (A-s): 0.001 SD: 0.0008 RSD(%): 110.13

Auto-zero performed.

Tl ID: Standard 1 Seq. No.: 00031 A/S Pos.: 1 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 1
Replicate 1 Time: 00:10
Peak Area (A-s): 0.030 Peak Height (A): 0.081
Background Pk Area (A-s): 0.123 Background Pk Height (A): 0.054
Blank Corrected Pk Area (A-s): 0.029

uL dispensed: 10 from 0, 5 from 39, 20 from 1
Replicate 2 Time: 00:13
Peak Area (A-s): 0.028 Peak Height (A): 0.078
Background Pk Area (A-s): 0.204 Background Pk Height (A): 0.086
Blank Corrected Pk Area (A-s): 0.027

Mean Pk Area (A-s): 0.028 SD: 0.0013 RSD(%): 4.47

Standard number 1 applied. [10.0]
Correlation coefficient: 1.00000 Slope: 0.0028

Tl ID: Standard 2 Seq. No.: 00032 A/S Pos.: 2 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 2
Replicate 1 Time: 00:17
Peak Area (A-s): 0.074 Peak Height (A): 0.186
Background Pk Area (A-s): 0.107 Background Pk Height (A): 0.094
Blank Corrected Pk Area (A-s): 0.073
Concentration (ug/L): 25.7

uL dispensed: 10 from 0, 5 from 39, 20 from 2
Replicate 2 Time: 00:20
Peak Area (A-s): 0.070 Peak Height (A): 0.185
Background Pk Area (A-s): 0.353 Background Pk Height (A): 0.152

Blank Corrected Pk Area (A-s): 0.069
Concentration (ug/L): 24.5

Me Conc (ug/L): 25.1 SD: 0.85 RSD(%): 3.37

Standard number 2 applied. [20.0]
Correlation coefficient: 1.00000 Slope: 0.0024

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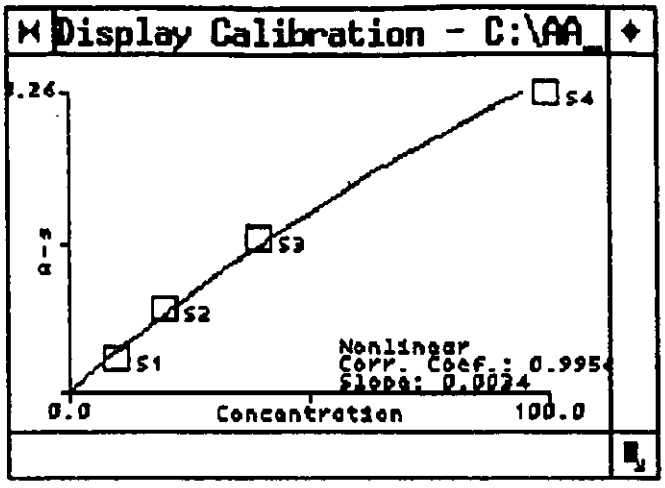
Display Calibration - C:\AA_
1.26
A-s
S4
S3
S2
S1
Nonlinear
Corr. Coef.: 0.995
Slope: 0.0024
0.0
Concentration
100.0

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Mean Conc (ug/L): 24.4 SD: 1.32 RSD(%): 5.43

Standard number 2 applied. [20.0]
Correlation coefficient: 1.00000 Slope: 0.0023

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T1 ID: Standard 3 Seq. No.: 00040 A/S Pos.: 3 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 3
Replicate 1 Time: 01:07
Peak Area (A-s): 0.137 Peak Height (A): 0.304
Background Pk Area (A-s): 0.151 Background Pk Height (A): 0.190
Blank Corrected Pk Area (A-s): 0.122
Concentration (ug/L): 29.4

uL dispensed: 10 from 0, 5 from 39, 20 from 3
Replicate 2 Time: 01:10
Peak Area (A-s): 0.133 Peak Height (A): 0.289
Background Pk Area (A-s): 0.134 Background Pk Height (A): 0.188
Blank Corrected Pk Area (A-s): 0.118
Concentration (ug/L): 28.8

Mean Conc (ug/L): 29.1 SD: 0.39 RSD(%): 1.33

S-shaped calibration curve detected. 2-coef. equation used.
Standard number 3 applied. [40.0]
Correlation coefficient: 0.99333 Slope: 0.0029

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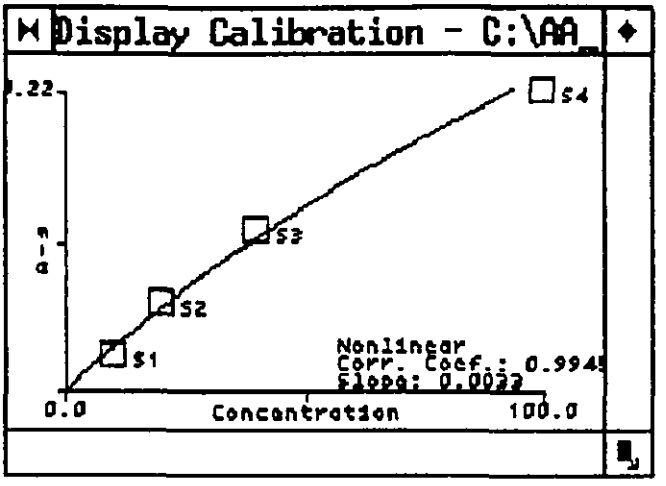
T1 ID: Standard 4 Seq. No.: 00041 A/S Pos.: 4 Date: 06/24/9

uL dispensed: 10 from 0, 5 from 39, 20 from 4
Replicate 1 Time: 01:14
Peak Area (A-s): 0.253 Peak Height (A): 0.441
Background Pk Area (A-s): 0.256 Background Pk Height (A): 0.433
Blank Corrected Pk Area (A-s): 0.238
Concentration (ug/L): 72.1

uL dispensed: 10 from 0, 5 from 39, 20 from 4
Replicate 2 Time: 01:17
Peak Area (A-s): 0.218 Peak Height (A): 0.418
Background Pk Area (A-s): 0.177 Background Pk Height (A): 0.339
Blank Corrected Pk Area (A-s): 0.203
Concentration (ug/L): 62.6

Mean Conc (ug/L): 67.4 SD: 6.75 RSD(%): 10.03

S-shaped calibration curve detected. 2-coef. equation used.
Standard number 4 applied. [100.0]
Correlation coefficient: 0.99455 Slope: 0.0033


Display Calibration - C:\AA
.22
S4
S3
S2
S1
Nonlinear
Corr. Coef.: 0.994
Slope: 0.0022
0.0
Concentration
100.0

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T1 ID: 57.037.38 Seq. No.: 00044 A/S Pos.: 10 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 10
Replicate 1 Time: 01:33
Peak Area (A-s): 0.045 Peak Height (A): 0.077
Background Pk Area (A-s): 0.192 Background Pk Height (A): 0.114
Blank Corrected Pk Area (A-s): 0.029
Concentration (ug/L): 9.3

uL dispensed: 10 from 0, 5 from 39, 20 from 10
Replicate 2 Time: 01:36
Peak Area (A-s): 0.034 Peak Height (A): 0.067
Background Pk Area (A-s): 0.325 Background Pk Height (A): 0.172
Blank Corrected Pk Area (A-s): 0.019
Concentration (ug/L): 5.8

Mean Conc (ug/L): 7.5 SD: 2.47 RSD(%): 32.72

T1 ID: 57.037.6 Seq. No.: 00045 A/S Pos.: 11 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 11
Replicate 1 Time: 01:39
Peak Area (A-s): 0.037 Peak Height (A): 0.076
Background Pk Area (A-s): 0.118 Background Pk Height (A): 0.083
Blank Corrected Pk Area (A-s): 0.022
Concentration (ug/L): 6.8

uL dispensed: 10 from 0, 5 from 39, 20 from 11
Replicate 2 Time: 01:42
Peak Area (A-s): 0.029 Peak Height (A): 0.065
Background Pk Area (A-s): 0.190 Background Pk Height (A): 0.404
Blank Corrected Pk Area (A-s): 0.014
Concentration (ug/L): 4.3

Mean Conc (ug/L): 5.5 SD: 1.80 RSD(%): 32.36

T1 ID: 57.037.45 Seq. No.: 00046 A/S Pos.: 12 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 12
Replicate 1 Time: 01:45
Peak Area (A-s): 0.035 Peak Height (A): 0.059
Background Pk Area (A-s): 0.255 Background Pk Height (A): 0.132
Blank Corrected Pk Area (A-s): 0.020
Concentration (ug/L): 6.2

uL dispensed: 10 from 0, 5 from 39, 20 from 12
Replicate 2 Time: 01:48
Peak Area (A-s): 0.031 Peak Height (A): 0.073
Background Pk Area (A-s): 0.234 Background Pk Height (A): 0.135
Blank Corrected Pk Area (A-s): 0.016
Concentration (ug/L): 4.9

Mean Conc (ug/L): 5.5 SD: 0.88 RSD(%): 15.93

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l ID: 57.037.12 Seq. No.: 00047 A/S Pos.: 13 Date: 06/24/92

uL spensed: 10 from 0, 5 from 39, 20 from 13
eplicate 1 Time: 01:51
eak Area (A-s): 0.034 Peak Height (A): 0.066
Background Pk Area (A-s): 0.188 Background Pk Height (A): 0.115
lank Corrected Pk Area (A-s): 0.018
oncentration (ug/L): 5.7

uL dispensed: 10 from 0, 5 from 39, 20 from 13
eplicate 2 Time: 01:54
eak Area (A-s): 0.033 Peak Height (A): 0.065
Background Pk Area (A-s): 0.152 Background Pk Height (A): 0.106
lank Corrected Pk Area (A-s): 0.017
oncentration (ug/L): 5.4

Mean Conc (ug/L): 5.6 SD: 0.21 RSD(%): 3.70

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Tl ID: 57.037.50 Seq. No.: 00048 A/S Pos.: 14 Date: 06/24/92

L dispensed: 10 from 0, 5 from 39, 20 from 14
Replicate 1 Time: 01:57
eak Area (A-s): 0.033 Peak Height (A): 0.068
ackground Pk Area (A-s): 0.225 Background Pk Height (A): 0.139
Blank Corrected Pk Area (A-s): 0.017
Concentration (ug/L): 5.4

uL ispensed: 10 from 0, 5 from 39, 20 from 14
Replicate 2 Time: 02:00
eak Area (A-s): 0.037 Peak Height (A): 0.075
ackground Pk Area (A-s): 0.231 Background Pk Height (A): 0.136
Blank Corrected Pk Area (A-s): 0.022
oncentration (ug/L): 6.9

Mean Conc (ug/L): 6.1 SD: 1.09 RSD(%): 17.72

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Tl ID: 57.037.18 Seq. No.: 00049 A/S Pos.: 15 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 15
eplicate 1 Time: 02:03
Peak Area (A-s): 0.027 Peak Height (A): 0.054
ackground Pk Area (A-s): 0.148 Background Pk Height (A): 0.097
lank Corrected Pk Area (A-s): 0.012
Concentration (ug/L): 3.8

uL dispensed: 10 from 0, 5 from 39, 20 from 15
eplicate 2 Time: 02:06
Peak Area (A-s): 0.029 Peak Height (A): 0.054
ackground Pk Area (A-s): 0.100 Background Pk Height (A): 0.059
lank Corrected Pk Area (A-s): 0.014
Concentration (ug/L): 4.4

Me. Conc (ug/L): 4.1 SD: 0.44 RSD(%): 10.82
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T1 ID: 57.037.55 Seq. No.: 00050 A/S Pos.: 16 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 16
Replicate 1 Time: 02:09
Peak Area (A-s): 0.040 Peak Height (A): 0.074
Background Pk Area (A-s): 0.356 Background Pk Height (A): 0.149
Blank Corrected Pk Area (A-s): 0.024
Concentration (ug/L): 7.7

uL dispensed: 10 from 0, 5 from 39, 20 from 16
Replicate 2 Time: 02:12
Peak Area (A-s): 0.037 Peak Height (A): 0.065
Background Pk Area (A-s): 0.356 Background Pk Height (A): 0.208
Blank Corrected Pk Area (A-s): 0.022
Concentration (ug/L): 6.9

Mean Conc (ug/L): 7.3 SD: 0.54 RSD(%): 7.47

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T1 ID: 57.037.24 Seq. No.: 00051 A/S Pos.: 17 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 17
Replicate 1 Time: 02:15
Peak Area (A-s): 0.033 Peak Height (A): 0.063
Background Pk Area (A-s): 0.243 Background Pk Height (A): 0.253
Blank Corrected Pk Area (A-s): 0.018
Concentration (ug/L): 5.5

uL dispensed: 10 from 0, 5 from 39, 20 from 17
Replicate 2 Time: 02:18
Peak Area (A-s): 0.028 Peak Height (A): 0.049
Background Pk Area (A-s): 0.163 Background Pk Height (A): 0.070
Blank Corrected Pk Area (A-s): 0.013
Concentration (ug/L): 3.9

Mean Conc (ug/L): 4.7 SD: 1.10 RSD(%): 23.25

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T1 ID: CCV Seq. No.: 00052 A/S Pos.: 40 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 40
Replicate 1 Time: 02:21
Peak Area (A-s): 0.159 Peak Height (A): 0.365
Background Pk Area (A-s): 0.213 Background Pk Height (A): 0.247
Blank Corrected Pk Area (A-s): 0.144
Concentration (ug/L): 53.7

uL dispensed: 10 from 0, 5 from 39, 20 from 40
Replicate 2 Time: 02:24
Peak Area (A-s): 0.171 Peak Height (A): 0.374
Background Pk Area (A-s): 0.179 Background Pk Height (A): 0.257
Blank Corrected Pk Area (A-s): 0.156
Concentration (ug/L): 59.4

Mean Conc (ug/L): 56.5 SD: 4.02 RSD(%): 7.11

QC sample is within range 48 - 72
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ID: CCB Seq. No.: 00053 A/S Pos.: 0 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 0
Replicate 1 Time: 02:27
Peak Area (A-s): 0.054 Peak Height (A): 0.120
Background Pk Area (A-s): 0.050 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.039
Concentration (ug/L): 12.5

uL dispensed: 10 from 0, 5 from 39, 20 from 0
Replicate 2 Time: 02:30
Peak Area (A-s): 0.032 Peak Height (A): 0.063
Background Pk Area (A-s): 0.050 Background Pk Height (A): 0.041
Blank Corrected Pk Area (A-s): 0.017
Concentration (ug/L): 5.3

Mean Conc (ug/L): 8.8 SD: 5.14 RSD(%): 57.85

QC sample is within range -10 - 10

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ID: 57.037.60 Seq. No.: 00054 A/S Pos.: 18 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 18
Replicate 1 Time: 02:33
Peak Area (A-s): 0.047 Peak Height (A): 0.085
Background Pk Area (A-s): 0.482 Background Pk Height (A): 0.260
Blank Corrected Pk Area (A-s): 0.031
Concentration (ug/L): 9.9

uL dispensed: 10 from 0, 5 from 39, 20 from 18
Replicate 2 Time: 02:37
Peak Area (A-s): 0.029 Peak Height (A): 0.083
Background Pk Area (A-s): 0.475 Background Pk Height (A): 0.242
Blank Corrected Pk Area (A-s): 0.013
Concentration (ug/L): 4.2

Mean Conc (ug/L): 7.0 SD: 4.05 RSD(%): 57.53

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ID: 57.037.30 Seq. No.: 00055 A/S Pos.: 19 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 19
Replicate 1 Time: 02:40
Peak Area (A-s): 0.018 Peak Height (A): 0.033
Background Pk Area (A-s): 0.128 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.7

uL dispensed: 10 from 0, 5 from 39, 20 from 19
Replicate 2 Time: 02:43
Peak Area (A-s): 0.007 Peak Height (A): 0.017
Background Pk Area (A-s): 0.101 Background Pk Height (A): 0.085
Blank Corrected Pk Area (A-s): -0.009
Concentration (ug/L): -2.6

Mean Conc (ug/L): -1.0 SD: 2.34 RSD(%): 243.96
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T1 ID: 57.037.66 Seq. No.: 00056 A/S Pos.: 20 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 20
Replicate 1 Time: 02:46
Peak Area (A-s): 0.023 Peak Height (A): 0.060
Background Pk Area (A-s): 0.402 Background Pk Height (A): 0.212
Blank Corrected Pk Area (A-s): 0.008
Concentration (ug/L): 2.5

uL dispensed: 10 from 0, 5 from 39, 20 from 20
Replicate 2 Time: 02:49
Peak Area (A-s): 0.028 Peak Height (A): 0.073
Background Pk Area (A-s): 0.488 Background Pk Height (A): 0.216
Blank Corrected Pk Area (A-s): 0.012
Concentration (ug/L): 3.9

Mean Conc (ug/L): 3.2 SD: 0.98 RSD(%): 30.77

T1 ID: 57.037.36 Seq. No.: 00057 A/S Pos.: 21 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 21
Replicate 1 Time: 02:52
Peak Area (A-s): 0.015 Peak Height (A): 0.028
Background Pk Area (A-s): 0.227 Background Pk Height (A): 0.133
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.1

uL dispensed: 10 from 0, 5 from 39, 20 from 21
Replicate 2 Time: 02:56
Peak Area (A-s): 0.002 Peak Height (A): 0.016
Background Pk Area (A-s): 0.115 Background Pk Height (A): 0.086
Blank Corrected Pk Area (A-s): -0.013
Concentration (ug/L): -3.9

Mean Conc (ug/L): -2.0 SD: 2.69 RSD(%): 137.08

T1 ID: 57.037.75 Seq. No.: 00058 A/S Pos.: 22 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 22
Replicate 1 Time: 02:59
Peak Area (A-s): 0.001 Peak Height (A): 0.017
Background Pk Area (A-s): 0.478 Background Pk Height (A): 0.203
Blank Corrected Pk Area (A-s): -0.014
Concentration (ug/L): -4.3

uL dispensed: 10 from 0, 5 from 39, 20 from 22
Replicate 2 Time: 03:02
Peak Area (A-s): 0.003 Peak Height (A): 0.016
Background Pk Area (A-s): 0.344 Background Pk Height (A): 0.181
Blank Corrected Pk Area (A-s): -0.012
Concentration (ug/L): -3.7

Mean Conc (ug/L): -4.0 SD: 0.45 RSD(%): 11.41

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1 ID: 57.037.75 Seq. No.: 00059 A/S Pos.: 22 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 20 from 22
Replicate 1 Time: 03:05
Peak Area (A-s): 0.116 Peak Height (A): 0.277
Background Pk Area (A-s): 0.383 Background Pk Height (A): 0.294
Blank Corrected Pk Area (A-s): 0.100
Concentration (ug/L): 35.1

uL dispensed: 5 from 39, 10 from 4, 20 from 22
Replicate 2 Time: 03:08
Peak Area (A-s): 0.135 Peak Height (A): 0.304
Background Pk Area (A-s): 0.363 Background Pk Height (A): 0.200
Blank Corrected Pk Area (A-s): 0.120
Concentration (ug/L): 43.1

Mean Conc (ug/L): 39.1 SD: 5.63 RSD(%): 14.40

Recovery is 86.1%

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1 ID: 57.037.41 Seq. No.: 00060 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 23
Replicate 1 Time: 03:12
Peak Area (A-s): 0.047 Peak Height (A): 0.116
Background Pk Area (A-s): 0.084 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.032
Concentration (ug/L): 10.2

uL dispensed: 10 from 0, 5 from 39, 20 from 23
Replicate 2 Time: 03:15
Peak Area (A-s): 0.029 Peak Height (A): 0.069
Background Pk Area (A-s): 0.190 Background Pk Height (A): 0.208
Blank Corrected Pk Area (A-s): 0.014
Concentration (ug/L): 4.3

Mean Conc (ug/L): 7.2 SD: 4.15 RSD(%): 57.30

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T1 ID: 57.037.41 Seq. No.: 00061 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 4, 20 from 23
Replicate 1 Time: 03:18
Peak Area (A-s): 0.075 Peak Height (A): 0.187
Background Pk Area (A-s): 0.160 Background Pk Height (A): 0.115
Blank Corrected Pk Area (A-s): 0.059
Concentration (ug/L): 19.6

uL dispensed: 5 from 39, 10 from 4, 20 from 23
Replicate 2 Time: 03:21
Peak Area (A-s): 0.078 Peak Height (A): 0.206
Background Pk Area (A-s): 0.208 Background Pk Height (A): 0.146
Blank Corrected Pk Area (A-s): 0.063
Concentration (ug/L): 20.8

Mean Conc (ug/L): 20.2 SD: 0.88 RSD(%): 4.37
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Recovery is 26.0%

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T1 ID: CCV Seq. No.: 00062 A/S Pos.: 40 Date: 06/24/9

uL dispensed: 10 from 0, 5 from 39, 20 from 40
Replicate 1 Time: 03:24
Peak Area (A-s): 0.153 Peak Height (A): 0.361
Background Pk Area (A-s): 0.191 Background Pk Height (A): 0.258
Blank Corrected Pk Area (A-s): 0.137
Concentration (ug/L): 50.8

uL dispensed: 10 from 0, 5 from 39, 20 from 40
Replicate 2 Time: 03:27
Peak Area (A-s): 0.172 Peak Height (A): 0.381
Background Pk Area (A-s): 0.193 Background Pk Height (A): 0.280
Blank Corrected Pk Area (A-s): 0.156
Concentration (ug/L): 59.7

Mean Conc (ug/L): 55.2 SD: 6.27 RSD(%): 11.35

QC sample is within range 48 - 72

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T1 ID: CCB Seq. No.: 00063 A/S Pos.: 0 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 0
Replicate 1 Time: 03:30
Peak Area (A-s): 0.058 Peak Height (A): 0.106
Background Pk Area (A-s): 0.038 Background Pk Height (A): 0.063
Blank Corrected Pk Area (A-s): 0.043
Concentration (ug/L): 13.8

uL dispensed: 10 from 0, 5 from 39, 20 from 0
Replicate 2 Time: 03:33
Peak Area (A-s): 0.023 Peak Height (A): 0.053
Background Pk Area (A-s): 0.068 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.008
Concentration (ug/L): 2.4

Mean Conc (ug/L): 8.0 SD: 8.05 RSD(%): 99.00

QC sample is within range -10 - 10

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T1 ID: 57.037.86 Seq. No.: 00064 A/S Pos.: 24 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 24
Replicate 1 Time: 03:36
Peak Area (A-s): 0.016 Peak Height (A): 0.023
Background Pk Area (A-s): 0.184 Background Pk Height (A): 0.149
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): 0.2

uL dispensed: 10 from 0, 5 from 39, 20 from 24
Replicate 2 Time: 03:40
Peak Area (A-s): 0.008 Peak Height (A): 0.021
Background Pk Area (A-s): 0.207 Background Pk Height (A): 0.201
Blank Corrected Pk Area (A-s): -0.007
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Concentration (ug/L): -2.2

Mean Conc (ug/L): -1.0 SD: 1.65 RSD(%): 162.53

ID: 57.037.48 Seq. No.: 00065 A/S Pos.: 25 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 25
Replicate 1 Time: 03:43
Peak Area (A-s): 0.009 Peak Height (A): 0.040
Background Pk Area (A-s): 0.137 Background Pk Height (A): 0.139
Blank Corrected Pk Area (A-s): -0.006
Concentration (ug/L): -1.9

uL dispensed: 10 from 0, 5 from 39, 20 from 25
Replicate 2 Time: 03:46
Peak Area (A-s): 0.031 Peak Height (A): 0.096
Background Pk Area (A-s): 0.079 Background Pk Height (A): 0.067
Blank Corrected Pk Area (A-s): 0.016
Concentration (ug/L): 5.0

Mean Conc (ug/L): 1.5 SD: 4.86 RSD(%): 315.35

ID: 57.037.94 Seq. No.: 00066 A/S Pos.: 26 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 26

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T1    ID: Blank              Seq. No.: 00071    A/S Pos.: 0     Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 0
Replicate  1                          Time: 10:42
Peak Area (A-s): 0.028                Peak Height (A): 0.050
Background Pk Area (A-s): 0.123       Background Pk Height (A): 0.064
Blank Corrected Pk Area (A-s): 0.013
Concentration (ug/L  ): 4.0

uL dispensed: 10 from 0, 5 from 39, 20 from 0
Replicate  2                          Time: 10:45
Peak Area (A-s): 0.007                Peak Height (A): 0.018
Background Pk Area (A-s): 0.124       Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): -0.008
Concentration (ug/L  ): -2.4

Mean Conc  (ug/L  ):       0.8        SD: 4.51              RSD(%): 564.47

Auto-zero performed.

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T1    ID: Standard 1         Seq. No.: 00072    A/S Pos.: 1     Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 1
Replicate  1                          Time: 10:49
Peak Area (A-s): 0.039                Peak Height (A): 0.094
Background Pk Area (A-s): 0.098       Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.021
Concentration (ug/L  ): 6.6

uL dispensed: 10 from 0, 5 from 39, 20 from 1
Replicate  2                          Time: 10:52
Peak Area (A-s): 0.043                Peak Height (A): 0.095
Background Pk Area (A-s): 0.096       Background Pk Height (A): 0.051
Blank Corrected Pk Area (A-s): 0.026
Concentration (ug/L  ): 8.1

Mean Conc  (ug/L  ):       7.4        SD: 1.02              RSD(%): 13.81

Standard number 1 applied.  [10.0]
Correlation coefficient: 1.00000      Slope: 0.0023

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T1    ID: Standard 2         Seq. No.: 00073    A/S Pos.: 2     Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 2
Replicate  1                          Time: 10:56
Peak Area (A-s): 0.073                Peak Height (A): 0.168
Background Pk Area (A-s): 0.161       Background Pk Height (A): 0.114
Blank Corrected Pk Area (A-s): 0.055
Concentration (ug/L  ): 23.6

uL dispensed: 10 from 0, 5 from 39, 20 from 2
Replicate  2                          Time: 10:59
Peak Area (A-s): 0.076                Peak Height (A): 0.166
Background Pk Area (A-s): 0.116       Background Pk Height (A): 0.092
Blank Corrected Pk Area (A-s): 0.058
Concentration (ug/L  ): 24.7
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Mean Conc (ug/L): 24.1 SD: 0.79 RSD(%): 3.26

tandard number 2 applied. [20.0]
Co lation coefficient: 1.00000 Slope: 0.0020

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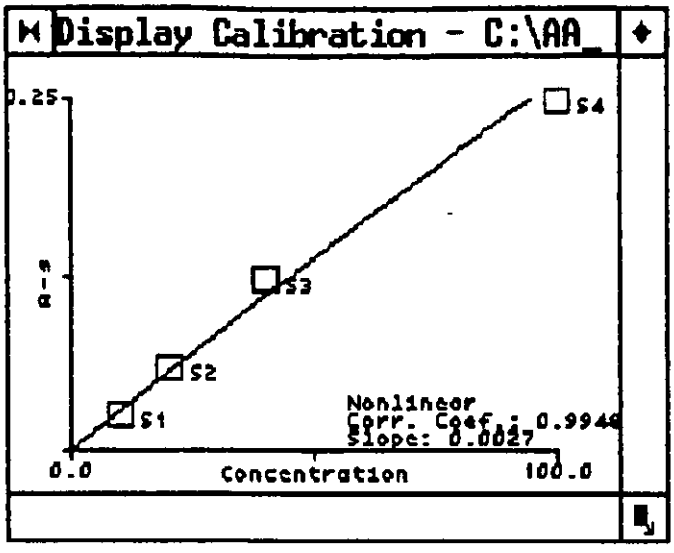
Display Calibration - C:\AA_
0.25
S4
S3
S2
S1
Nonlinear
Corr. Coef.: 0.9946
Slope: 0.0027
0.0
Concentration
100.0

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QC sample is within range -10 - 10

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T1 ID: 57.037.86 Seq. No.: 00079 A/S Pos.: 24 Date: 06/24/92

L dispensed: 10 from 0, 5 from 39, 20 from 24
Replicate 1 Time: 11:32
Peak Area (A-s): 0.013 Peak Height (A): 0.030
ackground Pk Area (A-s): 0.073 Background Pk Height (A): 0.085
lank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -1.6

L dispensed: 10 from 0, 5 from 39, 20 from 24
Replicate 2 Time: 11:35
eak Area (A-s): 0.011 Peak Height (A): 0.027
ackground Pk Area (A-s): 0.090 Background Pk Height (A): 0.090
Blank Corrected Pk Area (A-s): -0.006
Concentration (ug/L): -2.3

Mean Conc (ug/L): -2.0 SD: 0.49 RSD(%): 25.09

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1 ID: 57.037.94 Seq. No.: 00080 A/S Pos.: 26 Date: 06/24/92

L dispensed: 10 from 0, 5 from 39, 20 from 26
eplicate 1 Time: 11:39
Peak Area (A-s): 0.013 Peak Height (A): 0.023
Background Pk Area (A-s): 0.091 Background Pk Height (A): 0.104
l k Corrected Pk Area (A-s): -0.005
Cc entration (ug/L): -1.9

L dispensed: 10 from 0, 5 from 39, 20 from 26
eplicate 2 Time: 11:42
Peak Area (A-s): 0.013 Peak Height (A): 0.020
Background Pk Area (A-s): 0.082 Background Pk Height (A): 0.097
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -1.8

Mean Conc (ug/L): -1.8 SD: 0.08 RSD(%): 4.06

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T1 ID: 57.037.99 Seq. No.: 00081 A/S Pos.: 28 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 28
Replicate 1 Time: 11:46
eak Area (A-s): 0.012 Peak Height (A): 0.030
Background Pk Area (A-s): 0.160 Background Pk Height (A): 0.086
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -2.0

uL dispensed: 10 from 0, 5 from 39, 20 from 28
Replicate 2 Time: 11:49
Peak Area (A-s): 0.012 Peak Height (A): 0.037
Background Pk Area (A-s): 0.159 Background Pk Height (A): 0.081
Bl k Corrected Pk Area (A-s): -0.006
Cc entration (ug/L): -2.3

Mean Conc (ug/L): -2.1 SD: 0.21 RSD(%): 10.07
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T1 ID: 57.037.114 Seq. No.: 00082 A/S Pos.: 30 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 30
Replicate 1 Time: 11:53
Peak Area (A-s): 0.008 Peak Height (A): 0.026
Background Pk Area (A-s): 0.151 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): -0.010
Concentration (ug/L): -3.6

uL dispensed: 10 from 0, 5 from 39, 20 from 30
Replicate 2 Time: 11:56
Peak Area (A-s): 0.012 Peak Height (A): 0.027
Background Pk Area (A-s): 0.149 Background Pk Height (A): 0.073
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -2.0

Mean Conc (ug/L): -2.8 SD: 1.12 RSD(%): 40.17

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T1 ID: 57.037.125 Seq. No.: 00083 A/S Pos.: 32 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 32
Replicate 1 Time: 11:59
Peak Area (A-s): 0.012 Peak Height (A): 0.028
Background Pk Area (A-s): 0.140 Background Pk Height (A): 0.073
Blank Corrected Pk Area (A-s): -0.006
Concentration (ug/L): -2.2

uL dispensed: 10 from 0, 5 from 39, 20 from 32
Replicate 2 Time: 12:03
Peak Area (A-s): 0.011 Peak Height (A): 0.031
Background Pk Area (A-s): 0.148 Background Pk Height (A): 0.077
Blank Corrected Pk Area (A-s): -0.007
Concentration (ug/L): -2.6

Mean Conc (ug/L): -2.4 SD: 0.25 RSD(%): 10.60

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T1 ID: 57.037.131 Seq. No.: 00084 A/S Pos.: 34 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 20 from 34
Replicate 1 Time: 12:06
Peak Area (A-s): 0.007 Peak Height (A): 0.015
Background Pk Area (A-s): 0.169 Background Pk Height (A): 0.095
Blank Corrected Pk Area (A-s): -0.010
Concentration (ug/L): -3.8

uL dispensed: 10 from 0, 5 from 39, 20 from 34
Replicate 2 Time: 12:10
Peak Area (A-s): 0.000 Peak Height (A): 0.014
Background Pk Area (A-s): 0.177 Background Pk Height (A): 0.101
Blank Corrected Pk Area (A-s): -0.018
Concentration (ug/L): -6.4

Mean Conc (ug/L): -5.1 SD: 1.84 RSD(%): 35.93
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Element File: TL_MSA.GEL Element: Tl Wavelength: 276.8
Date: 06/24/92 Time: 12:32 Slit: 0.70 L
Data File: 21122.DAT ID/Wt File: 21122.IDW Lamp Current: 40
Technique: HGA Calib. Type: Method of Add. Energy: 53

Tl ID: Blank Seq. No.: 00087 A/S Pos.: 0 Date: 06/24/92

uL dispensed: 5 from 39, 20 from 0
Replicate 1 Time: 12:35
Peak Area (A-s): 0.007 Peak Height (A): 0.018
Background Pk Area (A-s): 0.082 Background Pk Height (A): 0.053
Blank Corrected Pk Area (A-s): 0.009

Auto-zero performed.

Tl ID: 57.037.6 Seq. No.: 00088 A/S Pos.: 11 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 11
Replicate 1 Time: 12:38
Peak Area (A-s): 0.005 Peak Height (A): 0.021
Background Pk Area (A-s): 0.144 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): -0.002

Tl ID: Standard 1 Seq. No.: 00089 A/S Pos.: 11 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 1, 10 from 11
Replicate 1 Time: 12:41
Peak Area (A-s): 0.017 Peak Height (A): 0.052
Background Pk Area (A-s): 0.127 Background Pk Height (A): 0.067
Blank Corrected Pk Area (A-s): 0.009

Tl ID: Standard 2 Seq. No.: 00090 A/S Pos.: 11 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 11
Replicate 1 Time: 12:45
Peak Area (A-s): 0.029 Peak Height (A): 0.095
Background Pk Area (A-s): 0.120 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.022

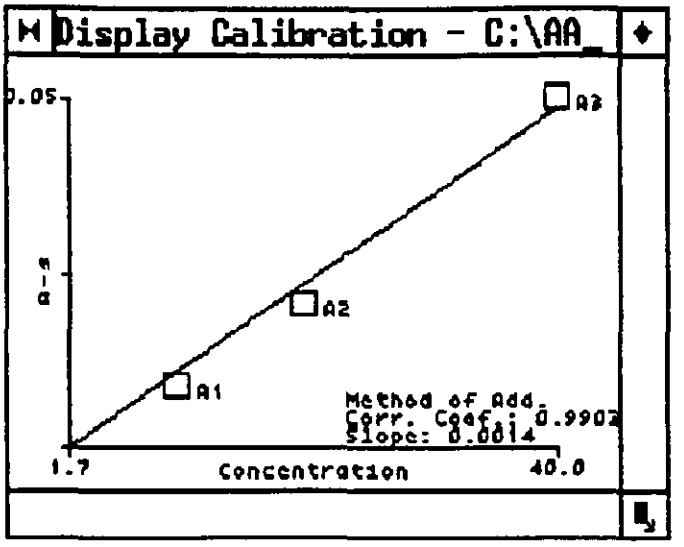
Tl ID: Standard 3 Seq. No.: 00091 A/S Pos.: 11 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 11
Replicate 1 Time: 12:48
Peak Area (A-s): 0.061 Peak Height (A): 0.163
Background Pk Area (A-s): 0.164 Background Pk Height (A): 0.105
Blank Corrected Pk Area (A-s): 0.054

The standard additions calibration curve may not be linear.
Tl ID: 57.037.6 Seq. No.: 00088 A/S Pos.: 11 Date: 06/24/92

Concentration (ug/L): -1.7

Correlation coefficient: 0.99030 Slope: 0.0014



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T1 ID: 57.037.12 Seq. No.: 00092 A/S Pos.: 13 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 13
Replicate 1 Time: 12:51
Peak Area (A-s): 0.002 Peak Height (A): 0.020
Background Pk Area (A-s): 0.255 Background Pk Height (A): 0.108
Bl : Corrected Pk Area (A-s): -0.005

T1 ID: Standard 1 Seq. No.: 00093 A/S Pos.: 13 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 1, 10 from 13
Replicate 1 Time: 12:55
Peak Area (A-s): 0.021 Peak Height (A): 0.055
Background Pk Area (A-s): 0.272 Background Pk Height (A): 0.100
Blank Corrected Pk Area (A-s): 0.014

T1 ID: Standard 2 Seq. No.: 00094 A/S Pos.: 13 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 13
Replicate 1 Time: 12:58
Peak Area (A-s): 0.032 Peak Height (A): 0.081
Background Pk Area (A-s): 0.327 Background Pk Height (A): 0.118
Blank Corrected Pk Area (A-s): 0.024

T1 ID: Standard 3 Seq. No.: 00095 A/S Pos.: 13 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 13
Replicate 1 Time: 13:01
Peak Area (A-s): 0.059 Peak Height (A): 0.146
Background Pk Area (A-s): 0.271 Background Pk Height (A): 0.102
Blank Corrected Pk Area (A-s): 0.052

Er - occurred during calculation of the correlation coef.
T1 ID: 57.037.12 Seq. No.: 00092 A/S Pos.: 13 Date: 06/24/92

Concentration (ug/L): -3.7

Correlation coefficient: 0.00000 Slope: 0.0015

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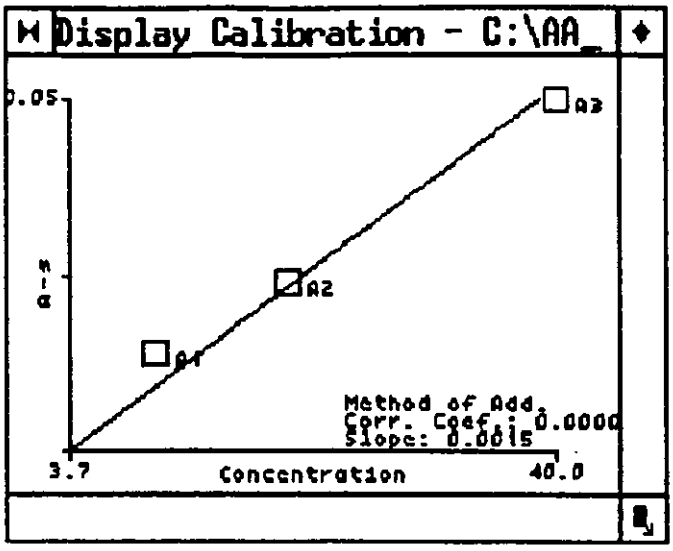

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T1 ID: 57.037.18 Seq. No.: 00096 A/S Pos.: 15 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 15
Replicate 1 Time: 13:05
Peak Area (A-s): 0.004 Peak Height (A): 0.017
Background Pk Area (A-s): 0.147 Background Pk Height (A): 0.087
Blank Corrected Pk Area (A-s): -0.003

T1 ID: Standard 1 Seq. No.: 00097 A/S Pos.: 15 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 1, 10 from 15
Replicate 1 Time: 13:08
Peak Area (A-s): 0.016 Peak Height (A): 0.052
Background Pk Area (A-s): 0.244 Background Pk Height (A): 0.104
Blank Corrected Pk Area (A-s): 0.009

T1 ID: Standard 2 Seq. No.: 00098 A/S Pos.: 15 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 15
Replicate 1 Time: 13:11
Peak Area (A-s): 0.036 Peak Height (A): 0.090
Background Pk Area (A-s): 0.070 Background Pk Height (A): 0.049
Blank Corrected Pk Area (A-s): 0.029

T1 ID: Standard 3 Seq. No.: 00099 A/S Pos.: 15 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 15
Replicate 1 Time: 13:14
Peak Area (A-s): 0.058 Peak Height (A): 0.161
Background Pk Area (A-s): 0.205 Background Pk Height (A): 0.090
Blank Corrected Pk Area (A-s): 0.050

The standard additions calibration curve may not be linear.
T1 ID: 57.037.18 Seq. No.: 00096 A/S Pos.: 15 Date: 06/24/9-

Concentration (ug/L): -2.3

Correlation coefficient: 0.99524 Slope: 0.0014
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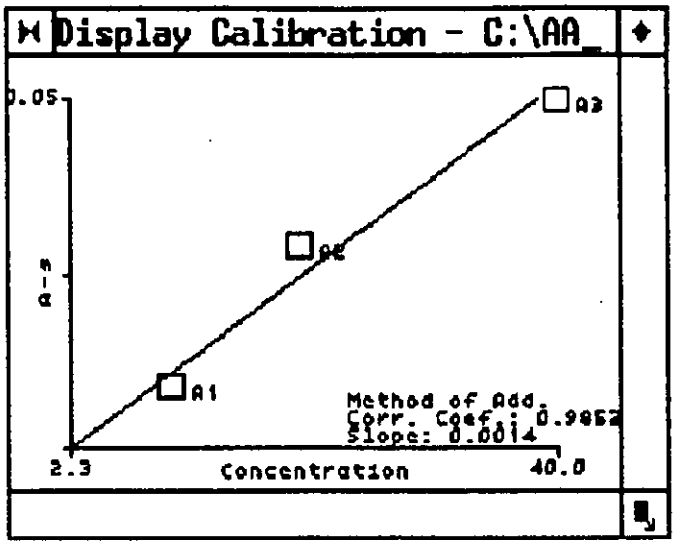

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T1 ID: 57.037.24 Seq. No.: 00100 A/S Pos.: 17 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 17
Replicate 1 Time: 13:18
Peak Area (A-s): 0.013 Peak Height (A): 0.027
Background Pk Area (A-s): 0.471 Background Pk Height (A): 0.171
Blank Corrected Pk Area (A-s): 0.005

T1 ID: Standard 1 Seq. No.: 00101 A/S Pos.: 17 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 1, 10 from 17
Replicate 1 Time: 13:21
Peak Area (A-s): 0.020 Peak Height (A): 0.056
Background Pk Area (A-s): 0.082 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.013

T1 ID: Standard 2 Seq. No.: 00102 A/S Pos.: 17 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 17
Replicate 1 Time: 13:24
Peak Area (A-s): 0.030 Peak Height (A): 0.097
Background Pk Area (A-s): 0.057 Background Pk Height (A): 0.058
Blank Corrected Pk Area (A-s): 0.023

T1 ID: Standard 3 Seq. No.: 00103 A/S Pos.: 17 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 17
Replicate 1 Time: 13:28
Peak Area (A-s): 0.064 Peak Height (A): 0.167
Background Pk Area (A-s): 0.083 Background Pk Height (A): 0.081
Blank Corrected Pk Area (A-s): 0.057

The standard additions calibration curve may not be linear.
T1 ID: 57.037.24 Seq. No.: 00100 A/S Pos.: 17 Date: 06/24/92

Concentration (ug/L): 4.5

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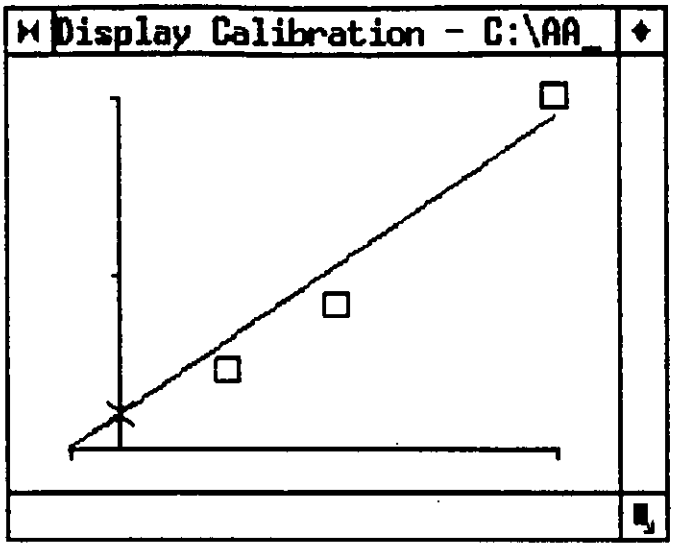

T1 ID: 57.037.30 Seq. No.: 00104 A/S Pos.: 19 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 19
Replicate 1 Time: 13:31
Peak Area (A-s): 0.006 Peak Height (A): 0.022
Background Pk Area (A-s): 0.403 Background Pk Height (A): 0.157
Blank Corrected Pk Area (A-s): -0.001

T1 ID: Standard 1 Seq. No.: 00105 A/S Pos.: 19 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 1, 10 from 19
Replicate 1 Time: 13:34
Peak Area (A-s): 0.021 Peak Height (A): 0.059
Background Pk Area (A-s): -0.007 Background Pk Height (A): 0.032
Blank Corrected Pk Area (A-s): 0.014

T1 ID: Standard 2 Seq. No.: 00106 A/S Pos.: 19 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 19
Replicate 1 Time: 13:38
Peak Area (A-s): 0.025 Peak Height (A): 0.087
Background Pk Area (A-s): 0.603 Background Pk Height (A): 0.175
Blank Corrected Pk Area (A-s): 0.018

T1 ID: Standard 3 Seq. No.: 00107 A/S Pos.: 19 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 19
Replicate 1 Time: 13:41
Peak Area (A-s): 0.068 Peak Height (A): 0.168
Background Pk Area (A-s): 0.010 Background Pk Height (A): 0.055
Blank Corrected Pk Area (A-s): 0.061

T1 ID: 57.037.30 Seq. No.: 00104 A/S Pos.: 19 Date: 06/24/92

Concentration (ug/L): -0.6

Correlation coefficient: 0.94119 Slope: 0.0015

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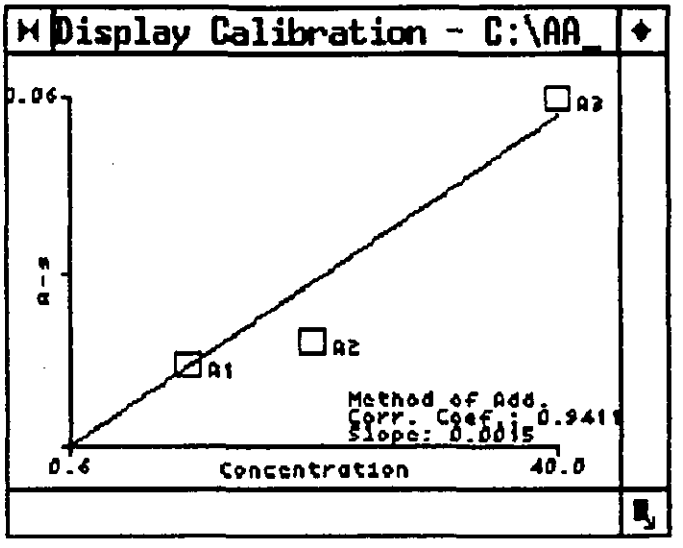


T1 ID: 57.037.36 Seq. No.: 00108 A/S Pos.: 21 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 21
Replicate 1 Time: 13:45
Peak Area (A-s): 0.013 Peak Height (A): 0.023
Background Pk Area (A-s): -0.054 Background Pk Height (A): 0.019
Bl < Corrected Pk Area (A-s): 0.006

T1 ID: Standard 1 Seq. No.: 00109 A/S Pos.: 21 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 1, 10 from 21
Replicate 1 Time: 13:48
Peak Area (A-s): 0.022 Peak Height (A): 0.053
Background Pk Area (A-s): -0.041 Background Pk Height (A): 0.022
Blank Corrected Pk Area (A-s): 0.015

T1 ID: Standard 2 Seq. No.: 00110 A/S Pos.: 21 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 21
Replicate 1 Time: 13:51
Peak Area (A-s): 0.030 Peak Height (A): 0.092
Background Pk Area (A-s): -0.133 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): 0.023

T1 ID: Standard 3 Seq. No.: 00111 A/S Pos.: 21 Date: 06/24/92

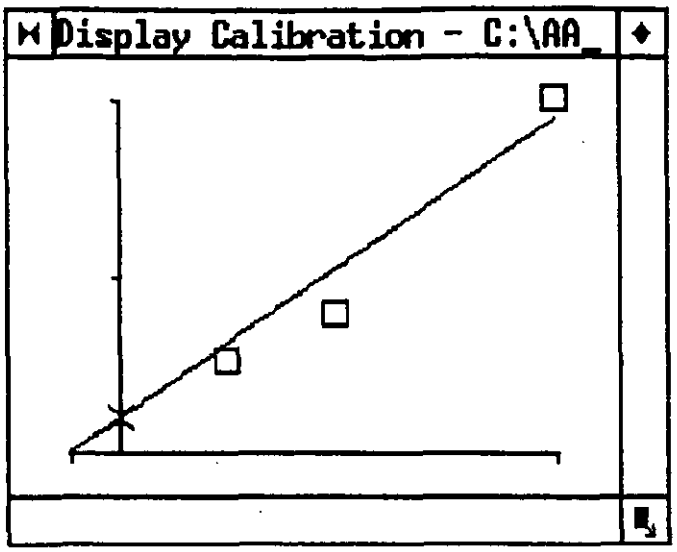
uL dispensed: 5 from 39, 10 from 3, 10 from 21
Replicate 1 Time: 13:54
Peak Area (A-s): 0.065 Peak Height (A): 0.159
Background Pk Area (A-s): -0.053 Background Pk Height (A): 0.041
Blank Corrected Pk Area (A-s): 0.058

Th standard additions calibration curve may not be linear.
T1 ID: 57.037.36 Seq. No.: 00108 A/S Pos.: 21 Date: 06/24/92

Concentration (ug/L): 4.5

Correlation coefficient: 0.94113 Slope: 0.0015

NONE



T1 ID: 57.037.41 Seq. No.: 00112 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 23
Replicate 1 Time: 13:58
Peak Area (A-s): 0.025 Peak Height (A): 0.054
Background Pk Area (A-s): 0.038 Background Pk Height (A): 0.049
Blank Corrected Pk Area (A-s): 0.018

T1 ID: Standard 1 Seq. No.: 00113 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 1, 10 from 23
Replicate 1 Time: 14:01
Peak Area (A-s): 0.033 Peak Height (A): 0.078
Background Pk Area (A-s): 0.083 Background Pk Height (A): 0.048
Blank Corrected Pk Area (A-s): 0.025

T1 ID: Standard 2 Seq. No.: 00114 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 23
Replicate 1 Time: 14:05
Peak Area (A-s): 0.045 Peak Height (A): 0.112
Background Pk Area (A-s): 0.121 Background Pk Height (A): 0.064
Blank Corrected Pk Area (A-s): 0.038

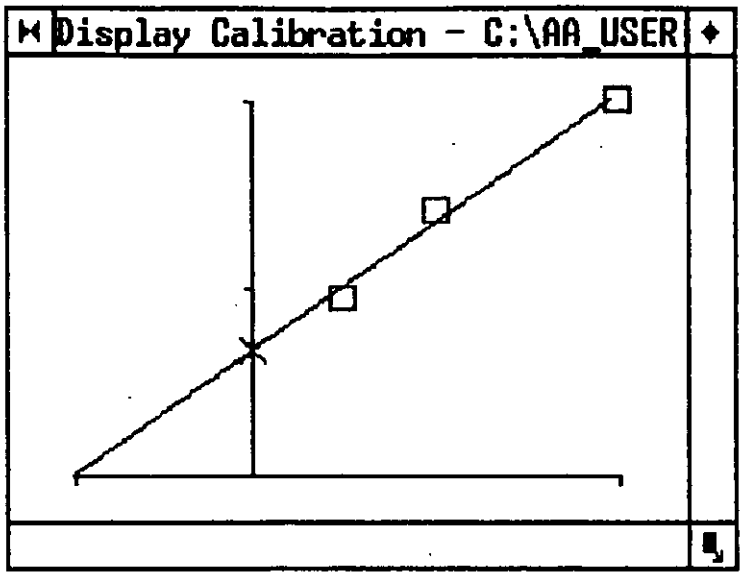
T1 ID: Standard 3 Seq. No.: 00115 A/S Pos.: 23 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 23
Replicate 1 Time: 14:08
Peak Area (A-s): 0.061 Peak Height (A): 0.149
Background Pk Area (A-s): 0.140 Background Pk Height (A): 0.073
Blank Corrected Pk Area (A-s): 0.054

The standard additions calibration curve may not be linear.
T1 ID: 57.037.41 Seq. No.: 00112 A/S Pos.: 23 Date: 06/24/9-

Concentration (ug/L): 19.6

Correlation coefficient: 0.99288 Slope: 0.0008


Display Calibration - C:\AA_USER

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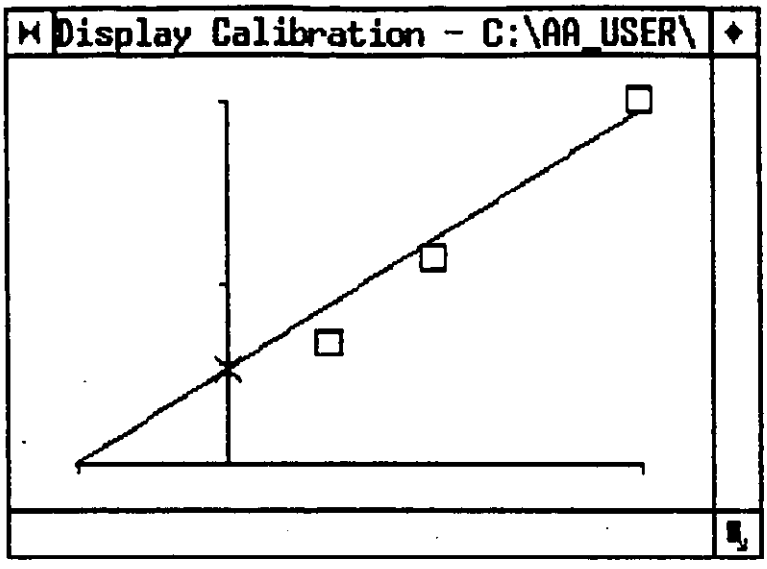
Correlation coefficient: 0.95220 Slope: 0.0010



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T1 ID: 57.037.53 Seq. No.: 00120 A/S Pos.: 27 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 27
Replicate 1 Time: 14:25
Peak Area (A-s): 0.029 Peak Height (A): 0.029
Background Pk Area (A-s): -0.736 Background Pk Height (A): 0.012
Blank Corrected Pk Area (A-s): 0.022

T1 ID: Standard 1 Seq. No.: 00121 A/S Pos.: 27 Date: 06/24/92

uL dispensed: 5 from 38, 10 from 1, 10 from 27
Replicate 1 Time: 14:28
Peak Area (A-s): 0.023 Peak Height (A): 0.056
Background Pk Area (A-s): -0.299 Background Pk Height (A): 0.008
Blank Corrected Pk Area (A-s): 0.016

T1 ID: Standard 2 Seq. No.: 00122 A/S Pos.: 27 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 27

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T1 ID: 57.037.53 Seq. No.: 00123 A/S Pos.: 27 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 27
Replicate 1 Time: 14:32
Peak Area (A-s): 0.010 Peak Height (A): 0.022
Background Pk Area (A-s): -0.160 Background Pk Height (A): 0.008
Blank Corrected Pk Area (A-s): 0.003

T1 ID: Standard 1 Seq. No.: 00124 A/S Pos.: 27 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 1, 10 from 27
Replicate 1 Time: 14:35
Peak Area (A-s): 0.018 Peak Height (A): 0.059
Background Pk Area (A-s): -0.098 Background Pk Height (A): 0.008
Blank Corrected Pk Area (A-s): 0.011

T1 ID: Standard 2 Seq. No.: 00125 A/S Pos.: 27 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 27
Replicate 1 Time: 14:39
Peak Area (A-s): 0.029 Peak Height (A): 0.092
Background Pk Area (A-s): -0.028 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): 0.022

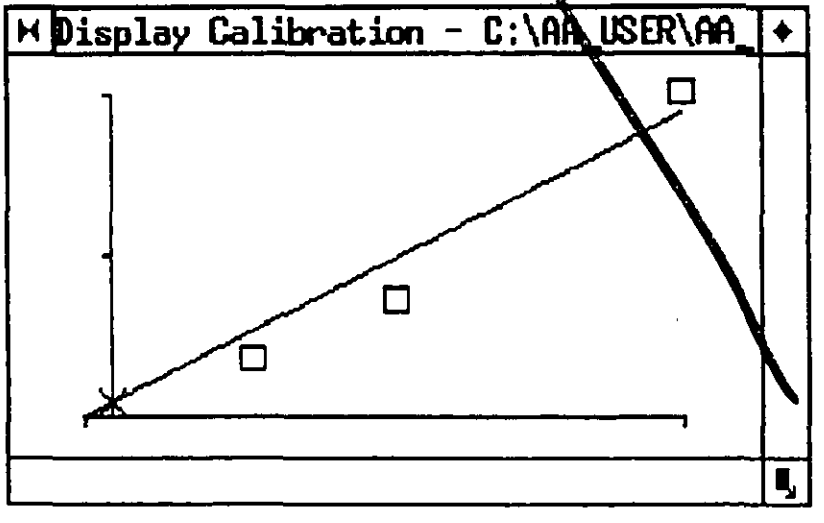
T1 ID: Standard 3 Seq. No.: 00126 A/S Pos.: 27 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 27
Replicate 1 Time: 14:42
Peak Area (A-s): 0.068 Peak Height (A): 0.146
Background Pk Area (A-s): -0.001 Background Pk Height (A): 0.054
Blank Corrected Pk Area (A-s): 0.061

The standard additions calibration curve may not be linear.
T1 ID: 57.037.53 Seq. No.: 00123 A/S Pos.: 27 Date: 06/24/92

Concentration (ug/L): 1.9

Correlation coefficient: 0.93721 Slope: 0.0014



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T1 ID: 57.037.58 Seq. No.: 00127 A/S Pos.: 29 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 29
Replicate 1 Time: 14:46
Peak Area (A-s): 0.016 Peak Height (A): 0.030
Background Pk Area (A-s): 0.003 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): 0.009

T1 ID: Standard 1 Seq. No.: 00128 A/S Pos.: 29 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 1, 10 from 29
Replicate 1 Time: 14:49
Peak Area (A-s): 0.023 Peak Height (A): 0.048
Background Pk Area (A-s): 0.003 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.016

T1 ID: Standard 2 Seq. No.: 00129 A/S Pos.: 29 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 29
Replicate 1 Time: 14:52
Peak Area (A-s): 0.040 Peak Height (A): 0.090
Background Pk Area (A-s): 0.028 Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): 0.032

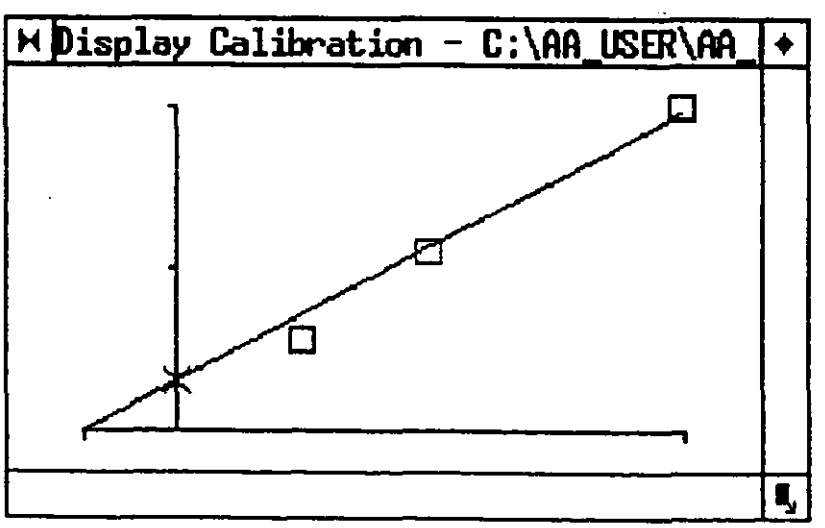
T1 ID: Standard 3 Seq. No.: 00130 A/S Pos.: 29 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 29
Replicate 1 Time: 14:55
Peak Area (A-s): 0.066 Peak Height (A): 0.153
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.058

The standard additions calibration curve may not be linear.
T1 ID: 57.037.58 Seq. No.: 00127 A/S Pos.: 29 Date: 06/24/92

Concentration (ug/L): 7.4

Correlation coefficient: 0.97964 Slope: 0.0012



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Tl ID: 57.037.63 Seq. No.: 00131 A/S Pos.: 31 Date: 06/24/92

uL spensed: 10 from 0, 5 from 39, 10 from 31
Replicate 1 Time: 14:59
Peak Area (A-s): 0.015 Peak Height (A): 0.023
Background Pk Area (A-s): 0.054 Background Pk Height (A): 0.045
Blank Corrected Pk Area (A-s): 0.007

Tl ID: Standard 1 Seq. No.: 00132 A/S Pos.: 31 Date: 06/24/92

L dispensed: 5 from 39, 10 from 1, 10 from 31
eplicate 1 Time: 15:02
Peak Area (A-s): 0.020 Peak Height (A): 0.046
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.037
lank Corrected Pk Area (A-s): 0.013

Tl ID: Standard 2 Seq. No.: 00133 A/S Pos.: 31 Date: 06/24/92

L dispensed: 5 from 39, 10 from 2, 10 from 31
Replicate 1 Time: 15:05
eak Area (A-s): 0.033 Peak Height (A): 0.083
ackground Pk Area (A-s): 0.060 Background Pk Height (A): 0.044
Blank Corrected Pk Area (A-s): 0.025

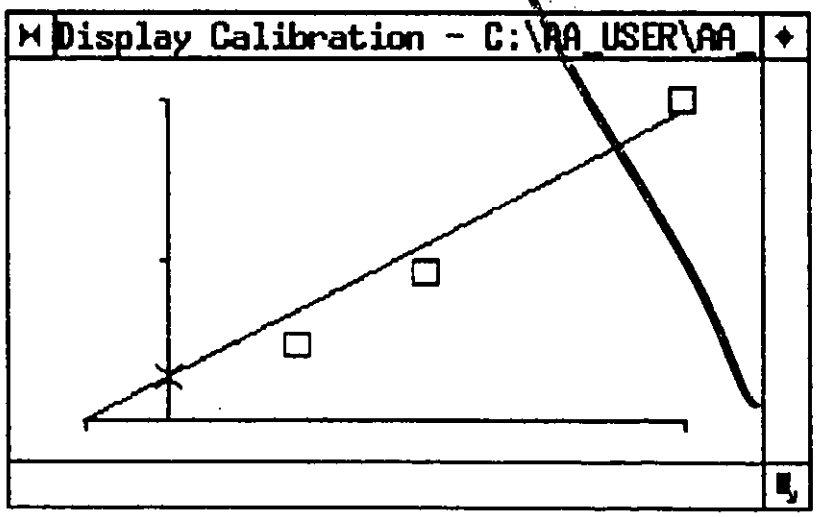
Tl ID: Standard 3 Seq. No.: 00134 A/S Pos.: 31 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 31
eplicate 1 Time: 15:09
e Area (A-s): 0.062 Peak Height (A): 0.142
Background Pk Area (A-s): 0.085 Background Pk Height (A): 0.074
lank Corrected Pk Area (A-s): 0.055

The standard additions calibration curve may not be linear.
Tl ID: 57.037.63 Seq. No.: 00131 A/S Pos.: 31 Date: 06/24/92

oncentration (ug/L): 6.5

orrelation coefficient: 0.94493 Slope: 0.0011



Yeow
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T1 ID: 57.037.69 Seq. No.: 00135 A/S Pos.: 33 Date: 06/24/92

uL dispensed: 10 from 0, 5 from 39, 10 from 33
Replicate 1 Time: 15:12
Peak Area (A-s): 0.011 Peak Height (A): 0.034
Background Pk Area (A-s): 0.091 Background Pk Height (A): 0.048
Blank Corrected Pk Area (A-s): 0.004

T1 ID: Standard 1 Seq. No.: 00136 A/S Pos.: 33 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 1, 10 from 33
Replicate 1 Time: 15:16
Peak Area (A-s): 0.028 Peak Height (A): 0.058
Background Pk Area (A-s): 0.071 Background Pk Height (A): 0.041
Blank Corrected Pk Area (A-s): 0.020

T1 ID: Standard 2 Seq. No.: 00137 A/S Pos.: 33 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 2, 10 from 33
Replicate 1 Time: 15:19
Peak Area (A-s): 0.043 Peak Height (A): 0.097
Background Pk Area (A-s): 0.076 Background Pk Height (A): 0.047
Blank Corrected Pk Area (A-s): 0.036

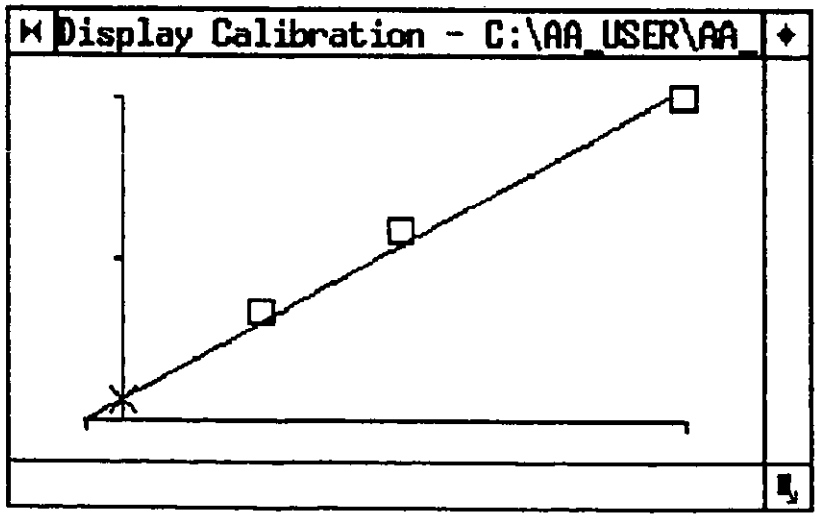
T1 ID: Standard 3 Seq. No.: 00138 A/S Pos.: 33 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 33
Replicate 1 Time: 15:22
Peak Area (A-s): 0.069 Peak Height (A): 0.155
Background Pk Area (A-s): 0.093 Background Pk Height (A): 0.084
Blank Corrected Pk Area (A-s): 0.062

The standard additions calibration curve may not be linear.
T1 ID: 57.037.69 Seq. No.: 00135 A/S Pos.: 33 Date: 06/24/92

Concentration (ug/L): 2.6

Correlation coefficient: 0.99500 Slope: 0.0015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1 ID: 57.037.128 Seq. No.: 00139 A/S Pos.: 35 Date: 06/24/92

uL ispensed: 10 from 0, 5 from 39, 10 from 35
eplicate 1 Time: 15:26
eak Area (A-s): 0.010 Peak Height (A): 0.023
Background Pk Area (A-s): 0.078 Background Pk Height (A): 0.045
Blank Corrected Pk Area (A-s): 0.002

1 ID: Standard 1 Seq. No.: 00140 A/S Pos.: 35 Date: 06/24/92

L dispensed: 5 from 39, 10 from 1, 10 from 35
eplicate 1 Time: 15:29
Peak Area (A-s): 0.021 Peak Height (A): 0.043
Background Pk Area (A-s): 0.069 Background Pk Height (A): 0.042
lank Corrected Pk Area (A-s): 0.014

T1 ID: Standard 2 Seq. No.: 00141 A/S Pos.: 35 Date: 06/24/92

L dispensed: 5 from 39, 10 from 2, 10 from 35
Replicate 1 Time: 15:32
eak Area (A-s): 0.037 Peak Height (A): 0.079
ackground Pk Area (A-s): 0.073 Background Pk Height (A): 0.042
lank Corrected Pk Area (A-s): 0.030

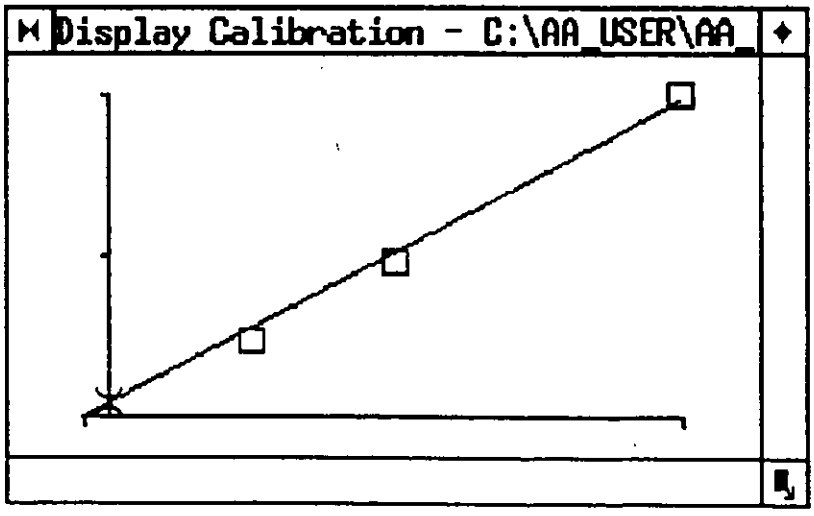
1 ID: Standard 3 Seq. No.: 00142 A/S Pos.: 35 Date: 06/24/92

uL dispensed: 5 from 39, 10 from 3, 10 from 35
eplicate 1 Time: 15:36
e Area (A-s): 0.070 Peak Height (A): 0.138
Background Pk Area (A-s): 0.086 Background Pk Height (A): 0.077
lank Corrected Pk Area (A-s): 0.063

he standard additions calibration curve may not be linear.
T1 ID: 57.037.128 Seq. No.: 00139 A/S Pos.: 35 Date: 06/24/92

oncentration (ug/L): 1.7

orrelation coefficient: 0.99321 Slope: 0.0015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TL
MSA RERUNS

Element File: TL_MSA.GEL Element: Tl Wavelength: 276.8
Date: 06/30/92 Time: 11:57 Slit: 0.70 L
Data File: RR.DAT ID/Wt File: RR.IDW Lamp Current: 0
Technique: HGA Calib. Type: Method of Add. Energy: 60

Tl ID: Blank Seq. No.: 00033 A/S Pos.: 0 Date: 06/30/92

uL dispensed: 5 from 39, 30 from 0
Replicate 1 Time: 12:00
Peak Area (A-s): 0.000 Peak Height (A): 0.008
Background Pk Area (A-s): 0.080 Background Pk Height (A): 0.070
Blank Corrected Pk Area (A-s): 0.000

Auto-zero performed.

Tl ID: 57.037.63 Seq. No.: 00034 A/S Pos.: 11 Date: 06/30/92

uL dispensed: 15 from 0, 5 from 39, 15 from 11
Replicate 1 Time: 12:03
Peak Area (A-s): 0.000 Peak Height (A): 0.009
Background Pk Area (A-s): 0.103 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): -0.000

Tl ID: Standard 1 Seq. No.: 00035 A/S Pos.: 11 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 1, 15 from 11
Replicate 1 Time: 12:06
Peak Area (A-s): 0.030 Peak Height (A): 0.075
Background Pk Area (A-s): 0.088 Background Pk Height (A): 0.051
Blank Corrected Pk Area (A-s): 0.029

Tl ID: Standard 2 Seq. No.: 00036 A/S Pos.: 11 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 2, 15 from 11
Replicate 1 Time: 12:09
Peak Area (A-s): 0.054 Peak Height (A): 0.141
Background Pk Area (A-s): 0.104 Background Pk Height (A): 0.082
Blank Corrected Pk Area (A-s): 0.053

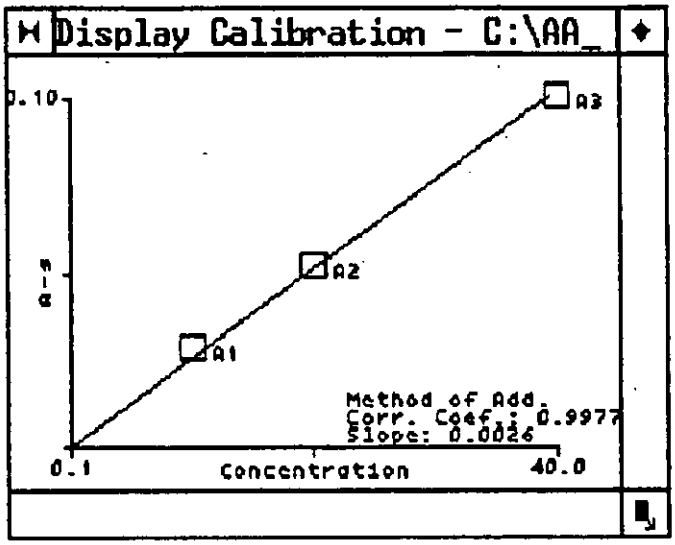
Tl ID: Standard 3 Seq. No.: 00037 A/S Pos.: 11 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 3, 15 from 11
Replicate 1 Time: 12:12
Peak Area (A-s): 0.104 Peak Height (A): 0.244
Background Pk Area (A-s): 0.141 Background Pk Height (A): 0.144
Blank Corrected Pk Area (A-s): 0.103

The standard additions calibration curve may not be linear.
Tl ID: 57.037.63 Seq. No.: 00034 A/S Pos.: 11 Date: 06/30/92

Concentration (ug/L): -0.1

Correlation coefficient: 0.99771 Slope: 0.0026


Display Calibration - C:\AA_
0.10
A-S
A3
A2
A1
Method of Add.
Corr. Coef.: 0.9977
Slope: 0.0026
0.1
Concentration
40.0

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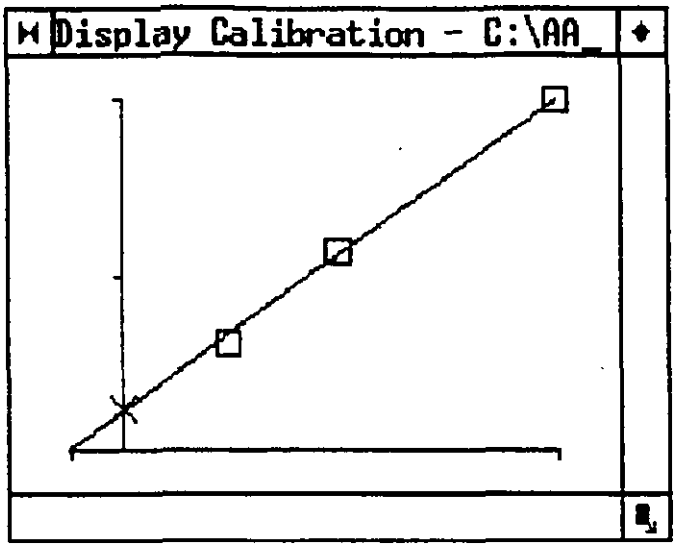


Tl ID: 57.037.24 Seq. No.: 00042 A/S Pos.: 13 Date: 06/30/92

uL dispensed: 15 from 0, 5 from 39, 15 from 13
Replicate 1 Time: 12:29
Peak Area (A-s): 0.013 Peak Height (A): 0.023
Background Pk Area (A-s): 0.105 Background Pk Height (A): 0.058
Blank Corrected Pk Area (A-s): 0.012

Tl ID: Standard 1 Seq. No.: 00043 A/S Pos.: 13 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 1, 15 from 13
Replicate 1 Time: 12:32
Peak Area (A-s): 0.028 Peak Height (A): 0.052
Background Pk Area (A-s): 0.186 Background Pk Height (A): 0.399
Blank Corrected Pk Area (A-s): 0.027

Tl ID: Standard 2 Seq. No.: 00044 A/S Pos.: 13 Date: 06/30/92

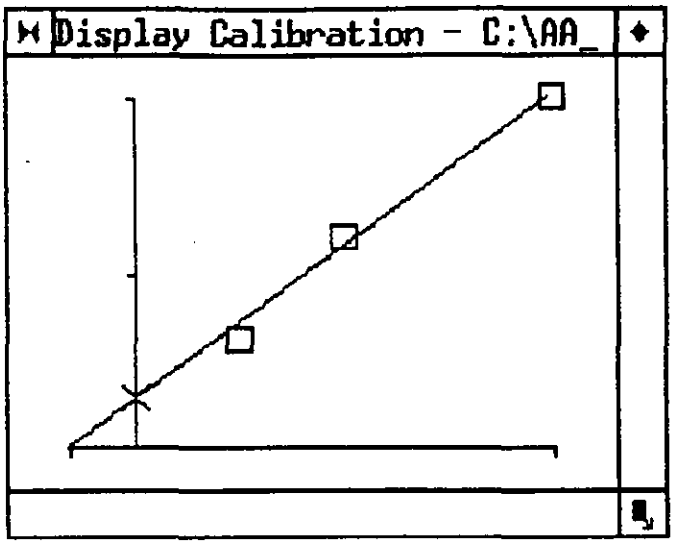
uL dispensed: 5 from 39, 15 from 2, 15 from 13
Replicate 1 Time: 12:36
Peak Area (A-s): 0.054 Peak Height (A): 0.143
Background Pk Area (A-s): 0.106 Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.054

Tl ID: Standard 3 Seq. No.: 00045 A/S Pos.: 13 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 3, 15 from 13
Replicate 1 Time: 12:39
Peak Area (A-s): 0.089 Peak Height (A): 0.160
Background Pk Area (A-s): 0.205 Background Pk Height (A): 0.268
Blank Corrected Pk Area (A-s): 0.089

The standard additions calibration curve may not be linear.
Tl ID: 57.037.24 Seq. No.: 00042 A/S Pos.: 13 Date: 06/30/92

Concentration (ug/L): 6.4



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T1 ID: 57.037.30 Seq. No.: 00046 A/S Pos.: 16 Date: 06/30/92

uL dispensed: 15 from 0, 5 from 39, 15 from 16
Replicate 1 Time: 12:43
Peak Area (A-s): 0.010 Peak Height (A): 0.018
Background Pk Area (A-s): 0.105 Background Pk Height (A): 0.056
Blank Corrected Pk Area (A-s): 0.010

T1 ID: Standard 1 Seq. No.: 00047 A/S Pos.: 16 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 1, 15 from 16
Replicate 1 Time: 12:46
Peak Area (A-s): 0.029 Peak Height (A): 0.082
Background Pk Area (A-s): 0.089 Background Pk Height (A): 0.051
Blank Corrected Pk Area (A-s): 0.029

T1 ID: Standard 2 Seq. No.: 00048 A/S Pos.: 16 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 2, 15 from 16
Replicate 1 Time: 12:49
Peak Area (A-s): 0.053 Peak Height (A): 0.142
Background Pk Area (A-s): 0.102 Background Pk Height (A): 0.080
Blank Corrected Pk Area (A-s): 0.052

T1 ID: Standard 3 Seq. No.: 00049 A/S Pos.: 16 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 3, 15 from 16
Replicate 1 Time: 12:52
Peak Area (A-s): 0.106 Peak Height (A): 0.267
Background Pk Area (A-s): 0.131 Background Pk Height (A): 0.156
Blank Corrected Pk Area (A-s): 0.105

The standard additions calibration curve may not be linear.
T1 ID: 57.037.30 Seq. No.: 00046 A/S Pos.: 16 Date: 06/30/92

Concentration (ug/L): 4.3
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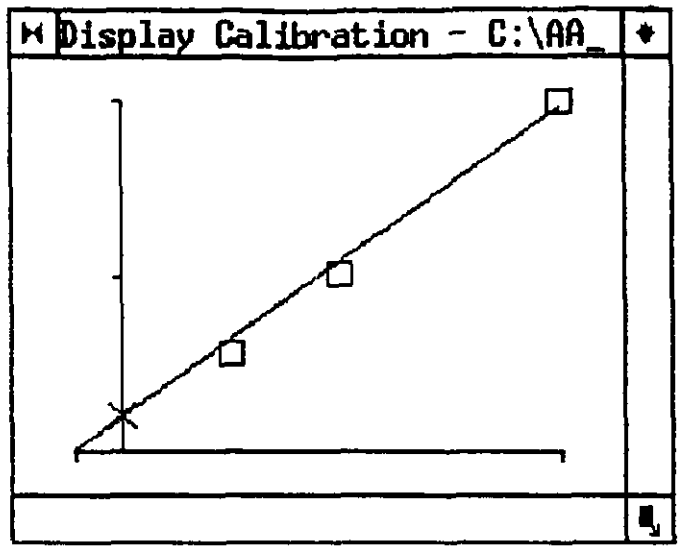


T1 ID: 57.037.36 Seq. No.: 00050 A/S Pos.: 17 Date: 06/30/92

uL dispensed: 15 from 0, 5 from 39, 15 from 17
Replicate 1 Time: 12:56
Peak Area (A-s): 0.013 Peak Height (A): 0.022
Background Pk Area (A-s): 0.097 Background Pk Height (A): 0.056
Blank Corrected Pk Area (A-s): 0.013

T1 ID: Standard 1 Seq. No.: 00051 A/S Pos.: 17 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 1, 15 from 17
Replicate 1 Time: 12:59
Peak Area (A-s): 0.030 Peak Height (A): 0.076
Background Pk Area (A-s): 0.081 Background Pk Height (A): 0.047
Blank Corrected Pk Area (A-s): 0.030

T1 ID: Standard 2 Seq. No.: 00052 A/S Pos.: 17 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 2, 15 from 17
Replicate 1 Time: 13:02
Peak Area (A-s): 0.054 Peak Height (A): 0.143
Background Pk Area (A-s): 0.095 Background Pk Height (A): 0.078
Blank Corrected Pk Area (A-s): 0.053

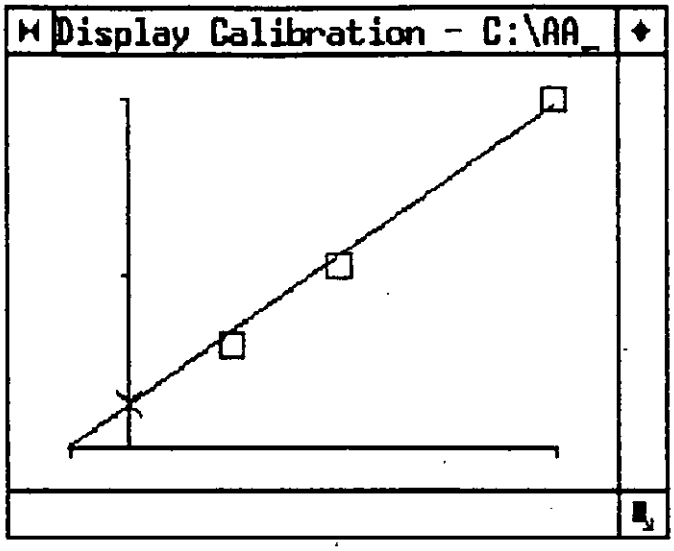
T1 ID: Standard 3 Seq. No.: 00053 A/S Pos.: 17 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 3, 15 from 17
Replicate 1 Time: 13:05
Peak Area (A-s): 0.104 Peak Height (A): 0.261
Background Pk Area (A-s): 0.123 Background Pk Height (A): 0.150
Blank Corrected Pk Area (A-s): 0.104

The standard additions calibration curve may not be linear.
T1 ID: 57.037.36 Seq. No.: 00050 A/S Pos.: 17 Date: 06/30/9

Concentration (ug/L): 5.7

Correlation coefficient: 0.99024 Slope: 0.0022



T1 ID: ~~57.037.48~~ rerun Seq. No.: 00054 A/S Pos.: 18 Date: 06/30/92

uL dispensed: 15 from 0, 5 from 39, 15 from 18
Replicate 1 Time: 13:09
Peak Area (A-s): 0.025 Peak Height (A): 0.067
Background Pk Area (A-s): 0.182 Background Pk Height (A): 0.388
Blank Corrected Pk Area (A-s): 0.025

T1 ID: Standard 1 Seq. No.: 00055 A/S Pos.: 18 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 1, 15 from 18
Replicate 1 Time: 13:12
Peak Area (A-s): 0.031 Peak Height (A): 0.070
Background Pk Area (A-s): 0.165 Background Pk Height (A): 0.385
Blank Corrected Pk Area (A-s): 0.031

T1 ID: Standard 2 Seq. No.: 00056 A/S Pos.: 18 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 2, 15 from 18
Replicate 1 Time: 13:16
Peak Area (A-s): 0.057 Peak Height (A): 0.146
Background Pk Area (A-s): 0.108 Background Pk Height (A): 0.081
Blank Corrected Pk Area (A-s): 0.057

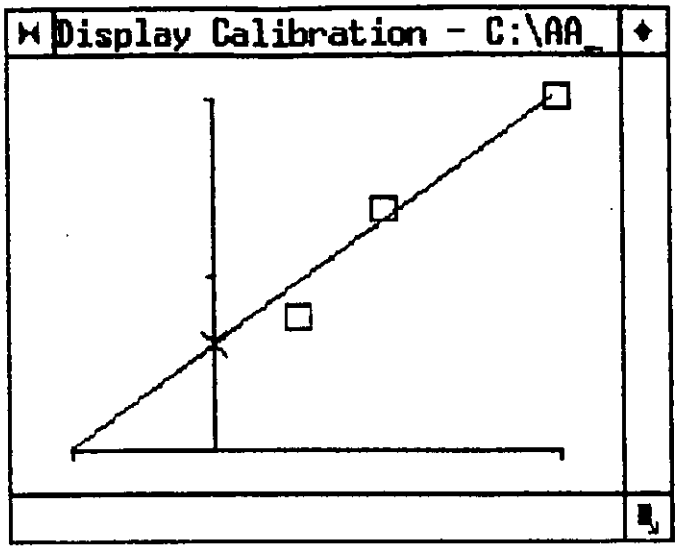
T1 ID: Standard 3 Seq. No.: 00057 A/S Pos.: 18 Date: 06/30/92

uL dispensed: 5 from 39, 15 from 3, 15 from 18
Replicate 1 Time: 13:19
Peak Area (A-s): 0.083 Peak Height (A): 0.188
Background Pk Area (A-s): 0.206 Background Pk Height (A): 0.423
Blank Corrected Pk Area (A-s): 0.083

T1 standard additions calibration curve may not be linear.
T1 ID: 57.037.48 Seq. No.: 00054 A/S Pos.: 18 Date: 06/30/92

Concentration (ug/L): 16.7

Correlation coefficient: 0.86047 Slope: 0.0015


Display Calibration - C:\AA_

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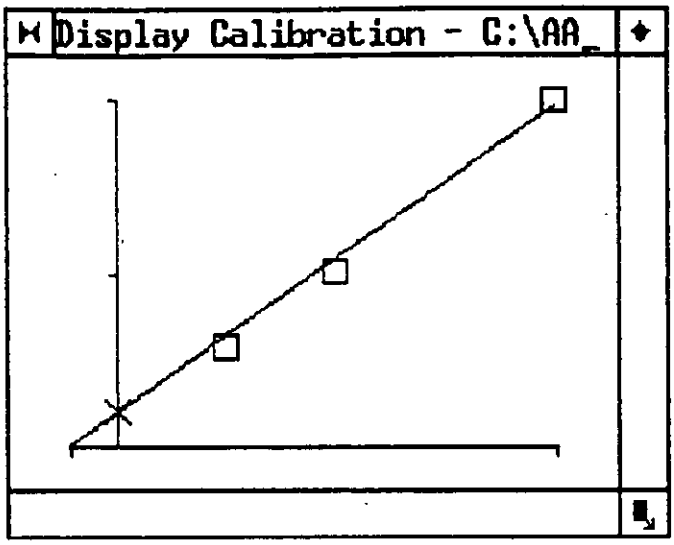
Display Calibration - C:\AA_

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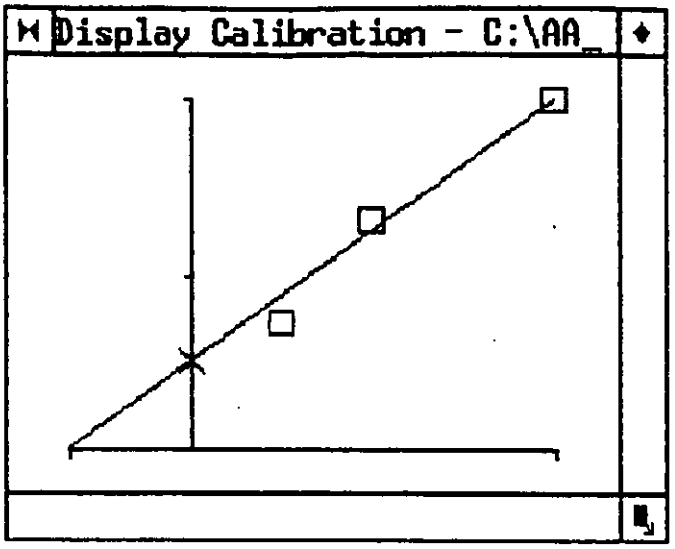
Display Calibration - C:\AA_

21122 IEA.

```
Element File: HG_.MEL          Element: Hg2                  Wavelength: 253.7
Da    06/19/92                 Time: 09:00                   Slit: 0.7 H
Dat  File: 21122HG2.DAT        ID/Wt File: UNTITLED          Lamp Current: 6
echnique: MHS                  Calib. Type: Linear           Energy: 69
```

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```
g2   ID: Seq. 00001          Seq. No.: 00001    A/S Pos.: --    Date: 06/19/92

Replicate  1                                   Time: 09:02
eak Area (A-s): 0.368                          Peak Height (A): 0.013
lank Corrected Pk Height (A): 0.013
oncentration (ug/L  ): 0.4

uto-zero performed.
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```
g2   ID: Seq. 00002          Seq. No.: 00002    A/S Pos.: --    Date: 06/19/92

Replicate  1                                   Time: 09:03
eak Area (A-s): 0.372                          Peak Height (A): 0.014
lank Corrected Pk Height (A): 0.014
oncentration (ug/L  ): 0.4

tandard number 1 applied.  [0.5]
orrelation coefficient: 1.00000                Slope: 0.0277
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```
    ID: Seq. 00003          Seq. No.: 00003    A/S Pos.: --    Date: 06/19/92

ample abs. is greater than that of the largest standard.
eplicate  1                                    Time: 09:05
eak Area (A-s): 0.751                          Peak Height (A): 0.028
Blank Corrected Pk Height (A): 0.028
oncentration (ug/L  ): 1.0

Standard number 2 applied.  [1.0]
orrelation coefficient: 0.99936                Slope: 0.0283
```

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Hg2   ID: Seq. 00004          Seq. No.: 00004    A/S Pos.: --    Date: 06/19/92

ample abs. is greater than that of the largest standard.
Replicate  1                                   Time: 09:06
eak Area (A-s): 1.631                          Peak Height (A): 0.060
lank Corrected Pk Height (A): 0.060
Concentration (ug/L  ): 2.1

tandard number 3 applied.  [2.0]
Correlation coefficient: 0.99849               Slope: 0.0297
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```
g2   ID: Seq. 00005          Seq. No.: 00005    A/S Pos.: --    Date: 06/19/92

a   e abs. is greater than that of the largest standard.
eplicate  1                                    Time: 09:08
Peak Area (A-s): 4.190                         Peak Height (A): 0.160
lank Corrected Pk Height (A): 0.160
oncentration (ug/L  ): 5.4
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Standard number 4 applied. [5.0]
Correlation coefficient: 0.99886 Slope: 0.0317

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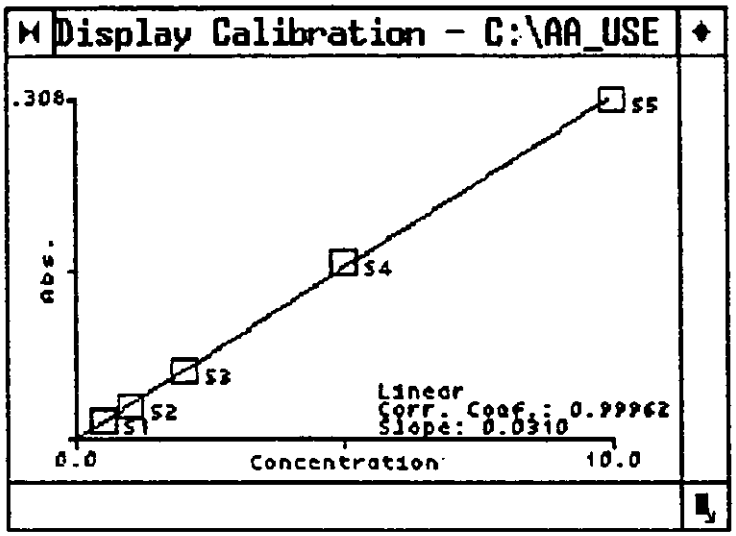
Hg2 ID: Seq. 00006 Seq. No.: 00006 A/S Pos.: -- Date: 06/19/92

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 09:09
Peak Area (A-s): 8.159 Peak Height (A): 0.308
Blank Corrected Pk Height (A): 0.308
Concentration (ug/L): 9.7

Standard number 5 applied. [10.0]
Correlation coefficient: 0.99962 Slope: 0.0310



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Hg2 ID: ICV Seq. No.: 00007 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:13
Peak Area (A-s): 4.112 Peak Height (A): 0.151
Blank Corrected Pk Height (A): 0.151
Concentration (ug/L): 4.9

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Hg2 ID: ICB Seq. No.: 00008 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:15
Peak Area (A-s): 0.263 Peak Height (A): 0.008
Blank Corrected Pk Height (A): 0.008
Concentration (ug/L): 0.3
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Hg2 ID: 57.037.3 Seq. No.: 00009 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:28
Peak Area (A-s): 0.272 Peak Height (A): 0.010
Blank Corrected Pk Height (A): 0.010
Concentration (ug/L): 0.3

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Hg2 ID: 57.037.3D Seq. No.: 00010 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:29
Peak Area (A-s): 0.316 Peak Height (A): 0.012
Blank Corrected Pk Height (A): 0.012
Concentration (ug/L): 0.4

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Hg2 ID: 57.037.3 S Seq. No.: 00011 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:31
Peak Area (A-s): 4.354 Peak Height (A): 0.168
Blank Corrected Pk Height (A): 0.168
Concentration (ug/L): 5.4

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Hg2 ID: 57.037.2 Seq. No.: 00012 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:32
Peak Area (A-s): 0.496 Peak Height (A): 0.017
Blank Corrected Pk Height (A): 0.017
Concentration (ug/L): 0.5

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Hg2 ID: 57.037.2D Seq. No.: 00013 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:33
Peak Area (A-s): 0.431 Peak Height (A): 0.015
Blank Corrected Pk Height (A): 0.015
Concentration (ug/L): 0.5

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Hg2 ID: 57.037.2S Seq. No.: 00014 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:34
Peak Area (A-s): 4.973 Peak Height (A): 0.193
Blank Corrected Pk Height (A): 0.193
Concentration (ug/L): 6.2

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Hg2 ID: 57.037.1 Seq. No.: 00015 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:35
Peak Area (A-s): 0.370 Peak Height (A): 0.012
Blank Corrected Pk Height (A): 0.012
Concentration (ug/L): 0.4

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Hg2 ID: 57.037.1D Seq. No.: 00016 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:36
Peak Area (A-s): 0.348 Peak Height (A): 0.011
Blank Corrected Pk Height (A): 0.011
Concentration (ug/L): 0.4

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Concentration (ug/L): 5.2

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Hg2 ID: CCB Seq. No.: 00024 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:46
Peak Area (A-s): 0.553 Peak Height (A): 0.019
Blank Corrected Pk Height (A): 0.019
Concentration (ug/L): 0.6

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Hg2 ID: 57.037.7D Seq. No.: 00025 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:47
Peak Area (A-s): 0.405 Peak Height (A): 0.014
Blank Corrected Pk Height (A): 0.014
Concentration (ug/L): 0.4

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Hg2 ID: 57.037.15 Seq. No.: 00026 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:48
Peak Area (A-s): 0.485 Peak Height (A): 0.016
Blank Corrected Pk Height (A): 0.016
Concentration (ug/L): 0.5

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Hg2 ID: 57.037.15D Seq. No.: 00027 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:49
Peak Area (A-s): 0.475 Peak Height (A): 0.016
Blank Corrected Pk Height (A): 0.016
Concentration (ug/L): 0.5

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Hg2 ID: 57.037.14 Seq. No.: 00028 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:50
Peak Area (A-s): 0.418 Peak Height (A): 0.013
Blank Corrected Pk Height (A): 0.013
Concentration (ug/L): 0.4

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Hg2 ID: 57.037.14D Seq. No.: 00029 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:51
Peak Area (A-s): 0.443 Peak Height (A): 0.015
Blank Corrected Pk Height (A): 0.015
Concentration (ug/L): 0.5

~~~~~~

Hg2 ID: 57.037.13 Seq. No.: 00030 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:52
Peak Area (A-s): 0.423 Peak Height (A): 0.014
Blank Corrected Pk Height (A): 0.014
Concentration (ug/L): 0.4
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Hg2 ID: 57.037.13D Seq. No.: 00031 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:53
Peak Area (A-s): 0.395 Peak Height (A): 0.013
Blank Corrected Pk Height (A): 0.013
Concentration (ug/L): 0.4

~~~~~~

Hg2 ID: 57.037.21 Seq. No.: 00032 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:54
Peak Area (A-s): 0.439 Peak Height (A): 0.015
Blank Corrected Pk Height (A): 0.015
Concentration (ug/L): 0.5

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Hg2 ID: 57.037.21D Seq. No.: 00033 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:55
Peak Area (A-s): 0.437 Peak Height (A): 0.015
Blank Corrected Pk Height (A): 0.015
Concentration (ug/L): 0.5

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Hg2 ID: 57.037.20 Seq. No.: 00034 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:56
Peak Area (A-s): 0.928 Peak Height (A): 0.033
Blank Corrected Pk Height (A): 0.033
Concentration (ug/L): 1.1

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Hg2 ID: 57.037.20D Seq. No.: 00035 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:58
Peak Area (A-s): 0.889 Peak Height (A): 0.031
Blank Corrected Pk Height (A): 0.031
Concentration (ug/L): 1.0

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Hg2 ID: 57.037.19 Seq. No.: 00036 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 09:59
Peak Area (A-s): 0.451 Peak Height (A): 0.015
Blank Corrected Pk Height (A): 0.015
Concentration (ug/L): 0.5

~~~~~~

Hg2 ID: 57.037.19D Seq. No.: 00037 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:00
Peak Area (A-s): 0.418 Peak Height (A): 0.014
Blank Corrected Pk Height (A): 0.014
Concentration (ug/L): 0.4

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Hg2 ID: 57.037.27 Seq. No.: 00038 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:01
Peak Area (A-s): 0.413 Peak Height (A): 0.013
Bl < Corrected Pk Height (A): 0.013
Concentration (ug/L): 0.4

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Hg2 ID: ~~CCB~~ 57.037.26 Seq. No.: 00041 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:05
Peak Area (A-s): 0.940 Peak Height (A): 0.034
Blank Corrected Pk Height (A): 0.034
Concentration (ug/L): 1.1

~~~~~~

Hg2 ID: 57.037.26D Seq. No.: 00043 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:07
Peak Area (A-s): 0.862 Peak Height (A): 0.030
Blank Corrected Pk Height (A): 0.030
Concentration (ug/L): 1.0

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Hg2 ID: 57.037.25 Seq. No.: 00044 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:08
Peak Area (A-s): 0.439 Peak Height (A): 0.014
Blank Corrected Pk Height (A): 0.014
Concentration (ug/L): 0.5

~~~~~~

Hg2 ID: 57.037.25D Seq. No.: 00045 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:09
Peak Area (A-s): 0.423 Peak Height (A): 0.013
Blank Corrected Pk Height (A): 0.013
Concentration (ug/L): 0.4

~~~~~~

Hg2 ID: 57.037.33 Seq. No.: 00046 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:11
Peak Area (A-s): 0.495 Peak Height (A): 0.017
Blank Corrected Pk Height (A): 0.017
Concentration (ug/L): 0.6

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Hg2 ID: 57.037.33D Seq. No.: 00047 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:12
Peak Area (A-s): 0.512 Peak Height (A): 0.017
Blank Corrected Pk Height (A): 0.017
Concentration (ug/L): 0.5

~~~~~~

Hg2 ID: 57.037.32 Seq. No.: 00048 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:13
Peak Area (A-s): 1.038 Peak Height (A): 0.036
Blank Corrected Pk Height (A): 0.036
Concentration (ug/L): 1.2

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Hg2 ID: 57.037.32D Seq. No.: 00049 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:14
Peak Area (A-s): 1.055 Peak Height (A): 0.038
Bl ‹ Corrected Pk Height (A): 0.038
Concentration (ug/L): 1.2

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Concentration (ug/L): 0.5

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Hg2 ID: 57.037.127D Seq. No.: 00057 A/S Pos.: -- Date: 06/19/9

Replicate 1 Time: 10:23
Peak Area (A-s): 0.465 Peak Height (A): 0.015
Blank Corrected Pk Height (A): 0.015
Concentration (ug/L): 0.5

~~~~~~

Hg2 ID: 57.037.126 Seq. No.: 00058 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:24
Peak Area (A-s): 0.432 Peak Height (A): 0.014
Blank Corrected Pk Height (A): 0.014
Concentration (ug/L): 0.5

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Hg2 ID: 57.037.126D Seq. No.: 00059 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:25
Peak Area (A-s): 0.415 Peak Height (A): 0.014
Blank Corrected Pk Height (A): 0.014
Concentration (ug/L): 0.5

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Hg2 ID: CCV Seq. No.: 00060 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:29
Peak Area (A-s): 4.236 Peak Height (A): 0.160
Blank Corrected Pk Height (A): 0.160
Concentration (ug/L): 5.2

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Hg2 ID: CCB Seq. No.: 00061 A/S Pos.: -- Date: 06/19/92

Replicate 1 Time: 10:30
Peak Area (A-s): 0.607 Peak Height (A): 0.021
Blank Corrected Pk Height (A): 0.021
Concentration (ug/L): 0.7
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Element File: HG_.MEL Element: Hg2 Wavelength: 253.7
Da : 06/17/92 Time: 10:45 Slit: 0.7 H
Data File: 21122HG.DAT ID/Wt File: 21122HG.IDW Lamp Current: 6
Technique: MHS Calib. Type: Linear Energy: 70

Hg2 ID: Seq. 00001 Seq. No.: 00001 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 10:47
Peak Area (A-s): 0.842 Peak Height (A): 0.028
Blank Corrected Pk Height (A): 0.028
Concentration (ug/L): 0.8

Auto-zero performed.

Hg2 ID: Seq. 00002 Seq. No.: 00002 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 10:49
Peak Area (A-s): 0.185 Peak Height (A): 0.007
Blank Corrected Pk Height (A): 0.007
Concentration (ug/L): 0.2

Standard number 1 applied. [0.5]
Correlation coefficient: 1.00000 Slope: 0.0146

Hg ID: Seq. 00003 Seq. No.: 00003 A/S Pos.: -- Date: 06/17/92

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:52
Peak Area (A-s): 0.768 Peak Height (A): 0.029
Blank Corrected Pk Height (A): 0.029
Concentration (ug/L): 2.0

Standard number 2 applied. [1.0]
Correlation coefficient: 0.73933 Slope: 0.0272

Hg2 ID: Seq. 00004 Seq. No.: 00004 A/S Pos.: -- Date: 06/17/92

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:56
Peak Area (A-s): 1.463 Peak Height (A): 0.061
Blank Corrected Pk Height (A): 0.061
Concentration (ug/L): 2.3

Standard number 3 applied. [2.0]
Correlation coefficient: 0.97015 Slope: 0.0299

Hg2 ID: Seq. 00005 Seq. No.: 00005 A/S Pos.: -- Date: 06/17/92

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:57
Peak Area (A-s): 3.935 Peak Height (A): 0.160
Blank Corrected Pk Height (A): 0.160
Concentration (ug/L): 5.4

Standard number 4 applied. [5.0]
Correlation coefficient: 0.99640 Slope: 0.0316

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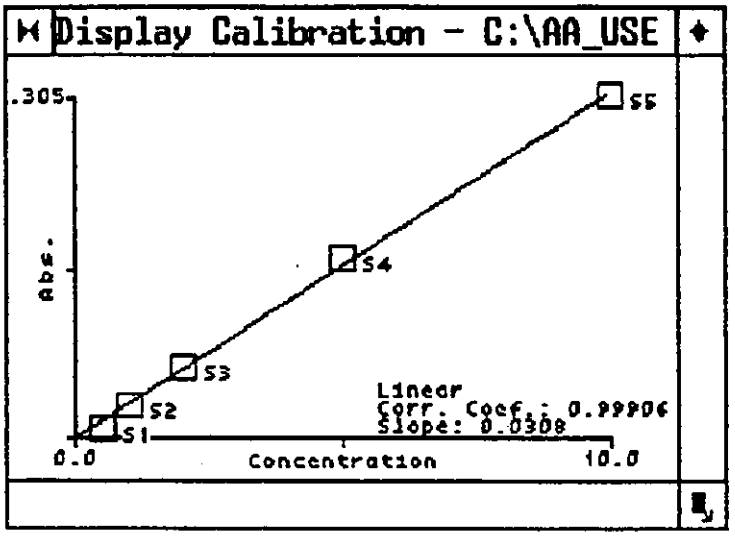
Hg2 ID: Seq. 00006 Seq. No.: 00006 A/S Pos.: -- Date: 06/17/92

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:59
Peak Area (A-s): 7.600 Peak Height (A): 0.305
Blank Corrected Pk Height (A): 0.305
Concentration (ug/L): 9.7

Standard number 5 applied. [10.0]
Correlation coefficient: 0.99906 Slope: 0.0308



~~~~~~

Hg2 ID: ICV Seq. No.: 00007 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:01
Peak Area (A-s): 2.665 Peak Height (A): 0.136
Blank Corrected Pk Height (A): 0.136
Concentration (ug/L): 4.4

~~~~~~

Hg2 ID: ICB Seq. No.: 00008 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:03
Peak Area (A-s): -0.019 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.0

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Hg2 ID: 57.032.1 Seq. No.: 00009 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:04
Peak Area (A-s): -0.050 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.0

Hg ID: 57.032.1D Seq. No.: 00010 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:05
Peak Area (A-s): -0.050 Peak Height (A): -0.002
Blank Corrected Pk Height (A): -0.002
Concentration (ug/L): -0.0

Hg2 ID: 57.032.1S Seq. No.: 00011 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:06
Peak Area (A-s): 4.523 Peak Height (A): 0.174
Blank Corrected Pk Height (A): 0.174
Concentration (ug/L): 5.7

Hg2 ID: 57.032.2 Seq. No.: 00012 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:07
Peak Area (A-s): 0.013 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.0

Hg2 ID: 57.032.BLNK Seq. No.: 00013 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:08
Peak Area (A-s): -0.043 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.0

Hg2 ID: 56.234.14 Seq. No.: 00014 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:10
Peak Area (A-s): 0.030 Peak Height (A): 0.002
Blank Corrected Pk Height (A): 0.002
Concentration (ug/L): 0.1

Hg2 ID: 56.234.1D Seq. No.: 00015 A/S Pos.: -- Date: 06/17/92
4

Replicate 1 Time: 11:11
Peak Area (A-s): -0.015 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.0

Hg2 ID: 56.234.1S Seq. No.: 00016 A/S Pos.: -- Date: 06/17/92
4

Replicate 1 Time: 11:12
Peak Area (A-s): 4.441 Peak Height (A): 0.172
Blank Corrected Pk Height (A): 0.172
Concentration (ug/L): 5.6

Hg2 ID: 56.234.15 Seq. No.: 00017 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:14
Peak Area (A-s): 0.031 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.0

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Hg2 ID: 56.234.#24 Seq. No.: 00018 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:15
Peak Area (A-s): 0.003 Peak Height (A): 0.000
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.0

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Hg2 ID: 56.234.#37 Seq. No.: 00019 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:16
Peak Area (A-s): -0.041 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.0

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Hg2 ID: 56.234.BLNK Seq. No.: 00020 A/S Pos.: -- Date: 06/17/92
EXTRACT

Replicate 1 Time: 11:17
Peak Area (A-s): -0.004 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.0

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Hg2 ID: 2.0 CCV Seq. No.: 00021 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:18
Peak Area (A-s): 1.602 Peak Height (A): 0.064
Blank Corrected Pk Height (A): 0.064
Concentration (ug/L): 2.1

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Hg2 ID: CCB Seq. No.: 00022 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:20
Peak Area (A-s): -0.030 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.0

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Hg2 ID: 57.037.6BH Seq. No.: 00023 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:22
Peak Area (A-s): -0.333 Peak Height (A): -0.010
Blank Corrected Pk Height (A): -0.010
Concentration (ug/L): -0.3

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Hg2 ID: 57.037.6BH D Seq. No.: 00024 A/S Pos.: -- Date: 06/17/

Replicate 1 Time: 11:23
Peak Area (A-s): -0.387 Peak Height (A): -0.012
Blank Corrected Pk Height (A): -0.012
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oncentration (ug/L): -0.4

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g2 ID: 57.037.12BH Seq. No.: 00025 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:24
eak Area (A-s): -0.201 Peak Height (A): -0.004
lank Corrected Pk Height (A): -0.004
oncentration (ug/L): -0.1

~~~~~~

g2 ID: 57.037.12BH D Seq. No.: 00026 A/S Pos.: -- Date: 06/17/92

eplicate 1 Time: 11:26
eak Area (A-s): -0.215 Peak Height (A): -0.004
Blank Corrected Pk Height (A): -0.004
oncentration (ug/L): -0.1

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Hg2 ID: 57.037.18BH Seq. No.: 00027 A/S Pos.: -- Date: 06/17/92

eplicate 1 Time: 11:27
Peak Area (A-s): -0.274 Peak Height (A): -0.008
lank Corrected Pk Height (A): -0.008
oncentration (ug/L): -0.2

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g2 ID: 57.037.18BH D Seq. No.: 00028 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:28
eak Area (A-s): -0.233 Peak Height (A): -0.006
lank Corrected Pk Height (A): -0.006
Concentration (ug/L): -0.2

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Hg2 ID: 57.037.24BH Seq. No.: 00029 A/S Pos.: -- Date: 06/17/92

eplicate 1 Time: 11:29
eak Area (A-s): 1.380 Peak Height (A): 0.057
Blank Corrected Pk Height (A): 0.057
oncentration (ug/L): 1.8

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g2 ID: 57.037.24BH D Seq. No.: 00030 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:30
Peak Area (A-s): 1.268 Peak Height (A): 0.052
lank Corrected Pk Height (A): 0.052
oncentration (ug/L): 1.7

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g2 ID: 57.037.24BH S Seq. No.: 00031 A/S Pos.: -- Date: 06/17/92

e icate 1 Time: 11:31
e Area (A-s): 5.737 Peak Height (A): 0.230
Blank Corrected Pk Height (A): 0.230
Concentration (ug/L): 7.5

uto-zero performed.
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Hg2 ID: 57.037.30BH Seq. No.: 00032 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:33
Peak Area (A-s): -4.395 Peak Height (A): -0.172
Blank Corrected Pk Height (A): -0.172
Concentration (ug/L): -5.6

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Hg2 ID: Seq. 00033 Seq. No.: 00033 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:36
Peak Area (A-s): -6.332 Peak Height (A): -0.250
Blank Corrected Pk Height (A): -0.250
Concentration (ug/L): -8.1

Auto-zero performed.

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Hg2 ID: 57.037.30BH X2 Seq. No.: 00034 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:39
Peak Area (A-s): 0.986 Peak Height (A): 0.040
Blank Corrected Pk Height (A): 0.040
Concentration (ug/L): 1.3

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Hg2 ID: 57.037.30BHD X2 Seq. No.: 00035 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:41
Peak Area (A-s): 0.861 Peak Height (A): 0.034
Blank Corrected Pk Height (A): 0.034
Concentration (ug/L): 1.1

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Hg2 ID: 57.037.36BH Seq. No.: 00036 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:42
Peak Area (A-s): 1.434 Peak Height (A): 0.067
Blank Corrected Pk Height (A): 0.067
Concentration (ug/L): 2.2

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Hg2 ID: 57.037.36BH D Seq. No.: 00037 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:43
Peak Area (A-s): 1.747 Peak Height (A): 0.072
Blank Corrected Pk Height (A): 0.072
Concentration (ug/L): 2.3

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Hg2 ID: 57.037.41BH Seq. No.: 00038 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:44
Peak Area (A-s): 0.622 Peak Height (A): 0.025
Blank Corrected Pk Height (A): 0.025
Concentration (ug/L): 0.8
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Hg2 ID: 57.037.41BH D Seq. No.: 00039 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:45
Peak Area (A-s): 0.382 Peak Height (A): 0.015
Blank Corrected Pk Height (A): 0.015
Concentration (ug/L): 0.5

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Hg2 ID: 2.0 CCV Seq. No.: 00040 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:46
Peak Area (A-s): 0.134 Peak Height (A): 0.010
Blank Corrected Pk Height (A): 0.010
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: CCV Seq. No.: 00041 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:50
Peak Area (A-s): 3.985 Peak Height (A): 0.155
Blank Corrected Pk Height (A): 0.155
Concentration (ug/L): 5.0

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Hg2 ID: CCB Seq. No.: 00042 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:51
Peak Area (A-s): 0.038 Peak Height (A): 0.002
Blank Corrected Pk Height (A): 0.002
Concentration (ug/L): 0.1

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Hg2 ID: 57.037.41BH S Seq. No.: 00043 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:52
Peak Area (A-s): 4.896 Peak Height (A): 0.199
Blank Corrected Pk Height (A): 0.199
Concentration (ug/L): 6.5

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Hg2 ID: 57.037.48BH Seq. No.: 00044 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:53
Peak Area (A-s): 0.409 Peak Height (A): 0.016
Blank Corrected Pk Height (A): 0.016
Concentration (ug/L): 0.5

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Hg2 ID: 57.037.48BH D Seq. No.: 00045 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:55
Peak Area (A-s): 0.381 Peak Height (A): 0.015
Blank Corrected Pk Height (A): 0.015
Concentration (ug/L): 0.5

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Hg2 ID: 57.037.53BH Seq. No.: 00046 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:56
Peak Area (A-s): 0.383 Peak Height (A): 0.016
Blank Corrected Pk Height (A): 0.016
Concentration (ug/L): 0.5

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Hg2 ID: 57.037.53BH D Seq. No.: 00047 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:57
Peak Area (A-s): 0.350 Peak Height (A): 0.014
Blank Corrected Pk Height (A): 0.014
Concentration (ug/L): 0.4

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Hg2 ID: 57.037.58BH Seq. No.: 00048 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 11:58
Peak Area (A-s): 1.695 Peak Height (A): 0.072
Blank Corrected Pk Height (A): 0.072
Concentration (ug/L): 2.3

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Hg2 ID: 57.037.58BH D Seq. No.: 00049 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 12:00
Peak Area (A-s): 1.708 Peak Height (A): 0.071
Blank Corrected Pk Height (A): 0.071
Concentration (ug/L): 2.3

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Hg2 ID: 57.037.63BH Seq. No.: 00050 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 12:01
Peak Area (A-s): 1.994 Peak Height (A): 0.079
Blank Corrected Pk Height (A): 0.079
Concentration (ug/L): 2.6

~~~~~~

Hg2 ID: 57.037.~~63~~69BH D Seq. No.: 00051 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 12:02
Peak Area (A-s): 0.023 Peak Height (A): 0.004
Blank Corrected Pk Height (A): 0.004
Concentration (ug/L): 0.1

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Hg2 ID: 57.037.69BH Seq. No.: 00052 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 12:04
Peak Area (A-s): 0.436 Peak Height (A): 0.026
Blank Corrected Pk Height (A): 0.026
Concentration (ug/L): 0.9

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Hg2 ID: 57.037.~~69~~63BH D Seq. No.: 00053 A/S Pos.: -- Date: 06/17/9[illegible]

Replicate 1 Time: 12:05
Peak Area (A-s): 1.903 Peak Height (A): 0.076
Blank Corrected Pk Height (A): 0.076
~~~~~~

Concentration (ug/L): 2.5 63BH D

~~~~~~

Hg_ ID: 57.037.128BH Seq. No.: 00054 A/S Pos.: -- Date: 06/17/92

eplicate 1 Time: 12:06
Peak Area (A-s): 0.249 Peak Height (A): 0.010
Blank Corrected Pk Height (A): 0.010
oncentration (ug/L): 0.3

~~~~~~

g2 ID: 57.037.128BH D Seq. No.: 00055 A/S Pos.: -- Date: 06/17/92

Replicate 1 Time: 12:07
eak Area (A-s): 0.191 Peak Height (A): 0.008
lank Corrected Pk Height (A): 0.008
Concentration (ug/L): 0.3

~~~~~~

g2 ID: 5.0 CCV Seq. No.: 00056 A/S Pos.: -- Date: 06/17/92

eplicate 1 Time: 12:09
eak Area (A-s): 4.216 Peak Height (A): 0.167
Blank Corrected Pk Height (A): 0.167
oncentration (ug/L): 5.4

~~~~~~

Hg2 ID: CCB Seq. No.: 00057 A/S Pos.: -- Date: 06/17/92

epiicate 1 Time: 12:10
Peak Area (A-s): 0.016 Peak Height (A): 0.001
lank Corrected Pk Height (A): 0.001
oncentration (ug/L): 0.0

7M1-8IN-3

Element File: HG_.MEL Element: Hg2 Wavelength: 253.7
Date: 06/30/92 Time: 15:24 Slit: 0.7 H
Data File: 063092HG.DAT ID/Wt File: 063092HG.IDW9XX Lamp Current: 6
Technique: MHS Calib. Type: Nonlinear Energy: 71

Hg2 ID: Seq. 00004 Seq. No.: 00004 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:27
Peak Area (A-s): 0.076 Peak Height (A): 0.004
Blank Corrected Pk Height (A): 0.004

Auto-zero performed.

Hg2 ID: Seq. 00005 Seq. No.: 00005 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:28
Peak Area (A-s): 0.332 Peak Height (A): 0.019
Blank Corrected Pk Height (A): 0.019

Standard number 1 applied. [0.5]
Correlation coefficient: 1.00000 Slope: 0.0373

Hg2 ID: Seq. 00006 Seq. No.: 00006 A/S Pos.: -- Date: 06/30/92

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 15:29
Peak Area (A-s): 0.645 Peak Height (A): 0.039
Blank Corrected Pk Height (A): 0.039
Concentration (ug/L): 1.0

Standard number 2 applied. [1.0]
Correlation coefficient: 1.00000 Slope: 0.0359

Hg2 ID: Seq. 00007 Seq. No.: 00007 A/S Pos.: -- Date: 06/30/92

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 15:30
Peak Area (A-s): 1.369 Peak Height (A): 0.080
Blank Corrected Pk Height (A): 0.080
Concentration (ug/L): 1.9

Hg2 ID: Seq. 00008 Seq. No.: 00008 A/S Pos.: -- Date: 06/30/92

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 15:31
Peak Area (A-s): 3.373 Peak Height (A): 0.198
Blank Corrected Pk Height (A): 0.198
Concentration (ug/L): 3.9

Hg2 ID: Seq. 00009 Seq. No.: 00009 A/S Pos.: -- Date: 06/30/92

Sample abs. is greater than that of the largest standard.

Replicate 1 Time: 15:32
Peak Area (A-s): 1.406 Peak Height (A): 0.081
Blank Corrected Pk Height (A): 0.081
Concentration (ug/L): 1.9

Standard number 3 applied. [2.0]
Correlation coefficient: 1.00000 Slope: 0.0347

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~~~

Blank Corrected Pk Height (A): 0.193
Concentration (ug/L): 5.1

~~~~~~

Hg2 ID: ICB Seq. No.: 00013 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:38
Peak Area (A-s): 0.068 Peak Height (A): 0.004
Blank Corrected Pk Height (A): 0.004
Concentration (ug/L): 0.1

~~~~~~

Hg2 ID: 57.127.4D Seq. No.: 00014 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:39
Peak Area (A-s): 0.105 Peak Height (A): 0.006
Blank Corrected Pk Height (A): 0.006
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: 57.127.4D D Seq. No.: 00015 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:40
Peak Area (A-s): 0.087 Peak Height (A): 0.006
Blank Corrected Pk Height (A): 0.006
Concentration (ug/L): 0.1

~~~~~~

Hg2 ID: 57.127.4E Seq. No.: 00016 A/S Pos.: -- Date: 06/30/

Replicate 1 Time: 15:40
Peak Area (A-s): 0.167 Peak Height (A): 0.011
Blank Corrected Pk Height (A): 0.011
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 57.127.4E D Seq. No.: 00017 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:41
Peak Area (A-s): 0.171 Peak Height (A): 0.012
Blank Corrected Pk Height (A): 0.012
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 57.127.5D Seq. No.: 00018 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:42
Peak Area (A-s): 0.086 Peak Height (A): 0.007
Blank Corrected Pk Height (A): 0.007
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: 57.127.5D D Seq. No.: 00019 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:43
Peak Area (A-s): 0.092 Peak Height (A): 0.005
Blank Corrected Pk Height (A): 0.005
Concentration (ug/L): 0.1
~~~~~~

~~~~~~

Hg2 ID: 57.127.5E Seq. No.: 00020 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:44
Peak Area (A-s): 0.176 Peak Height (A): 0.010
Blank Corrected Pk Height (A): 0.010
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 57.127.5E D Seq. No.: 00021 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:44
Peak Area (A-s): 0.179 Peak Height (A): 0.011
Blank Corrected Pk Height (A): 0.011
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 57.127.6D Seq. No.: 00022 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:45
Peak Area (A-s): 0.100 Peak Height (A): 0.007
Blank Corrected Pk Height (A): 0.007
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: 57.127.6D D Seq. No.: 00023 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:46
Peak Area (A-s): 0.099 Peak Height (A): 0.007
Blank Corrected Pk Height (A): 0.007
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: 57.127.6E Seq. No.: 00024 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:47
Peak Area (A-s): 0.151 Peak Height (A): 0.010
Blank Corrected Pk Height (A): 0.010
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: 57.127.6E D Seq. No.: 00025 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:48
Peak Area (A-s): 0.144 Peak Height (A): 0.009
Blank Corrected Pk Height (A): 0.009
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: ~~CCV~~ 57.127.7D Seq. No.: 00026 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:48
Peak Area (A-s): 0.110 Peak Height (A): 0.007
Blank Corrected Pk Height (A): 0.007
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: CCV Seq. No.: 00027 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:51
Peak Area (A-s): 2.836 Peak Height (A): 0.186
Blank Corrected Pk Height (A): 0.186
Concentration (ug/L): 4.9

~~~~~~

Hg2 ID: CCB Seq. No.: 00028 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:52
Peak Area (A-s): 0.090 Peak Height (A): 0.005
Blank Corrected Pk Height (A): 0.005
Concentration (ug/L): 0.1

~~~~~~

Hg2 ID: 57.127.7D Dup Seq. No.: 00029 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:53
Peak Area (A-s): 0.127 Peak Height (A): 0.008
Blank Corrected Pk Height (A): 0.008
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: ~~57.127.7D~~ 57.127.7E Seq. No.: 00030 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 15:54
Peak Area (A-s): 0.037 Peak Height (A): 0.007
Blank Corrected Pk Height (A): 0.007
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: 57.127.7E D Seq. No.: 00031 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:00
Peak Area (A-s): 0.208 Peak Height (A): 0.013
Blank Corrected Pk Height (A): 0.013
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 57.127.8D Seq. No.: 00032 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:01
Peak Area (A-s): 0.144 Peak Height (A): 0.009
Blank Corrected Pk Height (A): 0.009
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: 57.127.8D D Seq. No.: 00033 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:02
Peak Area (A-s): 0.136 Peak Height (A): 0.008
Blank Corrected Pk Height (A): 0.008
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: 57.127.8E Seq. No.: 00034 A/S Pos.: -- Date: 06/30/

Replicate 1 Time: 16:02
Peak Area (A-s): 0.145 Peak Height (A): 0.010
Blank Corrected Pk Height (A): 0.010
~~~~~~

Hg2 ID: CCV Seq. No.: 00044 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:15
Peak Area (A-s): 3.096 Peak Height (A): 0.197
Blank Corrected Pk Height (A): 0.197
Concentration (ug/L): 5.2

Hg2 ID: CCB Seq. No.: 00045 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:15
Peak Area (A-s): 0.122 Peak Height (A): 0.007
Blank Corrected Pk Height (A): 0.007
Concentration (ug/L): 0.2

~~~~~~

Hg2 ID: 7M1-FH Seq. No.: 00046 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:31
Peak Area (A-s): 0.198 Peak Height (A): 0.011
Blank Corrected Pk Height (A): 0.011
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 7M1 FH D Seq. No.: 00047 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:32
Peak Area (A-s): 0.196 Peak Height (A): 0.011
Blank Corrected Pk Height (A): 0.011
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 7M2 FH Seq. No.: 00048 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:32
Peak Area (A-s): 0.181 Peak Height (A): 0.010
Blank Corrected Pk Height (A): 0.010
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 7M2 FH D Seq. No.: 00049 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:33
Peak Area (A-s): 0.174 Peak Height (A): 0.010
Blank Corrected Pk Height (A): 0.010
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 7M3 FH Seq. No.: 00050 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:34
Peak Area (A-s): 0.178 Peak Height (A): 0.010
Blank Corrected Pk Height (A): 0.010
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 7 M3 FH D Seq. No.: 00051 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:35
Peak Area (A-s): 0.183 Peak Height (A): 0.010
Blank Corrected Pk Height (A): 0.010
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 8M1 FH Seq. No.: 00052 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:36
Peak Area (A-s): 0.216 Peak Height (A): 0.012
Blank Corrected Pk Height (A): 0.012
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 8M1 FH D Seq. No.: 00053 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:36
Peak Area (A-s): 0.211 Peak Height (A): 0.012
Blank Corrected Pk Height (A): 0.012
Concentration (ug/L): 0.3

~~~
~~~

Hg2 ID: CCV Seq. No.: 00058 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:40
Peak Area (A-s): 0.061 Peak Height (A): 0.004
Blank Corrected Pk Height (A): 0.004
Concentration (ug/L): 0.1

Hg2 ID: CCV Seq. No.: 00059 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:41
Peak Area (A-s): 2.779 Peak Height (A): 0.187
Blank Corrected Pk Height (A): 0.187
Concentration (ug/L): 4.9

Hg2 ID: CCB Seq. No.: 00060 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:42
Peak Area (A-s): 0.155 Peak Height (A): 0.013
Blank Corrected Pk Height (A): 0.013
Concentration (ug/L): 0.3

Hg2 ID: 8MB FH Seq. No.: 00061 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:43
Peak Area (A-s): 0.180 Peak Height (A): 0.010
Blank Corrected Pk Height (A): 0.010
Concentration (ug/L): 0.3

Hg2 ID: 8MB FH D Seq. No.: 00062 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:44
Peak Area (A-s): 0.187 Peak Height (A): 0.011
Blank Corrected Pk Height (A): 0.011
Concentration (ug/L): 0.3

Hg2 ID: 7IN1 FH Seq. No.: 00063 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:44
Peak Area (A-s): 0.220 Peak Height (A): 0.012
Blank Corrected Pk Height (A): 0.012
Concentration (ug/L): 0.3

Hg2 ID: 7IN1 FH D Seq. No.: 00064 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:45
Peak Area (A-s): 0.216 Peak Height (A): 0.013
Blank Corrected Pk Height (A): 0.013
Concentration (ug/L): 0.3

Hg2 ID: 7IN2 FH Seq. No.: 00065 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:46
Peak Area (A-s): 0.242 Peak Height (A): 0.013
Blank Corrected Pk Height (A): 0.013
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 7IN2 FH D Seq. No.: 00066 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:47
Peak Area (A-s): 0.240 Peak Height (A): 0.014
Blank Corrected Pk Height (A): 0.014
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 7IN3 FH Seq. No.: 00067 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:47
Peak Area (A-s): 0.278 Peak Height (A): 0.015
Blank Corrected Pk Height (A): 0.015
Concentration (ug/L): 0.4

~~~~~~

Hg2 ID: 7IN3 FH D Seq. No.: 00068 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:48
Peak Area (A-s): 0.284 Peak Height (A): 0.015
Blank Corrected Pk Height (A): 0.015
Concentration (ug/L): 0.4

~~~~~~

Hg2 ID: 8IN1 FH Seq. No.: 00069 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:49
Peak Area (A-s): 0.229 Peak Height (A): 0.013
Blank Corrected Pk Height (A): 0.013
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 8IN1 FH D Seq. No.: 00070 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:50
Peak Area (A-s): 0.231 Peak Height (A): 0.014
Blank Corrected Pk Height (A): 0.014
Concentration (ug/L): 0.4

~~~~~~

Hg2 ID: 8IN2 FH Seq. No.: 00071 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:50
Peak Area (A-s): 0.198 Peak Height (A): 0.012
Blank Corrected Pk Height (A): 0.012
Concentration (ug/L): 0.3

~~~~~~

Hg2 ID: 8IN2 FH D Seq. No.: 00072 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:51
Peak Area (A-s): 0.201 Peak Height (A): 0.011
Blank Corrected Pk Height (A): 0.011
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Concentration (ug/L): 0.3

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Hg2 ID: CCV Seq. No.: 00078 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:56
Peak Area (A-s): 3.290 Peak Height (A): 0.204
Blank Corrected Pk Height (A): 0.204
Concentration (ug/L): 5.4

Hg2 ID: CCB Seq. No.: 00079 A/S Pos.: -- Date: 06/30/92

Replicate 1 Time: 16:57
Peak Area (A-s): 0.164 Peak Height (A): 0.009
Blank Corrected Pk Height (A): 0.009
Concentration (ug/L): 0.2

BLANK

	F(measu.)	B(measu.)
Ag	< 0.7	< 1.4
As	2.59	4.92
Ba	7.87	< 4
Be	< 0.2	< 0.4
Cd	0.609	< 0.8
Cr	1.6	< 2.4
Pb	574	16.8
Sb	4	3.88
Tl	< 0.2	< 0.4
Hg	0.6	1.2

Values Used in Blank Correction as per Method.

For Front Half

Code	Definition
A	A ug
B	M (fhb), when this value is expressed as a "less-than", a null value is used
C	5% of M (fh)

For Back Half

D	M (bhb), when this value is expressed as a "less-than", a null value is used
E	1 ug
F	5% of M (bh)

For Explanation of Blank Correction Calculations

KILN 7

Run 1

FlowRate dscfh	Sample Vol dscf			Back (ug)	B(Measu.)	Correction	Code
1404000	50.753	Ag	<	0.98	0.98	0	D
1404000	50.753	As		0.426	0.448	0.022	F
1404000	50.753	Ba		3.23	3.23	0	D
1404000	50.753	Be		0.302	0.302	0	D
1404000	50.753	Cd		3.32	3.32	0	D
1404000	50.753	Cr	<	1.68	1.68	0	D
1404000	50.753	Pb		4.63	5.63	1	E
1404000	50.753	Sb		179.55	189	9.45	F
1404000	50.753	Tl	<	0.28	0.28	0	D
1404000	50.753	Hg	<	0.2	1.4	1.2	D

RUN 2

FlowRate dscfh	Sample Vol dscf			Back	B(Measu.)	Correction	Code
1194000	33.754	Ag	<	1.03	1.03	0	D
1194000	33.754	As		0.68	1.68	1	E
1194000	33.754	Ba	<	2.95	2.95	0	D
1194000	33.754	Be		0.513	0.513	0	D
1194000	33.754	Cd		1.64	1.64	0	D
1194000	33.754	Cr	<	1.77	1.77	0	D
1194000	33.754	Pb		8.93	9.93	1	E
1194000	33.754	Sb		97.85	103	5.15	F
1194000	33.754	Tl		0.723	0.723	0	D
1194000	33.754	Hg	<	0.04	1.24	1.2	D

RUN 3

FlowRate dscfh	Sample Vol dscf			Back	B(Measu.)	Correction	Code
1206000	44.561	Ag	<	0.933	0.933	0	D
1206000	44.561	As		0.15	1.15	1	E
1206000	44.561	Ba		3.43	3.43	0	D
1206000	44.561	Be		0.389	0.389	0	D
1206000	44.561	Cd		1.44	1.44	0	D
1206000	44.561	Cr	<	1.6	1.6	0	D
1206000	44.561	Pb		9.3	10.3	1	E
1206000	44.561	Sb		95.95	101	5.05	F
1206000	44.561	Tl	<	0.267	0.267	0	D
1206000	44.561	Hg	<	0.4	1.6	1.2	D

For Explanation of Blank Correction Calculations

Metals Emissions Kiln #8

FlowRate dscfh	Sample Vol dscf		RUN 1 Back	B(Measu.)	Correction	Code
1404000	48.626	Ag	< 1.05	1.05	0	D
1404000	48.626	As	4.19	5.19	1	E
1404000	48.626	Ba	12.9	12.9	0	D
1404000	48.626	Be	0.32	0.32	0	D
1404000	48.626	Cd	4.41	4.41	0	D
1404000	48.626	Cr	< 1.8	1.8	0	D
1404000	48.626	Pb	10.7	11.7	1	E
1404000	48.626	Sb	5.99	6.99	1	E
1404000	48.626	Tl	0.96	0.96	0	D
1404000	48.626	Hg	9.3	10.5	1.2	D

FlowRate dscfh	Sample Vol dscf		RUN 2 Back	B(Measu.)	Correction	Code
1446000	50.749	Ag	< 0.969	0.969	0	D
1446000	50.749	As	0.34	1.34	1	E
1446000	50.749	Ba	< 2.77	2.77	0	D
1446000	50.749	Be	< 0.277	0.277	0	D
1446000	50.749	Cd	1	1	0	D
1446000	50.749	Cr	< 1.66	1.66	0	D
1446000	50.749	Pb	10.5	11.5	1	E
1446000	50.749	Sb	4.57	5.57	1	E
1446000	50.749	Tl	0.595	0.595	0	D
1446000	50.749	Hg	16.1	17.3	1.2	D

FlowRate dscfh	Sample Vol dscf		RUN 3 Back	B(Measu.)	Correction	Code
1386000	45.278	Ag	< 0.969	0.969	0	D
1386000	45.278	As	0.41	1.41	1	E
1386000	45.278	Ba	< 2.77	2.77	0	D
1386000	45.278	Be	0.416	0.416	0	D
1386000	45.278	Cd	1.86	1.86	0	D
1386000	45.278	Cr	< 1.66	1.66	0	D
1386000	45.278	Pb	10.6	11.6	1	E
1386000	45.278	Sb	3.38	4.38	1	E
1386000	45.278	Tl	0.789	0.789	0	D
1386000	45.278	Hg	15	16.2	1.2	D

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CERTIFICATE OF ANALYSIS

Client:

IEA, Inc.
120 S. Center Ct., Suite 200
Morrisville, NC 27560

Attn: Frank Stevens

Work Order #: 92-06-178
Client Code: IEA
Report Date: 07/13/92
Work ID: BIF Compliance, mets/wets
Date Received: 06/22/92

Purchase Order: FF 1042

SAMPLE IDENTIFICATION

Lab Number	Sample Description	Lab Number	Sample Description
01	K7-RFEED-1-MTL	02	K7-RFEED-2-MTL
03	K7-RFEED-3-MTL	04	K8-RFEED-1-MTL
05	K8-RFEED-2-MTL	06	K8-RFEED-2D-MTL
07	K8-RFEED-3-MTL	08	K7-PROD-1-MTL
09	K7-PROD-2-MTL	10	K7-PROD-3-MTL
11	K8-PROD-1-MTL	12	K8-PROD-2-MTL
13	K8-PROD-2D-MTL	14	K8-PROD-3-MTL
15	K7-DUST-1-MTL	16	K7-DUST-2-MTL
17	K7-DUST-3-MTL	18	K8-DUST-1-MTL
19	K8-DUST-2-MTL	20	K8-DUST-2D-MTL
21	K8-DUST-3-MTL	22	K7-LBM-1-MTL
23	K7-LBM-2-MTL	24	K7-LBM-3-MTL
25	K8-LBM-1-MTL	26	K8-LBM-2-MTL
27	K8-LBM-2D-MTL	28	K8-LBM-3-MTL
29	K7-RFEED-1-PHYS	30	K7-RFEED-2-PHYS
31	K7-RFEED-3-PHYS	32	K8-RFEED-1-PHYS
33	K8-RFEED-2-PHYS	34	K8-RFEED-2D-PHYS
35	K8-RFEED-3-PHYS	36	K7-PROD-1-PHYS
37	K7-PROD-2-PHYS	38	K7-PROD-3-PHYS
39	K8-PROD-1-PHYS	40	K8-PROD-2-PHYS
41	K8-PROD-2D-PHYS	42	K8-PROD-3-PHYS
43	K7-LBM-1-PHYS	44	K7-LBM-2-PHYS
45	K7-LBM-3-PHYS	46	K8-LBM-1-PHYS
47	K8-LBM-2-PHYS	48	K8-LBM-2D-PHYS
49	K8-LBM-3-PHYS		

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Data are reported on an as-received basis unless stated otherwise. Practical Quantitation Limits (PQL's) are listed; they are higher than instrument detection limits and take the sample's matrix into account. Metals and other inorganic data are corrected for laboratory blank values; organic data are not. Unless otherwise noted, organic analysis blanks had no targets found above their PQL's.

Certificate approved by
Craig H. Caldwell

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REPORT NOTES

The first set of 16 samples digested for graphite furnace analysis of antimony, arsenic, lead, and thallium had apparently high recovery of those elements from the Laboratory Control Sample (LCS). The two matrix spike/matrix spike duplicate (MS/MSD) pairs prepared in that set had similarly high apparent recoveries for arsenic, lead, and thallium. The antimony recoveries were low, which is consistent with its recovery from the samples digested in the other batch as well. We suspect that the LCS and samples in the first batch were spiked with double the proper amount of spiking solution. The Quality Control Summary lists the nominal values for the spikes and recoveries.

The spike recoveries for arsenic and lead in sample K7-DUST-3-MTL (RASI No. 17) and for lead in sample K8-LBM-2D-MTL (RASI No. 27) were not calculated because the amount spiked was so much less than the native concentration that the recoveries would be meaningless.

The RFEED and DUST samples (RASI Nos. 01-07 and 15-21) required dilutions for their ICP analyses to reduce interferences from their high iron concentrations. The listed PQL's do not reflect those dilutions; the actual PQL's for the five metals determined by ICP in those samples are 10 times the listed values.

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QUALITY CONTROL SUMMARY

Four samples were prepared for metals analysis with matrix spike/matrix spike duplicate (MS/MSD) pairs. The results of these analyses are listed below.

Sample K8-RFEED-1-MTL (RASI No. 04)

Metal	Sample Result	Spike	MS % Rec.	MSD % Rec.	RPD
Antimony	<PQL	5.0	0	0	(Not calculable)
Arsenic	9.69	5.0	244	267	6
Barium	1.90	20.0	94	94	1
Beryllium	<PQL	20.0	96	95	1
Cadmium	<PQL	20.0	88	87	1
Chromium	3.67	20.0	98	102	3
Lead	29.0	5.0	332	301	3
Mercury	<PQL	0.8	100	99	1
Silver	<PQL	20.0	100	65	43
Thallium	1.35	5.0	187	197	5

Sample K8-PROD-1-MTL (RASI No. 11)

Metal	Sample Result	Spike	MS % Rec.	MSD % Rec.	RPD
Antimony	<PQL	5.0	20	14	34
Arsenic	8.26	5.0	117	81	15
Barium	37.8	200	106	112	5
Beryllium	0.13	200	87	90	3
Cadmium	<PQL	200	80	82	3
Chromium	48.8	200	92	95	3
Lead	20.8	5.0	86	2	20
Mercury	<PQL	0.8	98	92	6
Silver	<PQL	200	86	89	4
Thallium	0.52	5.0	143	121	16

Sample K7-DUST-3-MTL (RASI No. 17)

Metal	Sample Result	Spike	MS % Rec.	MSD % Rec.	RPD
Antimony	0.22	5.0	13	7	38
Arsenic	122	5.0	(see notes)		3
Barium	16.0	20.0	90	93	1
Beryllium	<PQL	20.0	92	91	3
Cadmium	4.26	20.0	88	88	1
Chromium	4.92	20.0	91	94	1
Lead	667	5.0	(see notes)		10
Mercury	<PQL	0.8	103	106	2
Silver	<PQL	20.0	96	97	0
Thallium	3.67	5.0	117	109	4

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Sample K8-LBM-2D-MTL (RASI No. 27)

Metal	Sample Result	Spike	MS % Rec.	MSD % Rec.	RPD
Antimony	11.8	5.0	71	0	(Not calculable)
Arsenic	0.69	5.0	91	81	10
Barium	73.1	200	108	135	17
Beryllium	<PQL	200	81	85	5
Cadmium	6.03	200	78	81	4
Chromium	57.6	200	92	102	9
Lead	249	5.0	(see notes)		81
Mercury	<PQL	0.8	98	94	3
Silver	<PQL	200	53	54	2
Thallium	<PQL	5.0	105	21	132

Two samples were analyzed for chloride with matrix spike/matrix spike duplicate (MS/MSD) pairs. The results of these analyses are listed below.

Sample	Sample Result	Spike	MS % Rec.	MSD % Rec.	RPD
K7-RFEED-2-PHYS	<PQL	33.6	67	64	5
K7-PROD-1-PHYS	<PQL	29.2	71	63	11

Sample K7-LBM-2-PHYS (RASI No. 44) was analyzed in duplicate for halide, ash, heating value, density, and water. The results of these analyses are listed below.

Analyte	Result 1	Result 2	RPD
Halide	2.44	2.47	1
Ash	<PQL	0.07	(Not calculable)
Heating value	14,400	14,500	1
Density	0.924	0.934	1
Water	<PQL	<PQL	(Not calculable)

TEST METHODOLOGIES

Chloride was determined by combustion in an oxygen bomb followed by electrometry as in ASTM Method D-4208.

Moisture was determined gravimetrically following drying at 105 C as in EPA Method 160.3.

Ash was determined gravimetrically following ignition at 1800 C as in ASTM Method D-482.

Heating value was determined by isothermal calorimetry as in ASTM Method D-240.

Total halides were determined by combustion in an oxygen bomb followed by a Volhard titration as in ASTM Method D-808.

Specific gravity was determined by weighing a measured volume of the sample.

Metals were determined in solid and non-aqueous liquid samples by digestion with nitric acid, hydrogen peroxide, and hydrochloric acid as in EPA Method 3050, followed by Inductively Coupled Plasma Emission Spectroscopy as in EPA Method 6010, unless noted otherwise.

Mercury was determined in solid and non-aqueous liquid samples by cold vapor atomic absorption after acid/permanganate digestion as in EPA Methods 245.5 and 7471.

Antimony was determined by graphite furnace AA as in EPA Methods 204.2 and 7041.

Arsenic was determined by graphite furnace AA as in EPA Methods 206.2 and 7061A.

Lead was determined by graphite furnace AA as in EPA Methods 239.2 and 7421.

Thallium was determined by graphite furnace AA as in EPA Methods 279.2 and 7841.

Water was determined by Karl Fischer titration.

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RESULTS BY SAMPLE

Sample Description: K7-RFEED-1-MTL **Lab No.:** 01

Analyte Description	Result	Units	PQL
Barium by ICP	24.7	mg/Kg	0.07
Beryllium by ICP	1.33	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	40.6	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	11.5	mg/Kg	0.20
Lead by GFAA	15.2	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	1.23	mg/Kg	0.40

Sample Description: K7-RFEED-2-MTL **Lab No.:** 02

Analyte Description	Result	Units	PQL
Barium by ICP	23.0	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	45.8	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	14.2	mg/Kg	0.20
Lead by GFAA	28.5	mg/Kg	0.08
Mercury by CVAA	0.04	mg/Kg	0.04
Thallium by GFAA	1.23	mg/Kg	0.40

Sample Description: K7-RFEED-3-MTL **Lab No.:** 03

Analyte Description	Result	Units	PQL
Barium by ICP	19.9	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	43.9	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	20.7	mg/Kg	0.20
Lead by GFAA	16.5	mg/Kg	0.08
Mercury by CVAA	0.06	mg/Kg	0.04
Thallium by GFAA	1.24	mg/Kg	0.40

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Sample Description: K8-RFEED-1-MTL **Lab No.:** 04

Analyte Description	Result	Units	PQL
Barium by ICP	20.3	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	39.4	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	9.69	mg/Kg	0.20
Lead by GFAA	29.0	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	1.35	mg/Kg	0.40

Sample Description: K8-RFEED-2-MTL **Lab No.:** 05

Analyte Description	Result	Units	PQL
Barium by ICP	16.7	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	31.2	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	16.3	mg/Kg	0.20
Lead by GFAA	20.6	mg/Kg	0.08
Mercury by CVAA	0.08	mg/Kg	0.04
Thallium by GFAA	1.15	mg/Kg	0.40

Sample Description: K8-RFEED-2D-MTL **Lab No.:** 06

Analyte Description	Result	Units	PQL
Barium by ICP	19.8	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	34.6	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	20.5	mg/Kg	0.20
Lead by GFAA	14.4	mg/Kg	0.08
Mercury by CVAA	0.08	mg/Kg	0.04
Thallium by GFAA	1.33	mg/Kg	0.40

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Sample Description: K8-RFEED-3-MTL **Lab No.:** 07

Analyte Description	Result	Units	PQL
Barium by ICP	18.2	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	35.4	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	17.0	mg/Kg	0.20
Lead by GFAA	21.1	mg/Kg	0.08
Mercury by CVAA	0.07	mg/Kg	0.04
Thallium by GFAA	1.22	mg/Kg	0.40

Sample Description: K7-PROD-1-MTL **Lab No.:** 08

Analyte Description	Result	Units	PQL
Barium by ICP	29.3	mg/Kg	0.07
Beryllium by ICP	0.27	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	25.3	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	9.37	mg/Kg	0.20
Lead by GFAA	27.5	mg/Kg	0.08
Mercury by CVAA	0.05	mg/Kg	0.04
Thallium by GFAA	0.49	mg/Kg	0.40

Sample Description: K7-PROD-2-MTL **Lab No.:** 09

Analyte Description	Result	Units	PQL
Barium by ICP	17.4	mg/Kg	0.07
Beryllium by ICP	0.15	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	145	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	0.57	mg/Kg	0.39
Arsenic by GFAA	8.64	mg/Kg	0.20
Lead by GFAA	29.3	mg/Kg	0.08
Mercury by CVAA	0.04	mg/Kg	0.04
Thallium by GFAA	<PQL	mg/Kg	0.40

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Sample Description: K7-PROD-3-MTL **Lab No.:** 10

Analyte Description	Result	Units	PQL
Barium by ICP	19.6	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	23.4	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	5.14	mg/Kg	0.20
Lead by GFAA	13.2	mg/Kg	0.08
Mercury by CVAA	0.11	mg/Kg	0.04
Thallium by GFAA	0.48	mg/Kg	0.40

Sample Description: K8-PROD-1-MTL **Lab No.:** 11

Analyte Description	Result	Units	PQL
Barium by ICP	38.6	mg/Kg	0.07
Beryllium by ICP	0.14	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	49.9	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	8.26	mg/Kg	0.20
Lead by GFAA	20.8	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	0.52	mg/Kg	0.40

Sample Description: K8-PROD-2-MTL **Lab No.:** 12

Analyte Description	Result	Units	PQL
Barium by ICP	68.8	mg/Kg	0.07
Beryllium by ICP	0.50	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	24.3	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	9.84	mg/Kg	0.20
Lead by GFAA	15.1	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	0.94	mg/Kg	0.40

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Sample Description: K8-PROD-2D-MTL **Lab No.:** 13

Analyte Description	Result	Units	PQL
Barium by ICP	31.4	mg/Kg	0.07
Beryllium by ICP	0.13	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	48.1	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	10.4	mg/Kg	0.20
Lead by GFAA	16.0	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	0.53	mg/Kg	0.40

Sample Description: K8-PROD-3-MTL **Lab No.:** 14

Analyte Description	Result	Units	PQL
Barium by ICP	14.4	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	<PQL	mg/Kg	0.45
Chromium by ICP	33.1	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	9.27	mg/Kg	0.20
Lead by GFAA	24.8	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	<PQL	mg/Kg	0.40

Sample Description: K7-DUST-1-MTL **Lab No.:** 15

Analyte Description	Result	Units	PQL
Barium by ICP	148	mg/Kg	0.07
Beryllium by ICP	1.55	mg/Kg	0.07
Cadmium by ICP	27.7	mg/Kg	0.45
Chromium by ICP	40.3	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	119	mg/Kg	0.20
Lead by GFAA	63.8	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	3.75	mg/Kg	0.40

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Sample Description: K7-DUST-2-MTL **Lab No.:** 16

Analyte Description	Result	Units	PQL
Barium by ICP	161	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	30.1	mg/Kg	0.45
Chromium by ICP	46.1	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	113	mg/Kg	0.20
Lead by GFAA	76.4	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	4.30	mg/Kg	0.40

Sample Description: K7-DUST-3-MTL **Lab No.:** 17

Analyte Description	Result	Units	PQL
Barium by ICP	158	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	42.2	mg/Kg	0.45
Chromium by ICP	48.7	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	0.22	mg/Kg	0.39
Arsenic by GFAA	122	mg/Kg	0.20
Lead by GFAA	667	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	3.67	mg/Kg	0.40

Sample Description: K8-DUST-1-MTL **Lab No.:** 18

Analyte Description	Result	Units	PQL
Barium by ICP	239	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	6.20	mg/Kg	0.45
Chromium by ICP	62.1	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	0.64	mg/Kg	0.39
Arsenic by GFAA	6.93	mg/Kg	0.20
Lead by GFAA	672	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	4.69	mg/Kg	0.40

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Sample Description: K8-DUST-2-MTL **Lab No.:** 19

Analyte Description	Result	Units	PQL
Barium by ICP	249	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	8.45	mg/Kg	0.45
Chromium by ICP	59.6	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	0.68	mg/Kg	0.39
Arsenic by GFAA	7.12	mg/Kg	0.20
Lead by GFAA	719	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	4.18	mg/Kg	0.40

Sample Description: K8-DUST-2D-MTL **Lab No.:** 20

Analyte Description	Result	Units	PQL
Barium by ICP	230	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	6.62	mg/Kg	0.45
Chromium by ICP	55.9	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	6.85	mg/Kg	0.20
Lead by GFAA	688	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	4.09	mg/Kg	0.40

Sample Description: K8-DUST-3-MTL **Lab No.:** 21

Analyte Description	Result	Units	PQL
Barium by ICP	124	mg/Kg	0.07
Beryllium by ICP	1.23	mg/Kg	0.07
Cadmium by ICP	105	mg/Kg	0.45
Chromium by ICP	32.4	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	<PQL	mg/Kg	0.39
Arsenic by GFAA	11.7	mg/Kg	0.20
Lead by GFAA	2650	mg/Kg	0.08
Mercury by CVAA	<PQL	mg/Kg	0.04
Thallium by GFAA	3.37	mg/Kg	0.40

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Sample Description: K7-LBM-1-MTL **Lab No.:** 22

Analyte Description	Result	Units	PQL
Barium by ICP	0.62	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	12.0	mg/Kg	0.45
Chromium by ICP	55.5	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	11.5	mg/Kg	0.39
Arsenic by GFAA	2.11	mg/Kg	0.20
Lead by GFAA	59.8	mg/Kg	0.08
Mercury by CVAA	0.17	mg/Kg	0.04
Thallium by GFAA	<PQL	mg/Kg	0.40

Sample Description: K7-LBM-2-MTL **Lab No.:** 23

Analyte Description	Result	Units	PQL
Barium by ICP	220	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	20.4	mg/Kg	0.45
Chromium by ICP	288	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	89.2	mg/Kg	0.39
Arsenic by GFAA	2.58	mg/Kg	0.20
Lead by GFAA	639	mg/Kg	0.08
Mercury by CVAA	0.23	mg/Kg	0.04
Thallium by GFAA	<PQL	mg/Kg	0.40

Sample Description: K7-LBM-3-MTL **Lab No.:** 24

Analyte Description	Result	Units	PQL
Barium by ICP	211	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	21.3	mg/Kg	0.45
Chromium by ICP	305	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	113	mg/Kg	0.39
Arsenic by GFAA	2.51	mg/Kg	0.20
Lead by GFAA	120	mg/Kg	0.08
Mercury by CVAA	0.24	mg/Kg	0.04
Thallium by GFAA	<PQL	mg/Kg	0.40

D-326

Work Order # 92-06-178 Ross Analytical Services, Inc Reported: 07/13/92

Sample Description: K8-LBM-1-MTL **Lab No.:** 25

Analyte Description	Result	Units	PQL
Barium by ICP	132	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	6.87	mg/Kg	0.45
Chromium by ICP	71.5	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	8.11	mg/Kg	0.39
Arsenic by GFAA	0.26	mg/Kg	0.20
Lead by GFAA	164	mg/Kg	0.08
Mercury by CVAA	0.68	mg/Kg	0.04
Thallium by GFAA	<PQL	mg/Kg	0.40

Sample Description: K8-LBM-2-MTL **Lab No.:** 26

Analyte Description	Result	Units	PQL
Barium by ICP	14.2	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	4.58	mg/Kg	0.45
Chromium by ICP	38.8	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	0.99	mg/Kg	0.39
Arsenic by GFAA	0.20	mg/Kg	0.20
Lead by GFAA	57.6	mg/Kg	0.08
Mercury by CVAA	0.27	mg/Kg	0.04
Thallium by GFAA	<PQL	mg/Kg	0.40

Sample Description: K8-LBM-2D-MTL **Lab No.:** 27

Analyte Description	Result	Units	PQL
Barium by ICP	69.5	mg/Kg	0.07
Beryllium by ICP	<PQL	mg/Kg	0.07
Cadmium by ICP	5.73	mg/Kg	0.45
Chromium by ICP	54.7	mg/Kg	0.80
Silver by ICP	<PQL	mg/Kg	0.70
Antimony by GFAA	11.8	mg/Kg	0.39
Arsenic by GFAA	0.69	mg/Kg	0.20
Lead by GFAA	249	mg/Kg	0.08
Mercury by CVAA	0.49	mg/Kg	0.04
Thallium by GFAA	<PQL	mg/Kg	0.40

Work Order # 92-06-178 Ross Analytical Services, Inc Reported: 07/13/92

Sample Description: K8-LBM-3-MTL **Lab No.:** 28

Analyte Description	Result	Units	PQL
Barium by ICP	211	mg/Kg	0.07
Beryllium by ICP	0.36	mg/Kg	0.07
Cadmium by ICP	10.2	mg/Kg	0.45
Chromium by ICP	95.2	mg/Kg	0.80
Silver by ICP	0.89	mg/Kg	0.70
Antimony by GFAA	10.8	mg/Kg	0.39
Arsenic by GFAA	0.72	mg/Kg	0.20
Lead by GFAA	218	mg/Kg	0.08
Mercury by CVAA	1.45	mg/Kg	0.04
Thallium by GFAA	<PQL	mg/Kg	0.40

Sample Description: K7-RFEED-1-PHYS **Lab No.:** 29

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K7-RFEED-2-PHYS **Lab No.:** 30

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K7-RFEED-3-PHYS **Lab No.:** 31

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K8-RFEED-1-PHYS **Lab No.:** 32

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Work Order # 92-06-178 Ross Analytical Services, Inc Reported: 07/13/92

Sample Description: K8-RFEED-2-PHYS **Lab No.:** 33

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K8-RFEED-2D-PHYS **Lab No.:** 34

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K8-RFEED-3-PHYS **Lab No.:** 35

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K7-PROD-1-PHYS **Lab No.:** 36

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K7-PROD-2-PHYS **Lab No.:** 37

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K7-PROD-3-PHYS **Lab No.:** 38

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Work Order # 92-06-178 Ross Analytical Services, Inc Reported: 07/13/92

Sample Description: K8-PROD-1-PHYS **Lab No.:** 39

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K8-PROD-2-PHYS **Lab No.:** 40

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K8-PROD-2D-PHYS **Lab No.:** 41

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K8-PROD-3-PHYS **Lab No.:** 42

Analyte Description	Result	Units	PQL
% moisture	<PQL	%	0.5
Chloride in organics	<PQL	%	0.04

Sample Description: K7-LBM-1-PHYS **Lab No.:** 43

Analyte Description	Result	Units	PQL
Density	0.941	g/mL	
Heating value	14,300	Btu/lb	500
Ash	0.22	%	0.05
Total halides as chloride	2.54	% as Cl	0.20
Water by Karl Fischer	<PQL	%	0.5

Sample Description: K7-LBM-2-PHYS **Lab No.:** 44

Analyte Description	Result	Units	PQL
Density	0.924	g/mL	
Heating value	14,400	Btu/lb	500
Ash	<PQL	%	0.05
Total halides as chloride	2.44	% as Cl	0.20

Work Order # 92-06-178 Ross Analytical Services, Inc Reported: 07/13/92

Analyte Description	Result	Units	PQL
Water by Karl Fischer	<PQL	%	0.5

Sample Description: K7-LBM-3-PHYS **Lab No.:** 45

Analyte Description	Result	Units	PQL
Density	0.946	g/mL	
Heating value	13,800	Btu/lb	500
Ash	0.13	%	0.05
Total halides as chloride	2.60	% as Cl	0.20
Water by Karl Fischer	<PQL	%	0.5

Sample Description: K8-LBM-1-PHYS **Lab No.:** 46

Analyte Description	Result	Units	PQL
Density	0.865	g/mL	
Heating value	16,100	Btu/lb	500
Ash	<PQL	%	0.05
Total halides as chloride	1.98	% as Cl	0.20
Water by Karl Fischer	<PQL	%	0.5

Sample Description: K8-LBM-2-PHYS **Lab No.:** 47

Analyte Description	Result	Units	PQL
Density	0.900	g/mL	
Heating value	16,200	Btu/lb	500
Ash	0.42	%	0.05
Total halides as chloride	1.84	% as Cl	0.20
Water by Karl Fischer	<PQL	%	0.5

Sample Description: K8-LBM-2D-PHYS **Lab No.:** 48

Analyte Description	Result	Units	PQL
Density	0.891	g/mL	
Heating value	16,300	Btu/lb	500
Ash	<PQL	%	0.05
Total halides as chloride	1.91	% as Cl	0.20
Water by Karl Fischer	<PQL	%	0.5

Sample Description: K8-LBM-3-PHYS **Lab No.:** 49

Analyte Description	Result	Units	PQL
Density	0.884	g/mL	

Work Order # 92-06-178 Ross Analytical Services, Inc Reported: 07/13/92

Analyte Description	Result	Units	PQL
Heating value	16,400	Btu/lb	500
Ash	0.13	%	0.05
Total halides as chloride	1.96	% as Cl	0.20
Water by Karl Fischer	<PQL	%	0.5

ROSS ANALYTICAL SERVICES

Analytical Data Sheet

000021

Client(s) IEA Analyst dhm

Test Moisture Date 7-8-92 Checker [illegible]

SAMPLE ID	DISH WT	GROSS SAMPLE WET	GROSS SAMPLE DRY	LOSS NET WT	% MOISTURE
92-06-178-29A	1.33 gm	5.31	5.31	<.01 gm	<.50
-30A	1.33 gm	4.76	4.75		<.50
-30A DUP	1.33 gm	6.17	6.17		<.50
-31A	1.33 gm	4.84	4.83		<.50
-32A	1.33 gm	5.23	5.23		<.50
-33A	1.33 gm	5.11	5.11		<.50
-34A	1.33 gm	7.74	7.73		<.50
-35A	1.33 gm	5.15	5.15		<.50
-36A	1.33 gm	6.32	6.32		<.50
-36A DUP	1.33 gm	5.13	5.13		<.50
-37A	1.33 gm	5.11	5.11		<.50
-38A	1.33 gm	4.13	4.13		<.50
-39A	1.33 gm	6.09	6.09		<.50
-40A	1.33 gm	5.98	5.96		<.50
-41A	1.33 gm	5.99	5.99		<.50
-42A	1.33 gm	4.09	4.09	✓	<.50

PQL = <.50 % ✓

D-333

RCSS ANALYTICAL SERVICES

000022

Analytical Data Sheet

Client(s) IEA — Analyst MSP

Test CL Bomb — Date 7-10-92 — Checker [illegible]

Sample ID	Samp. wt. (g)	Spike (g)	Final Volumes		
92-06-178-29A	.517	→	100mL		
-30A	.518		100mL		
-30A MS	.513	.178 gm of CH_2Cl_2 =	.149 gm of Cl^- (100mL)		
-30A MSD	.510	.246 gm of CH_2Cl_2 =	.205 gm of Cl^- (100mL)		
-31A	.530		100mL		
-32A	.513		100mL		
-33A	.527		100mL		
-34A	.539		100mL		
-35A	.525		100mL		
-36A	.511		100mL		
-36A-MS	.511	.189 gm of CH_2Cl_2 =	.158 gm of Cl^- (100mL)		
-36A-MSD	.517	.171 gm of CH_2Cl_2 =	.143 gm of Cl^- (100mL)		
-37A	.503		100mL		
-38A	.505		100mL		
-39A	.501		100mL		
-40A	.504		100mL		
-41A	.514		100mL		
-42A	.501		100mL		
Prep Blank #1 CL Bomb 7-10-92	—		100mL		
Prep Blank #2 CL Bomb 7-10-92	—		100mL		
LCS	—	.158 gm of CH_2Cl_2 =	.132 gm of Cl^-		
		D-334			

ROSS ANALYTICAL SERVICES

Analytical Data Sheet

000023

Client(s) IEA — Analyst SJ

Test Cl- Selective Ion1 — Date 7-13-92 — Checker CK

Sample ID	Wt (gm) Final Vol	Dilution	Actual Concentration	Final Concentration
Prep Blank 1	— 10 ml	—	<2.0 ug/ml	—
Prep Blank 2	—	—	<2.0	—
LCS		5-100	50.7	$\frac{1014}{1320}(100) = 76.8$ % REC
92-06-189-29A	.503 gm	—	<2.0	< PQL
29A MS	.532	5-100	58.3	$\frac{1166}{1450}(100) = 80.4$ % REC
29A MSD	.512	5-100	47.4	$\frac{949}{1320}(100) = 71.8$ % REC
30A	.528	—	<2.0	< PQL
31A	.503	—	<2.0	< PQL
32A	.503	—	<2.0	< PQL
33A	.534	—	<2.0	< PQL
34A	.529	—	<2.0	< PQL
35A	.526	—	<2.0	< PQL
36A	.551	—	<2.0	< PQL
37A	.526	—	<2.0	< PQL
38A	.513	—	<2.0	< PQL
39A	.529	—	<2.0	< PQL
40A	.515	—	<2.0	< PQL
40A MS	.510	5-100	48.6	$\frac{972}{1550}(100) = 61.5$ % REC
40A MSD	.524	5-100	70.9	$\frac{1415}{1660}(100) = 85.4$ % REC
41A	.503	—	<2.0	< PQL
42A	.508	—	<2.0	< PQL

Stock Cl- Std = CW 16 B = 1000 ug/ml used for 92-06-159, 29A → 92A & 92-06-175, 29A-742A

2.0 ug/ml → 200 µl → 100 ml

* 10.0 ug/ml → 1.0 ml → 100 ml

* 20.0 ug/ml → 2.0 ml → 100 ml

* 50.0 ug/ml → 5.0 ml → 100 ml

* 100 ug/ml → 10.0 ml → 100 ml

* 200 ug/ml → 20.0 ml → 100 ml

ROSS ANALYTICAL SERVICES

Analytical Data Sheet

000024

Client(s) IEA Analyst SJ

Test OC Selective Det Date 7-13-92 Checker [illegible]

Sample ID	Wt(am) Final Vol	Dilution	Actual Concentration	Final Concentration	
Prep Blank 1	— 10.0ml	—	L2.0 ug/ml	—	
Prep Blank 2	—	—	L2.0 "	—	
LCS		5-100	50.7	$\frac{1014}{1320}(100) = 76.8\%$ REC	
92-06-178-29A	.517 gm	—	L2.0	L PQL	
30A	.518	—	L2.0	L PQL	
30A MS	.513	5-100	49.6	$\frac{992}{1490}(100) = 66.6\%$ REC	
30A MSD	.510	5-100	65.1	$\frac{1302}{2050}(100) = 63.5\%$ REC	
31A	.530	—	L2.0	L PQL	
32A	.513	—	L2.0	L PQL	
33A	.527	—	L2.0	L PQL	
34A	.539	—	L2.0	L PQL	
35A	.535	—	L2.0	L PQL	
36A	.571	—	L2.0	L PQL	
~~37~~ 36A MS	.511	5-100	56.0	$\frac{1120}{1550}(100) = 70.9\%$ REC	
36A MSD	.517	5-100	45.2	$\frac{904}{1430}(100) = 63.2\%$ REC	
37A	.503	—	L2.0	L PQL	
38A	.505	—	L2.0	L PQL	
39A	.501	—	L2.0	L PQL	
40A	.504	—	L2.0	L PQL	
41A	.514	—	L2.0	L PQL	
42A	.501	—	L2.0	L PQL	
	PQL =	400. ug/gm			
		D-336			

ROSS ANALYTICAL SERVICES

Analytical Data Sheet

000025

Client(s) IEA Analyst KN/MSF/JO/ALF

Test Btu, Ash, Spec gr., Halide Date 6/29/92 Checker KN/ALA

W.O #	Ash	Btu	Spec. grav	Halide	
92-06-178-43A	0.22 %	14,307	0.941	2.54 %	
-44A	0 %	14,409	0.924	2.44 %	
-44A DUP	0.07 %	14,547	0.934	2.47 %	
-45A	0.13 %	13,811	0.946	~~2.43~~ 2.6 %	
-46A	0 %	16,125	0.865	1.98 %	
-47A	0.42 %	16,157	0.900	1.84 %	
-48A	0 %	16,289	0.891	1.91 %	
-49A	0.13 %	16,385	0.884	1.96 %	
					% Recovery
92-06-178-44A MS				14.53%	83.0 %
MSD				15.21%	87.6 %
(% Difference) - 44A	< PQL	0.95%	1.09 %	1.22 %	
	+ Normality KSCN = 0.0990				
	+ Theoretical % Chlorine (Chlorberger) = 31.5 %				

D-337

Client: IEA P.O.# 92-06-178

#37

SAMPLE WEIGHT .0789
ISO WEIGHT .1810
$AgNO_3$ KSCN
0.09 N 0.11 N
5.12 4.46
5.03 4.29
10.30 33.00
35.30 29.12
5.00 3.88

2.54%

CALORIMETRY FINAL REPORT
03/25/92 08:36:37 DETERMINATION
SAMPLE ID 892 CAL ID 8
WEIGHT .810 FUSE 15
ACID 0.00 SULFUR 0.00
INIT. TEMP 24.4799 TEMP. RISE 2.67222
SPIKE WGHT. 0 FE VALUE 2414.85
GROSS HEAT 14396.8 BTU/LB
DYNAMIC MODE

#39

SAMPLE WEIGHT .8109
ISO WEIGHT .1810
$AgNO_3$ KSCN
0.09 N 0.11 N
5.12 4.46
5.03 4.29
10.30 33.00
35.30 29.12
5.00 3.88

1.71%

CALORIMETRY FINAL REPORT
03/09/ 3 08:50:13 DETERMINATION
SAMPLE ID 639 CAL ID 1
WEIGHT .810 FUSE 15
ACID 0.00 SULFUR 0.00
INIT. TEMP 24.0127 TEMP. RISE 2.69959
SPIKE WGHT. 0 FE VALUE 2407.35
GROSS HEAT 14402.5 BTU/LB
DYNAMIC MODE

Spec Grav .924
1.8869
1.8869

Continued on Page

Read and Understood By

Signed KN Date 6/25/92

Signed Date

D-338

W.O. #92-06-178

44A (duplicate)

(See pg 45 for Asbestos Values)

SAMPLE WEIGHT 0.1802g

ISO WEIGHT

$AgNO_3$	KSCN
5.12	4.40
10.16	8.80
5.14	4.40

1.98% Asbestos

5.1 = 14.013 / 15mL = .934

CALORIMETRY FINAL REPORT

SAMPLE ID	640	CAL ID	8
WEIGHT	.802	FUSE	15
ACID	0.00	SULFUR	0.00
INIT. TEMP.	25.9500	TEMP. RISE	2.70259
SPIKE WGHT.	0	EE VALUE	2403.73
GROSS HEAT	14546.5	BTU/LB	
DYNAMIC MODE			

45A

SAMPLE WEIGHT 0.1887g

ISO WEIGHT

$AgNO_3$	KSCN
15.30	12.40
.025	.048
15.05	12.35

3.42% Asbestos

92.9%

5.6 = 14.013 / 15mL = .946

CALORIMETRY FINAL REPORT

6-25-92	18:10149	DETERMINATIO	
SAMPLE ID	889	CAL ID	
WEIGHT	.787	FUSE	
ACID	0.00	SULFUR	
INIT. TEMP.	22.4529	TEMP. RIS	
SPIKE WGHT.	0	EE VALUE	
GROSS HEAT	13810.8	BTU/LB	
DYNAMIC MODE			

Continued on Page

Read and Understood By

Signed [signature] Date 6/25/92 Signed Date

92-06-178

-46A

SAMPLE WEIGHT .823

ISO WEIGHT

E_aNO_3	KSCN
20.30	16.62
15.30	12.50
5.00	4.12

CALORIMETRY FINAL REPORT
06/25/92 18:41:34 DETERMINATION

SAMPLE ID		ID	8
WEIGHT	.823	FUSE	15
ACID	0.00	SULFUR	0.00
INIT. TEMP.	28.3060	TEMP. RISE	3.05929
SPIKE WGHT.	0	EE VALUE	2414.88

GROSS HEAT 16125.2 BTU/LB
DYNAMIC MODE

1. 98% 15.184 12.975
15 15
.879 .865

-47A

SAMPLE WEIGHT .813

ISO WEIGHT

E_aNO_3	KSCN
25.30	20.92
20.30	16.62
5.00	4.20

CALORIMETRY FINAL REPORT
03/09/93 09:31:12 DETERMINATION

SAMPLE ID	641	CAL ID	4
WEIGHT	.813	FUSE	15
ACID	0.00	SULFUR	0.00
INIT. TEMP.	26.9973	TEMP. RISE	3.10563
SPIKE WGHT.	0	EE VALUE	2354.56

GROSS HEAT 16156.5 BTU/LB
DYNAMIC MODE

1.84% 13.494 15.900
15

Continued on Page

Read and Understood By

MGP 6-25-92

Signed Date Signed Date

92-06-178

48A

SAMPLE WEIGHT .80
ISO WEIGHT
$AgNO_3$ KSCN
35.30 24.00
30.30 20.82
5.00 4.18

CALORIMETRY FINAL REPORT
06/25/92 18:50:30 DETERMINATION
SAMPLE ID 891 CAL ID 2
WEIGHT .801 FUSE 15
ACID 0.00 SULFUR 0.00
INIT. TEMP. 29.8672 TEMP. RISE 3.01599
SPIKE WGHT. 0 EE VALUE 2405.40
GROSS HEAT 16289.2 BTU/LB
DYNAMIC MODE

13.768 .891
15mL

1.11%

49A

SAMPLE WEIGHT .891
ISO WEIGHT
$AgNO_3$ KSCN
20.30 24.12
24.30 20.00
5.00 4.12

13.136 .876
15mL
12.253 .884
14mL

CALORIMETRY FINAL REPORT
06/09/93 09:45:06 DETERMINATION 3
SAMPLE ID 642 CAL ID 1
WEIGHT .831 FUSE 15
ACID 0.00 SULFUR 0.00
INIT. TEMP. 28.4933 TEMP. RISE 3.14848
SPIKE WGHT. 0 EE VALUE 2407.35
GROSS HEAT 16385.1 BTU/LB
DYNAMIC MODE

1.96%

Continued on Page

Read and Understood By

mg/ 6-25-92

Signed Date Signed Date

44A

SAMPLE WT .843
ISO
AgNO3
49.30 36.78
40.30 33.00
5.00 3.78

2.44%

CALORIMETRY FINAL REPORT
06/25/92 10:20:39 DETERMINATION
SAMPLE ID 843 CAL ID 4
WEIGHT .843 FUSE 15
ACID 0.00 SULFUR 0.00
INIT. TEMP. 28.57736 TEMP. RISE 2.90189
SPIKE WGHT. 0 EE VALUE 2354.56
GROSS HEAT 14557.7 BTU LB
DYNAMIC MODE

44A Dull tube

SAMPLE WT .849
ISO
AgNO3
50.30 40.20
0.00 0.00
5.00 4.20

1.78%

CALORIMETRY FINAL REPORT
06/25/92 19:51:03 DETERMINATION
SAMPLE ID 893 CAL ID 2
WEIGHT .849 FUSE 15
ACID 0.00 SULFUR 0.00
INIT. TEMP. 30.37202 TEMP. RISE 2.83622
SPIKE WGHT. 0 EE VALUE 2485.48
GROSS HEAT 14687.3 BTU/LB
DYNAMIC MODE

Continued on Page

Read and Understood By

M.S.P
Signed

6.25.92
Date

Signed

D-342

4th Pollicle

SAMPLE WEIGHT .854

ISO WEIGHT

$EqNO_3$	INCOR
10.00	8.15
5.00	4.30
5.00	3.85

2479%

CALORIMETRY FINAL REPORT
83/09/ 3 11:03:00 DETERMINATION
SAMPLE ID: 4th CAL ID
WEIGHT .854 FUSE 15
ACID 0.00 SULFUR 0.00
INIT. TEMP. 28.5541 TEMP. RISE 2.91692
SPIKE WGHT. 0 EE VALUE 2487.05
GROSS HEAT 14788.9 BTU/LB
DYNAMIC MODE

Continued on Page

Read and Understood By

ar sf — Signed
6-25-92 — Date
Signed
Date

D-343

Ash

SAMPLE	WEIGHTS		% ASH
92-06-178-43A	CRUCIBLE	18.8235	
	SAMPLE	1.5190	0.22%
	FINAL	18.8268	
92-06-178-44A	Crucible	19.9859	
	SAMPLE	1.5240	0 %
	FINAL	19.9820	
		18.9081	
92-06-178-44A (DUPLICATE)	Crucible	18.9183	
	SAMPLE	1.5230	0.07 %
	FINAL	1.5015	
	FINAL	18.9092	
92-06-178-45A	Crucible	18.7281	
	SAMPLE	1.5052	0.13 %
	FINAL	18.7300	
92-06-178-46A	Crucible	18.4341	
	SAMPLE	1.6373	0 %
	FINAL	18.4303	
92-06-178-47A	CRUCIBLE	16.3875	
	SAMPLE	1.5056	0.11 %
	FINAL	16.3938	
92-06-178-48A	CRUCIBLE	17.6805	
	SAMPLE	1.5233	0.00 %
	FINAL	17.6796	
92-06-178-49A	CRUCIBLE	19.8466	
	SAMPLE	1.5392	0.13 %
	FINAL	19.8481	

Continued on Page

Read and Understood By

[POL 0.05]

Signed Date Signed Date

x5

92-OC-178 - 4HA MS/MSD for Halide

MS>

SAMPLE WEIGHT .709g / 1.232g

CALIBRATION WEIGHT .523g

	KSCN	
3.58	2.00	
8.78	5.40	13.18%
5.20	3.40	

<MSD>

SAMPLE WEIGHT .7291g / 1.233g

CALIBRATION WEIGHT .5019g

$AgNO_3$	KSCN	
8.38	5.45	
13.48	8.39	15.74%
5.10	2.94	

CALORIMETRY FINAL REPORT

06/26/92 21:29:34 DETERMINATION

SAMPLE ID	927	CAL ID	2
WEIGHT	1.232	FUSE	15
ADD	0.00	SULFUR	0.00
INIT. TEMP.	26.3885	TEMP. RISE	3.93665
SPIKE WGHT.	0	EE VALUE	2405.40
GROSS HEAT	13812.9 BTU/LB		

DYNAMIC MODE

CALORIMETRY FINAL REPORT

3/ 3 12:16:21 DETERMINATION

LE ID	663	CAL ID	4
HT	1.233	FUSE	15
	0.00	SULFUR	0.00
TEMP.	24.7238	TEMP. RISE	3.90013
E WGHT.	0	EE VALUE	2354.56
S HEAT	13384.0 BTU/LB		

MIC MODE

Re

MS>

① .523g X 315mg/g = 164.75

② .709g X 244mg/g = 172.96

③ 132 X 1.232g = 162.62

④ 132 - 17.30 = 114.70

⑤ 114.70 / 164.75 = 70% Recovery

<MSD>

① .5019g X 315mg/g = 157.82

② .732 X 244mg/g = 178.6

③ 157 X 1.233 = 193.58

④ 157 - 17.96 = 139.14

⑤ 139.14 / 157.82 = 88% Recovery

(KSCN N = .0710N)

Continued on Page

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Signed Date Signed Date

PROJECT

Continued From Page

000034

17 - 44A MS

SAMPLE WEIGHT .718

Chloro Benzo WEIGHT

$AgNO_3$	KSCN
1.20	0.90
6.66	4.92
5.12	4.02

9.80%

CALORIMETRY FINAL REPORT

06/26/97	22:31:43 DETERMINATION		
SAMPLE ID	929	CAL ID	1
WEIGHT	1.931	FUSE	15
ACID	0.00	SULFUR	0.00
INIT. TEMP.	29.1389	TEMP. RISE	3.29565
SPIKE WGHT.	0	EE VALUE	2364.29
GROSS HEAT	13577.3 BTU/LB		
DYNAMIC MODE			

189 - 44A MS

SAMPLE WEIGHT .772

Chloro Benzo WEIGHT

$AgNO_3$	KSCN
6.66	4.92
11.99	8.75
5.11	3.83

14.19%

CALORIMETRY FINAL REPORT

03/10/ 3	13:21:55 DETERMINATION		
SAMPLE ID	665	CAL ID	2
WEIGHT	1.044	FUSE	15
ACID	0.00	SULFUR	0.00
INIT. TEMP.	27.7175	TEMP. RISE	3.37392
SPIKE WGHT.	0	EE VALUE	2419.77
GROSS HEAT	14058.1 BTU/LB		
DYNAMIC MODE			

Continued on Page

Read and Understood By

Signed Date Signed Date

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PROJECT _____ Continued From Page _____

00003

92-06-178-348 M3

10 g

S.[illegible] .522 → 1.027 → 14.53%

(blank) LIGHT

$AgNO_3$	KSCN
10.50	9.22
2.50	13.05
5.00 ml	3.35 ml

.507

① .522 × 315 = 164.43
② .500 × 264 = 132.00
③ 145.3 × 1.027 = 149.22
④ 149.22 − 132.00 = 17.22
⑤ 132.0 / 159.7 = 82.6%

CALORIMETRY FINAL REPORT
03/13/ 3 13:19:15 DETERMINATION

SAMPLE ID	684	CAL ID	3
WEIGHT	.520	FUSE	15
ACID	0.00	SULFUR	0.00
INIT. TEMP.	28.1634	TEMP. RISE	3.18760
SPIKE WGHT.	.507	EE VALUE	2309.81

GROSS HEAT ~~6667.61~~ BTU/LB
DYNAMIC MODE

1.027

$$Btu/lb = \frac{[wt)]}{g\ sample} \times 1.8$$

<MS> $= \frac{2309.81\ (3.18760)}{1.027} \times 1.8$

$= 12904.53$

<MSD> $Btu/lb = \frac{2402.15\ (3.25835)}{1.0109} \times 1.8$

$= \frac{7827.05}{1.0109} \times 1.8$

$= 13949.19$

Continued on Page

Read and Understood By

ACA 6-29-92 _____

Signed Date Signed Date

D-347

MS (NO)

SAMPLE WEIGHT .715 ÷ 1.238

ISO WEIGHT .523

$AgNO_3$	KSCN
0.45	2.88
5.95	6.30
5.30	3.42

13.7%

.523 × 315 = (1) 164.75

(2) 1.45

(3) 1.32 × 1.038 = 169.61

(4) 137 − 17.45 = 119.55

(5) 119.55 / 164.75 = 72.6%

CALORIMETRY FINAL REPORT
06/29/92 21:32:47 DETERMINATION
SAMPLE ID 961 CAL ID 6
WEIGHT .523 FUSE 15
ACID 0.00 SULFUR 0.00
INIT. TEMP. 24.6419 TEMP. RISE 4.87277
SPIKE WGHT. .523 EE VALUE 2441.40
GROSS HEAT 10929.8 BTU/LB
DYNAMIC MODE

92-06-178-411A MSD

NO $

SAMPLE WEIGHT .503 ÷ 1.014 (15.21%)

CHLORIDE

$AgNO_3$	KSCN
5.50	6.40
10.50	9.70
5.00 mL	3.30 mL

(1) .507g × 315 = 159.71

(2) .503g × 24.4 = 12.27

(3) 15.2% × 1.010 = 153.62

(4) 153.62 − 12.27 = 139.83

(5) 139.83 / 159.71 = 87.6%

CALORIMETRY FINAL REPORT
06/29/92 22:29:21 DETERMINATION
SAMPLE ID 962 CAL ID 7
WEIGHT .503 FUSE 15
ACID 0.00 SULFUR 0.00
INIT. TEMP. 26.8075 TEMP. RISE 3.26835
SPIKE WGHT. .507 EE VALUE 2462.15
GROSS HEAT 8575.12 BTU/LB
DYNAMIC MODE

1.010g

Need info for correct Btu value

Continued on Page

Read and Understood By

ACA 6-29-92

Signed Date

D-348

PROJECT WEEKLY QC

Continued From Page 000057

1) Specific gravity $\frac{14.4529}{10\text{ml}} = 1.4452\ g/ml$

2) Flash point 85°

3) BTU

.810

CALORIMETRY FINAL REPORT
06/26/92 07:39:09 DETERMINATION
SAMPLE ID 902 CAL ID 8
WEIGHT .810 FUSE 15
ACID 0.00 SULFUR 0.00
INIT. TEMP. 27.6182 TEMP. RISE 2.83747
SPIKE WGHT. 0 EE VALUE 2414.88
GROSS HEAT 15172.2 BTU LB
DYNAMIC MODE

4) TOH

.80C

SAMPLE WEIGHT	ISO WEIGHT $AgNO_3$	KSCN
	10.21	8.10
	15.21	10.55
	5	2.45

CALORIMETRY FINAL REPORT
06/09/92 17:29:03 DETERMINATION
SAMPLE ID 652 CAL ID 4
WEIGHT .801 FUSE 15
ACID 0.00 SULFUR 0.00
INIT. TEMP. 27.5537 TEMP. RISE 2.58112
SPIKE WGHT. 0 EE VALUE 2354.58
GROSS HEAT 15467.1 BTU LB
DYNAMIC MODE

Read and Understood By

Signed	Date	Signed	Date
	6-25-92		

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ROSS ANALYTICAL SERVICES

Analytical Data Sheet

R+4 000038

Client(s) IEA Analyst SJ/mgp

Test 3050G Date 7-6-92 Checker dfm

Sample ID	Samp. Wt.	Spike	HNO_3 1:1	HNO_3 conc	H_2O_2	Final Vol
PB #1	—		10mL	10mL	10mL	100mL
PB #2	—					
LCS	—	*				
92-06-178-01A	1.04					
-02A	.95					
-03A	.95					
-04A	.95					
-04A MS	1.00	*				
-04A MSD	1.01	*				
-05A	.95					
-06A	.95					
-07A	.95					
-08A	1.04					
-09A	.95					
-10A	.95					
-11A	.95					
-11A MS	1.02	*				
-11A MSD	1.00	*				
-12A	.98					
-13A	.97					
-14A	.98					
-15A	.96					
-16A	.96					
-17A	.96		↓	↓	↓	↓

* Spiked w/ GFAA Spike - CLP 158 (500 ul)

D-350

METALS PREP LOGSHEET

000039

CLIENT ID IEA. Resi. EP. Misc

METHOD ID 3050 G

PREP LOCATION RT 6 C

PREP DATE 7-7-92

ANALYST INIT SJ

CHECKER INIT dfm

SAMPLE ID	INITIAL WT / VOL	FINAL VOLUME	SPIKING DATA	COMMENTS
PB1	—	100 ml		
PB2	—			
LCS	—		500 µL of MV-158	
92-06-178-18A	.96g			
19A	.95g			
20A	.97g			
21A	.98g			
22A	.97g			
23A	.97g			
24A	.97g			
25A	.97g			
26A	.99g			
27A	1.00g			
27A MS	.97g		500 µL of CW-158	
27A (MSD)	.97g		500 µL of CW-158	
28A	.97g			
92-07-001-01A	1.01g			
02A	.99g			
03A	.97g	J		
		D-351		

Book Page

METALS PREP LOGSHEET

000040

CLIENT ID IEA

METHOD ID 3050G

PREP LOCATION KT 2C

PREP DATE 7-10-92

ANALYST INIT ST

CHECKER INIT dfm

SAMPLE ID	INITIAL WT / VOL	FINAL VOLUME	SPIKING DATA	COMMENTS
B1 3050G 7-10	—	100ml		
B2 3050G 7-10	—			
LCS 3050G 7-10	—		500 µl of CW-158	
12-06-178-17A	.95g			
17AMS	.96g		500 µl of CW-158	
17AMSD	.96g		500 µl of CW-158	
		D-352		

Book Page

PQL = 7.49 L

ROSS ANALYTICAL SERVICES

000041

Analytical Data Sheet for Metals

Client(s) IEA Analyst ESH

Test Sb Date 7/11/92 Checker [illegible]

Method No. 7041 SOP No. _____ Instrument GFAA

Sample Number	Dilution	Reading ug/L	Spike	Recovery	Final Conc. mg/kg
ICV		42.0			
CCV		-0.2			
PB1 3050-G 7-6-92		3 B			
PB2 3050 G 7-6-92		-0.1			
LCS 3050G 7-6-92		89.0	50	178%	
92-06-178-01A		-0.9			<PQL
-02A		-0.3			<PQL
-03A		-0.3			<PQL
-04A		-0.6			<PQL
-04A-MS		0.0	0%		
-04A-MSD		0.3	0%		
CCV		38.4	40	96%	
CCB		1.1			<PQL
92-06-178-05A		-1.3			<PQL
-06A		-0.3			<PQL
-07A		-0.8			<PQL
-08A		3.8			<PQL
-09A		5.4			0.57
-10A		2.6			<PQL
-11A		0.6			<PQL
-11A-MS		10.2	50	20% / ~~20.4%~~	-1
-11AMSD		7.2	50	14.4%	0.72
CCV		41.2	40	103%	
CCB		-0.4			<PQL

ROSS ANALYTICAL SERVICES 000042

Analytical Data Sheet for Metals

Client(s) IEA Analyst ESH

Test Sb Date 7/11/92 Checker COMM

Method No. 7041 SOP No. _____ Instrument SPECTRAA 400

Sample Number	Dilution	Reading	Spike	Recovery	Final Conc.
92-06-178-12A		-1.3			<PQL
-13A		-1.8			<PQL
-14A		-1.2			<PQL
-15A		1.1			<PQL
-16A		-0.0			<PQL
PB130SOG 7/7/92 ~~7/11~~ com		-2.5			<PQL
~~PB230SOG 7/7/92 com~~					
CCV		37.0	40	92.5%	
CCB		0.0			<PQL
PB2 305OG 7/7/92		1.4			<PQL
LCS 305OG 7/7/92		57.7	50	115%	
92-06-178-18A		6.1			0.64
-19A		6.5			0.68
-20A		3.7			~~0.38~~ <PQL
-21A		1.7			<PQL
-22A		111.9			11.5
-23A		864.8			89.2
-24A		1094.4			113
CCV		36.1	40	90.2%	
CCB		1.0			<PQL
92-06-178-25A		78.7			8.11
-26A		9.8			0.99
-27A		117.7			11.8

ROSS ANALYTICAL SERVICES

000043

Analytical Data Sheet for Metals

ESH

Client(s) IEA Analyst ~~CDH~~ for

Test Sb Date 7/11/92 Checker CDM

Method No. 7041 SOP No. _____ Instrument SPECTRAA-400

Sample Number	Dilution	Reading	Spike	Recovery	Final Conc.
92-06-178-27A.S		148.9	50	~~11.9%~~	15.4
-27A.SD		63.0	50	NO DET.	6.49
-28A		104.7			10.8
PB1 3050G 7/10/92		-0.2			<PQL
PB2 3050G 7/10/92		-1.2			<PQL
LCS 3050G 7/10/92		51.9		104%	
CCV		40.8	40	102%	
CCB		-0.8			<PQL
92-06-178-17A		2.1		12.6%	0.22
-17A.~~SD~~S		8.2	50	~~12.2%~~	0.85
-17A.SD		5.6	50	~~7.0%~~	0.58
				11.7%	

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Varian SpectrAA 300/400 Zeeman
QC Protocol Report

Ross Analytical Services, Inc.
16433 Foltz Industrial Parkway
Strongsville, Ohio 44136

OPERATOR ESH
DATE 07/10/92
BATCH IEA

QC PROTOCOL PARAMETERS

QC STANDARD POSITION	45
IF THERE IS AN ERROR	STOP
QC SPIKE POSITION	44
RECOVERY LIMITS (%)	85 TO 115
RECOVERY MINIMUM LIMIT (%)	40
CORRELATION COEFFICIENT (r)	0.995
OVERRANGE VOLUME REDUCTION	2
REPLICATE RSD LIMIT (%)	20.0

PROGRAM 1 Sb Ptfrm 7041/204.2

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	4
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	217.6
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	1
BACKGROUND CORRECTION	ON
MAXIMUM ABSORBANCE	2.00

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	90	5.0	3.0	NORMAL	NO
2	90	25.0	3.0	NORMAL	NO
3	700	10.0	3.0	NORMAL	NO
4	700	20.0	3.0	NORMAL	NO
5	700	2.0	0.0	NORMAL	NO
6	1700	3.0	0.0	NORMAL	YES
7	1700	2.0	0.0	NORMAL	YES
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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10	2500	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (fL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	0
STANDARD 1	4	16	0
STANDARD 2	8	12	0
STANDARD 3	12	8	0
STANDARD 4	16	4	0
STANDARD 5	20	0	0
SAMPLE	20	0	0

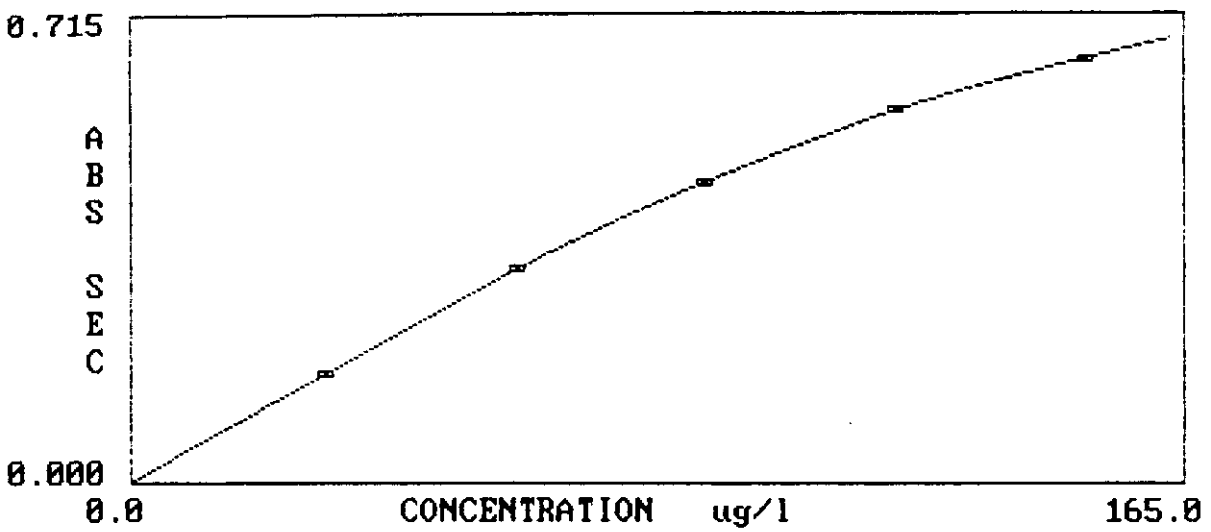
RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 90
INJECT RATE 3

QC PROTOCOL PARAMETERS

QC STANDARD RATE	9
QC STANDARD VOLUME (fL)	20
QC STANDARD CONCENTRATION	40.0 ug/l
QC STANDARD LIMITS (%)	90 TO 110
QC SPIKE RATE	9
QC SPIKE VOLUME (fL)	4
QC SPIKE CONCENTRATION	150.0 ug/l
MATRIX SPIKE CONCENTRATION	30.0 ug/l
REQUIRED DETECTION LIMIT	0.1 ug/l

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK QC	0.0		0.005	0.005 11Jul92 00:41
STANDARD 1 QC	30.0	0.0	0.165	0.165 11Jul92 00:43
STANDARD 2 QC	60.0	0.0	0.325	0.325 11Jul92 00:45
STANDARD 3 QC	90.0	0.0	0.460	0.460 11Jul92 00:47
STANDARD 4 QC	120.0	0.0	0.570	0.570 11Jul92 00:49
STANDARD 5 QC	150.0	0.0	0.650	0.650 11Jul92 00:51



SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
QCSTANDARD	48.0	0.0	0.262	0.262
QC		Q		11Jul92 00:53
				%R = 120.0
BLANK	0.0		-0.009	-0.009
QC				11Jul92 00:56
QCSTANDARD	36.4	0.0	0.200	0.200
QC				11Jul92 00:58
				%R = 91.0
BLANK	0.0		0.020	0.020
QC				11Jul92 01:01
BLANK	0.0		-0.017	-0.017
QC				11Jul92 01:03
BLANK	0.0		0.009	0.009
QC				11Jul92 01:06

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				%R = 105.1
QCBLANK QC	-0.2	0.0	-0.001	-0.001 11Jul92 01:09 ABS = 0.000

000047

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
PB 1 3050G QC	3.8	0.0	0.021	0.021 11Jul92 01:11
PB2 3050G QC	-0.1	0.0	-0.001	-0.001 11Jul92 01:13 RPD = 213.4
LCS 3050G QC	89.0	0.0	0.456	0.456 11Jul92 01:15 %R = 297.2
178-01A QC	-0.9	0.0	-0.005	-0.005 11Jul92 01:16
178-02A QC	-0.3	0.0	-0.002	-0.002 11Jul92 01:18
178-03A QC	-0.3	0.0	-0.002	-0.002 11Jul92 01:20
178-04A QC	-0.6	0.0	-0.003	-0.003 11Jul92 01:22
178-04AMS QC	0.0	0.0	0.000	0.000 11Jul92 01:23
178-04AMSD QC	0.3	0.0	0.002	0.002 11Jul92 01:25
QCSPIKE QC	3.5	0.0 E	0.019	0.019 11Jul92 01:27 %R = 10.8 %R LESS THAN MINIMUM LIMIT
QCSTANDARD QC	38.4	0.0	0.211	0.211 11Jul92 01:29 %R = 96.0
QCBLANK QC	1.1	0.0	0.006	0.006 11Jul92 01:31 ABS = 0.008
178-05A QC	-1.3	0.0	-0.007	-0.007 11Jul92 01:32
1 -06A QC	-0.3	0.0	-0.002	-0.002 11Jul92 01:34
178-07A QC	-0.8	0.0	-0.005	-0.005 11Jul92 01:36

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SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-09A QC	5.4	0.0	0.030	0.030 11Jul92 01:39
178-10A QC	2.6	0.0	0.015	0.015 11Jul92 01:41
178-11A QC	0.6	0.0	0.003	0.003 11Jul92 01:43
178-11AMS QC	10.2	0.0	0.057	0.057 11Jul92 01:45
178-11AMSD QC	7.2	0.0	0.040	0.040 11Jul92 01:46
QCSPIKE QC	19.1 E	0.0	0.106	0.106 11Jul92 01:48 %R = 39.6 %R LESS THAN MINIMUM LIMIT
QCSTANDARD QC	41.2	0.0	0.226	0.226 11Jul92 01:50 %R = 102.9
QCBLANK QC	-0.4	0.0	-0.002	-0.002 11Jul92 01:52 ABS = -0.001
178-12A QC	-0.2	0.0	-0.001	-0.001 11Jul92 01:54
178-13A QC	-0.6	0.0	-0.003	-0.003 11Jul92 01:55
178-14A QC	0.4	0.0	0.002	0.002 11Jul92 01:57
178-15A QC	3.1	0.0	0.017	0.017 11Jul92 01:59
178-16A QC	4.8	0.0	0.027	0.027 11Jul92 02:01
178-17A QC	7.4	0.0	0.041	0.041 11Jul92 02:02
178-17AS QC	13.9	0.0	0.077	0.077 11Jul92 02:04
178-17ASD QC	12.2	0.0	0.067	0.067 11Jul92 02:06
PB3 3050G QC	-1.2	0.0	-0.007	-0.007 11Jul92 02:08

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QC				11Jul92	02:10
				%R =	92.8
QCSTANDARD	44.4	0.0	0.243	0.243	
QC		Q		11Jul92	02:11
				%R =	111.1

000049

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS	
BLANK	0.0		-0.029	-0.029	
QC				11Jul92	10:38
QCSTANDARD	49.7	0.0	0.271	0.271	
QC		Q		11Jul92	10:40
				%R =	124.3
BLANK	0.0		0.017	0.017	
QC				11Jul92	11:16
QCSTANDARD	50.1	0.0	0.273	0.273	
QC		Q		11Jul92	11:18
				%R =	125.3
BLANK	0.0		0.004	0.004	
QC		Q		11Jul92	11:24
				%R =	125.3

Varian SpectrAA 300/400 Zeeman
QC Protocol Report

Ross Analytical Services, Inc.
16433 Foltz Industrial Parkway
Strongsville, Ohio 44136

OPERATOR ESH
DATE 07/10/92
BATCH IEA

QC PROTOCOL PARAMETERS

QC STANDARD POSITION	45
IF THERE IS AN ERROR	STOP
QC SPIKE POSITION	44
RECOVERY LIMITS (%)	85 TO 115
RECOVERY MINIMUM LIMIT (%)	40
CORRELATION COEFFICIENT (r)	0.995
OVERRANGE VOLUME REDUCTION	2
REPLICATE RSD LIMIT (%)	20.0

PROGRAM 1 Sb Ptfrm 7041/204.2

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	4
LAMP CURRENT (mA)	10

0361

Varian SpectrAA 300/400 Zeeman
QC Protocol Report

Ross Analytical Services, Inc.
16433 Foltz Industrial Parkway
Strongsville, Ohio 44136

OPERATOR ESH
DATE 07/11/92
BATCH IEA

QC PROTOCOL PARAMETERS

QC STANDARD POSITION	45
IF THERE IS AN ERROR	STOP
QC SPIKE POSITION	44
RECOVERY LIMITS (%)	85 TO 115
RECOVERY MINIMUM LIMIT (%)	40
CORRELATION COEFFICIENT (r)	0.995
OVERRANGE VOLUME REDUCTION	2
REPLICATE RSD LIMIT (%)	20.0

PROGRAM 1 Sb Ptfrm 7041/204.2

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	4
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	217.6
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	1
BACKGROUND CORRECTION	ON
MAXIMUM ABSORBANCE	2.00

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	90	5.0	3.0	NORMAL	NO
2	90	25.0	3.0	NORMAL	NO
3	700	10.0	3.0	NORMAL	NO
4	700	20.0	3.0	NORMAL	NO
5	700	2.0	0.0	NORMAL	NO
6	1700	3.0	0.0	NORMAL	YES

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8	1700	1.0	3.0	NORMAL	NO
9	2500	1.0	3.0	NORMAL	NO
10	2500	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (fL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	0
STANDARD 1	4	16	0
STANDARD 2	8	12	0
STANDARD 3	12	8	0
STANDARD 4	16	4	0
STANDARD 5	20	0	0
SAMPLE	20	0	0

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 90
INJECT RATE 3

QC PROTOCOL PARAMETERS

QC STANDARD RATE	9
QC STANDARD VOLUME (fL)	20
QC STANDARD CONCENTRATION	40.0 ug/l
QC STANDARD LIMITS (%)	90 TO 110
QC SPIKE RATE	9
QC SPIKE VOLUME (fL)	4
QC SPIKE CONCENTRATION	150.0 ug/l
MATRIX SPIKE CONCENTRATION	30.0 ug/l
REQUIRED DETECTION LIMIT	0.1 ug/l

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK	0.0		0.002	0.002
QC				11Jul92 21:22
STANDARD 1	30.0	0.0	0.170	0.170
QC				11Jul92 21:23
STANDARD 2	60.0	0.0	0.335	0.335
QC				11Jul92 21:25
STANDARD 3	90.0	0.0	0.475	0.475
QC				11Jul92 21:27
STANDARD 4	120.0	0.0	0.613	0.613
QC				11Jul92 21:29
STANDARD 5	150.0	0.0	0.684	0.684
QC				11Jul92 21:31

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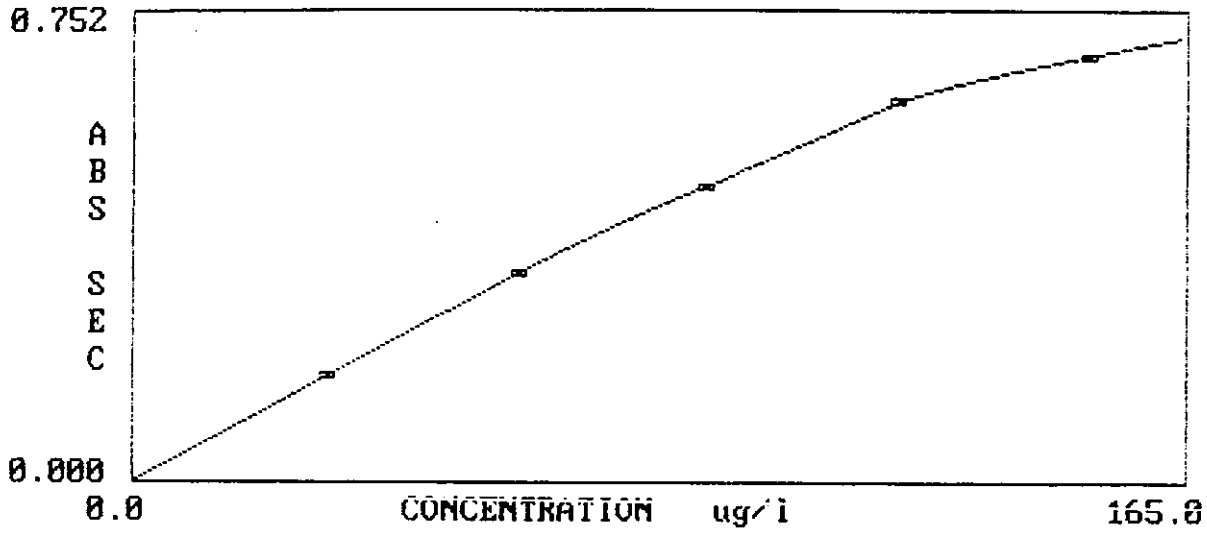

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK QC	0.0		0.009	0.009 11Jul92 21:34
QCSTANDARD QC	38.8	0.0	0.219	0.219 11Jul92 21:36 %R = 96.9
QCBLANK QC	-1.0	0.0	-0.006	-0.006 11Jul92 21:38 ABS = -0.004
178-12A QC	-1.3	0.0	-0.007	-0.007 11Jul92 21:40
178-13A QC	-1.8	0.0	-0.010	-0.010 11Jul92 21:41 RPD = -37.2
178-14A	-1.2	0.0	-0.007	-0.007

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SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-15A QC	1.1	0.0	0.006	0.006 11Jul92 21:45
178-16A QC	-0.0	0.0	-0.000	-0.000 11Jul92 21:47
178-17A QC	2.1	0.0	0.012	0.012 11Jul92 21:49
178-17AS QC	8.2	0.0	0.046	0.046 11Jul92 21:50
178-17ASD QC	5.6	0.0	0.032	0.032 11Jul92 21:52
PB3 3050G QC	-2.5	0.0	-0.014	-0.014 11Jul92 21:54
QCSPIKE QC	26.8	0.0	0.152	0.152 11Jul92 21:56 %R = 97.7
QCSTANDARD QC	33.3	0.0 Q	0.189	0.189 11Jul92 21:57 %R = 83.3
BLANK QC	0.0		0.009	0.009 11Jul92 22:00
QCSTANDARD QC	37.0	0.0	0.209	0.209 11Jul92 22:02 %R = 92.4
QCBLANK QC	0.0	0.0	0.000	0.000 11Jul92 22:04 ABS = 0.004
PB4 3050G QC	1.4	0.0	0.008	0.008 11Jul92 22:05
LCS 2 3050G QC	57.7	0.0	0.323	0.323 11Jul92 22:07 RPD = 190.4
178-18A QC	6.1	0.0	0.034	0.034 11Jul92 22:09 %R = -172.3
178-19A QC	6.5	0.0	0.037	0.037 11Jul92 22:11
178-20A QC	3.7	0.0	0.021	0.021 11Jul92 22:13
178-21A QC	1.7	0.0	0.010	0.010 11Jul92 22:14

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178-22A QC	111.7	0.0	0.570	0.570 11Jul92 22:16
178-23A QC	OVER	0.0	1.703	1.703 11Jul92 22:18

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-23A QC	OVER	0.0	1.668	1.668 11Jul92 22:20 DF = 2.00
178-23A QC	OVER	0.0	1.263	1.263 11Jul92 22:21 DF = 4.00
178-23A QC	864.8	0.0	0.460	0.460 11Jul92 22:23 DF = 10.00
178-24A QC	OVER	0.0	1.826	1.826 11Jul92 22:25
178-24A QC	OVER	0.0	1.807	1.807 11Jul92 22:26 DF = 2.00
178-24A QC	OVER	0.0	1.354	1.354 11Jul92 22:28 DF = 4.00
178-24A QC	1094.4	0.0	0.564	0.564 11Jul92 22:30 DF = 10.00
QCSPIKE QC	OVER	0.0	1.027	1.027 11Jul92 22:32 DF = 10.00
QCSPIKE QC	OVER D	0.0	0.739	0.739 11Jul92 22:34 DF = 20.00 REDUCED SAMPLE VOLUME LESS THAN 1fL
178-24A QC	-9.7	0.0	-0.003	-0.003 11Jul92 22:35 DF = 20.00
BLANK QC	0.0		-0.014	-0.014 11Jul92 22:40
QCSTANDARD QC	36.1	0.0	0.204	0.204 11Jul92 22:42 %R = 90.4
QCBLANK QC	1.0	0.0	0.006	0.006 11Jul92 22:44 ABS = 0.007

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178-25A QC	78.7	0.0	0.428	0.428 11Jul92 22:45	
178-26A QC	9.8	0.0	0.055	0.055 11Jul92 22:47 RPD = 155.8	000055

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-27A QC	117.7	0.0	0.602	0.602 11Jul92 22:49 %R = 359.6
178-27AMS QC	148.9	0.0	0.682	0.682 11Jul92 22:51
178-27AMSD QC	63.0	0.0	0.350	0.350 11Jul92 22:52
178-28A QC	104.7	0.0	0.543	0.543 11Jul92 22:54
PB 5 7/10 QC	-0.2	0.0	-0.001	-0.001 11Jul92 22:56
PB 6 7/10 QC	-1.2	0.0	-0.007	-0.007 11Jul92 22:58
LCS 7/10 QC	51.9	0.0	0.291	0.291 11Jul92 22:59
QCSPIKE QC	69.5	0.0 N	0.382	0.382 11Jul92 23:01 %R = 58.5 %R FAILED, REPEAT BY STANDARD ADDITIONS
QCSTANDARD QC	33.2	0.0 Q	0.188	0.188 11Jul92 23:03 %R = 83.0

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
QCSTANDARD QC	46.5	0.0 Q	0.231	0.231 11Jul92 23:19 %R = 116.3
BLANK QC	0.0		0.032	0.032 11Jul92 23:21
QCSTANDARD QC	40.8	0.0	0.208	0.208 11Jul92 23:23 %R = 102.1
QCBLANK QC	-0.8	0.0	-0.004	-0.004 11Jul92 23:25 ABS = -0.002

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ROSS ANALYTICAL SERVICES

000056

Analytical Data Sheet for Metals

Client(s) IEA Analyst ESH

Test As Date 7/11/92 Checker [illegible]

Method No. _____ SOP No. _____ Instrument SPECTRAA-400

Sample Number	Dilution	Reading ug/L	Spike	Recovery	Final Conc. mg/kg
ICV		40.0	40	100%	
ICB		1.7			<PQL
PB1 3050G 7-6-92		0.3			<PQL
PB2 3050G 7-6-92		-0.0			<PQL
LCS 3050G 7-6-92		70.8	50	142%	~~4.5~~ corr
92-06-178-01A		119.4			11.5
-02A		134.6			14.2
-03A		196.2			20.7
-04A		92.1		9.69	~~9.69~~ corr
-04A-S		218.9	50	~~254%~~	21.9
-04ASD		231.4		~~279%~~	22.9
CCV ~~0~~		40.2	40	100%	
CCB		-0.3			<PQL
92-06-178-05A		154.7			16.3
-06A		194.9			20.5
-07A		161.8			17.0
-08A		97.4			9.37
-09A		82.1			8.64
-10A		48.8			5.14
-11A		78.5			8.26
-11A-S		143.2		~~129%~~	
-11A-SD		123.4		~~89.8%~~	
CCV		39.1	40	97.8%	

CCB 0.9 <PQL

ROSS ANALYTICAL SERVICES

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Analytical Data Sheet for Metals

Client(s) IEA Analyst ESH

Test As Date 7/11/92 Checker CJM

Method No. _____ SOP No. _____ Instrument SPECTRAA 400

Sample Number	Dilution	Reading	Spike	Recovery	Final Conc.
PB1 3050G 7-10-92		-0.6			<PQL
PB2 3050G 7-10-92		0.0			<PQL
~~LCS 3050G 7-10-92~~ CCV		42.6	40	106%	
~~CCB~~		~~0.0~~ -0.1			<PQL
~~LCS 3050G 7-10-92~~ CCV		39.3	50	78.6%	
92C178-17A		1155.9			122
-17A.S		1150.1		N/A	
-17A.SD		1187.1		N/A	

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ROSS ANALYTICAL SERVICES

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Analytical Data Sheet for Metals

Client(s) IEA Analyst EJH

Test A.S Date 7/11/92 Checker CDM

Method No. _____ SOP No. _____ Instrument SPECTRAA-400

Sample Number	Dilution	Reading	Spike	Recovery	Final Conc.
92-06-178-12A		96.4			9.84
-13A		100.7			10.4
-14A		90.8			9.27
-15A		1145.8			119
-16A		1082.3			113
PB130506 7-~~9-2~~-7A		1.8			<PQL
PB2.3050G 7-~~9-2~~-7A-S		3.2			
LCS 3050G 7-~~9-2~~-7A-SD		41.1	50	82.2%	
92-06-178-18A		66.5			6.93
-19A		67.6			7.12
-20A		66.4			6.85
-21A		115.0			11.7
-22A		20.5			2.11
-23A		25.0			2.58
~~ICP~~ ICCV	36.0	~~34.2~~	40	90%	
CCB	~~0.4~~	~~0.0~~			<PQL
92-06-178-24A		24.3			2.51
-25A		2.5			0.26
-26A		2.0			~~0.40~~ 0.20
-27A		6.9			0.69
-27A-S		52.0	50	90.2%	
-27A-SD		47.1	50	~~80.4%~~	
-28A		7.0			0.72

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PQL

Varian SpectrAA 300/400 Zeeman QC Protocol Report

Ross Analytical Services, Inc.
16433 Foltz Industrial Parkway
Strongsville, Ohio 44136

OPERATOR	ESH
DATE	07/11/92
BATCH	IEA

QC PROTOCOL PARAMETERS

QC STANDARD POSITION	45
IF THERE IS AN ERROR	FLAG AND CONTINUE
QC SPIKE POSITION	44
RECOVERY LIMITS (%)	85 TO 115
RECOVERY MINIMUM LIMIT (%)	40
CORRELATION COEFFICIENT (r)	0.995
OVERRANGE VOLUME REDUCTION	2
REPLICATE RSD LIMIT (%)	20.0

PROGRAM 2 As Ptfrm 7060A/206.2 HF

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	1
LAMP CURRENT (mA)	20
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	193.7
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	1
BACKGROUND CORRECTION	ON
MAXIMUM ABSORBANCE	1.50

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	140	2.0	3.0	NORMAL	NO
2	200	2.0	3.0	NORMAL	NO
3	200	10.0	3.0	NORMAL	NO
4	1000	5.0	3.0	NORMAL	NO
5	1000	20.0	3.0	NORMAL	NO
6	1400	7.0	3.0	NORMAL	NO

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9	2600	2.0	3.0	NORMAL	NO
10	2600	5.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (fL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	25	2
STANDARD 1	5	20	2
STANDARD 2	10	15	2
STANDARD 3	15	10	2
STANDARD 4	20	5	2
STANDARD 5	25	0	2
SAMPLE	25	0	2

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 90
INJECT RATE 3

QC PROTOCOL PARAMETERS

QC STANDARD RATE	9
QC STANDARD VOLUME (fL)	25
QC STANDARD CONCENTRATION	40.0 ug/l
QC STANDARD LIMITS (%)	90 TO 110
QC SPIKE RATE	9
QC SPIKE VOLUME (fL)	5
QC SPIKE CONCENTRATION	30.0 ug/l
MATRIX SPIKE CONCENTRATION	150.0 ug/l
REQUIRED DETECTION LIMIT	1.0 ug/l

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK QC	0.0		0.087	0.087 12Jul92 01:10
BLANK QC	0.0		-0.076	-0.076 12Jul92 01:13
STANDARD 1 QC	30.0	0.0	0.182	0.182 12Jul92 01:15
BLANK QC	0.0		-0.015	-0.015 12Jul92 01:18
STANDARD 1 QC	30.0	0.0	0.174	0.174 12Jul92 01:20
STANDARD 2 QC	60.0	0.0	0.337	0.337 12Jul92 01:22

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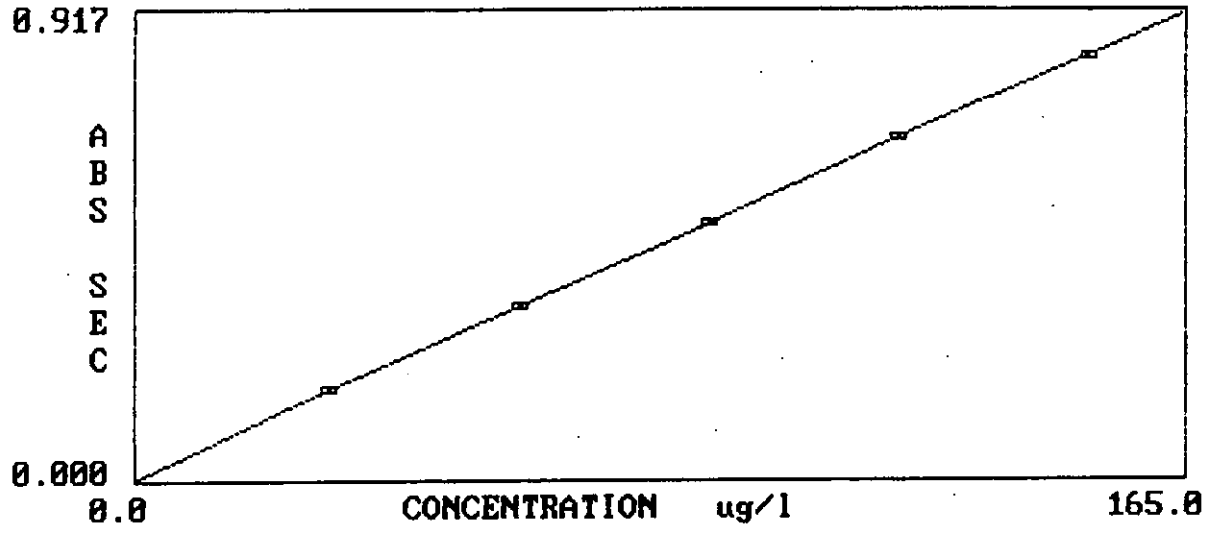
QC				12Jul92	01:24
STANDARD 4 QC	120.0	0.0	0.673	0.673 12Jul92	01:26

000061

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS	
STANDARD 5 QC	150.0	0.0	0.834	0.834 12Jul92	01:28



QCSTANDARD QC	40.0	0.0	0.229	0.229 12Jul92 %R =	01:30 100.0
QCBLANK QC	1.7	0.0	0.010	0.010 12Jul92 ABS =	01:32 0.010
PB 1 3050G QC	0.3	0.0	0.002	0.002 12Jul92	01:34
PB2 3050G QC	-0.0	0.0	-0.000	-0.000 12Jul92 RPD =	01:36 236.3
LCS 3050G	70.8	0.0	0.397	0.397	

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SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-01A QC	119.4	0.0	0.670	0.670 12Jul92 01:39
178-02A QC	134.6	0.0	0.753	0.753 12Jul92 01:41
178-03A QC	OVER	0.0	0.946	0.946 12Jul92 01:43
178-03A QC	196.2	0.0	0.527	0.527 12Jul92 01:45 DF = 2.08
178-04A QC	92.1	0.0	0.515	0.515 12Jul92 01:47
178-04AMS QC	OVER	0.0	0.993	0.993 12Jul92 01:48
178-04AMS QC	218.9	0.0	0.589	0.589 12Jul92 01:50 DF = 2.08
178-04AMSD QC	OVER	0.0	1.019	1.019 12Jul92 01:52
178-04AMSD QC	231.4	0.0	0.623	0.623 12Jul92 01:54 DF = 2.08
QCSPIKE QC	302.5	0.0 N	0.809	0.809 12Jul92 01:55 DF = 2.08 %R = 569.0 %R FAILED, REPEAT BY STANDARD ADDITIONS
QCSTANDARD QC	40.2	0.0	0.230	0.230 12Jul92 01:57 %R = 100.4
QCBLANK QC	-0.3	0.0	-0.002	-0.002 12Jul92 01:59 ABS = -0.002
178-05A QC	154.7	0.0	0.859	0.859 12Jul92 02:01
178-06A QC	OVER	0.0	0.952	0.952 12Jul92 02:03
178-06A QC	194.9	0.0	0.524	0.524 12Jul92 02:04 DF = 2.08
178-07A QC	161.8	0.0	0.896	0.896 12Jul92 02:06

QC				12Jul92 02:08
178-09A	82.1	0.0	0.460	0.460
QC				12Jul92 02:10

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SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-10A	48.8	0.0	0.277	0.277
QC				12Jul92 02:12
178-11A	78.5	0.0	0.440	0.440
QC				12Jul92 02:13
178-11AMS	143.2	0.0	0.798	0.798
QC				12Jul92 02:15
178-11AMSD	123.4	0.0	0.692	0.692
QC				12Jul92 02:17
QCSPIKE	141.1	0.0	0.787	0.787
QC		N		12Jul92 02:19
				%R = 295.9
				%R FAILED, REPEAT BY STANDARD ADDITIONS
QCSTANDARD	39.1	0.0	0.224	0.224
QC				12Jul92 02:21
				%R = 97.8
QCBLANK	0.9	0.0	0.005	0.005
QC				12Jul92 02:23
				ABS = 0.005
178-12A	96.4	0.0	0.539	0.539
QC				12Jul92 02:25
178-13A	100.7	0.0	0.564	0.564
QC				12Jul92 02:26
178-14A	90.8	0.0	0.508	0.508
QC				12Jul92 02:28
178-15A	OVER	0.0	3.847	3.847
QC				12Jul92 02:30
178-15A	OVER	0.0	2.619	2.619
QC				12Jul92 02:32
				DF = 2.08
178-15A	OVER	0.0	1.361	1.361
QC				12Jul92 02:34
				DF = 4.17
178-15A	1145.8	0.0	0.768	0.768
QC				12Jul92 02:36
				DF = 8.33
178-16A	OVER	0.0	3.977	3.977

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178-16A QC	OVER	0.0	2.807	2.807 12Jul92 02:39 DF = 2.08
178-16A QC	OVER	0.0	1.452	1.452 12Jul92 02:41 DF = 4.17

000064

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-16A QC	1082.3	0.0	0.727	0.727 12Jul92 02:43 DF = 8.33
178-17A QC	OVER	0.0	4.000	4.000 12Jul92 02:45
178-17A QC	OVER	0.0	2.931	2.931 12Jul92 02:47 DF = 2.08
178-17A QC	OVER	0.0	1.575	1.575 12Jul92 02:48 DF = 4.17
178-17A QC	1155.9	0.0	0.775	0.775 12Jul92 02:50 DF = 8.33
178-17AS QC	OVER	0.0	4.000	4.000 12Jul92 02:52
178-17AS QC	OVER	0.0	2.953	2.953 12Jul92 02:54 DF = 2.08
178-17AS QC	OVER	0.0	1.474	1.474 12Jul92 02:56 DF = 4.17
178-17AS QC	1150.1	0.0	0.771	0.771 12Jul92 02:57 DF = 8.33
178-17ASD QC	OVER	0.0	4.000	4.000 12Jul92 02:59
178-17ASD QC	OVER	0.0	2.798	2.798 12Jul92 03:01 DF = 2.08
178-17ASD QC	OVER	0.0	1.388	1.388 12Jul92 03:03 DF = 4.17
178-17ASD QC	1187.1	0.0	0.794	0.794 12Jul92 03:05 DF = 8.33
PB3 3050G	4.1	0.0	0.024	0.024

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000065

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK	0.0		0.009	0.009
QC				12Jul92 19:18
QCSTANDARD	32.9	0.0	0.190	0.190
QC		Q		12Jul92 19:20
				%R = 82.3
SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK	0.0		-0.004	-0.004
QC				12Jul92 19:23
QCSTANDARD	37.4	0.0	0.215	0.215
QC				12Jul92 19:25
				%R = 93.4
QCBLANK	37.3	0.0	0.214	0.214
QC				12Jul92 19:27
				ABS = 0.215
PB3 3050G	1.7	0.0	0.010	0.010
QC				12Jul92 19:28
PB4 3050G	9.8	0.0	0.057	0.057
QC				12Jul92 19:30
				RPD = 141.9
LC 2 3050G	43.9	0.0	0.251	0.251
QC				12Jul92 19:32
				%R = 22.8
178-18A	74.2	0.0	0.416	0.416
QC				12Jul92 19:34
178-19A	73.9	0.0	0.415	0.415
QC				12Jul92 19:36
178-20A	74.8	0.0	0.419	0.419
QC				12Jul92 19:38
178-21A	140.8	0.0	0.786	0.786
QC				12Jul92 19:39
178-22A	8.3	0.0	0.048	0.048
QC				12Jul92 19:41
178-23A	29.2	0.0	0.169	0.169
QC				12Jul92 19:43
MSPIKE	53.0	0.0	0.300	0.300
QC		N		12Jul92 19:45
				%R = 396.4
				%R FAILED, REPEAT BY STANDARD ADDITIONS
BLANK	0.0		0.027	0.027
QC				12Jul92 19:48
QCSTANDARD	37.8	0.0	0.217	0.217
QC				12Jul92 19:49

18, 19, 20, 21
1:10

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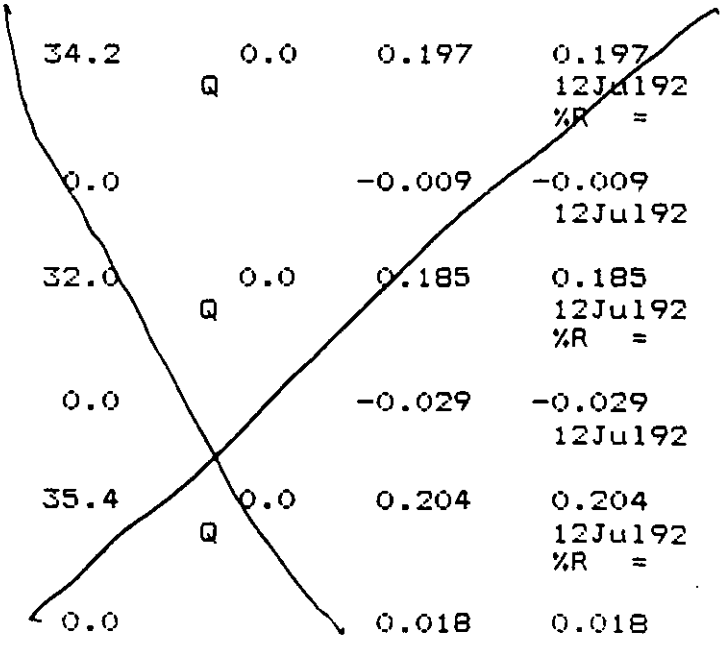
QCBLANK QC	0.9	0.0	0.005	0.005 12Jul92 19:51 ABS = 0.008
PB3 3050G QC	1.8	0.0	0.010	0.010 12Jul92 19:53

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
PB4 3050G QC	3.2	0.0	0.018	0.018 12Jul92 19:55 RPD = 56.1
LCS 2 3050G QC	41.1	0.0	0.235	0.235 12Jul92 19:57 %R = 25.3
178-18A QC	66.5	0.0	0.374	0.374 12Jul92 19:59
178-19A QC	67.6	0.0	0.379	0.379 12Jul92 20:01
178-20A QC	66.4	0.0	0.373	0.373 12Jul92 20:02
178-21A QC	115.0	0.0	0.645	0.645 12Jul92 20:04
178-22A QC	20.5	0.0	0.118	0.118 12Jul92 20:06
178-23A QC	25.0	0.0	0.145	0.145 12Jul92 20:08
QCSPIKE QC	46.1	0.0 N	0.262	0.262 12Jul92 20:10 %R = 351.1 %R FAILED, REPEAT BY STANDARD ADDITIONS
QCSTANDARD QC	34.2	0.0 Q	0.197	0.197 12Jul92 20:12 %R = 85.6
BLANK QC	0.0		-0.009	-0.009 12Jul92 20:15
QCSTANDARD QC	32.0	0.0 Q	0.185	0.185 12Jul92 20:17 %R = 80.1
BLANK QC	0.0		-0.029	-0.029 12Jul92 20:19
QCSTANDARD QC	35.4	0.0 Q	0.204	0.204 12Jul92 20:21 %R = 88.6
BLANK	0.0		0.018	0.018



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SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
QCSTANDARD QC	36.0	0.0	0.207	0.207 12Jul92 20:27 %R = 90.1
QCBLANK QC	-0.4	0.0	-0.002	-0.002 12Jul92 20:28 ABS = -0.001
178-24A QC	24.3	0.0	0.141	0.141 12Jul92 20:30
178-25A QC	2.5	0.0	0.014	0.014 12Jul92 20:32 RPD = 163.3
178-26A QC	2.0	0.0	0.011	0.011 12Jul92 20:34 %R = -1.7
178-27A QC	6.9	0.0	0.040	0.040 12Jul92 20:36
178-27AMS QC	52.0	0.0	0.295	0.295 12Jul92 20:37
178-27AMSD QC	47.1	0.0	0.268	0.268 12Jul92 20:39
178-28A QC	7.0	0.0	0.040	0.040 12Jul92 20:41
PB 5 7/10 QC	-0.6	0.0	-0.003	-0.003 12Jul92 20:43
PB 6 7/10 QC	0.0	0.0	0.000	0.000 12Jul92 20:45
QCSPIKE QC	138.8	0.0 N	0.775	0.775 12Jul92 20:47 %R = 462.8 %R FAILED, REPEAT BY STANDARD ADDITIONS
QCSTANDARD QC	44.7	0.0 Q	0.255	0.255 12Jul92 20:49 %R = 111.9
BLANK QC	0.0		0.009	0.009 12Jul92 20:52
QCSTANDARD QC	42.6	0.0	0.243	0.243 12Jul92 20:54 %R = 106.4
QCBLANK QC	-0.1	0.0	-0.001	-0.001 12Jul92 20:55 ABS = 0.001
LCS 7/10	39.3	0.0	0.225	0.225

QCSTANDARD QC	37.6	0.0	0.216	0.216 12Jul92 20:59 %R = 94.0	
QCBLANK QC	-1.0	0.0	-0.006	-0.006 12Jul92 21:01 ABS = -0.004	**000068**

ROSS ANALYTICAL SERVICES

PQL = 2.0

Analytical Data Sheet for Metals

000069

Client(s) IEA Analyst EH

Test Pb Date 7/9/92 Checker SMM

Method No. 7421 SOP No. _____ Instrument GFAA

Sample Number	Dilution	ug/l Reading	Spike	Recovery	Final Conc.
CCV		41.4	40.0	104%	mg/kg
CCB		-0.9			
PB 1 30506		0.7			<PQL
PB 2 30506		-0.3			<PQL
LCS rerun		59.8	50.0	120%	
178-01A		158.3			15.2 ✓
178-02A		270.7			28.5 ✓
178-03A		156.7			16.5 ✓
178-04A		275.5			24.0 ~~30.0~~
178-04A ms		456.1	50.0 5	EH 78 3009% 361 332	45.6 ~~456.1~~
178-04A msd		443.3	50.0 4.75	EH 74 3009% 301	~~44.2~~ ~~44.3~~ 43.3
CCV		36.4	40.0	92%	
CCB		-0.2			
178-05A		195.4			20.6 ✓
178-06A		136.8			14.4 ✓
178-07A		200.4			21.1 ✓
178-08A		286.0			27.5 ✓
178-09A		278.8			29.3 ✓
178-10A		125.5			13.2
178-11A		197.5			20.8
178-11A ms		254.5	50.0 4.9	EH 84% 361	25.0
178-11A msd		208.9	50.0 4.75	2%	~~95~~ 20.9
CCV		37.1	40.0	93%	✓
CCB		-0.0			

ROSS ANALYTICAL SERVICES

Analytical Data Sheet for Metals

Client(s) IEA Analyst EH

Test Pb Date 7/9/92 Checker BMM

Method No. 7421 SOP No. _____ Instrument _____

Sample Number	Dilution	Reading	Spike	Recovery	Final Conc.
CCV		39.8	40.0	100%	
CCB		-1.2			<PQL
178-15A		612.3			63.8
178-16A		733.0			76.4
178-17A Rerun		1391			
178-17A·5 Rerun post	1:1000	19.5	20		
178-17A·50 Rerun post	1:1000	23.4	20		
PB 3		04			<PQL
PB 4		-0.4			<PQL
CCV		39.5	40.0	99%	
CCB		-0.6			<PQL
LCS 2 3050 G		54.5	50.0	109%	
178-18A	1:50	129.1			673.
178-19A	1:50	136.6			719. ✓
178-20A	1:50	133.5			688.
178-21A	1:50	518.8			2697. ✓
178-22A Rerun	1:500	(1.4)			
178-23A	1:500	12.4			639.
178-24A Rerun	1:500	(4.5)			
CCV		37.5	40.0	94%	
CCB		-0.8			<PQL
178-25A	1:100	15.9			164. 165.7 EH
178-26A Rerun	1:100	(5.0)			

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ROSS ANALYTICAL SERVICES 000071

Analytical Data Sheet for Metals

Client(s) IEA Analyst EH

Test Pb Runs. Date 7/17/92 Checker BAM

Method No. 7421 SOP No. _____ Instrument GFAA

Sample Number	Dilution	ug/L Reading	Spike	Recovery	Final Conc.
CCV		40.9	40.0	102%	mg/kg.
CCB		-1.3			
LCS 1 30.50 G		67.1	50.0	134%	
178-17A	1:50	128.0			667
178-17A-MS	1:50	142.8	50.0 (S7)	1885	765
178-17A-MSD	1:50	161.6	50.0 (S7)	3365	842
178-22A	1:50	11.6			59.8
178-24A	1:50	23.3			120.1
178-26A	1:50	11.4			57.6
LCS 7/10		48.2	50.0	96%	
CCV		41.2	40.0	103%	
CCB		-0.7			

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ROSS ANALYTICAL SERVICES

Analytical Data Sheet for Metals

000072

Client(s) IEA Analyst EH

Test Pb Date 7/9/92 Checker [illegible]

Method No. 7421 SOP No. _____ Instrument _____

Sample Number	Dilution	Reading	Spike	Recovery	Final Conc.
178-27A	1:100	24.9			249.
178-27A MS	1:100	24.9	50.0 5.15	~~97%~~ 155% ✓	257
178-27A MSD	1:100	10.6	50.0 5.17	~~97%~~ 109% ✓	109
178-28A	1:100	21.1			218.
PB5 7/10		0.2			
PB6 7/10		-0.1			
LCS 7/10	Reran	~~36.5~~	50.0		
CCV		37.3	40.0	93%	
CCB		-0.8			
CCV		41.4	40	104%	
CCB		0.0			<PQL
92-06-178-12A		148.3			15.1
-13A		155.1			16.0
-14A		243.0			24.8
CCV		40.5	40	101%	
CCB		-1.3			<PQL

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Varian SpectrAA 300/400 Zeeman QC Protocol Report

Ross Analytical Services, Inc.
16433 Foltz Industrial Parkway
Strongsville, Ohio 44136

OPERATOR ESH
DATE 07/09/92
BATCH IEA

QC PROTOCOL PARAMETERS

QC STANDARD POSITION	45
IF THERE IS AN ERROR	STOP
QC SPIKE POSITION	44
RECOVERY LIMITS (%)	85 TO 115
RECOVERY MINIMUM LIMIT (%)	40
CORRELATION COEFFICIENT (r)	0.995
OVERRANGE VOLUME REDUCTION	2
REPLICATE RSD LIMIT (%)	20.0

PROGRAM 7 Pb Ptfrm 7421/239.2 M1

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	7
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	283.3
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	1
BACKGROUND CORRECTION	ON
MAXIMUM ABSORBANCE	1.40

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	300	10.0	3.0	NORMAL	NO
2	300	40.0	3.0	NORMAL	NO
3	900	10.0	3.0	NORMAL	NO
4	900	15.0	3.0	NORMAL	NO
5	900	1.0	0.0	NORMAL	NO
6	2300	4.0	0.0	NORMAL	YES
7	2300	3.0	0.0	NORMAL	YES
8	2450	2.0	3.0	NORMAL	NO
9	40	20.0	3.0	NORMAL	NO

SAMPLER PARAMETERS

VOLUMES (fL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	1
STANDARD 1	4	16	1
STANDARD 2	8	12	1
STANDARD 3	12	8	1
STANDARD 4	16	4	1
STANDARD 5	20		1
SAMPLE	20		1

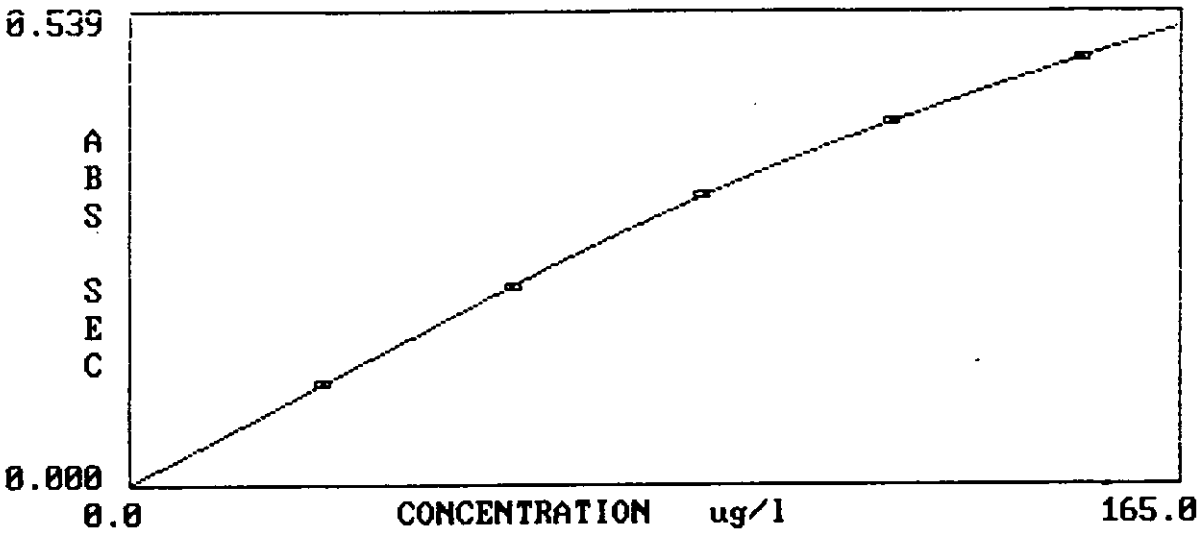
RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 90
INJECT RATE 1

QC PROTOCOL PARAMETERS

QC STANDARD RATE	9
QC STANDARD VOLUME (fL)	20
QC STANDARD CONCENTRATION	40.0 ug/l
QC STANDARD LIMITS (%)	90 TO 110
QC SPIKE RATE	9
QC SPIKE VOLUME (fL)	4
QC SPIKE CONCENTRATION	150.0 ug/l
MATRIX SPIKE CONCENTRATION	30.0 ug/l
REQUIRED DETECTION LIMIT	1.0 ug/l

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK	0.0		-0.004	-0.004
QC				09Jul92 20:22
STANDARD 1	30.0	0.0	0.115	0.115
QC				09Jul92 20:25
STANDARD 2	60.0	0.0	0.229	0.229
QC				09Jul92 20:28
STANDARD 3	90.0	0.0	0.332	0.332
QC				09Jul92 20:30
STANDARD 4	120.0	0.0	0.417	0.417
QC				09Jul92 20:33
STANDARD 5	150.0	0.0	0.490	0.490
QC				09Jul92 20:36



SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK QC	0.0		0.003	0.003 09Jul92 20:41
QCSTANDARD QC	41.4	0.0	0.158	0.158 09Jul92 20:43 %R = 103.6
QCBLANK QC	-0.9	0.0	-0.004	-0.004 09Jul92 20:46 ABS = -0.004
PB 1 3050G QC	0.7	0.0	0.003	0.003 09Jul92 20:48
PB2 3050G QC	-0.3	0.0	-0.001	-0.001 09Jul92 20:51 RPD = 600.0
LCS 3050G QC	59.8	0.0	0.228	0.228 09Jul92 20:53 %R = 200.6
7' 1A QC	158.3	0.0	0.509	0.509 09Jul92 20:56
178-02A QC	OVER	0.0	0.829	0.829 09Jul92 20:58

good 50 spk.

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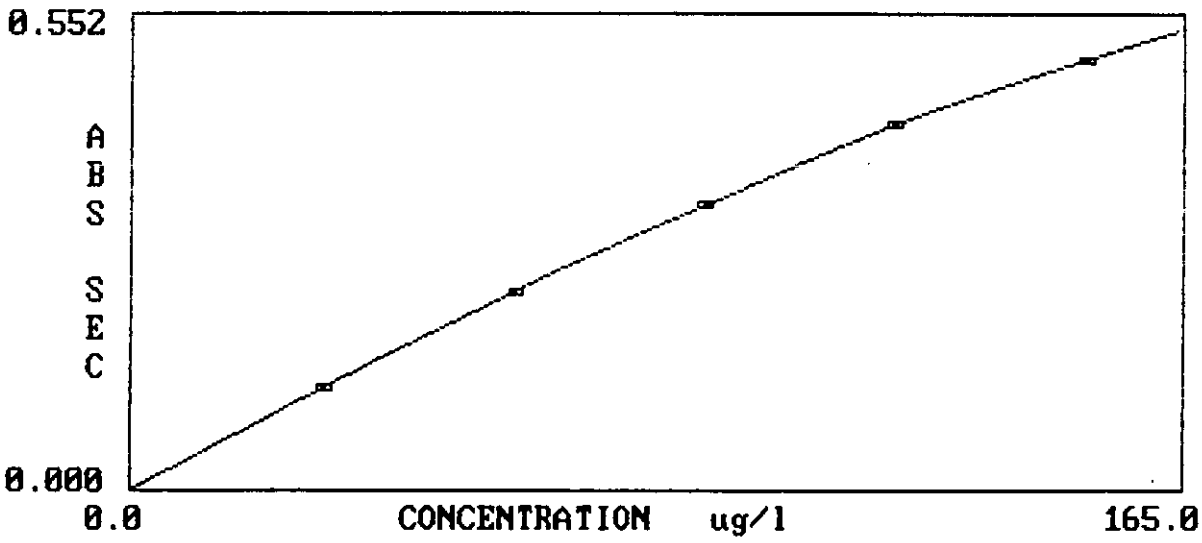
SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK QC	0.0		-0.004	-0.004 09Jul92 21:10
STANDARD 1 QC	30.0	0.0	0.120	0.120 09Jul92 21:13
STANDARD 2 QC	60.0	0.0	0.231	0.231 09Jul92 21:15
STANDARD 3 QC	90.0	0.0	0.331	0.331 09Jul92 21:18
STANDARD 4 QC	120.0	0.0	0.425	0.425 09Jul92 21:21
STANDARD 5 QC	150.0	0.0	0.502	0.502 09Jul92 21:23



QCSTANDARD QC	37.0	0.0	0.146	0.146 09Jul92 21:26 %R = 92.6
QCBLANK QC	-0.2	0.0	-0.001	-0.001 09Jul92 21:29 ABS = -0.002

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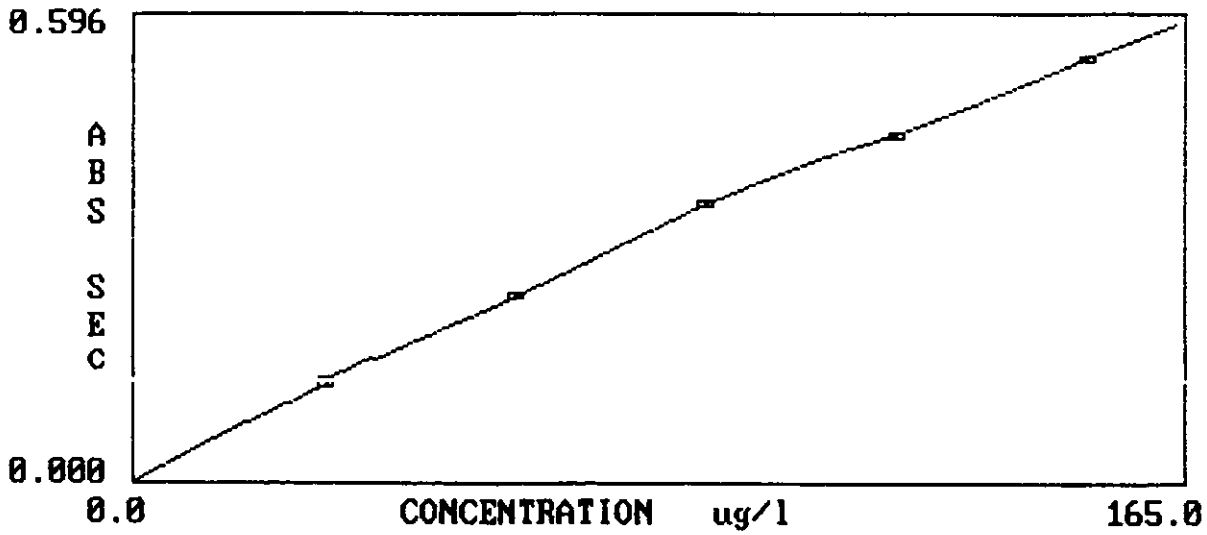
SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
PB 3050G QC	1.2	0.0	0.005	0.005 09Jul92 21:31
PB 3050G QC	0.8	0.0	0.003	0.003 09Jul92 21:34 RPD = 32.4
LCS 3050G QC	99.1	0.0	0.360	0.360 09Jul92 21:36 %R = 327.7
178-01A QC	154.2	0.0	0.512	0.512 09Jul92 21:39
178-02A QC	OVER	0.0	0.829	0.829 09Jul92 21:41
178-02A QC	270.7	0.0	0.466	0.466 09Jul92 21:44 DF = 2.00
178-03A QC	156.7	0.0	0.518	0.518 09Jul92 21:46
178-04A QC	OVER	0.0	0.843	0.843 09Jul92 21:49
1 -04A QC	275.5	0.0	0.472	0.472 09Jul92 21:51 DF = 2.00
178-04AMS QC	OVER	0.0	1.293	1.293 09Jul92 21:53
178-04AMS QC	OVER	0.0	0.773	0.773 09Jul92 21:56 DF = 2.00
178-04AMS QC	456.1	0.0	0.407	0.407 09Jul92 21:58 DF = 4.00
178-04AMSD QC	OVER	0.0	1.301	1.301 09Jul92 22:01
178-04AMSD QC	OVER	0.0	0.768	0.768 09Jul92 22:03 DF = 2.00
178-04AMSD QC	443.3	0.0	0.397	0.397 09Jul92 22:05 DF = 4.00
Q IKE QC	OVER	0.0	0.553	0.553 09Jul92 22:08 DF = 4.00

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
QCSPIKE QC	846.4	0.0	0.314	0.314 09Jul92 22:11 DF = 10.00
178-04AMSD QC	430.4	0.0	0.169	0.169 09Jul92 22:13 DF = 10.00
QCSPIKE QC	849.4	0.0 N	0.315	0.315 09Jul92 22:15 DF = 10.00 %R = 139.7 %R FAILED, REPEAT BY STANDARD ADDITIONS
QCSTANDARD QC	36.6	0.0	0.145	0.145 09Jul92 22:18 %R = 91.4
QCBLANK QC	-0.2	0.0	-0.001	-0.001 09Jul92 22:21 ABS = -0.002
178-05A QC	OVER	0.0	0.638	0.638 09Jul92 22:23
178-05A QC	195.4	0.0	0.356	0.356 09Jul92 22:25 DF = 2.00
178-06A QC	136.8	0.0	0.470	0.470 09Jul92 22:28
178-07A QC	OVER	0.0	0.697	0.697 09Jul92 22:30
178-07A QC	200.4	0.0	0.364	0.364 09Jul92 22:33 DF = 2.00
178-08A QC	OVER	0.0	0.852	0.852 09Jul92 22:35
178-08A QC	286.0	0.0	0.485	0.485 09Jul92 22:37 DF = 2.00
178-09A QC	OVER	0.0	0.802	0.802 09Jul92 22:40
178-09A QC	278.8	0.0	0.476	0.476 09Jul92 22:42 DF = 2.00
178-10A QC	125.5	0.0	0.440	0.440 09Jul92 22:45
178-11A QC	OVER	0.0	0.644	0.644 09Jul92 22:47

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-11A	197.5	0.0	0.359	0.359 09Jul92 22:50 DF = 2.00
178-11AMS QC	OVER	0.0	0.773	0.773 09Jul92 22:52
178-11AMS QC	254.5	0.0	0.445	0.445 09Jul92 22:55 DF = 2.00
178-11AMSD QC	OVER	0.0	0.662	0.662 09Jul92 22:57
178-11AMSD QC	208.9	0.0	0.377	0.377 09Jul92 23:00 DF = 2.00
QCSPIKE QC	291.5	0.0 N	0.492	0.492 09Jul92 23:02 DF = 2.00 %R = 137.5 %R FAILED, REPEAT BY STANDARD ADDITIONS
QCSTANDARD QC	37.1	0.0	0.147	0.147 09Jul92 23:05 %R = 92.7
QCBLANK QC	-0.0	0.0	-0.000	-0.000 09Jul92 23:07 ABS = -0.001
178-12A QC	145.9	0.0	0.492	0.492 09Jul92 23:10
178-13A QC	146.0	0.0	0.492	0.492 09Jul92 23:12
178-14A QC	OVER	0.0	0.734	0.734 09Jul92 23:15
178-14A QC	226.1	0.0	0.404	0.404 09Jul92 23:17 DF = 2.00

BLANK	0.0		-0.000	-0.000	
QC				10Jul92	13:44
STANDARD 1	30.0	0.0	0.128	0.128	
QC				10Jul92	13:47
STANDARD 2	60.0	0.0	0.240	0.240	
QC				10Jul92	13:49
STANDARD 3	90.0	0.0	0.358	0.358	
QC				10Jul92	13:52

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS	
STANDARD 4	120.0	0.0	0.446	0.446	
QC				10Jul92	13:55
STANDARD 5	150.0	0.0	0.542	0.542	
QC				10Jul92	13:57



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QCSTANDARD QC	41.4	0.0	0.172	0.172 10Jul92 14:00 %R = 103.5
QCBLANK QC	0.0	0.0	0.000	0.000 10Jul92 14:03 ABS = 0.000
178-12A QC	148.3	0.0	0.535	0.535 10Jul92 14:05
178-13A QC	155.1	0.0	0.557	0.557 10Jul92 14:07 RPD = 4.5
178-14A QC	OVER	0.0	0.795	0.795 10Jul92 14:10
178-14A QC	243.0	0.0	0.450	0.450 10Jul92 14:13 DF = 2.00 %R = 293.1

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK QC	0.0		0.004	0.004 10Jul92 14:19
QCSTANDARD QC	40.5	0.0	0.169	0.169 10Jul92 14:21 %R = 101.4
QCBLANK QC	-1.3	0.0	-0.006	-0.006 10Jul92 14:24 ABS = -0.005
BLANK QC	0.0		0.001	0.001 10Jul92 14:35
QCSTANDARD QC	48.7	0.0 Q	0.199	0.199 10Jul92 14:37 %R = 121.7
BLANK QC	0.0		-0.005	-0.005 10Jul92 14:41
STANDARD 1 QC	30.0	0.0	0.139	0.139 10Jul92 14:43
STANDARD 2 QC	60.0	0.0	0.258	0.258 10Jul92 14:46
STANDARD 3 QC	90.0	0.0	0.355	0.355 10Jul92 14:49
STANDARD 4 QC	120.0	0.0	0.454	0.454 10Jul92 14:51
STANDARD 5	150.0	0.0	0.591	0.591

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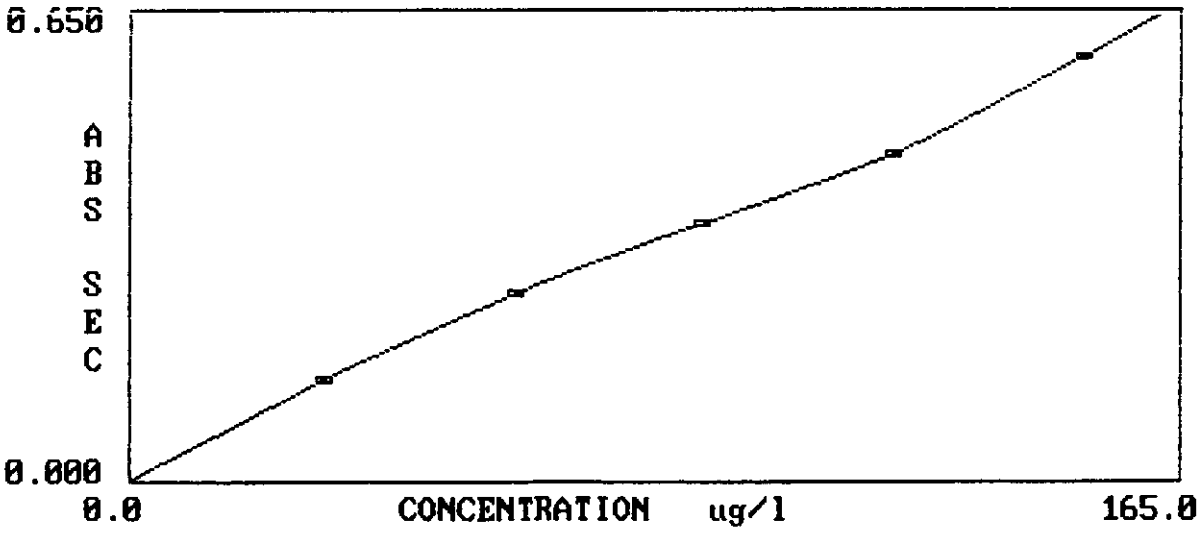

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
QCSTANDARD QC	41.9	0.0	0.189	0.189

10Jul92 14:57

%R = 104.8

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QC				10Jul92 14:59 ABS = -0.002
BLANK QC	0.0		0.003	0.003 10Jul92 15:05
STANDARD QC	39.8	0.0	0.180	0.180 10Jul92 15:07 %R = 99.4
QCBLANK QC	-1.4	0.0	-0.006	-0.006 10Jul92 15:10 ABS = -0.006
178-15A QC	OVER	0.0	0.765	0.765 10Jul92 15:12
178-15A QC	244.3	0.0	0.463	0.463 10Jul92 15:15 DF = 2.00

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK QC	0.0		-0.007	-0.007 10Jul92 15:21
QCSTANDARD QC	39.8	0.0	0.180	0.180 10Jul92 15:24 %R = 99.5
QCBLANK QC	-1.2	0.0	-0.006	-0.006 10Jul92 15:26 ABS = -0.007
178-15A QC	OVER	0.0	1.907	1.907 10Jul92 15:29
178-15A QC	OVER	0.0	1.070	1.070 10Jul92 15:31 DF = 2.00
178-15A QC	612.3	0.0	0.606	0.606 10Jul92 15:34 DF = 4.00
178-16A QC	OVER	0.0	2.034*	2.034* 10Jul92 15:36
178-16A QC	OVER	0.0	1.253	1.253 10Jul92 15:39 DF = 2.00
BLANK QC	0.0		0.000	0.000 10Jul92 15:42
QCSTANDARD QC	39.9	0.0	0.180	0.180 10Jul92 15:45

QCBLANK QC	-0.4	0.0	-0.002	-0.002 10Jul92 15:47 ABS = -0.002
178-15A QC	OVER	0.0	1.845	1.845 10Jul92 15:50
178-15A QC	OVER	0.0	1.116	1.116 10Jul92 15:52 DF = 2.00
178-15A QC	614.8	0.0	0.609	0.609 10Jul92 15:55 DF = 4.00
178-16A QC	OVER	0.0	2.032	2.032 10Jul92 15:57
178-16A QC	OVER	0.0	1.220	1.220 10Jul92 16:00 DF = 2.00

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-16A QC	OVER	0.0	0.668	0.668 10Jul92 16:02 DF = 4.00
178-16A QC	733.0	0.0	0.303	0.303 10Jul92 16:05 DF = 10.00 RPD = 17.5
BLANK QC	0.0		0.003	0.003 10Jul92 16:14
QCSTANDARD QC	40.5	0.0	0.183	0.183 10Jul92 16:16 %R = 101.3
QCBLANK QC	-0.5	0.0	-0.002	-0.002 10Jul92 16:19 ABS = -0.003
178-17A QC	OVER	0.0	2.535	2.535 10Jul92 16:21
178-17A QC	OVER	0.0	1.638*	1.638* 10Jul92 16:24 DF = 2.00
178-17A QC	OVER	0.0	0.923	0.923 10Jul92 16:26 DF = 4.00
178-17A QC	1391.0 139.1	0.0	0.540	0.540 10Jul92 16:29 DF = 10.00

OK
Bmm
7/11/92

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QC				10Jul92 16:31 RPD = 194.5
178-17ASD QC	23.4	0.0	0.109	0.109 10Jul92 16:34 %R = 13.1
[illegible] 3050G QC	0.4	0.0	0.002	0.002 10Jul92 16:36
PB4 3050G QC	58.0	0.0	0.250	0.250 10Jul92 16:39
BLANK QC	0.0		-0.005	-0.005 10Jul92 16:43
QCSTANDARD QC	39.5	0.0	0.179	0.179 10Jul92 16:45 %R = 98.8
QCBLANK QC	-0.6	0.0	-0.003	-0.003 10Jul92 16:48 ABS = -0.004

000085

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
PB4 3050G QC	-0.4	0.0	-0.002	-0.002 10Jul92 16:50
LCS 2 3050G QC	54.5	0.0	0.237	0.237 10Jul92 16:53 RPD = 202.7
178-18A QC	129.1	0.0	0.494	0.494 10Jul92 16:55 %R = 248.6
178-19A QC	136.6	0.0	0.528	0.528 10Jul92 16:58
178-20A QC	133.5	0.0	0.514	0.514 10Jul92 17:00
178-21A QC	OVER	0.0	1.248*	1.248* 10Jul92 17:02
178-21A QC	OVER	0.0	0.838	0.838 10Jul92 17:05 DF = 2.00
178-21A QC	518.8	0.0	0.497	0.497 10Jul92 17:07 DF = 4.00
7 22A QC	1.4	0.0	0.006	0.006 10Jul92 17:10
178-23A QC	12.4	0.0	0.058	0.058 10Jul92 17:12

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QCSPIKE QC	36.8	0.0	0.168	0.168 10Jul92 17:17 %R = 107.4
QCSTANDARD QC	37.5	0.0	0.171	0.171 10Jul92 17:20 %R = 93.8
QCBLANK QC	-0.8	0.0	-0.004	-0.004 10Jul92 17:22 ABS = -0.005
178-25A QC	15.9	0.0	0.074	0.074 10Jul92 17:24
178-26A QC	5.0	0.0	0.023	0.023 10Jul92 17:27
178-27A QC	24.9	0.0	0.116	0.116 10Jul92 17:29

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-27AMS QC	24.9	0.0	0.116	0.116 10Jul92 17:32
178-27AMSD QC	10.6	0.0	0.049	0.049 10Jul92 17:34
178-28A QC	21.1	0.0	0.098	0.098 10Jul92 17:37
PB 5 7/10 QC	0.2	0.0	0.001	0.001 10Jul92 17:39
PB 6 7/10 QC	-0.1	0.0	-0.000	-0.000 10Jul92 17:42
LCS 7/10 QC	36.5	0.0	0.167	0.167 10Jul92 17:44
QCSPIKE QC	69.6	0.0	0.291	0.291 10Jul92 17:47 %R = 110.4
QCSTANDARD QC	37.3	0.0	0.170	0.170 10Jul92 17:49 %R = 93.2
QCBLANK QC	-0.8	0.0	-0.004	-0.004 10Jul92 17:52 ABS = -0.005

Varian SpectrAA 300/400 Zeeman
QC Protocol Report

Ross Analytical Services, Inc.
16433 Foltz Industrial Parkway
Strongsville, Ohio 44136

OPERATOR ESH
DATE 07/12/92
BATCH IEA

QC PROTOCOL PARAMETERS

QC STANDARD POSITION	45
IF THERE IS AN ERROR	FLAG AND CONTINUE
QC SPIKE POSITION	44
RECOVERY LIMITS (%)	85 TO 115
RECOVERY MINIMUM LIMIT (%)	40
CORRELATION COEFFICIENT (r)	0.995
OVERRANGE VOLUME REDUCTION	2
REPLICATE RSD LIMIT (%)	20.0

PROGRAM 7 Pb Ptfrm 7421/239.2 M1

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	7
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	283.3
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	1
BACKGROUND CORRECTION	ON
MAXIMUM ABSORBANCE	1.40

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	300	10.0	3.0	NORMAL	NO
2	300	40.0	3.0	NORMAL	NO
3	900	10.0	3.0	NORMAL	NO
4	900	15.0	3.0	NORMAL	NO
5	900	1.0	0.0	NORMAL	NO
6	2300	4.0	0.0	NORMAL	YES
7	2300	3.0	0.0	NORMAL	YES

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SAMPLER PARAMETERS
VOLUMES (fL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	1
STANDARD 1	4	16	1
STANDARD 2	8	12	1
STANDARD 3	12	8	1
STANDARD 4	16	4	1
STANDARD 5	20		1
SAMPLE	20		1

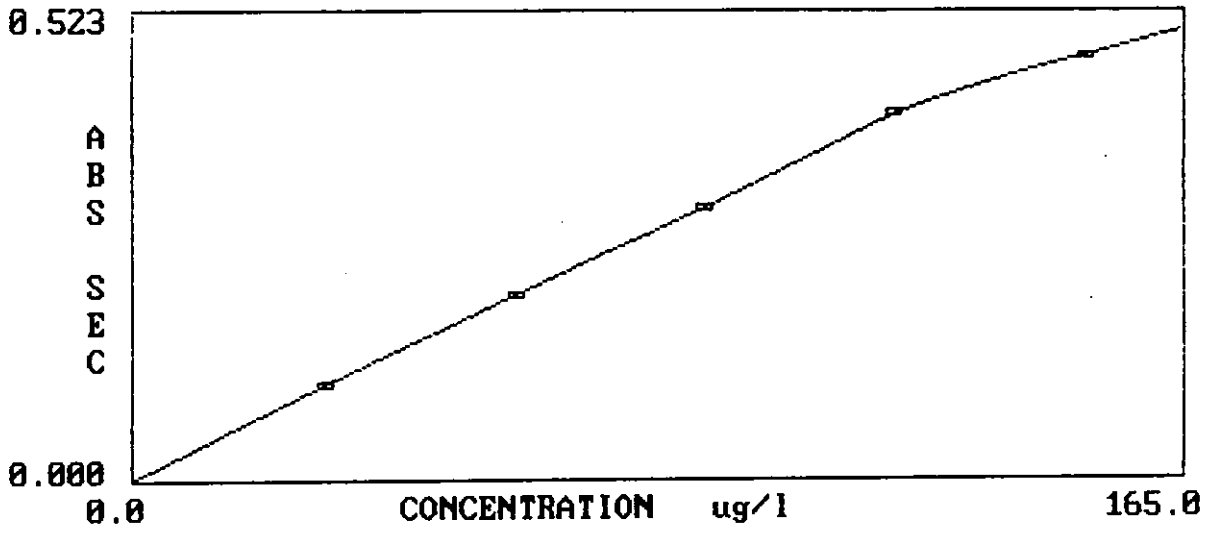
RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 90
INJECT RATE 1

QC PROTOCOL PARAMETERS

QC STANDARD RATE	9
QC STANDARD VOLUME (fL)	20
QC STANDARD CONCENTRATION	40.0 ug/l
QC STANDARD LIMITS (%)	90 TO 110
QC SPIKE RATE	9
QC SPIKE VOLUME (fL)	4
QC SPIKE CONCENTRATION	150.0 ug/l
MATRIX SPIKE CONCENTRATION	30.0 ug/l
REQUIRED DETECTION LIMIT	1.0 ug/l

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK QC	0.0		0.022	0.022 12Jul92 21:19
STANDARD 1 QC	30.0	0.0	0.107	0.107 12Jul92 21:21
STANDARD 2 QC	60.0	0.0	0.209	0.209 12Jul92 21:24
STANDARD 3 QC	90.0	0.0	0.305	0.305 12Jul92 21:27
STANDARD 4 QC	120.0	0.0	0.410	0.410 12Jul92 21:29
STANDARD 5 QC	150.0	0.0	0.476	0.476 12Jul92 21:32



SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
QCSTANDARD QC	36.9	0.0	0.131	0.131 12Jul92 21:35 %R = 92.3
QCBLANK QC	-4.5	0.0	-0.016	-0.016 12Jul92 21:37 ABS = -0.013
BLANK QC	0.0		-0.011	-0.011 12Jul92 21:41
QCSTANDARD QC	40.9	0.0	0.144	0.144 12Jul92 21:43 %R = 102.2
QCBLANK QC	-1.3	0.0	-0.005	-0.005 12Jul92 21:46 ABS = -0.003
LCS 1 3050G	67.1	0.0	0.232	0.232

D-401

178-17A QC	128.0	0.0	0.430	0.430 12Jul92 21:51 RPD = 62.4	

000090

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-17AMS QC	146.8	0.0	0.470	0.470 12Jul92 21:53 %R = 62.9
178-17AMSD QC	161.6	0.0	0.499	0.499 12Jul92 21:56
178-22A QC	11.6	0.0	0.041	0.041 12Jul92 21:58
178-24A QC	23.3	0.0	0.083	0.083 12Jul92 22:01
178-26A QC	11.4	0.0	0.040	0.040 12Jul92 22:03
LCS 7/10 QC	48.2	0.0	0.169	0.169 12Jul92 22:05
BLANK QC	0.0		-0.005	-0.005 12Jul92 22:10
QCSTANDARD QC	41.2	0.0	0.145	0.145 12Jul92 22:12 %R = 102.9
QCBLANK QC	-0.7	0.0	-0.002	-0.002 12Jul92 22:14 ABS = -0.001

PQL = 4 ppb. (4 µg/L)

ROSS ANALYTICAL SERVICES 000031

Analytical Data Sheet for Metals

Client(s) IEA Analyst ESH

Test TI Date 7/10/92 Checker CDM

Method No. _____ SOP No. _____ Instrument SPECTRA 400.

Sample Number	Dilution	µg/L Reading	Spike	Recovery	Final Conc. mg/kg
ICV		41.5	40	104%	
ICB		-0.1			
PB1 3050G 7-6-92		0.2			
PB2 3050G 7-6-92		-0.7			
LCS 3050G 7-6-92		68.1	50	136%	~~1.23~~ 1.22
92-06-178-01A		12.8			1.23 ✓
-02A		11.7			1.23 ✓
-03A		11.8			1.24 ✓
-04A		12.8			1.35 ✓
-04A-S		106.1	50	187%	
-04A-SD		111.5	50	197%	
CCV		42.7	40	107%	
CCB		0.5			< PQL
92-06-178-05A		10.9			1.15 ✓
-06A		12.6			1.33 ✓
-07A		11.6			1.22 ✓
-08A		5.1			0.49 ✓
-09A		3.5	→		✓ 0.37 < PQL
-10A		4.6			✓ 0.48
-11A		4.9			✓ 0.52
-11A-S		76.5	50	143%	
-11A-SD		65.3	50	121%	
CCV		42.7	40	107%	

CCB 0.7 < PQL

ROSS ANALYTICAL SERVICES 000092

Analytical Data Sheet for Metals

Client(s) IEA Analyst ~~CMM~~ EJH

Test TI Date 7/10/92 Checker CMM

Method No. _____ SOP No. _____ Instrument SPECTRAA-40

Sample Number	Dilution	µg/L Reading	Spike	Recovery	Final Conc. mg/kg
92-06-178-12A		9.2			✓0.94
-13A		5.1			✓0.53
-14A		3.2			✓<PQL
-15A		36.0			✓3.75
-16A		41.3			✓4.30
CCV		42.3	40	106%	
CCB		1.0			<PQL
PB1 3050G 7-7-92		1.6			<PQL
PB2 3050G 7-7-92		1.1			<PQL
LCJ 3050G 7-7-92		43.3	50	86.6%	~~4.69~~
92-06-178-18A		45.0			✓4.69
-19A		39.7			✓4.18
-20A		39.7			✓4.09
-21A		33.0			✓3.37
-22A		1.2			<PQL
-23A		0.7			<PQL
-24A		0.6		→ 41.15	<PQL
CCV		42.0/40.3	40 average	103%	
CCB		0.2/-1.2			<PQL
92-06-178-25A		-1.7			<PQL
-26A		-1.4			<PQL
-27A		0.3			<PQL
-27A-S		52.7	50	105%	

D-405

000093

ROSS ANALYTICAL SERVICES

Analytical Data Sheet for Metals

Client(s) IEA Analyst ESH

Test +1 Date 7/10/92 Checker Com

Method No. _____ SOP No. _____ Instrument SPECTRAA-400

Sample Number	Dilution	ug/L Reading	Spike	Recovery	Final Conc. mg/kg
92-06-178-27A-D		10.7	50	21.4%	
-28A		1.2			<PQL
PB1 3050 G. 7-10-92		0.2			<PQL
PB2 3050 G 7-10-92		0.7			<PQL
LCS 3050G 7-10-92		46.4	50	92.8%	
92-06-178-17A		34.9			3.67
-17A-S		93.3		117%	
-17A-SD		89.5		109%	
CCV		37.0	40	92.5%	
CCB		0.0			<PQL

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Varian SpectrAA 300/400 Zeeman
QC Protocol Report

Ross Analytical Services, Inc.
16433 Foltz Industrial Parkway
Strongsville, Ohio 44136

OPERATOR ESH
DATE 07/10/92
BATCH IEA

QC PROTOCOL PARAMETERS

QC STANDARD POSITION	45
IF THERE IS AN ERROR	STOP
QC SPIKE POSITION	44
RECOVERY LIMITS (%)	85 TO 115
RECOVERY MINIMUM LIMIT (%)	40
CORRELATION COEFFICIENT (r)	0.995
OVERRANGE VOLUME REDUCTION	2
REPLICATE RSD LIMIT (%)	20.0

PROGRAM 11 Tl Ptfrm 7841/279.2 M1

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	5
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	276.8
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	1
BACKGROUND CORRECTION	ON
MAXIMUM ABSORBANCE	0.55

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	150	10.0	3.0	NORMAL	NO
2	300	10.0	3.0	NORMAL	NO
3	300	10.0	3.0	NORMAL	NO
4	600	10.0	3.0	NORMAL	NO
5	600	12.0	3.0	NORMAL	NO
6	600	1.0	0.0	NORMAL	NO
7	2200	5.0	0.0	NORMAL	YES
8	2200	4.0	0.0	NORMAL	YES
9	2400	2.0	3.0	NORMAL	NO
10	40	30.0	3.0	NORMAL	NO

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SAMPLER PARAMETERS
VOLUMES (fL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	2
STANDARD 1	4	16	2
STANDARD 2	8	12	2
STANDARD 3	12	8	2
STANDARD 4	16	4	2
STANDARD 5	20		2
SAMPLE	20		2

RECALIBRATION RATE 0
RESLOPE RATE 0

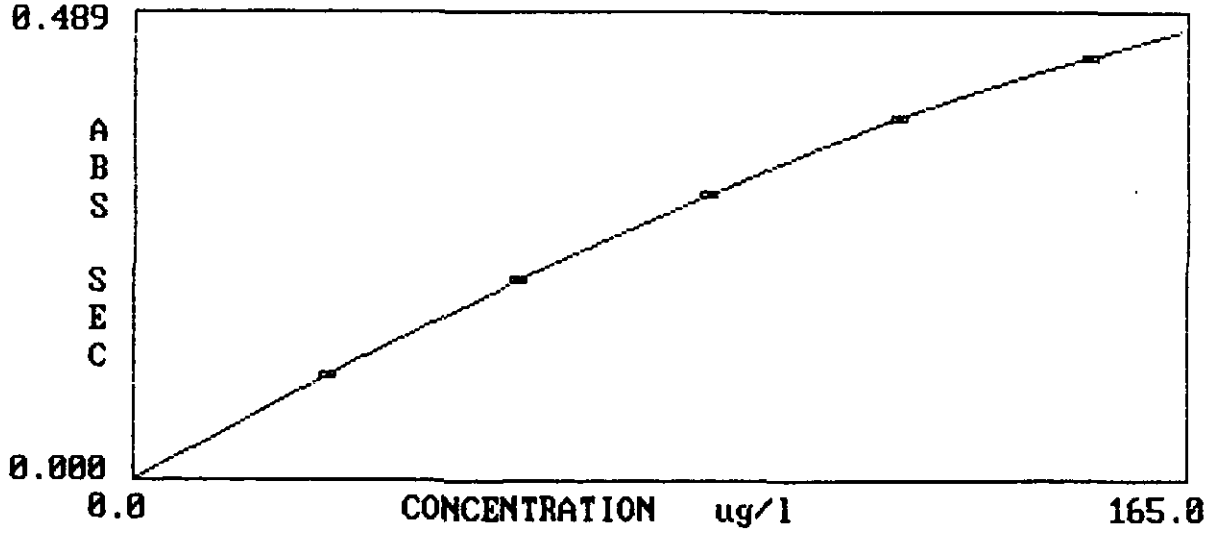
MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 70
INJECT RATE 1

QC PROTOCOL PARAMETERS

QC STANDARD RATE	9
QC STANDARD VOLUME (fL)	20
QC STANDARD CONCENTRATION	40.0 ug/l
QC STANDARD LIMITS (%)	90 TO 110
QC SPIKE RATE	9
QC SPIKE VOLUME (fL)	4
QC SPIKE CONCENTRATION	150.0 ug/l
MATRIX SPIKE CONCENTRATION	30.0 ug/l
REQUIRED DETECTION LIMIT	1.0 ug/l

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS	
BLANK QC	0.0		0.019	0.019 10Jul92	18:43
BLANK QC	0.0		-0.016	-0.016 10Jul92	18:46
STANDARD 1 QC	30.0	0.0	0.118	0.118 10Jul92	18:48
STANDARD 2 QC	60.0	0.0	0.214	0.214 10Jul92	18:51
STANDARD 3 QC	90.0	0.0	0.268	0.268 10Jul92	18:53
STANDARD 4 QC	120.0	0.0	0.373	0.373 10Jul92	18:56
E JK QC	0.0		-0.000	-0.000 10Jul92	19:00
STANDARD 1 QC	30.0	0.0	0.111	0.111 10Jul92	19:02

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
STANDARD 2 QC	60.0	0.0	0.183	0.183 10Jul92 19:04
STANDARD 3 QC	90.0	0.0	0.305	0.305 10Jul92 19:06
BLANK QC	0.0		0.004	0.004 10Jul92 19:10
STANDARD 1 QC	30.0	0.0	0.108	0.108 10Jul92 19:12
STANDARD 2 QC	60.0	0.0	0.209	0.209 10Jul92 19:14
STANDARD 3 QC	90.0	0.0	0.300	0.300 10Jul92 19:17
STANDARD 4 QC	120.0	0.0	0.382	0.382 10Jul92 19:19
STANDARD 5 QC	150.0	0.0	0.445	0.445 10Jul92 19:21



QCSTANDARD QC	41.1	0.0	0.146	0.146 10Jul92 19:23

D-409

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
[illegible]ANK QC	0.0		0.003	0.003 10Jul92 19:26
QCSTANDARD QC	41.5	0.0	0.147	0.147 10Jul92 19:28 %R = 103.7
QCBLANK QC	-0.1	0.0	-0.000	-0.000 10Jul92 19:30 ABS = 0.001
PB 1 3050G QC	0.2	0.0	0.001	0.001 10Jul92 19:32
PB2 3050G QC	-0.7	0.0	-0.002	-0.002 10Jul92 19:34 RPD = -314.2
LCS 3050G QC	68.1	0.0	0.235	0.235 10Jul92 19:36 %R = 229.2
178-01A QC	12.8	0.0	0.046	0.046 10Jul92 19:38
[illegible]-02A QC	11.7	0.0	0.042	0.042 10Jul92 19:40
178-03A QC	11.8	0.0	0.042	0.042 10Jul92 19:42
178-04A QC	12.8	0.0	0.046	0.046 10Jul92 19:44
178-04AMS QC	106.1	0.0	0.345	0.345 10Jul92 19:46
178-04AMSD QC	111.5	0.0	0.359	0.359 10Jul92 19:48
QCSPIKE QC	143.6	0.0	0.433	0.433 10Jul92 19:50 %R = 107.1
QCSTANDARD QC	42.7	0.0	0.151	0.151 10Jul92 19:52 %R = 106.7
QCBLANK QC	0.5	0.0	0.002	0.002 10Jul92 19:54 ABS = 0.003
178-05A QC	10.9	0.0	0.039	0.039 10Jul92 19:56
178-06A QC	12.6	0.0	0.045	0.045 10Jul92 19:58

D-410

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-07A QC	11.6	0.0	0.041	0.041 10Jul92 20:00
178-08A QC	5.1	0.0	0.018	0.018 10Jul92 20:02
178-09A QC	3.5	0.0	0.013	0.013 10Jul92 20:04
178-10A QC	4.6	0.0	0.016	0.016 10Jul92 20:06
178-11A QC	4.9	0.0	0.017	0.017 10Jul92 20:08
178-11AMS QC	76.5	0.0	0.261	0.261 10Jul92 20:10
178-11AMSD QC	65.3	0.0	0.226	0.226 10Jul92 20:12
QCSPIKE QC	100.3	0.0 N	0.329	0.329 10Jul92 20:14 %R = 116.6 %R FAILED, REPEAT BY STANDARD ADDITIONS
QCSTANDARD QC	42.7	0.0	0.151	0.151 10Jul92 20:16 %R = 106.7
QCBLANK QC	0.7	0.0	0.002	0.002 10Jul92 20:18 ABS = 0.004
178-12A QC	9.2	0.0	0.033	0.033 10Jul92 20:20
178-13A QC	5.1	0.0	0.018	0.018 10Jul92 20:23
178-14A QC	3.2	0.0	0.011	0.011 10Jul92 20:25
178-15A QC	36.0	0.0	0.128	0.128 10Jul92 20:27
178-16A QC	41.3	0.0	0.146	0.146 10Jul92 20:29
178-17A QC	34.9	0.0	0.124	0.124 10Jul92 20:31
178-17AS QC	93.3	0.0	0.309	0.309 10Jul92 20:33
178-17ASD QC	89.5	0.0	0.298	0.298 10Jul92 20:35

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
3 3050G QC	1.6	0.0	0.006	0.006 10Jul92 20:37
QCSPIKE QC	33.2	0.0	0.119	0.119 10Jul92 20:39 %R = 105.4
QCSTANDARD QC	42.3	0.0	0.150	0.150 10Jul92 20:41 %R = 105.8
QCBLANK QC	1.0	0.0	0.004	0.004 10Jul92 20:43 ABS = 0.005
PB4 3050G QC	1.1	0.0	0.004	0.004 10Jul92 20:45
LCS 2 3050G QC	43.3	0.0	0.153	0.153 10Jul92 20:47
178-18A QC	45.0	0.0	0.159	0.159 10Jul92 20:49
178-19A	39.7	0.0	0.141	0.141 10Jul92 20:51
178-20A QC	39.7	0.0	0.141	0.141 10Jul92 20:53
178-21A QC	33.0	0.0	0.118	0.118 10Jul92 20:55
178-22A QC	1.2	0.0	0.004	0.004 10Jul92 20:57
178-23A QC	0.7	0.0	0.002	0.002 10Jul92 20:59
178-24A QC	0.6	0.0	0.002	0.002 10Jul92 21:01
QCSPIKE QC	3.9	0.0 E	0.014	0.014 10Jul92 21:03 %R = 11.2 %R LESS THAN MINIMUM LIMIT
QCSTANDARD QC	42.0	0.0	0.149	0.149 10Jul92 21:05 %R = 105.0
C LANK Qu	0.2	0.0	0.001	0.001 10Jul92 21:07 ABS = 0.002
178-25A QC	1.7	0.0	0.006	0.006 10Jul92 21:09

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-26A QC	1.3	0.0	0.005	0.005 10Jul92 21:11
178-27A QC	2.3	0.0	0.008	0.008 10Jul92 21:13
178-27AMS QC	44.2	0.0	0.156	0.156 10Jul92 21:15
178-27AMSD QC	13.5	0.0	0.048	0.048 10Jul92 21:17
178-28A QC	2.5	0.0	0.009	0.009 10Jul92 21:19
PB 5 7/10 QC	1.3	0.0	0.005	0.005 10Jul92 21:21
PB 6 7/10 QC	1.3	0.0	0.005	0.005 10Jul92 21:23
LCS 7/10 QC	3.0	0.0	0.011	0.011 10Jul92 21:25
QCSPIKE QC	159.2 N	0.0	0.462	0.462 10Jul92 21:28 %R = 521.0 %R FAILED, REPEAT BY STANDARD ADDITIONS
QCSTANDARD QC	132.1 Q	0.0	0.410	0.410 10Jul92 21:30 %R = 330.2

D-413

Varian SpectrAA 300/400 Zeeman
QC Protocol Report

Ross Analytical Services, Inc.
16433 Foltz Industrial Parkway
Strongsville, Ohio 44136

OPERATOR ESH
DATE 07/10/92
BATCH IEA

QC PROTOCOL PARAMETERS

QC STANDARD POSITION	45
IF THERE IS AN ERROR	STOP
QC SPIKE POSITION	44
RECOVERY LIMITS (%)	85 TO 115
RECOVERY MINIMUM LIMIT (%)	40
CORRELATION COEFFICIENT (r)	0.995
OVERRANGE VOLUME REDUCTION	2
REPLICATE RSD LIMIT (%)	20.0

PROGRAM 11 T1 Ptfrm 7841/279.2 M1

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	5
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	276.8
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	1
BACKGROUND CORRECTION	ON
MAXIMUM ABSORBANCE	0.55

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
	150	10.0	3.0	NORMAL	NO
	300	10.0	3.0	NORMAL	NO
3	300	10.0	3.0	NORMAL	NO
4	600	10.0	3.0	NORMAL	NO
	600	12.0	3.0	NORMAL	NO
6	600	1.0	0.0	NORMAL	NO
7	2200	5.0	0.0	NORMAL	YES
	2200	4.0	0.0	NORMAL	YES
	2400	2.0	3.0	NORMAL	NO
10	40	30.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (fL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	2
STANDARD 1	4	16	2
STANDARD 2	8	12	2
STANDARD 3	12	8	2
STANDARD 4	16	4	2
STANDARD 5	20		2
SAMPLE	20		2

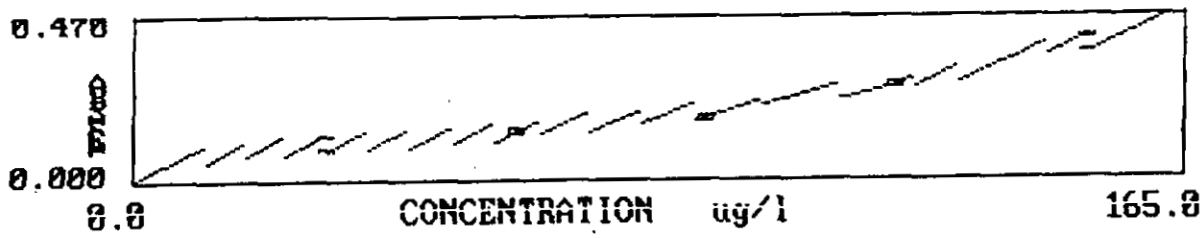
RECALIBRATION RATE 0
RESLOPE RATE 0

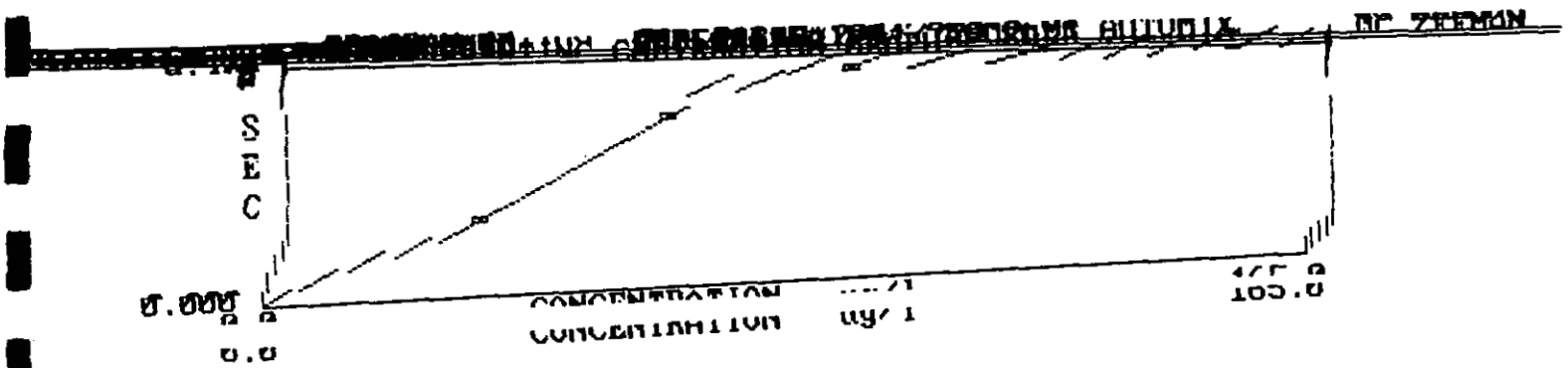
MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 70
INJECT RATE 1

QC PROTOCOL PARAMETERS

QC STANDARD RATE	9
QC STANDARD VOLUME (fL)	20
QC STANDARD CONCENTRATION	40.0 ug/l
QC STANDARD LIMITS (%)	90 TO 110
QC SPIKE RATE	9
QC SPIKE VOLUME (fL)	4
QC SPIKE CONCENTRATION	150.0 ug/l
MATRIX SPIKE CONCENTRATION	30.0 ug/l
REQUIRED DETECTION LIMIT	1.0 ug/l

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK	0.0		-0.004	-0.004
QC				10Jul92 21:35
STANDARD 1	30.0	0.0	0.103	0.103
QC				10Jul92 21:38
STANDARD 2	60.0	0.0	0.200	0.200
QC				10Jul92 21:40
STANDARD 3	90.0	0.0	0.281	0.281
QC				10Jul92 21:43
STANDARD 4	120.0	0.0	0.333	0.333
QC				10Jul92 21:45
STANDARD 5	150.0	0.0	0.428	0.428
QC				10Jul92 21:48


0.470
0.000
0.0
CONCENTRATION ug/l
165.0


S
E
C
0.0
CONCENTRATION ug/l
165.0

D-416

AUTOMATIC RUN PAUSED PRINTING

PROGRAM 11 T1 Ptfrm 7841/279.2 M1 QC ZEEMAN
QCSTANDARD REPLICATE 1
ABSORBANCE CONCENTRATION SAMPLER AUTOMIX
PEAK AREA MAX.ABS. 0.55 BC ON

AUTOMATIC RUN PAUSED PRINTING

	CONC ug/l	%RSD	CALIBRATION MEAN ABS	READINGS
BLANK	0.0		-0.004	-0.004
STANDARD 1	30.0	0.0	0.103	0.103
STANDARD 2	60.0	0.0	0.200	0.200
STANDARD 3	90.0	0.0	0.291	0.291

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STANDARD 4	120.0	0.0	0.333	0.333
STANDARD 5	150.0	0.0	0.428	0.428
RESLOPE	90.0	0.0		

000105

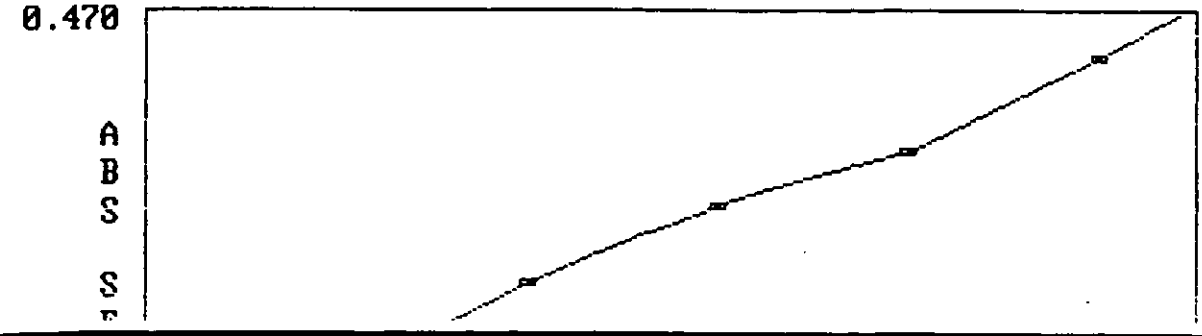
SOLUTION TYPE

F5 CALIBR'N GRAPH | F6 ANALYTICAL RESULTS

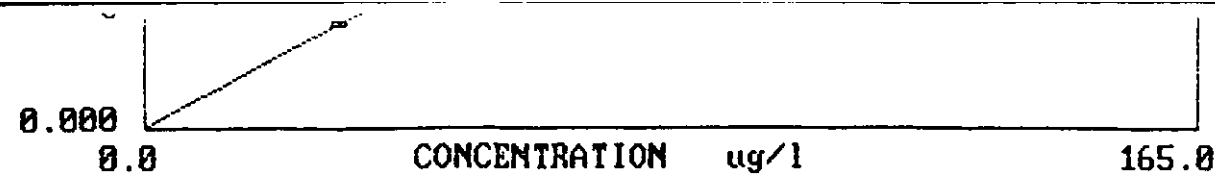
PROGRAM 11 T1 Ptfrm 7841/279.2 M1 QC ZEEMAN
QCSTANDARD REPLICATE 1
ABSORBANCE CONCENTRATION SAMPLER AUTOMIX
PEAK AREA MAX.ABS. 0.55 BC ON

AUTOMATIC RUN PAUSED | PRINTING

CALIBRATION GRAPH



D-418



000100

F 1 SOLUTION TYPE | F 3 GRAPHICS CURSOR | F 5 CALIBRATION | F 6 ANALYTICAL RESULTS

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
BLANK QC	0.0		-0.013	-0.013 10Jul92 21:58
QCSTANDARD QC	40.3	0.0	0.137	0.137 10Jul92 22:01 %R = 100.8
QCBLANK QC	-1.2	0.0	-0.004	-0.004 10Jul92 22:03 ABS = -0.006
178-25A QC	-1.7	0.0	-0.006	-0.006 10Jul92 22:05
178-26A QC	-1.4	0.0	-0.005	-0.005 10Jul92 22:08 RPD = -23.4
178-27A QC	-0.3	0.0	-0.001	-0.001 10Jul92 22:10 %R = 3.6
178-27AMS QC	52.7	0.0	0.177	0.177 10Jul92 22:12
178-27AMSD QC	10.7	0.0	0.037	0.037 10Jul92 22:14

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS
178-28A QC	-1.2	0.0	-0.004	-0.004 10Jul92 22:17
PB 5 7/10 QC	-1.1	0.0	-0.004	-0.004 10Jul92 22:19
PB 6 7/10 QC	146.1	0.0	0.415	0.415 10Jul92 22:21
LCS 7/10 QC	39.4	0.0	0.134	0.134 10Jul92 22:24
BLANK QC	0.0		-0.007	-0.007 10Jul92 22:29

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QC				10Jul92 22:31 %R = 101.3
QCBLANK QC	-0.5	0.0	-0.002	-0.002 10Jul92 22:34 ABS = -0.004
PB 5 7/10 QC	0.2	0.0	0.001	0.001 10Jul92 22:36
PB 6 7/10 QC	-0.7	0.0	-0.002	-0.002 10Jul92 22:38 RPD = -314.2
LCS 7/10 QC	46.4	0.0	0.157	0.157 10Jul92 22:41 %R = 156.9
QCSTANDARD QC	37.0	0.0	0.126	0.126 10Jul92 22:43 %R = 92.5
QCBLANK QC	0.0	0.0	0.000	0.000 10Jul92 22:45 ABS = -0.002

RT4E

ROSS ANALYTICAL SERVICES

Analytical Data Sheet

Client(s) Risk Metro, IEA — Analyst AMB

Test Mer SP — Date 6-25-92 — Checker SM

Sample ID	wt	Spike	H_2O	aqua regia	H_2O	KMnO4	conc HCl	H_2O
		—	20ml	10ml	100ml	30ml		100ml
PB	—	—	↓					
PB	—	—	↓					
Std 0.10 µg *	—	1.0	19.0					
0.20 *	—	2.0	18.0					
0.40 *	—	4.0	16.0					
1.00 *	—	10.0	10.0					
2.00 *	—	20.0	—					
SRS 0.40 µg **	—	4.0	16.0					
92-06-206-01A	0.51			120ml				
1R-07A	0.51			↓				
01AMS *	0.57	4.0ml		116ml				
01AMSD *	0.48	4.0ml		↓				
02A	0.48			120ml				
03A	0.47							
04A	0.50							
05A	0.50							
06A	0.52							
07A	0.47							
08A	0.49							
09A	0.51							
10A	0.48							
11A	0.53			↓	↓	↓	↓	↓
Std 0.02 µg *	—	200ml	19.98	5ml	50ml	15ml	—	50ml
Std 0.02 µg *	—	↓	↓	↓	↓	↓	↓	↓

* Spiked w/ Merc Std #182

** Spiked w/ Merc. Std #1133

D-421

RAW DATA w/ IEA 92-06-178

METALS PREP LOGSHEET — Mercuric Sulfam — 1 of 3 — 000109

CLIENT ID Bionetics, Proc Gam Swt, IEA, Risi Met. Lp, Risi-Met-RD
METHOD ID Mer. Sp
F P LOCATION RT 4D

PREP DATE 7-8-92
ANALYST INIT SJ
CHECKER INIT d fm

SAMPLE ID	INITIAL WT / VOL	FINAL VOLUME	SPIKING DATA	COMMENTS
PB1	—	260 ml		
PB2	—			
LCS .40 µg	—		4000 µl of merc Std # 1133	.40 µg Std
Std .10 µg	—		1000 µl of merc Std # 1182	
.20	—		2000 µl	
.40	—		4000 µl	
1.00	—		10,000 µl	
2.00 µg	—		20,000 µl	
Bionetics 92-06-208-01A	.48g			
Proc Gam Swt 92-07-020-01A	.48g			
IEA 92-06-178-02A	.46g			
03A	.47g			
04A	.47g			
04AMS	.48g		4000 µl of merc Std # 1182	.40 µg Std
04AMSD	.47g		4000 µl	.40 µg Std
05A	.47g			
06A	.47g			
07A	.48g			
08A	.50g			
09A	.46g			
10A	.47g			
11A	.46g		D-422	

Book Page

METALS PREP LOGSHEET

000110 2of3

CLIENT ID IEA
METHOD ID Mer-Sp
PREP LOCATION RT 40

PREP DATE 7-8-92
ANALYST INIT SJ
CHECKER INIT dfm

SAMPLE ID	INITIAL WT / VOL	FINAL VOLUME	SPIKING DATA	COMMENTS
IEA S 92-06-178-12A	.45g	260ml		
13A	.47g			
14A	.48g			
15A	.48g			
16A	.47g			
17A	.54g			
17A MS	.46g		4000 µl of Merc Std # 1182	.40 ug Std
17A MSD	.54g		↓ ↓ ↓ ↓ ↓ ↓	.40 ug Std
18A	.45g			
19A	.49g			
20A	.47g			
21A	.52g			
22A	.49g			
23A	.47g			
24A	.46g			
25A	.45g			
26A	.51g			
27A	.48g			
27A MS	.47g		4000µl of Merc Std # 1182	.40 ug Std
27A MSD	.45g		4000µl ↓ ↓ ↓ ↓	.40 ug Std
28A	.46g			
Risi Meds Of 92-07-047-01A	.48g		D-223	

Book Page

METALS PREP LOGSHEET

000111 3 of 3

CLIENT ID Rs.Mets.RD.
METHOD ID Mer-Sp
P LOCATION RT40

PREP DATE 7-8-92
ANALYST INIT SJ
CHECKER INIT dhm

SAMPLE ID	INITIAL WT / VOL	FINAL VOLUME	SPIKING DATA	COMMENTS
92-07-045-01A (Rs.Mets.RD)	.479	200 ml		
			D-424	

Book Page

Need data w/178- IEA

000112

ROSS ANALYTICAL SERVICES

Analytical Data Sheet for Metals

Client(s) RISI METS RD; IEA Analyst ALA

Test Mercury - CVAA Date 6/25/92 Checker BINIT

Method No. 7471 SOP No. MT-004-00 Instrument CVAA

Sample Number	Dilution	Reading	Spike	Recovery	Final Conc.
PB2		-.013	—	—	<PQL
SRS		0.354	0.400	88.5%	
92-06-206-01A		-0.007	—	—	<.039
PB2		-0.009	—	—	<PQL
SRS		0.337	0.400	84.2%	—
PB2		.013	—	—	<PQL
SRS		0.353	0.400	88.2%	—
92-06-178-01A		.016	—	—	✓ <.039
-01A MS		0.405	0.400	101.2%	—
-01A MSD		0.384	0.400	96%	—
-02A		.021/.019	Avg=.020	—	✓ .042
-03A		.029/.031	Avg=.030	—	✓ .064
reduns (04A)		.031	—	—	✓ .062
-05A		.039	—	—	✓ .078
-06A		.044	—	—	✓ .085
-07A		.032	—	—	✓ .068
-08A		.025	—	—	✓ .051
PB2		.011	—	—	<PQL
SRS		0.366	0.400	91.5%	—
92-06-178-09A		.023	—	—	✓ .045
-10A		.054	—	—	✓ .112
reduns (11A)		.055	—	—	✓ .10
PB2		.016	—	—	<PQL
SRS	D-425	.372	0.400	93%	—

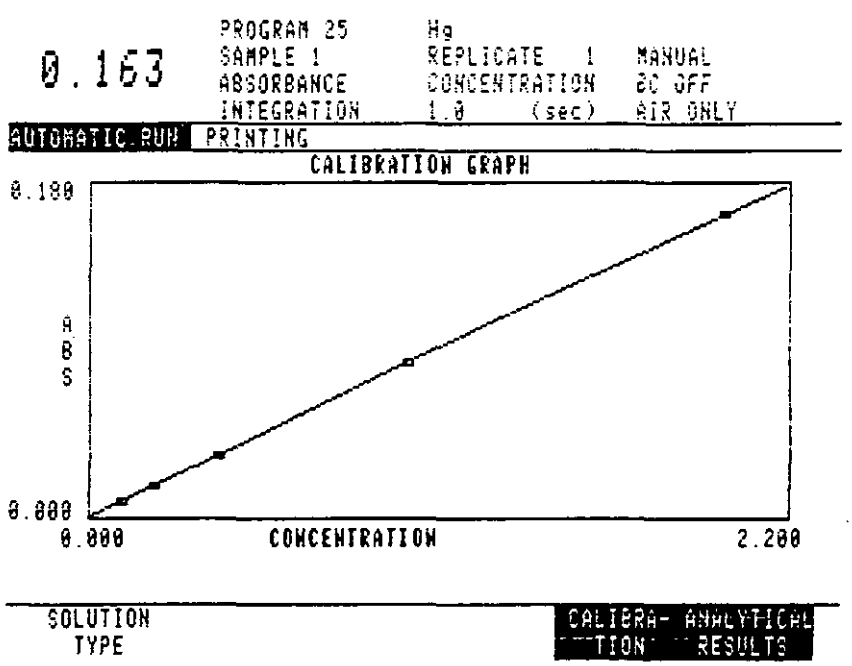
Varian SpectrAA 10/20 System Report

92-06-178
92-06-20C

OPERATOR
DATE 6.25.92
BATCH NO. 1

PROGRAM 25 Hg

SAMPLE	CONC	%RSD	MEAN ABS	READINGS	
BLANK	0.000		0.001	0.001	0.001
STANDARD 1	0.100	1.4	0.008	0.008	0.008
STANDARD 2	0.200	1.2	0.016	0.016	0.017
STANDARD 3	0.400	0.0	0.033	0.033	0.033
STANDARD 4	1.000	0.1	0.083	0.083	0.083
STANDARD 5	2.000	0.1	0.163	0.163	0.163



SAMPLE	SOLUTION TYPE			CALIBRATION	ANALYTICAL RESULTS	
SAMPLE 1	-0.013	35.9	-0.001	-0.001	-0.001	— PB2
SAMPLE 2	0.354	2.2	0.029	0.030	0.029	— SRS
SAMPLE 3	-0.007	95.4	-0.001	-0.000	-0.001	— 92-06-206-01A
SAMPLE 4	-0.008	0.0	-0.001	-0.001	-0.001	— PB2
SAMPLE 5	0.337	0.7	0.028	0.028	0.028	— SRS
SAMPLE 6	0.013	71.6	0.001	0.002	0.001	— PB2 (Analytical Zero)
SAMPLE 7	0.353	0.0	0.029	0.029	0.029	— SRS
SAMPLE 8	0.016	54.5	0.001	0.001	0.002	— 92-06-178-01A
SAMPLE 9	0.405	1.4	0.034	0.033	0.034	— " -01A MS
SAMPLE 10	0.384	1.1	0.032	0.032	0.032	— " -01A MSD
SAMPLE 11	0.021	26.2	0.002	0.002	0.001	— " -02A
SAMPLE 12	0.019	14.6	0.001	0.001	0.002	— " -02A

SAMPLE	CONC	%RSD	MEAN ABS	READINGS			
SAMPLE 13	0.029	0.0	0.002	0.002	0.002	— 92-06-178-03A	
SAMPLE 14	0.031	17.4	0.002	0.003	0.002	— " -03A	
SAMPLE 15	0.031	2.6	0.002	0.002	0.002	— " -04A	
SAMPLE 16	0.039	8.6	0.003	0.003	0.003	— " -05A	
SAMPLE 17	0.044	0.0	0.003	0.003	0.003	— " 06A	
SAMPLE 18	0.032	33.3	0.002	0.003	0.002	— " -07A	
SAMPLE 19	0.025	18.7	0.002	0.002	0.002	— " -08A	
SAMPLE 20	0.026	18.0	0.002	0.002	0.002	rinse	
SAMPLE 21	0.011	16.1	0.001	0.001	0.001	— PB2	
SAMPLE 22	0.366	0.0	0.030	0.030	0.030	— SRS	
SAMPLE 23	0.023	27.5	0.002	0.001	0.002	— 92-06-178-09A	
SAMPLE 24	0.054	5.7	0.004	0.004	0.004	— " -10A	
SAMPLE 25	0.055	7.6	0.004	0.004	0.004	— " -11A	
SAMPLE 26	0.029	10.5	0.002	0.002	0.002	} rinse	
SAMPLE 27	0.024	44.0	0.002	0.002	0.001		
SAMPLE 28	0.016	34.9	0.001	0.001	0.002	— PB2	
SAMPLE 29	0.372	0.0	0.031	0.031	0.031	— SRS	

ROSS ANALYTICAL SERVICES

Analytical Data Sheet for Metals

Client(s) BIONETICS, Proc Gen SWT, RISI MET OP, RISI MET RD, IEA Analyst ALA

Test Mercury - CVAA Date 7/09/92 Checker CDM

Method No. 7471 SOP No. MT-004-00 Instrument FIAA

	Sample Number	Dilution	Reading (ug/l)	Spike	Recovery	Final Conc. (ug/l)
1	PB1		-0.002	—	—	<PQL ✓
2	LCS 1		0.409	0.400	102% ✓	—
3	92-06-208-01A		0.003	—	—	<0.04 ✓
4	92-07-020-01A		0.014	—	—	<0.04 ✓
5	92-07-045-01A		.067/.069	Avg .068		0.145 ✓
6	92-07-047-01A		.059/.062	Avg .060		0.126 ✓
7	PB		.009	—	—	<PQL ✓
8	LCS 2		.412	0.400	103% ✓	—
9	PB		0.000	—	—	<PQL ✓
10	LCS 3		0.409	0.400	102% ✓	—
11	92-06-178-04A		0.003			<0.04 ✓
12	-04A MS		0.399	0.400	99.8% ✓	—
13	-04A MSD		0.395	0.400	98.7% ✓	—
14	-12A		0.002			<0.04 ✓
15	-13A		-0.001			<0.04 ✓
16	-14A		-0.002			<0.04 ✓
17	-15A		0.006			<0.04 ✓
18	-16A		-0.002			<0.04 ✓
19	-17A		-0.002			<0.04 ✓
20	-17A MS		0.414	0.400	103% ✓	—
21	-17A MSD		0.424	0.400	106% ✓	—
22	PB		0.002	—	—	<PQL
	LCS 4		0.414	0.400	103% ✓	

ROSS ANALYTICAL SERVICES

000116

Analytical Data Sheet for Metals

Client(s) BIOMETICS; PROC GAM SUT; BISI MET OP; BISIMETRD IEA Analyst ACA

Test Mercury - CVAA Date 7/09/92 Checker CJM

Method No. 7471 SOP No. MT-00403 Instrument FIAA

Sample Number	Dilution	Reading	Spike	Recovery	Final Conc.
92-06-178-18A		0.009	—	—	<0.04
-19A		0.001	—	—	<0.04
-20A		0.003	—	—	<0.04
-21A		0.004	—	—	<0.04
-22A		0.076/0.088	Avg 0.082		0.167 ✓
-23A		0.108	—	—	0.230 ✓
-24A		0.112	—	—	0.243 ✓
-25A		0.306	—	—	0.680 ✓
PB		.008	—	—	<PQL
LCS 5		0.419	0.400	104.8% ✓	—
PB		-0.005	—	—	<PQL
LCS 6		0.395	0.400	98.8% ✓	
DUP ~~92-06-178-26A~~					
ORIG ~~27A~~					
ALL N/A					

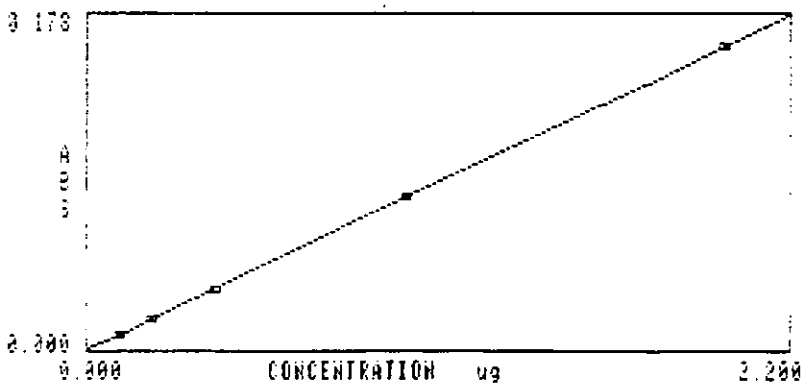
D-429

Varian SpectrAA 10/20 System Report

OPERATOR ALA
DATE 7.09.92
BATCH NO. 1

PROGRAM 24 Hg cold vapor - solid

SAMPLE	CONC ug	%RSD	MEAN ABS	READINGS	
BLANK	0.000		0.002	0.002	0.003
STANDARD 1	0.100	5.6	0.007	0.007	0.007
STANDARD 2	0.200	2.9	0.016	0.015	0.016
STANDARD 3	0.400	1.3	0.032	0.033	0.032
STANDARD 4	1.000	0.1	0.080	0.080	0.080
STANDARD 5	2.000	0.1	0.162	0.162	0.162



2	-0.028	4.5	-0.002	-0.002	-0.002
1	-0.035	8.8	-0.002	-0.002	-0.003
BLANK	0.000		-0.002	-0.002	-0.002
1	-0.002	76.9	-0.000	-0.000	-0.000
2	0.409	1.1	0.033	0.033	0.033
3	0.003	0.0	0.000	0.000	0.000
4	0.014	35.6	0.001	0.001	0.001
5	0.067	12.8	0.005	0.004	0.005
6	0.059	7.7	0.005	0.005	0.005

D-430

9	0.009	13.3	0.001	0.001	0.001
10	0.412	0.5	0.032	0.033	0.033
BLANK	0.000		0.000	0.000	0.000

000118

SAMPLE	CONC ug	%RSD	MEAN ABS	READINGS	
11	-0.000	99.9	-0.000	0.000	-0.000
12	0.409	0.0	0.033	0.033	0.033
13	0.003	32.0	0.000	0.000	0.000
14	0.399	1.5	0.032	0.032	0.032
15	0.395	0.7	0.032	0.032	0.032
16	0.002	99.9	0.000	-0.000	0.000
17	-0.001	99.9	-0.000	-0.000	0.000
18	-0.002	0.0	-0.000	-0.000	-0.000
19	0.006	21.3	0.000	0.000	0.000
20	-0.002	99.9	-0.000	0.000	-0.000
21	-0.002	99.9	-0.000	0.000	-0.000
22	0.414	1.5	0.033	0.033	0.034
23	0.424	0.0	0.034	0.034	0.034
24	0.002	99.9	0.000	0.000	-0.000
25	0.414	1.2	0.033	0.034	0.033
26	0.009	17.3	0.001	0.001	0.001
27	0.001	99.9	0.000	-0.000	0.000
28	0.003	0.0	0.000	0.000	0.000
29	0.004	72.7	0.000	0.000	0.000
30	0.076	0.0	0.005	0.005	0.005
31	0.088	2.9	0.006	0.006	0.006
32	0.108	0.0	0.008	0.008	0.008
33	0.112	4.0	0.008	0.008	0.008
34	0.306	0.9	0.024	0.024	0.024
35	0.033	13.5	0.002	0.001	0.002
36	0.022	22.2	0.001	0.002	0.001
37	0.026	4.9	0.002	0.002	0.002
38	0.025	3.0	0.002	0.002	0.002
39	0.006	68.4	0.001	0.001	0.000
40	0.419	0.0	0.034	0.034	0.034
BLANK	0.000		0.001	0.001	0.001
41	-0.005	85.2	-0.000	-0.001	-0.000
42	0.395	1.1	0.032	0.032	0.032
0000043	0.114	2.3	0.008	0.008	0.008
0000044	-0.013	15.3	-0.001	-0.001	-0.001
0000045	0.180	0.8	0.014	0.014	0.014
0000046	0.308	0.7	0.024	0.024	0.025
0000047	0.274	0.9	0.022	0.022	0.022
0000048	0.008	14.9	0.001	0.001	0.001
0000049	0.198	0.0	0.015	0.016	0.015
0000050	0.244	1.1	0.019	0.019	0.019
0000051	OVER	0.0	0.188	0.188	0.188
0000052	2.167	0.1	0.176	0.176	0.176
BLANK	0.000		0.177	0.177	0.178

* OMIT
Excessive
Chamber drift
MA 7/19/96

D-431

ROSS ANALYTICAL SERVICES

Analytical Data Sheet for Metals

Client(s) TEA Analyst ALA

Test Mercury - CVAA Date 7/09/92 Checker [illegible]

Method No. 7471 SOP No. MT-004-00 Instrument FIAT

Sample Number	Dilution	Reading (ABS)	Spike	Recovery	Final Conc. (ug/L)
PB		0.004	—	—	<PQL
LCS		0.400	0.400	100%	—
92-06-178-26A		0.145	—	—	0.269
-27A		0.234	—	—	0.487 ✓
-27A MS		0.626	0.400	98.5%	—
-27A MSD		0.610	0.400	94%	—
-28A		0.668/0.664	ABS=.666 —	—	1.45 ✓
PB		0.014	—	—	<PQL
LCS		0.424	0.400	106%	—

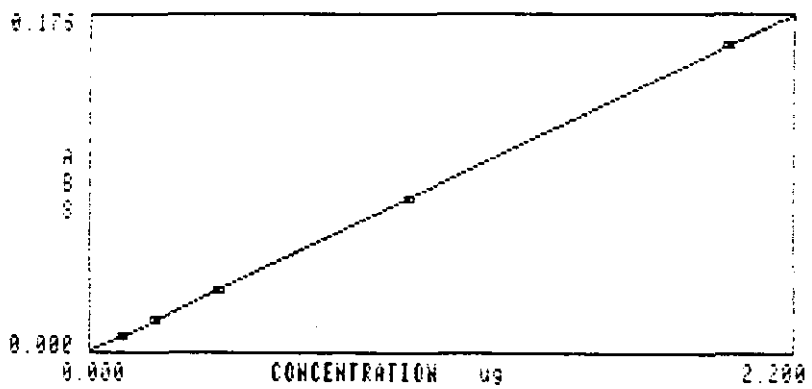
0-432

Varian SpectrAA 10/20 System Report

OPERATER ALA
DATE 7.10.92
BATCH NO. 1

PROGRAM 24 Hg cold vapor - solid

SAMPLE	CONC ug	%RSD	MEAN ABS	READINGS	
BLANK	0.000		0.000	0.000	0.000
STANDARD 1	0.100	4.4	0.007	0.007	0.007
STANDARD 2	0.200	0.9	0.015	0.015	0.015
STANDARD 3	0.400	0.7	0.032	0.031	0.032
STANDARD 4	1.000	0.5	0.080	0.079	0.080
STANDARD 5	2.000	0.3	0.160	0.160	0.160



1	0.004	57.6	0.000	0.000	0.000	— PB
2	0.400	1.5	0.032	0.032	0.031	— LCS
3	-0.011	64.9	-0.001	-0.001	-0.000	— RINSE
4	0.145	2.9	0.010	0.010	0.010	— 92-06-178-26A
5	0.234	1.4	0.018	0.018	0.018	— 92-06-179-28A
6	0.626	0.9	0.050	0.049	0.050	— " -27AMS
7	0.610	0.8	0.048	0.048	0.049	— " -27AMSD
8	0.004	57.6	0.000	0.000	0.000	— RINSE
9	0.668	0.8	0.053	0.053	0.053	— 92-06-178-28A
10	0.664	0.7	0.053	0.053	0.052	— " -28A
11	0.014	20.6	0.001	0.001	0.001	— PB
12	0.018	9.8	0.001	0.001	0.001	— ~~PB~~ Blank bottle
13	0.434	1.2	0.033	0.033	0.034	— LCS

METALS PREP LOGSHEET

000121

CLIENT ID IEA

METH ID Mer-Sp

PREP LOCATION RT AC

PREP DATE 7-10-92

ANALYST INIT ST

CHECKER INIT dbm

SAMPLE ID	INITIAL WT / VOL	FINAL VOLUME	SPIKING DATA	COMMENTS
Mer-Sp 7-10	—	100ml		
Mer-Sp 7-10	—			
Mer Sp 7-10	—			.40 µg Std # 1133
.10 µg 7-10	—		1.0 ml of Mer Std # 1182	
.20 µg 7-10	—		2.0	
.40 µg 7-10	—		4.0	
1.00 µg 7-10	—		10.0	
2.00 µg 7-10	—		20.0	
Ow-175-114	.47g			
" A MS	.49g			.40 µg Std # 1152
" A MSD	.47g			.40 µg Std # 1152

D-434

Book Page

ROSS ANALYTICAL SERVICES

000122

Analytical Data Sheet for Metals

Client(s) IEA Analyst GM

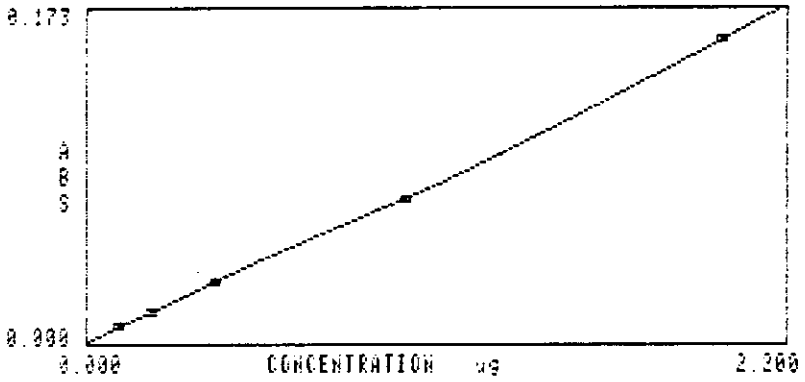
Test Mercury - CVAA Date 7/13/92 7/14/92 (GM) Checker [illegible]

Method No. 7471 SOP No. MT-004-00 Instrument FLAA

Sample Number	Dilution	Reading	Spike	Recovery	Final Conc.
PB		0.003			<PQL
SRS		0.396	0.40	99%	
92-06-178-11A		0.000			<0.04
-11A-MS		0.390	0.40	97.5%	
-11A-MSD		0.368	0.40	92%	
PB		0.001			<PQL
SRS		0.397		99.2%	

D435

SAMPLE	CONC ug	%RSD	MEAN ABS	READINGS	
BLANK	0.000		-0.000	-0.000	-0.001
STANDARD 1	0.100	3.1	0.008	0.006	0.008
STANDARD 2	0.200	1.2	0.015	0.015	0.015
STANDARD 3	0.400	1.2	0.031	0.031	0.030
STANDARD 4	1.000	0.4	0.074	0.074	0.074
STANDARD 5	2.000	0.1	0.157	0.157	0.157



1	0.003	99.9	0.000	-0.000	0.001	PB
2	0.396	0.9	0.030	0.031	0.030	SRS
3	0.000	99.9	0.000	-0.000	0.000	92-06-178-11A
4	0.390	1.4	0.030	0.030	0.030	92-06-178-11A MS
5	0.362	4.3	0.028	0.029	0.027	92-06-178-11A MSD
6	0.001	99.9	0.000	0.000	0.000	PB
7	0.397	1.2	0.030	0.030	0.031	SRS.

D-436

ROSS ANALYTICAL SERVICES

000124 RT 21

Analytical Data Sheet

Client(s) Bionetics, Chem. Redam, IEA Analyst SJ

Test 3050 I Date 6-29-92 Checker CJM

Sample ID	Sample Wt.	Spike	HNO_3 1:1	HNO_3 conc	H_2O_2	HCl conc	Final vol	Yttrium
PB1	—		10ml	5ml	5ml	10ml	5ml	100ml	200µl
PB2	—								
LCS	* —	*							
92-06-177 01B	1.0ml = .84g								
03B	1.0ml = .78g								
92-06-226-02A	.19g								
92-06-178-01A	.97g								
02A	.96g								
03A	.97g								
04A	.95g								
04A MS	1.02g	**							
04A MSD	.97g	**							
05A	.98g								
06A	.95g								
07A	.95g								
08A	.96g								
09A	.98g								
10A	1.01g								
11A	.95g								
11A MS	.97g	**							
11A MSD	.96g	**							
12A	.95g								
13A	.96g								
14A	.96g		↓	↓	↓	↓	↓	↓	↓

* Spiked with 1000 µl Resi 4 & 5B #1223, 1224

** " " 2000 µl " " "

Raw Data with:
IEA ~~BIONETICS~~ 92-06-178
Corr

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: ~~BIONETICS~~ IEA Corr 7/11 Method: 6010

W.O.#: 92-06-178 Date Analyzed: 7-11-92

Units: mg/kg Analyst: BMM

3050I	6-29-92	PREP BLK		PREP BLK		EXTR BLK	
	Raw	1	Raw	2	Raw	1	Default
Element	Number	Value	Number	Value	Number	Value	PQL
Al	0.004	<PQL					0.0172
[illegible]	-0.0066	<PQL					0.0247
[illegible]	0.008	<PQL					0.0255
Ba	0.0012	0.001					0.0007
[illegible]	-0.0012	<PQL					0.0007
[illegible]	0.0018	<PQL					0.0045
Ca	0.3769	0.377					0.047
[illegible]	-0.0037	<PQL					0.008
[illegible]	0.0013	<PQL					0.0038
Cu	0.0069	0.007					0.0032
Fe	0.0905	0.091					0.0058
[illegible]	-0.007	<PQL					0.0202
[illegible]	0.0184	0.018					0.0177
Mn	0.0027	0.003					0.0018
[illegible]	0.0052	0.005					0.0035
[illegible]	0.0017	<PQL					0.0053
K	0.104	0.104					0.0423
[illegible]	0.0075	<PQL					0.0308
[illegible]	0.1603	0.16					0.0267
Ag	0.0041	<PQL					0.007
Na	0.1928	<PQL					0.2427
[illegible]	-0.4334	<PQL					0.182
[illegible]	-0.0015	<PQL					0.0497
Sn	0.0233	0.023					0.0207
[illegible]	0.0072	0.007					0.0033
[illegible]	0.0361	0.036					0.0043

Problems/Comments to be Addressed on Report: _____

Reviewed and Approved By: BMM

Date: 7/11/92

D-438

Worksheet for ICP LCSA Analysis

To print this sheet press Alt+P then type "srsa" then Enter.

ROSS Analytical Services Inc.,
16433 Foltz Industrial Parkway
Strongsville, OH 44136

Analyst: BMM
W.O. #'s: 92-06-178,177,226
Client: ~~BIGNETICS~~ IEA 92-06-178
Matrix: (x one) 1. Water/wastewater; 2. TCLP/EP extract; X 3. Soil/sludge; 4. Waste
Analysis type: (x one) X1. ICP; 2. GFAA; 3. FLAA; 4. Vapor

Run Date: 7-11-92
PrepDate: 6-29-92

Prep: 3050I

LCS ANALYSIS RESULTS

Element	True value (ug/mL)	Value Obtained (ug/mL)	% Rec.	Value Obtained (ug/ml)	% Rec.
Al	1	1.0125	101.3		0.0
Sb	2	2.0407	102.0		0.0
As	2	1.8415	92.1		0.0
Ba	1	0.9300	**93.0**		0.0
Be	1	0.9067	**90.7**		0.0
Cd	1	0.8834	**88.3**		0.0
Ca	1	1.1557	115.6		0.0
Cr	1	0.9651	**96.5**		0.0
Co	1	0.9421	94.2		0.0
Cu	1	0.9379	93.8		0.0
Fe	1	1.0033	100.3		0.0
Pb	2	1.8701	93.5		0.0
Mg	1	0.9415	94.2		0.0
Mn	1	0.9810	98.1		0.0
Mo	2	2.1639	108.2		0.0
Ni	1	0.9322	93.2		0.0
K	25	23.2183	92.9		0.0
Se	2	1.8556	92.8		0.0
Si	2	2.5522	127.6		0.0
Ag	1	0.9443	**94.4**		0.0
Na	2	2.1326	106.6		0.0
Tl	2	1.5389	76.9		0.0
Ti	2	2.0648	103.2		0.0
Sn	2	1.8775	93.9		0.0
V	1	0.9849	98.5		0.0
Zn	1	0.9677	96.8		0.0

Checker: B. Winter Date: 7/11/92

D-439

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: ~~BIONETICS~~ IEA corr 7/12/92

Method: 6010

P.O.#: 92-06-178-01A 1

Date Analyzed: 7-11-92

Units: mg/kg

Analyst: BMM

Dil. Factor		1	10		50		
Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Al			19200	17.732			
			<PQL	25.4639			
			<PQL	26.2887			
Ba			24.7	0.72165			
			1.33 ✓	0.72165			
			<PQL	4.63918			
Ca			5470	48.4536			
Cr			40.6	8.24742			
			19.1	3.91753			
			53.7	3.29897			
Fe			39900	5.97938			
			<PQL	20.8247			
			10300	18.2474			
Mn			889	1.85567			
			8.77	3.60825			
			49.5	3.46392			
K			3510	43.6082			
Se			<PQL	31.7526			
			686	27.5258			
Ag			<PQL	7.21649			
Na			<PQL	250.206			
			<PQL	187.629			
			448	51.2371			
Sn			<PQL	21.3402			
			35.3	3.40206			
			117	4.43299			

Problems/Comments to be Addressed on Report: dil factor 1
estimated w/ Fe

Reviewed and Approved By: BMM

Date: 7/11/92

D-440

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: ~~BIONETICS~~ IEA corr. 7/11/92

Method: 6010

W.O.#: 92-06-178-024 1

Date Analyzed: 7-11-92

Units: mg/kg

Analyst: BMM

Element	Raw Number	Blks Corr.	Dil. Factor 1 Adj. Value	PQL	Dil. Factor 10 Adj. Value	PQL	Dil. Factor 50 Adj. Value	PQL	Default PQL
Al			19300	17.9167					
Sb			<PQL	25.7292					
As			<PQL	26.5625					
Ba			23 ✓	0.72917					
Be			**<PQL**	0.72917					
Cd			**<PQL**	4.6875					
Ca			9180	48.9583					
Cr			**45.8**	8.33333					
Co			19.9	3.95833					
Cu			46.5	3.33333					
Fe			38100	6.04167					
Pb			24.8	21.0417					
Mg			10800	18.4375					
Mn			801	1.875					
Mo			<PQL	3.64583					
Ni			48.4	5.52083					
K			3170	44.0625					
Se			<PQL	32.0833					
Si			881	27.8125					
Ag			**<PQL**	7.29167					
Na			<PQL	252.813					
Tl			<PQL	189.583					
Ti			434	51.770E					
Sn			<PQL	21.5625					
V			32.4	3.4375					
Zn			97.4	4.47917					

Problems/Comments to be Addressed on Report: dil. factor 1
saturated w/ Fe

Reviewed and Approved By: BMM

Date: 7/11/92

D-441

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: ~~BIONETICS~~ IEA 7/11/92

Method: 6010

W.O.#: 92-06-178-03A 1

Date Analyzed: 7-11-92

Units: mg/kg

Analyst: BMM

Element	Raw Number	Blks Corr.	Dil. Factor 1 Adj. Value	PQL	Dil. Factor 10 Adj. Value	PQL	Dil. Factor 50 Adj. Value	PQL	Default PQL
Al			19000	17.732					
b			<PQL	25.4639					
s			<PQL	26.2887					
Ba			~~20.1~~	0.72165					
e			<PQL	0.72165					
d			<PQL	4.63918					
Ca			3880	48.4536					
r			43.9 ✓	8.24742					
b			19.1	3.91753					
Cu			50.9	3.29897					
Fe			40800	5.97938					
d			<PQL	20.8247					
g			11700	18.2474					
n			653	1.85567					
b			<PQL	3.60825					
i			52.3	5.46392					
K			2450	43.6082					
e			<PQL	31.7526					
i			959	27.5258					
Hg			<PQL ✓	7.21649					
Na			<PQL	250.206					
i			<PQL	187.629					
i			299	51.2371					
Sn			<PQL	21.3402					
			30.6	3.40206					
n			113	4.43299					

Problems/Comments to be Addressed on Report: ~~use~~ on dil. factor

1 saturated w/ Fe

Reviewed and Approved By: BMM

Date: 7/11/92

D-442

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS
Method: 6010
W.O.#: 92-06-178-04A 1
Date Analyzed: 7-11-92
Units: mg/kg
Analyst: BMM

Element	Raw Number	Dil. Factor 1 Blks Corr.	10 Adj. Value	10 PQL	50 Adj. Value	50 PQL	Default PQL
Al			20700	18.1053			
Sb			<PQL	26			
As			<PQL	26.8421			
Ba			20.3 ~~20.4~~	0.73684			
Be			**<PQL**	0.73684			
Cd			**<PQL**	4.73684			
Ca			4230	49.4737			
Cr			**39.4** ✓	8.42105			
Co			19.5	4			
Cu			47.6	3.36842			
Fe			41100	6.10526			
Pb			<PQL	21.2632			
Mg			12500	18.6316			
Mn			728	1.89474			
Mo			<PQL	3.68421			
Ni			50	5.57895			
K			3100	44.5263			
Se			<PQL	32.4211			
Si			714	28.1053			
Ag			**<PQL**	7.36842			
Na			<PQL	255.474			
Tl			<PQL	191.579			
Ti			404	52.3158			
Sn			<PQL	21.7895			
V			55.7	3.47368			
Zn			114	4.52632			

Problems/Comments to be Addressed on Report: dil. factor 1
saturated w/ Fe

Reviewed and Approved By: CJM

Date: 7/11/92

D-443

ROSS Analytical Services Inc..
16433 Foltz Industrial Parkway
Strongsville, OH 44136

Analyst:BMM Date:7-11-92 Client:BIONETICS

% Recovery of Spikes in Solid Samples
For Metals

	MS	MSD
Sample #	92-06-178-04A 1:10	
Spiked Sample wt. g	1.02	0.97
Final Vol. ml	100	100

ELEMENT	spike added ug	unspiked conc ug/g	MS conc ug/g	MS % rec.	MSD conc ug/g	MSD % rec	% RPD
[illegible]	20	1928.34	2118.87	971.7	2116.45	959.4	0.1
Sb	40	0.00	30.74	78.4	30.21	77.0	1.7
As	40	0.00	35.87	91.5	38.96	99.3	-8.2
[illegible]a	20	1.90	20.36	**94.1**	20.34	**94.0**	0.1
[illegible]e	20	0.00	18.80	**95.9** ✓	18.68	**95.3**	0.6
Cd	20	0.00	17.24	**87.9**	17.07	**87.1**	0.9
[illegible]a	20	393.79	427.69	172.9	406.12	62.9	5.2
[illegible]	20	3.67	22.86	**97.9**	23.64	**101.8**	-3.3
Co	20	1.82	20.95	97.6	20.72	96.4	1.1
[illegible]	20	4.43	23.35	96.3	23.51	97.3	-0.7
[illegible]e	20	3830.24	4152.10	1641.5	4110.57	1429.7	1.0
Pb	40	0.00	40.19	102.5	39.21	100.0	2.5
Mg	20	1163.95	1276.90	576.0	1258.77	483.6	1.4
[illegible]n	20	67.85	91.58	121.0	89.21	109.0	2.6
[illegible]o	40	0.00	42.44	108.2	44.60	113.7	-5.0
Ni	20	4.66	23.93	98.3	23.87	98.0	0.2
[illegible]	500	288.43	768.82	98.0	767.09	97.6	0.2
[illegible]e	40	0.00	38.15	97.3	38.93	99.3	-2.0
Si	20	66.48	165.91	507.1	94.54	143.1	54.8
[illegible]g	20	0.00	19.66	**100.3**	12.69	**64.7**	43.1
[illegible]a	40	0.00	49.86	127.2	52.68	134.3	-5.5
Tl	40	0.00	0.00	0.0	0.00	0.0	ERR
Ti	40	37.59	81.84	112.8	81.87	112.9	-0.0
[illegible]n	40	0.00	35.65	90.9	36.60	93.3	-2.6
[illegible]	20	3.33	23.43	102.5	23.24	101.5	0.8
Zn	20	10.58	30.39	101.0	31.24	105.3	-2.7

Checker/Date: CJM 7/11/92 Check(to use this dilution) ✓

D-444

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS
Method: 6010
W.O.#: 92-06-178-05A 1
Date Analyzed: 7-11-92
Units: mg/kg
Analyst: BMM

Element	Raw Number	Dil. Factor 1 Blks Corr.	10 Adj. Value	PQL	50 Adj. Value	PQL	Default PQL
Al			19600	17.551			
So			<PQL	25.2041			
As			<PQL	26.0204			
Ba			**16.7**	0.71429			
Be			**<PQL**	0.71429			
Cd			<PQL	4.59184			
Ca			4150	47.9592			
Cr			**31.2**	8.16327			
Co			16.9	3.87755			
Cu			52.3	3.26531			
Fe			39600	5.91837			
Pb			<PQL	20.6122			
Mg			11400	18.0612			
Mn			613	1.83673			
Mo			12.8	3.57143			
Ni			42.6	5.40816			
K			2330	43.1633			
Se			<PQL	31.4286			
Si			935	27.2449			
Ag			**<PQL**	7.14286			
Na			<PQL	247.653			
Tl			<PQL	185.714			
Ti			346	50.7143			
Sn			<PQL	21.1224			
V			33.2	3.36735			
Zn			105	4.38776			

Problems/Comments to be Addressed on Report: Dil fact. 1
saturated w/ Fe

Reviewed and Approved By: CJM

Date: 7/11/92

D-445

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS — Method: 6010

S.O.#: 92-06-178-06A 1 — Date Analyzed: 7-11-92

Units: mg/kg — Analyst: BMM

Dil. Factor		1	10		50		
Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Al			21800	18.1053			
			<PQL	26			
			<PQL	26.8421			
Ba			**19.8**	0.73684			
			<PQL	0.73684			
			<PQL	4.73684			
Ca			1800	49.4737			
Cr			**34.6** ✓	8.42105			
			24.9	4			
			43.8	3.36842			
Fe			43200	6.10526			
			<PQL	21.2632			
			12500	18.6316			
Mn			552	1.89474			
			4.25	3.68421			
			51.3	5.57895			
K			2550	44.5263			
Se			<PQL	32.4211			
			499	28.1053			
			<PQL	7.36842			
Na			<PQL	255.474			
			<PQL	191.579			
			302	52.3158			
Sr			<PQL	21.7895			
			34.9	3.47368			
			118	4.52632			

Problems/Comments to be Addressed on Report: Dilution factor 1. Saturated w/ Fe

Reviewed and Approved By: CMM

Date: 7/11/92

D-446

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS

W.O.#: 92-06-178-07A 1

Units: mg/kg

Method: 6010

Date Analyzed: 7-11-92

Analyst: BMM

Element	Dil. Factor: Raw Number	1 Blks Corr.	10 Adj. Value	PQL	50 Adj. Value	PQL	Default PQL
Al			17700	18.1053			
Sb			<PQL	26			
As			<PQL	26.8421			
Ba			18.2 ~~18.5~~	0.73684			
Be			**<PQL**	0.73684			
Cd			<PQL	4.73684			
Ca			7700	49.4737			
Cr			**35.4**	6.42105			
Co			21.1	4			
Cu			65.6	3.36842			
Fe			38300	6.10526			
Pb			<PQL	21.2632			
Mg			11800	18.6316			
Mn			1170	1.89474			
Mo			<PQL	3.68421			
Ni			49.6	5.57895			
K			2880	44.5263			
Se			<PQL	32.4211			
Si			467	28.1053			
Ag			**<PQL**	7.36842			
Na			<PQL	255.474			
Tl			<PQL	191.579			
Ti			367	52.3158			
Sn			<PQL	21.7895			
V			28.9	3.47368			
Zn			94.8	4.52632			

Problems/Comments to be Addressed on Report: Dil. fact. 1 saturated w/ Fe

Reviewed and Approved By: CJM

Date: 7/11/92

D-447

Raw Data with:
IEA 92-06-178

ICP DATA SUMMARY SHEET

PDSS Analytical Services

Client: IEA — Method: 6010

W.O.#: 92-06-178-08A 1 — Date Analyzed: 7-11-92

Units: mg/kg — Analyst: BMM

Dil. Factor		1	10		50		
Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Al			3940	17.9167			
Sb			<PQL	25.7292			
As			<PQL	26.5625			
Ba	0.28241	293	29.1	0.72917			
Be	0.00260	0.271	<PQL	0.72917			
Cd	-0.04615	<PQL	<PQL	4.6875			
Ca			7950	48.9583			
Cr	0.24316	25.3	23	8.33333			
Co			10.9	3.95833			
Cu			41.4	3.33333			
Fe			12300	6.04167			
Pb			<PQL	21.0417			
Mg			4130	18.4375			
Mn			534	1.875			
Mo			<PQL	3.64583			
Ni			28.6	5.52083			
K			1200	44.0625			
Se			<PQL	32.0833			
Ag	-0.01492	<PQL	<PQL	7.29167			
Na			941	252.813			
Tl			<PQL	189.583			
Sn			179	51.7708			
V			<PQL	21.5625			
Zn			7.08	3.4375			
			18.8	4.47917			

Problems/Comments to be Addressed on Report: use dil. fact. 1

Reviewed and Approved By: [signature]

Date: 7/11/92

D-448

Raw Data with:
IEA 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA

Method: 6010

W.O.#: 92-06-178-09A 1

Date Analyzed: 7-11-92

Units: mg/kg

Analyst: BMM

Element	Raw Number	Blks Corr.	Dil. Factor 1 Adj. Value	PQL	Dil. Factor 10 Adj. Value	PQL	Dil. Factor 50 Adj. Value	PQL	Default PQL
Al			2140	17.551					
Sb			<PQL	25.2041					
As			<PQL	26.0204					
Ba	0.17165	17.4 ✓	**17.1**	0.71429					
Be	0.00176	0.149	**<PQL**	0.71429					
Cd	-0.00713	<PQL	**<PQL**	4.59184					
Ca			2170	47.9592					
Cr	1.4143	145	**144**	8.16327					
Co			7.47	3.87755					
Cu			38.3	3.26531					
Fe			8000	5.91837					
Pb			<PQL	20.6122					
Mg			2630	18.0612					
Mn			235	1.83673					
Mo			13.7	3.57143					
Ni			101	5.40816					
K			729	43.1633					
Se			<PQL	31.4286					
Si			459	27.2449					
Ag	-0.01931	<PQL	**<PQL**	7.14286					
Na			753	247.653					
Tl			<PQL	185.714					
Ti			110	50.7143					
Sn			<PQL	21.1224					
V			5.32	3.36735					
Zn			18.1	4.38776					

Problems/Comments to be Addressed on Report: use dil. fact. 1

Reviewed and Approved By: CJM

Date: 7/11/92

D-449

Raw Data with:
IEA 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA

Method: 6010

W.O.#: 92-06-178-10A 1

Date Analyzed: 7-11-92

Units: mg/kg

Analyst: BMM

Element	Raw Number	Blks Corr.	Dil. Factor 1 Adj. Value	PQL	Dil. Factor 10 Adj. Value	PQL	Dil. Factor 50 Adj. Value	PQL	Default PQL
Al			2590	17.0297					
Sb			<PQL	24.4554					
As			<PQL	25.2475					
Ba	0.19868	19.6 ✓	19.8	0.69307					
Be	0.00013	<PQL	<PQL	0.69307					
Cd	-0.00387	<PQL	<PQL	4.45545					
Ca			4250	46.5347					
Cr	0.23633	23.4	19.4	7.92079					
Co			6.79	3.76238					
Cu			27.4	3.16832					
Fe			10600	5.74257					
Pb			PQL	20					
Mg			3690	17.5248					
Mn			293	1.79218					
Mo			<PQL	3.46535					
Ni			22.9	5.24752					
K			651	41.8812					
Se			<PQL	30.495					
Ag	-0.01216	<PQL	<PQL	6.93069					
Na			725	240.297					
Tl			<PQL	180.198					
Ti			115	49.2079					
Sn			<PQL	20.495					
U			6.07	3.26733					
V			13.3	4.25743					

Problems/Comments to be Addressed on Report: use dil. fact. 1

Reviewed and Approved By: CDH

Date: 7/11/92

D-450

Raw Data with:
IEA 92-06-189

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA

W.O.#: 92-06-178-11A

Units: mg/kg

Method: 6010

Date Analyzed: 07/11/92

Analyst: CLT

		1 Blks Corr.	10 Adj. Value	PQL	50 Adj. Value	PQL	Default PQL
Al	49.7	5230					1.81053
Sb	-0.012	<PQL					2.6
As	0.0331	3.49					2.68421
Ba	0.3679	**38.6**					0.07368
Be	0.0013	**0.137**					0.07368
Cd	-0.0048	**<PQL**					0.47368
Ca	23.1	2390					4.94737
Cr	0.4738	**49.9**					0.84211
Co	0.0909	9.57					0.4
Cu	0.4041	41.8					0.33684
Fe	93.1	9790					0.61053
Pb	0.1363	14.4					2.12632
Mg	30.4	3200					1.86316
Mn	2.97	312					0.18947
Mo	0.0157	1.11					0.36842
Ni	0.3868	40.7					0.55789
K	18.5	1940					4.45263
Se	-0.0594	<PQL					3.24211
Si	5.3	541					2.81053
Ag	-0.0056	**<PQL**					0.73684
Na	6.22	655					25.5474
Tl	-0.3229	<PQL					19.1579
Ti	1.26	133					5.23158
Sn	0.0417	4.39					2.17895
V	0.0978	9.53					0.34737
Zn	0.1606	13.1					0.45263

Problems/Comments to be Addressed on Report: _____

Reviewed and Approved By: Com

Date: 7/13/92

D-451

ROSS Analytical Services Inc.,
16433 Foltz Industrial Parkway
Strongsville, OH 44136

Analyst:CLT Date:07/11/92 Client:IEA

% Recovery of Spikes in Solid Samples
For Metals

	MS	MSD
Sample #	92-06-178-11A	
Spiked Sample wt. g	0.97	0.96
Final Vol. ml	100	100

ELEMENT	spike added ug	unspiked conc ug/g	MS conc ug/g	MS % rec.	MSD conc ug/g	MSD % rec	% RPD
	200	5122.71	9772.06	2254.9	10764.90	2736.5	-9.7
Sb	400	0.00	355.26	86.2	347.97	84.4	2.1
As	400	3.42	399.67	96.1	399.20	96.0	0.1
	200	37.80	257.38	**106.5** ✓	269.60	**112.4**	-4.6
Be	200	0.13	180.15	**87.3** ✓	185.34	**89.6**	-2.8
Cd	200	0.00	164.34	**79.7** ✓	169.22	**82.1**	-2.9
	200	2349.53	2806.13	225.8	2874.77	259.1	-2.4
	200	48.84	237.70	**91.6**	244.78	**95.0**	-2.9
Co	200	9.37	191.56	88.4	196.98	91.0	-2.8
	200	40.94	234.27	93.8	242.03	97.5	-3.3
	200	9591.04	12440.62	1382.0	12962.07	1635.0	-4.1
Pb	400	14.05	383.54	89.6	397.11	92.9	-3.5
Mo	200	3130.44	4274.53	554.9	4471.54	650.4	-4.5
	200	306.01	538.82	112.9	550.82	118.7	-2.2
Mo	400	1.09	391.54	94.7	391.48	94.7	0.0
Ni	200	39.88	218.22	86.5	225.45	90.0	-3.3
	5000	1900.99	8010.20	118.5	8422.36	126.5	-5.0
	400	0.00	380.38	92.2	385.66	93.5	-1.4
Si	200	529.37	774.28	118.8	848.63	154.8	-9.2
	200	0.00	176.22	**85.5**	183.82	**89.2**	-4.2
	400	641.35	1285.16	156.1	1381.16	179.4	-7.2
Ti	400	0.00	377.94	91.7	392.34	95.1	-3.7
Ti	400	130.05	525.73	96.0	532.03	97.5	-1.2
	400	4.30	398.89	95.7	397.74	95.4	0.3
V	200	9.34	207.63	96.2	215.70	100.1	-3.8
Zn	200	12.83	202.23	91.9	215.63	98.4	-6.4

Checker/Date: CDM 7/13/92 Check(to use this dilution) ✓

D-452

Raw Data with:
IEA 92-06-189

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA
Method: 6010
W.O.#: 92-06-178-12A
Date Analyzed: 07/11/92
Units: mg/kg
Analyst: CLT

		Blks Corr.	10 Adj. Value	PQL	50 Adj. Value	PQL	Default PQL
Al	82.8	8710					1.81053
Sb	-0.0004	<PQL					2.6
As	0.0393	4.14					2.68421
Ba	0.6646	**69.8**					0.07368
Be	0.0047	**0.499**					0.07368
Cd	-0.0433	**<PQL**					0.47368
Ca	29.4	3050					4.94737
Cr	0.2308	**24.3**					0.84211
Co	0.1068	11.2					0.4
Cu	0.3587	37					0.33684
Fe	125	13200					0.61053
Pb	0.079	8.32					2.12632
Mg	44.8	4710					1.86316
Mn	3.32	349					0.15947
Mo	0.0304	2.67					0.36842
Ni	0.2291	24.1					0.55789
K	36.5	3830					4.45263
Se	-0.0618	<PQL					3.24211
Si	10.5	1090					2.81053
Ag	-0.0043	**<PQL**					0.73684
Na	8.34	878					25.5474
Tl	-0.3962	<PQL					19.1579
Ti	1.63	171					5.23158
Sn	0.0592	6.23					2.17895
V	0.1741	17.6					0.34737
Zn	0.195	16.7					0.45263

Problems/Comments to be Addressed on Report: _____

Reviewed and Approved By: CDM

Date: 7/13/92

D-453

Raw Data with:
IEA 92-06-189

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA
Method: 6010
W.O.#: 92-06-178-13A
Date Analyzed: 07/11/92
Units: mg/kg
Analyst: CLT

	1 Blks Corr.	10 Adj. Value	PQL	50 Adj. Value	PQL	Default PQL
Al	37.1	3860				1.79167
Sb	-0.0147	<PQL				2.57292
As	0.0314	3.28				2.69625
Ba	0.3023	**31.4** ✓				0.07292
Be	0.0013	**0.133**				0.07292
Cd	-0.0315	<PQL				0.46875
Ca	16.3	1650				4.89583
Cr	0.4614	**48.1** ✓				0.83333
Co	0.085	8.85				0.39583
Cu	0.3092	31.5				0.33333
Fe	82.5	8590				0.60417
Pb	0.0798	8.31				2.10417
Mg	31.7	3300				1.24375
Mn	1.83	191				0.1875
Mo	0.0188	1.42				0.56458
Ni	0.3198	33.3				0.55208
K	16	1660				4.40625
Se	-0.0657	<PQL				3.20833
Ag	6.89	701				2.78125
Tl	-0.0067	<PQL				0.72917
Na	5.75	599				25.2813
V	-0.2593	<PQL				18.9583
Zn	1.11	115				5.17708
Sn	0.0611	6.36				2.15625
W	0.0754	7.1				0.34375
Sn	0.1593	12.8				0.44792

Problems/Comments to be Addressed on Report: _____

Reviewed and Approved By: CDN

Date: 7/13/92

D-495

Raw Data with:
IEA 92-06-189

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA

W.O.#: 92-06-178-14A

Units: mg/kg

Method: 6010

Date Analyzed: 07/11/92

Analyst: CLT

		1 Blks Corr.	10 Adj. Value	PQL	50 Adj. Value	PQL	Default PQL
Al	19.4	2030					1.79167
Sb	-0.0167	<PQL					2.57292
As	0.0274	2.85					3.65625
Ba	0.1394	**14.4**					0.07292
Be	0.0004	**<PQL**					0.07292
Cd	-0.0194	**<PQL**					0.46875
Ca	13.4	1360					4.89583
Cr	0.3176	**33.1**					0.83333
Co	0.0656	6.84					0.39583
Cu	0.3525	36					0.33333
Fe	54.4	5660					0.60417
Pb	0.1316	15.8					2.10417
Mg	22.3	2320					1.64375
Mn	1.66	172					0.1875
Mo	0.009	0.391					0.36458
Ni	0.2747	28.6					0.55208
K	6.35	651					4.40625
Se	-0.0534	<PQL					3.20833
Si	7.88	804					2.78125
Ag	-0.0086	**<PQL**					0.72917
Na	4.24	441					25.2813
Tl	-0.1826	<PQL					18.9583
Ti	0.7059	73.5					5.17708
Sn	0.0465	4.84					2.15625
V	0.0349	2.88					0.34375
Zn	0.1023	6.9					0.44792

Problems/Comments to be Addressed on Report: _____

Reviewed and Approved By: CLT

Date: 7/13/92

D-456

METALS PREP LOGSHEET

000143

CLIENT ID TEA, Resi-EP-Misc
METHOD ID 3050I
PRL LOCATION RT 4C

PREP DATE 7-7-92
ANALYST INIT SJ
CHECKER INIT dfm

SAMPLE ID	INITIAL WT / VOL	FINAL VOLUME	SPIKING DATA	COMMENTS
PB1		100 mL		
PB2				
LCS			1000 µl Resi 4 & 5B #1223, 1224	
92-06-208-01A	.96g			
92-06-178-05A	.96g			
-16A	.95g			
-17A	.99g			
-17AMS	.98g		2000 µl Resi 4 & 5B	
-17AMSD	.97g		2000 µl 4 & 5B	
18A	.96g			
19A	.98g			
20A	.95g			
21A	1.02g			
22A	.97g			
23A	.96g			
24A	.99g			
25A	.95g			
26A	.95g			
27A	1.00g			
27AMS	.95g		2000 µl Resi 4 & 5B	
27AMSD	.97g		2000 µl 4 & 5B	
28A	.95g			

D-457

Book Page

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS
Method: 6010
W.O.#: 92-06-178
Date Analyzed: 7-11-92
Units: mg/kg
Analyst: BMM

3050I Element	7-7-92 Raw Number	PREP BLK 1 Value	Raw Number	PREP BLK 2 Value	Raw Number	EXTR BLK 1 Value	Default PQL
Al	0.0237	0.024	0.0464	0.046			0.0172
Sb	-0.0101	<PQL	-0.0099	<PQL			0.0247
As	0.0015	<PQL	-0.0011	<PQL			0.0255
Ba	0.0007	**<PQL**	0.0011	**0.001**			0.0007
Be	-0.0017	<PQL	-0.0012	**<PQL**			0.0007
Cd	0.0031	**<PQL**	0.0027	**<PQL**			0.0045
Ca	0.1648	0.165	0.1931	0.193			0.047
Cr	0.0001	**<PQL**	0.0009	**<PQL**			0.008
Co	0.0008	<PQL	0.0016	<PQL			0.0038
Cu	0.01	0.01	0.0094	0.009			0.0032
Fe	0.0726	0.073	0.0579	0.058			0.0058
Pb	-0.0079	<PQL	-0.0083	<PQL			0.0202
Mg	0.0024	<PQL	0.0106	<PQL			0.0177
Mn	0.0013	<PQL	0.0009	<PQL			0.0018
Mo	-0.0008	<PQL	-0.0019	<PQL			0.0035
Ni	0.0002	<PQL	0.0009	<PQL			0.0053
K	0.048	0.048	0.042	<PQL			0.0423
Se	-0.0125	<PQL	-0.0064	<PQL			0.0308
Si	0.0723	0.072	0.0743	0.074			0.0267
Ag	0.0026	**<PQL**	0.0003	**<PQL**			0.007
Na	0.1041	<PQL	0.1857	<PQL			0.2427
Tl	-0.5878	<PQL	-0.4653	<PQL			0.182
Ti	-0.0142	<PQL	-0.0071	<PQL			0.0097
Sn	0.0309	0.031	0.0328	0.033			0.0207
V	-0.0006	<PQL	-0.0002	<PQL			0.0033
Zn	0.0244	0.024	0.0467	0.047			0.0043

Problems/Comments to be Addressed on Report: _____

Reviewed and Approved By: CDM

Date: 7/11/92

D-458

Worksheet for ICP LCSA Analysis

To print this sheet press Alt+P then type "srsa" then Enter.

ROSS Analytical Services Inc.,
16433 Foltz Industrial Parkway
Strongsville, OH 44136

Analyst: BMM
S.D. #s:92-06-178.208
Client: BIONETICS 92-06-178

Run Date: 7-11-92
PrepDate: 7-7-92

Matrix: (one)	1. Water/wastewater	Analysis type: (one)	X1. ICP
	2. TCLP/EP extract		2. GFAA
X	3. Soil/sludge		3. FLAA
	4. Waste		4. Vapor

Prep: 3050I

LCS ANALYSIS RESULTS

Element	True value (ug/mL)	Value Obtained (ug/mL)	% Rec.	Value Obtained (ug/ml)	% Rec.
Al	1	0.9684	96.8		0.0
Sb	2	1.9952	99.8		0.0
As	2	1.8114	90.6		0.0
Ba	1	0.9043	**90.4** ✓		0.0
Be	1	0.8660	**86.6**		0.0
Cd	1	0.8470	**84.7**		0.0
Ca	1	0.9111	91.1		0.0
Cr	1	0.9459	**94.6**		0.0
Co	1	0.9079	90.8		0.0
Cu	1	0.9221	92.2		0.0
Fe	1	0.9077	90.8		0.0
Pb	2	1.8185	90.9		0.0
Mg	1	0.9162	91.6		0.0
Mn	1	0.9451	94.5		0.0
Mo	2	2.1200	106.0		0.0
Ni	1	0.8881	88.8		0.0
K	25	22.6861	90.7		0.0
Se	2	1.8113	90.6		0.0
Ag	2	2.6674	133.4		0.0
Tl	1	0.9271	**92.7**		0.0
Na	2	1.9611	98.1		0.0
Th	2	1.2782	63.9		0.0
Ti	2	2.0122	100.6		0.0
Sn	2	1.8881	94.4		0.0
V	1	0.9585	95.9		0.0
Zn	1	0.8972	89.7		0.0

Checker: CJ11 Date: 7/11/92

D-459

Raw Data with:
IEA 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA

W.O.#: 92-06-178-15A 1

Units: mg/kg

Method: 6010

Date Analyzed: 7-11-92

Analyst: BMM

Element	Raw Number	Dil. Factor 1 Blks Corr.	10 Adj. Value	PQL	50 Adj. Value	PQL	Default PQL
Al			17800	17.9167			
Sb			<PQL	25.7292			
As			85.2	26.5625			
Ba			**148**	0.72917			
Be			**1.55**	0.72917			
Cd			**27.7**	4.6875			
Ca			5020	48.9583			
Cr			**40.3**	8.33333			
Co			35.8	3.95833			
Cu			146	3.33333			
Fe			27600	6.04167			
Pb			358	21.0417			
Mg			7840	18.4375			
Mn			898	1.875			
Mo			26.1	3.64583			
Ni			33.1	5.52083			
K			4870	44.0625			
Se			<PQL	32.0833			
Si			450	27.8125			
Ag			**<PQL**	7.29167			
Na			936	252.813			
Tl			<PQL	189.583			
Ti			502	51.7708			
Sn			26.5	21.5625			
V			36.9	3.4375			
Zn			515	4.47917			

Problems/Comments to be Addressed on Report: dil. factor 1
saturated w/ Fe

Reviewed and Approved By: CJM

Date: 7/11/92

D-460

Raw Data with:
IEA 92-06-178

000147

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA

Method: 6010

S.O.#: 92-06-178-16A 1

Date Analyzed: 7-11-92

Units: mg/kg

Analyst: BMM

Dil. Factor		1	10		50		
Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Al			18300	18.1053			
			<PQL	26			
			114	26.8421			
Ba			**161** ✓	0.73684			
			<PQL	0.73684			
			30.1	4.73684			
Ca			5150	49.4737			
Cr			**46.1** ✓	8.42105			
			35.7	4			
			158	3.36842			
Fe			28700	6.10526			
			390	21.2632			
			8050	18.6316			
Mn			935	1.89474			
			21.7	3.68421			
			37	5.57895			
K			4970	44.5263			
Se			<PQL	32.4211			
			553	28.1053			
			<PQL	7.36842			
Na			950	255.474			
			<PQL	191.579			
			528	52.3158			
Sn			34.7	21.7895			
			38.1	3.47368			
			556	4.52632			

Problems/Comments to be Addressed on Report: dil. fact. 1 sat. w/ FQ

Reviewed and Approved By: CBM

Date: 7/11/92

D-461

Raw Data with:
IEA 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA
Method: 6010
W.O.#: 92-06-178-17A 1
Date Analyzed: 7-11-92
Units: mg/kg
Analyst: BMM

Element	Raw Number	Dil. Factor 1 Blks Corr.	10 Adj. Value	10 PQL	50 Adj. Value	50 PQL	Default PQL
Al			19100	17.3737			
Sb			<PQL	24.9495			
As			84.2	25.7576			
Ba			**158**	0.70707			
Be			**<PQL**	0.70707			
Cd			**42.2**	4.54545			
Ca			4960	47.4747			
Cr			**48.7**	8.08081			
Co			34.5	3.83838			
Cu			153	3.23232			
Fe			29100	5.85859			
Pb			546	20.404			
Mg			8150	17.8788			
Mn			879	1.81818			
Mo			19.3	3.53535			
Ni			34.1	5.35354			
K			5210	42.7273			
Se			<PQL	31.1111			
Si			388	26.9697			
Ag			**<PQL**	7.07071			
Na			1010	245.152			
Tl			<PQL	183.838			
Ti			535	50.202			
Sn			23.1	20.9091			
V			39.4	3.33333			
Zn			534	4.34343			

Problems/Comments to be Addressed on Report: dil. factor (10 activated w/ Fe.

Reviewed and Approved By: CDH

Date: 7/11/92

D-462

ROSS Analytical Services Inc.,
16433 Foltz Industrial Parkway
Strongsville, OH 44136

Analyst:BMM Date:7-11-92 Client:IEA

% Recovery of Spikes in Solid Samples
For Metals

	MS	MSD
Sample #	92-06-178-17A 1:10	
Spiked Sample wt. g	0.98	0.97
Final Vol. ml	100	100

ELEMENT	spike added ug	unspiked conc ug/g	MS conc ug/g	MS % rec.	MSD conc ug/g	MSD % rec	% RPD	
	20	1925.72	1888.51	-182.3	2049.15	604.8	-8.2	
Sb	40	0.00	18.76	46.0	24.69	60.5	-27.3	
As	40	8.51	47.12	94.6	49.47	100.4	-4.9	
	20	15.99	34.29	89.7	~~35.47~~ 34.63	~~95.5~~ 93.2%	~~-3.4~~	1.0
	20	0.00	18.79	92.1	~~18.74~~ 18.12	~~91.8~~ 90.9%	~~0.5~~	3.3
Cd	20	4.26	22.16	87.7	~~22.45~~ 21.86	~~89.1~~ 88.0%	~~-1.3~~	1.4
	20	500.72	519.13	90.2	532.68	156.6	-2.6	
	20	4.92	23.50	91.1	~~24.33~~ 23.70	~~95.1~~ 93.7%	~~-3.5~~	0.8
Co	20	3.48	22.39	92.6	22.93	95.3	-2.4	
	20	15.46	34.22	91.9	35.07	96.1	-2.5	
	20	2941.97	2774.35	-821.3	2977.81	175.6	-7.1	
Fe	40	55.15	90.44	86.5	96.76	102.0	-6.8	
Mg	20	826.11	814.00	-59.3	866.39	197.4	-6.2	
	20	88.84	105.63	82.3	109.64	102.0	-3.7	
	40	1.95	45.04	105.6	46.36	108.8	-2.9	
Ni	20	3.44	22.05	91.1	22.14	91.6	-0.4	
	500	526.74	963.14	85.5	1018.14	96.3	-5.6	
	40	0.00	38.68	94.8	40.00	98.0	-3.4	
Si	20	39.22	79.71	198.4	97.37	284.9	-19.9	
Ag	20	0.00	19.58	95.9	~~20.08~~ 19.48	~~98.4~~ 97.4%	~~-2.5~~	0.5
	40	102.35	135.90	82.2	144.25	102.7	-6.0	
Tl	40	0.00	0.00	0.0	0.00	0.0	ERR	
Ti	40	54.09	92.71	94.6	99.57	111.4	-7.1	
	40	2.34	39.56	91.2	41.53	96.0	-4.9	
	20	3.98	23.86	97.4	24.78	101.9	-3.8	
Zn	20	53.99	68.01	68.7	72.58	91.1	~~-6.5~~	

ck 7/13/92

Checker/Date: CJM 7/11/92 Check(to use this dilution)

D-403

Raw Data with:
IEA 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA
Method: 6010
W.O.#: 92-06-178-18A 1
Date Analyzed: 7-11-92
Units: mg/kg
Analyst: BMM

Element	Raw Number	Dil. Factor 1 Blks Corr.	10 Adj. Value	PQL	50 Adj. Value	PQL	Default PQL
Al			18800	17.9167			
Sb			<PQL	25.7292			
As			68.8	26.5625			
Ba			**239**	0.72917			
Be			**<PQL**	0.72917			
Cd			**6.2**	4.6875			
Ca			5990	48.9583			
Cr			**62.1**	8.33333			
Co			34.5	3.95833			
Cu			209	3.33333			
Fe			28600	6.04167			
Pb			248	21.0417			
Mg			8110	18.4375			
Mn			903	1.875			
Mo			39.3	3.64583			
Ni			37.2	5.52083			
K			5130	44.0625			
Se			<PQL	32.0833			
Si			556	27.8125			
Ag			**<PQL**	7.29167			
Na			1180	252.813			
Tl			<PQL	189.583			
Ti			644	51.7708			
Sn			26.7	21.5625			
V			41.4	3.4375			
Zn			614	4.47917			

Problems/Comments to be Addressed on Report: dilution fact. 1
Saturated w/ Fe

Reviewed and Approved By: CTM

Date: 7/11/92

D-464

Raw Data with:
IEA 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA

Method: 6010

W.O.#: 92-06-178-19A 1

Date Analyzed: 7-11-92

Units: mg/kg

Analyst: BMM

Element	Raw Number	Dil. Factor 1 Blks Corr.	10 Adj. Value	PQL	50 Adj. Value	PQL	Default PQL
Al			17200	17.551			
Sb			<PQL	25.2041			
As			76.8	26.0204			
Ba			249	0.71429			
Be			<PQL	0.71429			
Cd			8.45	4.59184			
Ca			6200	47.9592			
Cr			59.6	8.16327			
Co			30.7	3.87755			
Cu			213	3.26531			
Fe			26800	5.91837			
Pb			269	20.6122			
Mg			7510	18.0612			
Mn			873	1.83673			
Mo			35.6	3.57143			
Ni			32.3	5.40816			
K			4670	43.1633			
Se			<PQL	31.4286			
Si			610	27.2449			
Ag			<PQL	7.14286			
Na			1150	247.653			
Tl			<PQL	185.714			
Ti			614	50.7143			
Sn			26.9	21.1224			
V			38.9	3.36735			
Zn			584	4.38776			

Problems/Comments to be Addressed on Report: dil. fact. 1
saturated w/ Fe

Reviewed and Approved By: CDM

Date: 7/11/92

D-465

000152

Raw Data with:
IEA 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA

Method: 6010

W.O.#: 92-06-178-20A 1

Date Analyzed: 7-11-92

Units: mg/kg

Analyst: BMM

Dil. Factor		1	10		50		
Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Al			17500	18.1053			
Sb			<PQL	26			
As			70.3	26.8421			
Ba			**230**	0.73684			
Be			**<PQL**	0.73684			
Cd			**6.62**	4.73684			
Ca			5970	49.4737			
Cr			**55.9**	8.42105			
Co			32.2	4			
Cu			199	3.36842			
Fe			26900	6.10526			
Pb			248	21.2632			
Mg			7620	18.6316			
Mn			884	1.89474			
Mo			31.5	3.68421			
Ni			33.5	5.57895			
K			4700	44.5263			
Se			<PQL	32.4211			
Si			474	28.1053			
Ag			**<PQL**	7.36842			
Na			1110	255.474			
Tl			<PQL	191.579			
Ti			599	52.3158			
Sn			24.4	21.7895			
V			37.1	3.47368			
Zn			569	4.52632			

Problems/Comments to be Addressed on Report: dil. fact. 1
saturated w/ Fe

Reviewed and Approved By: CM

Date: 7/11/92

D-466

Raw Data with:
IEA 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: IEA

Method: 6010

W.O.#: 92-06-178-21A 1

Date Analyzed: 7-11-92

Units: mg/kg

Analyst: BMM

Element	Raw Number	Dil. Factor / Blks Corr.	1	10 Adj. Value	PQL	50 Adj. Value	PQL	Default PQL
Al				16600	16.8627			
Sb				<PQL	24.2157			
As				149	25			
Ba				**124**	0.68627			
Be				**1.23**	0.68627			
Cd				**105**	4.41176			
Ca				4430	46.0784			
Cr				**32.4**	7.84314			
Co				30	3.72549			
Cu				135	3.13725			
Fe				25600	5.68627			
Pb				1130	19.8039			
Mg				7320	17.3529			
Mn				817	1.76471			
Mo				12.9	3.43137			
Ni				30.5	5.19608			
K				4440	41.4706			
Se				<PQL	30.1961			
Si				378	26.1765			
Ag				**<PQL**	6.86275			
Na				894	237.941			
Tl				<PQL	178.431			
Ti				426	48.7255			
Sn				<PQL	20.2941			
V				32.9	3.23529			
Zn				450	4.21569			

Problems/Comments to be Addressed on Report: dil. fact. 1
saturated w/ Fe

Reviewed and Approved By: GM

Date: 7/11/92

D-467

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS
Method: 6010
W.O.#: 92-06-178-22A
Date Analyzed: 7-11-92
Units: mg/kg
Analyst: BMM

Dil. Factor		1	10		50		
Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Al	0.5275	54.4	110	17.732			1.7732
Sb	0.1308	13.5	<PQL	25.4639			2.54639
As	0.0298	3.07	<PQL	26.2887			2.62887
Ba	0.006	**0.615**	2	0.72165			0.07216
Be	-0.001	**<PQL**	<PQL	0.72165			0.07216
Cd	0.1159	**12**	14.3	4.63918			0.46392
Ca	0.5245	54.1	105	48.4536			4.84536
Cr	0.5381	**55.5**	52	8.24742			0.82474
Co	0.0181	1.86	7.72	3.91753			0.39175
Cu	0.4014	41.4	40.5	3.29897			0.3299
Fe	0.772	79.6	181	5.97938			0.59794
Pb	0.4809	49.6	60.7	20.8247			2.08247
Mg	0.1085	11.2	38	18.2474			1.82474
Mn	0.1764	18.2	21.2	1.85567			0.18557
Mo	0.0422	4.35	4.45	3.60825			0.36082
Ni	0.031	3.2	<PQL	5.46392			0.54639
K	0.05	5.16	74.2	43.6082			4.36082
Se	0.0315	3.25	<PQL	31.7526			3.17526
Si	13.7	1410	1460	27.5258			2.75258
Ag	0.0002	**<PQL**	<PQL	7.21649			0.72165
Na	0.1668	<PQL	<PQL	250.206			25.0206
Tl	-0.3212	<PQL	<PQL	187.629			18.7629
Ti	0.0234	<PQL	<PQL	51.2371			5.12371
Sn	0.6591	67.9	62	21.3402			2.13402
V	0.0013	<PQL	<PQL	3.40206			0.34021
Zn	1.65	170	185	4.43299			0.4433

Problems/Comments to be Addressed on Report: use dil. fact. 1

Reviewed and Approved By: Com

Date: 7/11/92

D-468

000155

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS — Method: 6010

S.O.#: 92-06-178-23A — Date Analyzed: 7-11-92

Units: mg/kg — Analyst: BMM

Dil. Factor		1	10		50		
Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Al	3.16	329	361	17.9167			1.79167
	4.41	459	470	25.7292			2.57292
	0.0259	269	<PQL	26.5625			2.65625
Ba	2.11	220	218	0.72917			0.07292
Be	-0.0007	<PQL	<PQL	0.72917			0.07292
	0.1954	20.4	22.1	4.6875			0.46875
Ca	2.55	265	318	48.9583			4.89583
Cr	2.77	288	296	8.33333			0.83333
	0.0403	4.2	11.7	3.95833			0.39583
	0.6126	63.8	64.1	3.33333			0.33333
Fe	2.62	273	338	6.04167			0.60417
K	0.9622	100	97.2	21.0417			2.10417
	0.3337	34.8	54.2	18.4375			1.84375
Mn	0.1878	19.6	20.9	1.875			0.1875
Mo	0.0803	8.36	9.12	3.64583			0.36458
	0.0737	7.67	8.35	5.52083			0.55208
	0.5702	59.4	142	44.0625			4.40625
Se	0.0304	<PQL	<PQL	32.0833			3.20833
	12.5	1300	1350	27.8125			2.78125
	-0.0016	<PQL	<PQL	7.29167			0.72917
Sr	3.37	351	457	252.813			25.2813
	-0.3754	<PQL	<PQL	189.583			18.9583
	0.3625	37.8	79	51.7708			5.17708
Sn	0.6744	70.2	66.9	21.5625			2.15625
	0.0048	0.497	<PQL	3.4375			0.34375
Zr	2.99	311	334	4.47917			0.44792

Problems/Comments to be Addressed on Report: use Ref. fact. 1

Reviewed and Approved By: CDR

Date: 7/11/92

D-469

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS
Method: 6010
W.O.#: 92-06-178-24A
Date Analyzed: 7-11-92
Units: mg/kg
Analyst: BMM

Dil. Factor		1	10		50		
Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Al	3.23	326	340	17.3737			1.73737
Sb	4.64	468	470	24.9495			2.49495
As	0.0341	3.44	<PQL	25.7576			2.57576
Ba	2.09	**211** ✓	210	0.70707			0.07071
Be	-0.0009	**<PQL**	<PQL	0.70707			0.07071
Cd	0.2104	**21.3**	24	4.54545			0.45455
Ca	2.81	283	362	47.4747			4.74747
Cr	3.02	**305**	309	8.08081			0.80808
Co	0.0306	3.09	12.4	3.83838			0.38384
Cu	0.6552	66.2	65.6	3.23232			0.32323
Fe	2.59	261	298	5.85859			0.58586
Pb	1.01	102	107	20.404			2.0404
Mg	0.3232	32.6	46.7	17.8788			1.78788
Mn	0.1946	19.7	20.6	1.81818			0.18182
Mo	0.0796	8.04	5.51	3.53535			0.35354
Ni	0.0599	6.05	5.44	5.35354			0.53535
K	0.6152	62.1	173	42.7273			4.27273
Se	0.0337	3.41	<PQL	31.1111			3.11111
Si	12.7	1280	1310	26.9697			2.69697
Ag	-0.0005	**<PQL**	<PQL	7.07071			0.70707
Na	3.75	379	473	245.152			24.5152
Tl	-0.3723	<PQL	<PQL	183.838			18.3838
Ti	0.2435	24.6	<PQL	50.202			5.0202
Sn	0.6971	70.4	71.9	20.9091			2.09091
V	0.0045	0.455	<PQL	3.33333			0.33333
Zn	2.93	296	317	4.34343			0.43434

Problems/Comments to be Addressed on Report: use dil-fact. 1

Reviewed and Approved By: CDM

Date: 7/11/92

D-470

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS — Method: 6010

S.O.#: 92-06-178-25A — Date Analyzed: 7-11-92

Units: mg/kg — Analyst: BMM

Dil. Factor		1	10		50		
Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Al	2.55	268	273	18.1053			1.81053
	0.1149	12.1	<PQL	26			2.6
	0.0013	<PQL	<PQL	26.8421			2.68421
Ba	1.25	132	131	0.73684			0.07368
	-0.0009	<PQL	<PQL	0.73684			0.07368
	0.0653	6.87	8.49	4.73684			0.47368
Ca	5.77	608	674	49.4737			4.94737
Cr	0.6794	71.5	71.1	8.42105			0.84211
	0.0517	5.44	11.4	4			0.4
	2.34	246	247	3.36842			0.33684
Fe	5.62	592	641	6.10526			0.61053
	1.47	155	153	21.2632			2.12632
	0.549	57.8	59	18.6316			1.86316
Mn	0.2495	26.3	26.8	1.89474			0.18947
	0.1456	15.3	12.3	3.68421			0.36842
	0.0584	6.15	6.46	5.57895			0.55789
	0.4872	51.3	133	44.5263			4.45263
Se	0.0194	<PQL	<PQL	32.4211			3.24211
	6.23	656	656	28.1053			2.81053
Ag	0.0036	<PQL	<PQL	7.36842			0.73684
Na	2.91	306	398	255.474			25.5474
	-0.3945	<PQL	<PQL	191.579			19.1579
	0.1834	19.3	<PQL	52.3158			5.23158
Sn	0.7504	79	82.4	21.7895			2.17895
	0.0078	0.824	<PQL	3.47368			0.34737
	6.04	636	678	4.52632			0.45263

Problems/Comments to be Addressed on Report: use dil. fact. 1

Reviewed and Approved By: CDM

Date: 7/11/92

D-471

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS
Method: 6010
W.O.#: 92-06-178-26A
Date Analyzed: 7-11-92
Units: mg/kg
Analyst: BMM

Dil. Factor	1		10		50		
Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Al	0.4317	45.4	53.7	18.1053			1.81053
Sb	0.0142	<PQL	<PQL	26			2.6
As	0.0198	<PQL	<PQL	26.8421			2.68421
Ba	0.1354	**14.2**	15.7	0.73684			0.07368
Be	-0.0008	**<PQL**	<PQL	0.73684			0.07368
Cd	0.0435	**4.58**	5.78	4.73684			0.47368
Ca	1.73	183	213	49.4737			4.94737
Cr	0.3686	**38.8**	38	8.42105			0.84211
Co	0.0255	2.68	6.79	4			0.4
Cu	0.807	84.9	87.6	3.36842			0.33684
Fe	1.34	141	152	6.10526			0.61053
Pb	0.4134	43.5	42.8	21.2632			2.12632
Mg	0.1027	10.8	<PQL	18.6316			1.86316
Mn	0.1246	13.1	13	1.89474			0.18947
Mo	0.0368	3.87	<PQL	3.68421			0.36842
Ni	0.0197	2.07	<PQL	5.57895			0.55789
K	0.093	9.79	56.9	44.5263			4.45263
Se	0.0226	<PQL	<PQL	32.4211			3.24211
Si	7.2	758	544	28.1053			2.81053
Ag	-0.0004	**<PQL**	<PQL	7.36842			0.73684
Na	0.3679	38.7	<PQL	255.474			25.5474
Tl	-0.3853	<PQL	<PQL	191.579			19.1579
Ti	0.0148	<PQL	<PQL	52.3158			5.23158
Sn	0.5742	60.4	53.3	21.7895			2.17895
V	0.0034	0.353	<PQL	3.47368			0.34737
Zn	2.27	239	261	4.52632			0.45263

Problems/Comments to be Addressed on Report: use dil. fact. 1

Reviewed and Approved By: CDM

Date: 7/11/92

D-472

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS — Method: 6010

LIMS.#: 92-06-178-27A — Date Analyzed: 7-11-92

Units: mg/kg — Analyst: BMM

Dil. Factor		1	10		50		
Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Al	1.48	148	148	17.2			1.72
[illegible]	0.0575	5.75	<PQL	24.7			2.47
[illegible]	0.0074	<PQL	<PQL	25.5			2.55
Ba	0.6948	**69.5** ✓	70.5	0.7			0.07
Be	-0.001	**<PQL**	<PQL	0.7			0.07
[illegible]	0.0573	**5.73**	8.05	4.5			0.45
[illegible]	3.92	392	465	47			4.7
Cr	0.5472	**54.7**	51.7	8			0.8
[illegible]	0.0387	3.87	25.1	3.8			0.38
[illegible]	1.62	162	164	3.2			0.32
Fe	4.2	420	435	5.8			0.58
[illegible]	1.06	106	107	20.2			2.02
[illegible]	0.3318	33.2	44.5	17.7			1.77
[illegible]	0.1933	19.3	23	1.8			0.18
[illegible]	0.0997	9.97	32.9	3.5			0.35
[illegible]	0.0448	4.48	<PQL	5.3			0.53
[illegible]	0.3231	32.3	113	42.3			4.23
Pb	0.0232	<PQL	<PQL	30.8			3.08
[illegible]	6.58	658	696	26.7			2.67
[illegible]	0.0018	**<PQL**	<PQL	7			0.7
Sb	1.54	154	257	242.7			24.27
[illegible]	-0.3727	<PQL	<PQL	182			18.2
[illegible]	0.0862	8.62	<PQL	49.7			4.97
[illegible]	0.6929	69.3	77.4	20.7			2.07
[illegible]	0.0065	0.654	8.42	3.3			0.33
[illegible]	4.13	413	442	4.3			0.43

Problems/Comments to be Addressed on Report: use Dil. fact. 1

Reviewed and Approved By: CM

Date: 7/11/92

D-473

ROSS Analytical Services Inc.,
16433 Foltz Industrial Parkway
Strongsville, OH 44136

Analyst:BMM Date:7-11-92 Client:BIONETICS

% Recovery of Spikes in Solid Samples
For Metals

	MS	MSD
Sample #	92-06-178-27A	
Spiked Sample wt. g	0.95	0.97
Final Vol. ml	100	100

ELEMENT	spike added ug	unspiked conc ug/g	MS conc ug/g	MS % rec.	MSD conc ug/g	MSD % rec	% RPD
Al	200	155.27	472.09	150.5	569.93	197.0	-18.8
Sb	400	6.05	400.22	93.6	415.36	97.2	-3.7
As	400	0.00	357.09	84.8	371.80	88.3	-4.0
Ba	200	73.13	300.83	**108.2**	356.45	**134.6**	-16.9
Be	200	0.00	170.32	**80.9**	178.71	**84.9**	-4.8
Cd	200	6.03	170.45	**78.1**	177.41	**81.4**	-4.0
Ca	200	413.12	762.79	166.1	930.01	245.5	-19.8
Cr	200	57.60	250.36	**91.6**	273.48	**102.5**	-8.8
Co	200	4.07	183.39	85.2	192.95	89.7	-5.1
Cu	200	170.79	414.74	115.9	477.77	145.8	-14.1
Fe	200	442.01	934.96	234.2	1135.74	329.5	-19.4
Pb	400	111.23	532.60	100.1	594.87	119.9	-11.0
Mg	200	34.93	248.04	101.2	277.39	115.2	-11.2
Mn	200	20.34	210.90	90.5	224.03	96.7	-6.0
Mo	400	10.49	431.13	99.9	455.02	105.6	-5.4
Ni	200	4.72	180.72	83.6	190.29	88.1	-5.2
K	5000	34.01	4574.99	86.3	4807.39	90.7	-5.0
Se	400	0.00	369.14	87.7	385.92	91.7	-4.4
Si	200	692.53	1281.76	279.9	1011.26	151.4	23.6
Ag	200	0.00	112.52	**53.4**	114.22	**54.3**	-1.5
Na	400	162.61	616.93	107.9	717.98	131.9	-15.1
Tl	400	0.00	304.95	72.4	349.30	83.0	-13.6
Ti	400	9.07	415.35	96.5	443.16	103.1	-6.5
Sn	400	72.94	451.79	90.0	476.73	95.9	-5.4
V	200	0.69	188.93	89.4	198.03	93.7	-4.7
Zn	200	434.81	735.05	142.6	851.81	198.1	-14.7

Checker/Date: CDM 7/11/92 Check(to use this dilution) ✓

D-474

ROSS Analytical Services Inc..
16433 Foltz Industrial Parkway
Strongsville. OH 44136

Analyst:BMM Date:7-11-92 Client:BIONETICS

% Recovery of Spikes in Solid Samples
For Metals

	MS	MSD
Sample #	92-06-178-27A 1:10	
Spiked Sample wt. g	0.95	0.97
Final Vol. ml	100	100

ELEMENT	spike added ug	unspiked conc ug/g	MS conc ug/g	MS % rec.	MSD conc ug/g	MSD % rec	% RPD
Al	20	15.57	47.44	151.4	56.08	192.4	-16.7
Sb	40	0.00	41.54	98.7	43.00	102.1	-3.5
As	40	0.00	37.45	88.9	38.92	92.4	-3.9
Ba	20	7.42	29.68	**105.8**	35.21	**132.0**	-17.0
Be	20	0.00	17.65	**83.9**	18.63	**88.5**	-5.4
Cd	20	0.85	18.21	**82.5**	19.14	**86.9**	-5.0
Ca	20	48.97	82.95	161.4	100.88	246.6	-19.5
Cr	20	5.44	25.50	**95.3**	27.66	**105.5**	-8.1
Co	20	2.64	20.42	84.5	21.03	87.4	-2.9
Cu	20	17.27	41.68	115.9	47.97	145.8	-14.0
Fe	20	45.82	95.87	237.7	116.89	337.6	-19.8
Pb	40	11.21	55.42	105.0	61.52	119.5	-10.4
Mg	20	4.69	26.27	102.5	28.18	111.6	-7.0
Mn	20	2.42	21.54	90.8	22.95	97.5	-6.3
Mo	40	3.46	43.79	95.8	46.36	101.9	-5.7
Ni	20	0.00	18.65	88.6	19.84	94.3	-6.2
K	500	11.90	469.35	86.9	492.67	91.3	-4.8
Se	40	0.00	38.21	90.7	39.37	93.5	-3.0
Si	20	73.28	68.93	-20.6	68.61	-22.2	0.5
Ag	20	0.00	11.71	**55.6**	11.88	**56.4**	-1.5
Na	40	27.02	71.96	106.7	81.21	128.7	-12.1
Tl	40	0.00	0.00	0.0	0.00	0.0	ERR
Ti	40	0.00	41.95	99.6	44.39	105.4	-5.6
Sn	40	8.15	46.13	90.2	49.43	98.0	-6.9
V	20	0.89	19.34	87.7	20.34	92.4	-5.0
Zn	20	46.48	78.06	150.0	91.38	213.3	-15.7

Checker/Date: CJM Check(to use this dilution) ___

D-475

Raw Data with:
BIONETICS 92-06-178

ICP DATA SUMMARY SHEET

ROSS Analytical Services

Client: BIONETICS
Method: 6010
W.O.#: 92-06-178-28A
Date Analyzed: 7-11-92
Units: mg/kg
Analyst: BMM

Element	Raw Number	Blks Corr.	Adj. Value	PQL	Adj. Value	PQL	Default PQL
Dil. Factor		1	10		50		
Al	3.97	418	411	18.1053			1.81053
Sb	0.1865	19.6	<PQL	26			2.6
As	0.0019	<PQL	<PQL	26.8421			2.68421
Ba	2	**211** ✓	205	0.73684			0.07368
Be	0.0034	**0.362** ✓	<PQL	0.73684			0.07368
Cd	0.097	**10.2** ✓	14.1	4.73684			0.47368
Ca	8.45	889	973	49.4737			4.94737
Cr	0.9046	**95.2** ✓	95.8	8.42105			0.84211
Co	0.0828	8.72	28	4			0.4
Cu	3.5	369	365	3.36842			0.33684
Fe	13.5	1420	1420	6.10526			0.61053
Pb	2.51	265	275	21.2632			2.12632
Mg	0.9101	95.8	104	18.6316			1.86316
Mn	0.3523	37.1	38.2	1.89474			0.18947
Mo	0.2474	26	31.6	3.68421			0.36842
Ni	0.1082	11.4	14.3	5.57895			0.55789
K	0.9204	96.9	244	44.5263			4.45263
Se	0.0329	3.46	<PQL	32.4211			3.24211
Si	11.3	1190	552	28.1053			2.81053
Ag	0.0085	**0.892**	<PQL	7.36842			0.73684
Na	4.62	486	619	255.474			25.5474
Tl	-0.3714	<PQL	<PQL	191.579			19.1579
Ti	0.2255	23.7	<PQL	52.3158			5.23158
Sn	0.9466	99.6	104	21.7895			2.17895
V	0.0198	2.09	5.77	3.47368			0.34737
Zn	8.34	878	921	4.52632			0.45263

Problems/Comments to be Addressed on Report: use dil. fact. 1

Reviewed and Approved By: CDM

Date: 7/11/92

D-476

000163

Method: RASI_ICP Standard: CAL_BLANK

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Avge	-.02680	.01160	-.00230	.00020	-.00305	.00170	.06840
SDev	.00071	.00226	.00382	.00000	.00007	.00184	.00000
%RSD	2.6385	19.506	166.02	.00000	2.3184	108.15	.00000
#1	-.02730	.01320	-.00500	.00020	-.00310	.00040	.06840
#2	-.02630	.01000	.00040	.00020	-.00300	.00300	.06840

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Avge	.00590	.00015	.00510	.02680	.00950	.00210	.00710
SDev	.00042	.00007	.00042	.00735	.00354	.00014	.00099
%RSD	7.1909	47.140	8.3189	27.440	37.216	6.7343	13.943
#1	.00620	.00010	.00540	.03200	.01200	.00220	.00640
#2	.00560	.00020	.00480	.02160	.00700	.00200	.00780

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Avge	-.00720	.00180	.00390	.00235	.00320	.00530	.03800
SDev	.00014	.00000	.00028	.00092	.00820	.00042	.00057
%RSD	1.9642	.00000	7.2524	39.117	256.33	8.0050	1.4887
#1	-.00710	.00180	.00410	.00170	-.00260	.00560	.03840
#2	-.00730	.00180	.00370	.00300	.00900	.00500	.03760

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138
Avge	.03710	-.32460	.00160	-.00150	.00140	.01420
SDev	.00071	.00962	.00028	.00071	.00141	.00000
%RSD	1.9059	2.9626	17.678	47.140	101.02	.00000
#1	.03760	-.31780	.00180	-.00100	.00040	.01420
#2	.03660	-.33140	.00140	-.00200	.00240	.01420

Method: RASI_ICP Standard: CAL_STD_1

Elem	Al3082	As1936	Ba4934	Be3130	Cd2265	Ca3158	Cr2677
Avge	.46200	16.324	1.8533	2.1596	16.591	3.1217	4.0179
SDev	.00085	.023	.0052	.0016	.035	.0018	.0038
%RSD	.18366	.14034	.28234	.07531	.21225	.05889	.09503
#1	.46260	16.308	1.8496	2.1584	16.566	3.1204	4.0206
#2	.46140	16.341	1.8570	2.1607	16.616	3.1230	4.0152

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Elem	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576	Ni2316
Avge	.89655	1.7891	7.9278	2.0706	.99870	1.6373	6.6577
SDev	.00148	.0001	.0139	.0045	.00580	.0008	.0047
%RSD	.16563	.00790	.17571	.21856	.58058	.05182	.07010
#1	.89550	1.7890	7.9179	2.0674	.99460	1.6367	6.6544
#2	.89760	1.7892	7.9376	2.0738	1.0028	1.6379	6.6610

Elem	Se1960	Tl3775	V_2924	Zn2138	Y_3710
Avge	10.306	1.0933	5.7370	5.2838	6.852
SDev	.021	.0038	.0054	.0045	.013
%RSD	.20171	.34925	.09367	.08565	.1961
#1	10.291	1.0960	5.7332	5.2806	6.842
#2	10.321	1.0906	5.7408	5.2870	6.861

Method: RASI_ICP Standard: CAL_STD_2

Elem	Sb2068	Mo2020	Si2881	Sn1899	Ti3248
Avge	9.8331	3.6302	1.9568	3.6596	.70520
SDev	.0211	.0175	.0085	.0079	.00085
%RSD	.21429	.48307	.43363	.21641	.12033
#1	9.8182	3.6178	1.9508	3.6540	.70460
#2	9.8480	3.6426	1.9628	3.6652	.70580

Method: RASI_ICP Standard: CAL_STD_3

Elem	Fe_Hi	K_7664	Na5889
Avge	.38590	5.0003	8.4915
SDev	.00749	.0233	.0081
%RSD	1.9423	.46524	.09493
#1	.38060	4.9839	8.4858
#2	.39120	5.0168	8.4972

Method: RASI_ICP Standard: CAL_STD_4

Elem	Ag3280	Tl3775
Avge	1.7698	.24040
SDev	.0031	.01047
%RSD	.17579	4.3532
#1	1.7676	.24780
#2	1.7720	.23300

Method: RASI_ICP Standard: BLANK_NO_Y

Elem	Y_3710
Avge	.0498
SDev	.0014
%RSD	2.840

#1	.0508
#2	.0488

Method: RASI_ICP Sample Name: Standard #1 Operator: BMM
Run Time: 07/10/92 09:56:48
Comment: RISI METS CP. IEA. RISI MONTHLY. BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.9078	.01022	19.979	1.9681	1.9618	5.0065	5.0408
SDev	.0173	.01179	.061	.0003	.0029	.0088	.0051
%RSD	.35169	115.33	.30570	.01549	.15004	.17560	.10096
#1	4.9200	.01855	19.936	1.9683	1.9639	5.0003	5.0444
#2	4.8956	.00189	20.022	1.9658	1.9597	5.0127	5.0372
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.0000		20.000	2.0000	2.0000	5.0000	5.0000
Range	5.0000		5.0000	5.0000	5.0000	5.0000	5.0000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.9596	5.0086	4.9173	4.9577	Q.81553	10.071	5.0221
SDev	.0154	.0020	.0036	.0054	1.1720	.014	.0128
%RSD	.30985	.03916	.07262	.10882	143.71	.14241	.25515
#1	4.9487	5.0072	4.9148	4.9615	Q1.6442	10.061	5.0311
	4.9704	5.0100	4.9198	4.9539	Q-.01318	10.081	5.0130
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	5.0000	5.0000	5.0000	5.0000	5.0000	10.000	5.0000
Range	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.9819	.00073	4.9777	9.9750	19.977	-.00768	2.9073
SDev	.0005	.00273	.0032	.0594	.016	.00265	.0005
%RSD	.02614	374.18	.06498	.59569	.07962	34.558	.01679
#1	1.9815	.00266	4.9754	10.017	19.988	-.00580	2.9070
#2	1.9823	-.00120	4.9800	9.9330	19.966	-.00956	2.9077
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	NOCHECK
Value	2.0000		5.0000	10.000	20.000		
Range	5.0000		5.0000	5.0000	5.0000		

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	10.003	9.9806	-.00864	-.01295	4.9560	4.9912	9.826
SDev	.054	.0988	.00620	.00403	.0051	.0118	.013
%RSD	.53511	.98993	71.812	31.100	.10343	.23614	.1312
#1	10.041	10.050	-.00425	-.01010	4.9596	4.9823	9.817
	9.9652	9.9108	-.01302	-.01580	4.9523	4.9995	9.835

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Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	10.000	10.000			5.0000	5.0000	
Range	5.0000	5.0000			5.0000	5.0000	

Method: RASI_ICP Sample Name: Standard #2 Operator: BMM
Run Time: 07/10/92 10:00:52
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05074	9.9610	9.8319	.00690	.00836	-.21298	.03527
SDev	.00289	.0317	.0278	.00168	.00169	.00596	.00545
%RSD	5.6891	.31842	.28237	24.320	20.228	2.8004	15.461
#1	.04870	9.9386	9.8515	.00809	.00955	-.20876	.03913
#2	.05278	9.9835	9.8122	.00571	.00716	-.21720	.03142

Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		5.0000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01221	.04138	.01441	.02175	-2.5734	-.00841	-.01201
SDev	.00470	.00436	.00401	.00686	.3938	.00203	.00643
%RSD	38.530	10.546	27.829	31.541	15.304	24.083	53.526
#1	.01554	.04447	.01725	.02660	-2.8519	-.00984	-.00747
#2	.00888	.03829	.01157	.01690	-2.2949	-.00698	-.01656

Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00408	10.062	.01317	.04602	9.8925	10.080	.01466
SDev	.00275	.039	.00561	.00424	.0461	.003	.00358
%RSD	67.454	.39124	42.622	9.2231	.46640	.02828	24.399
#1	.00602	10.034	.01714	.04902	9.9251	10.078	.01719
#2	.00213	10.090	.00920	.04302	9.8599	10.082	.01213

Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		5.0000				5.0000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.07688	-.09245	10.012	9.9899	.13097	.01926	9.972
SDev	.02007	.05332	.011	.0381	.01900	.00587	.005
%RSD	26.109	57.679	.11224	.38153	14.505	30.485	.0480
#1	.09108	-.05474	10.020	9.9630	.14440	.02341	9.968
#2	.06269	-.13015	10.004	10.017	.11753	.01511	9.975

Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			5.0000	5.0000			

Method: RASI_ICP Sample Name: Standard #3 Operator: BMM
Run Time: 07/10/92 10:04:58
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	48.804	.00894	.15727	.00265	-.02026	.00359	48.644
SDev	.318	.01517	.01356	.00033	.00090	.00057	.018
%RSD	.65198	169.69	8.6207	12.511	4.4345	15.827	.03797
#1	48.579	.01967	.16685	.00288	-.01962	.00399	48.631
#2	49.029	-.00179	.14768	.00241	-.02089	.00319	48.657

Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	50.000						50.000
Range	5.0000						5.0000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00096	48.124	.02861	48.293	49.140	.01900	49.582
SDev	.00876	.132	.00388	.207	1.103	.00867	.305
%RSD	915.33	.27366	13.551	.42938	2.2451	45.633	.61606
#1	.00715	48.031	.03135	48.146	48.360	.02514	49.366
#2	-.00524	48.217	.02587	48.440	49.920	.01267	49.798

Errors	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK	QC Pass
Value		50.000		50.000	50.000		50.000
Range		5.0000		5.0000	5.0000		5.0000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.795	.05925	-.00091	100.43	.04168	.04126	-.04087
SDev	.083	.02258	.00369	.81	.04677	.03373	.00250
%RSD	.41815	38.112	406.03	.81140	112.21	81.751	6.1234
#1	19.736	.07522	.00170	99.857	.07476	.06512	-.03910
#2	19.854	.04328	-.00351	101.01	.00861	.01741	-.04264

Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	20.000			100.00			
Range	5.0000			5.0000			

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	99.946	.46923	.03782	-.03300	48.597	.00421	9.873
SDev	1.139	.00400	.01964	.02018	.218	.00159	.074
%RSD	1.1398	.85229	51.918	61.166	.44958	37.815	.7476
#1	99.140	.47206	.05171	-.01872	48.443	.00534	9.821

#2	100.75	.46641	.02394	-.04727	48.752	.00309	9.925
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Value	100.00				50.000		
Range	5.0000				5.0000		

Method: RASI_ICP Sample Name: Standard #4 Operator: BMM
Run Time: 07/10/92 10:09:04
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.14682	-.00340	8.1999	.80935	.81038	2.0619	.18196
SDev	.05862	.00749	.0411	.00205	.00231	.0007	.04534
%RSD	39.929	220.09	.50160	.25394	.28538	.03527	24.917
#1	.18828	.00189	8.1708	.81080	.81202	2.0613	.21402
#2	.10537	-.00870	8.2290	.80789	.80875	2.0624	.14990
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	NOCHECK
Value			8.0000	.80000	.80000	2.0000	
Range			5.0000	5.0000	5.0000	5.0000	

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.0367	.15808	2.0277	.14385	-1.2395	4.1223	.13784
SDev	.0026	.04693	.0063	.04834	.1263	.0203	.05572
%RSD	.12550	29.689	.31294	33.604	10.187	.49340	40.422
#1	2.0385	.19127	2.0322	.17804	-1.3287	4.1079	.17723
#2	2.0349	.12490	2.0232	.10967	-1.1502	4.1367	.09844
Errors	QC Pass	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value	2.0000		2.0000			4.0000	
Range	5.0000		5.0000			5.0000	

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.06154	.01084	2.0547	.26911	8.2249	.01785	2.0216
SDev	.01807	.00507	.0028	.08206	.0108	.01303	.0042
%RSD	29.358	46.758	.13585	30.492	.13160	72.965	.20972
#1	.07432	.01442	2.0528	.32713	8.2172	.02707	2.0246
#2	.04877	.00726	2.0567	.21108	8.2325	.00864	2.0186
Errors	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass	NOCHECK	QC Pass
Value			2.0000		8.0000		2.0000
Range			5.0000		5.0000		5.0000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.31345	3.9684	-.00192	-.01074	.15725	2.0446	10.25
SDev	.10371	.0371	.00036	.00353	.04761	.0001	.02
%RSD	33.087	.93498	18.620	32.906	30.279	.00586	.2435

#1	.38678	3.9421	-.00217	-.00824	.19091	2.0447	10.26
#2	.24011	3.9946	-.00167	-.01323	.12358	2.0445	10.23
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		4.0000				2.0000	
Range		5.0000				5.0000	

Method: RASI_ICP Sample Name: ICVA Operator: BMM
Run Time: 07/10/92 10:13:09
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0659	2.0567	2.0912	1.0245	.99542	.99507	1.0769
SDev	.0245	.0069	.0109	.0017	.00268	.00253	.0089
%RSD	2.3029	.33371	.52224	.16401	.26933	.25413	.82236
#1	1.0833	2.0616	2.0989	1.0233	.99352	.99328	1.0832
#2	1.0486	2.0519	2.0835	1.0257	.99731	.99686	1.0706
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	1.0000	2.0000	2.0000	1.0000	1.0000	1.0000	1.0000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2236	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.96063	1.0847	1.0176	1.0593	1.0353	2.0648	1.0420
SDev	.00458	.0102	.0012	.0091	.0367	.0027	.0128
%RSD	.47728	.94071	.11670	.85803	3.5416	.12998	1.2331
#1	.95739	1.0919	1.0185	1.0657	1.0612	2.0629	1.0511
#2	.96388	1.0774	1.0168	1.0529	1.0094	2.0667	1.0330
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	1.0000	1.0000	1.0000	1.0000	1.0000	2.0000	1.0000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0380	2.0984	1.0452	25.873	2.0738	2.1406	.98298
SDev	.0016	.0055	.0023	.054	.0027	.0153	.00506
%RSD	.14986	.25979	.21549	.20779	.13114	.71490	.51499
#1	1.0391	2.0945	1.0436	25.911	2.0757	2.1298	.97940
#2	1.0369	2.1022	1.0468	25.835	2.0719	2.1515	.98656
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	1.0000	2.0000	1.0000	25.000	2.0000	2.0000	1.0000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.1232	2.0283	2.0404	2.0544	Q1.1693	1.0351	10.17
SDev	.0000	.0581	.0251	.0060	.0088	.0019	.01
%RSD	.00000	2.8626	1.2315	.29057	.75434	.18126	.1186

#1	2.1232	1.9872	2.0226	2.0587	Q1.1755	1.0337	10.18
#2	2.1232	2.0694	2.0581	2.0502	Q1.1630	1.0364	10.16
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	NOCHECK
Value	2.0000	2.0000	2.0000	2.0000	1.0000	1.0000	
Range	10.000	10.000	10.000	10.000	10.000	10.000	

Method: RASI_ICP Sample Name: ICB Operator: BMM
Run Time: 07/10/92 10:21:10
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01065	-.00477	.01708	H.00092	H.00101	H.00242	.00391
SDev	.00357	.01191	.00776	.00069	.00033	.00025	.00693
%RSD	33.539	249.77	45.418	74.876	32.525	10.347	177.30
#1	.01317	.00365	H.02256	H.00140	H.00124	H.00259	H.00881
#2	.00812	-.01319	.01159	.00043	H.00078	H.00224	-.00099
Errors	LC Pass	LC Pass	LC Pass	LC High	LC High	LC High	LC Pass
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00238	H.00475	-.00084	H.00395	H.10342	.00099	.00354
SDev	.00317	.00316	.00158	.00516	1.6545	.00343	.00571
%RSD	133.37	66.405	188.84	130.79	1599.8	347.27	161.41
#1	-.00014	H.00699	.00028	H.00760	L-1.0665	.00342	.00758
#2	-.00462	H.00252	-.00196	.00030	H1.2733	-.00144	-.00050
Errors	LC Pass	LC High	LC Pass	LC High	LC High	LC Pass	LC Pass
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.01340

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.00298	.00248	-.00015	.00900	.02697	.01175	.00139
SDev	.00043	.00273	.00074	.05376	.00136	.01164	.00131
%RSD	14.450	110.05	500.40	597.11	5.0539	99.105	94.399
#1	H.00328	H.00440	-.00067	.04702	.02794	.01998	.00231
#2	H.00267	.00055	.00038	-.02901	.02601	.00351	.00046
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02129	.00571	.00519	-.00291	H.00458	.00010	9.272
SDev	.00167	.02004	.00117	.00199	.00194	.00013	.022

%RSD	7.8567	350.80	22.452	68.497	42.426	133.72	.3400
#1	.02247	-.00846	.00602	-.00150	H.00595	.00019	9.256
#2	.02011	.01988	.00437	-.00432	H.00320	.00001	9.287
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 10:25:17
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.6555	-.00005	10.870	1.0646	1.0692	2.7365	Q2.7575
SDev	.0185	.00102	.077	.0073	.0074	.0202	.0176
%RSD	.69750	2071.1	.70529	.68797	.69548	.73830	.63851
#1	2.6424	.00067	10.816	1.0594	1.0640	2.7223	2.7451
#2	2.6686	-.00077	10.924	1.0698	1.0745	Q2.7508	Q2.7700
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.7074	2.7353	2.6641	2.7010	Q-.03607	5.4835	2.7222
SDev	.0193	.0217	.0123	.0210	1.31020	.0397	.0029
%RSD	.71355	.79296	.46132	.77906	3632.5	.72475	.10702
#1	2.6937	2.7200	2.6554	2.6861	Q-.96252	5.4554	2.7202
#2	2.7210	Q2.7506	2.6728	2.7158	Q.89038	Q5.5116	2.7243
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0811	-.00063	2.7084	5.4072	10.871	-.00140	2.6684
SDev	.0086	.00039	.0243	.0000	.109	.00263	.0096
%RSD	.79527	62.431	.89590	.00000	1.0024	187.71	.36130
#1	1.0750	-.00035	2.6913	5.4072	10.794	.00046	2.6616
#2	1.0871	-.00091	2.7256	5.4072	10.948	-.00326	2.6753
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.4149	5.3060	-.00675	-.00755	2.7005	2.7140	10.75

SDev	.0418	.0718	.00544	.00169	.0214	.0203	.09
%RSD	.77229	1.3493	30.578	22.345	.79360	.74703	.8085
#1	5.3854	5.2554	-.00290	-.00874	2.6854	2.6997	10.69
#2	5.4445	5.3567	-.01059	-.00636	2.7157	2.7283	10.81
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

Method: RASI_ICP Sample Name: CCVC Operator: BMM
Run Time: 07/10/92 10:29:24
Comment: RISI METS OP. IEA. RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.809	-.01489	.10227	.00342	-.00951	.00860	26.305
SDev	.063	.00509	.00043	.00077	.00043	.00184	.086
%RSD	.24486	34.207	.42173	22.429	4.5380	21.412	.32753
#1	25.765	-.01850	.10196	.00397	-.00921	.00990	26.245
#2	25.854	-.01129	.10257	.00288	-.00982	.00730	26.366
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	25.000						25.000
Range	10.000						10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00781	26.169	.02138	26.052	27.215	.01881	26.410
SDev	.00237	.100	.00119	.044	.533	.00534	.045
%RSD	30.300	.38282	5.5532	.17051	1.9576	28.400	.17086
#1	.00949	26.099	.02222	26.021	Q27.591	.02258	26.379
#2	.00614	26.240	.02054	26.083	26.838	.01503	26.442
Errors	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK	QC Pass
Value		25.000		25.000	25.000		25.000
Range		10.000		10.000	10.000		10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	10.523	-.00185	.00738	52.989	.03172	-.00915	-.01298
SDev	.023	.00001	.00001	.137	.02078	.00282	.00033
%RSD	.21583	.53789	.17761	.25898	65.512	30.827	2.5601
#1	10.507	-.00185	.00737	52.892	.04641	-.01114	-.01274
#2	10.539	-.00184	.00739	53.086	.01702	-.00716	-.01321
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	10.000			50.000			
Range	10.000			10.000			

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm

Avge	52.838	.14766	.00129	-.03445	26.067	.00714	10.40
SDev	.050	.08488	.00041	.00140	.042	.00241	.00
%RSD	.09497	57.484	31.528	4.0700	.16134	33.810	.0400
#1	52.873	.08764	.00100	-.03544	26.037	.00884	10.39
#2	52.802	.20767	.00157	-.03345	26.097	.00543	10.40
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Value	50.000				25.000		
Range	10.000				10.000		

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 10:33:32
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.10537	10.764	10.549	.00371	.00308	-.24822	.05918
SDev	.01948	.004	.067	.00053	.00009	.00454	.02784
%RSD	18.491	.03726	.63210	14.319	2.8219	1.8271	47.039
#1	.11915	10.767	10.596	.00408	.00315	-.24501	.07887
#2	.09159	10.761	10.502	.00333	.00302	-.25143	.03950
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00420	.09692	.00023	.06909	-1.8770	-.04644	.04153
SDev	.00025	.02290	.00208	.02364	1.5832	.00129	.02923
%RSD	5.8599	23.632	913.85	34.225	83.285	2.7673	70.402
#1	-.00437	.11311	.00170	.08581	-.77158	-.04735	.06224
#2	-.00402	.08072	-.00124	.05237	-2.9823	-.04554	.02083
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02527	10.967	-.00095	.17007	10.648	10.951	.00781
SDev	.00860	.018	.00279	.05235	.000	.083	.00125
%RSD	34.055	.14551	293.87	30.780	.00240	.76147	16.052
#1	.03135	10.955	.00102	.20708	10.648	10.892	.00869
#2	.01918	10.978	-.00292	.13305	10.648	Q11.010	.00692
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710

Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.18334	-.16770	10.589	10.848	.20237	-.00740	10.79
SDev	.05353	.00341	.012	.136	.03905	.00106	.07
%RSD	29.197	2.0309	.11127	1.2566	19.296	14.276	.6496
#1	.22119	-.17011	10.597	10.752	.22938	-.00665	10.74
#2	.14549	-.16529	10.581	10.945	.17475	-.00815	10.84
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

Method: RASI_ICP Sample Name: CCB Operator: BMM
Run Time: 07/10/92 10:37:39
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.02365	H.02810	H.04726	-.00006	.00006	.00100	H.03673
SDev	.00894	.00544	.00086	.00008	.00013	.00003	.00270
%RSD	37.808	19.351	1.8265	135.62	237.68	3.1682	7.3528
#1	H.01733	H.03194	H.04665	-.00011	H.00015	.00103	H.03863
#2	H.02997	H.02425	H.04787	-.00000	-.00004	.00098	H.03482
Errors	LC High	LC High	LC High	LC Pass	LC Pass	LC Pass	LC High
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00366	H.02295	-.00200	H.01475	L-.08856	-.00622	H.02324
SDev	.00390	.00515	.00160	.00533	1.13818	.00549	.00784
%RSD	106.43	22.445	79.715	36.154	1285.3	88.268	33.723
#1	-.00642	H.02659	-.00313	H.01853	L-.89337	-.01011	H.01770
#2	-.00091	H.01931	-.00087	H.01098	H.71626	-.00234	H.02878
Errors	LC Pass	LC High	LC Pass	LC High	LC Low	LC Pass	LC High
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.01340

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.00929	H.06530	-.00023	-.00000	H.05912	.05680	.00070
SDev	.00198	.02065	.00094	.01556	.01123	.01878	.00065
%RSD	21.253	31.626	406.03	3342e6	18.999	33.064	93.344
#1	H.01069	H.07991	.00043	-.01100	H.06706	H.07008	.00024
#2	H.00790	H.05070	-.00090	.01100	H.05118	.04352	.00116
Errors	LC High	LC High	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05086	.01967	H.03773	.02098	H.02220	H.00134	9.809
SDev	.00000	.05396	.01083	.00395	.00487	.00027	.074
%RSD	.00000	274.35	28.703	18.814	21.931	19.898	.7588
#1	.05086	.05782	H.04539	.02377	H.02564	H.00115	9.862
#2	.05086	-.01849	H.03007	.01819	H.01876	H.00152	9.757
Errors	LC Pass	LC Pass	LC High	LC Pass	LC High	LC High	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

Method: RASI_ICP Sample Name: ICSA Operator: BMM
Run Time: 07/10/92 10:43:08
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	469.77	L-.03158	L-.24265	L-.00585	L.00021	L-.00598	H553.18
SDev	1.91	.01313	.00009	.00017	.00012	.00075	1.06
%RSD	.40745	41.588	.03901	2.9179	57.641	12.482	.19196
#1	468.41	L-.02229	L-.24259	L-.00573	L.00029	L-.00545	H552.42
#2	471.12	L-.04086	L-.24272	L-.00597	L.00012	L-.00650	H553.93
Errors	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Low	LC High
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.05687	L-.00019	L-.00341	179.12	189.33	L-.01047	484.06
SDev	.00322	.00317	.00082	.33	.37	.00687	2.51
%RSD	5.7036	1654.5	23.900	.18359	.19579	65.571	.51852
#1	L-.05410	L.00205	L-.00284	178.89	189.07	L-.01533	482.28
#2	L-.05864	L-.00243	L-.00399	179.35	189.59	L-.00562	485.83
Errors	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00247	.01180	L-.01435	L.00400	L-.04065	L-.04287	L.00108
SDev	.00141	.01089	.00139	.01273	.04134	.00551	.00182
%RSD	57.061	92.283	9.6840	318.20	101.70	12.856	168.27
#1	L-.00147	.01949	L-.01336	L.01301	L-.01142	L-.03897	L.00237
#2	L-.00347	.00410	L-.01533	L-.00500	L-.06988	L-.04676	L-.00021
Errors	LC Low	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00823	L-.00560	.03690	L-.00554	.01743	.01921	9.708
SDev	.01004	.01861	.00573	.00605	.00323	.00022	.021
%RSD	121.22	332.56	15.521	109.03	18.525	1.1698	.2163
#1	L-.01538	L.00756	.04095	L-.00982	.01971	.01905	9.693
#2	L-.00118	L-.01876	.03285	L-.00127	.01514	.01937	9.723
Errors	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: ICSAB Operator: BMM
Run Time: 07/10/92 10:47:14
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	475.87	-.03540	-.16861	.45919	.45356	.86711	476.68
SDev	3.94	.02004	.04931	.00416	.00509	.00218	4.74
%RSD	.82732	56.623	29.244	.90625	1.1231	.25100	.99506
#1	473.08	-.04957	-.13374	.45625	.44996	.86557	473.33
#2	478.65	-.02123	-.20347	.46213	.45716	.86865	480.03
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High	600.00			.60000	.60000	1.2000	600.00
Low	400.00			.40000	.40000	.80000	400.00

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.39662	.44866	.50766	179.69	187.04	.89424	485.35
SDev	.00241	.00389	.05880	1.93	.27	.02352	4.26
%RSD	.60753	.86701	11.582	1.0734	.14473	2.6296	.87693
#1	L.39833	.45141	.54924	178.33	187.23	.87761	482.34
#2	L.39492	.44591	.46609	181.06	186.85	.91087	488.36
Errors	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.60000	.60000	.60000	240.00	240.00	1.2000	600.00
Low	.40000	.40000	.40000	160.00	160.00	.80000	400.00

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.45051	.00823	.86968	.32713	.17138	-.04806	.89931
SDev	.00298	.00055	.00528	.47254	.30270	.00809	.02914
%RSD	.66033	6.6733	.60652	144.45	176.62	16.827	3.2406
#1	.44841	.00784	.86595	.66126	.38543	-.04234	.91991
#2	.45262	.00862	.87341	-.00700	-.04266	-.05378	.87870
Errors	LC Pass	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	LC Pass
High	.60000		1.2000				1.2000

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Low	.40000		.80000				.80000
Elem	Na5889	T13775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.36904	.09331	.00692	-.00513	.47983	.92552	9.791
SDev	.54030	.02649	.02569	.00408	.00064	.00208	.130
%RSD	146.41	28.386	371.13	79.563	.13325	.22512	1.332
#1	.75109	.11204	-.01125	-.00224	.47938	.92405	9.699
#2	-.01301	.07458	.02509	-.00801	.48028	.92700	9.883
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	NOCHECK
High					.60000	1.2000	
Low					.40000	.80000	

Method: RASI_ICP Sample Name: ICSAB Operator: BMM
Run Time: 07/10/92 10:54:01
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	478.50	-.02209	-.15681	.46183	.45781	.87095	480.36
SDev	.48	.03179	.07801	.00125	.00236	.00119	.33
%RSD	.10022	143.88	49.749	.27113	.51545	.13694	.06953
#1	478.16	.00038	-.10165	.46271	.45948	.87180	480.60
#2	478.84	-.04457	-.21197	.46094	.45614	.87011	480.13
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High	600.00			.60000	.60000	1.2000	600.00
Low	400.00			.40000	.40000	.80000	400.00

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.39500	.44561	.46612	180.60	186.08	.89847	487.54
SDev	.00004	.00120	.00236	.17	.78	.00309	1.24
%RSD	.00906	.26815	.50644	.09596	.42123	.34431	.25466
#1	L.39498	.44476	.46779	180.72	185.53	.89628	486.66
#2	L.39503	.44645	.46445	180.48	186.64	.90066	488.41
Errors	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.60000	.60000	.60000	240.00	240.00	1.2000	600.00
Low	.40000	.40000	.40000	160.00	160.00	.80000	400.00

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.45227	.00583	.87497	.00500	.02125	-.05221	.87672
SDev	.00162	.00079	.00361	.02264	.02297	.00517	.00058
%RSD	.35898	13.559	.41236	452.55	108.08	9.8977	.06658
#1	.45112	.00639	.87241	-.01100	.03750	-.04856	.87630
#2	.45342	.00527	.87752	.02101	.00501	-.05587	.87713
Errors	LC Pass	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	LC Pass

High	.60000		1.2000				1.2000
Low	.40000		.80000				.80000
Elem	Na5889	T13775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00473	.01580	.01294	-.00801	.48010	.94417	9.829
SDev	.02844	.02862	.00611	.00406	.00043	.00203	.041
%RSD	601.04	181.19	47.239	50.665	.08899	.21466	.4167
#1	-.01538	.03603	.00862	-.00514	.48040	.94560	9.858
#2	.02484	-.00444	.01726	-.01088	.47980	.94273	9.800
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	NOCHECK
High					.60000	1.2000	
Low					.40000	.80000	

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000179

Method: RASI_ICP Sample Name: PB1 METPRP 07-02-92 Operator: BMM
Run Time: 07/10/92 11:13:27
Comment: RISI METS OP. IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.06550	L-.00600	L.00021	L.00043	L-.00046	L.00094	.28238
SDev	.00289	.00101	.01648	.00000	.00033	.00009	.01368
%RSD	4.4165	16.771	8005.9	.02598	71.848	9.0021	4.8431
#1	.06346	L-.00672	L.01186	L.00043	L-.00022	L.00088	.27271
#2	.06755	L-.00529	L-.01144	L.00043	L-.00069	L.00100	.29205
Errors	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00063	L-.00077	.01850	.08807	L-.66840	L-.00711	.06047
SDev	.00103	.00001	.00278	.00183	.51343	.00138	.00214
%RSD	164.61	.95098	15.005	2.0761	76.815	19.341	3.5397
#1	L-.00136	L-.00076	.02046	.08678	L-.30535	L-.00809	.06198
#2	L.00010	L-.00077	.01653	.08936	L-1.0314	L-.00614	.05896
Errors	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00541	L-.00166	L.00109	.05102	L-.01441	.05994	L-.00077
SDev	.00094	.00078	.00133	.00849	.02086	.01596	.00082
%RSD	17.430	47.094	121.75	16.638	144.81	26.620	105.79
#1	.00608	L-.00111	L.00015	.04502	L.00035	.04866	L-.00135
#2	.00475	L-.00222	L.00203	.05702	L-.02916	.07122	L-.00019
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.05559	L-.03612	.03310	L.00409	L-.00061	.03912	10.54
SDev	.02676	.08896	.00348	.00002	.00052	.00148	.46
%RSD	48.143	246.28	10.511	.52112	86.027	3.7866	4.330
#1	L.03667	L-.09903	.03556	L.00408	L-.00098	.03807	10.22
#2	L.07452	L.02678	.03064	L.00411	L-.00024	.04016	10.87
Errors	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

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000180

Method: RASI_ICP Sample Name: PB2 METPRP 07-02-92 Operator: BMM
Run Time: 07/10/92 11:17:32
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.13348	L-.01160	L.00471	L.00032	L-.00169	L.00111	.40929
SDev	.00362	.01210	.00314	.00000	.00007	.00050	.00140
%RSD	2.7108	104.34	66.635	.00204	4.2030	45.492	.34130
#1	.13092	L-.02016	L.00693	L.00032	L-.00164	L.00146	.40830
#2	.13604	L-.00304	L.00249	L.00032	L-.00174	L.00075	.41027
Errors	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00053	L-.00048	.01767	.05410	L-.73935	L-.00745	.05696
SDev	.00001	.00040	.00079	.00204	.31284	.00068	.00571
%RSD	2.5061	82.459	4.4699	3.7738	42.313	9.0775	10.017
#1	L-.00052	L-.00020	.01823	.05554	L-.51813	L-.00697	.06099
#2	L-.00054	L-.00076	.01711	.05265	L-.96056	L-.00793	.05292
Errors	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00425	L-.00253	L.00071	L.01401	L-.00643	.21160	L.00060
SDev	.00034	.00117	.00026	.01273	.01070	.00290	.00115
%RSD	8.0686	46.200	36.835	90.914	166.55	1.3695	190.42
#1	.00450	L-.00170	L.00053	L.00500	L.00114	.20955	L.00141
#2	.00401	L-.00336	L.00090	L.02301	L-.01400	.21365	L-.00021
Errors	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.06505	L-.40779	.03803	L-.01569	L-.00063	.04026	H13.17
SDev	.00335	.06295	.00037	.00399	.00039	.00013	.00
%RSD	5.1426	15.438	.97753	25.461	61.434	.32890	.0047
#1	L.06269	L-.45231	.03829	L-.01286	L-.00036	.04035	H13.17
#2	L.06742	L-.36327	.03777	L-.01851	L-.00091	.04016	H13.17
Errors	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC High
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: LCS METPRP 07-02-92 Operator: BMM **000181**
Run Time: 07/10/92 11:21:37
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mo. . CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0461	1.9525	1.9001	.95093	.92458	.90398	1.2438
SDev	.0171	.0151	.0371	.00824	.00945	.00625	.0106
%RSD	1.6300	.77165	1.9526	.86660	1.0220	.69183	.84954
#1	1.0582	1.9631	1.9263	.95676	.93126	.90840	1.2513
#2	1.0340	1.9418	1.8738	.94511	.91790	.89956	1.2363
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.96693	.97422	.94563	1.0015	L.00888	1.9235	.99845
SDev	.00192	.00518	.00635	.0187	.66378	.0013	.01285
%RSD	.19832	.53183	.67152	1.8714	7473.6	.06861	1.2866
#1	.96829	.97788	.95012	1.0148	L-.46048	1.9226	1.0075
#2	.96557	.97055	.94114	.98828	L.47824	1.9244	.98936
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0024	2.0604	.95343	24.033	1.9326	1.9780	.92379
SDev	.0063	.0133	.00725	.110	.0077	.0065	.00586
%RSD	.62587	.64330	.76049	.45918	.39697	.32867	.63416
#1	1.0069	2.0698	.95856	24.111	1.9380	1.9734	.92794
#2	.99799	2.0510	.94830	23.955	1.9272	1.9826	.91963
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.0061	1.8551	1.9303	2.0062	.99856	.96237	10.37
SDev	.0084	.0078	.0248	.0162	.00904	.00237	.10
%RSD	.41693	.41870	1.2839	.80758	.90509	.24619	.9926
#1	2.0120	1.8496	1.9478	1.9947	1.0049	.96404	10.44
#2	2.0001	1.8606	1.9127	2.0176	.99217	.96069	10.30
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000182

Method: RASI_ICP Sample Name: 92-06-214-01A 1:10 Operator: BMM
Run Time: 07/10/92 11:25:41
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.2074	L-.00785	L.01621	.00586	.00126	L.00314	28.560
SDev	.0361	.00118	.00868	.00099	.00051	.00160	.289
%RSD	1.6356	15.061	53.535	16.897	40.109	50.933	1.0126
#1	2.2329	L-.00701	L.02235	.00656	.00162	L.00427	28.765
#2	2.1819	L-.00868	L.01008	.00516	.00090	L.00201	28.356
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00519	L.00168	L.00233	3.5658	L3.3078	L.00614	18.023
SDev	.00158	.00040	.00080	.0168	1.6012	.00540	.050
%RSD	30.528	23.995	34.238	.47016	48.406	87.828	.27691
#1	L.00407	L.00196	L.00290	3.5777	L2.1756	L.00233	18.059
#2	L.00631	L.00139	L.00177	3.5540	L4.4400	L.00996	17.988
Errors	LC Low	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.06382	.00546	.00599	.34314	L.02104	.14728	L.00094
SDev	.00120	.00351	.00181	.07074	.00658	.00504	.00148
%RSD	1.8878	64.200	30.311	20.615	31.283	3.4239	156.97
#1	.06467	.00794	.00727	.39316	L.02570	.15085	L.00199
#2	.06297	L.00298	L.00470	.29312	L.01639	.14372	L-.00010
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.12065	L-.11103	L.00292	L.01103	.00515	.12818	9.673
SDev	.02844	.01905	.00350	.01205	.00007	.00334	.014
%RSD	23.570	17.160	119.88	109.21	1.3570	2.6087	.1419
#1	L.14076	L-.12450	L.00540	L.00251	.00520	.13055	9.683
#2	L.10054	L-.09756	L.00045	L.01955	.00510	.12582	9.664
Errors	LC Low	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-496

000183

Method: RASI_ICP Sample Name: 92-06-214-01A Operator: BMM
Run Time: 07/10/92 11:29:46
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mc : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.242	L-.01889	L.00199	.04273	.00142	L-.00291	252.39
SDev	.078	.00899	.00484	.00001	.00012	.00043	.89
%RSD	.38593	47.578	243.51	.01758	8.3994	14.663	.35320
#1	20.186	L-.01254	L.00541	.04273	.00133	L-.00261	251.76
#2	20.297	L-.02525	L-.00143	.04272	.00150	L-.00321	253.02
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.07638	.00617	.05541	31.342	L30.002	.02188	164.14
SDev	.00283	.00041	.00119	.074	.346	.00085	.34
%RSD	3.7062	6.6081	2.1412	.23522	1.1526	3.8636	.20504
#1	.07838	.00588	.05625	31.290	L29.757	.02128	163.90
#2	.07437	.00646	.05457	31.394	L30.246	.02248	164.37
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
' :h	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.55205	L.00228	.02382	2.8972	L-.01935	1.2767	L.00029
SDev	.00121	.00272	.00176	.0099	.01122	.0037	.00142
%RSD	.21900	119.23	7.3694	.34183	57.983	.28828	485.23
#1	.55120	.00421	.02506	2.8902	L-.02728	1.2793	L.00130
#2	.55291	L.00036	.02257	2.9042	L-.01142	1.2741	L-.00071
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.82679	L-.11820	.02840	.26975	.04694	1.0205	10.26
SDev	.00334	.00250	.00621	.00803	.00006	.0062	.00
%RSD	.40464	2.1193	21.864	2.9769	.12240	.60528	.0324
#1	.82442	L-.11997	.02401	.27542	.04698	1.0161	10.26
#2	.82915	L-.11643	.03279	.26407	.04690	1.0249	10.26
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
:gh	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000184

Method: RASI_ICP Sample Name: 92-06-214-02A 1:10 Operator: BMM
Run Time: 07/10/92 11:38:51
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.25726	L-.00716	L-.00264	L.00069	L-.00026	L.00104	.78043
SDev	.01665	.00234	.00891	.00008	.00000	.00039	.12109
%RSD	6.4707	32.670	337.23	11.344	.00010	37.136	15.515
#1	.26903	L-.00551	L-.00894	L.00063	L-.00026	L.00077	.86606
#2	.24549	L-.00881	L.00366	.00074	L-.00026	L.00132	.69481
Errors	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00167	L.00002	.01009	.53812	L.13833	L.00054	.32852
SDev	.00212	.00039	.00040	.01567	.15565	.00345	.06916
%RSD	127.24	2216.6	3.9245	2.9127	112.52	644.25	21.053
#1	L-.00317	L.00029	.00981	.54920	L.02826	L.00297	.37743
#2	L-.00017	L-.00026	.01037	.52704	L.24839	L-.00190	.27962
Errors	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02115	L-.00300	L.00189	L.03001	L.01448	.02762	L-.00038
SDev	.00043	.00117	.00011	.00424	.00932	.00359	.00146
%RSD	2.0397	38.990	5.7421	14.142	64.400	12.990	382.88
#1	.02145	L-.00383	L.00182	L.02701	L.02107	.03016	L-.00141
#2	.02084	L-.00217	L.00197	L.03301	L.00789	L.02509	L.00065
Errors	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.29925	L-.14086	L.00810	L-.01896	L-.00145	.04179	9.729
SDev	.01673	.01891	.00193	.00001	.00002	.00228	.005
%RSD	5.5898	13.426	23.809	.05738	1.1119	5.4602	.0556
#1	.31108	L-.12749	L.00674	L-.01897	L-.00146	.04341	9.725
#2	.28742	L-.15423	L.00947	L-.01896	L-.00144	.04018	9.733
Errors	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: 92-06-214-02A Operator: BMM
Run Time: 07/10/92 11:37:56
Comment: RISI METS OP. IEA, RISI MONTHLY, BIONETICS
M: .: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.0285	L-.00673	L.00542	.00628	L-.00054	L.00245	2.6146
SDev	.0289	.00934	.00715	.00031	.00006	.00000	.0018
%RSD	1.4267	138.81	131.89	4.8762	11.862	.01872	.07022
#1	2.0081	L-.01333	L.00037	.00649	L-.00050	L.00245	2.6133
#2	2.0490	L-.00012	L.01048	.00606	L-.00059	L.00245	2.6159
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01451	L.00149	.13445	4.4457	L3.4062	.04586	.39036
SDev	.00124	.00158	.00040	.0019	.5055	.00746	.00071
%RSD	8.5386	106.53	.29584	.04259	14.841	16.260	.18146
#1	.01364	L.00037	.13473	4.4470	L3.0488	.05114	.39086
#2	.01539	L.00261	.13417	4.4444	L3.7637	.04059	.38986
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
[illegible]gh	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.19146	L-.00111	.01130	.40016	L-.00834	.23015	L-.00250
SDev	.00034	.00117	.00037	.03537	.00247	.00726	.00403
%RSD	.18006	105.57	3.2944	8.8388	29.624	3.1547	163.64
#1	.19171	L-.00193	.01156	.37515	L-.01008	.22501	L.00039
#2	.19122	L-.00028	.01104	.42517	L-.00659	.23528	L-.00539
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.4993	L-.08520	.04635	L.00760	L-.00050	.31502	10.45
SDev	.0033	.00902	.00272	.00001	.00097	.00027	.05
%RSD	.13386	10.590	5.8650	.13830	192.80	.08579	.4477
#1	2.5017	L-.07882	.04443	L.00759	L.00018	.31483	10.48
#2	2.4969	L-.09158	.04827	L.00760	L-.00119	.31521	10.42
Errors	LC Pass	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC Pass
[illegible]gh	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-499

000186

Method: RASI_ICP Sample Name: 92-06-215-01A 1:10 Operator: BMM
Run Time: 07/10/92 11:42:01
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	A13082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.01484	L-.01312	L.00141	L.00059	L-.00025	L.00098	.29651
SDev	.00360	.00720	.00500	.00008	.00000	.00016	.01181
%RSD	24.256	54.858	354.21	12.843	.93044	16.440	3.9824
#1	L.01230	L-.00803	L-.00213	L.00054	L-.00026	L.00087	.30486
#2	.01739	L-.01821	L.00495	L.00065	L-.00025	L.00110	.28816
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00546	L.00336	L-.00195	.06976	L.37860	L-.01497	.05291
SDev	.00049	.00118	.00000	.02100	.44771	.00136	.00001
%RSD	9.0280	35.174	.13952	30.095	118.25	9.0654	.02270
#1	L-.00581	.00420	L-.00195	.05492	L.69518	L-.01401	.05292
#2	L-.00511	L.00253	L-.00196	.08461	L.06202	L-.01593	.05290
Errors	LC Low	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00074	L-.00276	L.00112	L.00700	L-.00993	.03835	L.00164
SDev	.00017	.00078	.00085	.03112	.02607	.00435	.00230
%RSD	23.394	28.214	75.313	444.47	262.43	11.354	139.74
#1	L.00061	L-.00331	L.00172	L.02901	L-.02837	.03527	L.00002
#2	L.00086	L-.00221	L.00053	L-.01501	L.00850	.04143	L.00327
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.04850	L-.10599	L.00633	L-.01700	L-.00153	.03150	9.715
SDev	.01004	.12590	.00038	.00200	.00060	.00107	.023
%RSD	20.696	118.79	6.0862	11.760	39.068	3.3990	.2333
#1	L.05559	L-.19501	L.00606	L-.01842	L-.00195	.03226	9.731
#2	L.04140	L-.01696	L.00660	L-.01559	L-.00111	.03075	9.699
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

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000187

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 11:46:06
Comment: RISI METS OP. IEA. RISI MONTHLY. BIONETICS
Mo . CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.7191	-.00268	Q11.245	1.0728	Q1.1019	Q2.8633	Q2.9383
SDev	.0390	.00438	.025	.0031	.0026	.0043	.0229
%RSD	1.4336	163.19	.22128	.29138	.23754	.15109	.77898
#1	2.7466	.00041	Q11.263	1.0751	Q1.1037	Q2.8663	Q2.9545
#2	2.6915	-.00578	Q11.228	1.0706	Q1.1000	Q2.8602	Q2.9221
Errors	QC Pass	NOCHECK	QC Fail	QC Pass	QC Fail	QC Fail	QC Fail
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	Q2.7923	Q2.8330	2.6837	Q2.8026	Q1.2085	Q5.7130	Q2.8405
SDev	.0114	.0059	.0075	.0513	.7199	.0054	.0656
%RSD	.40913	.20901	.28046	1.8314	59.568	.09377	2.3097
#1	Q2.8004	Q2.8372	2.6891	Q2.8389	Q.69947	Q5.7092	Q2.8869
#2	Q2.7843	Q2.8288	2.6784	Q2.7664	Q1.7175	Q5.7168	Q2.7941
Errors	QC Fail	QC Fail	QC Pass	QC Fail	QC Fail	QC Fail	QC Fail
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	Q1.1113	-.00561	Q2.8158	5.4242	Q11.430	-.00377	2.7202
SDev	.0040	.00039	.0013	.0325	.011	.00958	.0038
%RSD	.35631	6.9482	.04512	.59990	.10059	254.21	.13871
#1	Q1.1141	-.00588	Q2.8167	5.4472	Q11.438	.00301	2.7229
#2	Q1.1085	-.00533	Q2.8149	5.4012	Q11.422	-.01054	2.7175
Errors	QC Fail	NOCHECK	QC Fail	QC Pass	QC Fail	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.4871	5.1796	-.00714	-.01721	Q2.7677	Q2.8143	10.90
SDev	.0167	.0300	.00272	.00589	.0071	.0020	.02
%RSD	.30485	.57859	38.130	34.230	.25770	.07041	.2289
#1	5.4753	5.2008	-.00521	-.01305	Q2.7727	Q2.8157	10.92
#2	5.4989	5.1584	-.00906	-.02138	Q2.7627	Q2.8129	10.88
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Fail	QC Fail	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

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Method: RASI_ICP Sample Name: CCVA Operator: BMM **000188**
Run Time: 07/10/92 11:53:15
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5078	.00424	10.441	1.0011	1.0263	2.6530	2.6904
SDev	.0143	.00304	.112	.0043	.0063	.0154	.0259
%RSD	.57024	71.673	1.0754	.42671	.60966	.58062	.96231
#1	2.4977	.00638	10.361	.99813	1.0218	2.6421	2.6721
#2	2.5179	.00209	10.520	1.0042	1.0307	2.6639	2.7087
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5907	2.6424	2.4931	2.5919	Q1.2714	5.2716	2.6140
SDev	.0174	.0134	.0186	.0127	.7156	.0418	.0229
%RSD	.67253	.50817	.74729	.48865	56.288	.79237	.87445
#1	2.5784	2.6329	2.4800	2.5829	Q.76534	5.2421	2.5979
#2	2.6030	2.6519	2.5063	2.6008	Q1.7774	5.3012	2.6302
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0374	-.00475	2.6050	5.0740	10.525	.00927	2.4975
SDev	.0026	.00233	.0155	.0071	.096	.00750	.0103
%RSD	.24816	49.085	.59538	.13941	.90761	80.875	.41218
#1	1.0356	-.00640	2.5941	5.0790	10.458	.00397	2.4902
#2	1.0392	-.00310	2.6160	5.0690	10.593	.01457	2.5048
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.0861	4.9492	-.01429	-.00740	2.5826	2.5892	10.13
SDev	.0117	.0104	.00617	.00813	.0093	.0175	.06
%RSD	.23022	.21091	43.181	109.85	.36060	.67446	.5439
#1	5.0944	4.9419	-.01865	-.00165	2.5760	2.5769	10.09
#2	5.0778	4.9566	-.00992	-.01315	2.5892	2.6016	10.17
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

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000189

Method: RASI_ICP Sample Name: CCVC Operator: BMM
Run Time: 07/10/92 11:57:21
Comment: RISI METS OP, IEA. RISI MONTHLY, BIONETICS
Mod. CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	24.478	-.02242	.09364	.00278	-.00885	.00680	25.655
SDev	.050	.00021	.01007	.00092	.00055	.00173	.092
%RSD	.20260	.92300	10.751	33.156	6.1800	25.437	.35728
#1	24.443	-.02227	.10076	.00343	-.00847	.00802	25.591
#2	24.513	-.02256	.08652	.00213	-.00924	.00558	25.720
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	25.000						25.000
Range	10.000						10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00236	25.501	.01806	25.129	25.491	.01638	25.268
SDev	.00330	.066	.00315	.058	.584	.00189	.047
%RSD	140.02	.25837	17.468	.23009	2.2899	11.531	.18676
#1	.00469	25.454	.02029	25.088	25.078	.01771	25.235
#2	.00002	25.547	.01583	25.170	25.903	.01504	25.301
Errors	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK	QC Pass
Value		25.000		25.000	25.000		25.000
Range		10.000		10.000	10.000		10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	10.173	-.00549	.00167	49.927	.02757	-.01212	-.01395
SDev	.022	.00196	.00281	.116	.00345	.00593	.00100
%RSD	.21819	35.631	168.15	.23237	12.520	48.940	7.1636
#1	10.157	-.00687	.00366	49.845	.03001	-.00792	-.01324
#2	10.188	-.00411	-.00032	50.009	.02513	-.01631	-.01465
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	10.000			50.000			
Range	10.000			10.000			

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	49.814	.14715	-.01157	-.02943	25.075	.00189	9.772
SDev	.117	.07402	.00970	.01258	.072	.00293	.004
%RSD	.23506	50.306	83.846	42.754	.28720	155.29	.0362
#1	49.731	.19949	-.01843	-.02053	25.024	.00396	9.769
#2	49.897	.09480	-.00471	-.03833	25.126	-.00019	9.774
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Value	50.000				25.000		
Range	10.000				10.000		

Method: RASI_ICP Sample Name: CCV2 Operator: BMM **000190**
Run Time: 07/10/92 12:01:29
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.10113	Q11.076	10.886	.00365	.00322	-.25434	.08472
SDev	.01632	.017	.011	.00000	.00003	.00347	.02319
%RSD	16.142	.15529	.10544	.05059	.87621	1.3650	27.369
#1	.11267	Q11.064	10.878	.00365	.00320	-.25189	.10111
#2	.08959	Q11.088	10.895	.00366	.00324	-.25680	.06832
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00137	.09478	.00045	.06683	-2.4662	-.04015	.04556
SDev	.00144	.02053	.00032	.02147	1.3774	.00757	.01787
%RSD	105.16	21.658	71.350	32.118	55.851	18.848	39.213
#1	-.00238	.10929	.00022	.08201	-1.4922	-.03480	.05820
#2	-.00035	.08026	.00068	.05166	-3.4401	-.04550	.03293
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02297	Q11.293	-.00020	.16607	11.075	10.928	.01150
SDev	.00852	.021	.00171	.03537	.002	.097	.00046
%RSD	37.082	.18612	847.89	21.298	.01500	.88898	3.9866
#1	.02899	Q11.278	.00101	.19108	11.074	10.860	.01182
#2	.01695	Q11.308	-.00141	.14106	11.076	10.997	.01117
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.17979	-.19401	10.636	Q11.102	.20930	-.00816	10.79
SDev	.03178	.01855	.007	.094	.01991	.00026	.02
%RSD	17.678	9.5603	.06643	.84929	9.5148	3.2269	.2178
#1	.20226	-.20713	10.641	Q11.035	.22338	-.00798	10.77
#2	.15731	-.18090	10.631	Q11.168	.19522	-.00835	10.81
Errors	NOCHECK	NOCHECK	QC Pass	QC Fail	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

000191

Method: RASI_ICP Sample Name: CCB Operator: BMM
Run Time: 07/10/92 12:05:45
Comment: RISI METS OP. IEA, RISI MONTHLY. BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.01596	H.02966	H.04436	-.00011	-.00014	.00099	H.06851
SDev	.01205	.01761	.02746	.00015	.00015	.00011	.00083
%RSD	75.533	59.354	61.907	138.40	103.36	11.348	1.2086
#1	H.02448	H.04211	H.06378	-.00000	-.00004	.00091	H.06909
#2	.00743	H.01721	H.02494	-.00022	-.00024	.00107	H.06792
Errors	LC High	LC High	LC High	LC Pass	LC Pass	LC Pass	LC High
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00538	H.02265	-.00172	H.01586	L-.48945	-.00818	H.02021
SDev	.00176	.00475	.00042	.00443	.93311	.00276	.01213
%RSD	32.659	20.959	24.176	27.948	190.64	33.801	60.033
#1	-.00413	H.02601	-.00202	H.01899	L-1.1493	-.00622	H.02879
#2	-.00662	H.01930	-.00143	H.01272	H.17036	-.01013	.01163
Errors	LC Pass	LC High	LC Pass	LC High	LC Low	LC Pass	LC High
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.01340

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.00832	H.06668	-.00087	.01401	H.04029	.04858	.00277
SDev	.00180	.02416	.00227	.03820	.01260	.02466	.00197
%RSD	21.669	36.229	262.36	272.74	31.279	50.769	70.806
#1	H.00960	H.08377	.00074	.04102	H.04920	.06602	.00416
#2	H.00705	H.04960	-.00247	-.01301	.03138	.03114	.00139
Errors	LC High	LC High	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05678	L-.10611	H.03009	.01252	H.02124	H.00143	9.748
SDev	.01171	.00198	.00773	.01195	.00271	.00013	.051
%RSD	20.624	1.8656	25.693	95.468	12.762	8.9389	.5247
#1	.06505	L-.10471	H.03556	.02097	H.02316	H.00152	9.711
#2	.04850	L-.10751	H.02462	.00407	H.01932	H.00134	9.784
Errors	LC Pass	LC Low	LC High	LC Pass	LC High	LC High	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

Method: RASI_ICP Sample Name: CCVB Operator: BMM **000192**
Run Time: 07/10/92 12:18:48
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1937	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03203	Q11.405	11.172	.00312	.00035	-.26302	.01103
SDev	.01972	.037	.006	.00030	.00020	.00128	.00072
%RSD	61.583	.32613	.05529	9.7525	8.6561	.48581	6.5139
#1	.01809	Q11.429	11.168	.00291	.00221	-.26393	.01052
#2	.04597	Q11.377	11.177	.00334	.00250	-.26212	.01154
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00844	.02207	-.00190	-.00563	-2.7290	-.05005	-.03076
SDev	.00317	.00022	.00242	.00053	.0911	.00757	.00713
%RSD	37.543	.98281	127.41	9.3856	3.3365	15.116	23.195
#1	-.01068	.02192	-.00361	-.00600	-2.7934	-.05540	-.03580
#2	-.00620	.02223	-.00019	-.00526	-2.6646	-.04470	-.02571
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00483	Q11.643	-.00214	.00700	11.502	Q12.653	.00852
SDev	.00020	.028	.00436	.04244	.080	.473	.00002
%RSD	4.1598	.23658	203.59	606.09	.69433	3.7397	.20932
#1	-.00497	Q11.662	-.00523	-.02301	11.559	Q12.987	.00853
#2	-.00469	Q11.623	.00094	.03701	11.446	Q12.318	.00851
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Fail	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04968	-.26577	10.956	Q11.398	.12740	-.00987	11.16
SDev	.00167	.04631	.087	.040	.00126	.00056	.08
%RSD	3.3672	17.427	.79738	.35132	.98603	5.7914	.7173
#1	.04850	-.29851	Q11.017	Q11.426	.12829	-.00927	11.22
#2	.05086	-.23302	10.894	Q11.370	.12651	-.01006	11.10
Errors	NOCHECK	NOCHECK	QC Pass	QC Fail	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

D-506

000193

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 12:23:17
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02713	10.501	10.362	.00285	.00271	-.24404	-.01939
SDev	.00304	.057	.013	.00038	.00007	.00018	.00574
%RSD	11.217	.54270	.12494	13.380	2.7838	.07176	29.623
#1	.02498	10.460	10.353	.00312	.00276	-.24416	-.02345
#2	.02928	10.541	10.371	.00258	.00266	-.24392	-.01533
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00368	.01981	-.00146	-.00990	-1.7890	-.05101	-.02671
SDev	.00492	.00106	.00082	.00058	.9225	.01026	.00425
%RSD	133.64	5.3295	56.020	5.8657	51.567	20.107	15.914
#1	-.00020	.02056	-.00088	-.01031	-1.1367	-.04375	-.02971
#2	-.00717	.01907	-.00204	-.00949	-2.4413	-.05826	-.02370
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00544	10.768	-.00257	.02901	10.594	10.586	.00818
SDev	.00027	.053	.00091	.00566	.016	.138	.00033
%RSD	5.0453	.49557	35.199	19.506	.15266	1.3067	4.0054
#1	-.00525	10.730	-.00193	.03301	10.582	10.489	.00841
#2	-.00564	10.805	-.00321	.02501	10.605	10.684	.00795
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00946	-.09255	10.112	10.553	.13757	-.01327	10.25
SDev	.00502	.05607	.062	.006	.00123	.00001	.03
%RSD	53.033	60.584	.61235	.05679	.89640	.04275	.2942
#1	.00591	-.05290	10.068	10.558	.13670	-.01327	10.23
#2	.01301	-.13220	10.156	10.549	.13845	-.01327	10.27
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

D-507

Method: RASI_ICP Sample Name: CCB Operator: BMM
Run Time: 07/10/92 12:27:24
Comment: RISI METS OP. IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00881	H.02624	H.04683	-.00011	-.00038	-.00060	H.04657
SDev	.00271	.00843	.01612	.00000	.00001	.00010	.00869
%RSD	30.727	32.116	34.426	.17087	3.0195	16.917	18.669
#1	-.00689	H.02028	H.05823	-.00011	-.00037	-.00067	H.05271
#2	-.01072	H.03220	H.03543	-.00011	-.00039	-.00052	H.04042
Errors	LC Pass	LC High	LC High	LC Pass	LC Pass	LC Pass	LC High
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00346	.00145	-.00342	L-.00950	L-.20899	-.00680	.00000
SDev	.00194	.00082	.00041	.00032	.63425	.00068	.00642
%RSD	56.129	56.350	12.109	3.3170	303.48	10.024	191650.
#1	-.00484	.00203	-.00371	L-.00928	L-.65747	-.00632	-.00454
#2	-.00209	.00087	-.00312	L-.00972	H.23949	-.00728	.00454
Errors	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass	LC Pass
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.0134

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00080	H.07081	-.00028	-.00300	H.05820	H.08245	.00082
SDev	.00009	.02455	.00032	.01132	.01536	.03186	.00049
%RSD	11.323	34.667	116.18	377.12	26.392	38.641	60.406
#1	-.00087	H.08816	-.00051	.00500	H.06906	H.10498	.00117
#2	-.00074	H.05345	-.00005	-.01100	H.04734	.05992	.00047
Errors	LC Pass	LC High	LC Pass	LC Pass	LC High	LC High	LC Pass
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02011	-.09269	H.02815	.02266	L-.00163	.00011	9.721
SDev	.00335	.04695	.01429	.00601	.00267	.00014	.017
%RSD	16.638	50.646	50.759	26.505	163.63	126.91	.1754
#1	.01774	-.05950	H.03826	.02691	L-.00352	.00020	9.733
#2	.02247	L-.12589	H.01805	.01842	.00026	.00001	9.709
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Low	LC Pass	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

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000195

Method: RASI_ICP Sample Name: 92-06-215-01A Operator: BMM
Run Time: 07/10/92 12:31:30
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.09248	L.00901	L.01689	L-.00114	.00337	L.00109	L-.01138
SDev	.00638	.00332	.00655	.00008	.00005	.00010	.01966
%RSD	6.9029	36.793	38.746	6.6759	1.4674	9.3930	172.84
#1	.09699	L.00667	L.02152	L-.00108	.00340	L.00116	L.00253
#2	.08796	L.01136	L.01227	L-.00119	.00333	L.00102	L-.02528
Errors	LC Pass	LC Low	LC Low	LC Low	LC Pass	LC Low	LC Low
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00722	L.00031	L-.01068	L-.01046	L-.13292	L-.00513	L-.01362
SDev	.00175	.00236	.00039	.00757	.00006	.00549	.01284
%RSD	24.176	768.58	3.6972	72.388	.04691	106.89	94.261
#1	L-.00598	L.00197	L-.01096	L-.00510	L-.13297	L-.00125	L-.00454
#2	L-.00845	L-.00136	L-.01040	L-.01581	L-.13288	L-.00901	L-.02270
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00371	.01950	L-.00019	L-.02301	L.01591	.24532	L-.02586
SDev	.00009	.00661	.00020	.00566	.00221	.05075	.00033
%RSD	2.3782	33.910	104.36	24.595	13.868	20.688	1.2601
#1	L-.00365	.02418	L-.00033	L-.02701	L.01435	.28121	L-.02563
#2	L-.00378	.01483	L-.00005	L-.01901	L.01747	.20943	L-.02609
Errors	LC Low	LC Pass	LC Low	LC Low	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.12774	.48466	L.01228	L.02557	L-.00104	L-.00756	L.1273
SDev	.00836	.06598	.00424	.01001	.00119	.00456	.1443
%RSD	6.5473	13.614	34.570	39.132	114.65	60.408	113.3
#1	L.13366	.53132	L.00928	L.01850	L-.00020	L-.00433	L.2294
#2	L.12183	.43801	L.01528	L.03265	L-.00188	L-.01078	L.0253
Errors	LC Low	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Low
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-509

000196

Method: RASI_ICP Sample Name: 92-06-215-02A 1:10 Operator: BMM
Run Time: 07/10/92 12:35:36
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00592	L.00465	L.01612	L.00027	L-.00024	L.00158	.23786
SDev	.01011	.00831	.02160	.00008	.00012	.00024	.01597
%RSD	170.66	178.59	133.98	28.408	49.458	15.551	6.7119
#1	L-.00122	L.01053	L.00085	L.00032	L-.00033	L.00175	.24914
#2	L.01307	L-.00122	.03140	L.00022	L-.00016	L.00140	.22657
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00248	L.00227	L-.00085	L.00528	L-.72888	L-.00724	L.01210
SDev	.00194	.00197	.00237	.00867	.65665	.00408	.01498
%RSD	78.505	87.092	280.45	164.24	90.090	56.381	123.75
#1	L-.00110	L.00087	L.00083	L-.00085	L-.26456	L-.00435	.02269
#2	L-.00385	L.00368	L-.00252	.01141	L-1.1932	L-.01013	L.00151
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00042	.01570	L.00142	L.01301	L.01435	.05171	L.00359
SDev	.00077	.00272	.00058	.03395	.00056	.01163	.00408
%RSD	183.91	17.358	40.782	261.09	3.8672	22.486	113.87
#1	L-.00013	.01762	L.00101	L.03701	L.01475	.05994	L.00647
#2	L.00097	.01377	L.00183	L-.01100	L.01396	.04349	L.00070
Errors	LC Low	LC Pass	LC Low	LC Low	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Ti3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.04850	L-.09472	L.01615	L-.00568	L.00288	.01840	9.502
SDev	.00000	.00406	.00039	.00603	.00201	.00053	.036
%RSD	.00000	4.2877	2.4321	106.15	69.798	2.8828	.3785
#1	L.04850	L-.09759	L.01587	L-.00142	L.00146	.01878	9.528
#2	L.04850	L-.09185	L.01642	L-.00994	.00431	.01803	9.477
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: 92-06-215-02A Operator: BMM
Run Time: 07/10/92 12:39:42
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03777	L-.00810	L.00216	.00097	L-.00080	L.00143	1.3438
SDev	.00430	.00129	.00661	.00015	.00000	.00004	.0132
%RSD	11.384	15.986	306.03	15.726	.16625	2.9696	.98231
#1	.04082	L-.00718	L-.00251	.00108	L-.00081	L.00146	1.3345
#2	.03473	L-.00901	L.00683	.00086	L-.00080	L.00140	1.3531
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00040	L-.00043	.01150	.07236	L-.88957	L.00153	.03829
SDev	.00002	.00039	.00159	.00015	.94182	.00001	.00071
%RSD	5.2335	91.172	13.785	.20177	105.87	.73152	1.8655
#1	L.00038	L-.00015	.01262	.07247	L-1.5555	L.00154	.03880
#2	L.00041	L-.00071	.01038	.07226	L-.22360	L.00152	.03779
Errors	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00419	.00411	L.00332	.15806	L-.00178	.10710	L.00052
SDev	.00043	.00195	.00063	.03820	.00357	.00724	.00163
%RSD	10.276	47.351	19.097	24.167	200.22	6.7645	314.26
#1	.00449	.00549	L.00287	.18507	L.00074	.11222	L.00167
#2	.00388	L.00273	L.00377	.13105	L-.00430	.10198	L-.00063
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.22237	L-.15246	.06291	L-.01286	L-.00025	.15071	10.79
SDev	.00502	.07493	.00154	.00001	.00135	.00175	.14
%RSD	2.2567	49.149	2.4566	.07570	549.71	1.1597	1.311
#1	L.22592	L-.09948	.06181	L-.01287	L.00071	.14948	10.69
#2	L.21882	L-.20545	.06400	L-.01285	L-.00120	.15195	10.89
Errors	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000198

Method: RASI_ICP Sample Name: 92-06-215-03A 1:10 Operator: BMM
Run Time: 07/10/92 12:43:48
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00253	L-.01403	L.00050	L-.00032	L-.00048	L.00075	.11135
SDev	.01082	.01339	.00947	.00030	.00006	.00016	.01203
%RSD	427.79	95.451	1903.2	94.098	12.323	21.828	10.805
#1	L.00512	L-.00456	L.00719	L-.00011	L-.00044	L.00063	.11986
#2	L-.01018	L-.02350	L-.00620	L-.00054	L-.00052	L.00086	.10284
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03258	L-.00028	L-.00336	L-.00226	L.35567	L-.00720	L-.00854
SDev	.00001	.00079	.00119	.00133	.26526	.00549	.00000
%RSD	.03708	281.05	35.387	58.891	74.580	76.353	.00943
#1	.03259	L.00029	L-.00420	L-.00132	L.54324	L-.00331	L-.00854
#2	.03257	L-.00084	L-.00252	L-.00321	L.16811	L-.01108	L-.00854
Errors	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00087	L-.00188	L-.00083	L-.03101	L.00583	L.00870	L-.00127
SDev	.00009	.00156	.00127	.04527	.00439	.00507	.00278
%RSD	12.837	93.970	153.92	145.98	75.388	58.300	218.76
#1	L-.00073	L-.00056	L-.00173	L.00100	L.00272	L.01228	L.00069
#2	L-.00061	L-.00276	L.00007	L-.06303	L.00894	L.00511	L-.00323
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.14312	L-.17732	L.00274	L-.01271	L-.00304	.01187	9.855
SDev	.00335	.05301	.00233	.00400	.00056	.00095	.026
%RSD	2.3376	29.897	85.034	31.425	18.515	7.9771	.2680
#1	L.14549	L-.21481	L.00439	L-.01554	L-.00264	.01254	9.873
#2	L.14076	L-.13983	L.00109	L-.00989	L-.00344	.01120	9.836
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-512

Method: RASI_ICP Sample Name: 92-06-215-03A Operator: BMM **000199**
Run Time: 07/10/92 12:47:54
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mc : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03530	L-.00821	L.00329	.00096	L-.00075	L.00078	.69143
SDev	.00506	.00025	.00279	.00015	.00005	.00028	.00578
%RSD	14.329	3.0851	84.674	15.853	6.5047	36.053	.83607
#1	.03172	L-.00803	L.00526	.00085	L-.00078	L.00058	.68734
#2	.03887	L-.00839	L.00132	.00107	L-.00071	L.00097	.69552
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.37815	L.00193	.01259	.07894	L.27711	L-.00158	.02452
SDev	.00230	.00078	.00237	.00038	1.2768	.01094	.00071
%RSD	.60801	40.186	18.819	.48084	460.77	692.02	2.8920
#1	.37977	L.00248	.01427	.07868	L1.1800	L-.00932	.02402
#2	.37652	L.00138	.01092	.07921	L-.62575	L.00616	.02502
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Low	LC Pass
! h	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00323	L-.00031	L.00162	.09304	L.00345	.07695	L-.00052
SDev	.00009	.00117	.00058	.03395	.00054	.00293	.00147
%RSD	2.6965	375.10	36.141	36.496	15.765	3.8121	283.75
#1	.00329	L.00051	L.00120	.06903	L.00384	.07902	L.00052
#2	.00317	L-.00114	L.00203	.11705	L.00307	.07488	L-.00156
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.2266	L-.17479	.04486	L-.00434	L-.00065	.08819	10.62
SDev	.0201	.04703	.00542	.01201	.00088	.00028	.03
%RSD	1.6365	26.905	12.084	276.63	135.77	.31126	.2565
#1	1.2124	L-.20805	.04102	L.00415	L-.00003	.08800	10.60
#2	1.2408	L-.14154	.04869	L-.01283	L-.00127	.08838	10.64
Errors	LC Pass	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC Pass
h	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-513

000200

Method: RASI_ICP Sample Name: 92-06-215-03A-S 1:10 Operator: BMM
Run Time: 07/10/92 12:52:00
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.22141	.41800	.42127	.19991	.20464	.20688	.36062
SDev	.00507	.00009	.00032	.00038	.00001	.00061	.00694
%RSD	2.2903	.02168	.07624	.19080	.00572	.29652	1.9235
#1	.22500	.41807	.42150	.20018	.20465	.20645	.36553
#2	.21783	.41794	.42104	.19964	.20464	.20731	.35572
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.25521	.21313	.19562	.22183	L.09375	.41830	.21714
SDev	.00318	.00001	.00158	.00136	.71629	.00138	.00570
%RSD	1.2478	.00451	.80754	.61137	764.08	.33119	2.6262
#1	.25746	.21313	.19674	.22279	L.80024	.41928	.21311
#2	.25296	.21312	.19450	.22087	L-.41275	.41732	.22117
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.21656	.43782	.21042	5.0860	.44036	.39684	.20061
SDev	.00009	.00117	.00127	.0156	.00467	.00585	.00196
%RSD	.03924	.26674	.60539	.30598	1.0607	1.4728	.97833
#1	.21662	.43864	.20952	5.0750	.43705	.40097	.20200
#2	.21650	.43699	.21132	5.0970	.44366	.39271	.19923
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.58431	.28509	.40748	.41093	.21211	.22104	9.706
SDev	.00167	.05503	.00540	.00801	.00014	.00080	.026
%RSD	.28627	19.303	1.3257	1.9483	.06745	.36358	.2699
#1	.58549	.24618	.41130	.41659	.21221	.22161	9.725
#2	.58313	.32401	.40366	.40527	.21200	.22047	9.688
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

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Method: RASI_ICP Sample Name: 92-06-215-03A-SD1:10 Operator: BMM **000201**
Run Time: 07/10/92 12:56:06
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mo. CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.20601	.43335	.43686	.20050	.20586	.20707	.38975
SDev	.01806	.00114	.01742	.00076	.00092	.00047	.01064
%RSD	8.7656	.26224	3.9870	.38105	.44492	.22802	2.7306
#1	.21878	.43254	.44918	.19996	.20521	.20674	.38223
#2	.19324	.43415	.42455	.20104	.20651	.20740	.39728
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.25433	.21453	.19645	.21704	L-.25097	.42165	.21109
SDev	.00017	.00120	.00119	.01066	.09138	.00072	.01568
%RSD	.06692	.55976	.60649	4.9137	36.410	.17181	7.4279
#1	.25445	.21388	.19561	.22458	L-.18636	.42217	.22218
#2	.25421	.21538	.19729	.20950	L-.31559	.42114	.20000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
H	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.21716	.44198	.21167	5.0620	.43783	.27333	.20443
SDev	.00077	.00156	.00058	.0241	.02801	.00507	.00212
%RSD	.35401	.35286	.27382	.47513	6.3969	1.8549	1.0390
#1	.21662	.44309	.21126	5.0790	.41802	.27692	.20593
#2	.21771	.44088	.21208	5.0450	.45763	.26975	.20292
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.58195	.29069	.41349	.42223	.21522	.22293	9.701
SDev	.00167	.01298	.00850	.00002	.00044	.00053	.064
%RSD	.28744	4.4663	2.0566	.00537	.20525	.23825	.6559
#1	.58313	.29987	.40747	.42225	.21554	.22256	9.656
#2	.58076	.28151	.41950	.42222	.21491	.22331	9.746
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
H	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000202

Method: RASI_ICP Sample Name: 92-06-215-03A-S Operator: BMM
Run Time: 07/10/92 13:00:11
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.0722	3.8804	3.8012	1.8878	1.8720	1.8341	2.8928
SDev	.0200	.0188	.0497	.0082	.0077	.0103	.0180
%RSD	.96380	.48493	1.3081	.43650	.41381	.55974	.62379
#1	2.0581	3.8671	3.7660	1.8820	1.8666	1.8268	2.8801
#2	2.0863	3.8938	3.8364	1.8937	1.8775	1.8413	2.9056
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.3718	1.9606	1.8624	2.1362	L.76509	3.8541	2.0749
SDev	.0135	.0135	.0103	.0114	.40963	.0397	.0307
%RSD	.57103	.69102	.55238	.53227	53.539	1.0307	1.4802
#1	2.3623	1.9510	1.8551	2.1282	L1.0547	3.8260	2.0532
#2	2.3814	1.9701	1.8697	2.1443	L.47544	3.8822	2.0966
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.0102	4.0958	1.9244	46.972	3.8759	3.5301	1.7893
SDev	.0125	.0253	.0110	.226	.0195	.0401	.0142
%RSD	.61948	.61829	.57055	.48192	.50210	1.1349	.79463
#1	2.0014	4.0779	1.9166	46.812	3.8621	3.5018	1.7793
#2	2.0190	4.1137	1.9322	47.132	3.8896	3.5585	1.7994
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Ti3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.1299	3.5692	3.7091	3.9980	1.9846	1.9507	10.58
SDev	.0335	.0221	.0665	.0256	.0078	.0146	.05
%RSD	.65216	.62020	1.7917	.64144	.39269	.74612	.4502
#1	5.1062	3.5535	3.6621	3.9799	1.9791	1.9404	10.54
#2	5.1535	3.5848	3.7561	4.0162	1.9902	1.9610	10.61
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: 92-06-215-03A-SD Operator: BMM **000203**
Run Time: 07/10/92 13:04:16
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mc : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.0512	3.9525	3.8760	1.9306	1.8988	1.8632	3.1856
SDev	.0026	.0226	.0477	.0142	.0113	.0159	.0311
%RSD	.12710	.57182	1.2299	.73519	.59656	.85364	.97780
#1	2.0531	3.9365	3.8423	1.9205	1.8908	1.8519	3.1636
#2	2.0494	3.9685	3.9097	1.9406	1.9068	1.8744	3.2077
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.3954	2.0012	1.8926	2.0667	L.36800	3.9271	1.9470
SDev	.0178	.0123	.0151	.0093	.59225	.0390	.0165
%RSD	.74127	.61383	.79528	.44922	160.94	.99344	.84526
#1	2.3829	1.9925	1.8820	2.0601	L-.05079	3.8995	1.9354
#2	2.4080	2.0099	1.9033	2.0733	L.78678	3.9547	1.9587
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
' h	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.0425	4.1622	1.9598	47.930	3.9479	2.5784	1.8516
SDev	.0159	.0238	.0165	.368	.0428	.0169	.0114
%RSD	.77854	.57106	.84224	.76745	1.0843	.65672	.61768
#1	2.0313	4.1454	1.9481	47.670	3.9176	2.5664	1.8435
#2	2.0538	4.1790	1.9715	48.190	3.9781	2.5904	1.8597
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.3818	3.6163	3.8025	4.0537	2.0199	2.0155	10.71
SDev	.0385	.0157	.0255	.0215	.0180	.0149	.09
%RSD	.71488	.43373	.67018	.53117	.88937	.74044	.8601
#1	5.3546	3.6274	3.7845	4.0384	2.0072	2.0049	10.64
#2	5.4090	3.6052	3.8205	4.0689	2.0327	2.0260	10.77
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
gh	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: PB1 3050_I 06/29/92 Operator: BMM **000204**
Run Time: 07/10/92 13:08:21
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02022	L.01082	L.01371	.00539	.00327	.00762	.31377
SDev	.01452	.00993	.00318	.00000	.00013	.00073	.00305
%RSD	71.804	91.749	23.185	.00940	4.0772	9.5516	.97283
#1	L.00995	L.01784	L.01596	.00540	.00317	.00814	.31161
#2	.03048	L.00380	L.01147	.00539	.00336	.00711	.31593
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00329	.00454	.00952	.09045	L.91649	L.00391	L.01460
SDev	.00263	.00037	.00040	.00047	1.7520	.00346	.00000
%RSD	79.950	8.0799	4.1801	.51822	191.16	88.308	.02299
#1	L.00143	.00429	.00924	.09012	L-.32234	L.00147	L.01460
#2	L.00515	.00480	.00981	.09078	L2.1553	L.00636	L.01460
Errors	LC Low	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Low
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.0177(

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00584	.01954	.00545	.16607	L.01781	.14609	.00781
SDev	.00035	.00507	.00075	.00707	.00659	.00583	.00016
%RSD	5.9600	25.944	13.833	4.2597	36.997	3.9934	2.2367
#1	.00559	.02312	.00598	.17107	L.02247	.14197	.00720
#2	.00608	.01595	L.00492	.16106	L.01315	.15022	.00743
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.11592	L-.28049	.03859	L-.00867	L.00200	.04634	H11.67
SDev	.00502	.05895	.01277	.00199	.00049	.00027	.04
%RSD	4.3292	21.015	33.095	23.014	24.491	.55667	.3795
#1	L.11237	L-.32217	.04762	L-.01008	L.00166	.04815	H11.64
#2	L.11946	L-.23881	.02956	L-.00726	L.00235	.04853	H11.70
Errors	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC High
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

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000205

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 13:12:27
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mod CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5730	-.00954	Q11.021	1.0409	1.0703	Q2.7887	Q2.7878
SDev	.0059	.00560	.019	.0053	.0073	.0040	.0083
%RSD	.22737	58.664	.16927	.51317	.68062	.14195	.29929
#1	2.5771	-.00558	Q11.008	1.0371	1.0651	Q2.7859	Q2.7937
#2	2.5689	-.01350	Q11.034	1.0446	1.0755	Q2.7915	Q2.7819
Errors	QC Pass	NOCHECK	QC Fail	QC Pass	QC Pass	QC Fail	QC Fail
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.7212	Q2.7602	2.5848	2.6825	Q.71983	Q5.5462	2.6593
SDev	.0112	.0110	.0127	.0132	1.0102	.0191	.0179
%RSD	.41271	.39974	.49014	.49136	140.33	.34490	.67152
#1	2.7133	Q2.7524	2.5758	2.6732	Q1.4341	Q5.5597	2.6466
#2	2.7291	Q2.7680	2.5938	2.6918	Q.00555	Q5.5326	2.6719
Errors	QC Pass	QC Fail	QC Pass	QC Pass	QC Fail	QC Fail	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0795	.00129	2.7296	5.2351	Q11.156	-.00011	2.6137
SDev	.0035	.00000	.0072	.0198	.006	.01611	.0025
%RSD	.32688	.25523	.26238	.37835	.05437	14425.	.09396
#1	1.0770	.00129	2.7245	5.2211	Q11.160	-.01150	2.6120
#2	1.0820	.00129	2.7346	5.2491	Q11.151	.01128	2.6155
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Fail	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.2446	5.0375	-.00240	-.02878	2.6727	2.7244	10.55
SDev	.0151	.1080	.00466	.02389	.0096	.0005	.11
%RSD	.28705	2.1447	193.94	83.014	.36001	.01723	1.041
#1	5.2340	4.9611	.00089	-.04567	2.6659	2.7247	10.47
#2	5.2553	5.1139	-.00569	-.01189	2.6795	2.7240	10.62
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

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000206

Method: RASI_ICP Sample Name: CCVC Operator: BMM
Run Time: 07/10/92 13:16:34
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	24.710	-.01148	.10751	.00323	-.00857	.00632	26.316
SDev	.098	.00529	.03033	.00083	.00095	.00210	.074
%RSD	.39540	46.075	28.214	25.694	11.065	33.157	.28211
#1	24.779	-.01522	.12896	.00382	-.00790	.00781	26.369
#2	24.641	-.00774	.08606	.00264	-.00924	.00484	26.264
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	25.000						25.000
Range	10.000						10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00227	26.131	.01957	25.710	27.166	.01754	25.626
SDev	.00419	.029	.00122	.079	.808	.01537	.107
%RSD	184.19	.11016	6.2519	.30548	2.9729	87.639	.41765
#1	.00069	26.151	.02043	25.766	26.595	.02841	25.702
#2	-.00523	26.110	.01870	25.655	Q27.737	.00667	25.551
Errors	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK	QC Pass
Value		25.000		25.000	25.000		25.000
Range		10.000		10.000	10.000		10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	10.403	-.00046	-.00025	50.170	.02366	-.00227	-.01133
SDev	.034	.00039	.00111	.137	.00016	.00439	.00096
%RSD	.32584	85.655	438.41	.27353	.65893	193.43	7.7779
#1	10.427	-.00018	.00053	50.267	.02377	-.00537	-.01166
#2	10.379	-.00074	-.00104	50.073	.02355	.00083	-.01301
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	10.000			50.000			
Range	10.000			10.000			

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	50.084	.12834	.00283	-.02984	25.493	.00074	9.864
SDev	.308	.01201	.00269	.00490	.092	.00187	.025
%RSD	.61455	9.3578	95.288	16.426	.36256	251.35	.2551
#1	50.302	.13683	.00092	-.03331	25.558	.00206	9.882
#2	49.866	.11985	.00473	-.02637	25.427	-.00058	9.846
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Value	50.000				25.000		
Range	10.000				10.000		

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000207

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 13:20:41
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mc : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.07444	10.756	10.647	.00387	.00338	-.24544	.05237
SDev	.01720	.057	.096	.00000	.00025	.00008	.01880
%RSD	23.102	.53237	.89833	.07187	7.3679	.03328	35.910
#1	.08660	10.797	10.715	.00387	.00355	-.24549	.06566
#2	.06228	10.716	10.580	.00387	.00320	-.24538	.03907
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00359	.08952	.00058	.05798	-2.2950	-.04408	.04001
SDev	.00007	.01983	.00003	.02259	.0457	.00213	.01858
%RSD	1.8271	22.149	4.6241	38.961	1.9929	4.8293	46.440
#1	-.00363	.10355	.00056	.07396	-2.2626	-.04257	.05314
#2	-.00354	.07550	.00060	.04201	-2.3273	-.04558	.02687
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02109	10.991	-.00087	.17007	10.874	10.618	.01251
SDev	.00824	.039	.00074	.04952	.099	.027	.00016
%RSD	39.075	.35808	84.592	29.116	.90813	.25209	1.3214
#1	.02691	Q11.019	-.00139	.20508	10.944	10.637	.01263
#2	.01526	10.963	-.00035	.13505	10.804	10.599	.01239
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.15731	-.14027	10.244	10.707	.20977	-.01082	10.37
SDev	.02676	.06615	.053	.016	.03688	.00081	.11
%RSD	17.013	47.162	.51736	.14751	17.579	7.4609	1.057
#1	.17624	-.18705	10.281	10.718	.23584	-.01025	10.45
#2	.13839	-.09349	10.206	10.696	.18369	-.01139	10.29
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

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000208

Method: RASI_ICP Sample Name: CCB Operator: BMM
Run Time: 07/10/92 13:24:48
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.01881	H.02399	H.03724	H.00183	H.00086	-.00046	H.01811
SDev	.02506	.01292	.03256	.00229	.00150	.00022	.03275
%RSD	133.23	53.872	87.437	124.83	174.80	46.820	180.91
#1	.00109	H.03312	H.06026	.00021	-.00020	-.00031	H.04127
#2	H.03652	H.01485	.01422	H.00345	H.00192	-.00062	-.00506
Errors	LC High	LC High	LC High	LC High	LC High	LC Pass	LC High
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.00996	H.02040	H.00302	H.00723	L-1.2525	-.00427	H.07216
SDev	.01883	.00311	.00713	.00002	.8881	.01104	.08559
%RSD	189.04	15.257	236.27	.27012	70.910	258.50	118.62
#1	-.00335	H.01820	-.00202	H.00725	L-.62447	-.01208	.01163
#2	H.02328	H.02260	H.00805	H.00722	L-1.8805	.00354	H.13268
Errors	LC High	LC High	LC High	LC High	LC Low	LC Pass	LC High
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.01341

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.00389	H.05151	L-.00424	H.29912	.01040	H.10210	-.00137
SDev	.00274	.04483	.00653	.32823	.07027	.03505	.00784
%RSD	70.580	87.031	153.74	109.73	675.65	34.330	570.54
#1	H.00583	H.08321	.00037	H.06703	H.06009	H.07731	.00417
#2	H.00195	H.01981	L-.00886	H.53121	L-.03929	H.12688	L-.00691
Errors	LC High	LC High	LC Low	LC High	LC Pass	LC High	LC Pass
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.14194	L-.15370	H.02209	H.06217	H.02068	L-.00360	5.127
SDev	.12546	.02866	.01825	.04612	.00770	.00564	6.581
%RSD	88.388	18.648	82.607	74.179	37.224	156.54	128.4
#1	.05323	L-.17397	H.03499	.02956	H.01523	H.00039	9.780
#2	.23065	L-.13344	.00919	H.09478	H.02612	L-.00759	.4734
Errors	LC Pass	LC Low	LC High	LC High	LC High	LC Low	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

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000209

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 13:32:42
Comment: RISI METS OP. IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1937	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.4997	.00304	10.881	1.0091	1.0549	Q2.7680	Q2.7604
SDev	.0254	.01289	.017	.0013	.0007	.0016	.0012
%RSD	1.0144	424.15	.16004	.12862	.06753	.05725	.04226
#1	2.4818	.01215	10.869	1.0100	1.0554	Q2.7691	Q2.7596
#2	2.5176	-.00608	10.894	1.0082	1.0544	Q2.7669	Q2.7613
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Fail	QC Fail
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.6968	2.7217	2.5214	2.6407	Q.89324	5.4589	2.6309
SDev	.0086	.0047	.0079	.0001	1.1725	.0123	.0036
%RSD	.32053	.17341	.31442	.00499	131.27	.22474	.13622
#1	2.7029	2.7250	2.5270	2.6406	Q1.7223	5.4676	2.6335
#2	2.6907	2.7183	2.5158	2.6408	Q.06415	5.4502	2.6284
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0611	.00349	2.6967	5.0240	Q11.081	.00574	2.5553
SDev	.0008	.00234	.0024	.0184	.013	.00448	.0011
%RSD	.07316	66.895	.08869	.36609	.12144	78.107	.04468
#1	1.0617	.00515	2.6950	5.0370	Q11.071	.00891	2.5561
#2	1.0606	.00184	2.6984	5.0110	Q11.090	.00257	2.5545
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Fail	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.0636	4.8832	-.00264	-.01118	2.6152	2.6794	10.31
SDev	.0033	.0350	.00579	.00402	.0010	.0027	.00
%RSD	.06607	.71774	219.40	35.928	.03968	.09945	.0242
#1	5.0660	4.8584	-.00674	-.01402	2.6160	2.6813	10.31
#2	5.0613	4.9080	.00146	-.00834	2.6145	2.6775	10.30
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 13:41:26
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.4970	-.00428	10.840	1.0226	1.0663	Q2.7672	2.7294
SDev	.0173	.01147	.045	.0051	.0051	.0125	.0174
%RSD	.69277	267.99	.41102	.49992	.47740	.45315	.63567
#1	2.4848	-.01239	10.808	1.0190	1.0627	Q2.7584	2.7171
#2	2.5092	.00383	10.871	1.0262	1.0699	Q2.7761	2.7417
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.6989	2.7192	2.5391	2.6581	Q.69173	5.4115	2.6067
SDev	.0070	.0130	.0099	.0075	1.7740	.0274	.0079
%RSD	.26117	.47892	.39054	.28311	256.46	.50625	.30231
#1	2.6939	2.7100	2.5321	2.6528	Q-.56271	5.3922	2.6011
#2	2.7039	2.7284	2.5461	2.6635	Q1.9462	5.4309	2.6123
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0636	-.00229	2.6991	5.0650	Q11.086	-.01013	2.5339
SDev	.0063	.00273	.0135	.0340	.023	.00352	.0147
%RSD	.59023	119.17	.49937	.67038	.20302	34.779	.58008
#1	1.0591	-.00036	2.6895	5.0410	Q11.070	-.00764	2.5235
#2	1.0680	-.00422	2.7086	5.0890	Q11.102	-.01262	2.5443
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Fail	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.0695	4.9221	-.00425	-.01268	2.6262	2.6558	10.37
SDev	.0385	.0636	.00038	.00222	.0068	.0168	.09
%RSD	.75891	1.2923	9.0052	17.485	.25998	.63365	.8605
#1	5.0423	4.9671	-.00452	-.01111	2.6214	2.6439	10.30
#2	5.0968	4.8772	-.00398	-.01424	2.6310	2.6677	10.43
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

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000211

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 14:02:18
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.4513	-.00019	10.887	1.0067	1.0625	Q2.7815	2.7289
SDev	.0156	.00907	.006	.0071	.0055	.0166	.0209
%RSD	.63828	4804.7	.05447	.70482	.51997	.59546	.76407
#1	2.4402	.00622	10.891	1.0017	1.0586	Q2.7698	2.7141
#2	2.4623	-.00660	10.883	1.0117	1.0664	Q2.7932	2.7436
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.6963	2.7186	2.5063	2.6458	Q1.8679	5.4361	2.5911
SDev	.0185	.0178	.0151	.0140	.5681	.0404	.0014
%RSD	.68467	.65302	.60149	.53043	30.414	.74354	.05284
#1	2.6833	2.7060	2.4956	2.6359	Q1.4662	5.4075	2.5920
#2	2.7094	2.7312	2.5170	2.6557	2.2696	5.4646	2.5901
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0583	-.00284	2.6957	4.9290	Q11.101	-.00091	2.5152
SDev	.0094	.00195	.0162	.0028	.124	.00046	.0180
%RSD	.88521	68.730	.60061	.05740	1.1202	50.782	.71434
#1	1.0517	-.00146	2.6843	4.9310	Q11.013	-.00058	2.5025
#2	1.0650	-.00422	2.7072	4.9270	Q11.189	-.00124	2.5279
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Fail	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.9584	4.8040	-.01220	-.00685	2.6073	2.6505	10.27
SDev	.0251	.0055	.00079	.01031	.0188	.0230	.08
%RSD	.50604	.11413	6.4831	150.47	.72015	.86684	.7737
#1	4.9406	4.8001	-.01164	.00044	2.5940	2.6342	10.21
#2	4.9761	4.8079	-.01276	-.01415	2.6206	2.6667	10.32
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

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Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 14:45:15
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.4353	.00448	10.500	.99759	1.0616	Q2.7688	2.6478
SDev	.0187	.00005	.069	.00290	.0025	.0091	.0132
%RSD	.76738	1.0429	.65695	.29057	.23809	.32873	.49826
#1	2.4221	.00451	10.451	.99554	1.0598	Q2.7628	2.6385
#2	2.4485	.00444	10.548	.99964	1.0633	Q2.7752	2.6572
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.6954	2.6982	2.4934	2.6194	Q.31601	5.3906	2.5593
SDev	.0076	.0095	.0087	.0077	1.0566	.0034	.0050
%RSD	.28045	.35105	.35016	.29342	334.37	.06234	.19618
#1	2.6900	2.6915	2.4872	2.6140	Q1.0632	5.3929	2.5557
#2	2.7007	2.7049	2.4996	2.6249	Q-.43115	5.3882	2.5628
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0497	-.00477	2.6767	4.8890	Q11.071	-.01473	2.5002
SDev	.0055	.00156	.0094	.0255	.011	.00011	.0144
%RSD	.52442	32.692	.35100	.52089	.09915	.72453	.57470
#1	1.0458	-.00367	2.6701	4.8709	Q11.064	-.01481	2.4901
#2	1.0535	-.00587	2.6833	4.9070	Q11.079	-.01466	2.5104
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Fail	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	T13775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.9134	4.8834	-.00917	-.00090	2.5825	2.6295	9.521
SDev	.0050	.0043	.00118	.01019	.0080	.0128	.044
%RSD	.10214	.08776	12.834	1137.6	.30829	.48757	.4586
#1	4.9099	4.8803	-.01000	.00631	2.5768	2.6204	9.490
#2	4.9170	4.8864	-.00834	-.00810	2.5881	2.6386	9.552
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 14:55:14
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS

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Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.4838	.00070	9.6511	.98780	.98643	2.4924	2.4418
SDev	.0152	.01073	.0308	.00410	.00551	.0117	.0029
%RSD	.61099	1535.0	.31959	.41488	.55806	.46904	.12005
#1	2.4730	.00828	9.6293	.98490	.98254	2.4841	2.4439
#2	2.4945	-.00689	9.6729	.99070	.99032	2.5006	2.4398
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.4809	2.4869	2.4743	2.4795	Q1.1634	4.9794	2.4864
SDev	.0090	.0054	.0129	.0034	.0589	.0012	.0020
%RSD	.36267	.21715	.52149	.13733	5.0620	.02394	.08187
#1	2.4746	2.4831	2.4652	2.4771	Q1.1218	4.9803	2.4878
#2	2.4873	2.4907	2.4834	2.4819	Q1.2050	4.9786	2.4849
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.99381	-.00446	2.4777	4.9660	9.9897	-.01895	2.5310
SDev	.00323	.00039	.0149	.0439	.0007	.01147	.0168
%RSD	.32488	8.6828	.60162	.88317	.00727	60.508	.66444
#1	.99153	-.00418	2.4672	4.9350	9.9903	-.01084	2.5191
#2	.99609	-.00473	2.4883	4.9970	9.9892	-.02706	2.5429
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	T13775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.9666	4.9337	-.01413	-.00440	2.4855	2.4960	9.232
SDev	.0468	.0137	.00077	.00614	.0074	.0116	.045
%RSD	.94304	.27669	5.4676	139.75	.29741	.46425	.4926
#1	4.9335	4.9434	-.01358	-.00005	2.4802	2.4878	9.200
#2	4.9998	4.9241	-.01467	-.00874	2.4907	2.5042	9.264
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

Method: RASI_ICP Sample Name: CCVC Operator: BMM
Run Time: 07/10/92 15:03:54
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	A13082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	24.800	-.01289	.05921	.00117	-.00822	.00177	24.051
SDev	.292	.01059	.02170	.00040	.00030	.00092	.203
%RSD	1.1792	82.158	36.653	33.968	3.6775	51.799	.84297
#1	24.594	-.00540	.07456	.00145	-.00801	.00242	23.907
#2	25.007	-.02038	.04386	.00089	-.00843	.00112	24.194
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	25.000						25.000
Range	10.000						10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.01129	24.098	.01671	24.379	25.998	.01925	24.504
SDev	.00142	.228	.00005	.222	.188	.00518	.240
%RSD	12.599	.94800	.27038	.90912	.72205	26.915	.98109
#1	-.01029	23.936	.01668	24.223	26.131	.01559	24.334
#2	-.01230	24.259	.01675	24.536	25.865	.02291	24.674
Errors	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK	QC Pass
Value		25.000		25.000	25.000		25.000
Range		10.000		10.000	10.000		10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.8330	-.00480	-.00533	49.348	-.00067	-.00258	.00415
SDev	.0856	.00080	.00100	.542	.00079	.00030	.00037
% D	.87094	16.694	18.705	1.0980	118.34	11.766	8.9192
#1	9.7724	-.00536	-.00603	48.965	-.00011	-.00236	.00442
#2	9.8935	-.00423	-.00462	49.731	-.00123	-.00279	.00389
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	10.000			50.000			
Range	10.000			10.000			

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	49.230	.10614	.01144	-.01478	24.339	-.00216	9.605
SDev	.592	.08063	.00226	.00627	.237	.00026	.088
%RSD	1.2028	75.964	19.754	42.405	.97227	12.140	.9196
#1	48.811	.16315	.01304	-.01035	24.172	-.00198	9.542
#2	49.649	.04913	.00984	-.01921	24.506	-.00235	9.667
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Value	50.000				25.000		
Range	10.000				10.000		

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 15:08:02
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.06681	10.892	9.8764	.00320	.00359	-.24803	.04375
SDev	.03538	.121	.0752	.00052	.00044	.00016	.01944
%RSD	52.956	1.1121	.76179	16.188	12.293	.06451	44.432
#1	.09183	10.807	9.8232	.00356	.00391	-.24814	.05750
#2	.04179	10.978	9.9296	.00283	.00328	-.24791	.03000
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00576	.09822	-.00090	.08766	-1.5280	-.03693	.04624
SDev	.00232	.02065	.00242	.04663	.1692	.00138	.04392
%RSD	40.274	21.027	269.74	53.195	11.074	3.7316	94.980
#1	-.00412	.11283	.00082	.12064	-1.4084	-.03595	.07729
#2	-.00740	.08362	-.00261	.05469	-1.6477	-.03790	.01518
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							

Range

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03099	Q11.235	.00031	.15406	9.9433	10.703	.02998
SDev	.01569	.169	.00015	.09196	.0985	.114	.00179
%RSD	50.637	1.5053	47.689	59.691	.99018	1.0632	5.9841
#1	.04208	Q11.115	.00041	.21909	9.8737	10.623	.03125
#2	.01989	Q11.354	.00020	.08904	10.013	10.784	.02871
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	T13775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.18334	-.26352	9.9915	10.810	.30143	-.00861	10.14
SDev	.04015	.05132	.1045	.042	.04529	.00062	.10
%RSD	21.898	19.474	1.0461	.38510	15.026	7.1765	1.016
#1	.21172	-.29980	9.9176	10.839	.33346	-.00818	10.07
#2	.15495	-.22723	10.065	10.781	.26940	-.00905	10.21
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

Method: RASI_ICP Sample Name: CCB Operator: BMM
Run Time: 07/10/92 15:12:11
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.12361	H.05857	H.06080	L-.00080	H.00328	.00005	.00593
SDev	.00574	.00144	.00232	.00007	.00013	.00029	.00418
%RSD	4.6468	2.4624	3.8229	9.4157	3.9710	613.81	70.584
#1	H.11954	H.05959	H.05915	L-.00074	H.00338	.00025	.00297
#2	H.12767	H.05755	H.06244	L-.00085	H.00319	-.00016	H.00888
Errors	LC High	LC High	LC High	LC Low	LC High	LC Pass	LC Pass
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00576	H.04387	L-.01196	H.02997	L-.15450	-.00411	H.03014
SDev	.00001	.00252	.00000	.00182	1.59584	.00061	.01166
%RSD	.17665	5.7506	.00837	6.0791	1032.9	14.784	38.684
#1	-.00575	H.04209	L-.01196	H.02869	H.97393	-.00368	H.02190
#2	-.00577	H.04566	L-.01196	H.03126	L-1.2829	-.00454	H.03839
Errors	LC Pass	LC High	LC Low	LC High	LC Low	LC Pass	LC High

High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.01340

Elem Units	Mn2576 ppm	Mo2020 ppm	Ni2316 ppm	K_7664 ppm	Se1960 ppm	Si2881 ppm	Ag3280 ppm
Avge	H.01419	H.06034	-.00104	H.06803	H.05980	H.08286	L-.02251
SDev	.00056	.00273	.00088	.04386	.00269	.00508	.00115
%RSD	3.9804	4.5245	85.400	64.472	4.5056	6.1286	5.0902
#1	H.01379	H.05841	-.00166	H.09904	H.06171	H.08645	L-.02170
#2	H.01459	H.06227	-.00041	.03701	H.05790	H.07926	L-.02332

Errors	LC High	LC High	LC Pass	LC High	LC High	LC High	LC Low
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem Units	Na5889 ppm	T13775 ppm	Sn1899 ppm	Ti3248 ppm	V_2924 ppm	Zn2138 ppm	Y_3710 ppm
Avge	.27914	H.36269	H.05628	H.07463	H.04503	L-.00920	.0312
SDev	.00167	.01817	.00232	.00402	.00317	.00051	.0026
%RSD	.59924	5.0105	4.1303	5.3869	7.0302	5.4969	8.395
#1	.28033	H.34984	H.05464	H.07747	H.04279	L-.00884	.0293
#2	.27796	H.37554	H.05792	H.07179	H.04727	L-.00955	.0330

Errors	LC Pass	LC High	LC High	LC High	LC High	LC Low	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

Method: RASI_ICP Sample Name: PB2 3050_I 06/29/92 Operator: BMM
Run Time: 07/10/92 15:16:18
Comment:
Mode: CONC Corr. Factor: 1

Elem Units	Al3082 ppm	Sb2068 ppm	As1936 ppm	Ba4934 ppm	Be3130 ppm	Cd2265 ppm	Ca3158 ppm
Avge	.05549	L-.00009	L.02011	.00084	.00299	.00508	L-.01359
SDev	.05376	.00530	.00303	.00253	.00047	.00037	.00692
%RSD	96.880	6017.1	15.065	301.63	15.589	7.2713	50.914
#1	.01748	L-.00384	L.02226	.00263	.00266	.00535	L-.00870
#2	.09351	L.00366	L.01797	L-.00095	.00332	.00482	L-.01848

Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Low
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem Units	Cr2677 ppm	Co2286 ppm	Cu3247 ppm	Fe2599 ppm	Fe_Hi ppm	Pb2203 ppm	Mg2790 ppm
Avge	L.00684	.01299	L-.00281	L.00053	L-4.0988	L-.00382	.04803
SDev	.02128	.00285	.01286	.00441	4.2397	.00118	.07407
%RSD	311.31	21.965	458.01	836.74	103.44	30.794	154.22
#1	.02189	.01500	.00629	L.00365	L-7.0967	L-.00299	.10040
	L-.00821	.01097	L-.01190	L-.00259	L-1.1009	L-.00465	L-.00435

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Errors	LC Low	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770
Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00068	.01100	L-.00373	.27911	L-.01230	.09692	L-.01926
SDev	.00097	.00235	.00314	.36218	.00906	.06120	.00541
%RSD	141.25	21.413	84.254	129.76	73.637	63.143	28.046
#1	L.00000	.00933	L-.00595	.53521	L-.01870	.14020	L-.01545
#2	L.00137	.01266	L-.00151	L.02301	L-.00590	.05365	L-.02310

Errors	LC Low	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700
Elem	Na5889	T13775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.20818	.31294	L.00512	.05801	.01274	L-.00833	L.1056
SDev	.01506	.20378	.00974	.05606	.00313	.00122	.1111
%RSD	7.2318	65.118	190.12	96.643	24.553	14.687	105.2
#1	L.21882	L.16885	L-.00176	.09766	.01496	L-.00746	L.1841
#2	L.19753	.45704	L.01201	L.01837	.01053	L-.00919	L.0270

Errors	LC Low	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Low
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: LCS 3050_I 06/29/92 Operator: BMM
Run Time: 07/10/92 15:20:23
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0275	2.0253	1.8334	.94013	.90491	.87878	1.3972
SDev	.0124	.0129	.0036	.00395	.00401	.00181	.0103
%RSD	1.2115	.63482	.19722	.42019	.44284	.20640	.73856
#1	1.0363	2.0162	1.8360	.93733	.90208	.87750	1.4045
#2	1.0187	2.0344	1.8309	.94292	.90775	.88006	1.3899

Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700
Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.94442	.94561	.95385	1.0458	L.14971	1.8630	.95800
SDev	.00739	.00146	.00078	.0032	.17138	.0093	.00684
%RSD	.78274	.15464	.08175	.30486	114.48	.50084	.71445
#1	.93919	.94458	.95330	1.0435	L.27090	1.8564	.96284
#2	.94965	.94665	.95440	1.0480	L.02852	1.8696	.95316

Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770
Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.98398	2.1476	.92775	23.742	1.8363	2.6494	.95904
SDev	.00258	.0035	.00636	.023	.0032	.0146	.00539
%RSD	.26210	.16313	.68546	.09535	.17271	.55134	.56208
#1	.98215	2.1451	.92326	23.759	1.8340	2.6391	.95523
#2	.98580	2.1501	.93225	23.726	1.8385	2.6597	.96285

Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700
Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.1716	1.6721	1.8721	2.0492	.99341	.98350	10.25
SDev	.0117	.0163	.0120	.0039	.00291	.00387	.00
%RSD	.53919	.97224	.64020	.19091	.29315	.39357	.0373
#1	2.1634	1.6606	1.8636	2.0464	.99136	.98076	10.25
#2	2.1799	1.6836	1.8806	2.0520	.99547	.98624	10.26

Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000220

Method: RASI_ICP Sample Name: 92-06-178-15A Operator: BMM
Run Time: 07/10/92 15:48:07
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	160.98	k.42437	k.56616	k1.3525	k.00740	k.05275	k44.773
SDev	.03	.01695	.01941	.0034	.00025	.00075	.007
%RSD	.02030	3.9933	3.4279	.25339	3.3251	1.4115	.01457
#1	161.01	k.43635	k.57988	k1.3549	k.00758	k.05328	k44.768
#2	160.96	k.41239	k.55243	k1.3500	k.00723	k.05223	k44.777
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	k.26202	k.30472	k1.2548	S948.11	k255.92	k3.1040	k70.315
SDev	.00256	.00073	.0043	.01	2.50	.0005	.001
%RSD	.97531	.23964	.34401	.00132	.97617	.01743	.00095
#1	k.26383	k.30523	k1.2579	S948.12	k254.15	k3.1036	k70.315
#2	k.26021	k.30420	k1.2518	S948.10	k257.68	k3.1043	k70.316
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	k8.2045	k.23700	k.30787	44.142	k-.34539	k4.1760	k.25030
SDev	.0190	.00468	.00094	.129	.02955	.0340	.00131
%RSD	.23108	1.9769	.30420	.29166	8.5560	.81439	.52428
#1	k8.2179	k.24032	k.30853	44.051	k-.32449	k4.1519	k.25123
#2	k8.1911	k.23369	k.30720	44.233	k-.36628	k4.2000	k.24937
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	7.9473	k-.46575	k.39422	k4.5958	k.64872	k4.3264	10.10
SDev	.0100	.01609	.00542	.0055	.00470	.0140	.03
%RSD	.12628	3.4552	1.3757	.11963	.72511	.32269	.2491
#1	7.9402	k-.45437	k.39806	k4.5997	k.65205	k4.3165	10.11
#2	7.9544	k-.47713	k.39039	k4.5920	k.64540	k4.3363	10.08
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-533

000221

Method: RASI_ICP Sample Name: 92-06-178-16A 1:10 Operator: BMM
Run Time: 07/10/92 15:52:13
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	18.156	L-.01267	.09122	.16124	L.00013	.03105	5.2051
SDev	.366	.01151	.00398	.00259	.00005	.00089	.0846
%RSD	2.0180	90.873	4.3614	1.6083	35.349	2.8668	1.6249
#1	18.415	L-.02080	.08841	.16307	L.00010	.03168	5.2649
#2	17.897	L-.00453	.09404	.15941	L.00016	.03042	5.1453
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04171	.03643	.15657	28.616	L30.323	.39840	8.0500
SDev	.00135	.00070	.00154	.448	1.462	.01074	.1499
%RSD	3.2311	1.9158	.98612	1.5668	4.8212	2.6959	1.8626
#1	.04076	.03692	.15766	28.933	L29.290	.40599	8.1561
#2	.04267	.03593	.15548	28.299	L31.357	.39080	7.9440
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.93641	.02073	.03394	5.0090	L.00273	.56949	.01449
SDev	.01449	.00153	.00146	.1104	.01123	.00862	.00262
%RSD	1.5472	7.3642	4.2901	2.2031	410.62	1.5141	18.103
#1	.94666	.01966	.03291	5.0870	L-.00521	.57559	.01263
#2	.92617	.02181	.03497	4.9310	L.01067	.56339	.01634
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.94744	L-.28691	.02240	.51848	.03988	.55193	9.604
SDev	.01004	.03536	.01111	.00963	.00155	.00891	.111
%RSD	1.0593	12.324	49.607	1.8569	3.8824	1.6139	1.159
#1	.95453	L-.31191	L.01454	.52529	.03878	.55823	9.683
#2	.94034	L-.26191	.03025	.51167	.04097	.54564	9.525
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000222

Method: RASI_ICP Sample Name: 92-06-178-16A Operator: BMM
Run Time: 07/10/92 15:56:19
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	167.56	k.43910	k.63242	k1.4983	k.00753	k.09267	k46.341
SDev	1.11	.01041	.00295	.0080	.00017	.00248	.313
%RSD	.66502	2.3705	.46591	.53456	2.2307	2.6783	.67476
#1	166.77	k.44646	k.63451	k1.4927	k.00765	k.09092	k46.120
#2	168.35	k.43174	k.63034	k1.5040	k.00741	k.09443	k46.562
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	k.30107	k.32765	k1.3897	S948.04	k266.13	k3.4675	k73.293
SDev	.00290	.00144	.0102	.00	.34	.0286	.477
%RSD	.96283	.43841	.73518	.00049	.12931	.82424	.65019
#1	k.29902	k.32663	k1.3825	S948.05	k266.38	k3.4473	k72.956
#2	k.30312	k.32866	k1.3970	S948.04	k265.89	k3.4877	k73.630
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	k8.6072	k.25959	k.32254	46.031	k-.36906	k5.2739	k.24082
SDev	.0472	.00119	.00058	.156	.01124	.0564	.00146
%RSD	.54847	.45656	.18061	.33809	3.0458	1.0695	.60606
#1	k8.5738	k.26042	k.32213	45.921	k-.37701	k5.2340	k.24185
#2	k8.6406	k.25875	k.32295	46.141	k-.36111	k5.3138	k.23978
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.4098	k-.47096	k.40617	k4.8865	k.65618	k4.7333	10.36
SDev	.0719	.05558	.00159	.0108	.00182	.0386	.04
%RSD	.85529	11.802	.39128	.22010	.27790	.81591	.4040
#1	8.3590	k-.43166	k.40730	k4.8789	k.65489	k4.7060	10.33
#2	8.4607	k-.51026	k.40505	k4.8941	k.65747	k4.7606	10.39
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000223

Method: RASI_ICP Sample Name: 92-06-178-01A Operator: BMM
Run Time: 07/10/92 16:03:14
Comment:
M : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	180.67	k.19531	k-.09734	k.21802	k.00307	k-.19719	k49.826
SDev	1.62	.21349	.08565	.00331	.00004	.07573	.455
%RSD	.89685	109.31	87.985	1.5178	1.3762	38.406	.91368
#1	179.52	k.34627	k-.15791	k.21568	k.00304	k-.25074	k49.504
#2	181.81	k.04435	k-.03678	k.22036	k.00310	k-.14364	k50.148
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	k.30581	k.16365	k.47764	S710.63	k382.19	k.08951	k115.52
SDev	.05887	.00055	.02869	334.93	6.61	.02410	1.04
%RSD	19.252	.33867	6.0071	47.131	1.7294	26.925	.90043
#1	k.26418	k.16326	k.45735	S947.46	k377.52	k.07247	k114.78
#2	k.34744	k.16404	k.49793	S473.80	k386.86	k.10655	k116.25
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	k8.2407	k.04212	k.43686	33.202	k-.23668	k5.6923	k.12151
SDev	.0325	.02399	.00788	.294	.19371	.1515	.11045
%RSD	.39451	56.958	1.8036	.88630	81.844	2.6622	90.894
#1	k8.2177	k.05909	k.44243	32.994	k-.37366	k5.5851	k.19961
#2	k8.2637	k.02516	k.43129	33.410	k-.09971	k5.7994	k.04341
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.83743	k-.38157	k.15179	k4.3089	k.47787	k1.0120	10.19
SDev	.02175	.02722	.09845	.0229	.13926	.0106	.08
%RSD	2.5967	7.1348	64.861	.53039	29.141	1.0437	.7760
#1	.82206	k-.40082	k.22140	k4.3250	k.57634	k1.0045	10.13
#2	.85281	k-.36232	k.08217	k4.2927	k.37940	k1.0195	10.25
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-536

000224

Method: RASI_ICP Sample Name: 92-06-178-02A 1:10 Operator: BMM
Run Time: 07/10/92 16:07:20
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.816	L-.01071	L.00481	.02338	L-.00033	L-.01149	9.3230
SDev	.227	.01546	.01080	.00029	.00005	.00007	.0665
%RSD	1.1467	144.38	224.39	1.2248	15.038	.58584	.71300
#1	19.977	L.00022	L.01245	.02358	L-.00037	L-.01145	9.3700
#2	19.655	L-.02164	L-.00282	.02318	L-.00030	L-.01154	9.2760
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04146	.01857	.04741	38.633	L40.634	.02341	11.186
SDev	.00395	.00001	.00232	.413	.155	.00138	.179
%RSD	9.5364	.02493	4.8989	1.0686	.38208	5.8905	1.6041
#1	.04426	.01857	.04906	38.925	L40.744	.02243	11.313
#2	.03866	.01856	.04577	38.341	L40.524	.02438	11.059
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.81786	L-.00255	.05115	3.2243	L-.00112	.78575	.00993
SDev	.01061	.00121	.00101	.0255	.00877	.03403	.00014
%RSD	1.2970	47.437	1.9799	.78982	783.74	4.3313	1.4083
#1	.82536	L-.00169	.05043	3.2423	L-.00732	.76169	.01003
#2	.81036	L-.00340	.05187	3.2063	L.00508	.80982	.00983
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.13957	L-.21859	L.00762	.43527	.03312	.11043	9.502
SDev	.00167	.01096	.00283	.00773	.00079	.00363	.021
%RSD	1.1985	5.0124	37.135	1.7753	2.3742	3.2888	.2223
#1	L.14076	L-.21085	L.00962	.44074	.03368	.11300	9.517
#2	L.13839	L-.22634	L.00562	.42981	.03257	.10787	9.487
Errors	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-537

000225

Method: RASI_ICP Sample Name: 92-06-178-02A Operator: BMM
Run Time: 07/10/92 16:11:25
Comment:
Mo CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	182.53	k.34851	k-.12088	k.20745	k.00244	k-.25035	k84.328
SDev	.86	.01856	.00222	.00220	.00001	.00053	.469
%RSD	.47155	5.3251	1.8380	1.0616	.34736	.21154	.55579
#1	183.14	k.36163	k-.12245	k.20901	k.00243	k-.24997	k84.659
#2	181.92	k.33538	k-.11930	k.20589	k.00244	k-.25072	k83.996
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	k.29746	k.16431	k.40538	S947.53	k369.10	k.15745	k101.94
SDev	.00111	.00000	.00281	.00	.85	.00312	.56
%RSD	.37285	.00143	.69314	.00027	.23025	1.9805	.54751
#1	k.29825	k.16431	k.40737	S947.53	k369.70	k.15965	k102.33
#2	k.29668	k.16430	k.40339	S947.54	k368.50	k.15524	k101.55
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	k7.4624	k.05524	k.45296	30.020	k-.38401	k6.5914	k.20666
SDev	.0563	.00355	.00186	.253	.02297	.1523	.00214
%RSD	.75473	6.4198	.41151	.84359	5.9805	2.3101	1.0329
#1	k7.5022	k.05775	k.45428	30.199	k-.36777	k6.4837	k.20817
#2	k7.4226	k.05274	k.45165	29.841	k-.40025	k6.6991	k.20515
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.77593	k-.53143	k.23999	k4.0888	k.57405	k.88066	10.07
SDev	.01171	.00984	.00118	.0035	.00336	.00348	.10
%RSD	1.5091	1.8523	.49028	.08548	.58513	.39495	1.041
#1	.76765	k-.52447	k.24082	k4.0864	k.57642	k.88312	10.14
#2	.78421	k-.53839	k.23915	k4.0913	k.57167	k.87820	9.992
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-538

Method: RASI_ICP Sample Name: 92-06-178-03A 1:10 Operator: BMM
Run Time: 07/10/92 16:15:30
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.292	L-.00805	L.00464	.02005	L-.00045	L-.00881	4.0644
SDev	.282	.00731	.00476	.00036	.00007	.00082	.0852
%RSD	1.4607	90.846	102.51	1.7935	15.077	9.3217	2.0965
#1	19.491	L-.01322	L.00128	.02031	L-.00050	L-.00823	4.1247
#2	19.093	L-.00288	L.00801	.01980	L-.00040	L-.00939	4.0042
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04114	.01908	.05126	41.074	L40.910	L.00854	11.957
SDev	.00041	.00073	.00037	.506	.444	.00807	.125
%RSD	.98734	3.8420	.71571	1.2312	1.0860	94.511	1.0473
#1	.04143	.01856	.05152	41.431	L40.596	L.01425	12.045
#2	.04086	.01960	.05100	40.716	L41.224	L.00283	11.868
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.66455	L-.00372	.05429	2.4990	L-.01722	.68982	.00893
SDev	.00973	.00393	.00311	.0523	.01223	.01011	.00213
%RSD	1.4644	105.79	5.7219	2.0947	71.061	1.4651	23.807
#1	.67143	L-.00094	.05648	2.5360	L-.02587	.69697	.01044
#2	.65767	L-.00650	.05209	2.4620	L-.00857	.68268	.00743
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.15022	L-.29199	L.00824	.29780	.03099	.12261	9.444
SDev	.01673	.01706	.00682	.00427	.00057	.00249	.073
%RSD	11.136	5.8417	82.735	1.4338	1.8387	2.0336	.7776
#1	L.16205	L-.30405	L.00342	.29479	.03140	.12438	9.496
#2	L.13839	L-.27993	L.01306	.30082	.03059	.12085	9.392
Errors	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000227

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 16:38:29
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mc : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.4352	-.00128	9.6435	.96388	.99371	2.5279	2.4513
SDev	.0101	.00292	.0144	.00216	.00145	.0071	.0105
%RSD	.41615	228.29	.14977	.22415	.14616	.28173	.42775
#1	2.4280	.00079	9.6333	.96235	.99268	2.5229	2.4439
#2	2.4423	-.00334	9.6538	.96540	.99473	2.5329	2.4587
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5179	2.4871	2.4439	2.5018	Q1.7193	4.9767	2.4530
SDev	.0032	.0072	.0051	.0038	.1447	.0150	.0124
%RSD	.12648	.28996	.20803	.15097	8.4183	.30096	.50405
#1	2.5156	2.4820	2.4403	2.5045	Q1.8216	4.9661	2.4442
#2	2.5201	2.4922	2.4475	2.4992	Q1.6169	4.9873	2.4617
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.98787	-.00308	2.4865	4.8279	10.092	-.02348	2.4900
SDev	.00371	.00234	.0084	.0580	.025	.00004	.0124
%RSD	.37537	75.950	.33968	1.2015	.24936	.17740	.49840
#1	.98525	-.00143	2.4805	4.7869	10.075	-.02351	2.4812
#2	.99049	-.00474	2.4924	4.8689	10.110	-.02346	2.4988
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.8720	4.7352	-.01084	-.00143	2.4637	2.4796	9.101
SDev	.0100	.0818	.00617	.00187	.0067	.0163	.034
%RSD	.20601	1.7278	56.895	131.06	.27067	.65667	.3714
#1	4.8791	4.6774	-.01521	-.00275	2.4590	2.4681	9.077
#2	4.8649	4.7931	-.00648	-.00010	2.4684	2.4911	9.125
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

D-540

000228

Method: RASI_ICP Sample Name: CCVC Operator: BMM
Run Time: 07/10/92 16:42:35
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	24.626	-.02059	.10568	.00338	-.00489	.00771	24.543
SDev	.006	.00368	.00018	.00052	.00077	.00052	.020
%RSD	.02603	17.876	.17382	15.452	15.791	6.7033	.08339
#1	24.621	-.01798	.10555	.00375	-.00434	.00808	24.529
#2	24.630	-.02319	.10581	.00301	-.00544	.00735	24.558
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	25.000						25.000
Range	10.000						10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.01136	24.515	.01841	24.511	27.030	.03067	24.470
SDev	.00031	.044	.00154	.034	.651	.00000	.018
%RSD	2.7091	.17905	8.3674	.13906	2.4098	.00192	.07322
#1	-.01115	24.484	.01950	24.487	27.491	.03067	24.457
#2	-.01158	24.546	.01732	24.535	26.570	.03067	24.482
Errors	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK	QC Pass
Value		25.000		25.000	25.000		25.000
Range		10.000		10.000	10.000		10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.9358	-.00448	-.00265	48.661	.02955	-.01077	-.00913
SDev	.0166	.00038	.00001	.134	.01034	.01014	.00245
%RSD	.16733	8.4966	.37146	.27620	35.001	94.174	26.836
#1	9.9241	-.00421	-.00265	48.566	.03686	-.00360	-.00740
#2	9.9476	-.00475	-.00264	48.757	.02224	-.01795	-.01087
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	10.000			50.000			
Range	10.000			10.000			

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	48.630	-.02005	.00766	-.03307	24.459	.00333	9.541
SDev	.022	.09561	.00003	.02245	.011	.00200	.006
%RSD	.04471	476.87	.46104	67.892	.04569	60.171	.0612
#1	48.646	.04756	.00763	-.01719	24.451	.00475	9.545
#2	48.615	-.08766	.00768	-.04894	24.467	.00191	9.537
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Value	50.000				25.000		
Range	10.000				10.000		

D-591

000229

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 16:46:42
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mod CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.06005	10.994	9.9714	.00357	.00392	-.24961	.04226
SDev	.01367	.064	.0196	.00015	.00019	.00131	.01677
%RSD	22.762	.58543	.19664	4.1382	4.8127	.52440	39.691
#1	.06972	10.949	9.9575	.00367	.00405	-.24868	.05412
#2	.05039	Q11.040	9.9852	.00346	.00378	-.25053	.03040
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00274	.09442	.00030	.07447	-1.6423	-.04179	.04090
SDev	.00146	.01995	.00033	.02144	.5550	.00688	.02403
%RSD	53.303	21.128	107.57	28.791	33.795	16.470	58.761
#1	-.00377	.10853	.00007	.08963	-1.2499	-.03692	.05789
#2	-.00171	.08032	.00053	.05931	-2.0348	-.04666	.02391
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02438	Q11.477	.00126	.19608	10.161	10.688	.01258
SDev	.00794	.079	.00134	.01839	.052	.096	.00132
%RSD	32.560	.68913	106.48	9.3800	.51212	.90210	10.479
#1	.02999	Q11.421	.00031	.20908	10.124	10.620	.01165
#2	.01877	Q11.533	.00220	.18307	10.198	10.756	.01352
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.19516	-.44344	9.8758	10.877	.29240	-.00844	10.09
SDev	.03345	.03910	.0978	.028	.01273	.00012	.03
%RSD	17.142	8.8172	.99057	.25946	4.3529	1.4273	.2651
#1	.21882	-.47109	9.8066	10.857	.30140	-.00853	10.08
#2	.17151	-.41580	9.9450	10.897	.28340	-.00836	10.11
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

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000230

Method: RASI_ICP Sample Name: CCB
Run Time: 07/10/92 16:50:50
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Operator: BMM

MISSED SAMPLE BMM 7/11/92

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.09797	H.04867	H.06210	-.00069	H.00352	.00007	-.00385
SDev	.01453	.01287	.00910	.00037	.00003	.00025	.00543
%RSD	14.829	26.442	14.657	53.855	.81425	340.36	141.01
#1	H.08770	H.03957	H.06854	L-.00095	H.00350	.00025	-.00769
#2	H.10825	H.05777	H.05566	-.00043	H.00354	-.00010	-.00001
Errors	LC High	LC High	LC High	LC Pass	LC High	LC Pass	LC Pass
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00995	H.03496	L-.01305	H.02191	L-1.3428	-.00374	H.01994
SDev	.00400	.00145	.00389	.00275	1.1383	.00494	.02194
%RSD	40.270	4.1484	29.831	12.541	84.766	131.94	110.07
#1	L-.01278	H.03393	L-.01580	H.01997	L-2.1477	-.00025	.00442
#2	-.00711	H.03598	L-.01030	H.02386	L-.53796	-.00723	H.03546
Errors	LC Low	LC High	LC Low	LC High	LC Low	LC Pass	LC High
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.0134C

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.01048	H.05731	-.00010	.04802	H.04877	H.06897	L-.02159
SDev	.00097	.00389	.00103	.09196	.01147	.01020	.00016
%RSD	9.2133	6.7953	1052.1	191.51	23.519	14.787	.72478
#1	H.00980	H.05455	-.00083	-.01701	H.04066	.06176	L-.02148
#2	H.01117	H.06006	.00063	H.11305	H.05689	H.07618	L-.02170
Errors	LC High	LC High	LC Pass	LC Pass	LC High	LC High	LC Low
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.28388	H.34287	H.05137	H.05633	H.03524	L-.00857	.0501
SDev	.00836	.03416	.00617	.02198	.00389	.00014	.0068
%RSD	2.9463	9.9640	12.016	39.025	11.037	1.6655	13.66
#1	.27796	H.31871	H.04701	H.04079	H.03249	L-.00847	.0549
#2	.28979	H.36703	H.05574	H.07187	H.03800	L-.00867	.0452
Errors	LC Pass	LC High	LC High	LC High	LC High	LC Low	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

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000231

Method: RASI_ICP Sample Name: PBW 3050_I 06/29/92 Operator: BMM
Run Time: 07/10/92 17:24:20
Comment:
Mc : CONC Corr. Factor: 1

BMM 7/11/92

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00395	L-.00658	L.00797	.00121	L-.00117	L.00185	.37687
SDev	.01725	.00618	.00949	.00022	.00001	.00005	.00377
%RSD	436.15	94.007	119.02	18.344	.90835	2.5025	1.0005
#1	L.01615	L-.00220	L.01468	.00137	L-.00118	L.00181	.37954
#2	L-.00824	L-.01095	L.00126	.00105	L-.00116	L.00188	.37421
Errors	LC Low	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00368	L.00132	.00690	.09055	L-.27094	L-.00704	.01838
SDev	.00093	.00145	.00078	.03555	.44624	.00555	.01302
%RSD	25.167	109.77	11.262	39.257	164.70	78.881	70.810
#1	L-.00303	L.00235	.00745	.11568	L-.58648	L-.01096	.02758
#2	L-.00434	L.00030	.00635	.06541	L.04460	L-.00311	L.00918
Errors	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00268	.00520	L.00171	.10404	L.00755	.16033	L.00408
SDev	.00186	.00662	.00043	.02405	.02147	.01304	.00246
%RSD	69.194	127.37	24.913	23.117	284.40	8.1346	60.263
#1	.00400	.00988	L.00141	.12105	L.02273	.16955	L.00582
#2	L.00137	L.00052	L.00201	.08703	L-.00763	.15110	L.00234
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.19280	L-.43337	.02326	L-.00149	.00717	.03612	10.19
SDev	.00000	.03825	.00582	.00005	.01073	.00012	.11
%RSD	.00000	8.8272	25.010	3.2013	149.57	.34296	1.031
#1	L.19280	L-.40632	.02738	L-.00153	.01476	.03620	10.11
#2	L.19280	L-.46042	L.01915	L-.00146	L-.00041	.03603	10.26
Errors	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-548

000232

Method: RASI_ICP Sample Name: PB2 3050_I 06/29/92 Operator: BMM
Run Time: 07/10/92 17:28:55
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.43544	.85448	.79127	.38572	.37434	.36936	.87820
SDev	.00251	.03755	.02131	.01714	.01678	.01578	.01873
%RSD	.57693	4.3943	2.6937	4.4438	4.4815	4.2720	2.1326
#1	.43722	.88103	.80634	.39784	.38620	.38052	.89144
#2	.43367	.82793	.77620	.37360	.36248	.35821	.86496
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.48696	.39225	.39233	.52526	L-.35327	.77896	.41452
SDev	.02088	.01662	.01676	.02388	.85909	.03805	.01585
%RSD	4.2875	4.2361	4.2717	4.5458	243.18	4.8844	3.8246
#1	.50172	.40400	.40418	.50838	L-.96074	.80586	.42573
#2	.47219	.38050	.38048	.54215	L.25420	.75205	.40331
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.41022	.91730	.38914	9.7749	.77947	.65906	.39099
SDev	.01677	.03546	.01769	.4018	.01512	.00539	.01356
%RSD	4.0881	3.8661	4.5461	4.1105	1.9399	.81723	3.4688
#1	.42208	.94237	.40165	10.059	.79017	.66287	.40058
#2	.39836	.89222	.37663	9.4908	.76878	.65526	.38140
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.2230	.30918	.81337	.83956	.40967	.43398	10.90
SDev	.0251	.00515	.03083	.07353	.01764	.01471	.05
%RSD	2.0516	1.6645	3.7909	8.7587	4.3062	3.3886	.4968
#1	1.2408	.31282	.83517	.89155	.42215	.44438	10.86
#2	1.2053	.30554	.79157	.78756	.39720	.42358	10.93
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-999

000233

Method: RASI_ICP Sample Name: LCS 3050_I 06/29/92 Operator: BMM
Run Time: 07/10/92 17:32:59
Comment:
Mo : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0125	2.0407	1.8415	.92996	.90666	.88340	1.3441
SDev	.0203	.0324	.0028	.01282	.01058	.00464	.0101
%RSD	2.0001	1.5884	.15375	1.3783	1.1670	.52470	.75231
#1	.99821	2.0178	1.8395	.92089	.89918	.88012	1.3512
#2	1.0269	2.0637	1.8435	.93902	.91414	.88668	1.3369
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.96506	.94206	.94139	1.0485	L-.11680	1.8701	.94152
SDev	.00690	.00506	.01133	.0065	.12543	.0068	.00414
%RSD	.71549	.53665	1.2031	.62219	107.39	.36284	.43946
#1	.96018	.93848	.93338	1.0439	L-.02811	1.8749	.93860
#2	.96994	.94563	.94940	1.0531	L-.20550	1.8653	.94445
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
I	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.98101	2.1639	.93224	23.270	1.8556	2.6323	.94427
SDev	.00871	.0070	.00612	.291	.0203	.0073	.00670
%RSD	.88793	.32409	.65600	1.2524	1.0920	.27908	.70973
#1	.97485	2.1589	.92792	23.064	1.8413	2.6271	.93953
#2	.98717	2.1688	.93657	23.476	1.8699	2.6375	.94901
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.1326	1.5389	1.8775	2.0648	.98850	.98575	10.10
SDev	.0234	.0332	.0089	.0218	.00887	.00647	.13
%RSD	1.0981	2.1585	.47389	1.0537	.89769	.65654	1.242
#1	2.1161	1.5624	1.8712	2.0495	.98223	.98117	10.02
#2	2.1492	1.5154	1.8838	2.0802	.99478	.99033	10.19
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
I	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-550

000234

Method: RASI_ICP Sample Name: 92-06-178-01A 1:10 Operator: BMM
Run Time: 07/10/92 17:37:05
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	18.653	L-.00994	L.00899	.02398	.00129	L-.01008	5.3212
SDev	.587	.00946	.00127	.00109	.00043	.00008	.1590
%RSD	3.1467	95.164	14.103	4.5384	33.106	.77732	2.9881
#1	19.068	L-.01663	L.00810	.02475	.00160	L-.01013	5.4336
#2	18.238	L-.00325	L.00989	.02321	.00099	L-.01002	5.2087
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03942	.01856	.05243	38.729	L40.322	L.01119	11.928
SDev	.00389	.00001	.00073	1.164	.622	.00684	.387
%RSD	9.8586	.05816	1.3883	3.0064	1.5418	61.082	3.2488
#1	.03667	.01856	.05295	39.553	L40.762	L.01603	12.202
#2	.04217	.01857	.05192	37.906	L39.883	L.00636	11.654
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.86189	.00851	.04807	3.4094	L.00574	.67328	L.00627
SDev	.02746	.00360	.00030	.0523	.00428	.00348	.00010
%RSD	3.1862	42.233	.61565	1.5354	74.517	.51693	1.5962
#1	.88131	.01105	.04786	3.4464	L.00271	.67574	L.00620
#2	.84248	.00597	.04828	3.3723	L.00876	.67082	L.00634
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.15495	L-.36675	L.00821	.43412	.03463	.11518	9.485
SDev	.00669	.00614	.00934	.00328	.00102	.00526	.130
%RSD	4.3182	1.6729	113.88	.75511	2.9533	4.5658	1.370
#1	L.15968	L-.37109	L.00160	.43644	.03535	.11890	9.576
#2	L.15022	L-.36242	L.01481	.43180	.03391	.11146	9.393
Errors	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-551

000235

Method: RASI_ICP Sample Name: 92-06-178-02A 1:10 Operator: BMM
Run Time: 07/10/92 17:41:10
Comment:
Mo - CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	18.565	L-.01646	L.00422	.02207	L-.00010	L-.01105	8.8329
SDev	.160	.00334	.00058	.00044	.00004	.00104	.0798
%RSD	.86332	20.312	13.846	1.9904	42.624	9.3966	.90299
#1	18.678	L-.01409	L.00380	.02238	L-.00013	L-.01179	8.8893
#2	18.451	L-.01882	L.00463	.02176	L-.00007	L-.01032	8.7765
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04396	.01908	.04502	36.610	L38.079	.02384	10.377
SDev	.00156	.00072	.00271	.338	.839	.00962	.085
%RSD	3.5462	3.7584	6.0273	.92291	2.2022	40.374	.81773
#1	.04506	.01959	.04694	36.849	L37.486	L.01703	10.437
#2	.04286	.01858	.04310	36.371	L38.672	.03065	10.317
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.76906	L.00086	.04646	3.0442	L-.01665	.85413	L.00601
SDev	.00721	.00154	.00044	.0622	.01117	.01449	.00044
%RSD	.93771	177.81	.95880	2.0449	67.130	1.6970	7.3815
#1	.77416	L-.00022	.04678	3.0882	L-.02455	.86438	L.00632
#2	.76396	L.00195	.04615	3.0002	L-.00874	.84388	L.00570
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.13248	L-.28603	L.01416	.41677	.03149	.09530	9.323
SDev	.00167	.01016	.00280	.01181	.00017	.00124	.009
%RSD	1.2627	3.5515	19.764	2.8347	.55059	1.3022	.0928
#1	L.13366	L-.29322	L.01614	.42512	.03137	.09618	9.329
#2	L.13129	L-.27885	L.01218	.40841	.03161	.09443	9.317
Errors	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-552

000236

Method: RASI_ICP Sample Name: 92-06-178-03A 1:10 Operator: BMM
Run Time: 07/10/92 17:45:15
Comment:
Mode: CONC Corr. Factor: 1

Elem	A13082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	18.476	L-.02230	L-.00302	.01946	L-.00024	L-.00850	3.7835
SDev	.042	.00124	.00241	.00023	.00001	.00046	.0038
%RSD	.22843	5.5779	79.806	1.1596	2.8900	5.4321	.09999
#1	18.446	L-.02318	L-.00132	.01962	L-.00024	L-.00818	3.7862
#2	18.506	L-.02142	L-.00473	.01930	L-.00025	L-.00883	3.7808
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04263	.01855	.04968	39.596	L41.100	L.00682	11.360
SDev	.00259	.00144	.00196	.100	.248	.00241	.018
%RSD	6.0648	7.7616	3.9389	.25250	.60319	35.291	.16250
#1	.04446	.01957	.05106	39.525	L40.924	L.00852	11.347
#2	.04080	.01754	.04829	39.667	L41.275	L.00512	11.373
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.63321	L-.00059	.05072	2.3810	L-.00953	.93798	L.00520
SDev	.00170	.00078	.00094	.0127	.01740	.04778	.00128
%RSD	.26925	131.92	1.8448	.53479	182.47	5.0941	24.542
#1	.63200	L-.00114	.05006	2.3900	L.00277	.90420	L.00611
#2	.63441	L-.00004	.05138	2.3719	L-.02184	.97177	L.00430
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.15731	L-.29401	L.00125	.29015	.03004	.11119	9.288
SDev	.01673	.03421	.00074	.00405	.00108	.00012	.081
%RSD	10.633	11.635	58.874	1.3958	3.5878	.11053	.8708
#1	L.16914	L-.26982	L.00177	.29302	.02928	.11128	9.231
#2	L.14549	L-.31820	L.00073	.28729	.03080	.11111	9.345
Errors	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-553

000237

Method: RASI_ICP Sample Name: 92-06-178-04A 1:10 Operator: BMM
Run Time: 07/10/92 17:49:20
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.669	L-.01266	L.00243	.01942	L-.00011	L-.01076	4.0355
SDev	.084	.00530	.00581	.00008	.00012	.00013	.0081
%RSD	.42603	41.873	238.63	.40069	105.69	1.1709	.20174
#1	19.610	L-.00891	L-.00167	.01948	L-.00003	L-.01085	4.0298
#2	19.728	L-.01641	L.00654	.01937	L-.00019	L-.01067	4.0413
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03746	.01856	.04559	39.073	L40.330	L.01118	11.872
SDev	.00002	.00145	.00077	.073	.096	.00979	.035
%RSD	.04371	7.8159	1.6995	.18579	.23748	87.564	.29422
#1	.03747	.01754	.04504	39.022	L40.397	L.01810	11.848
#2	.03745	.01959	.04614	39.124	L40.262	L.00426	11.897
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
I	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.69204	L-.00084	.04751	2.9472	L-.01032	.68613	L.00633
SDev	.00008	.00039	.00279	.0042	.01340	.02390	.00014
%RSD	.01112	46.770	5.8646	.14401	129.81	3.4833	2.1528
#1	.69210	L-.00056	.04948	2.9502	L-.01980	.66924	L.00643
#2	.69199	L-.00111	.04554	2.9442	L-.00085	.70303	L.00624
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.13129	L-.34804	L.00727	.38342	.03429	.10977	9.295
SDev	.00669	.04324	.00969	.00201	.00202	.00013	.069
%RSD	5.0963	12.423	133.17	.52487	5.9046	.11834	.7381
#1	L.13602	L-.37862	L.00042	.38200	.03572	.10967	9.247
#2	L.12656	L-.31747	L.01412	.38484	.03286	.10986	9.344
Errors	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
I	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-554

000238

Method: RASI_ICP Sample Name: 92-06-178-04AMS 1:10 Operator: BMM
Run Time: 07/10/92 17:53:26
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	21.612	.31355	.36592	.20767	.19178	.17580	4.3813
SDev	.043	.01317	.00274	.00037	.00023	.00008	.0119
%RSD	.19849	4.2012	.74874	.17814	.12090	.04509	.27237
#1	21.643	.30423	.36398	.20793	.19195	.17575	4.3898
#2	21.582	.32286	.36786	.20741	.19162	.17586	4.3729
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.23322	.21371	.23854	42.356	L43.491	.40994	13.024
SDev	.00061	.00145	.00156	.135	.284	.00321	.040
%RSD	.26222	.67733	.65443	.31825	.65368	.78209	.31012
#1	.23365	.21474	.23964	42.451	L43.692	.41220	13.053
#2	.23279	.21269	.23743	42.261	L43.290	.40767	12.996
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.93413	.43292	.24413	7.8471	.38908	1.7003	.20058
SDev	.00445	.00274	.00067	.0552	.00520	.0065	.00053
%RSD	.47630	.63221	.27592	.70314	1.3376	.38383	.26510
#1	.93728	.43485	.24365	7.8862	.38540	1.7049	.20096
#2	.93098	.43098	.24460	7.8081	.39276	1.6957	.20020
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50861	L.08138	.36358	.83476	.23935	.31180	9.302
SDev	.00167	.03427	.00429	.00612	.00181	.00037	.026
%RSD	.32889	42.115	1.1790	.73304	.75558	.11947	.2790
#1	.50979	L.10562	.36661	.83044	.24063	.31206	9.320
#2	.50743	L.05715	.36055	.83909	.23807	.31153	9.283
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

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000239

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 17:57:32
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	A13082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5523	-.00260	9.8276	.97726	.99531	2.5438	2.4730
SDev	.0306	.00417	.0466	.00246	.00351	.0019	.0006
%RSD	1.1970	160.46	.47415	.25150	.35305	.07488	.02600
#1	2.5739	-.00555	9.7947	.97899	.99779	2.5451	2.4726
#2	2.5307	.00035	9.8606	.97552	.99283	2.5424	2.4735
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5704	2.5100	2.4994	2.6343	Q.95165	5.0674	2.5257
SDev	.0032	.0007	.0039	.0564	.83986	.0069	.0247
%RSD	.12476	.02877	.15644	2.1394	88.252	.13659	.97646
#1	2.5727	2.5106	2.5022	2.6742	Q.35778	5.0723	2.5432
#2	2.5682	2.5095	2.4967	2.5945	Q1.5455	5.0625	2.5083
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0022	-.00143	2.5052	4.8689	10.248	-.01964	2.5329
SDev	.0040	.00001	.0078	.0141	.040	.00149	.0083
%RSD	.39526	.37270	.31034	.29057	.39364	7.6074	.32940
#1	1.0050	-.00142	2.5107	4.8589	10.220	-.01859	2.5388
#2	.99939	-.00143	2.4997	4.8790	10.277	-.02070	2.5270
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	T13775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.9678	4.6773	-.00785	-.00755	2.4806	2.5238	9.173
SDev	.0251	.0068	.00117	.00213	.0019	.0017	.072
%RSD	.50507	.14588	14.908	28.259	.07715	.06811	.7853
#1	4.9856	4.6725	-.00703	-.00906	2.4819	2.5250	9.224
#2	4.9501	4.6822	-.00868	-.00604	2.4792	2.5226	9.122
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

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Method: RASI_ICP Sample Name: CCVC Operator: BMM
Run Time: 07/10/92 18:01:39
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	24.864	-.01902	.09657	.00322	-.00424	.00622	24.510
SDev	.083	.00718	.01694	.00060	.00093	.00143	.089
%RSD	.33289	37.756	17.545	18.662	21.863	23.016	.36214
#1	24.806	-.01394	.10855	.00364	-.00358	.00723	24.447
#2	24.923	-.02410	.08459	.00279	-.00489	.00520	24.572
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	25.000						25.000
Range	10.000						10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.01229	24.544	.01731	24.735	26.981	.02015	24.561
SDev	.00195	.041	.00157	.011	.479	.00418	.026
%RSD	15.837	.16713	9.0647	.04340	1.7739	20.734	.10640
#1	-.01092	24.515	.01842	24.727	26.642	.02310	24.542
#2	-.01367	24.573	.01620	24.742	27.319	.01719	24.579
Errors	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK	QC Pass
Value		25.000		25.000	25.000		25.000
Range		10.000		10.000	10.000		10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.9639	-.00308	-.00166	48.798	.02317	-.00772	-.01160
SDev	.0048	.00078	.00043	.035	.01523	.00007	.00180
%RSD	.04861	25.146	25.834	.07249	65.711	.93577	15.534
#1	9.9605	-.00254	-.00136	48.823	.03394	-.00767	-.01033
#2	9.9674	-.00363	-.00197	48.773	.01240	-.00777	-.01288
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	10.000			50.000			
Range	10.000			10.000			

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	49.129	-.05422	.00198	-.02674	24.459	.00164	9.544
SDev	.025	.07763	.00347	.00388	.023	.00238	.022
%RSD	.05108	143.16	175.17	14.498	.09262	145.34	.2340
#1	49.147	.00067	-.00047	-.02948	24.443	.00332	9.560
#2	49.112	-.10911	.00444	-.02400	24.475	-.00005	9.529
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Value	50.000				25.000		
Range	10.000				10.000		

000241

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 18:05:48
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.06270	Q11.116	10.077	.00372	.00398	-.25222	.04483
SDev	.02178	.005	.028	.00022	.00009	.00032	.02143
%RSD	34.735	.04845	.28142	5.9465	2.2181	.12717	47.798
#1	.07811	Q11.113	10.057	.00388	.00405	-.25199	.05998
#2	.04730	Q11.120	10.097	.00357	.00392	-.25245	.02968
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00456	.08578	-.00061	.06980	-1.0050	-.04179	.03118
SDev	.00332	.01586	.00077	.02135	.9748	.00055	.01991
%RSD	72.883	18.484	126.53	30.591	96.992	1.3202	63.865
#1	-.00221	.09700	-.00006	.08490	-.31574	-.04218	.04526
#2	-.00691	.07457	-.00116	.05470	-1.6943	-.04140	.01710
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02026	Q11.543	.00214	.14706	10.227	10.622	.01250
SDev	.00670	.012	.00211	.05376	.024	.045	.00147
%RSD	33.058	.10455	98.805	36.558	.23214	.42276	11.808
#1	.02499	Q11.534	.00363	.18507	10.210	10.590	.01354
#2	.01552	Q11.551	.00064	.10904	10.244	10.653	.01145
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.20344	-.46246	10.131	10.950	.28989	-.00933	9.904
SDev	.04516	.04526	.013	.032	.01974	.00037	.005
%RSD	22.200	9.7868	.13319	.29071	6.8079	3.9290	.0549
#1	.23538	-.43046	10.141	10.973	.30385	-.00907	9.900
#2	.17151	-.49446	10.122	10.928	.27594	-.00959	9.908
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

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000242

Method: RASI_ICP Sample Name: CCB Operator: BMM
Run Time: 07/10/92 18:09:55
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.13242	H.05556	H.06258	-.00059	H.00353	-.00010	.00476
SDev	.00074	.00832	.00174	.00007	.00001	.00006	.00211
%RSD	.56221	14.969	2.7780	12.719	.23939	63.029	44.264
#1	H.13189	H.06145	H.06135	-.00064	H.00352	-.00006	.00327
#2	H.13295	H.04968	H.06381	-.00053	H.00354	-.00015	.00625
Errors	LC High	LC High	LC High	LC Pass	LC High	LC Pass	LC Pass
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00702	H.04004	L-.01112	H.03556	L-1.1825	-.00410	H.02916
SDev	.00371	.00143	.00039	.00141	.1818	.00186	.00069
%RSD	52.806	3.5731	3.4838	3.9562	15.376	45.431	2.3546
#1	-.00440	H.03903	L-.01139	H.03457	L-1.0540	-.00541	H.02964
#2	L-.00965	H.04105	L-.01085	H.03656	L-1.3111	-.00278	H.02867
Errors	LC Pass	LC High	LC Low	LC High	LC Low	LC Pass	LC High
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.0134

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.01305	H.05758	-.00155	H.09404	H.06949	H.08079	L-.02158
SDev	.00024	.00039	.00132	.01556	.01002	.00513	.00016
%RSD	1.8678	.67307	84.772	16.549	14.422	6.3490	.76239
#1	H.01288	H.05785	-.00249	H.08303	H.07657	H.08442	L-.02170
#2	H.01322	H.05731	-.00062	H.10504	H.06240	H.07716	L-.02146
Errors	LC High	LC High	LC Pass	LC High	LC High	LC High	LC Low
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.29334	H.45105	H.04809	H.06476	H.04070	L-.00866	.0297
SDev	.00502	.02622	.00466	.00599	.00042	.00026	.0006
%RSD	1.7107	5.8126	9.6788	9.2538	1.0265	2.9647	2.030
#1	.29689	H.43251	H.05138	H.06052	H.04040	L-.00848	.0293
#2	.28979	H.46959	H.04480	H.06899	H.04100	L-.00885	.0302
Errors	LC Pass	LC High	LC High	LC High	LC High	LC Low	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

000243

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 18:15:18
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mc : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04921	Q11.487	10.427	.00367	.00372	-.26175	.01133
SDev	.00241	.018	.035	.00000	.00015	.00063	.00289
%RSD	4.8979	.15315	.33465	.00301	3.9651	.24037	25.540
#1	.04750	Q11.475	10.402	.00367	.00362	-.26130	.00928
#2	.05091	Q11.499	10.451	.00367	.00383	-.26219	.01338
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00282	.02807	-.00108	.08048	-1.6176	-.03964	.00389
SDev	.00228	.00201	.00074	.02160	.8073	.00622	.00891
%RSD	80.832	7.1458	68.735	26.839	49.909	15.680	229.09
#1	-.00121	.02949	-.00161	.09575	-2.1884	-.03525	.01019
#2	-.00443	.02666	-.00056	.06520	-1.0467	-.04404	-.00241
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
' ue							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00167	Q11.926	.00024	.04002	10.516	Q11.053	.01209
SDev	.00123	.046	.00128	.02122	.016	.063	.00164
%RSD	73.906	.38224	528.47	53.033	.15317	.57002	13.529
#1	-.00080	Q11.893	.00115	.02501	10.505	Q11.008	.01325
#2	-.00254	Q11.958	-.00066	.05502	10.527	Q11.097	.01093
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Fail	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.09817	-.44911	10.529	Q11.351	.24394	-.00941	10.17
SDev	.01004	.03913	.075	.022	.00651	.00050	.08
%RSD	10.223	8.7128	.71221	.19424	2.6666	5.3214	.7653
#1	.10527	-.47677	10.476	Q11.336	.23934	-.00906	10.12
#2	.09108	-.42144	10.582	Q11.367	.24854	-.00977	10.23
Errors	NOCHECK	NOCHECK	QC Pass	QC Fail	NOCHECK	NOCHECK	NOCHECK
.ue			10.000	10.000			
Range			10.000	10.000			

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Method: RASI_ICP Sample Name: CCVB Operator: BMM **000244**
Run Time: 07/10/92 18:24:56
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00815	10.938	9.9143	.00305	.00337	-.24994	-.01319
SDev	.01056	.064	.0102	.00000	.00015	.00107	.00833
%RSD	129.46	.58242	.10310	.01361	4.3705	.42869	63.160
#1	.00069	10.893	9.9070	.00305	.00347	-.25069	-.01908
#2	.01562	10.983	9.9215	.00305	.00327	-.24918	-.00730
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00211	.02156	-.00070	-.00018	-1.4183	-.04418	-.01937
SDev	.00466	.00015	.00116	.00091	.8552	.00371	.01442
%RSD	221.02	.68252	165.22	501.76	60.295	8.3990	74.452
#1	-.00540	.02146	-.00153	.00046	-.81361	-.04155	-.02957
#2	.00119	.02166	.00012	-.00082	-2.0230	-.04680	-.00917
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00528	Q11.354	.00067	.04902	10.007	10.553	.01072
SDev	.00010	.037	.00134	.02547	.067	.111	.00130
%RSD	1.9536	.32582	200.84	51.951	.66889	1.0514	12.182
#1	-.00520	Q11.328	-.00028	.03101	9.9592	10.474	.01164
#2	-.00535	Q11.380	.00162	.06703	10.054	10.631	.00979
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.08043	-.43519	10.074	10.801	.20950	-.01057	9.736
SDev	.00836	.07655	.073	.020	.00371	.00012	.011
%RSD	10.399	17.590	.72231	.18530	1.7688	1.1064	.1137
#1	.07452	-.48932	10.022	10.815	.21213	-.01065	9.728
#2	.08635	-.38106	10.125	10.787	.20688	-.01049	9.744
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

D-561

000245

Method: RASI_ICP Sample Name: CCB Operator: BMM
Run Time: 07/10/92 18:29:03
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mo . CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.02388	H.02863	H.04757	.00026	L-.00065	-.00076	H.00728
SDev	.00196	.00938	.01388	.00007	.00020	.00044	.00323
%RSD	8.1938	32.748	29.178	28.120	31.216	58.079	44.380
#1	L-.02250	H.03526	H.05739	.00032	L-.00050	-.00108	.00499
#2	L-.02526	H.02200	H.03776	.00021	L-.00079	-.00045	H.00956

Errors	LC Low	LC High	LC High	LC Pass	LC Low	LC Pass	LC High
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00129	.00032	-.00227	L-.00815	L-.20676	-.00622	-.00388
SDev	.00370	.00001	.00115	.00010	.28820	.00061	.00069
%RSD	286.41	2.5068	50.623	1.1808	139.39	9.8059	17.770
#1	.00132	.00033	-.00146	L-.00808	L-.41055	-.00665	-.00339
#2	-.00391	.00031	-.00308	L-.00822	L-.00297	-.00579	-.00436

Errors	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass	LC Pass
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.01340

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00133	H.07963	-.00154	-.01501	H.05127	.05891	H.00498
SDev	.00008	.02533	.00019	.02264	.00169	.02614	.00179
%RSD	6.2016	31.806	12.641	150.85	3.3029	44.374	36.020
#1	-.00138	H.09754	-.00140	.00100	H.05246	H.07740	.00371
#2	-.00127	H.06172	-.00168	-.03101	H.05007	.04043	H.00624

Errors	LC Pass	LC High	LC Pass	LC Pass	LC High	LC Pass	LC High
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04850	L-.29809	H.03225	.02551	L-.00160	L-.00274	8.964
SDev	.00669	.00208	.00463	.01401	.00074	.00012	.014
%RSD	13.797	.69799	14.355	54.913	46.485	4.4150	.1571
#1	.05323	L-.29956	H.03552	.03542	-.00107	L-.00265	8.954
#2	.04376	L-.29661	H.02898	.01561	L-.00212	L-.00283	8.974

Errors	LC Pass	LC Low	LC High	LC Pass	LC Low	LC Low	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

D-562

000247

Method: RASI_ICP Sample Name: 92-06-178-05A 1:10 Operator: BMM
Run Time: 07/10/92 18:37:16
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.172	L-.00487	L.01273	.01634	L-.00000	L-.00997	4.0837
SDev	.070	.00201	.00288	.00015	.00025	.00059	.0044
%RSD	.36501	41.398	22.596	.92495	9255.5	5.8834	.10868
#1	19.122	L-.00629	L.01070	.01644	L.00017	L-.00956	4.0806
#2	19.221	L-.00344	L.01477	.01623	L-.00018	L-.01039	4.0868
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03057	.01653	.05159	38.839	L41.200	L.00173	11.169
SDev	.00213	.00144	.00001	.026	1.067	.00669	.011
%RSD	6.9566	8.7342	.01738	.06653	2.5890	387.52	.09832
#1	.02907	.01755	.05158	38.857	L41.954	L.00646	11.161
#2	.03207	.01551	.05159	38.821	L40.446	L-.00301	11.177
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.60097	.01259	.04173	2.2859	L.00294	.92480	L.00613
SDev	.00040	.00702	.00133	.0396	.00462	.01085	.00099
%RSD	.06719	55.726	3.1948	1.7330	157.42	1.1732	16.137
#1	.60068	.01755	.04267	2.3139	L.00621	.93247	L.00683
#2	.60125	.00763	.04079	2.2579	L-.00033	.91713	L.00543
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.13839	L-.34094	L.00973	.33915	.03295	.10489	9.207
SDev	.00335	.11386	.00618	.00401	.00134	.00051	.007
%RSD	2.4175	33.394	63.503	1.1819	4.0652	.48144	.0765
#1	L.13602	L-.26044	L.01411	.34198	.03389	.10453	9.202
#2	L.14076	L-.42145	L.00536	.33631	.03200	.10525	9.212
Errors	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000246

Method: RASI_ICP Sample Name: 92-06-178-04AMSD1:10 Operator: BMM
Run Time: 07/10/92 18:33:10
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.530	.29308	.37788	.19735	.18122	.16562	3.9582
SDev	.038	.00177	.00699	.00045	.00089	.00076	.0136
%RSD	.18438	.60280	1.8497	.22816	.49394	.46146	.34428
#1	20.503	.29433	.38282	.19766	.18059	.16508	3.9486
#2	20.556	.29183	.37294	.19703	.18186	.16616	3.9679
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.22933	.20097	.22843	39.877	L40.800	.38034	12.210
SDev	.00318	.00216	.00039	.189	1.835	.01299	.058
%RSD	1.3851	1.0727	.17000	.47312	4.4976	3.4165	.47653
#1	.22709	.20249	.22816	39.744	L39.502	.38953	12.169
#2	.23158	.19945	.22871	40.010	L42.097	.37116	12.251
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
gh	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.86539	.43266	.23158	7.4460	.37760	.92506	.12306
SDev	.00308	.00155	.00054	.0424	.01090	.01019	.00108
%RSD	.35614	.35789	.23511	.57002	2.8875	1.1016	.87972
#1	.86321	.43376	.23120	7.4760	.36990	.91785	.12383
#2	.86757	.43157	.23197	7.4160	.38531	.93226	.12229
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51098	L.02449	.35499	.79417	.22574	.30480	9.138
SDev	.00502	.05445	.00162	.01009	.00001	.00037	.036
%RSD	.98209	222.33	.45671	1.2704	.00628	.12229	.3919
#1	.50743	L-.01401	.35384	.80131	.22573	.30453	9.113
#2	.51452	L.06299	.35614	.78704	.22575	.30506	9.164
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
gh	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-563

000248

Method: RASI_ICP Sample Name: 92-06-178-06A 1:10 Operator: BMM
Run Time: 07/10/92 18:41:21
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.739	L-.01096	L.01399	.01880	L-.00017	L-.00849	1.7313
SDev	.078	.00973	.00724	.00015	.00001	.00057	.0147
%RSD	.37554	88.802	51.777	.77481	4.1503	6.7548	.84831
#1	20.794	L-.01784	L.01911	.01890	L-.00017	L-.00808	1.7417
#2	20.684	L-.00408	L.00887	.01870	L-.00016	L-.00889	1.7209
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03287	.02365	.04197	41.012	L44.113	L-.00111	11.866
SDev	.00034	.00001	.00000	.068	.975	.00079	.047
%RSD	1.0412	.05754	.00363	.16516	2.2107	71.365	.39839
#1	.03262	.02365	.04196	41.060	L43.423	L-.00055	11.900
#2	.03311	.02366	.04197	40.964	L44.803	L-.00167	11.833
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.52427	.00405	.04870	2.4250	L-.00009	.48218	L.00457
SDev	.00170	.00234	.00006	.0099	.00346	.00868	.00084
%RSD	.32486	57.828	.11783	.40840	3810.5	1.7993	18.315
#1	.52548	.00570	.04874	2.4180	L-.00253	.48832	L.00516
#2	.52307	L.00239	.04866	2.4320	L.00235	.47605	L.00398
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.14549	L-.31431	L.00605	.28738	.03354	.11349	9.116
SDev	.00669	.03226	.00694	.00405	.00090	.00063	.004
%RSD	4.5991	10.265	114.69	1.4084	2.6947	.55526	.0486
#1	L.15022	L-.29149	L.00114	.28452	.03418	.11304	9.113
#2	L.14076	L-.33712	L.01096	.29024	.03290	.11393	9.119
Errors	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-565

000249

Method: RASI_ICP Sample Name: 92-06-178-07A 1:10 Operator: BMM
Run Time: 07/10/92 18:45:27
Comment:
Mc : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	16.815	L-.01548	L.00583	.01742	L-.00020	L-.00946	7.3362
SDev	.005	.00241	.00839	.00022	.00006	.00020	.0216
%RSD	.03008	15.563	143.95	1.2853	30.038	2.0989	.29484
#1	16.819	L-.01378	L-.00010	.01758	L-.00016	L-.00932	7.3209
#2	16.812	L-.01718	L.01177	.01726	L-.00024	L-.00960	7.3514
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03362	.02009	.06267	36.354	L38.731	L.01474	11.205
SDev	.00050	.00072	.00039	.043	.026	.00624	.021
%RSD	1.4963	3.5810	.62193	.11901	.06786	42.341	.18949
#1	.03397	.02060	.06294	36.323	L38.749	L.01916	11.190
#2	.03326	.01958	.06239	36.384	L38.712	L.01033	11.220
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.1141	L.00040	.04712	2.7411	L.00510	.45205	L.00483
SDev	.0018	.00312	.00039	.0241	.01366	.00290	.00178
%RSD	.15956	778.74	.82142	.87744	267.94	.64067	36.881
#1	1.1129	L.00260	.04684	2.7581	L-.00456	.45000	L.00608
#2	1.1154	L-.00180	.04739	2.7241	L.01476	.45409	L.00357
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.12656	L-.31056	L.00570	.34822	.02781	.09191	9.155
SDev	.00335	.06447	.00002	.00005	.00107	.00075	.014
%RSD	2.6434	20.760	.26045	.01382	3.8516	.82005	.1582
#1	L.12420	L-.35615	L.00569	.34825	.02857	.09138	9.145
#2	L.12893	L-.26497	L.00572	.34818	.02706	.09245	9.165
Errors	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-566

000250

Method: RASI_ICP Sample Name: 92-06-178-08A 1:10 Operator: BMM
Run Time: 07/10/92 18:49:34
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.7808	L-.00467	L.01022	.02791	L-.00035	L-.00425	7.6297
SDev	.0080	.00331	.00954	.00030	.00006	.00016	.0057
%RSD	.21039	70.904	93.347	1.0663	16.529	3.7304	.07436
#1	3.7864	L-.00233	L.00347	.02812	L-.00031	L-.00436	7.6257
#2	3.7751	L-.00701	L.01696	.02770	L-.00039	L-.00414	7.6338
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02206	.01044	.03976	11.826	L11.030	L.01801	3.9647
SDev	.00177	.00144	.00000	.025	.545	.00625	.0027
%RSD	8.0051	13.744	.00763	.21371	4.9371	34.709	.06897
#1	.02331	.01146	.03976	11.844	L11.415	.02243	3.9667
#2	.02081	.00943	.03976	11.808	L10.645	L.01359	3.9628
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51218	L-.00047	.02742	1.1475	L-.00899	.94978	L.00337
SDev	.00041	.00234	.00034	.0255	.00051	.01447	.00148
%RSD	.07933	502.44	1.2324	2.2193	5.6315	1.5236	43.839
#1	.51247	L.00119	.02718	1.1655	L-.00935	.93954	L.00441
#2	.51189	L-.00212	.02766	1.1295	L-.00863	.96001	L.00232
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.90367	L-.32910	L.01140	.17174	.00681	.01804	9.096
SDev	.01506	.01613	.00154	.00001	.00230	.00013	.024
%RSD	1.6660	4.9011	13.517	.00558	33.842	.70162	.2588
#1	.89303	L-.34051	L.01031	.17173	.00843	.01812	9.079
#2	.91432	L-.31770	L.01249	.17175	.00518	.01795	9.113
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-567

000251

Method: RASI_ICP Sample Name: 92-06-178-09A 1:10 Operator: BMM
Run Time: 07/10/92 18:53:39
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.1007	L-.01223	L-.00004	.01677	L-.00040	L-.00218	2.1261
SDev	.0007	.00276	.00680	.00007	.00001	.00025	.0138
%RSD	.03366	22.529	17753.	.44381	1.5934	11.390	.65051
#1	2.1002	L-.01418	L.00477	.01682	L-.00040	L-.00201	2.1359
#2	2.1012	L-.01029	L-.00484	.01672	L-.00041	L-.00236	2.1164
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.14109	.00733	.03753	7.8406	L7.1454	L.01470	2.5805
SDev	.00050	.00289	.00000	.0055	.7649	.00374	.0075
%RSD	.35201	39.467	.00898	.07036	10.705	25.441	.29239
#1	.14144	.00937	.03752	7.8445	L6.6045	L.01206	2.5858
#2	.14074	.00528	.03753	7.8367	L7.6863	L.01735	2.5751
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.24979	.01342	.09850	.71429	L-.00327	.44939	L.00454
SDev	.00032	.00039	.00146	.00424	.00905	.00870	.00000
%RSD	.12887	2.8963	1.4864	.59420	276.64	1.9371	.06548
#1	.25002	.01369	.09954	.71128	L-.00967	.45554	L.00454
#2	.24956	.01314	.09747	.71729	L.00313	.44323	L.00454
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.73808	L-.32243	L-.00280	.10767	.00521	.01779	9.077
SDev	.00167	.05236	.00696	.00399	.00054	.00075	.003
%RSD	.22664	16.239	248.12	3.7045	10.379	4.2102	.0333
#1	.73926	L-.35945	L.00212	.11049	.00483	.01832	9.075
#2	.73689	L-.28541	L-.00772	.10485	.00559	.01726	9.079
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-568

000252

Method: RASI_ICP Sample Name: 92-06-178-10A 1:10 Operator: BMM
Run Time: 07/10/92 18:57:45
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.6168	L-.00928	L.00572	.01999	L-.00035	L-.00255	4.2916
SDev	.0124	.00191	.00290	.00022	.00006	.00013	.0111
%RSD	.47381	20.542	50.711	1.1216	16.393	5.1936	.25959
#1	2.6080	L-.01063	L.00777	.02015	L-.00031	L-.00245	4.2837
#2	2.6256	L-.00793	L.00367	.01983	L-.00039	L-.00264	4.2995
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01965	.00687	.02771	10.746	L10.580	L.00891	3.7255
SDev	.00032	.00073	.00118	.041	.720	.00060	.0055
%RSD	1.6058	10.628	4.2433	.37888	6.8073	6.7062	.14665
#1	.01987	.00738	.02854	10.717	L10.070	L.00933	3.7216
#2	.01943	.00635	.02688	10.775	L11.089	L.00849	3.7293
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.29586	L-.00139	.02311	.65726	L.01250	1.0148	L.00406
SDev	.00041	.00040	.00220	.01698	.01053	.0399	.00146
%RSD	.13825	28.492	9.5149	2.5830	84.238	3.9272	35.881
#1	.29557	L-.00111	.02467	.66927	L.01994	.98658	L.00509
#2	.29615	L-.00167	.02156	.64526	L.00505	1.0429	L.00303
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.73216	L-.34495	L.00268	.11662	.00613	.01343	9.088
SDev	.00335	.04944	.00502	.00200	.00062	.00026	.040
%RSD	.45694	14.332	187.00	1.7134	10.156	1.9520	.4362
#1	.73453	L-.30999	L.00623	.11521	.00657	.01324	9.060
#2	.72980	L-.37991	L-.00086	.11804	.00569	.01361	9.116
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-569

000253

Method: RASI_ICP Sample Name: 92-06-178-11A 1:10 Operator: BMM
Run Time: 07/10/92 19:01:50
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.1598	L-.01463	L.00107	.03574	L-.00049	L-.00331	2.5176
SDev	.0342	.00025	.00505	.00007	.00006	.00053	.0218
%RSD	.66326	1.7093	471.84	.21108	12.563	16.122	.86626
#1	5.1356	L-.01445	L.00464	.03579	L-.00045	L-.00294	2.5331
#2	5.1840	L-.01480	L-.00250	.03569	L-.00054	L-.00369	2.5022
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04741	.00940	.03551	9.9824	L10.407	L.01009	3.1359
SDev	.00178	.00002	.00039	.0029	.148	.00180	.0103
%RSD	3.7497	.19882	1.0964	.02857	1.4224	17.790	.32801
#1	.04867	.00941	.03579	9.9803	L10.511	L.01136	3.1432
#2	.04616	.00939	.03523	9.9844	L10.302	L.00882	3.1287
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.31282	L-.00161	.04379	1.8387	L-.00940	.59193	L.00411
SDev	.00057	.00156	.00098	.0014	.00342	.00293	.00261
%RSD	.18157	96.494	2.2391	.07695	36.401	.49561	63.660
#1	.31242	L-.00051	.04448	1.8397	L-.00698	.59400	L.00595
#2	.31322	L-.00272	.04309	1.8377	L-.01182	.58985	L.00226
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.77120	L-.34134	L.00161	.13733	.00948	.01514	9.064
SDev	.00836	.01812	.00928	.00001	.00122	.00037	.019
%RSD	1.0845	5.3079	576.71	.00839	12.886	2.4636	.2065
#1	.76528	L-.35415	L.00817	.13734	.00862	.01541	9.050
#2	.77711	L-.32853	L-.00495	.13732	.01035	.01488	9.077
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-576

000254

Method: RASI_ICP Sample Name: 92-06-178-11AMS 1:10 Operator: BMM
Run Time: 07/10/92 19:05:57
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.8918	.38224	.38823	.24541	.18762	.17941	3.0106
SDev	.0116	.00372	.01907	.00037	.00043	.00090	.0063
%RSD	.11758	.97348	4.9117	.15191	.22930	.50087	.20978
#1	9.9000	.38488	.40171	.24514	.18731	.18005	3.0151
#2	9.8836	.37961	.37475	.24567	.18792	.17878	3.0062
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.25060	.20260	.22986	13.063	L12.475	.39820	4.2857
SDev	.00260	.00142	.00078	.029	1.117	.00626	.0055
%RSD	1.0379	.69937	.34047	.22446	8.9501	1.5715	.12756
#1	.25243	.20361	.23041	13.042	L11.686	.40262	4.2818
#2	.24876	.20160	.22930	13.084	L13.265	.39377	4.2895
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.55838	.44251	.23222	7.7511	.40616	.89435	.19205
SDev	.00161	.00194	.00010	.0523	.01345	.00293	.00034
%RSD	.28907	.43960	.04278	.67535	3.3121	.32807	.17499
#1	.55724	.44388	.23229	7.7141	.41567	.89643	.19182
#2	.55952	.44113	.23215	7.7881	.39665	.89228	.19229
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.3744	L.06414	.40768	.58861	.21983	.21544	9.207
SDev	.0017	.08058	.01083	.00396	.00036	.00076	.040
%RSD	.12171	125.63	2.6564	.67283	.16331	.35136	.4371
#1	1.3756	L.00716	.40002	.58581	.21957	.21490	9.179
#2	1.3732	L.12112	.41534	.59141	.22008	.21597	9.236
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-571

Method: RASI_ICP Sample Name: 92-06-178-11AMSD1:10 Operator: BMM
Run Time: 07/10/92 19:10:02
Comment:
Mod CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	10.676	.37109	.37692	.25012	.18868	.18086	3.0271
SDev	.065	.00866	.00949	.00231	.00181	.00132	.0355
%RSD	.60638	2.3329	2.5169	.92247	.96142	.72861	1.1711
#1	10.630	.36497	.38363	.24849	.18740	.17992	3.0021
#2	10.722	.37721	.37022	.25176	.18996	.18179	3.0522
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.25112	.20462	.23067	13.407	L14.222	.39769	4.3849
SDev	.00367	.00290	.00195	.119	.008	.00077	.0240
%RSD	1.4619	1.4173	.84571	.88419	.05482	.19338	.54624
#1	.24852	.20257	.22929	13.324	L14.227	.39714	4.3680
#2	.25372	.20667	.23205	13.491	L14.216	.39823	4.4018
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.56088	.43673	.23243	7.9872	.39838	.95313	.19967
SDev	.00509	.00313	.00157	.0099	.01239	.00367	.00053
%RSD	.90764	.71562	.67615	.12399	3.1111	.38487	.26495
#1	.55728	.43452	.23132	7.9802	.38962	.95053	.19930
#2	.56448	.43894	.23354	7.9942	.40715	.95572	.20004
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.4442	L.00007	.39575	.58429	.22299	.22492	9.082
SDev	.0000	.02621	.01087	.00214	.00303	.00237	.103
%RSD	.00000	38928.	2.7464	.36652	1.3582	1.0550	1.130
#1	1.4442	L-.01846	.38806	.58581	.22085	.22324	9.010
#2	1.4442	L.01860	.40343	.58278	.22513	.22660	9.155
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D572

000256

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 19:14:07
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5575	.00734	10.283	.99059	.99180	2.5667	2.5391
SDev	.0034	.00667	.100	.00611	.00758	.0134	.0147
%RSD	.13431	90.904	.96801	.61682	.76394	.52186	.57957
#1	2.5551	.01205	10.213	.98627	.98644	2.5572	2.5287
#2	2.5600	.00262	10.353	.99491	.99716	2.5762	2.5496
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.6175	2.5334	2.5550	2.5748	Q.89272	5.1410	2.5297
SDev	.0202	.0122	.0145	.0013	.96196	.0200	.0110
%RSD	.77294	.48258	.56602	.05033	107.76	.38879	.43566
#1	2.6032	2.5248	2.5448	2.5757	Q.21251	5.1269	2.5219
#2	2.6318	2.5421	2.5652	2.5739	Qi.5729	5.1552	2.5375
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0123	.00104	2.5190	4.9700	10.443	-.01179	2.5801
SDev	.0066	.00040	.0159	.0071	.092	.00319	.0167
%RSD	.65318	38.209	.63028	.14233	.88436	27.070	.64569
#1	1.0076	.00132	2.5078	4.9750	10.377	-.01404	2.5683
#2	1.0170	.00076	2.5302	4.9650	10.508	-.00953	2.5919
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.1015	4.6941	-.01638	-.01354	2.5099	2.5872	9.544
SDev	.0335	.0488	.00467	.00577	.0160	.0136	.033
%RSD	.65579	1.0389	28.487	42.606	.63749	.52524	.3415
#1	5.0778	4.6596	-.01308	-.01762	2.4986	2.5776	9.521
#2	5.1251	4.7286	-.01968	-.00946	2.5212	2.5968	9.567
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

Method: RASI_ICP Sample Name: CCVC Operator: BMM000257
Run Time: 07/10/92 19:18:16
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mc : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.512	-.01552	.07862	.00331	-.00530	.00621	25.038
SDev	.222	.00092	.01222	.00114	.00109	.00199	.237
%RSD	.87204	5.9011	15.549	34.466	20.560	32.127	.94496
#1	25.355	-.01488	.06997	.00412	-.00453	.00762	24.871
#2	25.669	-.01617	.08726	.00250	-.00607	.00480	25.206
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	25.000						25.000
Range	10.000						10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00910	25.083	.01910	25.325	Q28.390	.02868	25.190
SDev	.00516	.214	.00385	.225	1.477	.01178	.245
%RSD	56.757	.85203	20.166	.88947	5.2014	41.065	.97333
#1	-.00545	24.932	.02182	25.165	Q29.434	.03701	25.016
#2	-.01275	25.234	.01637	25.484	27.346	.02035	25.363
Errors	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Fail	NOCHECK	QC Pass
Value		25.000		25.000	25.000		25.000
Range		10.000		10.000	10.000		10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	10.195	-.00193	-.00135	50.243	.02044	-.00887	-.01308
SDev	.092	.00232	.00012	.314	.01226	.00763	.00151
%RSD	.90726	120.19	8.8603	.62513	59.967	86.008	11.565
#1	10.130	-.00029	-.00126	50.021	.02911	-.01427	-.01201
#2	10.260	-.00357	-.00143	50.465	.01177	-.00348	-.01415
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	10.000			50.000			
Range	10.000			10.000			

Elem	Na5889	T13775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	50.960	-.08872	.00789	-.02152	25.065	.00428	9.671
SDev	.507	.00290	.00626	.00244	.240	.00213	.037
%RSD	.99459	3.2674	79.398	11.340	.95904	49.739	.3828
#1	50.602	-.09077	.00346	-.01979	24.895	.00578	9.645
#2	51.319	-.08667	.01231	-.02324	25.235	.00277	9.697
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Value	50.000				25.000		
Range	10.000				10.000		

D-574

000258

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 19:22:23
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.08121	10.906	9.9330	.00378	.00451	-.24691	.05415
SDev	.01066	.067	.0892	.00015	.00000	.00014	.01609
%RSD	13.132	.61009	.89757	3.8832	.04271	.05483	29.713
#1	.08875	10.953	9.9961	.00388	.00451	-.24681	.06552
#2	.07367	10.859	9.8700	.00367	.00451	-.24700	.04277
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00059	.09094	.00103	.07241	-1.3146	-.03997	.04671
SDev	.00058	.01993	.00113	.01557	.6091	.00068	.02815
%RSD	97.959	21.911	109.45	21.497	46.330	1.7014	60.267
#1	-.00018	.10503	.00184	.08342	-1.7453	-.03949	.06662
#2	-.00100	.07685	.00023	.06140	-.88395	-.04045	.02680
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02252	Q11.277	.00078	.17007	10.017	10.415	.01161
SDev	.00765	.058	.00005	.04952	.056	.017	.00196
%RSD	33.953	.51836	5.8570	29.116	.55774	.16673	16.883
#1	.02793	Q11.319	.00081	.20508	10.056	10.427	.01299
#2	.01711	Q11.236	.00075	.13505	9.9771	10.402	.01022
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.21646	-.41078	10.290	10.761	.29874	-.00836	9.589
SDev	.03011	.01230	.068	.020	.03179	.00075	.099
%RSD	13.910	2.9940	.66535	.18407	10.643	8.9655	1.032
#1	.23775	-.41948	10.338	10.775	.32122	-.00783	9.659
#2	.19516	-.40209	10.241	10.747	.27626	-.00889	9.519
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

D-575

Method: RASI_ICP Sample Name: CCB Operator: BMM 000259
Run Time: 07/10/92 19:26:32
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mc : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01255	H.02178	H.03802	.00021	-.00034	.00023	H.02957
SDev	.00459	.01490	.00299	.00000	.00004	.00071	.00324
%RSD	36.569	68.391	7.8733	.05820	12.684	313.44	10.966
#1	.00931	H.03231	H.04014	.00021	-.00037	-.00028	H.02727
#2	.01580	.01125	H.03590	.00021	-.00031	.00073	H.03186
Errors	LC Pass	LC High	LC High	LC Pass	LC Pass	LC Pass	LC High
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00214	H.01992	-.00253	H.01523	L-.19550	-.00525	.01216
SDev	.00162	.00398	.00002	.00419	.14956	.00811	.01098
%RSD	75.819	19.967	.77486	27.524	76.503	154.40	90.310
#1	-.00328	H.02273	-.00254	H.01227	L-.08974	-.01098	H.01992
#2	-.00099	H.01711	-.00252	H.01820	L-.30126	.00048	.00439
Errors	LC Pass	LC High	LC Pass	LC High	LC Low	LC Pass	LC Pass
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.01340

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.00627	H.06558	-.00055	.03001	.03758	.04709	.00324
SDev	.00112	.02182	.00079	.01556	.02490	.01519	.00131
%RSD	17.951	33.274	145.45	51.854	66.257	32.259	40.448
#1	H.00706	H.08101	-.00111	.01901	H.05519	.05784	.00416
#2	H.00547	H.05015	.00002	.04102	.01997	.03635	.00231
Errors	LC High	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.09226	L-.24886	H.03691	.01399	H.01645	L-.00274	8.776
SDev	.00167	.01702	.00966	.01398	.00302	.00013	.003
%RSD	1.8131	6.8398	26.180	99.953	18.340	4.6799	.0321
#1	.09344	L-.23683	H.04375	.02387	H.01858	L-.00265	8.778
#2	.09108	L-.26090	H.03008	.00410	H.01432	L-.00283	8.774
Errors	LC Pass	LC Low	LC High	LC Pass	LC High	LC Low	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

D-576

000260

Method: RASI_ICP Sample Name: 92-06-178-12A 1:10 Operator: BMM
Run Time: 07/10/92 19:30:39
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.4689	L.00394	L.01494	.06380	L-.00013	L-.00380	3.1502
SDev	.0793	.00179	.00754	.00044	.00000	.00018	.0225
%RSD	.93651	45.595	50.449	.69597	3.3436	4.6172	.71311
#1	8.5250	L.00267	L.02027	.06411	L-.00013	L-.00367	3.1661
#2	8.4128	L.00520	L.00961	.06348	L-.00013	L-.00392	3.1343
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02262	.01680	.03278	13.325	L14.168	L.00569	4.5470
SDev	.00130	.00035	.00079	.108	.295	.00419	.0130
%RSD	5.7353	2.0743	2.4020	.80850	2.0816	73.702	.28537
#1	.02170	.01705	.03223	13.401	L13.959	L.00272	4.5561
#2	.02353	.01656	.03334	13.249	L14.376	L.00865	4.5378
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.34994	.01471	.02273	3.5674	L.00385	1.2996	L.00305
SDev	.00308	.00586	.00104	.0297	.01154	.0066	.00052
%RSD	.87973	39.813	4.5854	.83282	299.89	.50444	17.207
#1	.35211	.01885	.02346	3.5464	L-.00431	1.2950	L.00342
#2	.34776	.01057	.02199	3.5884	L.01201	1.3042	L.00267
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.96400	L-.32826	L.01210	.18878	.02191	.02038	9.068
SDev	.00669	.04228	.00576	.00209	.00123	.00050	.098
%RSD	.69410	12.880	47.639	1.1048	5.6214	2.4524	1.076
#1	.95926	L-.35815	L.00802	.18730	.02278	.02073	9.137
#2	.96873	L-.29836	L.01617	.19025	.02103	.02002	L8.999
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-577

000261

Method: RASI_ICP Sample Name: 92-06-178-13A 1:10 Operator: BMM
Run Time: 07/10/92 19:34:45
Comment:
M : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.6815	L.00141	L.01795	.02889	L-.00041	L-.00239	1.6995
SDev	.0084	.01147	.02057	.00030	.00011	.00059	.0149
%RSD	.22904	815.55	114.61	1.0298	25.829	24.680	.87467
#1	3.6755	L.00952	.03249	.02910	L-.00033	L-.00281	1.6890
#2	3.6874	L-.00671	L.00340	.02868	L-.00048	L-.00197	1.7100
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04613	.01298	.02662	8.5807	L8.6296	L.01047	3.1321
SDev	.00121	.00504	.00196	.0177	.0116	.00562	.0192
%RSD	2.6213	38.785	7.3478	.20584	.13389	53.677	.61195
#1	.04699	.01654	.02800	8.5682	L8.6214	L.01445	3.1186
#2	.04527	.00942	.02524	8.5931	L8.6377	L.00650	3.1457
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.19322	.01064	.03426	1.5196	L.00220	.76728	L.00511
SDev	.00750	.00818	.00092	.0000	.01736	.01884	.00112
%RSD	3.8838	76.898	2.6714	.00000	789.10	2.4550	22.027
#1	.19852	.01642	.03361	1.5196	L-.01008	.78060	L.00590
#2	.18791	.00485	.03491	1.5196	L.01448	.75396	L.00431
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.69550	L-.32186	L.01190	.11647	.02462	.01569	9.019
SDev	.01840	.10772	.00039	.00581	.02457	.00050	.019
%RSD	2.6456	33.469	3.3058	4.9867	99.800	3.1804	.2142
#1	.70851	L-.24569	L.01162	.12057	.04199	.01604	9.005
#2	.68248	L-.39804	L.01218	.11236	.00725	.01533	9.032
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-578

000262

Method: RASI_ICP Sample Name: 92-06-178-14A 1:10 Operator: BMM
Run Time: 07/10/92 19:38:50
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.9339	L-.00948	L.00881	.01332	L-.00058	L-.00155	1.4129
SDev	.0168	.00801	.00040	.00007	.00005	.00047	.0151
%RSD	.86702	84.508	4.5665	.55489	8.4261	30.264	1.0719
#1	1.9457	L-.01515	L.00909	.01337	L-.00055	L-.00188	1.4236
#2	1.9220	L-.00382	L.00853	.01327	L-.00062	L-.00122	1.4022
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02887	.00610	.03071	5.7017	L7.1864	L.00231	2.2003
SDev	.00001	.00038	.00195	.0345	.2249	.01055	.0034
%RSD	.01861	6.2251	6.3542	.60563	3.1295	457.09	.15658
#1	.02888	.00583	.02933	5.7261	L7.3455	L-.00515	2.1978
#2	.02887	.00637	.03208	5.6773	L7.0274	L.00977	2.2027
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Low	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.17058	L.00131	.02828	.59024	L-.00179	.83296	L.00357
SDev	.00041	.00001	.00229	.01839	.00218	.01015	.00195
%RSD	.23983	.39318	8.1131	3.1161	121.76	1.2183	54.694
#1	.17087	L.00131	.02666	.57723	L-.00025	.82579	L.00219
#2	.17030	L.00131	.02990	.60324	L-.00334	.84014	L.00494
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.52754	L-.31954	L.00182	.07322	L.00257	.01023	9.119
SDev	.00502	.04032	.00964	.00801	.00010	.00024	.047
%RSD	.95127	12.617	528.53	10.936	3.8720	2.3215	.5185
#1	.52399	L-.34805	L-.00499	.06755	L.00250	.01006	9.153
#2	.53108	L-.29103	L.00864	.07888	L.00264	.01040	9.086
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-579

Method: RASI_ICP Sample Name: PB1 3050_I 07/07/92 Operator: BMM
Run Time: 07/10/92 19:42:55
Comment:
M : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02367	L-.01006	L.00146	L.00068	L-.00169	L.00309	.16478
SDev	.00296	.00246	.00048	.00022	.00002	.00007	.00714
%RSD	12.483	24.449	32.994	32.723	.91788	2.2655	4.3337
#1	.02576	L-.01180	L.00112	L.00053	L-.00168	L.00314	.15973
#2	.02158	L-.00832	L.00180	.00084	L-.00170	L.00304	.16983
Errors	LC Pass	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00013	L.00083	.00995	.07257	L-.69592	L-.00788	L.00239
SDev	.00049	.00072	.00117	.00667	1.34582	.00435	.00959
%RSD	372.47	87.382	11.718	9.1872	193.39	55.240	401.18
#1	L.00048	L.00032	.01078	.07728	L-1.6476	L-.01096	L.00918
#2	L-.00021	L.00134	.00913	.06786	L.25572	L-.00480	L-.00439
Errors	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Low	LC Low
gh	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00126	L-.00084	L.00024	.04802	L-.01247	.07225	L.00256
SDev	.00016	.00039	.00210	.00424	.01124	.00436	.00066
%RSD	12.980	46.436	860.38	8.8388	90.161	6.0271	25.656
#1	L.00137	L-.00112	L-.00124	.05102	L-.02042	.07533	L.00303
#2	L.00114	L-.00056	L.00173	.04502	L-.00452	.06917	L.00210
Errors	LC Low	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.10409	L-.58780	.03093	L-.01419	L-.00057	.02439	H11.15
SDev	.00502	.02527	.00194	.01001	.00076	.00013	.02
%RSD	4.8212	4.2993	6.2820	70.542	133.57	.52638	.1787
#1	L.10054	L-.60567	.02955	L-.00711	L-.00110	.02448	H11.13
#2	L.10764	L-.56993	.03230	L-.02126	L-.00003	.02430	H11.16
Errors	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC High
gh	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: PB2 3050_I 07/07/92 Operator: BMM
Run Time: 07/10/92 19:47:01
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04635	L-.00989	L-.00109	.00105	L-.00117	L.00271	.19314
SDev	.00727	.00906	.00107	.00000	.00000	.00030	.00612
%RSD	15.692	91.628	97.943	.02591	.02521	11.230	3.1677
#1	.05150	L-.00348	L-.00034	.00105	L-.00117	L.00293	.18881
#2	.04121	L-.01629	L-.00185	.00105	L-.00117	L.00250	.19747
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00090	L.00159	.00940	.05795	L-.23442	L-.00827	L.01064
SDev	.00064	.00034	.00039	.00304	.65378	.00001	.00480
%RSD	70.950	21.256	4.1575	5.2456	278.90	.16528	45.077
#1	L.00045	L.00135	.00967	.06010	L-.69671	L-.00326	L.01403
#2	L.00135	L.00183	.00912	.05580	L.22788	L-.00828	L.00725
Errors	LC Low	LC Low	LC Pass	LC Pass	LC Low	LC Low	LC Low
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.00080	L-.00194	L.00086	L.04202	L-.00642	.07431	L.00025
SDev	.00048	.00117	.00142	.00142	.00660	.00434	.00033
%RSD	60.544	60.114	164.62	3.3672	102.80	5.8364	129.38
#1	L.00114	L-.00112	L.00187	.04302	L-.01108	.07737	L.00048
#2	L.00046	L-.00277	L-.00014	L.04102	L-.00175	.07124	L.00002
Errors	LC Low	LC Low	LC Low	LC Low	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.18570	L-.46531	.03283	L-.00710	L-.00021	.04668	10.01
SDev	.00669	.02314	.01006	.00002	.00033	.00026	.02
%RSD	3.6031	4.9739	30.645	.24929	155.50	.55125	.2151
#1	L.18097	L-.48168	.03994	L-.00711	L-.00044	.04650	9.993
#2	L.19043	L-.44895	.02571	L-.00709	L.00002	.04686	10.02
Errors	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: LCS 3050_I 07/07/92 Operator: BMM
Run Time: 07/10/92 19:51:07
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mo . CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0035	1.9952	1.8114	.90435	.86598	.84698	1.0901
SDev	.0107	.0051	.0047	.00373	.00625	.00487	.0052
%RSD	1.0690	.25651	.25772	.41198	.72135	.57500	.47693
#1	1.0110	1.9988	1.8081	.90698	.87040	.85042	1.0937
#2	.99587	1.9916	1.8147	.90171	.86157	.84353	1.0864
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.94586	.90753	.93174	.97293	L.19142	1.8185	.91622
SDev	.00272	.00433	.00625	.00394	.23249	.0038	.01098
%RSD	.28772	.47718	.67081	.40538	121.45	.20726	1.1989
#1	.94779	.91059	.93616	.97572	L.35582	1.8212	.92399
#2	.94394	.90447	.92732	.97014	L.02703	1.8158	.90845
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
H h	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.94505	2.1200	.88812	22.686	1.8113	2.7407	.92714
SDev	.00516	.0129	.00374	.096	.0166	.0073	.00539
%RSD	.54620	.60659	.42076	.42407	.91670	.26582	.58136
#1	.94870	2.1291	.89076	22.754	1.8230	2.7458	.93095
#2	.94140	2.1109	.88548	22.618	1.7995	2.7355	.92333
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.9611	1.2782	1.9200	2.0122	.95852	.93273	10.84
SDev	.0117	.0061	.0054	.0019	.00523	.00185	.05
%RSD	.59708	.47927	.28193	.09194	.54593	.19835	.4602
#1	1.9694	1.2825	1.9238	2.0135	.96222	.93404	10.88
#2	1.9528	1.2738	1.9161	2.0109	.95482	.93142	10.81
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
H h	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-582

000266

Method: RASI_ICP Sample Name: 92-06-178-15A 1:10 Operator: BMM
Run Time: 07/10/92 19:55:13
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	17.121	L-.01280	.08183	.14179	.00149	.02657	4.8151
SDev	.057	.00221	.01837	.00082	.00049	.00028	.0149
%RSD	.33578	17.269	22.454	.57640	32.479	1.0564	.30885
#1	17.162	L-.01124	.09483	.14237	.00184	.02677	4.8256
#2	17.080	L-.01436	.06884	.14121	.00115	.02637	4.8046
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03867	.03440	.13979	26.482	L29.077	.34336	7.5235
SDev	.00066	.00073	.00117	.112	1.411	.00136	.0157
%RSD	1.7083	2.1342	.83371	.42322	4.8526	.39742	.20892
#1	.03821	.03492	.14062	26.561	L30.075	.34433	7.5347
#2	.03914	.03388	.13897	26.402	L28.079	.34240	7.5124
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.86171	.02502	.03181	4.6729	L.00091	.43172	L.00522
SDev	.00331	.00546	.00187	.0170	.02633	.00505	.00020
%RSD	.38468	21.832	5.8832	.36332	2881.9	1.1710	3.8875
#1	.86405	.02888	.03313	4.6849	L.01953	.43529	L.00536
#2	.85936	.02116	.03048	4.6609	L-.01770	.42814	L.00507
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.89894	L-.36568	.02542	.48226	.03539	.49483	9.159
SDev	.00836	.00399	.00699	.00009	.00012	.00313	.024
%RSD	.93041	1.0913	27.513	.01955	.35151	.63224	.2614
#1	.90485	L-.36850	.03036	.48219	.03548	.49704	9.176
#2	.89303	L-.36285	L.02047	.48233	.03530	.49262	9.142
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000267

Method: RASI_ICP Sample Name: 92-06-178-16A 1:10 Operator: BMM
Run Time: 07/10/92 19:59:18
Comment:
M : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	17.373	L-.01210	.10877	.15258	L.00062	.02862	4.8921
SDev	.249	.00469	.01341	.00267	.00031	.00108	.0663
%RSD	1.4338	38.726	12.329	1.7512	49.876	3.7714	1.3554
#1	17.549	L-.01542	.11825	.15447	.00084	.02938	4.9390
#2	17.197	L-.00879	.09928	.15069	L.00040	.02786	4.8452
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04378	.03390	.14971	27.240	L30.028	.37076	7.6463
SDev	.00348	.00144	.00428	.405	.720	.00258	.0937
%RSD	7.9497	4.2466	2.8615	1.4867	2.3989	.69631	1.2261
#1	.04624	.03492	.15274	27.526	L29.518	.36893	7.7126
#2	.04131	.03288	.14668	26.954	L30.537	.37258	7.5801
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.88808	.02064	.03517	4.7189	L-.00967	.52504	L.00155
SDev	.01408	.00159	.00231	.1330	.02098	.00509	.00101
%RSD	1.5852	7.6969	6.5743	2.8182	216.89	.97031	65.061
#1	.89803	.02177	.03681	4.8129	L-.02451	.52864	L.00084
#2	.87812	.01952	.03354	4.6248	L.00516	.52144	L.00226
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.90249	L-.33721	.03297	.50136	.03624	.52826	9.055
SDev	.00000	.00804	.00050	.00362	.00058	.00876	.058
%RSD	.00000	2.3837	1.5084	.72230	1.6116	1.6589	.6422
#1	.90249	L-.34290	.03333	.50392	.03583	.53446	9.096
#2	.90249	L-.33153	.03262	.49880	.03665	.52206	9.014
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-584

Method: RASI_ICP Sample Name: 92-06-178-17A 1:10 Operator: BMM
Run Time: 07/10/92 20:03:24
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	18.872	L-.00966	.08337	.15668	L.00057	.04177	4.9071
SDev	.145	.00227	.00250	.00141	.00005	.00135	.0478
%RSD	.76773	23.499	2.9969	.89949	8.3580	3.2323	.97486
#1	18.770	L-.00805	.08161	.15569	L.00054	.04082	4.8732
#2	18.975	L-.01126	.08514	.15768	L.00061	.04273	4.9409
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04818	.03414	.15149	28.831	L31.733	.54044	8.0959
SDev	.00149	.00037	.00078	.262	1.766	.00655	.0671
%RSD	3.0905	1.0833	.51290	.90986	5.5645	1.2115	.82841
#1	.04923	.03388	.15094	28.646	L30.484	.54507	8.0485
#2	.04713	.03441	.15204	29.017	L32.982	.53581	8.1433
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.87060	.01915	.03377	5.1621	L.00420	.38437	L.00347
SDev	.00801	.00158	.00104	.0354	.00622	.00366	.00073
%RSD	.92012	8.2499	3.0778	.68518	148.18	.95363	21.067
#1	.86494	.01803	.03303	5.1871	L-.00020	.38696	L.00399
#2	.87627	.02026	.03450	5.1371	L.00859	.38178	L.00295
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0030	L-.31743	.02290	.53013	.03901	.52911	9.115
SDev	.0117	.00802	.00434	.00822	.00054	.00677	.094
%RSD	1.1674	2.5266	18.961	1.5506	1.3771	1.2800	1.029
#1	.99475	L-.31176	L.01983	.53594	.03863	.52432	9.049
#2	1.0113	L-.32310	.02597	.52431	.03939	.53390	9.181
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: 92-06-178-17AMS 1:10 Operator: BMM
Run Time: 07/10/92 20:07:30
Comment:
Mc : CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	18.507	.18383	.46181	.33609	.18417	.21713	5.0875
SDev	.015	.00284	.02455	.00171	.00074	.00079	.0243
%RSD	.08264	1.5450	5.3165	.50968	.39975	.36303	.47840
#1	18.518	.18182	.47917	.33730	.18469	.21769	5.1047
#2	18.497	.18584	.44445	.33488	.18365	.21658	5.0703
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.23031	.21938	.33536	27.189	L29.223	.88631	7.9772
SDev	.00128	.00217	.00077	.118	.831	.00315	.0068
%RSD	.55475	.98939	.23073	.43474	2.8427	.35494	.08535
#1	.23121	.22092	.33590	27.272	L29.810	.88853	7.9820
#2	.22941	.21785	.33481	27.105	L28.635	.88409	7.9724
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0352	.44140	.21606	9.4388	.37907	.78120	.19191
SDev	.0044	.00118	.00088	.0594	.00715	.00292	.00053
%RSD	.42179	.26683	.40556	.62954	1.8865	.37381	.27654
#1	1.0382	.44223	.21544	9.4808	.37401	.78327	.19228
#2	1.0321	.44056	.21667	9.3968	.38412	.77914	.19153
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.3319	L.00396	.38764	.90857	.23385	.66653	9.051
SDev	.0017	.04136	.00582	.00589	.00055	.00163	.058
%RSD	.12560	1043.6	1.5018	.64837	.23325	.24494	.6380
#1	1.3307	L-.02528	.39176	.91273	.23423	.66769	9.092
#2	1.3330	L.03321	.38352	.90440	.23346	.66538	9.010
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-586

000270

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 20:11:36
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.6058	-.00230	10.218	.98732	.98197	2.5243	2.5215
SDev	.0203	.00190	.037	.00417	.00345	.0059	.0115
%RSD	.77976	82.545	.36345	.42259	.35168	.23231	.45768
#1	2.6202	-.00096	10.245	.99027	.98441	2.5285	2.5296
#2	2.5915	-.00365	10.192	.98437	.97953	2.5202	2.5133
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5902	2.5027	2.5481	2.5929	2.5694	5.0790	2.5199
SDev	.0148	.0075	.0102	.0350	1.9412	.0032	.0069
%RSD	.57143	.30165	.39879	1.3496	75.551	.06273	.27274
#1	2.6007	2.5080	2.5553	2.6176	Q3.9421	5.0812	2.5248
#2	2.5798	2.4973	2.5409	2.5681	Q1.1968	5.0767	2.5151
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0028	-.00061	2.4861	5.0120	10.359	-.00962	2.5906
SDev	.0044	.00117	.0092	.0778	.054	.00384	.0070
%RSD	.43455	190.66	.36953	1.5525	.52104	39.946	.27163
#1	1.0059	.00021	2.4926	5.0670	10.397	-.00690	2.5956
#2	.99973	-.00144	2.4796	4.9570	10.321	-.01234	2.5857
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.1015	4.6789	-.00569	-.00610	2.4819	2.5733	9.532
SDev	.0067	.0360	.00270	.00015	.0048	.0086	.054
%RSD	.13116	.76991	47.409	2.4551	.19220	.33424	.5636
#1	5.1062	4.6535	-.00759	-.00621	2.4853	2.5794	9.570
#2	5.0968	4.7044	-.00378	-.00600	2.4786	2.5672	9.495
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

000271

Method: RASI_ICP Sample Name: CCVC Operator: BMM
Run Time: 07/10/92 20:15:43
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.717	-.02148	.07261	.00347	-.00453	.00579	24.737
SDev	.020	.01454	.02277	.00044	.00031	.00166	.006
%RSD	.07690	67.684	31.365	12.789	6.9389	28.723	.02514
#1	25.703	-.01120	.08872	.00379	-.00431	.00696	24.742
#2	25.731	-.03175	.05651	.00316	-.00475	.00461	24.733
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	25.000						25.000
Range	10.000						10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00847	24.892	.02017	25.184	Q28.182	.02859	25.254
SDev	.00404	.002	.00315	.058	1.316	.00058	.038
%RSD	47.643	.00873	15.630	.22909	4.6691	2.0316	.15207
#1	-.00562	24.894	.02240	25.224	27.251	.02818	25.281
#2	-.01133	24.891	.01794	25.143	Q29.112	.02900	25.226
Errors	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Fail	NOCHECK	QC Pass
Value		25.000		25.000	25.000		25.000
Range		10.000		10.000	10.000		10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	10.134	-.00195	-.00223	50.693	.03553	-.00826	-.01306
SDev	.025	.00078	.00279	.277	.00214	.00582	.00179
%RSD	.24686	40.062	125.46	.54701	6.0324	70.434	13.698
#1	10.151	-.00250	-.00025	50.889	.03705	-.00415	-.01179
#2	10.116	-.00140	-.00420	50.497	.03402	-.01237	-.01432
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	10.000			50.000			
Range	10.000			10.000			

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	51.216	-.09076	.00919	-.00858	24.914	.00472	9.723
SDev	.119	.03428	.00814	.00333	.056	.00174	.034
%RSD	.23189	37.772	88.606	38.821	.22352	36.860	.3497
#1	51.300	-.06652	.01495	-.00623	24.953	.00595	9.747
#2	51.132	-.11500	.00343	-.01094	24.875	.00349	9.699
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Value	50.000				25.000		
Range	10.000				10.000		

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 20:19:50
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.07613	10.805	9.8326	.00367	.00418	-.24261	.05739
SDev	.02893	.002	.0024	.00030	.00014	.00192	.02536
%RSD	37.993	.01540	.02398	8.0432	3.2276	.79009	44.196
#1	.09659	10.804	9.8343	.00388	.00427	-.24125	.07532
#2	.05568	10.806	9.8309	.00346	.00408	-.24396	.03945
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00352	.09094	-.00016	.07254	-1.1309	-.03779	.04186
SDev	.00413	.02564	.00162	.02741	1.1004	.00009	.03502
%RSD	117.29	28.197	1010.8	37.784	97.301	.23648	83.654
#1	-.00060	.10907	.00098	.09193	-.35282	-.03772	.06662
#2	-.00644	.07281	-.00130	.05316	-1.9090	-.03785	.01710
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02271	Q11.127	.00179	.19208	9.8289	10.282	.00866
SDev	.00936	.028	.00286	.06366	.0391	.029	.00014
%RSD	41.195	.25559	159.91	33.146	.39806	.28159	1.6169
#1	.02932	Q11.107	.00381	.23709	9.8012	10.262	.00875
#2	.01609	Q11.147	-.00023	.14706	9.8566	10.303	.00856
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.22355	-.42129	10.288	10.591	.29535	-.00817	9.543
SDev	.06356	.03454	.049	.056	.02508	.00100	.017
%RSD	28.434	8.1983	.47425	.53150	8.4929	12.272	.1813
#1	.26850	-.39687	10.322	10.551	.31308	-.00746	9.555
#2	.17861	-.44572	10.253	10.631	.27761	-.00888	9.530
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

000273

Method: RASI_ICP Sample Name: CCB Operator: BMM
Run Time: 07/10/92 20:23:58
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.01859	H.03484	H.04664	.00026	-.00021	.00034	H.03138
SDev	.01193	.01115	.01786	.00007	.00014	.00037	.00265
%RSD	64.191	32.014	38.286	28.444	63.694	107.54	8.4304
#1	.01015	H.04273	H.05927	.00031	-.00012	.00008	H.03325
#2	H.02703	H.02696	H.03401	.00021	-.00031	.00060	H.02951
Errors	LC High	LC High	LC High	LC Pass	LC Pass	LC Pass	LC High
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00410	H.02043	-.00336	H.04352	L-1.0711	-.00523	.00778
SDev	.00048	.00469	.00115	.01297	.0537	.00060	.01440
%RSD	11.767	22.937	34.269	29.814	5.0111	11.472	185.08
#1	-.00444	H.02374	-.00255	H.05269	L-1.1091	-.00481	H.01797
#2	-.00376	H.01711	-.00417	H.03434	L-1.0331	-.00565	-.00240
Errors	LC Pass	LC High	LC Pass	LC High	LC Low	LC Pass	LC Pass
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.01340

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.00821	H.06641	-.00124	.00900	H.05778	.04756	.00174
SDev	.00226	.02455	.00078	.00283	.01829	.01883	.00050
%RSD	27.510	36.968	62.853	31.427	31.661	39.593	28.519
#1	H.00980	H.08377	-.00069	.01100	H.07071	.06088	.00210
#2	H.00661	H.04905	-.00178	.00700	H.04484	.03425	.00139
Errors	LC High	LC High	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.09463	L-.24750	H.03693	.01677	H.02556	L-.00203	8.886
SDev	.00836	.05949	.00425	.01395	.00525	.00012	.039
%RSD	8.8389	24.037	11.502	83.162	20.522	5.8876	.4348
#1	.10054	L-.28956	H.03993	.02663	H.02927	L-.00194	8.859
#2	.08871	L-.20543	H.03393	.00691	H.02185	L-.00211	8.913
Errors	LC Pass	LC Low	LC High	LC Pass	LC High	LC Low	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

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000274

Method: RASI_ICP Sample Name: 92-06-178-17AMSD1:10 Operator: BMM
Run Time: 07/10/92 20:28:05
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.877	.23947	.47989	.34410	.18176	.21777	5.1670
SDev	.147	.00414	.01597	.00238	.00073	.00007	.0061
%RSD	.74039	1.7272	3.3285	.69132	.40071	.03110	.11809
#1	19.773	.23655	.49118	.34241	.18125	.21782	5.1627
#2	19.981	.24240	.46859	.34578	.18228	.21772	5.1713
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.23604	.22246	.34020	28.885	L30.730	.93857	8.4040
SDev	.00337	.00140	.00234	.147	1.532	.00094	.0685
%RSD	1.4271	.62772	.68918	.50882	4.9866	.10032	.81509
#1	.23366	.22148	.33854	28.781	L29.646	.93790	8.3556
#2	.23842	.22345	.34186	28.989	L31.814	.93924	8.4525
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0636	.44975	.21480	9.8759	.38801	.94450	.19479
SDev	.0066	.00428	.00273	.1061	.01507	.02105	.00250
%RSD	.61621	.95222	1.2718	1.0744	3.8844	2.2283	1.2835
#1	1.0589	.45277	.21287	9.8009	.37735	.92962	.19303
#2	1.0682	.44672	.21673	9.9510	.39866	.95938	.19656
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.3993	L.08974	.40283	.96584	.24035	.70405	L8.943
SDev	.0134	.04023	.02045	.00018	.00058	.00299	.028
%RSD	.95636	44.828	5.0752	.01896	.24194	.42523	.3127
#1	1.4087	L.11819	.41729	.96597	.24076	.70194	L8.923
#2	1.3898	L.06129	.38838	.96571	.23994	.70617	L8.963
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: 92-06-178-18A 1:10 Operator: BMM
Run Time: 07/10/92 20:32:11 **000275**
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	18.085	L-.00163	.06603	.22913	L.00057	.00595	5.7530
SDev	.060	.00614	.00084	.00067	.00013	.00009	.0162
%RSD	.33410	376.32	1.2756	.29359	23.409	1.4838	.28119
#1	18.043	L.00271	.06544	.22961	L.00067	.00602	5.7415
#2	18.128	L-.00597	.06663	.22866	L.00048	.00589	5.7644
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05966	.03310	.20071	27.479	L30.309	.23802	7.7810
SDev	.00194	.00035	.00001	.039	.081	.00885	.0076
%RSD	3.2547	1.0520	.00314	.14121	.26774	3.7172	.09717
#1	.06104	.03335	.20070	27.452	L30.252	.23176	7.7863
#2	.05829	.03286	.20071	27.507	L30.366	.24427	7.7756
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.86665	.03774	.03576	4.9230	L.01829	.53381	L.00285
SDev	.00210	.00234	.00161	.0255	.00930	.00141	.00015
%RSD	.24245	6.1880	4.5151	.51729	50.847	.26387	5.4105
#1	.86517	.03940	.03690	4.9050	L.02487	.53282	L.00295
#2	.86814	.03609	.03461	4.9410	L.01172	.53481	L.00274
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.1296	L-.33673	.02561	.61794	.03979	.58952	L8.959
SDev	.0234	.00805	.00542	.00805	.00126	.00126	.025
%RSD	2.0732	2.3904	21.173	1.3035	3.1727	.21369	.2740
#1	1.1130	L-.34242	.02178	.62363	.03890	.58863	L8.977
#2	1.1461	L-.33104	.02945	.61224	.04069	.59041	L8.942
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

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000276

Method: RASI_ICP Sample Name: 92-06-178-19A 1:10 Operator: BMM
Run Time: 07/10/92 20:36:17
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	16.899	L-.00410	.07530	.24431	L.00017	.00828	6.0736
SDev	.087	.00803	.00169	.00015	.00006	.00007	.0088
%RSD	.51300	195.94	2.2454	.05986	36.520	.84197	.14513
#1	16.837	L.00158	.07410	.24420	L.00021	.00823	6.0673
#2	16.960	L-.00977	.07649	.24441	L.00012	.00833	6.0798
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05839	.03005	.20881	26.223	L27.299	.26367	7.3550
SDev	.00145	.00037	.00039	.035	.354	.01476	.0075
%RSD	2.4853	1.2197	.18600	.13316	1.2950	5.5996	.10234
#1	.05942	.02979	.20909	26.199	L27.549	.27411	7.3497
#2	.05737	.03031	.20854	26.248	L27.049	.25323	7.3603
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.85575	.03488	.03163	4.5808	L.01136	.59756	L.00209
SDev	.00283	.00233	.00151	.0028	.00490	.00293	.00001
%RSD	.33038	6.6943	4.7801	.06178	43.162	.49100	.55222
#1	.85375	.03653	.03057	4.5788	L.01483	.59964	L.00208
#2	.85775	.03323	.03270	4.5828	L.00789	.59549	L.00210
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.1296	L-.38040	.02634	.60126	.03812	.57186	9.024
SDev	.0100	.00901	.00311	.00008	.00039	.00087	.006
%RSD	.88851	>2.3697	11.792	.01325	1.0314	.15275	.0713
#1	1.1225	L-.37402	.02415	.60131	.03840	.57124	9.019
#2	1.1367	L-.38677	.02854	.60120	.03785	.57248	9.028
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-593

000277

Method: RASI_ICP Sample Name: 92-06-178-20A 1:10 Operator: BMM
Run Time: 07/10/92 20:40:23
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	16.603	L-.00508	.06675	.21829	L-.00005	.00629	5.6737
SDev	.034	.00015	.00330	.00015	.00006	.00032	.0006
%RSD	.20183	2.9471	4.9379	.06856	124.83	5.0399	.01144
#1	16.579	L-.00519	.06908	.21839	L-.00001	.00607	5.6732
#2	16.626	L-.00498	.06441	.21818	L-.00010	.00652	5.6741
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05315	.03056	.18952	25.591	L27.582	.23528	7.2350
SDev	.00064	.00036	.00039	.018	.180	.01066	.0185
%RSD	1.1974	1.1607	.20493	.07207	.65403	4.5301	.25573
#1	.05360	.03030	.18979	25.604	L27.455	.22775	7.2481
#2	.05270	.03081	.18924	25.578	L27.710	.24282	7.2220
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.83937	.02991	.03185	4.4678	L.00444	.45046	L.00209
SDev	.00073	.00156	.00107	.0071	.01320	.00651	.00130
%RSD	.08668	5.2246	3.3645	.15832	297.31	1.4440	62.291
#1	.83989	.03101	.03109	4.4628	L-.00490	.44586	L.00117
#2	.83886	.02880	.03261	4.4728	L.01378	.45506	L.00301
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0551	L-.34443	.02321	.56915	.03527	.54014	L8.962
SDev	.0084	.01709	.00272	.00198	.00008	.00012	.011
%RSD	.79272	4.9615	11.701	.34884	.23231	.02270	.1212
#1	1.0492	L-.33234	.02513	.57055	.03533	.54005	L8.954
#2	1.0610	L-.35651	.02129	.56775	.03521	.54023	L8.970
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-594

000278

Method: RASI_ICP Sample Name: 92-06-178-21A 1:10 Operator: BMM
Run Time: 07/10/92 20:44:29
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	16.896	L-.01894	.15201	.12694	.00125	.10738	4.5226
SDev	.099	.00062	.01353	.00082	.00014	.00061	.0015
%RSD	.58623	3.2653	8.9029	.64287	11.388	.56883	.03263
#1	16.826	L-.01938	.16158	.12636	.00135	.10694	4.5216
#2	16.966	L-.01851	.14244	.12752	.00115	.10781	4.5237
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03301	.03062	.13761	26.149	L27.710	1.1523	7.4660
SDev	.00611	.00038	.00195	.136	2.968	.0060	.0232
%RSD	18.508	1.2341	1.4155	.52173	10.711	.52356	.31129
#1	.03733	.03089	.13898	26.053	L29.809	1.1566	7.4495
#2	.02869	.03035	.13623	26.245	L25.611	1.1480	7.4824
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.83350	.01316	.03116	4.5238	L.00435	.38604	L-.00035
SDev	.00413	.00115	.00040	.0071	.00042	.01605	.00192
%RSD	.49554	8.7734	1.2681	.15637	9.7507	4.1568	550.46
#1	.83058	.01397	.03088	4.5188	L.00405	.39738	L.00101
#2	.83642	.01234	.03144	4.5288	L.00465	.37469	L-.00171
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.91195	L-.35251	L.01662	.43490	.03357	.45852	9.040
SDev	.01673	.09462	.00999	.01612	.00244	.00051	.068
%RSD	1.8343	26.841	60.074	3.7064	7.2791	.11023	.7545
#1	.90012	L-.28561	.02369	.44629	.03530	.45816	L8.992
#2	.92378	L-.41942	L.00956	.42350	.03184	.45888	9.088
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000279

Method: RASI_ICP Sample Name: 92-06-178-22A 1:10 Operator: BMM
Run Time: 07/10/92 20:48:35
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.10654	L.00809	L.01286	.00194	L-.00074	.01384	.10155
SDev	.00077	.00721	.00238	.00037	.00013	.00010	.00481
%RSD	.72743	89.135	18.489	19.170	17.463	.68926	4.7320
#1	.10709	L.00299	L.01454	.00168	L-.00065	.01377	.09815
#2	.10599	L.01319	L.01118	.00221	L-.00083	.01391	.10495
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05046	.00749	.03925	.17550	L-.05283	.05889	.03684
SDev	.00291	.00361	.00117	.01104	.65509	.00497	.00068
%RSD	5.7574	48.185	2.9900	6.2905	1239.9	8.4466	1.8348
#1	.05252	.00494	.03842	.18330	L-.51605	.05538	.03732
#2	.04841	.01005	.04008	.16769	L.41038	.06241	.03637
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02060	.00432	L.00360	.07203	L.00199	1.4181	L.00272
SDev	.00024	.00194	.00166	.00990	.00342	.0224	.00213
%RSD	1.1882	44.943	46.146	13.749	171.77	1.5808	78.369
#1	.02077	L.00295	L.00243	.06503	L-.00043	1.4023	L.00422
#2	.02042	.00570	L.00478	.07903	L.00441	1.4340	L.00121
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.10527	L-.31565	.06017	L-.00481	L.00091	.17934	9.032
SDev	.01338	.03530	.00619	.00400	.00153	.00012	.038
%RSD	12.712	11.185	10.288	83.122	168.77	.06476	.4166
#1	L.09581	L-.34061	.05579	L-.00198	L-.00018	.17926	9.005
#2	L.11473	L-.29069	.06454	L-.00764	L.00199	.17943	9.058
Errors	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-596

Method: RASI_ICP Sample Name: 92-06-178-23A 1:10 Operator: BMM
Run Time: 07/10/92 20:52:41
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.34670	.45121	L.00544	.20942	L-.00075	.02119	.30482
SDev	.00654	.01063	.00880	.00104	.00007	.00009	.00629
%RSD	1.8869	2.3551	161.66	.49802	9.9356	.40096	2.0642
#1	.35132	.45873	L.01166	.21015	L-.00069	.02113	.30927
#2	.34207	.44370	L-.00078	.20868	L-.00080	.02125	.30037
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.28411	.01125	.06156	.32411	L.99005	.09335	.05202
SDev	.00272	.00395	.00155	.01670	1.1063	.00123	.00686
%RSD	.95824	35.077	2.5236	5.1534	111.75	1.3147	13.183
#1	.28603	.01404	.06266	.33592	L1.7724	.09248	.05687
#2	.28218	.00846	.06046	.31230	L.20775	.09421	.04717
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02010	.00876	.00802	.13605	L-.00881	1.2930	L.00234
SDev	.00016	.00273	.00054	.00142	.00242	.0029	.00180
%RSD	.81563	31.158	6.7047	1.0399	27.525	.22122	77.118
#1	.02022	.01069	.00840	.13505	L-.00709	1.2910	L.00362
#2	.01999	.00683	.00764	.13705	L-.01052	1.2950	L.00106
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.43882	L-.35098	.06427	.07583	L.00097	.32020	9.024
SDev	.00335	.04730	.00541	.01000	.00128	.00175	.050
%RSD	.76238	13.476	8.4183	13.186	132.84	.54690	.5574
#1	.43646	L-.31754	.06045	.08290	L.00187	.32143	9.059
#2	.44119	L-.38443	.06810	.06876	L.00006	.31896	L8.988
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-597

Method: RASI_ICP Sample Name: 92-06-178-24A 1:10 Operator: BMM
Run Time: 07/10/92 20:56:48
C ent:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.33629	.46534	L.00223	.20784	L-.00074	.02376	.35798
SDev	.00071	.00487	.00489	.00030	.00007	.00022	.01216
%RSD	.21161	1.0471	219.83	.14348	9.4332	.90979	3.3976
#1	.33579	.46879	L-.00123	.20805	L-.00069	.02361	.34938
#2	.33680	.46190	L.00569	.20763	L-.00079	.02391	.36658
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.30564	.01228	.06491	.29548	L-.07543	.10570	.04624
SDev	.00256	.00109	.00000	.00210	.62077	.01245	.00411
%RSD	.83901	8.9084	.00627	.71186	823.00	11.780	8.8950
#1	.30745	.01150	.06491	.29400	L-.51438	.09689	.04333
#2	.30383	.01305	.06492	.29697	L.36352	.11450	.04915
rors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
igh	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02044	.00545	.00539	.17107	L-.00221	1.2959	L.00209
SDev	.00064	.00039	.00142	.04527	.00147	.0036	.00310
%RSD	3.1515	7.1401	26.319	26.465	66.289	.27660	148.72
#1	.01999	.00518	L.00439	.13906	L-.00118	1.2934	L-.00011
#2	.02090	.00573	.00639	.20308	L-.00325	1.2984	L.00428
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.46840	L-.38508	.07118	L.01923	L.00051	.31406	9.153
SDev	.02509	.05534	.00657	.00602	.00064	.00012	.017
%RSD	5.3569	14.371	9.2282	31.332	124.01	.03850	.1824
#1	.45065	L-.34595	.06653	L.02349	L.00006	.31398	9.165
#2	.48614	L-.42421	.07582	L.01497	L.00097	.31415	9.142
rors	LC Pass	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC Pass
igh	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-598

000282

Method: RASI_ICP Sample Name: 92-06-178-25A 1:10 Operator: BMM
Run Time: 07/10/92 21:00:53
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.25944	L.00315	L.00150	.12463	L-.00077	.00807	.64057
SDev	.00581	.00418	.00314	.00127	.00005	.00015	.01112
%RSD	2.2378	132.76	208.52	1.0166	6.0568	1.9207	1.7362
#1	.25534	L.00610	L-.00071	.12373	L-.00080	.00796	.63271
#2	.26355	L.00019	L.00372	.12552	L-.00073	.00818	.64844
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.06758	.01083	.23487	.60855	L.72884	.14512	.05605
SDev	.00177	.00109	.00196	.00678	.72806	.00933	.00480
%RSD	2.6173	10.025	.83430	1.1136	99.893	6.4271	8.5608
#1	.06633	.01006	.23349	.60376	L1.2437	.15171	.05944
#2	.06884	.01159	.23626	.61334	L.21402	.13852	.05266
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02542	.01173	.00615	.12605	L.02351	.62309	L.00161
SDev	.00024	.00039	.00171	.02122	.00782	.00939	.00065
%RSD	.95472	3.3520	27.797	16.836	33.262	1.5077	40.630
#1	.02525	.01145	.00736	.14106	L.02904	.62973	L.00207
#2	.02559	.01201	L.00494	.11104	L.01798	.61645	L.00115
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.37850	L-.31377	.07826	L.00489	L.00100	.64440	9.012
SDev	.00836	.01410	.00311	.01001	.00053	.00414	.052
%RSD	2.2097	4.4930	3.9745	204.72	53.018	.64301	.5760
#1	.38442	L-.32374	.07606	L.01196	L.00138	.64147	L8.975
#2	.37259	L-.30380	.08046	L-.00219	L.00063	.64733	9.048
Errors	LC Pass	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

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Method: RASI_ICP Sample Name: 92-06-178-26A 1:10 Operator: BMM
Run Time: 07/10/92 21:04:59
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05097	L-.00836	L.00441	.01496	L-.00078	.00550	.20200
SDev	.00513	.00787	.00361	.00015	.00005	.00019	.00143
%RSD	10.066	94.186	81.782	.99328	6.1899	3.4306	.70955
#1	.05460	L-.00279	L.00696	.01507	L-.00082	.00563	.20301
#2	.04734	L-.01393	L.00186	.01486	L-.00075	.00536	.20098
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03613	.00646	.08319	.14469	L.41427	.04069	L.00920
SDev	.00129	.00069	.00078	.00198	.33414	.00061	.01782
%RSD	3.5682	10.700	.93377	1.3721	80.657	1.4986	193.71
#1	.03704	.00597	.08374	.14609	L.65054	.04026	.02180
#2	.03522	.00694	.08264	.14328	L.17800	.04112	L-.00340
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01238	L-.00068	L.00142	.05402	L-.00232	.51657	L.00225
SDev	.00009	.00078	.00190	.00424	.00708	.01161	.00049
%RSD	.68461	115.44	134.47	7.8567	305.34	2.2483	21.642
#1	.01232	L-.00123	L.00276	.05702	L.00269	.52478	L.00190
#2	.01244	L-.00012	L.00007	.05102	L-.00733	.50835	L.00259
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.11710	L-.31786	.05059	L-.00744	L.00052	.24812	9.064
SDev	.00335	.01007	.01430	.00800	.00033	.00012	.025
%RSD	2.8570	3.1682	28.269	107.60	64.355	.04700	.2708
#1	L.11473	L-.32498	.06070	L-.00178	L.00028	.24820	9.046
#2	L.11946	L-.31074	.04048	L-.01309	L.00075	.24804	9.081
Errors	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000284

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 21:09:07
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5417	-.00045	10.129	.98448	.97383	2.4924	2.4704
SDev	.0037	.00484	.011	.00179	.00054	.0038	.0027
%RSD	.14555	1071.2	.10430	.18169	.05540	.15162	.11012
#1	2.5443	-.00387	10.122	.98321	.97345	2.4898	2.4685
#2	2.5391	.00297	10.137	.98574	.97421	2.4951	2.4724
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5615	2.4835	2.5398	2.4891	Q1.6450	5.0260	2.5126
SDev	.0059	.0058	.0000	.0056	.1212	.0093	.0144
%RSD	.23142	.23212	.00001	.22584	7.3692	.18600	.57240
#1	2.5573	2.4795	2.5398	2.4852	Q1.7307	5.0193	2.5228
#2	2.5657	2.4876	2.5398	2.4931	Q1.5593	5.0326	2.5025
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.99454	-.00586	2.4674	5.0480	10.230	.03250	2.5787
SDev	.00072	.00078	.0030	.0071	.015	.00443	.0056
%RSD	.07290	13.274	.12100	.14013	.14800	13.645	.21536
#1	.99403	-.00641	2.4695	5.0430	10.220	.02936	2.5748
#2	.99505	-.00531	2.4653	5.0530	10.241	.03563	2.5826
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.1050	4.7554	-.01197	-.00440	2.4686	2.5514	9.547
SDev	.0084	.0845	.00387	.00201	.0036	.0024	.006
%RSD	.16384	1.7776	32.313	45.659	.14750	.09391	.0590
#1	5.1109	4.6956	-.01471	-.00298	2.4661	2.5497	9.551
#2	5.0991	4.8151	-.00924	-.00582	2.4712	2.5531	9.543
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

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ethod: RASI_ICP Sample Name: CCVC Operator: BMM
Run Time: 07/10/92 21:13:14
Com nt: IEA, ADMIRAL, DUPONT_CIRC
ode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.514	-.01576	.07762	.00334	-.00410	.00598	24.360
SDev	.086	.00336	.02750	.00081	.00041	.00212	.112
%RSD	.33817	21.318	35.426	24.218	9.8854	35.468	.45826
#1	25.575	-.01813	.09706	.00391	-.00382	.00747	24.439
#2	25.453	-.01338	.05817	.00277	-.00439	.00448	24.281
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	25.000						25.000
Range	10.000						10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00770	24.512	.01818	24.784	Q28.615	.02397	24.973
SDev	.00214	.085	.00120	.111	.789	.00779	.041
%RSD	27.827	.34638	6.5823	.44968	2.7562	32.511	.16260
#1	-.00619	24.572	.01902	24.863	Q28.057	.02949	25.002
#2	-.00922	24.452	.01733	24.705	Q29.172	.01846	24.944
Er rs	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Fail	NOCHECK	QC Pass
Va_ue		25.000		25.000	25.000		25.000
Range		10.000		10.000	10.000		10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.9888	-.00475	-.00029	50.306	.04559	.00897	-.01512
SDev	.0348	.00233	.00277	.231	.03251	.00640	.00112
%RSD	.34830	49.124	941.83	.45841	71.308	71.339	7.3880
#1	10.013	-.00640	.00167	50.469	.06858	.01349	-.01433
#2	9.9642	-.00310	-.00226	50.143	.02260	.00444	-.01591
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	10.000			50.000			
Range	10.000			10.000			

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	50.821	-.15884	.00664	-.02174	24.590	.00472	9.640
SDev	.309	.03017	.00074	.00893	.130	.00250	.064
%RSD	.60893	18.991	11.110	41.092	.52729	52.836	.6679
#1	51.040	-.18017	.00612	-.02806	24.682	.00649	9.685
#2	50.602	-.13751	.00716	-.01542	24.499	.00296	9.594
E: rs	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Va_ue	50.000				25.000		
Range	10.000				10.000		

000286

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 21:17:20
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.08549	10.742	9.6949	.00388	.00408	-.24088	.06420
SDev	.03527	.064	.1167	.00044	.00020	.00238	.02082
%RSD	41.262	.59565	1.2038	11.472	4.9608	.98625	32.423
#1	.11043	10.697	9.6124	.00420	.00422	-.23920	.07892
#2	.06054	10.788	9.7774	.00357	.00393	-.24256	.04948
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00251	.09446	-.00061	.06679	-1.2875	-.03556	.04430
SDev	.00078	.01788	.00168	.02058	.0665	.01067	.02060
%RSD	31.236	18.928	277.11	30.820	5.1675	29.997	46.512
#1	-.00195	.10710	.00058	.08135	-1.2404	-.02802	.05836
#2	-.00306	.08182	-.00179	.05224	-1.3345	-.04310	.02973
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02344	Q11.035	.00252	.18407	9.7008	10.499	.01046
SDev	.00745	.131	.00218	.08064	.1280	.057	.00177
%RSD	31.777	1.1901	86.502	43.810	1.3193	.53838	16.919
#1	.02871	10.942	.00406	.24110	9.6103	10.459	.01171
#2	.01817	Q11.128	.00098	.12705	9.7913	10.539	.00921
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.22947	-.39444	10.141	10.499	.30094	-.00817	9.498
SDev	.04851	.04776	.054	.062	.00918	.00100	.088
%RSD	21.140	12.108	.53348	.59283	3.0490	12.289	.9278
#1	.26377	-.36067	10.103	10.455	.30743	-.00746	9.436
#2	.19516	-.42821	10.179	10.543	.29445	-.00888	9.561
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

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ethod: RASI_ICP Sample Name: CCB Operator: BMM
Run Time: 07/10/92 21:21:29
Co nt: IEA, ADMIRAL, DUPONT_CIRC
ode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.01671	H.03102	H.03743	.00026	-.00045	-.00004	H.02573
SDev	.00265	.00612	.00406	.00007	.00012	.00033	.00179
%RSD	15.838	19.726	10.851	28.608	26.526	914.81	6.9753
#1	H.01858	H.03535	H.04030	.00021	-.00037	.00020	H.02700
#2	.01484	H.02670	H.03456	.00031	L-.00054	-.00027	H.02447
Errors	LC High	LC High	LC High	LC Pass	LC Pass	LC Pass	LC High
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00021	H.01965	-.00309	H.01161	L-.21978	.00401	.00683
SDev	.00016	.00507	.00079	.00669	.21286	.00248	.00481
%RSD	76.966	25.768	25.702	57.583	96.855	61.868	70.421
#1	-.00032	H.02324	-.00365	H.01634	L-.06926	.00226	.01023
#2	-.00009	H.01607	-.00253	H.00688	L-.37029	.00577	.00343
F ors	LC Pass	LC High	LC Pass	LC High	LC Low	LC Pass	LC Pass
H gh	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.01340

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.00678	H.06198	-.00173	H.05402	H.05728	H.11937	.00070
SDev	.00234	.02143	.00018	.00707	.01366	.03188	.00065
%RSD	34.465	34.574	10.669	13.095	23.846	26.707	93.011
#1	H.00843	H.07713	-.00160	H.05902	H.06694	H.14191	.00024
#2	H.00513	H.04683	-.00186	.04902	H.04762	H.09683	.00116
Errors	LC High	LC High	LC Pass	LC High	LC High	LC High	LC Pass
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.06979	L-.24753	H.03253	.02530	H.01825	L-.00203	8.904
SDev	.01004	.04736	.01354	.00194	.00428	.00063	.056
%RSD	14.382	19.133	41.621	7.6650	23.431	31.085	.6305
#1	.07688	L-.28102	H.04210	.02667	H.02128	L-.00158	8.864
#2	.06269	L-.21404	H.02295	.02393	H.01523	L-.00247	8.944
F ors	LC Pass	LC Low	LC High	LC Pass	LC High	LC Low	NOCHECK
H gh	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

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Method: RASI_ICP Sample Name: 92-06-178-27A 1:10 Operator: BMM
Run Time: 07/10/92 21:25:35
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.14793	L.01015	L.01693	.07045	L-.00051	.00805	.46525
SDev	.00576	.00117	.00155	.00022	.00018	.00024	.00318
%RSD	3.8953	11.522	9.1427	.31768	35.085	2.9464	.68309
#1	.15200	L.00933	L.01802	.07029	L-.00038	.00822	.46301
#2	.14385	L.01098	L.01584	.07061	L-.00063	.00789	.46750
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05167	.02508	.16412	.43530	L.00631	.10654	.04451
SDev	.00016	.00253	.00117	.00193	.32190	.02119	.00069
%RSD	.31216	10.078	.71359	.44337	5102.7	19.887	1.5548
#1	.05179	.02686	.16495	.43394	L-.22131	.12152	.04500
#2	.05156	.02329	.16329	.43667	L.23393	.09156	.04402
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02295	.03292	L.00475	.11305	L.02478	.69613	L.00085
SDev	.00032	.00468	.00186	.00283	.00268	.00145	.00033
%RSD	1.4005	14.207	39.219	2.5030	10.828	.20822	38.526
#1	.02318	.03623	.00607	.11104	L.02667	.69716	L.00062
#2	.02273	.02961	L.00344	.11505	L.02288	.69511	L.00108
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.25667	L-.31944	.07741	L.01064	.00843	.44153	9.090
SDev	.00000	.02625	.00424	.00202	.00104	.00152	.002
%RSD	.00000	8.2185	5.4763	18.947	12.394	.34368	.0221
#1	.25667	L-.30088	.08041	L.00922	.00917	.44046	9.088
#2	.25667	L-.33801	.07442	L.01207	.00769	.44261	9.091
Errors	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-605

Method: RASI_ICP Sample Name: 92-06-178-27AMS 1:10 Operator: BMM
Run Time: 07/10/92 21:29:41
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.45067	.39465	.35575	.28197	.16772	.17301	.78808
SDev	.00151	.00288	.01264	.00156	.00055	.00018	.00043
%RSD	.33562	.73034	3.5536	.55508	.32606	.10514	.05476
#1	.44960	.39261	.34681	.28308	.16811	.17314	.78838
#2	.45174	.39668	.36469	.28086	.16734	.17288	.78777
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.24227	.19401	.39596	.91073	L.78936	.52646	.24959
SDev	.00047	.00216	.00039	.00105	.66605	.00137	.00480
%RSD	.19446	1.1133	.09816	.11484	84.379	.35495	1.9249
#1	.24194	.19249	.39623	.91147	L1.2603	.52513	.24620
#2	.24261	.19554	.39568	.90999	L.31839	.52778	.25299
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.20459	.41603	.17714	4.4588	.36299	.65489	.11124
SDev	.00008	.00233	.00152	.0141	.01515	.02028	.00065
%RSD	.03877	.56093	.85961	.31730	4.1731	3.0969	.58852
#1	.20454	.41768	.17822	4.4688	.35228	.66923	.11078
#2	.20465	.41438	.17607	4.4488	.37370	.64055	.11171
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.68367	L.00334	.43822	.39856	.18376	.74160	9.132
SDev	.03178	.07652	.00078	.00200	.00217	.00024	.045
%RSD	4.6488	2289.0	.17721	.50129	1.1814	.03303	.4958
#1	.66119	L-.05076	.43767	.39997	.18530	.74177	9.164
#2	.70614	L.05745	.43877	.39715	.18223	.74143	9.100
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: 92-06-178-27AMSD1:10 Operator: BMM
Run Time: 07/10/92 21:33:47
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.54395	.41715	.37753	.34152	.18067	.18566	.97858
SDev	.00584	.00233	.00697	.00052	.00024	.00034	.00337
%RSD	1.0743	.55932	1.8471	.15284	.13464	.18475	.34471
#1	.53982	.41880	.38246	.34189	.18050	.18542	.98097
#2	.54808	.41550	.37260	.34115	.18084	.18590	.97620
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.26826	.20402	.46529	1.1338	L.58728	.59673	.27330
SDev	.00257	.00037	.00000	.0000	.23819	.00998	.00549
%RSD	.95911	.18033	.00005	.00231	40.558	1.6726	2.0078
#1	.26644	.20376	.46529	1.1339	L.75571	.58967	.26942
#2	.27008	.20428	.46529	1.1338	L.41886	.60379	.27718
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.22257	.44967	.19248	4.7789	.38185	.66551	.11525
SDev	.00032	.00078	.00112	.0368	.00977	.00004	.00033
%RSD	.14515	.17328	.58317	.76972	2.5592	.00573	.28296
#1	.22280	.45022	.19169	4.8049	.38876	.66549	.11502
#2	.22234	.44912	.19327	4.7529	.37494	.66554	.11548
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.78776	L.02201	.47949	.43055	.19732	.88643	L8.999
SDev	.00836	.01615	.00424	.00001	.00056	.00201	.004
%RSD	1.0617	73.410	.88511	.00109	.28602	.22628	.0425
#1	.79367	L.01058	.47649	.43055	.19772	.88501	L8.996
#2	.78184	L.03343	.48249	.43056	.19692	.88785	9.002
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-607

000291

Method: RASI_ICP Sample Name: 92-06-178-28A 1:10 Operator: BMM
Run Time: 07/10/92 21:37:53
C. ent:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.39005	L.01582	L.00655	.19434	L.00028	.01336	.92393
SDev	.00147	.00231	.00220	.00030	.00006	.00066	.00924
%RSD	.37674	14.570	33.651	.15344	21.067	4.9178	1.0001
#1	.38901	L.01745	L.00499	.19455	L.00032	.01382	.93047
#2	.39109	L.01419	L.00811	.19413	L.00023	.01289	.91740
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.09102	.02663	.34673	1.3499	L1.6846	.26168	.09841
SDev	.00001	.00036	.00156	.0023	.3990	.00436	.00069
%RSD	.00512	1.3580	.45104	.16990	23.686	1.6646	.69686
#1	.09102	.02638	.34784	1.3482	L1.9668	.26476	.09890
#2	.09102	.02689	.34563	1.3515	L1.4025	.25860	.09793
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03627	.03000	.01356	.23209	L.01964	.52453	L.00510
SDev	.00016	.00117	.00108	.00424	.00782	.01014	.00032
%RSD	.44315	3.9071	7.9528	1.8287	39.786	1.9341	6.3754
#1	.03615	.03083	.01432	.23509	L.01412	.51735	L.00533
#2	.03638	.02917	.01279	.22909	L.02517	.53170	L.00487
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.58786	L-.29456	.09835	L.01586	.00548	.87481	9.034
SDev	.00669	.02320	.00116	.00200	.00033	.00026	.031
%RSD	1.1382	7.8751	1.1785	12.618	5.9784	.02975	.3474
#1	.59259	L-.27816	.09753	L.01444	.00525	.87463	9.012
#2	.58313	L-.31096	.09917	L.01727	.00572	.87500	9.057
Errors	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-608

Method: RASI_ICP Sample Name: 92-06-178-22A Operator: BMM **000292**
Run Time: 07/10/92 21:47:34
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.52749	.13078	.02977	.00598	L-.00100	.11595	.52455
SDev	.01963	.00523	.00767	.00074	.00006	.00009	.02292
%RSD	3.7209	4.0012	25.763	12.456	6.2260	.07646	4.3698
#1	.54137	.12708	L.02434	.00650	L-.00095	.11588	.54076
#2	.51362	.13448	.03519	.00545	L-.00104	.11601	.50834
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.53813	.01805	.40137	.77204	L.61678	.48088	.10848
SDev	.00678	.00104	.00821	.00785	.56191	.00371	.02193
%RSD	1.2598	5.7592	2.0462	1.0172	91.104	.77068	20.213
#1	.53334	.01879	.39556	.77760	L.21945	.47826	.12399
#2	.54293	.01732	.40717	.76649	L1.0141	.48350	.09298
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.17637	.04217	.03105	.05002	.03152	13.666	L.00017
SDev	.00233	.00169	.00068	.08913	.00343	.472	.00441
%RSD	1.3231	3.9951	2.1942	178.19	10.877	3.4528	2537.5
#1	.17472	.04336	.03057	.11305	L.02909	13.333	L.00329
#2	.17802	.04098	.03153	L-.01301	.03394	14.000	L-.00295
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	T13775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.16678	L-.32118	.65908	L.02340	L.00128	1.6473	10.22
SDev	.02007	.05940	.02049	.00207	.00173	.0158	.21
%RSD	12.036	18.496	3.1092	8.8363	134.97	.95893	2.081
#1	L.18097	L-.27917	.64459	L.02486	L.00251	1.6361	10.07
#2	L.15258	L-.36318	.67357	L.02194	L.00006	1.6584	10.37
Errors	LC Low	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-609

000293

Method: RASI_ICP Sample Name: 92-06-178-23A Operator: BMM
Run Time: 07/10/92 21:51:41
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.1585	4.4057	.02588	2.1121	L-.00067	.19544	2.5476
SDev	.0152	.0017	.00672	.0053	.00009	.00044	.0065
%RSD	.48266	.03824	25.975	.25052	13.879	.22556	.25644
#1	3.1477	4.4045	L.02113	2.1083	L-.00060	.19576	2.5522
#2	3.1692	4.4069	.03063	2.1158	L-.00074	.19513	2.5430
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.7691	.04031	.61258	2.6209	L3.3065	.96222	.33365
SDev	.0068	.00110	.00038	.0031	.4973	.01366	.00959
%RSD	.24483	2.7282	.06167	.12002	15.040	1.4192	2.8746
#1	2.7643	.03953	.61285	2.6187	L2.9548	.97188	.34043
#2	2.7739	.04109	.61231	2.6231	L3.6581	.95256	.32687
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.18778	.08026	.07366	.57023	L.03039	12.460	L-.00164
SDev	.00008	.00040	.00098	.00142	.01490	.056	.00033
%RSD	.04261	.50326	1.3262	.24811	49.044	.44864	20.345
#1	.18772	.08054	.07435	.56923	.04092	12.420	L-.00140
#2	.18783	.07997	.07297	.57123	L.01985	12.499	L-.00187
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Ti3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.3675	L-.37539	.67439	.36249	.00478	2.9863	10.06
SDev	.0067	.06642	.01125	.02201	.00027	.0084	.03
%RSD	.19870	17.694	1.6683	6.0722	5.5813	.28194	.2881
#1	3.3722	L-.32842	.66644	.37805	.00497	2.9803	10.04
#2	3.3627	L-.42236	.68235	.34693	.00459	2.9922	10.08
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-610

000294

Method: RASI_ICP Sample Name: 92-06-178-24A Operator: BMM
Run Time: 07/10/92 21:55:47
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.2310	4.6367	.03406	2.0888	L-.00093	.21043	2.8061
SDev	.0145	.0255	.00212	.0203	.00007	.00136	.0197
%RSD	.45029	.54969	6.2205	.97409	7.4558	.64441	.70377
#1	3.2412	4.6547	.03556	2.1031	L-.00098	.21139	2.8201
#2	3.2207	4.6187	.03256	2.0744	L-.00088	.20947	2.7922
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.0202	.03063	.65521	2.5857	L3.2806	1.0105	.32323
SDev	.0177	.00037	.00508	.0161	.2325	.0049	.00685
%RSD	.58602	1.1982	.77591	.62364	7.0883	.48642	2.1182
#1	3.0327	.03037	.65881	2.5971	L3.1162	1.0070	.31838
#2	3.0077	.03089	.65162	2.5743	L3.4451	1.0139	.32807
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.19457	.07963	.05987	.61525	.03375	12.674	L-.00052
SDev	.00129	.00040	.00152	.03961	.01221	.046	.00065
%RSD	.66428	.50429	2.5309	6.4387	36.183	.36384	125.56
#1	.19548	.07992	.05880	.58723	.04238	12.641	L-.00097
#2	.19365	.07935	.06094	.64326	L.02511	12.707	L-.00006
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.7519	L-.37231	.69711	.24348	.00451	2.9273	10.17
SDev	.0151	.01906	.00112	.00603	.00016	.0131	.11
%RSD	.40126	5.1202	.16114	2.4783	3.5164	.44579	1.071
#1	3.7625	L-.35883	.69631	.23921	.00440	2.9365	10.24
#2	3.7412	L-.38579	.69790	.24775	.00462	2.9180	10.09
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000295

Method: RASI_ICP Sample Name: 92-06-178-25A Operator: BMM
Run Time: 07/10/92 21:59:54
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5507	.11491	L.00125	1.2518	L-.00085	.06531	5.7715
SDev	.0051	.00212	.00298	.0042	.00007	.00055	.0101
%RSD	.19971	1.8422	238.09	.33935	7.8287	.83981	.17503
#1	2.5543	.11341	L.00336	1.2548	L-.00090	.06570	5.7786
#2	2.5471	.11641	L-.00086	1.2488	L-.00080	.06492	5.7643
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.67945	.05170	2.3398	5.6227	L6.0132	1.4732	.54898
SDev	.00097	.00178	.0027	.0104	.7824	.0131	.00205
%RSD	.14247	3.4335	.11682	.18577	13.012	.88727	.37434
#1	.67876	.05295	2.3379	5.6301	L5.4599	1.4639	.55043
#2	.68013	.05044	2.3417	5.6153	L6.5665	1.4824	.54753
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.24953	.14564	.05843	.48719	L.01944	6.2289	L.00360
SDev	.00065	.00043	.00034	.01132	.01076	.1543	.00147
%RSD	.26059	.29460	.58290	2.3231	55.327	2.4778	40.910
#1	.24999	.14534	.05867	.49520	L.01184	6.3380	L.00464
#2	.24907	.14594	.05819	.47919	L.02705	6.1198	L.00256
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.9074	L-.39446	.75036	.18345	.00784	6.0386	9.980
SDev	.0050	.00607	.01197	.00402	.00007	.0154	.020
%RSD	.17261	1.5382	1.5952	2.1912	.89870	.25570	.1976
#1	2.9109	L-.39017	.74189	.18060	.00789	6.0277	9.994
#2	2.9038	L-.39875	.75882	.18629	.00779	6.0495	9.966
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 22:04:00
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5840	.00812	10.045	.99286	.96061	2.4649	2.5141
SDev	.0296	.00305	.068	.01215	.00768	.0231	.0262
%RSD	1.1453	37.599	.67804	1.2233	.79914	.93801	1.0430
#1	2.6050	.00596	10.093	1.0014	.96604	2.4812	2.5326
#2	2.5631	.01028	9.9966	.98427	.95518	2.4485	2.4955
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5385	2.4680	2.5409	2.4872	Q1.5000	5.0423	2.5334
SDev	.0233	.0263	.0211	.0306	.0642	.0574	.0398
%RSD	.91659	1.0639	.83093	1.2286	4.2805	1.1386	1.5724
#1	2.5550	2.4866	2.5558	2.5088	Q1.4546	5.0829	2.5616
#2	2.5221	2.4495	2.5260	2.4656	Q1.5454	5.0017	2.5052
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.99043	-.00435	2.4491	5.0810	10.242	.57635	2.6017
SDev	.01089	.00081	.0236	.0085	.115	.09889	.0230
%RSD	1.0996	18.581	.96315	.16706	1.1233	17.158	.88541
#1	.99813	-.00492	2.4657	5.0870	10.324	.64628	2.6180
#2	.98273	-.00378	2.4324	5.0750	10.161	.50643	2.5854
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.1926	4.7620	-.00676	-.01838	2.4559	2.5821	9.323
SDev	.0552	.1014	.00660	.00638	.0196	.0340	.084
%RSD	1.0631	2.1292	97.542	34.700	.79913	1.3173	.8957
#1	5.2316	4.8337	-.01143	-.02289	2.4698	2.6061	9.382
#2	5.1535	4.6903	-.00210	-.01387	2.4420	2.5580	9.264
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

ethod: RASI_ICP Sample Name: CCVC Operator: BMM
un Time: 07/10/92 22:08:06
Cor nt: IEA, ADMIRAL, DUPONT_CIRC
ode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.323	-.02341	.06659	.00405	-.00485	.00547	23.937
SDev	.017	.00064	.01895	.00089	.00013	.00207	.074
%RSD	.06592	2.7251	28.459	21.889	2.7334	37.797	.30755
#1	25.335	-.02296	.07999	.00468	-.00475	.00693	23.989
#2	25.311	-.02386	.05319	.00343	-.00494	.00401	23.885
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	25.000						25.000
Range	10.000						10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00584	24.116	.01949	24.414	Q28.304	.02160	24.762
SDev	.00394	.067	.00236	.088	1.344	.00110	.033
%RSD	67.477	.27591	12.117	.36104	4.7469	5.0685	.13340
#1	-.00306	24.163	.02116	24.477	27.354	.02083	24.785
#2	-.00863	24.069	.01782	24.352	Q29.254	.02238	24.738
Errors	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Fail	NOCHECK	QC Pass
Value		25.000		25.000	25.000		25.000
Range		10.000		10.000	10.000		10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.8476	-.00349	-.00259	49.895	.03094	.30139	-.01566
SDev	.0276	.00039	.00269	.204	.01692	.03111	.00618
%RSD	.28035	11.053	104.05	.40831	54.687	10.321	39.480
#1	9.8672	-.00322	-.00068	50.039	.04290	.32338	-.01129
#2	9.8281	-.00377	-.00449	49.751	.01897	.27939	-.02004
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	10.000			50.000			
Range	10.000			10.000			

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	50.490	-.11239	.00077	-.01235	24.269	.00713	9.468
SDev	.340	.06150	.00963	.00474	.105	.00337	.045
%RSD	.67255	54.719	1243.8	38.404	.43313	47.303	.4781
#1	50.730	-.06890	-.00604	-.01570	24.344	.00952	9.500
#2	50.250	-.15587	.00759	-.00899	24.195	.00475	9.436
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Value	50.000				25.000		
Range	10.000				10.000		

000298

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 22:12:13
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.07680	Q11.235	10.124	.00467	.00388	-.24882	.05718
SDev	.01620	.048	.028	.00023	.00001	.00025	.00714
%RSD	21.096	.42438	.27789	4.8345	.15735	.10189	12.494
#1	.08826	Q11.269	10.144	.00451	.00387	-.24864	.06223
#2	.06535	Q11.202	10.105	.00483	.00388	-.24900	.05212
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00335	.08245	-.00027	.05605	-1.2763	-.03908	.02876
SDev	.00104	.01048	.00037	.01109	.2629	.00194	.00825
%RSD	31.096	12.714	136.66	19.789	20.601	4.9660	28.679
#1	-.00409	.08987	-.00054	.06389	-1.4622	-.03771	.03459
#2	-.00262	.07504	-.00001	.04821	-1.0904	-.04045	.02292
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01809	Q11.562	.00143	.17707	10.164	Q15.408	.00817
SDev	.00460	.001	.00127	.01698	.001	.768	.00002
%RSD	25.409	.01186	89.346	9.5879	.00511	4.9859	.24201
#1	.02134	Q11.563	.00052	.18908	10.163	Q14.864	.00815
#2	.01484	Q11.561	.00233	.16507	10.164	Q15.951	.00818
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Fail	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.18097	-.42379	10.619	10.834	.31087	-.00462	9.912
SDev	.01673	.04127	.024	.024	.03166	.00075	.053
%RSD	9.2432	9.7379	.23004	.22272	10.183	16.189	.5298
#1	.19280	-.39461	10.636	10.817	.33326	-.00515	9.949
#2	.16914	-.45297	10.602	10.851	.28849	-.00409	9.874
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 22:19:54
Cc ent: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01823	9.1869	8.2645	.00347	.00274	-.20606	.02298
SDev	.00489	.0423	.0170	.00000	.00025	.00019	.00187
%RSD	26.811	.46028	.20608	.00102	8.9728	.09361	8.1223
#1	.02169	9.1570	8.2765	.00347	.00292	-.20620	.02430
#2	.01478	9.2168	8.2525	.00347	.00257	-.20592	.02166
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00329	.02546	-.00074	.00112	-1.1298	-.03051	-.01741
SDev	.00306	.00282	.00120	.00118	.2056	.00809	.00205
%RSD	92.795	11.096	161.99	105.16	18.195	26.532	11.800
#1	-.00546	.02746	.00011	.00196	-.98446	-.03623	-.01886
#2	-.00113	.02347	-.00159	.00029	-1.2752	-.02478	-.01596
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00181	9.4912	.00051	.05502	8.3382	Q11.283	.00747
SDev	.00042	.0497	.00000	.00000	.0755	.588	.00001
%RSD	22.997	.52397	.20374	.00000	.90519	5.2091	.06528
#1	-.00151	9.4560	.00051	.05502	8.2848	10.868	.00746
#2	-.00210	9.5264	.00051	.05502	8.3915	Q11.699	.00747
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Fail	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.07807	-.40314	Q8.7234	Q8.9260	.20832	-.00409	9.712
SDev	.01171	.00410	.0263	.0020	.00056	.00025	.007
%RSD	14.999	1.0170	.30172	.02229	.26684	6.0450	.0704
#1	.06979	-.40024	Q8.7048	Q8.9274	.20792	-.00391	9.717
#2	.08635	-.40604	Q8.7420	Q8.9246	.20871	-.00426	9.707
Errors	NOCHECK	NOCHECK	QC Fail	QC Fail	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

Method: RASI_ICP Sample Name: CCB Operator: BMM
Run Time: 07/10/92 22:24:04
Comment: IEA, ADMIRAL, DUPONT_CIRC
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00628	H.02078	H.03463	.00032	L-.00062	-.00020	H.01149
SDev	.00048	.00284	.00362	.00000	.00012	.00012	.00027
%RSD	7.6143	13.691	10.463	.00634	18.769	59.307	2.3448
#1	-.00594	H.02279	H.03720	.00032	L-.00054	-.00012	H.01130
#2	-.00661	H.01877	H.03207	.00032	L-.00071	-.00029	H.01168
Errors	LC Pass	LC High	LC High	LC Pass	LC Low	LC Pass	LC High
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00392	H.00362	-.00446	L-.00666	H.46613	-.00310	-.00920
SDev	.00194	.00036	.00040	.00013	.08108	.00249	.00411
%RSD	49.555	9.9728	9.0008	1.9594	17.394	80.232	44.703
#1	-.00530	H.00388	-.00475	L-.00675	H.52346	-.00134	-.01211
#2	-.00255	H.00337	-.00418	L-.00657	H.40879	-.00486	-.00629
Errors	LC Pass	LC High	LC Pass	LC Low	LC High	LC Pass	LC Pass
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.01340

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H-.00001	H.06264	-.00130	-.03101	H.04281	H.75475	.00104
SDev	.00000	.02256	.00010	.00849	.01367	.18259	.00082
%RSD	8.2801	36.013	7.8264	27.372	31.934	24.192	78.175
#1	H-.00001	H.07859	-.00137	-.03701	H.05247	H.88387	.00162
#2	H-.00001	H.04669	-.00123	-.02501	.03314	H.62564	.00047
Errors	LC High	LC High	LC Pass	LC Pass	LC High	LC High	LC Pass
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04022	L-.26383	H.02925	.01416	H.00174	-.00105	8.908
SDev	.00836	.04231	.00039	.00200	.00123	.00025	.008
%RSD	20.797	16.036	1.3327	14.132	70.609	23.852	.0881
#1	.03430	L-.23392	H.02953	.01274	H.00261	-.00122	8.914
#2	.04613	L-.29375	H.02897	.01557	.00087	-.00087	8.903
Errors	LC Pass	LC Low	LC High	LC Pass	LC High	LC Pass	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

000301

Method: RASI_ICP Sample Name: 92-06-178-26A Operator: BMM
Run Time: 07/10/92 22:28:11
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.43172	L.01416	L.01976	.13536	L-.00075	.04348	1.7345
SDev	.00367	.01163	.00380	.00052	.00007	.00086	.0002
%RSD	.85129	82.143	19.217	.38547	8.8328	1.9743	.01107
#1	.42913	L.02238	L.02245	.13573	L-.00071	.04409	1.7347
#2	.43432	L.00593	L.01708	.13499	L-.00080	.04288	1.7344
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.36862	.02551	.80695	1.3415	L1.5937	.41338	.10266
SDev	.00175	.00108	.00195	.0039	.0244	.00499	.00068
%RSD	.47589	4.2381	.24160	.29004	1.5311	1.2065	.66493
#1	.36986	.02627	.80833	1.3443	L1.6109	.40985	.10218
#2	.36738	.02474	.80557	1.3388	L1.5764	.41690	.10314
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.12464	.03676	.01969	.09304	L.02263	7.1991	L-.00042
SDev	.00089	.00467	.00006	.01981	.02076	.0384	.00196
%RSD	.71096	12.693	.28281	21.289	91.735	.53391	471.15
#1	.12526	.04006	.01973	.10704	.03731	7.2263	L.00097
#2	.12401	.03347	.01965	.07903	L.00795	7.1719	L-.00181
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.36786	L-.38530	.57419	L.01476	.00335	2.2666	9.859
SDev	.02007	.06443	.00078	.00398	.00002	.0064	.073
%RSD	5.4568	16.723	.13624	26.945	.47811	.28291	.7367
#1	.35366	L-.33973	.57474	L.01758	.00334	2.2621	9.910
#2	.38205	L-.43086	.57363	L.01195	.00337	2.2711	9.808
Errors	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000302

Method: RASI_ICP Sample Name: 92-06-178-27A Operator: BMM
Run Time: 07/10/92 22:32:17
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.4751	.05748	L.00745	.69479	L-.00099	.05733	3.9247
SDev	.0087	.00434	.00226	.00350	.00007	.00074	.0244
%RSD	.59027	7.5450	30.322	.50410	6.7514	1.2835	.62113
#1	1.4689	.06055	L.00904	.69231	L-.00095	.05681	3.9074
#2	1.4813	.05442	L.00585	.69726	L-.00104	.05785	3.9419
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Low	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.54719	.03866	1.6225	4.1991	L4.1463	1.0567	.33180
SDev	.00515	.00073	.0090	.0249	.8760	.0081	.00136
%RSD	.94020	1.8986	.55407	.59342	21.127	.76906	.41091
#1	.54356	.03918	1.6162	4.1815	L3.5268	1.0509	.33083
#2	.55083	.03814	1.6289	4.2167	L4.7657	1.0624	.33276
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.19327	.09970	.04484	.32313	L.02317	6.5791	L.00177
SDev	.00097	.00120	.00092	.01415	.01147	.1101	.00001
%RSD	.50270	1.2030	2.0603	4.3784	49.513	1.6731	.47964
#1	.19259	.09885	.04549	.33313	L.01506	6.6569	L.00176
#2	.19396	.10054	.04419	.31313	.03128	6.5012	L.00178
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.5448	L-.37266	.69290	.08617	.00655	4.1307	10.18
SDev	.0184	.00301	.00657	.00403	.00052	.0241	.06
%RSD	1.1911	.80706	.94806	4.6743	7.9105	.58314	.6383
#1	1.5317	L-.37478	.69754	.08902	.00618	4.1136	10.14
#2	1.5578	L-.37053	.68825	.08332	.00692	4.1477	10.23
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-619

000303

Method: RASI_ICP Sample Name: 92-06-178-27AMS Operator: BMM
Run Time: 07/10/92 22:36:23
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.4848	3.8021	3.3923	2.8579	1.6181	1.6192	7.2466
SDev	.0086	.0070	.0284	.0013	.0015	.0015	.0022
%RSD	.19140	.18481	.83619	.04692	.09582	.09099	.03075
#1	4.4788	3.7972	3.3723	2.8569	1.6192	1.6182	7.2450
#2	4.4909	3.8071	3.4124	2.8588	1.6170	1.6203	7.2481
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.3784	1.7422	3.9400	8.8821	L9.3426	5.0597	2.3564
SDev	.0088	.0043	.0054	.0092	.0865	.0187	.0014
%RSD	.37116	.24914	.13827	.10367	.92630	.36997	.05764
#1	2.3722	1.7392	3.9362	8.8756	L9.4038	5.0465	2.3574
#2	2.3847	1.7453	3.9439	8.8886	L9.2815	5.0730	2.3555
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.0036	4.0957	1.7168	43.462	3.5068	12.177	1.0689
SDev	.0006	.0178	.0020	.006	.0449	.806	.0013
%RSD	.03195	.43339	.11556	.01301	1.2813	6.6228	.12114
#1	2.0031	4.0832	1.7154	43.466	3.4750	12.747	1.0698
#2	2.0040	4.1083	1.7182	43.458	3.5386	11.606	1.0680
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.8609	2.8960	4.2920	3.9459	1.7948	6.9830	H11.62
SDev	.0067	.0725	.0123	.0200	.0025	.0115	.06
%RSD	.11416	2.5030	.28756	.50650	.14105	.16512	.5124
#1	5.8656	2.8448	4.2832	3.9317	1.7930	6.9749	H11.66
#2	5.8561	2.9473	4.3007	3.9600	1.7966	6.9912	H11.58
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: 92-06-178-27AMSD Operator: BMM
Run Time: 07/10/92 22:40:29
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.5283	4.0290	3.6064	3.4576	1.7335	1.7209	9.0211
SDev	.0710	.0088	.0250	.0352	.0154	.0043	.0221
%RSD	1.2839	.21936	.69313	1.0195	.88615	.25194	.24528
#1	5.4781	4.0228	3.5887	3.4327	1.7226	1.7178	9.0055
#2	5.5785	4.0353	3.6241	3.4825	1.7443	1.7239	9.0368
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.6528	1.8716	4.6344	11.017	L11.172	5.7702	2.6906
SDev	.0160	.0152	.0430	.071	.306	.0145	.0192
%RSD	.60401	.81005	.92738	.64122	2.7435	.25158	.71461
#1	2.6414	1.8609	4.6040	10.967	L10.955	5.7600	2.6770
#2	2.6641	1.8823	4.6648	11.067	L11.389	5.7805	2.7042
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo3020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.1731	4.4137	1.8458	46.632	3.7434	9.8092	1.1080
SDev	.0167	.0235	.0108	.515	.0146	.4440	.0077
%RSD	.76853	.53259	.58447	1.1044	.38963	4.5264	.69491
#1	2.1613	4.3971	1.8382	46.268	3.7331	10.123	1.1025
#2	2.1849	4.4303	1.8534	46.996	3.7538	9.4952	1.1134
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.9644	3.3882	4.6243	4.2987	1.9209	8.2626	10.01
SDev	.0585	.1251	.0263	.0175	.0148	.0288	.11
%RSD	.84065	3.6924	.56841	.40752	.77156	.34892	1.082
#1	6.9230	3.2998	4.6057	4.2863	1.9104	8.2422	9.930
#2	7.0058	3.4767	4.6429	4.3111	1.9314	8.2829	10.08
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

Method: RASI_ICP Sample Name: 92-06-178-28A Operator: BMM
Run Time: 07/10/92 22:44:36
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.9730	.18649	L.00187	2.0036	.00345	.09701	8.4455
SDev	.0022	.00385	.01312	.0067	.00074	.00092	.0109
%RSD	.05594	2.0645	700.93	.33480	21.466	.94831	.12895
#1	3.9714	.18921	L.01115	2.0083	.00397	.09766	8.4532
#2	3.9746	.18376	L-.00740	1.9988	.00292	.09636	8.4378
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.90457	.08281	3.5024	13.469	L14.318	2.5131	.91006
SDev	.00050	.00073	.0031	.007	.654	.0093	.00068
%RSD	.05500	.88566	.08907	.05088	4.5646	.37148	.07479
#1	.90422	.08333	3.5046	13.465	L14.780	2.5197	.90958
#2	.90493	.08229	3.5002	13.474	L13.856	2.5065	.91054
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.35225	.24741	.10824	.92037	.03291	11.266	.00848
SDev	.00040	.00569	.00148	.03537	.00489	.591	.00000
%RSD	.11372	2.2998	1.3632	3.8430	14.846	5.2423	.00785
#1	.35254	.25143	.10929	.94538	.03637	11.684	.00848
#2	.35197	.24339	.10720	.89536	L.02946	10.849	.00848
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.6165	L-.37138	.94658	.22545	.01985	8.3399	9.953
SDev	.0033	.05943	.00656	.00799	.00022	.0058	.022
%RSD	.07247	16.002	.69271	3.5431	1.1004	.06947	.2163
#1	4.6142	L-.32936	.95121	.23110	.02000	8.3358	9.968
#2	4.6189	L-.41340	.94194	.21980	.01969	8.3440	9.938
Errors	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

000306

Method: RASI_ICP Sample Name: ICSA Operator: BMM
Run Time: 07/10/92 22:48:43
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	491.79	L-.01111	L-.33295	L-.00150	.00074	L-.00671	H531.56
SDev	5.67	.02299	.02565	.00175	.00041	.00110	5.39
%RSD	1.1523	206.91	7.7044	117.12	55.973	16.340	1.0147
#1	495.79	L.00515	L-.31481	L-.00026	.00103	L-.00593	H535.37
#2	487.78	L-.02737	L-.35109	L-.00274	L.00045	L-.00748	H527.75
Errors	LC Pass	LC Low	LC Low	LC Low	LC Pass	LC Low	LC High
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.05387	L-.00371	.00433	177.33	204.74	.07124	484.37
SDev	.00182	.00363	.00301	1.61	1.21	.02967	5.75
%RSD	3.3719	97.866	69.534	.90853	.59018	41.656	1.1872
#1	L-.05258	L-.00114	.00646	178.47	205.59	.09222	488.43
#2	L-.05515	L-.00628	L.00220	176.19	203.88	.05026	480.30
Errors	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00202	.00657	L-.00975	L.01100	L-.01528	1.4828	L-.00208
SDev	.00043	.00267	.00162	.00283	.02090	.6692	.00183
%RSD	21.508	40.654	16.594	25.713	136.77	45.131	87.993
#1	L-.00171	.00846	L-.00861	L.01301	L-.00050	1.9560	L-.00078
#2	L-.00233	.00468	L-.01089	L.00900	L-.03006	1.0096	L-.00337
Errors	LC Low	LC Pass	LC Low	LC Low	LC Low	LC Pass	LC Low
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.05441	L-.26052	.04537	L-.01548	.01118	.04948	9.505
SDev	.00502	.13203	.01749	.00802	.00045	.00862	.024
%RSD	9.2231	50.680	38.539	51.825	4.0130	17.414	.2498
#1	L.05086	L-.16716	.05774	L-.02115	.01087	.05558	9.522
#2	L.05796	L-.35387	.03301	L-.00981	.01150	.04339	9.488
Errors	LC Low	LC Low	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

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Method: RASI_ICP Sample Name: ICSAB Operator: BMM
Run Time: 07/10/92 22:52:50
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	490.94	L-.02287	L-.34065	.45753	.43532	.81830	451.16
SDev	.16	.02211	.01902	.00082	.00127	.00229	.56
%RSD	.03337	96.695	5.5841	.17990	.29205	.27978	.12305
#1	490.82	L-.03850	L-.32720	.45812	.43442	.81668	450.77
#2	491.06	L-.00723	L-.35410	.45695	.43621	.81991	451.55
Errors	LC Pass	LC Low	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	500.00	100.00	200.00	50.000	20.000	100.00	500.00
Low	.01720	.02470	.02550	.00070	.00070	.00450	.04700

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.39028	.42226	.47801	175.82	202.98	.92610	477.13
SDev	.00548	.00105	.00000	.01	1.14	.00968	.11
%RSD	1.4030	.24949	.00029	.00811	.56238	1.0457	.02213
#1	.39415	.42152	.47801	175.81	202.17	.91925	477.20
#2	.38641	.42301	.47801	175.83	203.79	.93295	477.05
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100.00	100.00	50.000	200.00	1000.0	200.00	500.00
Low	.00800	.00380	.00320	.00580	50.000	.02020	.01770

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.43773	L.00290	.83094	L-.01000	L-.01848	.29106	.89962
SDev	.00040	.00197	.00034	.02122	.02419	.07838	.00015
%RSD	.09032	68.042	.04137	212.13	130.95	26.930	.01622
#1	.43801	L.00150	.83070	L-.02501	L-.00137	.34649	.89972
#2	.43745	.00429	.83118	L.00500	L-.03558	.23564	.89951
Errors	LC Pass	LC Low	LC Pass	LC Low	LC Low	LC Pass	LC Pass
High	25.000	5.0000	100.00	1000.0	200.00	100.00	10.000
Low	.00180	.00350	.00530	.04230	.03080	.02670	.00700

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.04258	L-.28499	L.02057	L-.01738	.45919	.93671	9.508
SDev	.00502	.00269	.01429	.00199	.00012	.00062	.028
%RSD	11.785	.94398	69.461	11.459	.02516	.06626	.2920
#1	L.04613	L-.28689	.03067	L-.01597	.45927	.93627	9.528
#2	L.03903	L-.28309	L.01047	L-.01879	.45911	.93715	9.489
Errors	LC Low	LC Low	LC Low	LC Low	LC Pass	LC Pass	LC Pass
High	1000.0	100.00	100.00	100.00	100.00	100.00	11.00
Low	.24270	.18200	.02070	.04970	.00330	.00430	9.000

D-624

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 22:56:57
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	Q3.8534	-.00806	9.8951	.97467	.95109	2.4382	Q3.7854
SDev	.2922	.00013	.0430	.00501	.00606	.0071	.2918
%RSD	7.5819	1.5993	.43495	.51360	.63732	.29321	7.7088
#1	Q4.0600	-.00815	9.8647	.97113	.94680	2.4332	Q3.9918
#2	Q3.6468	-.00797	9.9255	.97821	.95538	2.4433	Q3.5791
Errors	QC Fail	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.4915	2.4299	2.4964	Q2.9826	Q1.2043	4.9551	Q3.7619
SDev	.0093	.0119	.0121	.1140	.0893	.0168	.2556
%RSD	.37520	.48840	.48560	3.8221	7.4125	.33963	6.7951
#1	2.4849	2.4215	2.4878	Q3.0632	Q1.1411	4.9432	Q3.9427
#2	2.4981	2.4383	2.5049	Q2.9020	Q1.2674	4.9670	Q3.5812
Errors	QC Pass	QC Pass	QC Pass	QC Fail	QC Fail	QC Pass	QC Fail
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.97286	-.00281	2.4153	4.9260	10.151	.13677	2.5376
SDev	.00305	.00195	.0089	.0042	.041	.02590	.0042
%RSD	.31369	69.113	.36994	.08616	.40244	18.933	.16549
#1	.97070	-.00419	2.4090	4.9230	10.122	.15508	2.5348
#2	.97502	-.00144	2.4216	4.9290	10.179	.11846	2.5408
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.0364	4.7661	-.00275	-.01213	2.4188	2.5285	9.151
SDev	.0251	.0520	.00353	.00189	.0086	.0051	.040
%RSD	.49820	1.0907	128.03	15.551	.35459	.20119	.4353
#1	5.0187	4.8028	-.00026	-.01346	2.4128	2.5250	9.123
#2	5.0542	4.7293	-.00525	-.01079	2.4249	2.5322	9.180
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

Method: RASI_ICP Sample Name: CCVA Operator: BMM
Run Time: 07/10/92 23:15:55
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS

D-625

Elem	Al3082	Sb2068	As1938	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.3718	-.00484	9.8530	.98987	1.0010	2.5173	2.3965
SDev	.0041	.00468	.0162	.00208	.0026	.0007	.0010
%RSD	.17455	96.569	.16487	.21010	.25794	.02856	.04275
#1	2.3747	-.00815	9.8415	.99134	1.0028	2.5168	2.3972
#2	2.3689	-.00154	9.8645	.98840	.99920	2.5178	2.3957
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.5000		10.000	1.0000	1.0000	2.5000	2.5000
Range	10.000		10.000	10.000	10.000	10.000	10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5037	2.4968	2.4924	2.4511	Q.73183	4.9938	2.3757
SDev	.0088	.0038	.0016	.0103	.83596	.0064	.0046
%RSD	.35309	.15034	.06366	.42186	114.23	.12789	.19520
#1	2.5100	2.4995	2.4936	2.4584	Q.14072	4.9893	2.3790
#2	2.4975	2.4942	2.4913	2.4437	Q1.3229	4.9984	2.3724
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	2.5000	2.5000	2.5000	2.5000	2.5000	5.0000	2.5000
Range	10.000	10.000	10.000	10.000	10.000	10.000	10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.99966	-.00309	2.4976	4.8639	10.097	.00548	2.4864
SDev	.00051	.00156	.0077	.0184	.015	.00085	.0080
%RSD	.05088	50.370	.30870	.37813	.15344	15.581	.32182
#1	1.0000	-.00420	2.5030	4.8509	10.086	.00609	2.4807
#2	.99930	-.00199	2.4921	4.8770	10.108	.00488	2.4920
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass
Value	1.0000		2.5000	5.0000	10.000		2.5000
Range	10.000		10.000	10.000	10.000		10.000

Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.9229	4.8636	-.00595	-.00321	2.5015	2.5030	9.546
SDev	.0017	.0761	.00154	.00004	.0027	.0072	.040
%RSD	.03397	1.5648	25.929	1.2543	.10663	.28602	.4219
#1	4.9217	4.9174	-.00704	-.00324	2.5034	2.4979	9.575
#2	4.9241	4.8098	-.00486	-.00318	2.4996	2.5080	9.518
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	5.0000	5.0000			2.5000	2.5000	
Range	10.000	10.000			10.000	10.000	

Method: RASI_ICP Sample Name: CCVC Operator: BMM
Run Time: 07/10/92 23:20:03
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	23.449	-.02335	.08147	.00394	-.00318	.00828	22.819
SDev	.055	.00650	.02633	.00100	.00138	.00170	.023
%RSD	.23663	27.842	32.314	25.292	43.510	20.577	.10278
#1	23.488	-.01876	.10008	.00465	-.00220	.00949	22.835
#2	23.410	-.02795	.06285	.00324	-.00416	.00708	22.802
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	25.000						25.000
Range	10.000						10.000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00686	24.598	.02100	24.090	27.077	.02739	23.381
SDev	.00103	.000	.00319	.045	1.245	.00660	.036
%RSD	14.996	.00002	15.215	.18539	4.5970	24.076	.15266
#1	-.00614	24.598	.02326	24.121	Q27.957	.03206	23.406
#2	-.00759	24.598	.01874	24.058	26.196	.02273	23.355
Errors	NOCHECK	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK	QC Pass
Value		25.000		25.000	25.000		25.000
Range		10.000		10.000	10.000		10.000

Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	10.041	-.00564	.00126	48.743	.04180	.00093	.00539
SDev	.020	.00117	.00171	.095	.02355	.00359	.00588
%RSD	.20156	20.710	135.56	.19447	56.330	387.92	109.10
#1	10.056	-.00481	.00247	48.676	.05845	.00347	.00954
#2	10.027	-.00646	.00005	48.811	.02515	-.00161	.00123
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value	10.000			50.000			
Range	10.000			10.000			

Elem	Na5889	T13775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	49.021	-.03116	-.00040	-.02596	24.836	.00844	9.800
SDev	.072	.04205	.00270	.00346	.043	.00253	.003
%RSD	.14674	134.96	674.50	13.330	.17294	29.947	.0326
#1	48.970	-.00142	-.00231	-.02352	24.867	.01023	9.802
#2	49.071	-.06090	.00151	-.02841	24.806	.00665	9.798
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK
Value	50.000				25.000		
Range	10.000				10.000		

Method: RASI_ICP Sample Name: CCVB Operator: BMM
Run Time: 07/10/92 23:29:12
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03144	10.650	9.7209	.00157	.00765	-.24545	-.01947
SDev	.01925	.045	.0005	.00023	.00009	.00139	.01194
%RSD	61.238	.42224	.00495	14.624	1.1317	.56796	61.334
#1	.04505	10.681	9.7213	.00173	.00771	-.24643	-.01103
#2	.01783	10.618	9.7206	.00141	.00759	-.24446	-.02792
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		10.000					
Range		10.000					

Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00610	.04214	.00189	.01186	-2.1162	-.04638	-.01067
SDev	.00206	.00877	.00273	.00669	.6567	.00635	.01324
%RSD	33.771	20.801	144.26	56.428	31.031	13.687	124.03
#1	-.00465	.04834	.00382	.01659	-2.5805	-.05087	-.00131
#2	-.00756	.03594	-.00004	.00713	-1.6518	-.04189	-.02003
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK

Value Range							
Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00324	Q11.232	.00044	.02701	9.7499	10.659	-.00193
SDev	.00285	.010	.00154	.01698	.0579	.036	.00149
%RSD	87.962	.08681	353.75	62.854	.59431	.33307	77.073
#1	.00525	Q11.239	.00153	.03902	9.7909	10.634	-.00088
#2	.00122	Q11.225	-.00066	.01501	9.7090	10.684	-.00299
Errors	NOCHECK	QC Fail	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		10.000				10.000	
Range		10.000				10.000	
Elem	Na5889	Tl3775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.09226	.83073	10.358	10.649	.20320	-.00702	.1355
SDev	.01506	.12274	.059	.070	.01724	.00102	.0117
%RSD	16.318	14.775	.56688	.65692	8.4860	14.487	8.652
#1	.10290	.91752	10.400	10.699	.21540	-.00630	.1438
#2	.08161	.74394	10.317	10.600	.19101	-.00774	.1272
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value			10.000	10.000			
Range			10.000	10.000			

Method: RASI_ICP Sample Name: CCB Operator: BMM
Run Time: 07/10/92 23:33:21
Comment: RISI METS OP, IEA, RISI MONTHLY, BIONETICS
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3158
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01036	H.09772	H.05969	.00005	-.00015	.00025	H.01556
SDev	.01881	.04958	.00773	.00023	.00070	.00019	.00340
%RSD	181.52	50.737	12.952	429.44	477.22	77.365	21.846
#1	-.00294	H.13278	H.06516	-.00011	L-.00064	.00039	H.01315
#2	H.02366	H.06266	H.05423	.00022	H.00035	.00011	H.01796
Errors	LC Pass	LC High	LC High	LC Pass	LC Pass	LC Pass	LC High
High	.01590	.01250	.02030	.00050	.00010	.00180	.00640
Low	-.01530	-.01450	-.03190	-.00070	-.00050	-.00120	-.01100
Elem	Cr2677	Co2286	Cu3247	Fe2599	Fe_Hi	Pb2203	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00311	H.00651	-.00063	H.01099	H.12188	.00411	.00795
SDev	.00064	.00034	.00200	.01728	.46092	.00005	.00660
%RSD	20.651	5.1918	319.08	157.30	378.16	1.2915	83.041
#1	-.00356	H.00627	-.00204	-.00123	H.44781	.00407	.00328
#2	-.00265	H.00675	.00079	H.02321	L-.20404	.00414	.01262

Errors	LC Pass	LC High	LC Pass	LC High	LC High	LC Pass	LC Pass
High	.00650	.00230	.00100	.00230	.00230	.02280	.01720
Low	-.00730	-.00310	-.00500	-.00190	-.00190	-.02700	-.01340
Elem	Mn2576	Mo2020	Ni2316	K_7664	Se1960	Si2881	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.00219	H.08513	.00026	-.00000	H.07777	H.09474	H.01768
SDev	.00127	.02221	.00094	.00424	.00688	.02609	.00180
%RSD	58.205	26.087	358.28	911e6	8.8488	27.542	10.162
#1	H.00129	H.10084	-.00040	.00300	H.08264	H.11319	H.01641
#2	H.00309	H.06943	.00093	-.00300	H.07290	H.07629	H.01895

Errors	LC High	LC High	LC Pass	LC Pass	LC High	LC High	LC High
High	-.00030	.00300	.00430	.05090	.03760	.06890	.00430
Low	-.00150	-.00360	-.00350	-.05770	-.03140	-.06370	-.00470
Elem	Na5889	T13775	Sn1899	Ti3248	V_2924	Zn2138	Y_3710
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05204	L-.21118	H.06237	.03107	H.00998	H.00117	9.232
SDev	.00502	.02859	.01859	.00204	.00830	.00014	.034
%RSD	9.6424	13.538	29.806	6.5609	83.136	11.759	.3717
#1	.05559	L-.19096	H.07552	.03251	H.00411	H.00127	9.208
#2	.04850	L-.23139	H.04922	.02963	H.01584	H.00107	9.256

Errors	LC Pass	LC Low	LC High	LC Pass	LC High	LC High	NOCHECK
High	.80990	.09930	.01050	.04010	.00150	.00030	
Low	-1.2403	-.10050	-.02250	-.02470	-.00150	-.00150	

92-06-178

an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 2370

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☒ RCRA ☐ OTHER _____

ROSS ANALYTICAL

PROJECT #	PROJECT NAME
13131-003	Solute A.T. Kerr BIF Test

SAMPLERS: *(SIGNATURE)* James Peters

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLE ID / ~~STATION LOCATION~~	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS: CHLORINE	MOISTURE	METALS	ASH	BTU	DENSITY
	6/2		X		K8-PROD-1-PHYS	1			X	X		~~X~~	~~X~~	~~X~~
			X		K8-PROD-1-MTL	1					X			
			X		K8-RFEED-1-PHYS	1			X	X				
			X		K8-RFEED-1-MTL	1					X			
			X		K8-LBM-1-PHYS	1			X	X		X	X	X
			X		K8-LBM-1-MTL	1					X			
			X		K8-LBM-2-PHYS	1			X	X		X	X	X
			X		K8-LBM-2D-PHYS	1			X	X		X	X	X
			X		K8-LBM-2D-MTL	1					X			
			X		K8-LBM-2-MTL	1					X			

RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED BY	DATE	TIME
James Baird	6-9-92		Marcia Shaw	6/10/92	7:22
RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
Kimberly Wright	6-9-92		Lisa K. Hall	6-10-92	0900

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**
James Peters	

IEA REMARKS

M ALS = Sb, As, Be, Ba, Cd, Cr, Pb, Hg, Ni, Tl

Per Nathan 6-12-92

FIELD REMARKS

Carol Thomas 6/23/92

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 3707

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☒ RCRA ☐ OTHER _____

PROJECT #	PROJECT NAME
1381-003	Solite A.F. Old BIF Test

SAMPLERS: (SIGNATURE) James Peters

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLE ID STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	METALS	CHLORINE	MOISTURE	ASH	BTU	DENSITY
	6/3		X		K8-DUST-3-MTL	1			X					
	"		X	✓	K8-RFEED-3-MTL	1			X					
			X	✓	K8-RFEED-3-PHYS	1				X	X			
			X		K8-PROD-3-MTL	1			X					
			X		K8-PROD-3-PHYS	1				X	X			
			X		K8-LBM-3-PHYS	1				X	X	X	X	X
	↓	"	X		K8-LBM-3-MTL	1			X					

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
James Baker	6/9.92		Marcia Pho	6/19/92	3:20
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
[illegible]	[illegible]		Robert Hall	6/22/92	1500

IEA QUOTE NO.

IEA RUSH NO.

PROJECT MANAGER (PLEASE PRINT): James Peters

P.O. NO.

IEA REMARKS

METALS = Sb, As, Ba, Be, Cd, Cr, Pb, Hg, Ag, Tl

Eric Hudson 6-12-92

FIELD REMARKS

Robert Hall 6/22/92

D-632

iea an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 23705

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

PROJECT #	PROJECT NAME
1381-003	Solute A Fold Bi[illegible] Test

SAMPLERS: *(SIGNATURE)*

JTPeters

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLE ID ~~STATION LOCATION~~	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS: CHLORINE	MOISTURE	METALS
	6/2		X	✓	K8-RFEED-2-PHYS	1			X	X	
			X	✓	K8-RFEED-2D-PHYS	1			X	X	
			X	✓	K8-RFEED-2-MTL	1					X
			X	✓	K8-RFEED-2D-MTL	1					X
			X		K8-PROD-2-PHYS	1			X	X	
			X		K8-PROD-2D-PHYS	1			X	X	
			X		K8-PROD-2-MTL	1					X
			X		K8-PROD-2D-MTL	1					X
			X	✓	K8-DUST-1-MTL	1					X
			X	✓	K8-DUST-2-MTL	1					X
			X	✓	K8-DUST-2D-MTL	1					X

RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED BY	DATE	TIME
James Peters	6/9-92		[illegible]	6/11/92	1321
RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
[illegible]	6/12/92		[illegible]	6/12/92	1500

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**
James Peters	

IEA REMARKS

MET S = Sb, As, Ba, Be, Cd, Cr, Pb, [illegible], Ag, T

FIELD REMARKS

[illegible] 6/12/92

Page 2

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.
1901 NORTH HARRISON AVE.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 5621

PROJECT #	PROJECT NAME

SAMPLERS: *(SIGNATURE)*

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS
74			X		KT-RFEED-1	1			X
78			X		KT-RFEED-1	1			X X
71			X		KT-PROD-1	1			X
76			X		KT-PROD-1	1			X X
83			X		KT-PROD-2	1			X
798			X		KT-PROD-2	1			X X
82			X		KT-RFEED-2	1			X
79			X		KT-RFEED-2	1			X X
			X		KT-PROD-3	1			X
			X		KT-PROD-3	1			X X
			X		KT-RFEED-3	1			X
87			X		KT-RFEED-3	1			X X

RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED BY	DATE	TIME
	6-16-				
RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
	6-16-92				

IEA REMARKS

Ben Nelson 6-16-92

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**

FIELD REMARKS

D-634

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.
1901 NORTH HARRISON AVE.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 5622

ROSS ANALYTICAL

PROJECT #	PROJECT NAME
1381-003	Solite A.F.Bd BIF Test

SAMPLERS (SIGNATURE): J.M. Peters

SAMPLE I.D.	DATE	TIME	NO. OF CONTAINERS	GRAB	COMP	SAMPLE I.D. STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS: METALS	CHLORINE	MOISTURE	ASH	BTU	DENSITY
73	6/4		X		✓	K7-LBM-1-MTL	1			X					
77	↓		X		✓	K7-LBM-1-PHYS	1				X	X	X	X	X
84			X		✓	K7-LBM-2-MTL	1			X					
81			X		✓	K7-LBM-2-PHYS	1				X	X	X	X	X
			X		✓	K7-LBM-3-MTL	1			X					
			X		✓	K7-LBM-3-PHYS	1				X	X	X	X	X
72			X		✓	K7-DUST-1-MTL	1			X					
85			X		✓	K7-DUST-2-MTL	1			X					
	↓		X		✓	K7-DUST-3-MTL	1			X					

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
James Bard	6/9/92				
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
Signature illegible	6-16-92				

IEA REMARKS

Eric Hudson 6-16-92

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	P.O. NO.
JAMES PETERS	

FIELD REMARKS

D-6

Appendix E

Equipment Calibration Data Sheets

DEECO

Date 7/13/92 Thermocouple No. Stack Thermocouple
Ambient temperature 91.4 °F Barometric pressure 29.54 in Hg
Calibration person MRW Reference: mercury-in-glass ____ °F
other ____ °F

Reference point number	Source[a] (specify)	Reference thermometer temperature, °F	Thermocouple potentiometer temperature, °F	Temperature[b] difference, %
1	Ice Bath	35.4°	34.0°	.28%
2	Hot Bath	200°	199.67°	.05%

[a]Type of calibration system used.

[b] $\frac{(\text{ref temp, °F} + 460) - (\text{test thermom temp, °F} + 460)}{\text{ref temp, °F} + 460} \times 100 =$ (<1.5%)

DEECO

Date 7/13/92 Thermocouple No. Probe Thermocouple
Ambient temperature 91.4 °F Barometric pressure 29.54 in Hg
Calibration person [illegible] Reference: mercury-in-glass ____ °F
other ____ °F

Reference point number	Source[a] (specify)	Reference thermometer temperature, °F	Thermocouple potentiometer temperature, °F	Temperature[b] difference, %
1	Ice Bath	38.3°	37°	.26%
2	Hot Bath	200°	199.67°	.05%

[a]Type of calibration system used.

[b]
$$\frac{(\text{ref temp, °F} + 460) - (\text{test thermom temp, °F} + 460)}{\text{ref temp, °F} + 460} \times 100 = \quad (<1.5\%)$$

TYPE S PITOT TUBE INSPECTION DATA FORM

Pitot tube assembly level? ✓ yes _____ no

Pitot tube openings damaged? _____ yes (explain below) ✓ no

α_1 = 4 ° (<10°), α_2 = 1 ° (<10°), β_1 = 1 ° (<5°),

β_2 = 1 ° (<5°)

γ = 1 °, θ = 0 °, A = 1.052 ~~cm~~ (in.)

z = A sin γ = .0184 ~~cm~~ (in.); <0.32 cm (<1/8 in.),

w = A sin θ = 0 ~~cm~~ (in.); <.08 cm (<1/32 in.)

P_A .530 cm (in.) P_b .522 cm (in.)

D_t = .374 ~~cm~~ (in.)

Comments: Performed by MRH

Calibration required? ✓ yes _____ no

SET H

NOZZLE CALIBRATION

Date 6/28/91 Calibrated by MCK

Nozzle identification number	D1, in.	D2, in.	D3, in.	delta D, in.	Davg
H.19	0.197	0.197	0.196	0.001	0.197
H.25	0.236	0.235	0.236	0.001	0.236
H.28	.276 0.278	.276 0.277	.276 0.277	0.000 0.001	0.276 ~~0.277~~
H.31	0.309	0.310 ~~0.308~~	0.310 ~~0.309~~	0.001 ~~0.006~~	0.310 ~~0.309~~
H.38	0.375	0.371	0.373	0.004	0.373

where:

D1, D2, D3 = nozzle diameter measured on a different diameter, in.
Tolerance = measure within 0.001 in.

delta D = maximum difference in any two measurements, in.
Tolerance = 0.004 in.

Davg = average of D1, D2, and D3.

SET H

NOZZLE CALIBRATION

Date 6/25/91 Calibrated by MCR

Nozzle identification number	D1, in.	D2, in.	D3, in.	delta D, in.	Davg
H.42	0.431	0.433	0.430	0.003	0.431
H.44	0.431	0.429	.430	0.003	0.429
H.50	0.496	0.492	0.494	0.004	0.494
H.63	0.623	0.621	0.622	0.002	0.622
H.75	0.746	0.744	0.743	0.003	0.744

where:

D1, D2, D3 = nozzle diameter measured on a different diameter, in.
Tolerance = measure within 0.001 in.

delta D = maximum difference in any two measurements, in.
Tolerance = 0.004 in.

Davg = average of D1, D2, and D3.

STAINLESS STEEL

Nozzle ID	record date	nozzle diameter (inches) D1	D2	D3	Max D diff.	D (average)
1-e	8/18/92	0.236	0.238	0.236	0.004	0.237
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
2-e	8/18/92	0.296	0.3	0.297	0.004	0.298
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
3-e	8/18/92	0.482	0.486	0.481	0.005	0.481
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000

GLASS

Nozzle ID	record date	nozzle diameter (inches) D1	D2	D3	Max D diff.	D (average)
1-g	8/21/92	0.261	0.262	0.262	0.001	0.262
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
2-g	8/21/92	0.262	0.263	0.263	0.001	0.263
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
3-g	8/21/92	0.313	0.313	0.312	0.001	0.313
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
4-g	8/21/92	0.31	0.309	0.31	0.002	0.309
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
5-g	8/21/92	0.184	0.185	0.184	0.001	0.184
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
	"	0				0.000
6-g	8/21/92	0.197	0.197	0.197	0	0.197

Certificate of Analysis

ANALYTICAL CONTROL LABORATORY ANALYSIS

Name & Grade: Acetone, Optima

Catalog No.: A-929

Lot No.: 915809 **Date:** October 14, 1991

This is to certify that this lot was tested and found to comply with the specifications for this product. The following are the actual analytical results obtained:

TESTS	ACTUAL ANALYSIS
Appearance	Pass Test
Color	5 APHA
Optical Absorbance at 350nm	0.002
340nm	0.05
330nm	0.73
Pesticide Residue Analysis (as Heptachlor Epoxide)	Not more than 10 ng/L
Sulfur (as Parathion)	Not more than 500 ng/L
Phosphorous (as Parathion)	Not more than 100 ng/L
Residue after Evaporation	0.9 PPM
Assay	99.8%
Water	0.2%
Fluorescence Background (as Quinine Sulfate)	Not more than 1 PPB
Refractive Index at 25°C	1.3555
Density (g/ml) at 25°C	0.7839
Titratable Acid	0.0003 meq/g.
Titratable Base	0.0001 meq/g.
Methanol	0.02%
Isopropyl Alcohol	0.01%
Solubility in Water	Pass Test
Aldehyde	<0.002%
Substances Reducing Permanganate	Pass Test

Approved By: Frank Turk
for) Frederick H. Turk
Quality Control Supervisor

Fisher Scientific
Chemical Division
1 Reagent Lane
Fair Lawn, N.J. 07410
(201) 796-7100

LOW FLOW DRY GAS METER CALIBRATION
PRE-TEST
(<1 liter / minute)

DATE: 5/28/92 METER CONSOLE NO: UT #1

NOMINAL FLOW RATE: _____ LPM

BUBBLE METER NO: 3725

CALIBRATION BY: BS ROTAMETER SETTING: 0.5 - 1.5

EQUATIONS

$$Qdgm = \frac{(Vf - Vi)(Tbm + 460)}{(Tavg + 460)(time,dgm)}$$

$$Y = \frac{Qbm}{Qdgm}$$

RUN #1

BUBBLE METER CONDITIONS:
Temp (Tbm): 70.0 deg F
bubble meter times (Qbm) (liters/minute)
1: .509 lpm 5: .509 lpm
2: .507 lpm 6: .505 lpm
3: .506 lpm 7: _____ lpm
4: .507 lpm Avg: 0.507 lpm

DRY GAS METER CONDITIONS:
Volume initial (Vi): 0.000 liters
Volume final (Vf): 7.342 liters
Temp initial (Ti): 73 deg F
Temp final (Tf): 75 deg F
Temp avg (Tavg): 74 deg F
Time, dgm: 12.9 min
calculated Y = 0.8975

RUN #2

BUBBLE METER CONDITIONS:
Temp (Tbm): 70.0 deg F
bubble meter times (Qbm) (liters/minute)
1: .902 lpm 5: .903 lpm
2: .903 lpm 6: .903 lpm
3: .905 lpm 7: _____ lpm
4: .906 lpm Avg: .904 lpm

DRY GAS METER CONDITIONS:
Volume initial (Vi): 0.000 liters
Volume final (Vf): 12.480 liters
Temp initial (Ti): 77 deg F
Temp final (Tf): 81 deg F
Temp avg (Tavg): 79 deg F
Time, dgm: 12.4 min
calculated Y = 0.9135

RUN #3

BUBBLE METER CONDITIONS:
Temp (Tbm): 70.0 deg F
bubble meter times (Qbm) (liters/minute)
1: 1.39 lpm 5: 1.39 lpm
2: 1.37 lpm 6: 1.38 lpm
3: 1.37 lpm 7: _____ lpm
1.38 lpm Avg: 1.38 lpm

DRY GAS METER CONDITIONS:
Volume initial (Vi): 0.000 liters
Volume final (Vf): 18.60 liters
Temp initial (Ti): 81 deg F
Temp final (Tf): 82 deg F
Temp avg (Tavg): 82 deg F
Time, dgm: 12.2 min
calculated Y = 0.9257

AVERAGE Y = 0.9122

DRY GAS METER POST-TEST CALIBRATION USING REFERENCE METER

DATE: 5-24-92 METER BOX NO. M-4

CALIBRATOR: JAB BAROMETRIC PRESSURE (Pb) 29.50 in. Hg

INITIAL CALIBRATION Y: .988 ΔH@: 1.992

PLANT: _____ PROJECT NO.: _____

AVERAGE ΔH DURING TESTING: _____ MAXIMUM VACUUM ~~15~~ 10 in. Hg

Orifice manometer setting* ΔH in. H2O	Volume reference meter Vw ft3	Volume dry gas meter Vd ft3	Temperatures: Ref Meter Tw °F	Ref Meter Avg Tw °F	Dry gas meter Td °F	Dry gas meter Avg Td °F	Test duration θ min	Vacuum setting ** in. Hg	Calibr Factor Y	ΔH@ in. H2O
2.0	start 305.918 stop 311.210 dif 5.292	130.523 135.789 5.264	start 68 stop 70	69	start 68 stop 71	69.5	7	10	1.0086	2.016
2.0	start 311.210 stop 316.485 dif 5.275	135.777 141.062 5.285	start 70 stop 72	71	start 71 stop 72	71.5	~~7~~	10	1.0032	2.037
2.0	start 316.485 stop 322.505 dif 6.020	141.062 147.110 6.048	start 72 stop 74	73	start 72 stop 74	73	8	10	.9977	2.053
								Post-test Average***	1.003	2.035

* To be the average Δ H used during test series.

** To be the highest vacuum used during test series.

*** Post-test Y must be within the range, pre-test Y +/- 5% OK? ☑

Post-test Δ H@ should be within the range of the initial or pre-test Δ H@ +/- 0.20 in. H2O. OK? ☑

$$Y = \frac{(1.006)\,(Vw)\,(Pbar)\,(Td + 460)}{(Vd)\,(Pbar + \Delta H / 13.6)\,(Tw + 460)}$$

$$\Delta H@ = \frac{(0.0317)\,(\Delta H)}{(Pbar)\,(Td + 460)} \left[\frac{(Tw + 460)\,(\theta)}{(Vw)(1.006)} \right]^2$$

$$\text{Percent difference} = \frac{(\text{Avg inital Y}) - (\text{Post-test Y})}{(\text{Avg initial Y})}$$

dgmptcal.wk1

LOW FLOW DRY GAS METER CALIBRATION
PRE-TEST
(<1 liter / minute)

DATE: 5/28/92

METER CONSOLE NO: UT # 2

NOMINAL FLOW RATE: _____ LPM

BUBBLE METER NO: 3725

CALIBRATION BY: B

ROTAMETER SETTING: 0.5 - 1.5

EQUATIONS

$$Qdgm = \frac{(Vf - Vi)(Tbm + 460)}{(Tavg + 460)(time,dgm)}$$

$$Y = \frac{Qbm}{Qdgm}$$

RUN #1

BUBBLE METER CONDITIONS:

Temp (Tbm): 70.0 deg F

bubble meter times (Qbm) (liters/minute)

1: .487 lpm 5: .486 lpm
2: .486 lpm 6: .488 lpm
3: .486 lpm 7: _____ lpm
4: .486 lpm Avg: .486 lpm

DRY GAS METER CONDITIONS:

Volume initial (Vi): 0.000 liters
Volume final (Vf) 6.528 liters

Temp initial (Ti): 70 deg F
Temp final (Tf): 75 deg F
Temp avg (Tavg): 73 deg F

Time, dgm: 12.8 min

calculated Y = 0.9583

RUN #2

BUBBLE METER CONDITIONS:

Temp (Tbm): 70.0 deg F

bubble meter times (Qbm) (liters/minute)

1: 1.02 lpm 5: 1.01 lpm
2: 1.00 lpm 6: 1.02 lpm
3: 1.03 lpm 7: _____ lpm
4: 1.04 lpm Avg: 1.02 lpm

DRY GAS METER CONDITIONS:

Volume initial (Vi): 0.000 liters
Volume final (Vf) 13.625 liters

Temp initial (Ti): 75 deg F
Temp final (Tf): 79 deg F
Temp avg (Tavg): 77 deg F

Time, dgm: 12.2 min

calculated Y = 0.9254

RUN #3

BUBBLE METER CONDITIONS:

Temp (Tbm): 70 deg F

bubble meter times (Qbm) (liters/minute)

1: 1.50 lpm 5: 1.53 lpm
2: 1.50 lpm 6: 1.49 lpm
3: 1.49 lpm 7: _____ lpm
.51 lpm Avg: 1.50 lpm

DRY GAS METER CONDITIONS:

Volume initial (Vi): 0.000 liters
Volume final (Vf): 18.570 liters

Temp initial (Ti): 79 deg F
Temp final (Tf): 81 deg F
Temp avg (Tavg): 80 deg F

Time, dgm: 12.3 min

calculated Y = 1.01

AVERAGE Y = 0.9646

FIELD BALANCE CALBRATION DATA SHEET

Balance No.	Date	Calibrator	Mass determined for					
			5 g	Error	50 g	Error	100 g	Error
DEECO 1	6/2/92	J.A. Peters			50.0	0.0	100.1	0.1

Error must not exceed 0.5 grams at each point.

CEM Calibration Gas Inventory Data Sheet

Client Solite A.F.Old
Location Nos. 8 & 7 Kilns
Source Arvonia, VA
Project No. 1381-003

Date 6-2-92
Team Leader J. Peters
CEM Operator G. Bright

Constituent	Cyl. No.	Concentration	Analysis Grade	Cylinder Pressure	
				Pre-Test	Post Test
O_2/CO_2	ALM Ø29168	12.95 / 10.04	EPA -1		1200
O_2/CO_2	ALM Ø29165	21.0 / 16.98			1700
CO	ALM028446	297			1000
CO	ALM026283	598			300
THC	IL 142Ø	30.1			1600
THC	ALM ØØ8152	50.5			1500 3 Gas
THC	AAL 19791	98.5			1600
N_2					1000
Air Zero gas					1450

all other solute

THERMOCOUPLE DIGITAL INDICATOR
CALIBRATION DATA FORM

Date 6-26-92 Calibrator Name JAB

Indicator No. M-4 oven Serial No. 007

Calibration Device No. C1 300 Manufacturer Omega

Test Point No.	Millivolt Signal	Equivalent Temperature deg. F	Digital Indicator Temperature deg. F	Percent difference %
		100	101	
		200	202	
		300	301	
		400	400	
		500	498	
		600	599	
		700	701	
		900	800	
		900	900	
		1100	1101	

Percent difference must be less than or equal to 0.5%

Percent Difference:

$$\frac{(\text{Ref temp} + 460) - (\text{Test temp} + 460)}{(\text{Ref temp} + 460)} \times 100\% \text{ should be} < 0.5\%$$

THERMOCOUPLE DIGITAL INDICATOR
CALIBRATION DATA FORM

Date 6-26-92 Calibrator Name JAB

Indicator No. M-4 Probe Serial No. 007

Calibration Device No. CI 300 Manufacturer Omega

Test Point No.	Millivolt Signal	Equivalent Temperature deg. F	Digital Indicator Temperature deg. F	Percent difference %
		100	99	
		210	199	
		300	300	
		400	401	
		502	502	
		600	601	
		700	700	
		800	799	
		900	898	
		1100	1099	

Percent difference must be less than or equal to 0.5%

Percent Difference:

$$\frac{(\text{Ref temp} + 460) - (\text{Test temp} + 460)}{(\text{Ref temp} + 460)} \times 100\% \text{ should be} < 0.5\%$$

THERMOCOUPLE DIGITAL INDICATOR
CALIBRATION DATA FORM

Date 6-24-92 Calibrator Name JAB

Indicator No. M-4-Readout Serial No. 007

Calibration Device No. C1 300 Manufacturer Omega

Test Point No.	Millivolt Signal	Equivalent Temperature deg. F	Digital Indicator Temperature deg. F	Percent difference %
		100	100	
		200	200	
		300	301	
		400	400	
		500	500	
		600	600	
		700	700	
		800	799	
		900	899	
		1100	1101	

Percent difference must be less than or equal to 0.5%

Percent Difference:

$$\frac{(\text{Ref temp} + 460) - (\text{Test temp} + 460)}{(\text{Ref temp} + 460)} \times 100\% \text{ should be} < 0.5\%$$

THERMOCOUPLE DIGITAL INDICATOR
CALIBRATION DATA FORM

Date 6-26-92 Calibrator Name JAB

Indicator No. M-10 Probe Serial No. 007

Calibration Device No. CI 300 Manufacturer Omega

Test Point No.	Millivolt Signal	Equivalent Temperature deg. F	Digital Indicator Temperature deg. F	Percent difference %
		100	99	
		200	200	
		300	301	
		400	401	
		500	500	
		600	599	
		700	699	
		800	800	
		900	900	
		1100	1102	

Percent difference must be less than or equal to 0.5%

Percent Difference:

$$\frac{(\text{Ref temp} + 460) - (\text{Test temp} + 460)}{(\text{Ref temp} + 460)} \times 100\% \text{ should be} < 0.5\%$$

THERMOCOUPLE DIGITAL INDICATOR
CALIBRATION DATA FORM

Date 6-26-97 Calibrator Name JAB

Indicator No. M-10 oven Serial No. 007

Calibration Device No. CL-300 Manufacturer Omega

Test Point No.	Millivolt Signal	Equivalent Temperature deg. F	Digital Indicator Temperature deg. F	Percent difference %
		100	101	
		200	201	
		300	300	
		400	400	
		500	501	
		600	599	
		700	701	
		800	802	
		900	900	
		1100	1099	

Percent difference must be less than or equal to 0.5%

Percent Difference:

$$\frac{(\text{Ref temp} + 460) - (\text{Test temp} + 460)}{(\text{Ref temp} + 460)} \times 100\% \text{ should be} < 0.5\%$$

THERMOCOUPLE DIGITAL INDICATOR
CALIBRATION DATA FORM

Date 6-26-92 Calibrator Name JKB

Indicator No. M-10 Readout Serial No. 007

Calibration Device No. CI 300 Manufacturer Omega

Test Point No.	Millivolt Signal	Equivalent Temperature deg. F	Digital Indicator Temperature deg. F	Percent difference %
		100	100	
		200	200	
		300	301	
		400	400	
		500	500	
		600	601	
		700	699	
		800	799	
		900	900	
		1100	1101	

Percent difference must be less than or equal to 0.5%

Percent Difference:

$$\frac{(\text{Ref temp} + 460) - (\text{Test temp} + 460)}{(\text{Ref temp} + 460)} \times 100\% \text{ should be} < 0.5\%$$

THERMOCOUPLE DIGITAL INDICATOR
CALIBRATION DATA FORM

Date 6-24-92 Calibrator Name JAB

Indicator No. M-11 Readout Serial No. 007

Calibration Device No. CL 300 Manufacturer Omega

Test Point No.	Millivolt Signal	Equivalent Temperature deg. F	Digital Indicator Temperature deg. F	Percent difference %
		100	99	
		200	199	
		300	300	
		400	398	
		500	502	
		600	599	
		700	701	
		800	801	
		900	900	
		1100	1101	

Percent difference must be less than or equal to 0.5%

Percent Difference:

$$\frac{(\text{Ref temp} + 460) - (\text{Test temp} + 460)}{(\text{Ref temp} + 460)} \times 100\% \text{ should be} < 0.5\%$$

THERMOCOUPLE DIGITAL INDICATOR
CALIBRATION DATA FORM

Date 6-26-92 Calibrator Name JAB

Indicator No. M-11 oven Serial No. 007

Calibration Device No. CI 300 Manufacturer Omega

Test Point No.	Millivolt Signal	Equivalent Temperature deg. F	Digital Indicator Temperature deg. F	Percent difference %
		100	99	
		200	198	
		300	300	
		400	401	
		500	499	
		600	598	
		700	700	
		800	802	
		900	901	
		1100	1099	

Percent difference must be less than or equal to 0.5%

Percent Difference:

$$\frac{(\text{Ref temp} + 460) - (\text{Test temp} + 460)}{(\text{Ref temp} + 460)} \times 100\% \text{ should be} < 0.5\%$$

THERMOCOUPLE DIGITAL INDICATOR
CALIBRATION DATA FORM

Date 6-26-92 Calibrator Name JAB

Indicator No. M-11 Hobe Serial No. 007

Calibration Device No. CL 300 Manufacturer Omega

Test Point No.	Millivolt Signal	Equivalent Temperature deg. F	Digital Indicator Temperature deg. F	Percent difference %
		100	102	
		200	199	
		300	299	
		400	403	
		500	502	
		600	602	
		700	700	
		800	801	
		900	899	
		1100	1098	

Percent difference must be less than or equal to 0.5%

Percent Difference:

$$\frac{(\text{Ref temp} + 460) - (\text{Test temp} + 460)}{(\text{Ref temp} + 460)} \times 100\% \text{ should be} < 0.5\%$$

TEMPERATURE CALIBRATION DATA FORM

Date 6-8-92 Calibrator Name Clark Malone

Ambient Temperature 75.6 Barometric Pressure 29.81 in. Hg

Reference: Hg-in-glass

Other

Thermocouple No.:	Source (specify)	Reference thermometer temperature °F	Thermocouple indicator temperature °F	Percent error %
Hex-1 CR-5	Ambient	75.6	75.4	.037
	Boil H_2O	211	210.8	.029
	Ice Bath	38.0	39.6	.321
Hex-2 CR-4	Ambient	77.0	78.4	.260
	Boiling H_2O	211.4	210.8	.029
	Ice Bath	37.0	37.0	0.0

Source: ice bath, ambient air, boiling H2O, hot oil

iea

$$\% \text{ error} = \frac{(\text{Ref temp} + 460) - (\text{Test temp} + 460)}{(\text{Ref temp} + 460)} \times 100\% \text{ should be} < 1.5\%$$

.2

E-22

TEMPERATURE CALIBRATION DATA FORM

Date 6-8-92 Calibrator Name James Clark Malone

Ambient Temperature 72.9 Barometric Pressure 29.81 in. Hg

Reference: Hg-in-glass

Other

Thermocouple No.	Source (specify)	Reference thermometer temperature °F	Thermocouple indicator temperature °F	Percent error %
S-C	Ambient	79.4	79.2	.037
	Boiling H_2O	211.0	207.8	.496
	Ice Bath	37.8	37.4	.080
S-B	Ambient	71.8	71.4	.075
	Boiling H_2O	212.0	211.8	.029
	ICE Bath	36.8	36.4	.040

Source: ice bath, ambient air, boiling H2O, hot oil

iea

$$\% \text{ error} = \frac{(\text{Ref temp} + 460) - (\text{Test temp} + 460)}{(\text{Ref temp} + 460)} \times 100\% \text{ should be} < 1.5\%$$

tempcal.wk1

TYPE S PITOT TUBE INSPECTION DATA FORM

Pitot tube assembly level? ✓ yes _____ no

Pitot tube openings damaged? _____ yes (explain below) X no

α_1 = _____° (<10°), α_2 = _____° (<10°), β_1 = _____° (<5°),

β_2 = _____° (<5°)

γ = 0 °, θ = 1 °, A = .717 cm (in.)

z = A sin γ = 0 cm (in.); <0.32 cm (<1/8 in.),

w = A sin θ = .012 cm (in.); <.08 cm (<1/32 in.)

P_A .358 cm (in.) P_b .359 cm (in.)

D_t = .25 cm (in.)

Comments: INSP. by JAB 6-8-97

PROBE #: CR4 Hex 2

Calibration required? _____ yes ✓ no

TYPE S PITOT TUBE INSPECTION DATA FORM

Pitot tube assembly level? ✓ yes _____ no

Pitot tube openings damaged? _____ yes (explain below) ✓ no

α_1 = 0 ° (<10°), α_2 = 0 ° (<10°), β_1 = 0 ° (<5°),

β_2 = 0 ° (<5°)

γ = 0 °, θ = 0 °, A = ~~0.860~~ 0.686 (cm) ~~(in.)~~

z = A sin γ = 0 cm (in.); <0.32 cm (<1/8 in.),

w = A sin θ = 0 cm (in.); <.08 cm (<1/32 in.)

0.360 cm (in.) P_b 0.356 cm (in.)

D = 0.285 cm (in.)

Comments: 10-8-91
Checked by RS.
CP-5

Calibration required? _____ yes ✓ no

E-25

TYPE S PITOT TUBE INSPECTION DATA FORM

Pitot tube assembly level? ✓ yes _____ no

Pitot tube openings damaged? _____ yes (explain below) ✓ no

α_1 = 3 ° (<10°), α_2 = 3 ° (<10°), β_1 = 0 ° (<5°),

β_2 = 1 ° (<5°)

γ = 0 °, θ = 1 °, A = .939 cm (in.)

z = A sin γ = .000 cm (in.); <0.32 cm (<1/8 in.),

w = A sin θ = .016 cm (in.); <.08 cm (<1/32 in.)

P_A .9168 cm (in.) P_b .470 cm (in.)

D_t = .375 cm (in.)

Comments: INSP'd By JAB 6-8-92

PROBE #: 5C

Calibration required? _____ yes ✓ no

TYPE S PITOT TUBE INSPECTION DATA FORM

Pitot tube assembly level? _____ yes _____ no

Pitot tube openings damaged? _____ yes (explain below) _____ no

α_1 = 2° (<10°), α_2 = 1° (<10°), β_1 = .5° (<5°),

β_2 = 1° (<5°)

γ = 1°, θ = 0°, A = .063 cm (in.)

z = A sin γ = .018 cm (in.); <0.32 cm (<1/8 in.),

w = A sin θ = 0 cm (in.); <.08 cm (<1/32 in.)

P_A .532 cm (in.) P_b .531 cm (in.)

D_t = .375 cm (in.)

Comments: Insp. by JAB 6-8-92

PROBE #: 5B

Calibration required? _____ yes ✓ no

Control No. [redacted]

ANALYTICAL BALANCE CALIBRATION FORM

Balance Mettler AE 240 Serial Number L 58883

Class of standard weights Class S #2541

Date	Analyst	0.500 g	1.0000 g	10.0000 g	50.0000 g	100.0000 g
5/6/92	JASchenk	0.5001	1.0002	10.0001	50.0003	99.9998
5/8/92	JASchenk	0.5001	1.0001	10.0001	50.0002	99.9999
5/19/92	JASchenk	0.5000	1.0001	10.0001	—	99.9998
5/20/92	JASchenk	0.5000	1.0001	10.0001	used 20g 20.0002	99.9997
5/21/92	JASchenk	0.5001	1.0001	10.0001	—	[illegible]
5/22/92	JASchenk	0.5001	1.0001	10.0001	[illegible]	[illegible]
6/16/92	B.RAYFIELD	—	1.0001	—	50.0002	99.9997
6/18/92	JASchenk	0.5000	1.0001	10.0001	used 20g wt 20.0001	99.9998
6/19/92	JASchenk	0.5001	1.0001	10.0001	20.0002	99.9998
6/30/92	B.RAYFIELD	0.5000	1.0001	—	50.0002	99.9999
7/1/92	B.RAYFIELD	0.5000	1.0001	—	50.0002	99.9998
7/6/92	B.RAYFIELD	0.5000	1.0001	—	50.0002	100.0000

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TYPE S PITOT TUBE INSPECTION DATA FORM

Pitot tube assembly level? _____ yes _____ no

Pitot tube openings damaged? _____ yes (explain below) _____ no

α_1 = 2° (<10°), α_2 = 1° (<10°), β_1 = .5° (<5°),

β_2 = 1° (<5°)

γ = 1 %, θ = 0°, A = .063 cm (in.)

z = A sin γ = .018 cm (in.); <0.32 cm (<1/8 in.),

w = A sin θ = 0 cm (in.); <.08 cm (<1/32 in.)

P_A .532 cm (in.) P_b .531 cm (in.)

D_t = .375 cm (in.)

Comments: Insp. by JAB 4-8-92

PROBE #.5 B

Calibration required? _____ yes ✓ no

Control No. [illegible]

ANALYTICAL BALANCE CALIBRATION FORM

Balance Mettler AE 240 Serial Number L 58883

Class of standard weights Class S #2541

Date	Analyst	0.500 g	1.0000 g	10.0000 g	50.0000 g	100.0000 g
5/6/92	TASchuh	0.5001	1.0002	10.0001	50.0003	99.9998
5/8/92	TASchuh	0.5001	1.0001	10.0001	50.0002	99.9999
5/19/92	TASchuh	0.5000	1.0001	10.0001	—	99.9998
5/20/92	TASchuh	0.5000	1.0001	10.0001	need 20g 20.0002	99.9997
5/21/92	TASchuh	[illegible]	[illegible]	[illegible]	—	[illegible]
5/22/92	TASchuh	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6/16/92	B.RAYFIELD	—	1.0001	—	50.0002	99.9997
6/18/92	TASchuh	0.5000	1.0001	10.0001	need 20g wt 20.0001	99.9998
6/19/92	TASchuh	0.5000	1.0001	10.0001	20.0002	99.9998
6/30/92	B.RAYFIELD	0.5000	1.0001	—	50.0002	99.9999
7/1/92	B.RAYFIELD	0.5000	1.0001	—	50.0002	99.9998
7/6/92	B.RAYFIELD	0.5000	1.0001	—	50.0002	100.0000

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