
Gradient Corporation
██████████

No. 0000055



1989 Antrim Iron Works
(Tar Lake) Site Investigation

Volume IV - Tar and Soil Inorganic Compound Data

March 1990

44 Brattle Street □ Cambridge, MA 02138 □ (617) 576-1555 □ FAX: (617) 864-8469

EPA Region 5 Records Ctr.



209200

COMPUCHEM
LABORATORIES

02/FEB/90

ENSAFE
ATTN. Mr. Phil Coop
P.O.Box341315(Zip38184-1315)
5705 Stage Rd./Suite 212
Memphis, TN 38134

Subject. Report of Data - Account Number 178202

ATTN. Mr. Phil Coop

Enclosed herewith are the results of analytical work performed in accordance with the referenced account number.

This report covers 6 sample(s) appearing on the attached listing and their associated Quality Control Data.

Thank you for selecting CompuChem@ Laboratories for your sample analysis. If you should have questions or require additional analytical services please contact your representative at 1-919-549-8263.

Sincerely,



Elise L. Cobb
Supervisor, Report Deliverables

Attachment

COMPUCHEM
LABORATORIES, INC.

02/FEB/90

ENSAFE
ATTN. Mr. Phil Coop
P.O.Box341315(Zip38184-1315)
5705 Stage Rd./Suite 212
Memphis, TN 38134

ACCOUNT #. 178202

CC#	SAMPLE-ID	RECEIPT DATE
309691	B201A	12/20/89
309699	B201B	12/20/89
309700	B202TAR	12/20/89
309701	B202A	12/20/89
309702	B202B	12/20/89
309703	B202C	12/20/89

TOTAL NUMBER OF SAMPLES = 6

COMPUCHEM LABORATORIES

INORGANIC CASE SUMMARY NARRATIVE
CASE# 17820 SDG# 18756A
CONTRACT# 788

SAMPLE NUMBERS: B201A, B201B, B202A, B202B, B202C, B202TAR


The samples in this SDG were received in good condition with the appropriate chain-of-custody documents on 12/20/89. The SDG consists of six soil samples for the analysis of complete HSL metals and cyanide. The enclosed cover page reflects both Ensafe and CompuChem sample identifiers.

The associated quality control sample spike, B202CS, was outside the control limits for mercury, selenium, and cyanide, therefore the values were flagged with an 'N'. The associated quality control duplicate, B202D, was outside the control limits for aluminum, calcium, iron, manganese, and cyanide, therefore the values were flagged with an '*' in all of the samples. Sample B201A was used as the original for cyanide sample spike and duplicate.

A serial dilution was done on sample B202TARL. The adjusted sample concentrations for all of the analytes were within 10% of their original values.

In one or more of the samples the concentrations of arsenic, cobalt, beryllium, barium, calcium, magnesium, and vanadium fell between the Instrument Detection Limits (IDLs) and the Contract Required Detection Limits (CRDLs). The concentrations of antimony, cadmium, mercury, nickel, potassium, selenium, silver, sodium, thallium, and cyanide were below the IDL, while the remaining analytes had concentrations above the CRDL.

Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.


Jeanne C. Alston
Technical Reviewer

Note: This report is paginated for reference and accountability in decreasing numerical sequence.

U.S. EPA - CLP
COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 SOW No.: 7/88

Client Sample No.	Lab Sample ID
B201A	309691
B201AD	309696
B201AS	309695
B201B	309699
B202A	309701
B202B	309702
B202C	309703
B202CD	309693
B202CS	309692
B202TAR	309700
LCS	309694
LCS	309697
Prep Blank	311610
Prep Blank	311944
Prep Blank	315350

Were ICP interelement corrections applied? Yes/No YES
 Were ICP background corrections applied? Yes/No YES
 If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: *M. D. ... for BHL* Name: Bruce Rohrbach
 Date: 1/30/90 Title: Inorganics Lab Manager

IMPLEMENTATION OF THE EPA'S CONTRACT LABORATORY PROGRAM (CLP
INORGANIC 7/87 STATEMENT OF WORK (SOW) - REVISED 12/87

Effective with samples received at CompuChem Laboratories, Inc., on Tuesday, February 21, 1989, the 7/87 (revised 12/87), Inorganics SOW: Inorganic Analysis, Multi-Media, Multi-Concentration will be utilized. The 7/87 SOW is currently being employed by the EPA CLP.

Recent solicitations by the EPA for additional inorganic laboratory capacity have included yet a further update - a 7/88 SOW. The 7/88 SOW will not be employed in the EPA CLP until the normal contract "Pre-Award" activities are completed. Those activities include the bid openings as a result of the Invitation for Bid (IFB), analysis of Performance Evaluation (P.E.) Samples, submission of the analytical results of the P.E. sample by the laboratory and assessment and grading of these results by the EPA, a Pre-Award visit to the laboratory by the EPA and, finally, a contract award.

As a service to our clients wanting to utilize the 7/87 EPA CLP SOW the following information is provided to identify the substantive differences between the 7/85 and 7/87 Statements of Work.

"KEY" CHANGES TO THE INORGANICS SOW

1. A new acronym is introduced, the TAL, which refers to the Target Analyte List.
2. The Sample Delivery Group (SDG) concept, utilized in the 7/87 SOW and is defined as the following, whichever is most frequent:
 - each Case of field samples received, or
 - each 20 field samples within a Case, or
 - each 14 calendar day period during which field samples in a Case are received.
3. Sample data package due dates are determined from the receipt of the last sample in the SDG. For verification of the data turnaround requirements, reference should be made to the CompuChem Quotation.
4. Analytical results must be reported to two significant figures if the result is less than 10; to three significant figures if the value is greater than or equal to 10. Results for percent solids must be reported to one decimal place. The reporting requirements for mercury are slightly different.

5. All reporting forms have changed from the 7/85 SOW; a new form, Form V (Part 2) - IN, has been added to accommodate post digestion spikes. All data packages must be paginated. In addition to hardcopy deliverables, EPA requires a diskette deliverable item, containing information contained on the summary forms.
6. Form I-IN is the Inorganic Analysis Data Sheet. It contains fields for three types of result qualifiers. In the 7/85 SOW results were reported in brackets, [], if the concentration found was greater than or equal to the Instrument Detection Limit (IDL) but less than the Contract Required Detection Limit (CRDL). In the 7/87 SOW, the C (Concentration) qualifier field is used. A "B" is inserted in the "C" qualifier column if the reported value is less than the CRDL but greater than the IDL. If the analyte was analyzed for but not detected, a "U" must be entered in the "C" qualifier column.

A "Q" qualifier column is used for the following entries, some of which were the same qualifiers used in the 7/85 SOW:

- E - The reported value is estimated because of interference.
- M - The duplicate injection precision was not met.
- N - The spiked sample recovery was not within control limits.
- S - The value reported was determined by the Method of Standard Additions (MSA).
- W - The post-digestion spike for furnace AA analysis is outside of the 85-115% control limits, while sample absorbance is less than 50% of the spike absorbance.
- * - Duplicate analyses are not within control limits.
- + - The correlation coefficient for the MSA is less than 0.995.

A "M (Method) qualifier field is employed for the following entries, some of which were used in the 7/85 SOW:

- P - Refers to ICP
- A - Refers to Flame AA
- CV - Refers to Manual Cold Vapor AA
- AV - Refers to Automated Cold Vapor AA
- AS - Refers to Semi-Automated Spectrophotometric
- C - Refers to Manual Spectrophotometric
- T - Refers to Titrimetric
- NR - Refers to the fact that the analyte is not required to be analyzed.

Provisions are also made on Form I-IN to insert descriptions of color and clarity before and after digestion and if there are artifacts present. If artifacts are present, they are described in the comments field.

7. Duplicate determinations for percent solids are required.
8. There are a few minor changes regarding holding times for water and soil/sediment samples.
 - For cyanide, the holding time requirements remain the same; samples must be distilled within 14 days of receipt by the laboratory.
 - For mercury, samples must be digested within 26 days of receipt by the laboratory.
 - For metals (other than mercury), samples must be analyzed within 180 days of receipt by the laboratory.
9. For flame AA, ICP, mercury and cyanide analyses, when the pre-digestion/pre-distillation spike recovery fails acceptance criteria, a post-digestion/post distillation spike must be performed for those elements not meeting criteria (silver is an exception).

10. An aqueous Laboratory Control Sample (LCS) must be prepared and analyzed for every group of aqueous samples in a SDG, or for each batch of aqueous samples digested, whichever is more frequent. An aqueous LCS is not required for mercury and cyanide analysis.

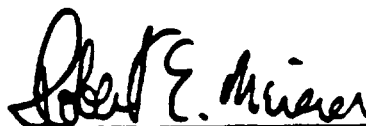
A solid LCS must be prepared and analyzed for every group of solid samples in a SDG, or for each batch of samples digested, whichever is more frequent. Percent solids determination in a solid LCS is not required.

Exceptions to the 80-120% control limits for the aqueous LCS are silver and antimony.

11. In the 7/87 SOW, clarification of the ICP serial dilution requirements is provided. The serial dilution analysis is required when an analyte is minimally a factor of 50 above the IDL in the original sample. When this occurs, a 5 fold dilution must agree within 10% of the original determination or an "E" qualifier is applied.

The ICP serial dilution analysis must be performed on each group of samples of a similar matrix and concentration level or for each SDG, whichever is more frequent.

The above represents the major changes in the 7/87 Inorganics SOW for the EPA's CLP. If, after reading this announcement, or after receiving data under the new SOW, there are questions, please feel free to contact your Account Administrator at 1-800-833-5597.



Robert E. Meierer
Vice President of Quality Assurance

1
INORGANIC ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B201A

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Matrix (soil/water): SOIL Lab Sample ID: 309691
 Level (low/med): LOW Date Received: 12/20/89
 % Solids: 90.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	895		*	P
7440-36-0	Antimony	4.6	U		P
7440-38-2	Arsenic	.66	U		F
7440-39-3	Barium	4.9	B		P
7440-41-7	Beryllium	.30	B		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	1010	B	*	P
7440-47-3	Chromium	2.4			P
7440-48-4	Cobalt	.66	U		P
7440-50-8	Copper	29.3			P
7439-89-6	Iron	1470		*	P
7439-92-1	Lead	1.7			F
7439-95-4	Magnesium	284	B		P
7439-96-5	Manganese	15.0		*	P
7439-97-6	Mercury	.11	U	N	CV
7440-02-0	Nickel	6.4	U		P
7440-09-7	Potassium	278	U		P
7782-49-2	Selenium	.44	U	WN	F
7440-22-4	Silver	.88	U		P
7440-23-5	Sodium	329	U		P
7440-28-0	Thallium	.44	U		F
7440-62-2	Vanadium	1.9	B		P
7440-66-6	Zinc	49.6			P
	Cyanide	.98		N*	AS

Color Before: BLACK Clarity Before: _____ Texture: MEDIUM
 Color After: BLACK Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B201B

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Matrix (soil/water): SOIL Lab Sample ID: 309699
 Level (low/med): LOW Date Received: 12/20/89
 % Solids: 88.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1250		*	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	1.1	B		F
7440-39-3	Barium	3.0	B		P
7440-41-7	Beryllium	.23	U		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	336	B	*	P
7440-47-3	Chromium	3.1			P
7440-48-4	Cobalt	.68	U		P
7440-50-8	Copper	8.1			P
7439-89-6	Iron	2110		*	P
7439-92-1	Lead	2.6			F
7439-95-4	Magnesium	307	B		P
7439-96-5	Manganese	15.6		*	P
7439-97-6	Mercury	.11	U	N	CV
7440-02-0	Nickel	6.6	U		P
7440-09-7	Potassium	286	U		P
7782-49-2	Selenium	.45	U	WN	F
7440-22-4	Silver	.91	U		P
7440-23-5	Sodium	339	U		P
7440-28-0	Thallium	.45	U		F
7440-62-2	Vanadium	1.7	B		P
7440-66-6	Zinc	21.3			P
	Cyanide	.57	U	N*	AS

Color Before: BLACK Clarity Before: _____ Texture: MEDIUM
 Color After: BLACK Clarity After: _____ Artifacts: _____

Comments:

FORM 1 - PAGE 2

FORM I - IN

7/88

1
INORGANIC ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B202A

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Matrix (soil/water): SOIL Lab Sample ID: 309701

Level (low/med): LOW Date Received: 12/20/89

% Solids: 88.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1280		*	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	1.0	B		F
7440-39-3	Barium	2.3	B		P
7440-41-7	Beryllium	.23	U		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	13900		*	P
7440-47-3	Chromium	2.5			P
7440-48-4	Cobalt	.68	U		P
7440-50-8	Copper	3.6	B		P
7439-89-6	Iron	2010		*	P
7439-92-1	Lead	1.2			F
7439-95-4	Magnesium	2260			P
7439-96-5	Manganese	24.4		*	P
7439-97-6	Mercury	.11	U	N	CV
7440-02-0	Nickel	6.6	U		P
7440-09-7	Potassium	285	U		P
7782-49-2	Selenium	.45	U	WN	F
7440-22-4	Silver	.90	U		P
7440-23-5	Sodium	337	U		P
7440-28-0	Thallium	.45	U		F
7440-62-2	Vanadium	2.9	B		P
7440-66-6	Zinc	16.6			P
	Cyanide	.57	U	N*	AS

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: BROWN Clarity After: _____ Artifacts: _____

Comments:

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FORM I - IN

7/88

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B202B

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Matrix (soil/water): SOIL Lab Sample ID: 309702

Level (low/med): LOW Date Received: 12/20/89

% Solids: 86.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	649		*	P
7440-36-0	Antimony	4.9	U		P
7440-38-2	Arsenic	.70	U		F
7440-39-3	Barium	2.4	B		P
7440-41-7	Beryllium	.23	U		P
7440-43-9	Cadmium	1.2	U		P
7440-70-2	Calcium	35100		*	P
7440-47-3	Chromium	3.1			P
7440-48-4	Cobalt	.70	U		P
7440-50-8	Copper	5.5	B		P
7439-89-6	Iron	1360		*	P
7439-92-1	Lead	.85			F
7439-95-4	Magnesium	3030			P
7439-96-5	Manganese	27.1		*	P
7439-97-6	Mercury	.12	U	N	CV
7440-02-0	Nickel	6.7	U		P
7440-09-7	Potassium	293	U		P
7782-49-2	Selenium	.47	U	WN	F
7440-22-4	Silver	.93	U		P
7440-23-5	Sodium	347	U		P
7440-28-0	Thallium	.47	U		F
7440-62-2	Vanadium	2.1	B		P
7440-66-6	Zinc	13.3			P
	Cyanide	.58	U	N*	AS

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: BROWN Clarity After: _____ Artifacts: _____

Comments:

FORM 1 - PAGE 4

1
INORGANIC ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B202C

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Matrix (soil/water): SOIL Lab Sample ID: 309703
 Level (low/med): LOW Date Received: 12/20/89
 % Solids: 87.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	704		*	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	.69	U		F
7440-39-3	Barium	2.1	B		P
7440-41-7	Beryllium	.23	U		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	11400		*	P
7440-47-3	Chromium	2.3	B		P
7440-48-4	Cobalt	.69	U		P
7440-50-8	Copper	9.0			P
7439-89-6	Iron	1520		*	P
7439-92-1	Lead	.84			F
7439-95-4	Magnesium	1740			P
7439-96-5	Manganese	21.5		*	P
7439-97-6	Mercury	.11	U	N	CV
7440-02-0	Nickel	6.7	U		P
7440-09-7	Potassium	289	U		P
7782-49-2	Selenium	.46	U	WN	F
7440-22-4	Silver	.92	U		P
7440-23-5	Sodium	342	U		P
7440-28-0	Thallium	.46	U		F
7440-62-2	Vanadium	2.4	B		P
7440-66-6	Zinc	11.2			P
	Cyanide	.57	U	N*	AS

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
 Color After: BROWN Clarity After: _____ Artifacts: _____

Comments:

FORM 1 - PAGE 5

1
INORGANIC ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B202TAR

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Matrix (soil/water): SOIL Lab Sample ID: 309700
 Level (low/med): LOW Date Received: 12/20/89
 % Solids: 35.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4300		*	P
7440-36-0	Antimony	11.8	U		P
7440-38-2	Arsenic	1.9	B		F
7440-39-3	Barium	13.5	B		P
7440-41-7	Beryllium	.56	U		P
7440-43-9	Cadmium	2.8	U		P
7440-70-2	Calcium	62000		*	P
7440-47-3	Chromium	258			P
7440-48-4	Cobalt	1.8	B		P
7440-50-8	Copper	474			P
7439-89-6	Iron	14300		*	P
7439-92-1	Lead	14.3			F
7439-95-4	Magnesium	23700			P
7439-96-5	Manganese	879		*	P
7439-97-6	Mercury	.28	U	N	CV
7440-02-0	Nickel	16.3	U		P
7440-09-7	Potassium	710	U		P
7782-49-2	Selenium	2.3	U	EN	F
7440-22-4	Silver	2.3	U		P
7440-23-5	Sodium	839	U		P
7440-28-0	Thallium	1.1	U		F
7440-62-2	Vanadium	8.7	B		P
7440-66-6	Zinc	140			P
	Cyanide	1.4	U	N*	AS

Color Before: BLACK Clarity Before: _____ Texture: MEDIUM
 Color After: BLACK Clarity After: _____ Artifacts: _____

Comments:

FORM 1 - PAGE 6

THE FOLLOWING FURNACE ANALYTES ARE ESTIMATED DUE TO INTERFERENCE:
SELENIUM

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Initial Calibration Source: EPA-LV
 Continuing Calibration Source: SPEX

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum	2090.0	1898.20	90.8	5000.0	4906.40	98.1	4969.10	99.4	P
Antimony	1010.0	1034.40	102.4	5000.0	4943.70	98.9	5002.30	100.0	P
Arsenic	47.0	50.55	107.6	25.0	26.78	107.1	25.20	100.8	F
Barium	2010.0	2004.50	99.7	5000.0	5033.00	100.7	5084.70	101.7	P
Beryllium	501.0	493.13	98.4	5000.0	5016.90	100.3	5115.40	102.3	P
Cadmium	492.0	497.46	101.1	5000.0	4992.70	99.9	5036.80	100.7	P
Calcium	50200.0	49468.00	98.5	50000.0	49697.00	99.4	50560.00	101.1	P
Chromium	503.0	508.20	101.0	5000.0	5028.40	100.6	5113.10	102.3	P
Cobalt	498.0	510.56	102.5	5000.0	5075.10	101.5	5158.90	103.2	P
Copper	520.0	519.34	99.9	5000.0	4936.30	98.7	5001.90	100.0	P
Iron	2081.0	2058.10	98.9	5000.0	5071.10	101.4	5153.60	103.1	P
Lead	97.9	106.65	108.9	25.0	26.35	105.4	25.00	100.0	F
Magnesium	25700.0	24531.00	95.5	50000.0	49070.00	98.1	49938.00	99.9	P
Manganese	504.0	513.79	101.9	5000.0	5065.00	101.3	5139.80	102.8	P
Mercury	4.9	4.76	97.1	3.0	2.72	90.7	2.72	90.7	CV
Nickel	485.0	471.86	97.3	5000.0	5009.60	100.2	5146.50	102.9	P
Potassium	50200.0	49498.00	98.6	50000.0	48063.00	96.1	48841.00	97.7	P
Selenium	104.0	101.78	97.9	20.0	19.99	100.0	19.27	96.4	F
Silver	484.0	492.70	101.8	500.0	492.25	98.4	498.34	99.7	P
Sodium	51500.0	49028.00	95.2	50000.0	49175.00	98.4	50487.00	101.0	P
Thallium	97.3	94.92	97.6	20.0	21.23	106.2	21.01	105.0	F
Vanadium	505.0	493.18	97.7	5000.0	4951.10	99.0	5054.30	101.1	P
Zinc	2920.0	2973.00	101.8	5000.0	4994.80	99.9	5057.50	101.2	P
Cyanide	94.0	90.31	96.1	100.0	92.45	92.4	93.86	93.9	AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

7/88

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Initial Calibration Source: EPA-LV
 Continuing Calibration Source: SPEX

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration				M	
	True	Found	%R(1)	True	Found	%R(1)	Found		%R(1)
Aluminum				5000.0	4953.00	99.1	4968.90	99.4	P
Antimony				5000.0	4977.90	99.6	5045.80	100.9	P
Arsenic				25.0	24.27	97.1	22.83	91.3	F
Barium				5000.0	5053.10	101.1	5078.80	101.6	P
Beryllium				5000.0	5075.70	101.5	5138.60	102.8	P
Cadmium				5000.0	5033.50	100.7	5083.70	101.7	P
Calcium				50000.0	50474.00	100.9	51077.00	102.2	P
Chromium				5000.0	5092.20	101.8	5150.70	103.0	P
Cobalt				5000.0	5149.70	103.0	5204.50	104.1	P
Copper				5000.0	4967.50	99.4	4999.10	100.0	P
Iron				5000.0	5124.90	102.5	5183.50	103.7	P
Lead				25.0	26.22	104.9			F
Magnesium				50000.0	49734.00	99.5	50217.00	100.4	P
Manganese				5000.0	5121.10	102.4	5181.80	103.6	P
Mercury				3.0	2.79	93.0	3.03	101.0	CV
Nickel				5000.0	5126.30	102.5	5138.30	102.8	P
Potassium				50000.0	49409.00	98.8	51636.00	103.3	P
Selenium				20.0	19.37	96.8	18.94	94.7	F
Silver				500.0	496.13	99.2	501.30	100.3	P
Sodium				50000.0	50647.00	101.3	51593.00	103.2	P
Thallium				20.0	19.81	99.0			F
Vanadium				5000.0	5038.10	100.8	5093.70	101.9	P
Zinc				5000.0	5048.90	101.0	5092.80	101.9	P
Cyanide				100.0	93.45	93.4			AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

7/88

INORGANICS CASE 18756A

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Initial Calibration Source: EPA-LV
 Continuing Calibration Source: SPEX

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration				M	
	True	Found	%R(1)	True	Found	%R(1)	Found		%R(1)
Aluminum				5000.0	4824.00	96.5			P
Antimony				5000.0	4835.40	96.7			P
Arsenic									
Barium				5000.0	4988.00	99.8			P
Beryllium				5000.0	4956.90	99.1			P
Cadmium				5000.0	4877.40	97.5			P
Calcium				50000.0	48737.00	97.5			P
Chromium				5000.0	4965.00	99.3			P
Cobalt				5000.0	5007.60	100.2			P
Copper				5000.0	4879.30	97.6			P
Iron				5000.0	5017.90	100.4			P
Lead									
Magnesium				50000.0	48677.00	97.4			P
Manganese				5000.0	4993.40	99.9			P
Mercury									
Nickel				5000.0	4955.30	99.1			P
Potassium				50000.0	51723.00	103.4			P
Selenium									
Silver				500.0	487.24	97.4			P
Sodium				50000.0	51041.00	102.1			P
Thallium									
Vanadium				5000.0	4904.50	98.1			P
Zinc				5000.0	4865.80	97.3			P
Cyanide	94.0	88.10	93.7	100.0	93.37	93.4	93.04	93.0	AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

7/88

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 AA CRDL Standard Source: SPEX/CC
 ICP CRDL Standard Source: SPEX/CC

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony				120.0	128.12	106.8	113.49	94.6
Arsenic	10.0	8.73	87.3					
Barium								
Beryllium				10.0	11.12	111.2	8.19	81.9
Cadmium				10.0	11.22	112.2	12.01	120.1
Calcium								
Chromium				20.0	22.31	111.6	20.26	101.3
Cobalt				100.0	102.73	102.7	91.13	91.1
Copper				50.0	54.68	109.4	57.39	114.8
Iron								
Lead	3.0	3.34	111.3					
Magnesium								
Manganese				30.0	31.43	104.8	31.80	106.0
Mercury								
Nickel				80.0	80.24	100.3	63.63	79.5
Potassium								
Selenium	5.0	5.46	109.2					
Silver				20.0	21.25	106.2	18.71	93.6
Sodium								
Thallium	10.0	9.68	96.8					
Vanadium				100.0	97.88	97.9	90.03	90.0
Zinc				40.0	40.73	101.8	37.93	94.8
Cyanide								

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BLANKSLab Name: COMPUCHEM LABORATORIESContract: 788Lab Code: COMPUCase No.: 17820

SAS No.: _____

SDG No.: 18756APreparation Blank Matrix (soil/water): SOILPreparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L) C	Continuing Calibration Blank (ug/L)						Prepa- ration Blank		C	M
		1	C	2	C	3	C				
Aluminum	16.0 U	16.0 U		16.0 U		16.0 U		16.0 U		3.200 U	P
Antimony	21.0 U	21.6 B		21.0 U		21.0 U		21.0 U		4.200 U	P
Arsenic	3.0 U	3.0 U		3.0 U		3.0 U		3.0 U		0.600 U	F
Barium	1.0 U	1.0 U		1.0 U		1.1 B		1.1 B		0.200 U	P
Beryllium	1.0 U	1.3 B		1.0 U		1.0 U		1.0 U		0.200 U	P
Cadmium	5.0 U	5.0 U		5.0 U		5.0 U		5.0 U		1.000 U	P
Calcium	17.0 U	17.0 U		17.0 U		17.0 U		17.0 U		3.400 U	P
Chromium	5.0 U	5.0 U		5.0 U		5.0 U		5.0 U		1.000 U	P
Cobalt	3.0 U	3.0 U		3.3 B		3.0 U		3.0 U		0.600 U	P
Copper	4.0 U	4.0 U		4.0 U		4.0 U		4.0 U		0.800 U	P
Iron	4.0 U	4.0 U		4.4 B		-4.5 B		4.0 U		0.800 U	P
Lead	2.0 U	2.0 U		2.0 U		2.0 U		2.0 U		0.400 U	F
Magnesium	-72.0 B	-155.7 B		56.0 U		58.3 B		58.3 B		13.442 B	P
Manganese	1.0 U	1.0 U		1.0 U		1.0 U		1.0 U		2.948 B	P
Mercury	0.2 U	0.2 U		0.2 U		0.2 U		0.2 U		0.100 U	CV
Nickel	29.0 U	29.0 U		29.0 U		29.0 U		29.0 U		5.800 U	P
Potassium	1260.0 U	1260.0 U		-1268.3 B		1260.0 U		1260.0 U		377.160 B	P
Selenium	2.0 U	2.0 U		2.0 U		2.0 U		2.0 U		0.400 U	F
Silver	4.0 U	4.0 U		4.0 U		4.0 U		4.0 U		0.800 U	P
Sodium	1490.0 U	1490.0 U		1490.0 U		1490.0 U		1490.0 U		298.000 U	P
Thallium	2.0 U	2.0 U		2.0 U		2.0 U		2.0 U		0.400 U	F
Vanadium	-2.5 B	-2.1 B		3.1 B		2.3 B		2.3 B		0.400 U	P
Zinc	1.0 U	1.0 U		1.0 U		1.2 B		1.2 B		0.278 B	P
Cyanide	10.0 U	10.0 U		10.0 U		10.0 U		10.0 U		0.500 U	AS

FORM III - IN

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3
BLANKSLab Name: COMPUCHEM LABORATORIESContract: 788Lab Code: COMPUCase No.: 17820

SAS No.: _____

SDG No.: 18756APreparation Blank Matrix (soil/water): SOILPreparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L) C	Continuing Calibration Blank (ug/L)						Prepa- ration Blank	C	M
		1	C	2	C	3	C			
Aluminum		16.0	U	26.5	B					P
Antimony		21.0	U	21.0	U					P
Arsenic		3.0	U				0.600	U		F
Barium		-1.2	B	1.0	U					P
Beryllium		1.0	U	1.0	U					P
Cadmium		5.0	U	5.0	U					P
Calcium		17.0	U	26.9	B					P
Chromium		5.0	U	5.0	U					P
Cobalt		8.3	B	4.0	B					P
Copper		4.0	U	4.0	U					P
Iron		4.0	U	12.1	B					P
Lead										F
Magnesium		309.6	B	56.0	U					P
Manganese		1.0	U	1.0	U					P
Mercury		0.2	U							CV
Nickel		29.0	U	29.0	U					P
Potassium		3877.1	B	1260.0	U					P
Selenium		2.0	U				0.400	U		F
Silver		4.0	U	4.0	U					P
Sodium		2202.5	B	1490.0	U					P
Thallium										F
Vanadium		7.9	B	2.0	U					P
Zinc		1.0	U	1.0	U					P
Cyanide	10.0	U	10.0	U	10.0	U				AS

FORM III - IN

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3
BLANKS

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Preparation Blank Matrix (soil/water): SOIL
 Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L) C	Continuing Calibration Blank (ug/L)						Prepa- ration Blank	C	M
		1	C	2	C	3	C			
Aluminum									P	
Antimony									P	
Arsenic	3.0 U		3.0 U		3.0 U		3.0 U		F	
Barium									P	
Beryllium									P	
Cadmium									P	
Calcium									P	
Chromium									P	
Cobalt									P	
Copper									P	
Iron									P	
Lead									F	
Magnesium									P	
Manganese									P	
Mercury									CV	
Nickel									P	
Potassium									P	
Selenium	2.0 U		2.0 U		2.0 U		2.0 U		F	
Silver									P	
Sodium									P	
Thallium									F	
Vanadium									P	
Zinc									P	
Cyanide									AS	

FORM III - IN

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BLANKSLab Name: COMPUCHEM LABORATORIESContract: 788Lab Code: COMPUCase No.: 17820

SAS No.: _____

SDG No.: 18756APreparation Blank Matrix (soil/water): SOILPreparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L) C	Continuing Calibration Blank (ug/L)						Prepa- ration Blank	C	M
		1	C	2	C	3	C			
Aluminum										P
Antimony										P
Arsenic			3.0	U						F
Barium										P
Beryllium										P
Cadmium										P
Calcium										P
Chromium										P
Cobalt										P
Copper										P
Iron										P
Lead										F
Magnesium										P
Manganese										P
Mercury										CV
Nickel										P
Potassium										P
Selenium			2.0	U						F
Silver										P
Sodium										P
Thallium										F
Vanadium										P
Zinc										P
Cyanide										AS

FORM III - IN

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INORGANICS CASE 18756A

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ICP INTERFERENCE CHECK SAMPLE

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 ICP ID Number: P1 ICS Source: EPA-LV

Concentration Units: ug/L

Analyte	True		Initial Found			Final Found		
	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum	482000	484000	439130	436390.0	90.2	438780	428620.0	88.6
Antimony	0	0	23	34.2		36	62.9	
Arsenic								
Barium	0	466	1	474.0	101.7	2	480.5	103.1
Beryllium	0	472	1	465.8	98.7	0	472.1	100.0
Cadmium	0	900	16	964.8	107.2	19	969.6	107.7
Calcium	460000	455000	428480	427330.0	93.9	424360	428570.0	94.2
Chromium	53	532	54	507.7	95.4	53	514.7	96.7
Cobalt	0	469	37	492.9	105.1	32	504.0	107.5
Copper	0	515	-5	515.5	100.1	12	525.2	102.0
Iron	173000	172000	166890	166060.0	96.5	166240	166340.0	96.7
Lead								
Magnesium	444000	450000	439670	436680.0	97.0	434210	435600.0	96.8
Manganese	0	461	19	479.2	103.9	19	487.7	105.8
Mercury								
Nickel	0	892	-16	890.8	99.9	-2	891.2	99.9
Potassium	0	0	541	870.4		-1869	-1151.6	
Selenium								
Silver	0	1010	1	959.9	95.0	0	953.1	94.4
Sodium	0	0	2763	3784.9		1650	2913.2	
Thallium								
Vanadium	0	487	29	487.4	100.1	29	492.2	101.1
Zinc	0	976	-18	920.8	94.3	-19	925.2	94.8
Cyanide								

Lab Name: COMPUCHEM LABORATORIES

Lab Code: COMPU

Case No.: 17820

Contract: 788

Matrix: SOIL

SAS No.:

B202CS

% Solids for Sample: 87.2

SDG No.: 18

Level (low/med): LO

Concentration Units: MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	98.4381					
Antimony	75-125	9.7041					
Arsenic	75-125	463.1651	4.8165 U	114.68	85.8		NR
Barium	75-125	11.9518	0.6881 U	9.17	105.8		P
Beryllium	75-125	10.0780	2.0963 B	458.72	100.5		F
Cadmium	75-125	47.8395	0.2294 U	11.47	104.2		P
Calcium	75-125	116.7340	1.1468 U	11.47	87.9		P
Chromium	75-125	63.2362	2.2821 B	45.87	99.3		NR
Cobalt	75-125	5.2706	0.6881 U	114.68	101.8		P
Copper	75-125	136.2018	9.0367	57.34	94.5		P
Iron	75-125	0.7689	0.8394	4.59	96.5		NR
Lead	75-125	118.3372	21.5413	114.68	100.0		F
Magnesium	75-125	0.9518 B	0.1147 U	0.57	134.9		NR
Manganese	75-125	11.3739	6.6514 U	114.68	103.2		P
Mercury	75-125	12.1789	0.4587 U	2.29	41.6		NR
Nickel	75-125	114.1055	0.9174 U	11.47	99.2		F
Potassium	75-125	125.1835	0.4587 U	11.47	106.2		F
Selenium	75-125		2.4450 B	114.68	97.4		P
Silver	75-125		11.1766	114.68	99.4		P
Sodium	75-125						NR
Thallium	75-125						
Vanadium	75-125						
Zinc	75-125						
Cyanide	75-125						

Comments:
FORM SA -PAGE 2 (SR) Lab ID: 309703

ICP Metals (SSR) Lab ID: 309692
AA Metals (SSR) Lab ID: 309692
Mercury (SSR) Lab ID: 309692
Cyanide (SSR) Lab ID: 309692

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.

B201AS

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 90.6

Concentration Units: MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R	Q	M
Aluminum							NR
Antimony							NR
Arsenic							NR
Barium							NR
Beryllium							NR
Cadmium							NR
Calcium							NR
Chromium							NR
Cobalt							NR
Copper							NR
Iron							NR
Lead							NR
Magnesium							NR
Manganese							NR
Mercury							NR
Nickel							NR
Potassium							NR
Selenium							NR
Silver							NR
Sodium							NR
Thallium							NR
Vanadium							NR
Zinc							NR
Cyanide	75-125	4.4696	0.9829	5.52	63.2	N	AS

Comments:

FORM 5A -PAGE 1 (SR) Lab ID:309691 ICP Metals (SSR) Lab ID:
 AA Metals (SSR) Lab ID:
 Mercury (SSR) Lab ID:
 Cyanide (SSR) Lab ID:309695

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.

B202C

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Matrix: SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Aluminum							
Antimony							
Arsenic							
Barium							
Beryllium							
Cadmium							
Calcium							
Chromium							
Cobalt							
Copper							
Iron							
Lead							
Magnesium							
Manganese							
Mercury							
Nickel							
Potassium							
Selenium							
Silver							
Sodium							
Thallium							
Vanadium							
Zinc							
Cyanide							

Comments:
FORM 5B - PAGE 1 NO POST DIGEST SPIKES WERE REQUIRED FOR FLAME AA
ICP, MERCURY, AND CYANIDE ANALYSES.

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.

B201A

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Matrix: SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Aluminum							
Antimony							
Arsenic							
Barium							
Beryllium							
Cadmium							
Calcium							
Chromium							
Cobalt							
Copper							
Iron							
Lead							
Magnesium							
Manganese							
Mercury							
Nickel							
Potassium							
Selenium							
Silver							
Sodium							
Thallium							
Vanadium							
Zinc							
Cyanide		43.92	17.81	40.0	65.3		AS

Comments:

FORM 5B - PAGE 1 Lab Sample ID:309691

U.S. EPA - CLP

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DUPLICATES

CLIENT SAMPLE NO.

B202CD

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 87.2 % Solids for Duplicate: 90.8

Concentration Units: MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		704.1743		557.2477		23.3	*	P
Antimony		4.8165	U	4.8165	U			P
Arsenic		0.6881	U	0.6881	U			F
Barium		2.0963	B	1.6651	B	22.9		P
Beryllium		0.2294	U	0.2294	U			P
Cadmium		1.1468	U	1.1468	U			P
Calcium		11404.5876		9306.1930		20.3	*	P
Chromium		2.2821	B	1.4817	B	42.5		P
Cobalt		0.6881	U	0.6881	U			P
Copper	5.7	9.0367		5.6330	B	46.4		P
Iron		1515.2523		1203.4404		22.9	*	P
Lead	0.7	0.8394		1.2500		39.3		F
Magnesium	1146.8	1740.5505		1543.6698		12.0		P
Manganese	3.4	21.5413		14.3532		40.1	*	P
Mercury		0.1147	U	0.1147	U			CV
Nickel		6.6514	U	6.6514	U			P
Potassium		288.9908	U	288.9908	U			P
Selenium		0.4587	U	0.4587	U			F
Silver		0.9174	U	0.9174	U			P
Sodium		341.7431	U	341.7431	U			P
Thallium		0.4587	U	0.4587	U			F
Vanadium		2.4450	B	1.8624	B	27.1		P
Zinc	4.6	11.1766		8.8532		23.2		P
Cyanide							*	NR

Comments:

FORM 6 - PAGE 2 (S) Lab ID:309703 ICP Metals Dup. Lab ID:309693
 AA Metals Dup. Lab ID:309693
 Mercury Dup. Lab ID:309693
 Cyanide Dup. Lab ID:

FORM VI - IN

7/88

U.S. EPA - CLP

6
 DUPLICATES

CLIENT SAMPLE NO.

B201AD

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 90.6 % Solids for Duplicate: 90.6

Concentration Units: MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								NR
Antimony								NR
Arsenic								NR
Barium								NR
Beryllium								NR
Cadmium								NR
Calcium								NR
Chromium								NR
Cobalt								NR
Copper								NR
Iron								NR
Lead								NR
Magnesium								NR
Manganese								NR
Mercury								NR
Nickel								NR
Potassium								NR
Selenium								NR
Silver								NR
Sodium								NR
Thallium								NR
Vanadium								NR
Zinc								NR
Cyanide	0.6	0.9829		0.5519	U	200.0	*	AS

Comments:

FORM 6 - PAGE 1 (S) Lab ID:309691 ICP Metals Dup. Lab ID:
 AA Metals Dup. Lab ID:
 Mercury Dup. Lab ID:
 Cyanide Dup. Lab ID:309696

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U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No: 18756A
 Solid LCS Source: EPA-LV
 Aqueous LCS Source: _____

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum				325.0	255.9		225.0 424.0	78.7
Antimony				211.0	210.8		127.0 294.0	99.9
Arsenic				917.0	913.6		635.0 1199.0	99.6
Barium				4.8	5.1	B	0.0 40.0	106.2
Beryllium				19.4	19.2		16.5 22.3	99.0
Cadmium				45.4	43.7		35.7 55.1	96.3
Calcium				196200.0	181200.0		166800.0 225600.0	92.4
Chromium				99.6	100.8		79.2 120.0	101.2
Cobalt				144.0	144.2		125.0 162.0	100.1
Copper				6910.0	6739.8		6006.0 7820.0	97.5
Iron				22430.0	18405.0		17770.0 27080.0	82.1
Lead				236.0	207.5		188.0 285.0	87.9
Magnesium				118100.0	114044.0		100400.0 129900.0	96.6
Manganese				208.0	208.4		177.0 239.0	100.2
Mercury				3.0	16.3		8.5 17.0	543.3
Nickel				60.9	51.6		49.2 72.6	84.7
Potassium				50.0	723.6	B	0.0 1000.0	999.9
Selenium				39.2	30.6		19.1 59.4	78.1
Silver				22.2	21.0		15.5 29.0	94.6
Sodium				50.0	1108.9		0.0 1000.0	999.9
Thallium				39.0	36.7		24.6 53.5	94.1
Vanadium				65.8	72.8		51.7 79.9	110.6
Zinc				187.0	158.2		138.0 236.0	84.6
Cyanide				5.6	5.1		4.3 6.9	91.1

Comments:
 Form 7 - Page 1 Lab Sample ID:309694

STANDARD ADDITION RESULTS

Lab Name: COMPUCHEM LABORATORIES

Contract: 788

Lab Code: COMPU

Case No.: 17820

SAS No.: _____

SDG No.: 18756A

Concentration Units: ug/L

CLIENT Sample No.	An	0 ADD		1 ADD		2 ADD		3 ADD		Final Conc.	r	Q
		ABS	CON	ABS	CON	ABS	CON	ABS	CON			

U.S. EPA - CLP

9
ICP SERIAL DILUTIONS

CLIENT SAMPLE NO.

B202TARL

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	Difference	Q	M
Aluminum	7641.00		7480.50		2.1		P
Antimony	21.00	U	105.00	U			P
Arsenic							NR
Barium	23.97	B	17.95	B	25.1		P
Beryllium	1.00	U	5.00	U			P
Cadmium	5.00	U	25.00	U			P
Calcium	110020.00		109490.00		0.5		P
Chromium	457.47		437.00		4.5		P
Cobalt	3.14	B	19.40	B	517.8		P
Copper	841.39		848.80		0.9		P
Iron	25369.00		25084.00		1.1		P
Lead							NR
Magnesium	42058.00		43010.00		2.3		P
Manganese	1559.70		1553.25		0.4		P
Mercury							NR
Nickel	29.00	U	145.00	U			P
Potassium	1260.00	U	26415.50				P
Selenium							NR
Silver	4.00	U	20.00	U			P
Sodium	1490.00	U	8019.00	B			P
Thallium							NR
Vanadium	15.52	B	38.45	B	147.7		P
Zinc	247.97		252.15		1.7		P

Comments:

FORM 9 - PAGE 1 Lab Sample ID: 309700

U.S. EPA - CLP

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Instrument Detection Limits (Quarterly)

Lab Name: COMPUCHEM LABORATORIES

Contract: 68-D9-0086

Lab Code: COMPU

Case No.: 17820

SAS No.: _____

SDG No.: 18756A

ICP ID Number: _____

P1 _____

Date: 01/15/90

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.20		200	16.0	P
Antimony	206.80		60	21.0	P
Arsenic	193.60		10	34.0	P
Barium	493.40		200	1.0	P
Beryllium	313.00		5	1.0	P
Cadmium	228.80		5	5.0	P
Calcium	315.80		5000	17.0	P
Chromium	267.70		10	5.0	P
Cobalt	228.60		50	3.0	P
Copper	324.70		25	4.0	P
Iron	259.90		100	4.0	P
Lead	220.30		3	31.0	P
Magnesium	383.20		5000	56.0	P
Manganese	257.60		15	1.0	P
Mercury					
Nickel	231.60		40	29.0	P
Potassium	766.40		5000	1260.0	P
Selenium					
Silver	328.00		10	4.0	P
Sodium	330.20		5000	1490.0	P
Thallium					
Vanadium	292.40		50	2.0	P
Zinc	213.80		20	1.0	P

Comments:

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U.S. EPA - CLP

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Instrument Detection Limits (Quarterly)

Lab Name: COMPUCHEM LABORATORIES Contract: 68-D9-0086
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 ICP ID Number: _____ Date: 01/15/90
 Flame AA ID Number: _____
 Furnace AA ID Number: A1

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic	197.30	BS	10	3.0	F
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	283.30	BS	3	2.0	F
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium	196.00	BS	5	2.0	F
Silver					
Sodium					
Thallium	276.80	BS	10	2.0	F
Vanadium					
Zinc					

Comments:

FORM X - IN

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Instrument Detection Limits (Quarterly)

Lab Name: COMPUCHEM LABORATORIES Contract: 68-D9-0086
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 ICP ID Number: _____ Date: 01/15/90
 Flame AA ID Number: _____
 Furnace AA ID Number: A2

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic	197.30	BS	10	3.0	F
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	283.30	BS	3	2.0	F
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium	196.00	BS	5	2.0	F
Silver					
Sodium					
Thallium	276.80	BS	10	2.0	F
Vanadium					
Zinc					

Comments:

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U.S. EPA - CLP

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Instrument Detection Limits (Quarterly)

Lab Name: COMPUCHEM LABORATORIES

Contract: 68-D9-0086

Lab Code: COMPU

Case No.: 17820

SAS No.: _____

SDG No.: 18756A

ICP ID Number: _____

Date: 01/15/90

Flame AA ID Number: _____

Furnace AA ID Number: A3

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic	197.30	BS	10	3.0	F
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	283.30	BS	3	2.0	F
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium	196.00	BS	5	2.0	F
Silver					
Sodium					
Thallium	276.80	BS	10	2.0	F
Vanadium					
Zinc					

Comments:

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Instrument Detection Limits (Quarterly)

Lab Name: COMPUCHEM LABORATORIES

Contract: 68-D9-0086

Lab Code: COMPU

Case No.: 17820

SAS No.: _____

SDG No.: 18756A

ICP ID Number: _____

Date: 01/15/90

Flame AA ID Number: V1

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Mercury	253.70	BD	0.2	0.2	CV
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Thallium					
Vanadium					
Zinc					

Comments:

U.S. EPA - CLP

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Instrument Detection Limits (Quarterly)

Lab Name: COMPUCHEM LABORATORIES Contract: 68-D9-0086
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 ICP ID Number: _____ Date: 01/15/90
 Flame AA ID Number: V2
 Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Mercury	253.70	BD	0.2	0.2	AV
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Thallium					
Vanadium					
Zinc					

Comments:

U.S. EPA - CLP

11A

ICP Interelement Correction Factors (Annually)

Lab Name: COMPUCHEM LABORATORIES

Contract: 68-D9-0086

Lab Code: COMPU

Case No.: 17820

SAS No.: _____

SDG No.: 18756A

ICP ID Number: P1

Date: 09/22/89

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	AS
Aluminum	308.20	0.0000000	0.0000000	0.0000000	0.0000000	
Antimony	206.80	0.0000000	0.0000000	0.0000000	0.0000000	
Arsenic	193.60	0.0057900	0.0000000	0.0002100	0.0000000	
Barium	493.40	0.0000000	0.0000000	0.0000000	0.0000000	
Beryllium	313.00	0.0000000	0.0000000	0.0000000	0.0000000	
Cadmium	228.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0127700
Calcium	315.80	0.0000000	0.0000000	0.0000000	0.0000000	
Chromium	267.70	0.0000000	0.0000000	0.0000000	0.0000000	
Cobalt	228.60	0.0000000	0.0000000	0.0001500	0.0515800	0.0002200
Copper	324.70	0.0000000	0.0000000	0.0000000	0.0000000	
Iron	259.90	0.0000900	0.0000000	0.0000000	0.0000000	
Lead	220.30	0.0004800	0.0000000	0.0000000	0.0000000	
Magnesium	383.20	0.0000000	0.0000000	0.0000000	0.0000000	
Manganese	257.60	0.0013400	0.0000000	0.0000000	0.0000000	
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	
Potassium	766.40	0.0000000	0.0000000	0.0000000	0.0000000	
Selenium						
Silver	328.00	0.0000000	0.0000000	0.0000000	0.0000000	
Sodium	330.20	0.0000000	0.0000000	0.0000000	0.0000000	
Thallium						
Vanadium	292.40	0.0001700	0.0000000	0.0000000	0.0000000	
Zinc	213.80	0.0000000	0.0000000	0.0001300	0.0000400	

Comments:

U.S. EPA - CLP

11B

ICP Interelement Correction Factors (Annually)

Lab Name: COMPUCHEM LABORATORIES

Contract: 68-D9-0086

Lab Code: COMPU

Case No.: 17820

SAS No.: _____

SDG No.: 18756A

ICP ID Number: P1

Date: 09/22/89

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		CD	CO	CR	CU	MO
Aluminum	308.20		-0.0038800			0.0114700
Antimony	206.80			0.0063900		0.0022600
Arsenic	193.60			0.0009500		
Barium	493.40					
Beryllium	313.00					
Cadmium	228.80					
Calcium	315.80					
Chromium	267.70					
Cobalt	228.60	0.0081800		0.0003900		
Copper	324.70					
Iron	259.90					
Lead	220.30		-0.0026700			
Magnesium	383.20					
Manganese	257.60					
Mercury						
Nickel	231.60		0.0005400			
Potassium	766.40					
Selenium						
Silver	328.00					
Sodium	330.20					
Thallium						
Vanadium	292.40					
Zinc	213.80				0.0052700	

Comments:

U.S. EPA - CLP

11B

ICP Interelement Correction Factors (Annually)

Lab Name: COMPUCHEM LABORATORIES

Contract: 68-D9-0086

Lab Code: COMPU

Case No.: 17820

SAS No.: _____

SDG No.: 18756A

ICP ID Number: P1

Date: 09/22/89

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		NI	SN	TI	V	ZN
Aluminum	308.20					
Antimony	206.80	-0.0024400	-0.0199800		-0.0069700	
Arsenic	193.60	0.0009500			0.0132500	
Barium	493.40					
Beryllium	313.00				0.0082000	
Cadmium	228.80					
Calcium	315.80					
Chromium	267.70					
Cobalt	228.60	0.0014700				
Copper	324.70					
Iron	259.90					
Lead	220.30	0.0014800				
Magnesium	383.20					
Manganese	257.60					
Mercury						
Nickel	231.60					
Potassium	766.40					
Selenium						
Silver	328.00					
Sodium	330.20			0.2944600		0.3768800
Thallium						
Vanadium	292.40					
Zinc	213.80					

Comments:

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ICP Linear Ranges (Quarterly)

Lab Name: COMPUCHEM LABORATORIES

Contract: 68-D9-0086

Lab Code: COMPU

Case No.: 17820

SAS No.: _____

SDG No.: 18756A

ICP ID Number: P1

Date: 01/15/90

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	M
Aluminum	4.00	2500000.0	
Antimony	4.00	500000.0	
Arsenic	4.00	1000000.0	
Barium	4.00	500000.0	
Beryllium	4.00	250000.0	
Cadmium	4.00	750000.0	
Calcium	4.00	2500000.0	
Chromium	4.00	500000.0	
Cobalt	4.00	500000.0	
Copper	4.00	500000.0	
Iron	4.00	1000000.0	
Lead	4.00	500000.0	
Magnesium	4.00	2500000.0	
Manganese	4.00	500000.0	
Mercury			NR
Nickel	4.00	500000.0	
Potassium	4.00	2500000.0	
Selenium			NR
Silver	4.00	100000.0	
Sodium	4.00	2500000.0	
Thallium			NR
Vanadium	4.00	200000.0	
Zinc	4.00	400000.0	

Comments:

Boron: 100000	Tin: 100000	Titanium: 10000
Molybdenum: 100000	Silicon: 50000	Strontium: 1000

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PREPARATION LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Method: P

Client Sample No.	Preparation Date	Weight (gram)	Volume (mL)
B201A	01/04/90	1.00	200
B201B	01/04/90	1.00	200
B202A	01/04/90	1.00	200
B202B	01/04/90	1.00	200
B202C	01/04/90	1.00	200
B202CD	01/04/90	1.00	200
B202CS	01/04/90	1.00	200
B202TAR	01/04/90	1.00	200
LCSS	01/04/90	1.00	200
PBS	01/04/90	1.00	200

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Method: F

Client Sample No.	Preparation Date	Weight (gram)	Volume (mL)
B201A	01/04/90	1.00	200
B201A	01/22/90	1.02	200
B201B	01/04/90	1.00	200
B201B	01/22/90	1.01	200
B202A	01/04/90	1.00	200
B202A	01/22/90	1.00	200
B202B	01/04/90	1.00	200
B202B	01/22/90	1.01	200
B202C	01/04/90	1.00	200
B202C	01/22/90	1.01	200
B202CD	01/04/90	1.00	200
B202CD	01/22/90	1.01	200
B202CS	01/04/90	1.00	200
B202CS	01/22/90	1.00	200
B202TAR	01/04/90	1.00	200
B202TAR	01/22/90	1.01	200
LCSS	01/04/90	1.00	200
LCSS	01/22/90	1.00	200
PBS	01/04/90	1.00	200
PBS	01/22/90	1.00	200

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PREPARATION LOG

Lab Name: COMPUCHEM LABORATORIES

Contract: 788

Lab Code: COMPU

Case No.: 17820

SAS No.: _____

SDG No.: 18756A

Method: CV

Client Sample No.	Preparation Date	Weight (gram)	Volume (mL)
B201A	01/02/90	0.20	100
B201B	01/02/90	0.20	100
B202A	01/02/90	0.20	100
B202B	01/02/90	0.20	100
B202C	01/02/90	0.20	100
B202CD	01/02/90	0.20	100
B202CS	01/02/90	0.20	100
B202TAR	01/02/90	0.20	100
LCSS	01/02/90	0.20	100
PBS			

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PREPARATION LOG

Lab Name: COMPUCHEM LABORATORIES

Contract: 788

Lab Code: COMPU

Case No.: 17820

SAS No.: _____

SDG No.: 18756A

Method: AS

Client Sample No.	Preparation Date	Weight (gram)	Volume (mL)
B201A	12/29/89	5.00	250
B201AD	12/29/89	5.00	250
B201AS	12/29/89	5.00	250
B201B	12/29/89	5.00	250
B202A	12/29/89	5.00	250
B202B	12/29/89	5.00	250
B202C	12/29/89	5.00	250
B202TAR	12/29/89	5.00	250
LCSS	12/29/89	5.00	250
PBS	12/29/89	5.00	250

INORGANICS CASE 18756A

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Instrument ID Number: P1 Method: P

Start Date: 01/24/90 End Date: 01/24/90

Client Sample No.	D/F	Time	% R	Analytes																					
				A	S	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	E	G	A	L	I	N
S0	1.00	2035		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S	1.00	2037		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICV	1.00	2039		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICV	1.00	2042																							
ICV	1.00	2044		X																					
ICB	1.00	2046		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA	1.00	2048		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB	1.00	2050		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI	1.00	2053		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZ		2056																							
PBS	1.00	2102		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCSS	1.00	2105		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B202C	1.00	2107		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B202CS	1.00	2109		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B202CD	1.00	2119		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B201A	1.00	2124		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV	1.00	2126		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1.00	2128		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B201B	1.00	2130		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B202TAR	1.00	2132		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B202A	1.00	2134		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B202B	1.00	2136		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B202TARL	5.00	2139		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZ		2151																							
ZZZZZ		2158																							
ZZZZZ		2200																							
ZZZZZ		2203																							
ZZZZZ		2207																							
CCV	1.00	2209		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1.00	2211		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZ		2213																							
ZZZZZ		2216																							

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Instrument ID Number: P1 Method: P

Start Date: 01/24/90 End Date: 01/24/90

Client Sample No.	D/F	Time	% R	Analytes																					
				A	S	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	E	G	A	L	N	N
ZZZZZ		2225																							
ZZZZZ		2228																							
ZZZZZ		2230																							
ZZZZZ		2235																							
ZZZZZ		2240																							
ZZZZZ		2242																							
ZZZZZ		2247																							
ZZZZZ		2253																							
CCV	1.00	2255		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1.00	2257		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZ		2259																							
ZZZZZ		2301																							
ZZZZZ		2303																							
ZZZZZ		2308																							
ZZZZZ		2310																							
ZZZZZ		2312																							
ZZZZZ		2314																							
ZZZZZ		2316																							
ZZZZZ		2318																							
ZZZZZ		2323																							
CCV	1.00	2325		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1.00	2327		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZ		2329																							
ZZZZZ		2331																							
ZZZZZ		2333																							
ZZZZZ		2335																							
ZZZZZ		2337																							
ZZZZZ		2339																							
CRI	1.00	2341		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA	1.00	2343		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB	1.00	2346		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV	1.00	2348		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Instrument ID Number: P1 Method: P

Start Date: 01/24/90 End Date: 01/24/90

Client Sample No.	D/F	Time	% R	Analytes																					
				A	S	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z
CCB	1.00	2350		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Instrument ID Number: A1 Method: F

Start Date: 01/23/90 End Date: 01/23/90

Client Sample No.	D/F	Time	% R	Analytes																						
				A	S	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z	C
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	E	G	A	L	I	N	N
S0	1.00	0119																						X		
S20	1.00	0122																						X		
S20	1.00	0144																						X		
S5	1.00	0147																						X		
S30	1.00	0150																						X		
S50	1.00	0154																						X		
S0	1.00	0157																						X		
ICV	2.50	0215																						X		
ICB	1.00	0218																						X		
CRA	1.00	0224																						X		
CRA	1.00	0228	106.6																					X		
ZZZZZ		0313																								
ZZZZZ		0317																								
LCSS	200.00	0321																								
LCSS	200.00	0326																								
LCSS	10.00	0330																						X		
LCSSA	10.00	0334	90.0																					X		
B202C	1.00	0339																						X		
B202CA	1.00	0345	48.2																					X		
CCV	1.00	0349																						X		
CCB	1.00	0353																						X		
B202CS	1.00	0415																						X		
B202CD	1.00	0419																						X		
B202CDA	1.00	0423	57.6																					X		
B201A	1.00	0427																						X		
B201AA	1.00	0431	68.2																					X		
B201B	1.00	0440																						X		
B201BA	1.00	0444	66.5																					X		
B202TAR	1.00	0449																								
B202TARA	1.00	0453	28.0																							
CCV	1.00	0457																						X		
CCB	1.00	0500																						X		

Comments:

AA14.02- 6 COMPUCHEM RUN ID: A19001230118 FOR ANALYTE SE - PAGE 1

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Instrument ID Number: A1 Method: F

Start Date: 01/23/90 End Date: 01/23/90

Client Sample No.	D/F	Time	% R	Analytes																						
				A	S	A	B	B	C	C	C	C	F	P	M	H	N	K	S	A	N	T	V	Z	C	
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	I	E	G	A	L	N	N
B202TAR	2.00	0504																								X
B202TARA	2.00	0508	26.6																							X
B202A	1.00	0515																								X
B202AA	1.00	0519	49.3																							X
B202B	1.00	0523																								X
B202BA	1.00	0530	53.4																							X
ZZZZZ		0626																								
ZZZZZ		0631																								
ZZZZZ		0636																								
ZZZZZ		0641																								
CCV	1.00	0645																								X
CCB	1.00	0649																								X
ZZZZZ		0702																								
ZZZZZ		0706																								
CCV	1.00	0710																								X
CCB	1.00	0714																								X

Comments:

AA14.02- 7 COMPUCHEM RUN ID: A19001230118 FOR ANALYTE SE - PAGE 2

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: SDG No.: 18756A
 Instrument ID Number: A1 Method: F
 Start Date: 01/23/90 End Date: 01/23/90

Client Sample No.	D/F	Time	% R	Analytes																						
				A	S	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z	C
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	E	G	A	L	L	N	I
S0	1.00	0119			X																					
S20	1.00	0122			X																					
S20	1.00	0144			X																					
S10	1.00	0147			X																					
S30	1.00	0150			X																					
S50	1.00	0154			X																					
S80	1.00	0157			X																					
ICV	2.50	0215			X																					
ICB	1.00	0218			X																					
CRA	1.00	0224			X																					
CRA	1.00	0228	110.8		X																					
ZZZZZ		0313																								
ZZZZZ		0317																								
LCSS	200.00	0321			X																					
LCSSA	200.00	0326	112.0		X																					
LCSS	10.00	0330																								
LCSS	10.00	0334																								
B202C	1.00	0339			X																					
B202CA	1.00	0345	115.1		X																					
CCV	1.00	0349			X																					
CCB	1.00	0353			X																					
B202CS	1.00	0415			X																					
B202CD	1.00	0419			X																					
B202CDA	1.00	0423	108.4		X																					
B201A	1.00	0427			X																					
B201AA	1.00	0431	110.3		X																					
B201B	1.00	0440			X																					
B201BA	1.00	0444	104.0		X																					
B202TAR	1.00	0449			X																					
B202TARA	1.00	0453	92.5		X																					
CCV	1.00	0457			X																					
CCB	1.00	0500			X																					

Comments:
 AA14.02- 8 COMPUCHEM RUN ID: A19001230118 FOR ANALYTE AS - PAGE 1

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Instrument ID Number: A1 Method: F

Start Date: 01/23/90 End Date: 01/23/90

Client Sample No.	D/F	Time	% R	Analytes																						
				A	S	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z	C
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	E	G	A	L	I	N	N
B202TAR	2.00	0504																								
B202TAR	2.00	0508																								
B202A	1.00	0515					X																			
B202AA	1.00	0519	97.8				X																			
B202B	1.00	0523					X																			
B202BA	1.00	0530	114.6				X																			
ZZZZZ		0626																								
ZZZZZ		0631																								
ZZZZZ		0636																								
ZZZZZ		0641																								
CCV	1.00	0645					X																			
CCB	1.00	0649					X																			
ZZZZZ		0702																								
ZZZZZ		0706																								
CCV	1.00	0710					X																			
CCB	1.00	0714					X																			

Comments:

AA14.02- 9 COMPUCHEM RUN ID: A19001230118 FOR ANALYTE AS - PAGE 2

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Instrument ID Number: A3 Method: F
 Start Date: 01/22/90 End Date: 01/23/90

Client Sample No.	D/F	Time	% R	Analytes																					
				A	S	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z
S0	1.00	2230																							X
S20	1.00	2235																							X
S3	1.00	2240																							X
S40	1.00	2245																							X
S60	1.00	2250																							X
ICV	2.50	2300																							X
ICB	1.00	2305																							X
CRA	1.00	2310																							X
CRA	1.00	2315	90.4																						X
ZZZZZ		2320																							
ZZZZZ		2325																							
LCSS	50.00	2330																							X
LCSSA	50.00	2335	113.2																						X
LCSS	10.00	2340																							
LCSS	10.00	2345																							
B202C	1.00	2350																							X
B202CA	1.00	2355	92.0																						X
CCV	1.00	0000																							X
CCB	1.00	0005																							X
B202CS	1.00	0010																							X
B202CD	1.00	0015																							X
B202CDA	1.00	0020	93.6																						X
B201A	1.00	0025																							X
B201AA	1.00	0030	108.2																						X
B202A	1.00	0035																							X
B202AA	1.00	0040	105.6																						X
B202B	1.00	0045																							X
B202BA	1.00	0050	104.3																						X
CCV	1.00	0055																							X
CCB	1.00	0100																							X
B201B	1.00	0105																							X
B201BA	1.00	0110	106.0																						X

Comments:
 AA14.02-10 COMPUCHEM RUN ID: A39001222230 FOR ANALYTE PB - PAGE 1

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Instrument ID Number: A3 Method: F
 Start Date: 01/22/90 End Date: 01/23/90

Client Sample No.	D/F	Time	% R	Analytes																									
				A	S	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z	C			
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	E	G	A	L	L	I	N	N		
B202TAR	1.00	0115																						X					
B202TARA	1.00	0120																											
B202TAR	5.00	0125																						X					
B202TARA	5.00	0130	103.1																					X					
CCV	1.00	0135																						X					
CCB	1.00	0140																						X					

Comments:
AA14.02-11 COMPUCHEM RUN ID: A39001222230 FOR ANALYTE PB - PAGE 2

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Instrument ID Number: A3 Method: F
 Start Date: 01/22/90 End Date: 01/23/90

Client Sample No.	D/F	Time	% R	Analytes																							
				A	S	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z	C	
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I		E	G	A	L		N	N
S0	1.00	2230																						X			
S20	1.00	2235																						X			
S10	1.00	2240																						X			
S40	1.00	2245																						X			
S60	1.00	2250																						X			
ICV	2.50	2300																						X			
ICB	1.00	2305																						X			
CRA	1.00	2310																						X			
CRA	1.00	2315	99.8																					X			
ZZZZZ		2320																									
ZZZZZ		2325																									
LCSS	50.00	2330																									
LCSS	50.00	2335																									
LCSS	10.00	2340																							X		
LCSSA	10.00	2345	89.6																					X			
B202C	1.00	2350																						X			
B202CA	1.00	2355	94.8																					X			
CCV	1.00	0000																						X			
CCB	1.00	0005																						X			
B202CS	1.00	0010																						X			
B202CD	1.00	0015																						X			
B202CDA	1.00	0020	96.6																					X			
B201A	1.00	0025																						X			
B201AA	1.00	0030	109.5																					X			
B202A	1.00	0035																						X			
B202AA	1.00	0040	104.0																					X			
B202B	1.00	0045																						X			
B202BA	1.00	0050	110.2																					X			
CCV	1.00	0055																						X			
CCB	1.00	0100																						X			
B201B	1.00	0105																						X			
B201BA	1.00	0110	109.8																					X			

Comments:
 AA14.02-12 COMPUCHEM RUN ID: A39001222230 FOR ANALYTE TL - PAGE 1

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Instrument ID Number: V1 Method: CV

Start Date: 01/03/90 End Date: 01/03/90

Client Sample No.	D/F	Time	% R	Analytes																						
				A	S	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z	C
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	I	E	G	A	L	I	N
S0	1.00	1900																							X	
S2	1.00	1903																							X	
S1	1.00	1906																							X	
S4	1.00	1909																							X	
S6	1.00	1912																							X	
S8	1.00	1915																							X	
ICV	1.00	1918																							X	
ICB	1.00	1921																							X	
ZZZZZ		1924																								
ZZZZZ		1927																								
ZZZZZ		1930																								
ZZZZZ		1933																								
ZZZZZ		1936																								
ZZZZZ		1939																								
ZZZZZ		1942																								
ZZZZZ		1945																								
ZZZZZ		1948																								
ZZZZZ		1951																								
CCV	1.00	1954																							X	
CCB	1.00	1957																							X	
ZZZZZ		2000																								
ZZZZZ		2003																								
ZZZZZ		2006																								
ZZZZZ		2009																								
ZZZZZ		2012																								
ZZZZZ		2015																								
ZZZZZ		2018																								
ZZZZZ		2021																								
PBS	1.00	2024																							X	
LCSS	5.00	2027																							X	
CCV	1.00	2030																							X	
CCB	1.00	2033																							X	

Comments:
 AA14.02- 1 COMPUCHEM RUN ID: V19001031900 FOR ANALYTE HG - PAGE 1

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788

Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A

Instrument ID Number: V1 Method: CV

Start Date: 01/03/90 End Date: 01/03/90

Client Sample No.	D/F	Time	% R	Analytes																						
				A	S	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z	C
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	E	G	A	L	N	N	N
B202C	1.00	2036																				X				
B202CS	1.00	2039																				X				
B202CD	1.00	2042																				X				
B201A	1.00	2045																				X				
B201B	1.00	2048																				X				
B202TAR	1.00	2051																				X				
B202A	1.00	2054																				X				
B202B	1.00	2057																				X				
ZZZZZ		2100																								
CCV	1.00	2106																				X				
CCB	1.00	2109																				X				
ZZZZZ		2112																								
CCV	1.00	2115																				X				
CCB	1.00	2118																				X				

Comments:
 AA14.02- 2 COMPUCHEM RUN ID: V19001031900 FOR ANALYTE HG - PAGE 2

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Instrument ID Number: C1 Method: AS
 Start Date: 12/29/89 End Date: 12/29/89

Client Sample No.	D/F	Time	% R	Analytes																									
				A	S	I	A	B	B	C	C	C	C	F	P	M	M	H	N	K	S	A	N	T	V	Z	C		
S300	1.00	1412		L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	E	G	A	L	N	N	X			
S300	1.00																									X			
S200	1.00																									X			
S100	1.00																									X			
S50	1.00																									X			
S10	1.00																									X			
S0	1.00																									X			
S300	1.00																									X			
S0	1.00																									X			
S0	1.00																									X			
S100	1.00																									X			
S100	1.00																									X			
S100	1.00																									X			
ICV	1.00																									X			
ICB	1.00																									X			
ZZZZZ																													
ZZZZZ																													
ZZZZZ																													
ZZZZZ																													
ZZZZZ																													
ZZZZZ																													
ZZZZZ																													
ZZZZZ																													
CCV	1.00																									X			
CCB	1.00																									X			
ZZZZZ																													
ZZZZZ																													
ZZZZZ																													
ZZZZZ																													
ZZZZZ																													
ZZZZZ																													

Comments:
 AA14.02- 3 COMPUCHEM RUN ID: C18912291412 FOR ANALYTE CN - PAGE 1

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ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788
 Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
 Instrument ID Number: C1 Method: AS
 Start Date: 12/29/89 End Date: 12/29/89

Client Sample No.	D/F	Time	% R	Analytes																					
				A	S	A	B	B	C	C	C	C	F	P	M	H	N	K	S	A	N	T	V	Z	C
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	E	G	A	L	N	N
ZZZZZ																									
ZZZZZ																									
ZZZZZ																									
CCV		1.00																							X
CCB		1.00																							X
ZZZZZ																									
ZZZZZ																									
ZZZZZ																									
ZZZZZ																									
ZZZZZ																									
S0		1.00																							X
S0		1.00																							X
S0		1.00																							X
S0		1.00																							X
CCV		1.00																							X
CCB		1.00																							X
ICV		1.00																							X
ICB		1.00																							X
PBS		1.00																							X
LCSS		1.00																							X
B201A		1.00																							X
B201AS		1.00																							X
B201AD		1.00																							X
B201B		1.00																							X
B202TAR		1.00																							X
B202A		1.00																							X
CCV		1.00																							X
CCB		1.00																							X
B202B		1.00																							X
B202C		1.00																							X
B201AA		1.00																							X

Comments:
 AA14.02- 4 COMPUCHEM RUN ID: C18912291412 FOR ANALYTE CN - PAGE 2

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: COMPUCHEM LABORATORIES Contract: 788
Lab Code: COMPU Case No.: 17820 SAS No.: _____ SDG No.: 18756A
Instrument ID Number: C1 Method: AS
Start Date: 12/29/89 End Date: 12/29/89

Client Sample No.	D/F	Time	% R	Analytes																					
				A	S	A	B	B	C	C	C	C	F	P	M	H	N	K	S	A	N	T	V	Z	C
				L	B	S	A	E	D	A	R	O	U	E	B	G	N	G	I	E	G	A	L	N	N
S0	1.00																								X
S0	1.00																								X
S0	1.00																								X
CCV	1.00																								X
CCB	1.00																								X
S100	1.00																								X
S100	1.00																								X
S100	1.00																								X
S300	1.00	1539																							X

Comments:
AA14.02- 5 COMPUCHEM RUN ID: C18912291412 FOR ANALYTE CN - PAGE 3

CompuChem Laboratories, Inc.
ICP Analysis Run Log

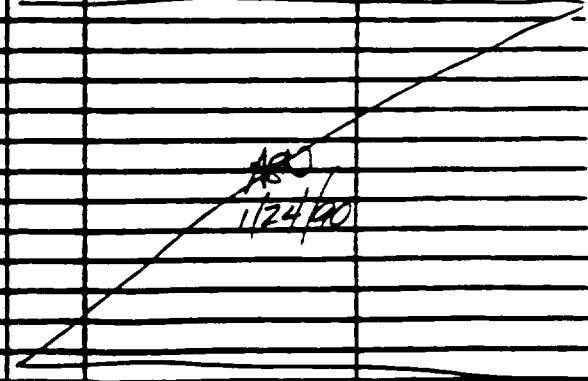
Page: ONE of ONE

Operator: ANTHONY S. NAGEL
Date: 1/24/90
Verification Data In: 18557J

File Name: 900124125N
Case Name: 18756A, COM344
18557J, 18765D

#	SAMPLE ID.	COMMENTS	#	SAMPLE ID.	COMMENTS
	CALIBRATION	BLANK		CV	SEE (2)
	CALIBRATION	SOLUTIONS		CCV	SEE (2)
	ICV	SEE (1)	1	311427	LCS(11)
	ICB		2	311909	
1	ICS A	0689	3	311425	SS(311909)
2	ICS AB	0387B	4	311424	
3	CR1	2XCPD	5	311431	
4	NIT PE	SAMPLE 0.4	6	311444	
5	311944 B	18756A	7	311445	
6	309694	LCS(0287)	8	311420	
7	309703		9	311422	
8	309692	SS(309703)	10	311421	
9	309693	D(309703)		CCV	SEE (2)
10	309691			CCB	-4-
	CCV	SEE (2)	1	311423	
	CCB	-1-	2	311890	
1	309699		3	311901	
2	309700		4	311907	
3	309701		5	311911	
4	309702		6	311911(1+4)	SERIAL D
5	309700(1+4)	SERIAL D	7	CR1	2XCPD
6	315493 B	COM344	8	ICS A	0689
7	315164	LCS(0287)	9	ICS AB	0387B
8	311569			CCV	SEE (2)
9	315165	D(311569)		CCB	-5-
10	311571				
	CCV	SEE (2)			
	CCB	-2-			
1	311574				
2	315489 B	18557J			
3	314390	LCS(0287)			
4	314386				
5	314388	SS(314386)			
6	314389	D(314386)			
7	314386	18557J, 18765D			
8	314387				
9	314387(1+4)	SERIAL D			
10	311946 B	18765D			

3/1/90



(1) ICV SOLUTIONS:

(2) CCV SOLUTIONS:

ICV-1(0287) } 1/9/90
SDXAS }
ICV-3(0787) }

CVS1 - 1/24/90

Instrument Hours: 31
Production Smples: 24
QC Samples: 39

Continued on page N/A

ANIMONI JINNON
1-24-90
UNITS: mg/L

200.18756A
FILE: ASD 900124ASU
PAGES: 1-65

BURN # 1 788A 24-JAN-90 20:34:30
CALIBRATION BLANK: PREPARED-1/24/90

LV
3727.5

AL	SB	AS	BA	BE	CD	CA	CR
.00067	-.0004	.00000	.00000	.00000	-.0001	-.0016	.00121
CO	CU	FE	PB	MG	MN	NI	K
.10436	.00000	.00282	.00295	.57679	.00724	.00215	.59906
SE	AG	NA	TL	V	ZN	SR	B
.01422	-.0003	.08732	.02723	.15131	.00107	-.0044	.00201
MO	TI	SN	SI	XX			
.00027	.00027	.00000	.34232	.00161			

BURN # 2 788A 24-JAN-90 20:34:48
CALIBRATION BLANK: PREPARED-1/24/90

LV
3728.0

AL	SB	AS	BA	BE	CD	CA	CR
.00080	-.0019	-.0024	.00027	.00000	-.0003	-.0024	.00107
CO	CU	FE	PB	MG	MN	NI	K
.10408	.00000	.00282	-.0009	.58061	.00724	.00510	.60113
SE	AG	NA	TL	V	ZN	SR	B
-.0099	.00134	.08745	.01609	.15102	.00107	.00496	.00201
MO	TI	SN	SI	XX			
.00107	.00027	-.0011	.37580	.00161			

BURN # 3 788A 24-JAN-90 20:35:06
CALIBRATION BLANK: PREPARED-1/24/90

LV
3727.5

AL	SB	AS	BA	BE	CD	CA	CR
-.0003	-.0039	-.0011	.00000	.00000	.00000	-.0019	.00080
CO	CU	FE	PB	MG	MN	NI	K
.10516	.00000	.00201	.00161	.57653	.00724	.00107	.59772
SE	AG	NA	TL	V	ZN	SR	B
-.0086	.00027	.08679	.01690	.15171	.00080	.00013	.00000
MO	TI	SN	SI	XX			
.00161	-.0001	.00000	.29564	.00161			

AVERAGE N=3 788A 24-JAN-90 20:35:20
CALIBRATION BLANK: PREPARED-1/24/90

LV
3727.7

AL	SB	AS	BA	BE	CD	CA	CR
.00040	-.0021	-.0012	.00009	.00000	-.0001	-.0020	.00103
CO	CU	FE	PB	MG	MN	NI	K
.10453	.00000	.00255	.00121	.57798	.00724	.00277	.59930
SE	AG	NA	TL	V	ZN	SR	B
-.0014	.00045	.08719	.02008	.15135	.00098	.00022	.00134
MO	TI	SN	SI	XX			
.00098	.00013	-.0004	.33792	.00161			

BURN # 1 788A 24-JAN-90 20:37:00
CALIBRATION SOLUTION ONE: SOURCE-SPEX; PREPARED-1/24/90

LV
3728.0

	AL	SB	AS	BA	BE	CD	CA	CR
	.82819	1.8813	1.5400	3.3250	3.7292	1.9072	9.0805	4.3989
	CO	CU	FE	PB	MG	MN	NI	K
	6.5406	.53876	5.3649	2.1980	9.2350	2.7336	5.1296	1.0052
	SE	AG	NA	TL	V	ZN	SR	B
	4.5298	.38412	.22277	2.1305	10.540	5.4724	.14981	.00215
	MO	TI	SN	SI	XX			
	8.7075	-.0005	-.0048	.32953	.00161			

BURN # 2 788A 24-JAN-90 20:37:18
CALIBRATION SOLUTION ONE: SOURCE-SPEX; PREPARED-1/24/90

LV
3728.0

	AL	SB	AS	BA	BE	CD	CA	CR
	.82886	1.8950	1.5443	3.3224	3.7237	1.9135	9.0984	4.4052
	CO	CU	FE	PB	MG	MN	NI	K
	6.5443	.53836	5.3694	2.1964	9.1974	2.7377	5.1246	1.0105
	SE	AG	NA	TL	V	ZN	SR	B
	4.5546	.38613	.22291	2.1499	10.512	5.4839	.15182	.00027
	MO	TI	SN	SI	XX			
	8.7158	-.0003	-.0058	.32725	.00161			

BURN # 3 788A 24-JAN-90 20:37:36
CALIBRATION SOLUTION ONE: SOURCE-SPEX; PREPARED-1/24/90

LV
3728.0

	AL	SB	AS	BA	BE	CD	CA	CR
	.83195	1.8915	1.5609	3.3368	3.7437	1.9109	9.1167	4.4229
	CO	CU	FE	PB	MG	MN	NI	K
	6.5649	.54211	5.3918	2.2131	9.3124	2.7466	5.1677	1.0075
	SE	AG	NA	TL	V	ZN	SR	B
	4.5874	.38720	.22398	2.1773	10.562	5.5054	.14887	.00282
	MO	TI	SN	SI	XX			
	8.7572	-.0005	-.0091	.30123	.00161			

AVERAGE N=3 788A 24-JAN-90 20:37:53
CALIBRATION SOLUTION ONE: SOURCE-SPEX; PREPARED-1/24/90

LV
3728.0

	AL	SB	AS	BA	BE	CD	CA	CR
	.82967	1.8893	1.5484	3.3281	3.7322	1.9105	9.0985	4.4090
	CO	CU	FE	PB	MG	MN	NI	K
	6.5499	.53974	5.3754	2.2025	9.2483	2.7393	5.1406	1.0077
	SE	AG	NA	TL	V	ZN	SR	B
	4.5573	.38582	.22322	2.1526	10.538	5.4872	.15017	.00174
	MO	TI	SN	SI	XX			
	8.7268	-.0004	-.0066	.31934	.00161			

BURN # 1 788A 24-JAN-90 20:39:00
 ICV ICV-1(0288)
 LV
 3727.5

AL	SB	AS	BA	BE	CD	CA	CR
1.8927	.02741	.00421	2.0066	.49455	.49862	49.472	.50950
CO	CU	FE	PB	MG	MN	NI	K
.51230	.51683	2.0600	4.8384	24.486	.51638	.45486	49.130
SE	AG	NA	TL	V	ZN		
-.0104	.49068	49.127	-.0569	.49320	2.9691		

BURN # 2 788A 24-JAN-90 20:39:24
 ICV ICV-1(0288)
 LV
 3727.5

AL	SB	AS	BA	BE	CD	CA	CR
1.8992	.04439	.01387	1.9957	.49202	.49499	49.441	.50676
CO	CU	FE	PB	MG	MN	NI	K
.51059	.52180	2.0545	4.8347	24.565	.51246	.48516	49.588
SE	AG	NA	TL	V	ZN		
-.0045	.49202	48.612	-.1249	.49449	2.9738		

BURN # 3 788A 24-JAN-90 20:39:47
 ICV ICV-1(0288)
 LV
 3727.0

AL	SB	AS	BA	BE	CD	CA	CR
1.9026	.00739	-.0038	2.0113	.49282	.49876	49.493	.50835
CO	CU	FE	PB	MG	MN	NI	K
.50879	.51939	2.0600	4.8354	24.542	.51253	.47556	49.777
SE	AG	NA	TL	V	ZN		
.02639	.49539	49.346	-.0764	.49186	2.9761		

AVERAGE N=3 788A 24-JAN-90 20:40:48
 ICV ICV-1(0288)
 LV
 3727.3

AL	SB	AS	BA	BE	CD	CA	CR
1.8982	.02639	.00476	2.0045	.49313	.49746	49.468	.50820
CO	CU	FE	PB	MG	MN	NI	K
.51056	.51934	2.0581	4.8362	24.531	.51379	.47186	49.498
SE	AG	NA	TL	V	ZN		
.00383	.49270	49.028	-.0861	.49318	2.9730		

4

BURN # 1 788A 24-JAN-90 20:41:23
 ICV SPEXAS
 LV
 3728.0
 AL SB AS BA BE CD CA CR
 -.0048 .02275 1.0201 .00054 .00144 -.0031 .03635 .00071
 CO CU FE PB MG MN NI K
 .00119 -.00000 .00474 .00305 -.0099 -.00000 .00035 3.5088
 SE AG NA TL V ZN
 .01549 .00122 .60889 -.0678 .00097 .00360

BURN # 2 788A 24-JAN-90 20:41:47
 ICV SPEXAS
 LV
 3728.0
 AL SB AS BA BE CD CA CR
 -.0016 .01560 1.0272 .00054 .00108 -.0039 .02751 .00253
 CO CU FE PB MG MN NI K
 .00098 -.00000 .00499 .01949 -.0300 -.00000 -.0012 2.3021
 SE AG NA TL V ZN
 .02197 -.0004 1.3277 -.0527 .00007 .00409

BURN # 3 788A 24-JAN-90 20:42:09
 ICV SPEXAS
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 .00323 .01791 1.0124 .00054 .00144 .00262 .02457 -.0008
 CO CU FE PB MG MN NI K
 .00037 -.00000 .00599 .00061 .03523 .00000 -.0028 2.7989
 SE AG NA TL V ZN
 .02433 .00022 1.0378 -.0785 .00011 .00409

AVERAGE N=3 788A 24-JAN-90 20:42:56
 ICV SPEXAS
 LV
 3727.7
 AL SB AS BA BE CD CA CR
 -.0011 .01875 1.0199 .00054 .00132 -.0015 .02948 .00081
 CO CU FE PB MG MN NI K
 .00085 -.00000 .00524 .00772 -.0015 -.00000 -.0012 2.8699
 SE AG NA TL V ZN
 .02060 .00033 .99145 -.0663 .00038 .00393

BURN # 1 788A 24-JAN-90 20:43:31
 ICV ICV-3(0787)
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 -.0048 1.0251 .01125 .00134 .00001 .00059 -.0079 .00132
 CO CU FE PB MG MN NI K
 -.0027 -.0000 .00250 -.0103 -.1210 .00000 -.0208 -.9533
 SE AG NA TL V ZN
 .03374 -.0005 -1.221 -.0073 -.0021 .00017

BURN # 2 788A 24-JAN-90 20:43:53
 ICV ICV-3(0787)
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 .00483 1.0450 .00942 .00175 .00037 .00061 -.0020 .00132
 CO CU FE PB MG MN NI K
 -.0030 -.0000 .00350 .00667 -.0870 .00000 .00976 .28641
 SE AG NA TL V ZN
 -.0181 .00154 .42287 -.0603 -.0023 .00017

BURN # 3 788A 24-JAN-90 20:44:15
 ICV ICV-3(0787)
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 -.0161 1.0331 -.0117 .00134 .00037 .00011 .00393 -.0023
 CO CU FE PB MG MN NI K
 -.0013 -.0000 .00200 .01647 -.0205 .00001 -.0138 1.5590
 SE AG NA TL V ZN
 .01579 -.0018 .11463 -.0212 -.0017 .00016

AVERAGE N=3 788A 24-JAN-90 20:44:56
 ICV ICV-3(0787)
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 -.0054 1.0344 .00300 .00148 .00025 .00044 -.0020 .00010
 CO CU FE PB MG MN NI K
 -.0023 -.0000 .00267 .00427 -.0762 .00000 -.0083 .29736
 SE AG NA TL V ZN
 .01049 -.0002 -.2279 -.0296 -.0020 .00017

6

BURN # 1 788A 24-JAN-90 20:45:30
 ICB
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 -.0016 .00519 .01123 -.0003 .00001 .00201 .00098 .00132
 CO CU FE PB MG MN NI K
 -.0020 .00000 -.0002 .00668 -.1087 .00000 .00923 -1.247
 SE AG NA TL V ZN
 .02197 .00054 -.8101 -.0376 -.0029 .00017

BURN # 2 788A 24-JAN-90 20:45:52
 ICB
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 -.0065 .01527 .01833 -.0003 .00001 .00193 -.0049 -.0011
 CO CU FE PB MG MN NI K
 -.0023 .00000 -.0017 -.0067 -.0499 .00001 -.0059 .02573
 SE AG NA TL V ZN
 .01020 .00154 -.6046 -.0250 -.0026 .00017

BURN # 3 788A 24-JAN-90 20:46:14
 ICB
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 .00644 .01091 .00059 .00013 .00001 .00070 .00098 .00253
 CO CU FE PB MG MN NI K
 -.0021 .00000 -.0007 -.0079 -.0576 .00000 -.0057 -.3658
 SE AG NA TL V ZN
 -.0089 .00386 .32013 -.0199 -.0020 .00017

AVERAGE N=3 788A 24-JAN-90 20:46:55
 ICB
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 -.0005 .01046 .01005 -.0001 .00001 .00155 -.0010 .00091
 CO CU FE PB MG MN NI K
 -.0021 .00000 -.0009 -.0026 -.0720 .00000 -.0008 -.5289
 SE AG NA TL V ZN
 .00775 .00198 -.3649 -.0275 -.0025 .00017

BURN # 1 788A 24-JAN-90 20:47:53
 ICSA 0689
 LV
 3726.5
 AL SB AS BA BE CD CA CR
 440.57 .02382 .00184 .00175 .00096 .01818 428.76 .05368
 CO CU FE PB MG MN NI K
 .03560 -.0050 167.16 .01018 438.62 .01853 -.0187 .05751
 SE AG NA TL V ZN
 .01079 -.0010 3.0081 .18718 .02810 -.0175

BURN # 2 788A 24-JAN-90 20:48:16
 ICSA 0689
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 438.54 .00463 .08433 .00134 .00132 .01589 427.30 .05403
 CO CU FE PB MG MN NI K
 .03669 -.0049 166.60 .00223 439.70 .01861 -.0167 .14365
 SE AG NA TL V ZN
 .07082 -.0010 2.7941 .08900 .02911 -.0194

BURN # 3 788A 24-JAN-90 20:48:38
 ICSA 0689
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 438.27 .04154 .09116 .00134 .00131 .01444 429.39 .05346
 CO CU FE PB MG MN NI K
 .03791 -.0050 166.90 .00168 440.68 .01860 -.0138 1.4226
 SE AG NA TL V ZN
 .06493 .00633 2.4855 .11438 .02955 -.0185

AVERAGE N=3 788A 24-JAN-90 20:49:28
 ICSA 0689
 LV
 3726.8
 AL SB AS BA BE CD CA CR
 439.13 .02333 .05911 .00148 .00120 .01617 428.48 .05372
 CO CU FE PB MG MN NI K
 .03673 -.0050 166.89 .00470 439.67 .01858 -.0164 .54125
 SE AG NA TL V ZN
 .04885 .00146 2.7626 .13019 .02892 -.0185

8

BURN # 1 788A 24-JAN-90 20:50:07
 ICSAB 0387B
 LV
 3725.5
 AL SB AS BA BE CD CA CR
 436.02 .02402 .07831 .47399 .46487 .95416 426.54 .50683
 CO CU FE PB MG MN NI K
 .49199 .51234 165.77 4.5842 434.23 .47712 .90361 .84850
 SE AG NA TL V ZN
 .10058 .95708 4.6953 1.0370 .48663 .91951

BURN # 2 788A 24-JAN-90 20:50:30
 ICSAB 0387B
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 435.39 .03386 .00136 .47339 .46540 .96376 426.58 .50098
 CO CU FE PB MG MN NI K
 .49212 .51710 165.83 4.6051 438.35 .47988 .88417 1.1129
 SE AG NA TL V ZN
 .06905 .96134 3.1244 1.0628 .48751 .92114

BURN # 3 788A 24-JAN-90 20:50:52
 ICSAB 0387B
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 437.77 .04484 .08650 .47460 .46720 .97643 428.87 .51523
 CO CU FE PB MG MN NI K
 .49469 .51706 166.57 4.6329 437.45 .48075 .88469 .64992
 SE AG NA TL V ZN
 .07023 .96134 3.5351 1.0485 .48811 .92182

AVERAGE N=3 788A 24-JAN-90 20:52:09
 ICSAB 0387B
 LV
 3726.5
 AL SB AS BA BE CD CA CR
 436.39 .03424 .05539 .47400 .46582 .96478 427.33 .50768
 CO CU FE PB MG MN NI K
 .49293 .51550 166.06 4.6074 436.68 .47925 .89082 .87043
 SE AG NA TL V ZN
 .07996 .95992 3.7849 1.0494 .48742 .92083

9

BURN # 1 788A 24-JAN-90 20:52:32
 CRI 2X CRDL
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 .04065 .13841 .06881 .00013 .01112 .01084 .05405 .01987
 CO CU FE PB MG MN NI K
 .10227 .05468 .02547 .05681 -.1504 .03143 .06509 .31860
 SE AG NA TL V ZN
 .01726 .02125 -.2109 .00463 .09843 .04122

BURN # 2 788A 24-JAN-90 20:53:00
 CRI 2X CRDL
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 .02776 .13714 .08212 -.0003 .01113 .01071 .03636 .02322
 CO CU FE PB MG MN NI K
 .10391 .05468 .01823 .06044 -.1489 .03143 .08781 -.7904
 SE AG NA TL V ZN
 .01197 .02058 -.6217 -.0628 .09688 .04073

BURN # 3 788A 24-JAN-90 20:53:24
 CRI 2X CRDL
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 .03098 .10880 .08210 -.0003 .01112 .01212 .03046 .02383
 CO CU FE PB MG MN NI K
 .10202 .05468 .01698 .03851 -.1334 .03143 .08781 -.2358
 SE AG NA TL V ZN
 .00314 .02191 -.6215 -.0949 .09831 .04024

AVERAGE N=3 788A 24-JAN-90 20:54:08
 CRI 2X CRDL
 LV
 3727.0
 AL SB AS BA BE CD CA CR
 .03313 .12812 .07768 -.0001 .01112 .01122 .04029 .02231
 CO CU FE PB MG MN NI K
 .10273 .05468 .02022 .05192 -.1443 .03143 .08024 -.2359
 SE AG NA TL V ZN
 .01079 .02125 -.4847 -.0510 .09788 .04073

11

BURN # 1 788A 24-JAN-90 21:01:18
311944 PREP BLANK SOIL SDG=18756A

LV	AL	SB	AS	BA	BE	CD	CA	CR
3727.0	-.0177	-.0039	-.0002	-.0007	.00000	-.0007	-.0138	-.0057
	CO	CU	FE	PB	MG	MN	NI	K
	-.0015	.00000	-.0017	-.0250	-.0421	.01474	-.0017	-.4309
	SE	AG	NA	TL	V	ZN		
	.00726	-.0004	-.2969	-.0363	-.0004	.00139		

BURN # 2 788A 24-JAN-90 21:01:41
311944 PREP BLANK SOIL SDG=18756A

LV	AL	SB	AS	BA	BE	CD	CA	CR
3727.0	-.0048	-.0047	-.0065	-.0003	-.0000	.00219	-.0079	-.0008
	CO	CU	FE	PB	MG	MN	NI	K
	.00141	.00000	-.0017	.01218	.14974	.01474	.00401	3.2564
	SE	AG	NA	TL	V	ZN		
	.01726	-.0011	2.0664	-.0665	.00218	.00114		

BURN # 3 788A 24-JAN-90 21:02:04
311944 PREP BLANK SOIL SDG=18756A

LV	AL	SB	AS	BA	BE	CD	CA	CR
3727.0	-.0016	.01095	.00941	-.0003	-.0000	-.0022	-.0138	-.0029
	CO	CU	FE	PB	MG	MN	NI	K
	.00061	.00000	-.0015	-.0134	.09403	.01474	-.0038	2.8319
	SE	AG	NA	TL	V	ZN		
	-.0192	.00288	.62776	-.0760	.00205	.00163		

AVERAGE N=3 788A 24-JAN-90 21:02:55
311944 PREP BLANK SOIL SDG=18756A

LV	AL	SB	AS	BA	BE	CD	CA	CR
3727.0	-.0081	.00077	.00091	-.0004	-.0000	-.0002	-.0118	-.0031
	CO	CU	FE	PB	MG	MN	NI	K
	.00017	.00000	-.0017	-.0087	.06721	.01474	-.0005	1.8858
	SE	AG	NA	TL	V	ZN		
	.00176	.00045	.79911	-.0596	.00128	.00139		

12

BURN # 1 788A 24-JAN-90 21:04:33
309694 LCS(0278)
LV
3725.0
AL SB AS BA BE CD CA CR
1.2623 1.0463 4.4819 .02554 .09485 .21923 901.12 .50388
CO CU FE PB MG MN NI K
.71949 33.433 91.533 1.0659 567.52 1.0367 .24306 3.8494
SE AG NA TL V ZN
.20931 .10547 6.1319 .13203 .36266 .78674

BURN # 2 788A 24-JAN-90 21:04:55
309694 LCS(0278)
LV
3725.0
AL SB AS BA BE CD CA CR
1.2962 1.0521 4.5478 .02554 .09592 .22006 908.27 .50432
CO CU FE PB MG MN NI K
.71998 33.850 92.264 1.0498 571.35 1.0440 .27077 3.8107
SE AG NA TL V ZN
.18487 .10448 5.4053 .29799 .36418 .79245

BURN # 3 788A 24-JAN-90 21:05:17
309694 LCS(0278)
LV
3725.0
AL SB AS BA BE CD CA CR
1.2801 1.0635 4.5337 .02554 .09664 .21667 908.61 .50372
CO CU FE PB MG MN NI K
.72400 33.813 92.278 1.0913 571.78 1.0460 .25979 3.1936
SE AG NA TL V ZN
.20990 .10548 5.0965 .20283 .36482 .79427

AVERAGE N=3 788A 24-JAN-90 21:06:33
309694 LCS(0278)
LV
3725.0
AL SB AS BA BE CD CA CR
1.2795 1.0540 4.5212 .02554 .09581 .21866 906.00 .50397
CO CU FE PB MG MN NI K
.72116 33.699 92.025 1.0690 570.22 1.0422 .25787 3.6179
SE AG NA TL V ZN
.20136 .10514 5.5446 .21095 .36388 .79115

13

BURN # 1 788A 24-JAN-90 21:07:14
 309703 B2020C
 LV
 3725.0

AL	SB	AS	BA	BE	CD	CA	CR
3.0392	.01100	-.0162	.00860	.00103	.00225	50.115	.00956
CO	CU	FE	PB	MG	MN	NI	K
.00367	.06427	6.6290	-.0124	7.9653	.09391	-.0002	1.5956
SE	AG	NA	TL	V	ZN		
.00903	.00227	1.0551	-.0803	.01146	.04912		

BURN # 2 788A 24-JAN-90 21:07:36
 309703 B2020C
 LV
 3725.0

AL	SB	AS	BA	BE	CD	CA	CR
3.0779	.01174	.00933	.00941	.00067	.00199	49.548	.00893
CO	CU	FE	PB	MG	MN	NI	K
.00242	.02945	6.5871	.00216	7.3971	.09391	.00035	.74313
SE	AG	NA	TL	V	ZN		
-.0033	.00226	.33633	-.0423	.01095	.04804		

BURN # 3 788A 24-JAN-90 21:07:58
 309703 B2020C
 LV
 3724.0

AL	SB	AS	BA	BE	CD	CA	CR
3.0933	.02512	-.0137	.00941	.00068	.00080	49.508	.01137
CO	CU	FE	PB	MG	MN	NI	K
.00223	.02448	6.6033	.01188	7.4040	.09394	.01604	.65193
SE	AG	NA	TL	V	ZN		
.02317	.00093	.55965	.00740	.00957	.04905		

AVERAGE N=3 788A 24-JAN-90 21:08:38
 309703 B2020C
 LV
 3724.7

AL	SB	AS	BA	BE	CD	CA	CR
3.0702	.01595	-.0069	.00914	.00080	.00168	49.724	.00995
CO	CU	FE	PB	MG	MN	NI	K
.00278	.03940	6.6065	.00053	7.5888	.09392	.00541	.99690
SE	AG	NA	TL	V	ZN		
.00962	.00182	.65036	-.0384	.01066	.04873		

14

BURN # 1 788A 24-JAN-90 21:09:15
309692 SS(309703)
LV
3725.0
AL SB AS BA BE CD CA CR
2.9829 .41544 1.9979 2.0011 .05127 .04253 59.412 .20937
CO CU FE PB MG MN NI K
.50588 .27320 6.2960 .49417 11.693 .59166 .48837 .31607
SE AG NA TL V ZN
1.9288 .04969 1.0568 2.0443 .49556 .54421

BURN # 2 788A 24-JAN-90 21:09:37
309692 SS(309703)
LV
3725.0
AL SB AS BA BE CD CA CR
3.0135 .43253 2.0011 2.0293 .05234 .04463 59.894 .20967
CO CU FE PB MG MN NI K
.50956 .27568 6.3425 .50626 11.829 .59313 .53908 .54546
SE AG NA TL V ZN
1.9691 .04771 1.1587 2.1577 .49891 .54616

BURN # 3 788A 24-JAN-90 21:09:59
309692 SS(309703)
LV
3724.0
AL SB AS BA BE CD CA CR
3.0143 .43960 1.9999 2.0278 .05272 .04467 59.981 .20669
CO CU FE PB MG MN NI K
.51145 .27824 6.3587 .50216 11.827 .59674 .52039 .25825
SE AG NA TL V ZN
1.9694 .05137 .14836 2.0637 .49804 .54703

AVERAGE N=3 788A 24-JAN-90 21:10:40
309692 SS(309703)
LV
3724.7
AL SB AS BA BE CD CA CR
3.0036 .42919 1.9996 2.0194 .05211 .04394 59.763 .20858
CO CU FE PB MG MN NI K
.50896 .27571 6.3324 .50087 11.783 .59384 .51595 .37326
SE AG NA TL V ZN
1.9558 .04959 .78795 2.0886 .49750 .54580

15

BURN # 1 788A 24-JAN-90 21:18:47
309693 D(309703)
LV
3724.0
AL SB AS BA BE CD CA CR
2.4285 .00957 .00441 .00699 .00069 .00048 40.532 .00798
CO CU FE PB MG MN NI K
.00176 .02457 5.2371 .00222 6.6901 .06258 .01552 1.0714
SE AG NA TL V ZN
.00432 .00026 .25528 -.0406 .00782 .03894

BURN # 2 788A 24-JAN-90 21:19:09
309693 D(309703)
LV
3724.0
AL SB AS BA BE CD CA CR
2.4172 .01950 .00713 .00740 .00068 -.0010 40.434 .00707
CO CU FE PB MG MN NI K
.00074 .02457 5.2196 .00468 6.6979 .06258 .00924 .38586
SE AG NA TL V ZN
-.0075 .00159 -.5672 -.0223 .00899 .03845

BURN # 3 788A 24-JAN-90 21:19:31
309693 D(309703)
LV
3724.0
AL SB AS BA BE CD CA CR
2.4430 .00232 -.0072 .00740 .00033 .00131 40.759 .00433
CO CU FE PB MG MN NI K
.00178 .02456 5.2843 -.0033 6.8032 .06258 -.0002 .19073
SE AG NA TL V ZN
.01256 .00026 .76964 .01868 .00754 .03843

AVERAGE N=3 788A 24-JAN-90 21:20:11
309693 D(309703)
LV
3724.0
AL SB AS BA BE CD CA CR
2.4296 .01046 .00145 .00726 .00057 .00028 40.575 .00646
CO CU FE PB MG MN NI K
.00143 .02456 5.2470 .00122 6.7304 .06258 .00820 .54932
SE AG NA TL V ZN
.00314 .00070 .15259 -.0147 .00812 .03860

16

BURN # 1 788A 24-JAN-90 21:23:33
309691 B201A
LV
3724.0
AL SB AS BA BE CD CA CR
4.0596 .01534 .01243 .02210 .00138 .00407 4.5833 .00948
CO CU FE PB MG MN NI K
.00215 .13269 6.6864 .04061 1.2419 .06799 .01912 -1.508
SE AG NA TL V ZN
.00314 .00256 -.3939 -.0056 .00863 .22513

BURN # 2 788A 24-JAN-90 21:23:55
309691 B201A
LV
3724.0
AL SB AS BA BE CD CA CR
4.0516 .02352 -.0023 .02210 .00138 .00281 4.5950 .01068
CO CU FE PB MG MN NI K
.00239 .13269 6.6827 .01776 1.2983 .06847 .00022 -1.251
SE AG NA TL V ZN
.01530 .00025 .62293 -.0216 .00886 .22416

BURN # 3 788A 24-JAN-90 21:24:17
309691 B201A
LV
3724.0
AL SB AS BA BE CD CA CR
4.0516 .00115 -.0040 .02210 .00139 -.0007 4.5760 .01219
CO CU FE PB MG MN NI K
.00197 .13269 6.6703 .02196 1.3166 .06799 .01453 -1.091
SE AG NA TL V ZN
.06625 .00058 .21638 -.0265 .00809 .22416

AVERAGE N=3 788A 24-JAN-90 21:24:57
309691 B201A
LV
3724.0
AL SB AS BA BE CD CA CR
4.0543 .01334 .00204 .02210 .00138 .00206 4.5848 .01078
CO CU FE PB MG MN NI K
.00217 .13269 6.6798 .02678 1.2856 .06815 .01129 -1.284
SE AG NA TL V ZN
.02823 .00113 .14848 -.0179 .00852 .22449

17

BURN # 1 788A 24-JAN-90 21:25:32
 CCV1 CVS1
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 4.9021 4.9252 5.0679 5.0208 5.0143 4.9842 49.685 5.0257
 CO CU FE PB MG MN NI K
 5.0669 4.9289 5.0705 5.0257 49.161 5.0577 4.9816 47.914
 SE AG NA TL V ZN
 4.9689 .49170 49.855 5.2406 4.9511 4.9899

BURN # 2 788A 24-JAN-90 21:25:54
 CCV1 CVS1
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 4.9134 4.9357 5.0737 5.0512 5.0320 4.9934 49.720 5.0407
 CO CU FE PB MG MN NI K
 5.0927 4.9413 5.0799 4.9836 49.111 5.0776 5.0235 48.106
 SE AG NA TL V ZN
 5.0494 .49144 49.035 5.2355 4.9651 5.0058

BURN # 3 788A 24-JAN-90 21:26:16
 CCV1 CVS1
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 4.9037 4.9703 5.0499 5.0268 5.0044 5.0006 49.684 5.0188
 CO CU FE PB MG MN NI K
 5.0657 4.9388 5.0628 5.0160 48.939 5.0597 5.0238 48.168
 SE AG NA TL V ZN
 4.9747 .49361 48.635 5.3253 4.9370 4.9887

AVERAGE N=3 788A 24-JAN-90 21:26:57
 CCV1 CVS1
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 4.9064 4.9437 5.0638 5.0330 5.0169 4.9927 49.697 5.0284
 CO CU FE PB MG MN NI K
 5.0751 4.9363 5.0711 5.0084 49.070 5.0650 5.0096 48.063
 SE AG NA TL V ZN
 4.9977 .49225 49.175 5.2671 4.9511 4.9948

BURN # 1 788A 24-JAN-90 21:27:31
 CCB1
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 -.0080 .03733 -.0045 -.0003 .00142 .00005 .01287 .00187
 CO CU FE PB MG MN NI K
 .00133 .00000 -.0008 -.0061 -.1308 -.0003 -.0113 -.5898
 SE AG NA TL V ZN
 .00169 .00120 .91853 -.0755 -.0008 .00111

BURN # 2 788A 24-JAN-90 21:27:53
 CCB1
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 -.0080 .01234 .00165 .00133 .00108 .00280 .00412 -.0014
 CO CU FE PB MG MN NI K
 -.0012 .00000 -.0008 .00416 -.1735 -.0003 -.0039 -1.613
 SE AG NA TL V ZN
 .01993 .00217 -.9108 .00423 -.0026 .00063

BURN # 3 788A 24-JAN-90 21:28:15
 CCB1
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 -.0016 .01509 .00509 .00133 .00143 .00065 -.0017 -.0011
 CO CU FE PB MG MN NI K
 -.0028 .00000 -.0010 -.0007 -.1628 -.0003 .00278 -1.358
 SE AG NA TL V ZN
 .01009 .00151 -.4026 -.0516 -.0029 .00063

AVERAGE N=3 788A 24-JAN-90 21:28:55
 CCB1
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 -.0059 .02159 .00076 .00080 .00131 .00117 .00509 -.0002
 CO CU FE PB MG MN NI K
 -.0009 .00000 -.0009 -.0009 -.1557 -.0003 -.0041 -1.187
 SE AG NA TL V ZN
 .01057 .00163 -.1316 -.0409 -.0021 .00079

19

BURN # 1 788A 24-JAN-90 21:29:48
 309699 B201B
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 5.4859 -0.0276 .01137 .01331 .00008 .00175 1.4690 .01515
 CO CU FE PB MG MN NI K
 .00215 .03642 9.2640 .02139 1.3549 .06912 .01098 -1.504
 SE AG NA TL V ZN
 .03947 .00125 -.4115 .02309 .00810 .09423

BURN # 2 788A 24-JAN-90 21:30:10
 309699 B201B
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 5.5547 -0.0316 .00233 .01331 .00009 .00114 1.4778 .01215
 CO CU FE PB MG MN NI K
 -.0004 .03395 9.3169 .01528 1.3198 .06863 .02861 -1.952
 SE AG NA TL V ZN
 -.0086 -.0014 -1.529 .04441 .00579 .09423

BURN # 3 788A 24-JAN-90 21:30:32
 309699 B201B
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 5.5067 .00067 -.0304 .01331 .00008 .00217 1.4865 .01395
 CO CU FE PB MG MN NI K
 .00090 .03642 9.2349 .01475 1.3732 .06815 .01507 -1.568
 SE AG NA TL V ZN
 -.0135 -.0001 -.4110 .01572 .00810 .09302

AVERAGE N=3 788A 24-JAN-90 21:31:25
 309699 B201B
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 5.5158 -.0195 -.0056 .01331 .00009 .00169 1.4778 .01375
 CO CU FE PB MG MN NI K
 .00090 .03560 9.2719 .01714 1.3493 .06864 .01822 -1.675
 SE AG NA TL V ZN
 .00579 -.0001 -.7840 .02774 .00733 .09383

20

BURN # 1 788A 24-JAN-90 21:32:03
 309700 B202TAR
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 7.6981 .00050 -.0316 .02450 .00005 .00240 110.41 .45949
 CO CU FE PB MG MN NI K
 .00217 .84631 25.506 .03534 42.388 1.5676 .02018 -3.970
 SE AG NA TL V ZN
 -.0034 -.0000 -.4834 -.0445 .01494 .24833

BURN # 2 788A 24-JAN-90 21:32:24
 309700 B202TAR
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 7.6277 -.0023 .00711 .02370 .00005 .00341 109.80 .45767
 CO CU FE PB MG MN NI K
 .00301 .83646 25.359 .03721 42.002 1.5594 .02375 -3.461
 SE AG NA TL V ZN
 -.0069 -.0020 -.4831 -.0807 .01574 .24791

BURN # 3 788A 24-JAN-90 21:32:46
 309700 B202TAR
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 7.5973 -.0049 -.0169 .02370 -.0007 .00223 109.84 .45526
 CO CU FE PB MG MN NI K
 .00425 .84140 25.244 .04146 41.783 1.5521 .03601 -2.631
 SE AG NA TL V ZN
 -.0170 .00062 -.4831 -.0216 .01589 .24768

AVERAGE N=3 788A 24-JAN-90 21:33:27
 309700 B202TAR
 LV
 3724.0
 AL SB AS BA BE CD CA CR
 7.6410 -.0022 -.0138 .02397 -.0002 .00268 110.02 .45747
 CO CU FE PB MG MN NI K
 .00314 .84139 25.369 .03800 42.058 1.5597 .02665 -3.354
 SE AG NA TL V ZN
 -.0091 -.0005 -.4832 -.0489 .01552 .24797

2

BURN # 1 788A 24-JAN-90 21:34:10
309701 B202A
LV

3724.0
AL SB AS BA BE CD CA CR
5.5995 -.0129 .00450 .01012 -.0003 .00108 61.243 .01089
CO CU FE PB MG MN NI K
.00074 .01426 8.8552 -.0015 9.8836 .10791 .01839 -2.756
SE AG NA TL V ZN
.01110 -.0037 -.8090 .06285 .01224 .07273

BURN # 2 788A 24-JAN-90 21:34:32
309701 B202A
LV

3724.0
AL SB AS BA BE CD CA CR
5.6363 -.0042 -.0079 .01012 -.0003 -.0002 61.680 .01330
CO CU FE PB MG MN NI K
.00202 .01672 8.9081 .00155 9.9813 .10791 -.0005 -1.093
SE AG NA TL V ZN
.00531 -.0007 .10554 .02519 .01350 .07320

BURN # 3 788A 24-JAN-90 21:34:54
309701 B202A
LV

3724.0
AL SB AS BA BE CD CA CR
5.6779 .00959 -.0047 .01012 .00006 .00469 61.871 .00910
CO CU FE PB MG MN NI K
.00176 .01672 8.9553 -.0063 10.047 .10790 .01558 -1.956
SE AG NA TL V ZN
-.0045 -.0014 -.3015 -.0264 .01299 .07440

AVERAGE N=3 788A 24-JAN-90 21:35:39
309701 B202A
LV

3724.0
AL SB AS BA BE CD CA CR
5.6379 -.0025 -.0027 .01012 -.0002 .00186 61.598 .01109
CO CU FE PB MG MN NI K
.00150 .01590 8.9062 -.0021 9.9706 .10791 .01115 -1.935
SE AG NA TL V ZN
.00396 -.0019 -0.3350 0.02055 0.0291 0.07344

BURN # 1 788A 24-JAN-90 21:36:14
 309702 B202B
 LV
 3724.0

AL	SB	AS	BA	BE	CD	CA	CR
2.7795	-.0031	-.0163	.01012	-.0006	.00098	150.77	.01397
CO	CU	FE	PB	MG	MN	NI	K
.00028	.02430	5.8474	-.0052	12.998	.11785	.00230	-2.287
SE	AG	NA	TL	V	ZN		
-.0213	.00124	.41716	.02041	.00784	.05652		

BURN # 2 788A 24-JAN-90 21:36:36
 309702 B202B
 LV
 3724.0

AL	SB	AS	BA	BE	CD	CA	CR
2.7843	.00894	-.0103	.01012	-.0003	.00022	150.70	.01277
CO	CU	FE	PB	MG	MN	NI	K
.00050	.02183	5.8323	.01830	13.050	.11591	-.0020	.07996
SE	AG	NA	TL	V	ZN		
.01284	.00060	.21380	-.0241	.00988	.05677		

BURN # 3 788A 24-JAN-90 21:36:58
 309702 B202B
 LV
 3724.0

AL	SB	AS	BA	BE	CD	CA	CR
2.8067	.02428	.00866	.01012	-.0003	.00003	151.32	.01337
CO	CU	FE	PB	MG	MN	NI	K
-.0004	.02430	5.8795	-.0040	13.097	.11591	.02325	-2.446
SE	AG	NA	TL	V	ZN		
-.0196	-.0007	.41657	-.0060	.00885	.05796		

AVERAGE N=3 788A 24-JAN-90 21:37:38
 309702 B202B
 LV
 3724.0

AL	SB	AS	BA	BE	CD	CA	CR
2.7901	.01005	-.0060	.01012	-.0004	.00041	150.93	.01337
CO	CU	FE	PB	MG	MN	NI	K
.00014	.02348	5.8530	.00302	13.048	.11656	.00783	-1.551
SE	AG	NA	TL	V	ZN		
-.0094	.00037	.34918	-.0032	.00885	.05708		

BURN # 1 788A 24-JAN-90 21:38:35
 309700(1+4) SERIAL DIL
 LV
 3724.0

AL	SB	AS	BA	BE	CD	CA	CR
1.4967	-.0158	.01023	.00373	.00008	.00275	21.992	.08830
CO	CU	FE	PB	MG	MN	NI	K
.00387	.16237	5.0228	-.0007	8.6406	.30984	.00025	6.3813
SE	AG	NA	TL	V	ZN		
.02847	-.0027	1.8410	-.0351	.00917	.05053		

BURN # 2 788A 24-JAN-90 21:38:57
 309700(1+4) SERIAL DIL
 LV
 3724.0

AL	SB	AS	BA	BE	CD	CA	CR
1.5094	-.0072	-.0141	.00373	-.0003	.00018	21.972	.08740
CO	CU	FE	PB	MG	MN	NI	K
.00347	.17469	5.0428	.00655	8.5705	.31226	-.0018	4.3661
SE	AG	NA	TL	V	ZN		
.01226	-.0024	.82426	-.0214	.00611	.05097		

BURN # 3 788A 24-JAN-90 21:39:19
 309700(1+4) SERIAL DIL
 LV
 3724.0

AL	SB	AS	BA	BE	CD	CA	CR
1.4823	-.0171	-.0122	.00333	-.0003	.00157	21.731	.08650
CO	CU	FE	PB	MG	MN	NI	K
.00429	.17223	4.9847	-.0019	8.5949	.30985	.00587	5.1019
SE	AG	NA	TL	V	ZN		
.03252	-.0027	2.1461	-.0025	.00778	.04978		

AVERAGE N=3 788A 24-JAN-90 21:40:07
 309700(1+4) SERIAL DIL
 LV
 3724.0

AL	SB	AS	BA	BE	CD	CA	CR
1.4961	-.0134	-.0054	.00359	-.0002	.00150	21.898	.08740
CO	CU	FE	PB	MG	MN	NI	K
.00388	.16976	5.0168	.00134	8.6020	.31065	.00145	5.2831
SE	AG	NA	TL	V	ZN		
.02442	-.0026	1.6038	-.0197	.00769	.05043		

BURN # 1 788A 24-JAN-90 22:08:21
 CCV2 CVS1
 LV
 3722.0
 AL SB AS BA BE CD CA CR
 4.9540 4.9953 5.0254 5.0728 5.1013 5.0491 50.566 5.1156
 CO CU FE PB MG MN NI K
 5.1577 4.9862 5.1529 5.0942 49.912 5.1360 5.1234 49.105
 SE AG NA TL V ZN
 5.0372 .49860 51.149 4.9013 5.0462 5.0575

BURN # 2 788A 24-JAN-90 22:08:43
 CCV2 CVS1
 LV
 3722.5
 AL SB AS BA BE CD CA CR
 5.0062 5.0119 5.0377 5.1320 5.1471 5.0428 50.622 5.1212
 CO CU FE PB MG MN NI K
 5.1696 5.0453 5.1706 5.0952 50.119 5.1572 5.1903 47.891
 SE AG NA TL V ZN
 5.0406 .49867 49.711 4.9550 5.0743 5.0713

BURN # 3 788A 24-JAN-90 22:09:05
 CCV2 CVS1
 LV
 3723.5
 AL SB AS BA BE CD CA CR
 4.9472 4.9999 4.9693 5.0493 5.0978 5.0184 50.491 5.1024
 CO CU FE PB MG MN NI K
 5.1494 4.9743 5.1372 5.0801 49.784 5.1261 5.1258 49.528
 SE AG NA TL V ZN
 4.9877 .49774 50.601 4.8951 5.0426 5.0437

AVERAGE N=3 788A 24-JAN-90 22:09:49
 CCV2 CVS1
 LV
 3722.7
 AL SB AS BA BE CD CA CR
 4.9691 5.0023 5.0108 5.0847 5.1154 5.0368 50.560 5.1131
 CO CU FE PB MG MN NI K
 5.1589 5.0019 5.1536 5.0898 49.938 5.1398 5.1465 48.841
 SE AG NA TL V ZN
 5.0218 .49834 50.487 4.9171 5.0543 5.0575

BURN # 1 788A 24-JAN-90 22:10:24
 CCB2
 LV
 3723.0
 AL SB AS BA BE CD CA CR
 .00108 -0.0129 .00348 -0.0011 .00013 -0.0026 .00476 .00182
 CO CU FE PB MG MN NI K
 .00317 -0.0000 .00433 -0.0094 .01796 .00010 -0.0121 -0.9014
 SE AG NA TL V ZN
 .00417 -0.0001 .57307 .03367 .00271 -0.0007

BURN # 2 788A 24-JAN-90 22:10:46
 CCB2
 LV
 3723.0
 AL SB AS BA BE CD CA CR
 -.0053 -0.0108 .01036 -.0011 -.0002 .00222 -.0011 -.0015
 CO CU FE PB MG MN NI K
 .00397 -0.0000 .00507 -.0190 .04220 .00010 -.0054 -1.653
 SE AG NA TL V ZN
 -.0266 .00055 .87630 .02763 .00361 -0.0007

BURN # 3 788A 24-JAN-90 22:11:08
 CCB2
 LV
 3721.5
 AL SB AS BA BE CD CA CR
 .00748 -0.0043 .02663 -.0003 .00013 -.0000 -.0011 .00062
 CO CU FE PB MG MN NI K
 .00278 -0.0000 .00383 .00743 .04333 .00011 .00285 -1.251
 SE AG NA TL V ZN
 -.0022 .00088 .19599 -.0376 .00289 -.0014

AVERAGE N=3 788A 24-JAN-90 22:11:48
 CCB2
 LV
 3722.5
 AL SB AS BA BE CD CA CR
 .00108 -0.0093 .01349 -.0008 .00001 -.0001 .00083 .00031
 CO CU FE PB MG MN NI K
 .00331 -0.0000 .00441 -.0070 .03449 .00011 -.0049 -1.268
 SE AG NA TL V ZN
 -.0082 .00044 .54845 .00789 .00307 -.0009

BURN # 1 788A 24-JAN-90 22:55:01
 CCV3 CVS1
 LV
 3720.5

AL	SB	AS	BA	BE	CD	CA	CR
4.9670	4.9871	5.0177	5.0590	5.0777	5.0200	50.435	5.0895
CO	CU	FE	PB	MG	MN	NI	K
5.1462	4.9708	5.1251	5.0809	49.740	5.1188	5.1688	49.871
SE	AG	NA	TL	V	ZN		
5.0061	.49580	51.811	5.1181	5.0401	5.0474		

BURN # 2 788A 24-JAN-90 22:55:23
 CCV3 CVS1
 LV
 3720.5

AL	SB	AS	BA	BE	CD	CA	CR
4.9313	4.9498	5.0599	5.0434	5.0723	5.0424	50.411	5.0895
CO	CU	FE	PB	MG	MN	NI	K
5.1419	4.9583	5.1170	5.0699	49.659	5.1153	5.0904	49.084
SE	AG	NA	TL	V	ZN		
4.9859	.49509	49.760	5.2768	5.0310	5.0433		

BURN # 3 788A 24-JAN-90 22:55:45
 CCV3 CVS1
 LV
 3720.5

AL	SB	AS	BA	BE	CD	CA	CR
4.9606	4.9968	5.0176	5.0570	5.0770	5.0379	50.576	5.0975
CO	CU	FE	PB	MG	MN	NI	K
5.1611	4.9734	5.1326	5.1076	49.803	5.1292	5.1197	49.273
SE	AG	NA	TL	V	ZN		
4.9874	.49749	50.370	5.1532	5.0432	5.0560		

AVERAGE N=3 788A 24-JAN-90 22:56:26
 CCV3 CVS1
 LV
 3720.5

AL	SB	AS	BA	BE	CD	CA	CR
4.9530	4.9779	5.0317	5.0531	5.0757	5.0335	50.474	5.0922
CO	CU	FE	PB	MG	MN	NI	K
5.1497	4.9675	5.1249	5.0861	49.734	5.1211	5.1263	49.409
SE	AG	NA	TL	V	ZN		
4.9931	.49613	50.647	5.1827	5.0381	5.0489		

BURN # 1 788A 24-JAN-90 22:57:01
 CCB3
 LV
 3721.5
 AL SB AS BA BE CD CA CR
 -.0065 .01647 -.0223 .00055 -.0002 .00119 -.0024 .00067
 CO CU FE PB MG MN NI K
 .00238 .00000 -.0032 .00797 .06492 .00051 .00465 .64589
 SE AG NA TL V ZN
 .02650 -.0008 1.5581 .00904 .00287 .00125

BURN # 2 788A 24-JAN-90 22:57:23
 CCB3
 LV
 3721.0
 AL SB AS BA BE CD CA CR
 -.0016 .01055 -.0301 .00138 -.0002 .00126 .00063 .00129
 CO CU FE PB MG MN NI K
 -.0002 .00000 -.0045 .01228 .08732 .00051 .00125 .00461
 SE AG NA TL V ZN
 -.0086 .00084 .54070 -.0035 .00210 .00223

BURN # 3 788A 24-JAN-90 22:57:45
 CCB3
 LV
 3722.0
 AL SB AS BA BE CD CA CR
 -.0097 -.0108 -.0161 .00138 -.0002 .00113 -.0084 .00128
 CO CU FE PB MG MN NI K
 .00066 .00000 -.0058 .00119 .02256 .00051 -.0042 -.2545
 SE AG NA TL V ZN
 .01539 -.0025 1.0363 -.0161 .00193 .00027

AVERAGE N=3 788A 24-JAN-90 22:58:25
 CCB3
 LV
 3721.5
 AL SB AS BA BE CD CA CR
 -.0060 .00541 -.0229 .00110 -.0002 .00119 -.0034 .00108
 CO CU FE PB MG MN NI K
 .00096 .00000 -.0045 .00714 .05827 .00051 .00056 .13198
 SE AG NA TL V ZN
 .01110 -.0008 1.0450 -.0035 .00230 .00125

BURN # 1 788A 24-JAN-90 23:24:23
 CCV4 CVS1
 LV
 3718.0

AL	SB	AS	BA	BE	CD	CA	CR
4.9561	5.0356	5.0332	5.0839	5.1343	5.0652	50.861	5.1376
CO	CU	FE	PB	MG	MN	NI	K
5.1874	5.0005	5.1687	5.0936	50.096	5.1662	5.1224	51.465
SE	AG	NA	TL	V	ZN		
4.9395	.50092	50.521	4.9533	5.0822	5.0770		

BURN # 2 788A 24-JAN-90 23:24:45
 CCV4 CVS1
 LV
 3719.0

AL	SB	AS	BA	BE	CD	CA	CR
4.9633	5.0661	5.0089	5.0669	5.1168	5.0866	51.050	5.1463
CO	CU	FE	PB	MG	MN	NI	K
5.2018	4.9861	5.1738	5.1193	50.213	5.1750	5.1295	52.080
SE	AG	NA	TL	V	ZN		
4.9840	.50082	52.152	4.8278	5.0885	5.0856		

BURN # 3 788A 24-JAN-90 23:25:07
 CCV4 CVS1
 LV
 3720.0

AL	SB	AS	BA	BE	CD	CA	CR
4.9873	5.0357	5.0501	5.0855	5.1646	5.0994	51.319	5.1681
CO	CU	FE	PB	MG	MN	NI	K
5.2242	5.0108	5.2080	5.1311	50.341	5.2042	5.1630	51.363
SE	AG	NA	TL	V	ZN		
5.0492	.50217	52.107	4.8025	5.1104	5.1158		

AVERAGE N=3 788A 24-JAN-90 23:25:52
 CCV4 CVS1
 LV
 3719.0

AL	SB	AS	BA	BE	CD	CA	CR
4.9689	5.0458	5.0307	5.0788	5.1386	5.0837	51.077	5.1507
CO	CU	FE	PB	MG	MN	NI	K
5.2045	4.9991	5.1835	5.1147	50.217	5.1818	5.1383	51.636
SE	AG	NA	TL	V	ZN		
4.9909	.50130	51.593	4.8612	5.0937	5.0928		

BURN # 1 788A 24-JAN-90 23:26:27
 CCB4
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 .00599 .00631 .01349 -.0009 .00111 -.0030 .00675 .00032
 CO CU FE PB MG MN NI K
 .00865 -.0000 .00141 .01166 .31073 .00076 -.0007 3.8797
 SE AG NA TL V ZN
 .04083 -.0016 2.8337 .01226 .00835 .00052

BURN # 2 788A 24-JAN-90 23:26:49
 CCB4
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 .01273 -.0084 .01697 -.0014 .00036 -.0038 -.0117 -.0010
 CO CU FE PB MG MN NI K
 .00818 -.0000 .00089 -.0236 .29652 .00076 .02220 4.3869
 SE AG NA TL V ZN
 -.0032 -.0016 1.7922 .06076 .00753 -.0010

BURN # 3 788A 24-JAN-90 23:27:11
 CCB4
 LV
 3719.0
 AL SB AS BA BE CD CA CR
 -.0008 -.0131 .00030 -.0014 .00036 .00004 -.0025 .00032
 CO CU FE PB MG MN NI K
 .00811 -.0000 .00141 -.0154 .32149 .00075 .02619 3.3647
 SE AG NA TL V ZN
 -.0021 -.0026 1.9817 -.0161 .00790 -.0007

AVERAGE N=3 788A 24-JAN-90 23:27:51
 CCB4
 LV
 3718.3
 AL SB AS BA BE CD CA CR
 .00598 -.0051 .01025 -.0012 .00061 -.0022 -.0025 -.0001
 CO CU FE PB MG MN NI K
 .00831 -.0000 .00123 -.0091 .30958 .00075 .01590 3.8771
 SE AG NA TL V ZN
 .01185 -.0020 2.2025 .01897 .00793 -.0004

61

BURN # 1 788A 24-JAN-90 23:40:44
 CRI 2X CRDL
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 .03569 .10998 .03618 .00072 .00796 .01142 -.0000 .01974
 CO CU FE PB MG MN NI K
 .08694 .05739 .00433 .04612 -.2498 .03060 .04803 -6.752
 SE AG NA TL V ZN
 -.0340 .01618 -2.719 -.0590 .08637 .03743

BURN # 2 788A 24-JAN-90 23:41:06
 CRI 2X CRDL
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 .00200 .11818 .04856 .00072 .00831 .01349 .01232 .02164
 CO CU FE PB MG MN NI K
 .09256 .05739 .00355 .05241 -.1740 .03214 .07224 -5.801
 SE AG NA TL V ZN
 -.0494 .02134 -2.823 -.0553 .09131 .03817

BURN # 3 788A 24-JAN-90 23:41:28
 CRI 2X CRDL
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 .00032 .11231 .06792 -.0006 .00830 .01112 -.0031 .01942
 CO CU FE PB MG MN NI K
 .09388 .05739 .00173 .04990 -.1835 .03265 .07064 -5.642
 SE AG NA TL V ZN
 -.0476 .01860 -2.928 .04558 .09240 .03817

AVERAGE N=3 788A 24-JAN-90 23:42:08
 CRI 2X CRDL
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 .01267 .11349 .05089 .00029 .00819 .01201 .00308 .02026
 CO CU FE PB MG MN NI K
 .09113 .05739 .00321 .04948 -.2024 .03180 .06363 -6.065
 SE AG NA TL V ZN
 -.0437 .01871 -2.823 -.0229 .09003 .03793

BURN # 1 788A 24-JAN-90 23:42:42
 ICSA 0689
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 434.63 .02962 .03389 .00159 -.0004 .01921 424.15 .05346
 CO CU FE PB MG MN NI K
 .03386 .01100 165.85 .02572 432.08 .01881 .01373 -.9284
 SE AG NA TL V ZN
 .10528 .00117 2.3069 .08256 .02936 -.0201

BURN # 2 788A 24-JAN-90 23:43:04
 ICSA 0689
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 441.25 .04923 -.0519 .00159 -.0007 .01944 425.34 .05157
 CO CU FE PB MG MN NI K
 .03117 .01094 166.87 .01759 435.48 .01856 -.0094 -2.522
 SE AG NA TL V ZN
 .04583 -.0002 1.2643 .20775 .02873 -.0186

BURN # 3 788A 24-JAN-90 23:43:26
 ICSA 0689
 LV
 3717.5
 AL SB AS BA BE CD CA CR
 440.46 .02826 -.0153 .00159 -.0004 .01827 423.60 .05505
 CO CU FE PB MG MN NI K
 .03130 .01360 166.01 .03401 435.07 .01864 -.0097 -2.157
 SE AG NA TL V ZN
 .07838 -.0002 1.3784 .06915 .02936 -.0195

AVERAGE N=3 788A 24-JAN-90 23:44:06
 ICSA 0689
 LV
 3717.8
 AL SB AS BA BE CD CA CR
 438.78 .03571 -.0111 .00159 -.0005 .01898 424.36 .05336
 CO CU FE PB MG MN NI K
 .03211 .01185 166.24 .02577 434.21 .01867 -.0018 -1.869
 SE AG NA TL V ZN
 .07650 .00025 1.6499 .11982 .02915 -.0194

CYANIDE RUN LOG

PAGE 2 of 2

CompuChem Laboratories Inc.

Date: 12.29.89

Operator: 1577/RC

Case Name: Various

File Name: CN1229A CH

NO.	SAMPLE ID	COMMENTS	NO.	SAMPLE ID	COMMENTS
 	ICV	See Footnote (1)	10	CCB	
 	ICB		1		
51	ICV		2		
52	ICB		3		
53	311610	PB	4		
54	309697	LCS	5		
55	309691		6		
56	309695	(SS)(309691)	7		
57	309696	Dsp (309691)	8		
58	309699		9		
59	309700		10		
6020	309701			CCV	See Footnote (2)
9	CCV	See Footnote (2)		CCB	
10	CCB		1		
61	309702		2		
62	309703		3		
63	309691	A	4		
64	BLK		5		
65	BLK		6		
66	BLK		7		
7			8		
8			9		
9			10		
10				CCV	See Footnote (2)
9	CCV	See Footnote (2)		CCB	

(1) ICV Solns = ICV

CASE TYPE: Platinum Hg
 SDG ID : 178202-18756A (755/203)

COMPUCHEN CORP MERCURY PREPARATION LOG


PREPARED BY: Eric S. Woodcock
 DATE: 01-01-90

PREPARATION ANALYSIS CODE : -162

CON	LAB ID	DATE REC'D	CUSTOMER ID	INITIAL (WT / VOL)	FINAL VOL	BEFORE	AFTER	DESCRIPTION	pH
1	309691	12-20-89	R201A	0.20g	100.4	Hand ml			
2	309699		R201R	0.20g					
3	309700		R202TAR	0.20g		Hand ml			
4	309701		R202A	0.20g		Hand ml			
5	309702		R202R	0.20g					
6	309703	12-20-89	R2020	0.20g	100.4	Hand ml			
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21	309692			0.20g	100.4	REF CON: (309705)			
22	309693			0.20g		REF CON: (309703)			
23	309694			0.20g		85			
24	311974			100.4	100.4	DI H ₂ O			

SAMPLE SPIKE:

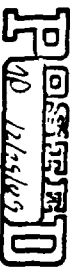
QC PREPARATION INFORMATION

LABORATORY CONTROL SAMPLE:

1.026 109906Hg → 100.4

0.20g 50/100 LCS 0287

CASE TYPE: Platinum CN
 SDG ID : 178202-18756 (757/258)



COMPUCHEM CORP CYANIDE PREPARATION LOG
 PREPARATION ANALYSIS CODE : -139

PREPARED BY: [Signature]
 DATE: 12/29/89

CON	LAB ID	DATE REC'D	CUSTOMER ID	INITIAL (WT / VOL)	FINAL VOL	BEFORE	AFTER	DESCRIPTION	pH
1	309695	30-Dec-89	B201A	5.00 g	250 mL			Black medium	
2	309697		B201B					Black medium	
3	309700		B202 TAR					Black medium	
4	309701		B202 A					Brown med.	
5	309702		B202 B					Brown med	
6	309703	30-Dec-89	B202 C	5.00 g	250 mL			Brown med	
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20	309695								
21	309695			5.00 g	250 mL			REF CON: (309691)	
22	309696			5.00 g				REF CON: (309691)	
23	309697			5.00 g				Solid LCS	
24	311610			500 mL	250 mL			DI H ₂ O	

SAMPLE SPIKE:
 10 mL 2500 ppm CN → 250 mL

QC PREPARATION INFORMATION
 ILV: 25 mL ILV6 → 250 mL

LABORATORY CONTROL SAMPLE:
 5.0 g solid LCS → 250 mL

COMPUCHEM CORP METALS PREPARATION LOG



CASE TYPE: Plasma

PREPARED BY: B. Myers

SDG ID : 178000-18756

DATE: 01-01-89

PREPARATION ANALYSIS CODE : -163

I	CON	(LAB ID)	DATE REC'D	CUSTOMER ID	INIT PLASMA		FINAL P		INIT FURNACE		FINAL P		DESCRIPTION	PH
					(WT / VOL)	VOL	(WT / VOL)	VOL	BEFORE	AFTER				
1	308661	1230-89	BS014		1.0g	200ml	1.0g	200ml					Black Medium	
2	308695		BS018											
3	309700		BS027HR											Black Medium
4	309701		BS028A											Brown Medium
5	309702		BS028R											
6	309703	1230-89	BS030		1.0g	200ml	1.0g	200ml					Brown Medium	
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21	308692	-	SAMPLE SPIKE		1.0g	200ml	1.0g	200ml					REF CON: (308703)	
22	308693	-	DUPLICATE SAMPLE		1.0g	200ml	1.0g	200ml					REF CON: (308703)	
23	308694	-	LAB CTRL SAMPLE		1.0g	200ml	1.0g	200ml					BS	
24	311944	-	PREP BLANK		1.0g	200ml	1.0g	200ml					GL AC	
	311945													

QC PREPARATION INFORMATION

SAMPLE SPIKE:

LABORATORY CONTROL SAMPLE:

Plasma Preparation 2nd K14-18 - 200ml

P1 } 1.0g SOLID HCS - 200ml
P2 }

Furnace Preparation 2nd K14-16 - 200ml

Plat. Met. Re-prep
178202-18756

RKC
1-22-90

No	CCN	Date Rec.	Sample I-D.	INIT. FINE WT/Vol	FINAL V.	DESCRIP.
✓1	309691	12-20-89	B201A	1.02g	200ul	Black/med.
✓2	309699		B201B	1.01g		Black/med.
✓3	309700		B202TA	1.01g		" "
✓4	309701		B202A	1.00g		Brown/med.
✓5	309702		B202B	1.01g		" "
✓6	309703	12-20-89	B202D ^{Gr} ₁₃₁	1.01g		Brown/med.
✓7	309692			1.00g		SS(309703)
✓8	309693			1.01g		D(309703)
✓9	309694	Wd 1/30		1.00g		BS
10	315350	315348				D.I. H ₂ O
11	315351				200ul	D.I. H ₂ O

SS: 2ml xcc 16 → 200ul

DRY WEIGHT DATA BASE AND CALCULATION WORKSHEET -143 QUEUE #113
 COMPUCHEM LABORATORIES

DATE ASSIGNED-----12/20/89
 DATE COMPLETED----12/21/89
 NAME-----LOUELLEN JONES

UNDECANTED DRY WEIGHT

* = sample also has decanted dry wght.

N/A = not applicable; instructions indicate the matrix to be water.

CCN		WGHT OF CONTAIN	TOTAL WET WGHT	TOTAL DRY WGHT	FACTOR	% MOIST	% SOLID
309679	309691	0.99	6.00	5.53	1.10	9	90.6
309686	309699	0.99	6.00	5.40	1.14	12	88.0
309687	309700	0.99	6.00	2.77	2.78	64	35.5
309688	309701	0.99	6.00	5.42	1.14	12	88.4
309689	309702	0.99	6.00	5.30	1.16	14	86.0
309690	309703	0.99	6.00	5.36	1.15	13	87.2

DRY WEIGHT DATA BASE AND CALCULATION WORKSHEET -190 QUEUE #113
 COMPUCHEM LABORATORIES

DATE ASSIGNED-----01/05/90
 DATE COMPLETED-----01/06/90
 NAME-----AMY TUTOR

 UNDECANTED DRY WEIGHT
 FOR INORGANIC SAMPLES

N/A = not applicable; instructions indicate the matrix to be water.

CCN	WGHT OF CONTAIN	TOTAL WET WGHT	TOTAL DRY WGHT	FACTOR	% MOIST	% SOLID
306819 (306823)	0.99	6.10	5.70	1.09	8	92.2
307360 (307799)	0.99	6.08	6.07	1.00	0	99.8
307865 (307204)	0.99	6.41	5.39	1.23	19	81.2
308133 (308130)	0.99	6.04	6.03	1.00	0	99.8
308307 (307274)	0.99	6.09	5.59	1.11	10	90.2
308647 (308659)	0.99	6.10	5.14	1.23	19	81.2
308819 (308804)	0.99	6.16	5.92	1.05	5	95.4
309003 (309001)	0.98	6.09	6.02	1.01	1	98.6
309550 (311066)	0.99	6.17	5.66	1.11	10	90.2
309693 (309703)	0.98	6.20	5.72	1.10	9	90.8
310097 (310095)	0.99	6.20	5.52	1.15	13	86.9
311784 (311790)	0.99	6.08	5.34	1.18	15	85.5

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BURN # 1 788A 24-JAN-90 23:46:07
 ICSAB 0387B
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 433.93 .07551 .11130 .49502 .48578 .98551 431.92 .52796
 CO CU FE PB MG MN NI K
 .51132 .53877 167.93 4.6577 439.32 .49901 .90995 -3.068
 SE AG NA TL V ZN
 .06495 .95947 1.9751 1.0816 .50225 .93866

BURN # 2 788A 24-JAN-90 23:46:29
 ICSAB 0387B
 LV
 3717.5
 AL SB AS BA BE CD CA CR
 423.17 .06506 .06051 .47143 .45825 .93865 413.33 .49109
 CO CU FE PB MG MN NI K
 .48151 .51860 161.80 4.4519 427.94 .46903 .84271 -2.547
 SE AG NA TL V ZN
 .01516 .93136 2.3240 1.0582 .47430 .89642

BURN # 3 788A 24-JAN-90 23:46:51
 ICSAB 0387B
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 428.76 .04822 .12924 .47510 .47232 .98473 440.47 .52516
 CO CU FE PB MG MN NI K
 .51922 .51808 169.29 4.7533 439.54 .49493 .92099 2.1608
 SE AG NA TL V ZN
 .04285 .96848 4.4406 1.1120 .50003 .94062

AVERAGE N=3 788A 24-JAN-90 23:47:32
 ICSAB 0387B
 LV
 3717.8
 AL SB AS BA BE CD CA CR
 428.62 .06293 .10035 .48051 .47212 .96963 428.57 .51474
 CO CU FE PB MG MN NI K
 .50402 .52515 166.34 4.6210 435.60 .48766 .89122 -1.152
 SE AG NA TL V ZN
 .04099 .95310 2.9132 1.0840 .49219 .92524

64

BURN # 1 788A 24-JAN-90 23:48:07
CCV5 CVS1
LV
3718.0
AL SB AS BA BE CD CA CR
4.8186 4.8665 4.8623 5.0055 4.9802 4.9117 49.019 4.9973
CO CU FE PB MG MN NI K
5.0354 4.8896 5.0372 4.9592 48.912 5.0212 4.9939 52.306
SE AG NA TL V ZN
4.9142 .48849 52.103 4.8729 4.9243 4.8906

BURN # 2 788A 24-JAN-90 23:48:29
CCV5 CVS1
LV
3718.0
AL SB AS BA BE CD CA CR
4.8417 4.8175 4.8311 5.0021 4.9622 4.8734 48.685 4.9607
CO CU FE PB MG MN NI K
5.0079 4.8999 5.0248 4.9416 48.647 4.9952 4.9318 51.336
SE AG NA TL V ZN
4.8831 .48632 50.399 5.0740 4.9074 4.8630

BURN # 3 788A 24-JAN-90 23:48:52
CCV5 CVS1
LV
3718.0
AL SB AS BA BE CD CA CR
4.8117 4.8221 4.8225 4.9565 4.9284 4.8470 48.506 4.9370
CO CU FE PB MG MN NI K
4.9795 4.8484 4.9917 4.8913 48.472 4.9639 4.9403 51.528
SE AG NA TL V ZN
4.8109 .48690 50.622 5.0293 4.8816 4.8439

AVERAGE N=3 788A 24-JAN-90 23:49:33
CCV5 CVS1
LV
3718.0
AL SB AS BA BE CD CA CR
4.8240 4.8354 4.8386 4.9880 4.9569 4.8774 48.737 4.9650
CO CU FE PB MG MN NI K
5.0076 4.8793 5.0179 4.9307 48.677 4.9934 4.9553 51.723
SE AG NA TL V ZN
4.8694 .48724 51.041 4.9921 4.9045 4.8658

BURN # 1 788A 24-JAN-90 23:50:07
 CCB5
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 .02322 .00722 .01688 .00152 -.0002 .00208 .02156 .00051
 CO CU FE PB MG MN NI K
 .00404 -.0000 .00867 .01747 -.0707 .00057 -.0245 .97986
 SE AG NA TL V ZN
 -.0178 .00381 .75499 .00380 -.0021 .00030

BURN # 2 788A 24-JAN-90 23:50:29
 CCB5
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 .02322 .00123 .01223 .00069 -.0002 -.0001 .02156 .00213
 CO CU FE PB MG MN NI K
 .00380 -.0000 .01235 -.0034 -.0452 .00057 -.0037 .39919
 SE AG NA TL V ZN
 -.0334 -.0003 .75531 -.0279 -.0013 -.0005

BURN # 3 788A 24-JAN-90 23:50:51
 CCB5
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 .03317 -.0092 -.0109 .00069 -.0002 .00311 .03754 -.0008
 CO CU FE PB MG MN NI K
 .00405 -.0000 .01525 .01552 -.0276 .00057 -.0283 .72202
 SE AG NA TL V ZN
 -.0066 .00173 .96911 -.0318 -.0016 .00108

AVERAGE N=3 788A 24-JAN-90 23:51:31
 CCB5
 LV
 3718.0
 AL SB AS BA BE CD CA CR
 .02654 -.0003 .00608 .00096 -.0002 .00168 .02689 .00062
 CO CU FE PB MG MN NI K
 .00396 -.0000 .01209 .00986 -.0478 .00057 -.0188 .70035
 SE AG NA TL V ZN
 -.0193 .00173 .82647 -.0186 -.0016 .00030

Atomic Absorption Raw Data Package

SDG No. : 18756A & 18244I Date 1/23/90
Analyst SHARON E. BLAKE

Channel A Channel B
Element Se As
Background Correction S-H S-H
Wavelength 196.0 nm 197.3 nm

AA Spectrophotometer Instrument I.D. A1
Integration Time 2.9 sec Delay 0.5 sec
Integration Mode Peak Area

Set Up Parameters ** Fill In or See Attached (screen dump) **

Furnace table with columns: Dry, Pyr1, Pyr2, Atom, Clean. Rows: Temp, Ramp, Hold, Purge.

Fastac
Aspiration Rate 1.0 mL/min
Delay 10.0 sec Deposition 20.0 sec

Calibration Standards

Source SPEX
Preparation Date 1/10/90
Preparer SHARON E. BLAKE
Concentration Units ug/Liter
Performance Check - 20 ug/L STANDARD ABSORBANCES
Channel A .108
Channel B .107

Se/As in Waste # 158

	Dry	Fyr1	Fyr2	Atom	Clean
Temp	150	500	850	2050	2350
Ramp	2	10	15	0	
Hold	0	0	0	4	2
Purge	1	2	2	0	3

INT

Pk Area 02.9 sec Delay= 0.5
FASTAC Delay 10.0 Dep 020.0

FURNACE READY

Temp <100 C

Se-S As-S
 Standard 2
 Abs 1 0.007 0.014
 Mean 0.007 0.014
 P/H 0.008 0.001
 Abs 2 0.001 0.001
 Mean 0.004 0.007
 P/H 0.008 -0.003

STB

01:19

AUTO ZERO
 01:22:06
 OPERATOR B6
 Tue 23 JAN 1990

Se-S As-S
 Standard C
 Abs 1 0.062 0.078
 Mean 0.062 0.078
 P/H 0.110 0.147
 Abs 2 0.054 0.073
 Mean 0.058 0.075
 P/H 0.088 0.127

20/20

01:22

DEC 1-23-90

ASPIRATION RATE TOO LOW

Se-S As-S
 Mean 0.058 0.075
 SD 0.006 0.004
 RSD 09.65 04.80

20/20

01:44

Abs 1 0.105 0.145
 Mean 0.105 0.145
 P/H 0.180 0.263
 Abs 2 0.111 0.149
 Mean 0.108 0.147
 P/H 0.199 0.276

Se-S As-S
 Mean 0.108 0.147
 SD 0.004 0.003
 RSD 03.88 01.90

Se-S As-S
 Standard 1
 Abs 1 0.032 0.071
 Mean 0.032 0.071
 P/H 0.053 0.129
 Abs 2 0.026 0.068
 Mean 0.029 0.069
 P/H 0.037 0.132

5/10

01:47

Se-S As-S
 Mean 0.029 0.069
 SD 0.004 0.002
 RSD 14.48 03.18

Se-S As-S
 Standard 2

30/30

01:50

STANDARD 2

Abs	1	0.155	0.212
Mean		0.155	0.212
P/H		0.243	0.406
Abs	2	0.151	0.211
Mean		0.153	0.211
P/H		0.260	0.399
Se-S As-S			
Mean		0.153	0.211
SD		0.003	0.001
RSD		01.83	00.47

30/50

01:54

Standard 3

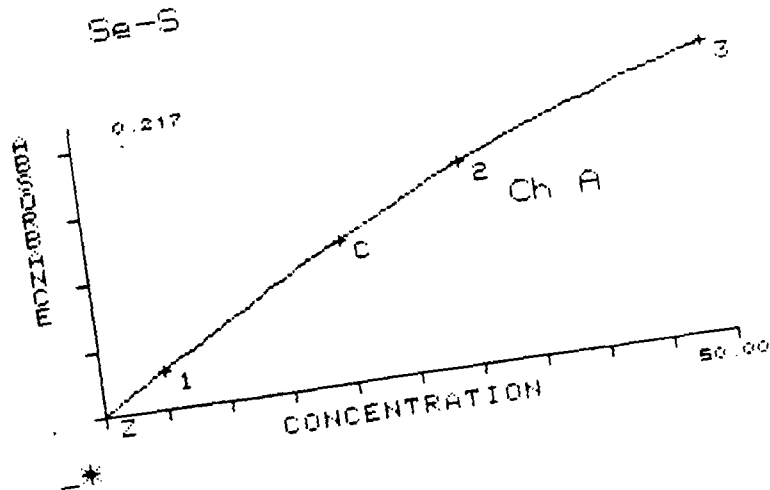
Abs	1	0.212	0.339
Mean		0.212	0.339
P/H		0.283	0.561
Abs	2	0.223	0.327
Mean		0.217	0.333
P/H		0.311	0.551
Se-S As-S			
Mean		0.217	0.333
SD		0.008	0.008
RSD		03.59	02.52

180

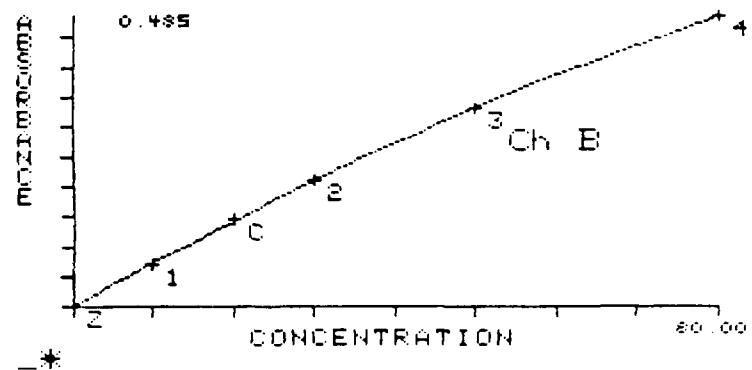
01:57

Standard 4

Abs	1	0.006	0.480
Mean		0.006	0.480
P/H		-0.005	0.694
Abs	2	-0.005	0.490
Mean		0.000	0.485
P/H		-0.005	0.733
Se-S As-S			
Mean		0.000	0.485
SD		0.008	0.007
RSD		DIG HI	01.44



As-5



CALIBRATE A

STD	CONC	MEAN
Z	00.00	0.000
C	20.00	0.108
1	05.00	0.029
2	30.00	0.153
3	50.00	0.217

APP CONC

STD Z	00.00
STD C	19.97
STD 1	04.99
STD 2	30.07
STD 3	50.02

CALIBRATE B

STD	CONC	MEAN
Z	00.00	0.000
C	20.00	0.147
1	10.00	0.069
2	30.00	0.211
3	50.00	0.333
4	80.00	0.485

APP CONC

STD Z	00.00
STD C	20.49
STD 1	09.41
STD 2	30.03
STD 3	49.83
STD 4	80.07

Se-S As-S
 SN= 000887
 Conc 1 39.96 19.88
 Mean 39.96 19.88
 P/H 0.280 0.241
 Conc 2 41.47 20.56
 Mean 40.71 20.22
 P/H 0.287 0.257
 Se-S As-S
 Mean 40.71 20.22
 SD 01.07 00.48
 RSD 02.62 02.37

ICV1 2:5 02:15
 ICV-2 (0887)
 T=104 ppb Se 98%
 T=47 ppb As 108%

Se-S As-S
 SN= 000000
 Conc 1 00.57 -00.36
 Mean 00.57 -00.36
 P/H -0.003 -0.002
 Conc 2 01.57 -00.89
 Mean 01.07 -00.63
 P/H -0.004 -0.003
 Se-S As-S
 Mean 01.07 -00.63
 SD 00.71 00.37
 RSD 66.07 -59.36

ICB1 02:18

Se-S As-S
 SN= 000510
 Conc 1 04.93 08.62
 Mean 04.93 08.62
 P/H 0.042 0.124
 Conc 2 06.00 08.85
 Mean 05.46 08.73
 P/H 0.048 0.134
 Se-S As-S
 Mean 05.46 08.73
 SD 00.76 00.16
 RSD 13.84 01.85

CRA 02:24

Se-S As-S
 SN= 000510
 Conc 1 15.42 31.00
 Mean 15.42 31.00
 P/H 0.157 0.387
 Conc 2 16.83 30.76
 Mean 16.12 30.88
 P/H 0.181 0.389
 Se-S As-S
 Mean 16.12 30.88
 SD 01.00 00.17
 RSD 06.18 00.54

CZAA 02:28
 107% Se
 111% As

Se-S As-S
 SN= 315348 PBS
 Conc 1 00.08 -01.59
 Mean 00.08 -01.59
 P/H -0.005 0.000
 Conc 2 -00.50 00.08
 Mean -00.21 -00.76
 P/H -0.008 0.003
 Se-S As-S
 Mean -00.21 -00.76
 SD 00.41 01.18
 RSD DIG HI DIG HI

03:13

Se-S As-S
 SN= 315348 PBSA
 Conc 1 09.51 20.15
 Mean 09.51 20.15
 P/H 0.082 0.257
 Conc 2 09.92 20.69
 Mean 09.71 20.42
 P/H 0.087 0.240
 Se-S As-S
 Mean 09.71 20.42
 SD 00.29 00.38
 RSD 02.98 01.86

03:17

97% Se
102% As

Se-S As-S
 SN= 309694 LCS
 Conc 1 00.12 23.64
 Mean 00.12 23.64
 P/H -0.005 0.262
 Conc 2 01.49 22.05
 Mean 00.80 22.84
 P/H 0.003 0.243
 Se-S As-S
 Mean 00.80 22.84
 SD 00.97 01.12
 RSD DIG HI 04.92

1:200 03:21

As only

Se-S As-S
 SN= 309694 LCSA
 Conc 1 09.90 45.69
 Mean 09.90 45.69
 P/H 0.099 0.413
 Conc 2 12.12 44.77
 Mean 11.01 45.23
 P/H 0.118 0.440
 Se-S As-S
 Mean 11.01 45.23
 SD 01.57 00.65
 RSD 14.25 01.43

1:200 03:26

112% As

Se-S As-S
 SN= 309694 LCS 1:10 03:30
 Conc 1 15.72 HIGH
 Mean 15.72 HIGH
 P/H 0.124 0.695
 Conc 2 14.87 HIGH
 Mean 15.29 HIGH
 P/H 0.127 0.714
 Se-S As-S
 Mean 15.29 HIGH
 SD 00.60
 RSD 03.93

Se only

Se-S As-S
 SN= 309694 LCSA 1:10 03:34
 Conc 1 24.69 HIGH
 Mean 24.69 HIGH
 P/H 0.182 0.832
 Conc 2 23.90 HIGH
 Mean 24.29 HIGH
 P/H 0.208 0.724
 Se-S As-S
 Mean 24.29 HIGH
 SD 00.56
 RSD 02.29

90% Se

Se-S As-S
 SN= 309703 ~~B2020~~ B2020C 03:39
 Conc 1 -00.57 03.41
 Mean -00.57 03.41
 P/H 0.001 0.026
 Conc 2 -00.41 02.11
 Mean -00.49 02.76
 P/H 0.001 0.020
 Se-S As-S
 Mean -00.49 02.76
 SD 00.11 00.92
 RSD -23.06 33.29

see 1-23-90

Se-S As-S
 SN= 309703 C ^{7/21/90} B2020A 03:45
 Conc 1 04.88 23.21
 Mean 04.88 23.21
 P/H 0.045 0.270
 Conc 2 04.77 22.84
 Mean 04.82 23.02
 P/H 0.052 0.250
 Se-S As-S
 Mean 04.82 23.02
 SD 00.08 00.26
 RSD 01.61 01.13

48% Se "W"
115% As

Se-S As-S
 SN= 000135
 Conc 1 19.66 25.58
 Mean 19.66 25.58
 P/H 0.184 0.298
 Conc 2 20.33 27.98
 Mean 19.99 26.78
 P/H 0.200 0.312
 Mean Se-S As-S
 19.99 26.78
 SD 00.47 01.70
 RSD 02.36 06.33

CCV1

03:49

SPEX 1,3,S
 T= 20.00 ppb Se 100%
 T= 25.00 ppb As 107%

Se-S As-S
 SN= 000000
 Conc 1 -00.52 -00.35
 Mean -00.52 -00.35
 P/H -0.007 -0.003
 Conc 2 -01.96 -00.33
 Mean -01.24 -00.34
 P/H -0.002 -0.001
 Mean Se-S As-S
 -01.24 -00.34
 SD 01.02 00.01
 RSD -82.09 -04.11

CCB1

03:53

Se-S As-S
 SN= 309692
 Conc 1 05.07 41.11
 Mean 05.07 41.11
 P/H 0.035 0.463
 Conc 2 03.23 43.51
 Mean 04.15 42.31
 P/H 0.030 0.461

B2020S^C 04:15

Se-S As-S
 Mean 04.15 42.31
 SD 01.30 01.70
 RSD 31.34 04.01

Se-S As-S
 SN= 309693
 Conc 1 -01.51 00.71
 Mean -01.51 00.71
 P/H -0.012 0.012
 Conc 2 -00.80 00.88
 Mean -01.16 00.79
 P/H 0.002 0.012

B2020D^C 04:19
 1-31-40

Se-S As-S
 Mean -01.16 00.79
 SD 00.50 00.12
 RSD -43.27 15.18

Se-S As-S
 SN= 309693
 Conc 1 06.02 21.55
 Mean 06.02 21.55
 P/H 0.038 0.252
 Conc 2 05.51 21.84
 Mean 05.76 21.69
 P/H 0.037 0.255

B2020DA^C 04:23
 58% Se "W"
 108% As

Se-S As-S
 Mean 05.76 21.69
 SD 00.36 00.21
 RSD 06.25 00.94

Se-S As-S
 SN= 309691
 Conc 1 -00.64 00.82
 Mean -00.64 00.82
 P/H -0.004 0.007
 Conc 2 01.22 00.59
 Mean 00.29 00.70
 P/H -0.005 0.014

B201A 04:27

Se-S As-S
 Mean 00.29 00.70
 SD 01.32 00.16
 RSD DIG HI 23.14

Se-S As-S
 SN= 309691
 Conc 1 07.34 22.18
 Mean 07.34 22.18
 P/H 0.055 0.217
 Conc 2 06.30 21.94
 Mean 06.82 22.06
 P/H 0.061 0.224

B201AA 04:31
 68% Se "W"
 110% As

Se-S As-S
 Mean 06.82 22.06
 SD 00.74 00.17
 RSD 10.77 00.76

Se-S As-S
 SN= 309699
 Conc 1 -00.28 04.17
 Mean -00.28 04.17
 P/H -0.001 0.045
 Conc 2 00.05 05.22
 Mean -00.12 04.69
 P/H 0.000 0.040

B201B

04:40

Se-S As-S
 Mean -00.12 04.69
 SD 00.23 00.74
 RSD DIG HI 15.82

Se-S As-S
 SN= 309699
 Conc 1 06.77 25.40
 Mean 06.77 25.40
 P/H 0.050 0.244
 Conc 2 06.54 25.60
 Mean 06.65 25.50
 P/H 0.055 0.255

B201BA

04:44

67% Se "W"
104% AS

Se-S As-S
 Mean 06.65 25.50
 SD 00.16 00.14
 RSD 02.43 00.55

Se-S As-S
 SN= 309700
 Conc 1 -01.75 04.19
 Mean -01.75 04.19
 P/H -0.003 0.038
 Conc 2 -00.37 02.48
 Mean -01.06 03.33
 P/H -0.006 0.034

B202TAR

04:49

Se-S As-S
 Mean -01.06 03.33
 SD 00.98 01.21
 RSD -91.98 36.30

Se-S As-S
 SN= 309700
 Conc 1 03.10 21.36
 Mean 03.10 21.36
 P/H 0.011 0.231
 Conc 2 02.50 22.31
 Mean 02.80 21.83
 P/H 0.022 0.231

B202TARA

04:53

28% Se
93% AS

Se-S As-S
 Mean 02.80 21.83
 SD 00.42 00.67
 RSD 15.14 03.07

SN= 000135 Se-S As-S
 Conc 1 18.80 25.87
 Mean 18.80 25.87
 P/H 0.180 0.281
 Conc 2 19.75 24.53
 Mean 19.27 25.20
 P/H 0.185 0.289
 Se-S As-S
 Mean 19.27 25.20
 SD 00.67 00.95
 RSD 03.48 03.75

CCV2 04:57

SPEX 1,35
 T= 20.00 PPB 96%
 T= 25.00 PPB 101%

SN= 000000 Se-S As-S
 Conc 1 00.31 -00.04
 Mean 00.31 -00.04
 P/H -0.007 0.003
 Conc 2 -00.94 -00.66
 Mean -00.32 -00.35
 P/H -0.010 -0.002
 Se-S As-S
 Mean -00.32 -00.35
 SD 00.88 00.44
 RSD DIG HI DIG HI

CCB2 05:00

Se-S As-S
 SN= 309700
 Conc 1 -01.39 01.11
 Mean -01.39 01.11
 P/H -0.009 0.011
 Conc 2 00.14 01.92
 Mean -00.63 01.51
 P/H 0.009 0.012

B202AR 1:2 05:04
 Se only

Se-S As-S
 Mean -00.63 01.51
 SD 01.08 00.57
 RSD DIG HI 37.88

Se-S As-S
 SN= 309700
 Conc 1 02.82 19.88
 Mean 02.82 19.88
 P/H 0.017 0.218
 Conc 2 02.50 21.30
 Mean 02.66 20.59
 P/H 0.016 0.232

B202ARZA 1:2 05:08
 27% Se "E"

Se-S As-S
 Mean 02.66 20.59
 SD 00.23 01.00
 RSD 08.49 04.87

Se-S As-S
 SN= 309701
 Conc 1 -00.55 04.82
 Mean -00.55 04.82
 P/H -0.002 0.061
 Conc 2 01.13 04.17
 Mean 00.29 04.49
 P/H 0.010 0.051

B202A 05:15

Se-S As-S
 Mean 00.29 04.49
 SD 01.19 00.46
 RSD DIG HI 10.22

Se-S As-S
 SN= 309701
 Conc 1 04.87 24.24
 Mean 04.87 24.24
 P/H 0.042 0.274
 Conc 2 04.99 23.88
 Mean 04.93 24.06
 P/H 0.028 0.259

B202AA 05:19
 49% Se "W"
 98% As

Se-S As-S
 Mean 04.93 24.06
 SD 00.08 00.25
 RSD 01.70 01.05

Se-S As-S
 SN= 309702
 Conc 1 -00.57 02.04
 Mean -00.57 02.04
 P/H -0.004 0.019
 Conc 2 -01.72 02.30
 Mean -01.15 02.17
 P/H -0.009 0.022

B202B

05:23

Se-S As-S
 Mean -01.15 02.17
 SD 00.81 00.18
 RSD -70.69 08.43

Se-S As-S
 SN= 309702
 Conc 1 04.63 23.12
 Mean 04.63 23.12
 P/H 0.043 0.275
 Conc 2 06.05 22.74
 Mean 05.34 22.93
 P/H 0.029 0.264

B202BA

05:30

Se-S As-S
 Mean 05.34 22.93
 SD 01.00 00.27
 RSD 18.80 01.16

55% Se 'E' "W" SETB 1-23-90
 115% AS

Se-S As-S
 SN= 000135
 Conc 1 19.53 23.88
 Mean 19.53 23.88
 P/H 0.176 0.270
 Conc 2 19.22 24.66
 Mean 19.37 24.27
 P/H 0.174 0.274
 Se-S As-S
 Mean 19.37 24.27
 SD 00.22 00.55
 RSD 01.13 02.27

CCV3

06:45

SPEX 1,3,5
 T=20.00 ppb Se 97%
 T=25.00 ppb As 97%

Se-S As-S
 SN= 000000
 Conc 1 -00.18 -00.80
 Mean -00.18 -00.80
 P/H -0.005 0.000
 Conc 2 -00.26 -00.85
 Mean -00.22 -00.83
 P/H -0.006 -0.003
 Se-S As-S
 Mean -00.22 -00.83
 SD 00.06 00.04
 RSD -25.45 -04.33

CCB3

06:49

		Se-S	As-S
SN= 000135			
Conc	1	18.90	22.36
Mean		18.90	22.36
P/H		0.146	0.270
Conc	2	18.99	23.30
Mean		18.94	22.83
P/H		0.170	0.286
		Se-S	As-S
Mean		18.94	22.83
SD		00.06	00.66
RSD		00.33	02.90

CCV4

07:10

SPEX 1,3,5

T=20.00 ppb Se 95%

T=25.00 ppb As 91%

		Se-S	As-S
SN= 000000			
Conc	1	00.15	-02.33
Mean		00.15	-02.33
P/H		-0.002	-0.005
Conc	2	-00.49	-01.24
Mean		-00.17	-01.79
P/H		-0.009	-0.004
		Se-S	As-S
Mean		-00.17	-01.79
SD		00.45	00.77
RSD		DIG HI	-43.01

CCB 4

07:14

ELEMENTS

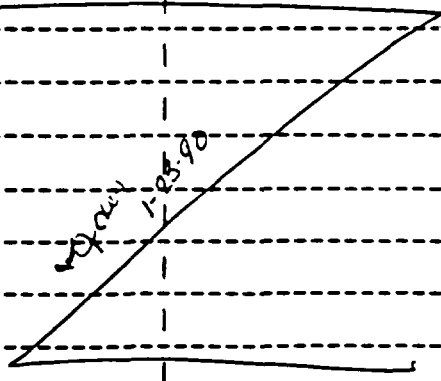
AS/SE
PB/TL

CD
AG
SB

Operator: SERBLAKE

Case Name: 18756A / 18244
File Name: 900123.G118

NO.	CALIBRATION	6 STDs	COMMENTS	TIME	NO.	SAMPLE NO.	COMMENTS	TIME
	SAMPLE ID							
1	ICV		10V-2 (0887)	02:15	1	CCB 2		05:01
1	ICB			02:18	1	309700	1:2	05:02
1	KPA			02:24	2	309700	1:2A	05:03
2	KPA	1A		02:28	3	309701		05:15
3	315348	PBS		03:13	4	309701	1A	05:16
4	315348	1A		03:17	5	309702		05:22
5	309694	1CS 1:200		03:21	6	309702	1A	05:33
6	309694	1:200A		03:26	7	311956	PBW	06:21
7	309694	1:10		03:30	8	311956	1A	06:23
8	309694	1:10A		03:34	9	308285	1:5 CS	06:23
9	309703			03:39	10	308285	1:5A	06:24
10	309703	1A		03:45		CCV 3	SPEX	06:4
	CCV 1	SPEX		03:46		CCB 3		06:4
	CCB 1			03:53	1	310536		07:0
1	309692	BS(309703)		04:15	2	310537	1A	07:0
2	309693	0(309703)		04:19	3			
3	309693	1A		04:23	4			
4	309691			04:27	5			
5	309691	1A		04:31	6			
6	309699			04:40	7			
7	309699	1A		04:44	8			
8	309700			04:49	9			
9	309700	1A		04:53	10			
10						CCV 4	SPEX	07:10
	CCV 2	SPEX		04:57		CCB 4		07:14



# INJECTS	# SAMPLES	DILUTIONS	PST	DIG	SPR	CALIB	QC	QC SAMPLES	INST	HRS
80	7	2			K	10		7		6.0
17										
93										55

Atomic Absorption Raw Data Package

SDG No. : 18756 A Date 1/22/90

Analyst Littlejohn

	<u>Channel A</u>	<u>Channel B</u>
Element	<u>Pb</u>	<u>Tl</u>
Background Correction	<u>B-S</u>	<u>F-D</u>
Wavelength	<u>283.9 nm</u>	<u>277 nm</u>

AA Spectrophotometer Instrument I.D. A 3

Integration Time 3.1 sec Delay 0.1 sec

Integration Mode Peak Area

Set Up Parameters ** Fill In or See Attached (screen dump) **

Furnace

	Dry	Pyr1	Pyr2	Atom	Clean
Temp	<u>150</u>	<u>200</u>	<u>400</u>	<u>450</u>	<u>2300</u>
Ramp	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Hold	<u>0</u>	<u>1</u>	<u>2</u>	<u>0</u>	<u>1</u>
Purge	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

leg = 5sec
1/22/90

Fastac

Aspiration Rate 1 mL/min
 Delay 12 sec Deposition 10 sec

Calibration Standards

Source SPEX
 Preparation Date 1/22/90
 Preparer [Signature]
 Concentration Units ug/Liter

Performance Check - 20 ug/L STANDARD ABSORBANCES
 Channel A .201
 Channel B .247

PAGES 1 THRU 12

Abs 1 -0.001 0.015 90
Mean -0.001 0.015
P/H -0.002 0.000
Abs 2 0.000 0.016
Mean -0.001 0.015
P/H 0.005 0.002

22 30

2

AUTO ZERO

15:08:19

Sun 21 JAN 1990

Pb-S T1-D

Standard C

20/20

22 35

Abs 1 0.200 0.250
Mean 0.200 0.250
P/H 0.408 0.439
Abs 2 0.203 0.245
Mean 0.201 0.247
P/H 0.419 0.436

Pb-S T1-D

Mean 0.201 0.247
SD 0.002 0.004
RSD 01.09 01.45

Pb-S T1-D

Standard 1

3/10

22 40

Abs 1 0.035 0.114
Mean 0.035 0.114
P/H 0.046 0.201
Abs 2 0.042 0.117
Mean 0.038 0.115
P/H 0.071 0.214

Pb-S T1-D

Mean 0.038 0.115
SD 0.005 0.002
RSD 13.15 01.91

Pb-S T1-D

Standard 2

40/40

22 45

Abs 1 0.355 0.431
Mean 0.355 0.431
P/H 0.592 0.666
Abs 2 0.351 0.422
Mean 0.353 0.426
P/H 0.594 0.648

Pb-S T1-D

Mean 0.353 0.426
SD 0.003 0.006
RSD 00.79 01.50

Pb-S T1-D

Standard 3

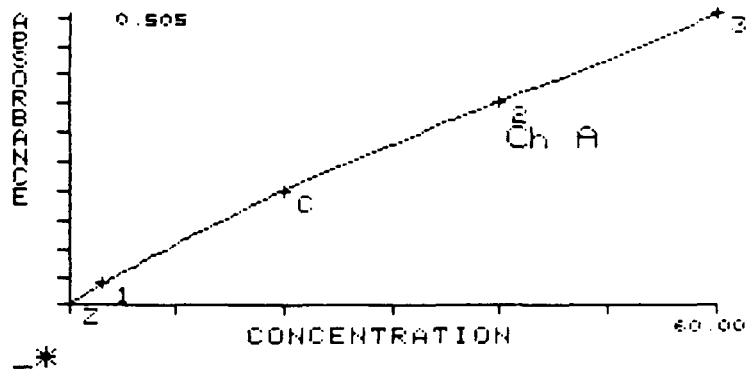
60/60

22 50

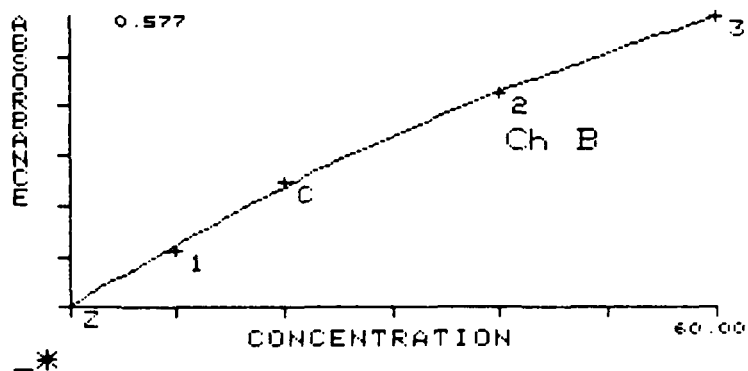
Abs 1 0.503 0.574
Mean 0.503 0.574
P/H 0.828 0.801
Abs 2 0.508 0.581
Mean 0.505 0.577
P/H 0.790 0.818

Pb-S T1-D

Mean 0.505 0.577
SD 0.004 0.005
RSD 00.71 00.86



TI-D



CALIBRATE A

STD	CONC	MEAN
Z	00.00	0.000
C	20.00	0.201
1	03.00	0.038
2	40.00	0.353
3	60.00	0.505

APP CONC

STD Z	00.00
STD C	19.91
STD 1	03.22
STD 2	40.05
STD 3	59.99

CALIBRATE B

STD	CONC	MEAN
Z	00.00	0.000
C	20.00	0.247
1	10.00	0.115
2	40.00	0.426
3	60.00	0.577

APP CONC

STD Z	00.00
STD C	20.84
STD 1	09.15
STD 2	39.66
STD 3	60.10

2300

4

SN= 000387
 Conc 1 42.13 37.92
 Mean 42.13 37.92
 P/H 0.731 0.653
 Conc 2 43.19 38.02
 Mean 42.66 37.97
 P/H 0.719 0.650
 Pb-S T1-D
 Mean 42.66 37.97
 SD 00.75 00.07
 RSD 01.75 00.18

ICV-4 387 2:5

$T_{Pb} = 39.16$

$T_{TL} = 38.92$

SN= 000099
 Conc 1 00.43 -00.20
 Mean 00.43 -00.20
 P/H -0.003 0.002
 Conc 2 00.70 00.05
 Mean 00.56 -00.08
 P/H -0.002 0.000
 Pb-S T1-D
 Mean 00.56 -00.08
 SD 00.19 00.18
 RSD 34.10 DIG HI

ICB

2305

SN= 000310
 Conc 1 03.50 09.62
 Mean 03.50 09.62
 P/H 0.070 0.228
 Conc 2 03.19 09.75
 Mean 03.34 09.68
 P/H 0.057 0.218
 Pb-S T1-D
 Mean 03.34 09.68
 SD 00.22 00.09
 RSD 06.55 00.95

CRA

2310

$T_{Pb} = 3$ 111.3%

$T_{TL} = 10$ 96.8%

SN= 000310
 Conc 1 18.68 27.39
 Mean 18.68 27.39
 P/H 0.414 0.534
 Conc 2 24.15 31.90
 Mean 21.41 29.64
 P/H 0.480 0.592
 Pb-S T1-D
 Mean 21.41 29.64
 SD 03.87 03.19
 RSD 18.06 10.75

CRA A

2315

+20Pb 90.35%

+20TL 99.80%

23 20 SN= 315348
 Conc 1 -00.45 00.12
 Mean -00.45 00.12
 P/H -0.005 -0.001
 Conc 2 -00.08 -00.03
 Mean -00.27 00.04
 P/H -0.007 -0.002
 Pb-S T1-D
 Mean -00.27 00.04
 SD 00.26 00.11
 RSD -96.66 DIG HI

PBS

2325 SN= 315348
 Conc 1 19.59 21.55
 Mean 19.59 21.55
 P/H 0.412 0.442
 Conc 2 21.76 21.72
 Mean 20.67 21.63
 P/H 0.409 0.428
 Pb-S T1-D
 Mean 20.67 21.63
 SD 01.53 00.12
 RSD 07.42 00.55

PBS A

+20 Pb 103.35%
 +20 TL 108.15%

2330 SN= 309694
 Conc 1 21.01 03.45
 Mean 21.01 03.45
 P/H 0.372 0.076
 Conc 2 20.50 03.29
 Mean 20.75 03.37
 P/H 0.388 0.076
 Pb-S T1-D
 Mean 20.75 03.37
 SD 00.36 00.11
 RSD 01.73 03.35

LCS 50 X

$(2075)(50)(.2) = 207.5 / 236$

87.9%

$T_{Pb} = 236$

2335 SN= 309694
 Conc 1 44.58 23.38
 Mean 44.58 23.38
 P/H 0.697 0.422
 Conc 2 42.21 22.81
 Mean 43.39 23.09
 P/H 0.672 0.432
 Pb-S T1-D
 Mean 43.39 23.09
 SD 01.68 00.40
 RSD 03.86 01.74

LCS 50 X A

+20 Pb 113.2%

2340 SN= 309694
 Conc 1 HIGH 18.54
 Mean HIGH 18.54
 P/H 1.813 0.342
 Conc 2 HIGH 18.15
 Mean HIGH 18.34
 P/H 1.716 0.342
 Pb-S T1-D
 Mean HIGH 18.34
 SD 00.28
 RSD 01.49

LCS 10 X

$(18.34)(10)(.2) = 366.8 / 39$

94.0%

$T_{TL} = 39$

234

SN= 309694
 Conc 1 HIGH 36.49
 Mean HIGH 36.49
 P/H 1.799 0.578
 Conc 2 HIGH 36.06
 Mean HIGH 36.27
 P/H 1.780 0.549
 Pb-S T1-D
 Mean HIGH 36.27
 SD 00.30
 RSD 00.83

LCS 10 x A

+20TL 5.65%

2350

SN= 309703
 Conc 1 03.50 00.11
 Mean 03.50 00.11
 P/H 0.060 -0.001
 Conc 2 03.83 -00.05
 Mean 03.66 00.03
 P/H 0.074 -0.002
 Pb-S T1-D
 Mean 03.66 00.03
 SD 00.23 00.11
 RSD 06.36 DIG HI

B2020C 0.90

2355

SN= 309703
 Conc 1 21.71 18.94
 Mean 21.71 18.94
 P/H 0.371 0.361
 Conc 2 22.40 19.01
 Mean 22.05 18.97
 P/H 0.418 0.371
 Pb-S T1-D
 Mean 22.05 18.97
 SD 00.49 00.05
 RSD 02.20 00.26

B2020CA

+20Pb 91.9%
+20TL 94.8%

0000 SN= 000135 Pb-S T1-D
 Conc 1 26.72 21.38
 Mean 26.72 21.38
 P/H 0.524 0.461
 Conc 2 25.98 21.09
 Mean 26.35 21.23
 P/H 0.537 0.475
 Pb-S T1-D
 Mean 26.35 21.23
 SD 00.52 00.21
 RSD 01.98 00.96

CCV,
 CCV 135-

$T_{Pb} = 25$

105.4%

$T_{Tl} = 20$

106.1%

0:05 SN= 000099 Pb-S T1-D
 Conc 1 00.39 01.85
 Mean 00.39 01.85
 P/H 0.002 0.013
 Conc 2 00.19 -00.52
 Mean 00.29 00.66
 P/H 0.001 -0.003
 Pb-S T1-D
 Mean 00.29 00.66
 SD 00.14 01.68
 RSD 48.62 DIG HI

CCB,

Pb-S T1-D
 :10 SN= 309692
 Conc 1 23.66 53.61
 Mean 23.66 53.61
 P/H 0.431 0.749
 Conc 2 22.31 52.60
 Mean 22.98 53.10
 P/H 0.440 0.720

SS(309703)

Pb-S T1-D
 Mean 22.98 53.10
 SD 00.95 00.71
 RSD 04.15 01.34

Pb-S T1-D
 :15 SN= 309693
 Conc 1 05.45 00.04
 Mean 05.45 00.04
 P/H 0.110 0.002
 Conc 2 05.45 00.02
 Mean 05.45 00.03
 P/H 0.102 0.003

DL(309703)

Pb-S T1-D
 Mean 05.45 00.03
 SD 00.00 00.01
 RSD 00.00 46.66

Pb-S T1-D
 :20 SN= 309693
 Conc 1 23.28 19.29
 Mean 23.28 19.29
 P/H 0.456 0.365
 Conc 2 25.05 19.35
 Mean 24.16 19.32
 P/H 0.461 0.384

DL(309703) A

Pb-S T1-D
 Mean 24.16 19.32
 SD 01.25 00.04
 RSD 05.17 00.21

+20 Pb 93.5%

+20 Tl 96.6%

Pb-S T1-D
 :25 SN= 309691
 Conc 1 07.87 00.26
 Mean 07.87 00.26
 P/H 0.160 0.002
 Conc 2 07.16 00.10
 Mean 07.51 00.18
 P/H 0.138 0.002

B201A

Pb-S T1-D
 Mean 07.51 00.18
 SD 00.50 00.11
 RSD 06.68 62.77

Pb-S T1-D
 :30 SN= 309691
 Conc 1 29.53 21.84
 Mean 29.53 21.84
 P/H 0.495 0.441
 Conc 2 28.80 21.97
 Mean 29.16 21.90
 P/H 0.495 0.426

B201A A

Pb-S T1-D
 Mean 29.16 21.90
 SD 00.52 00.09
 RSD 01.76 00.42

+20 Pb 108.2%

+20 Tl 109.5%

:35 SN= 309701
 Pb-S T1-D
 Conc 1 05.02 -00.36
 Mean 05.02 -00.36
 P/H 0.108 0.002
 Conc 2 05.48 00.89
 Mean 05.25 00.26
 P/H 0.114 0.008
 Mean Pb-S T1-D
 05.25 00.26
 SD 00.33 00.88
 RSD 06.19 DIG HI

B202A

:40 SN= 309701
 Pb-S T1-D
 Conc 1 26.26 20.78
 Mean 26.26 20.78
 P/H 0.471 0.387
 Conc 2 26.51 20.83
 Mean 26.38 20.80
 P/H 0.453 0.400
 Mean Pb-S T1-D
 26.38 20.80
 SD 00.18 00.04
 RSD 00.66 00.17

B202A

A

+20 Pb

105.6%

+20 TL

104%

:45 SN= 309702
 Pb-S T1-D
 Conc 1 03.58 00.24
 Mean 03.58 00.24
 P/H 0.064 0.003
 Conc 2 03.74 00.07
 Mean 03.66 00.15
 P/H 0.071 0.002
 Mean Pb-S T1-D
 03.66 00.15
 SD 00.11 00.12
 RSD 03.08 80.00

B202B

:50 SN= 309702
 Pb-S T1-D
 Conc 1 24.93 22.06
 Mean 24.93 22.06
 P/H 0.423 0.429
 Conc 2 24.12 22.02
 Mean 24.52 22.04
 P/H 0.403 0.410
 Mean Pb-S T1-D
 24.52 22.04
 SD 00.57 00.03
 RSD 02.33 00.12

B202B

A

+20 Pb

104.3

+20 TL

110.2%

CCV₂

CCV 135

55 SN= 000135
 Pb-S T1-D
 Conc 1 26.32 22.41
 Mean 26.32 22.41
 P/H 0.494 0.473
 Conc 2 23.68 19.61
 Mean 25.00 21.01
 P/H 0.446 0.433

T_{Pb} = 25

100%

T_{Tl} = 20

105.0%

Pb-S T1-D
 Mean 25.00 21.01
 SD 01.87 01.98
 RSD 07.46 09.41

1:00 SN= 000099
 Pb-S T1-D
 Conc 1 01.48 -00.44
 Mean 01.48 -00.44
 P/H 0.001 -0.001
 Conc 2 00.66 -00.19
 Mean 01.07 -00.32
 P/H 0.002 0.001

CCB₂

Pb-S T1-D
 Mean 01.07 -00.32
 SD 00.58 00.18
 RSD 54.11 -55.00

1:05 Pb-S T1-D
 SN= 309699
 Conc 1 11.11 -00.34
 Mean 11.11 -00.34
 P/H 0.197 -0.002
 Conc 2 11.36 00.24
 Mean 11.23 -00.05
 P/H 0.193 0.002

B201 B

Pb-S T1-D
 Mean 11.23 -00.05
 SD 00.18 00.41
 RSD 01.56 DIG HI

1:10 SN= 309699
 Conc 1 32.71 21.91
 Mean 32.71 21.91
 P/H 0.507 0.443
 Conc 2 32.15 22.01
 Mean 32.43 21.96
 P/H 0.502 0.429

B201 B A

+20 Pb 106.0%
 +20 TL 109.8%

Pb-S T1-D
 Mean 32.43 21.96
 SD 00.40 00.07
 RSD 01.21 00.31

1:15 SN= 309700
 Conc 1 48.37 -00.16
 Mean 48.37 -00.16
 P/H 0.546 0.000
 Conc 2 48.13 00.23
 Mean 48.25 00.03
 P/H 0.548 0.005

B202 JAR
 T 2-1-40

Pb-S T1-D
 Mean 48.25 00.03
 SD 00.17 00.28
 RSD 00.35 DIG HI

1:20 SN= 309700
 Conc 1 67.49 21.81
 Mean 67.49 21.81
 P/H 0.710 0.405
 Conc 2 58.43 18.18
 Mean 62.96 19.99
 P/H 0.604 0.363

B202 JAR A
 T 2-1-40

+20 Pb H
 +20 TL 99.95%

Pb-S T1-D
 Mean 62.96 19.99
 SD 06.41 02.57
 RSD 10.17 12.83

1:25 SN= 309700
 Conc 1 05.26 00.09
 Mean 05.26 00.09
 P/H 0.079 -0.001
 Conc 2 04.87 00.09
 Mean 05.06 00.09
 P/H 0.078 0.001

B202 JAR 5X
 T 2-1-40

Pb-S T1-D
 Mean 05.06 00.09
 SD 00.28 00.00
 RSD 05.43 00.00

01:30 Pb-S T1-D
 SN= 309700
 Conc 1 26.36 22.17
 Mean 26.36 22.17
 P/H 0.443 0.430
 Conc 2 25.00 22.68
 Mean 25.68 22.42
 P/H 0.394 0.423
 Mean Pb-S T1-D
 25.68 22.42
 SD 00.96 00.36
 RSD 03.74 01.60

~~T_{pb} = 21.40~~
 B202 JAR 5X A

+20 Pb 103.10%

01:35 Pb-S T1-D
 SN= 000135
 Conc 1 27.01 20.08
 Mean 27.01 20.08
 P/H 0.535 0.488
 Conc 2 25.44 19.54
 Mean 26.22 19.81
 P/H 0.501 0.480
 Mean Pb-S T1-D
 26.22 19.81
 SD 01.11 00.38
 RSD 04.23 01.92

CCV₃
 CCV 135

T_{Pb} = 25 104.88%

T_{TL} = 20 99.05%

01:40 Pb-S T1-D
 SN= 000099
 Conc 1 00.34 -00.37
 Mean 00.34 -00.37
 P/H 0.001 0.000
 Conc 2 00.36 -00.38
 Mean 00.35 -00.38
 P/H 0.002 -0.002
 Mean Pb-S T1-D
 00.35 -00.38
 SD 00.01 00.01
 RSD 04.00 -02.63

CCB₃

PB/TL

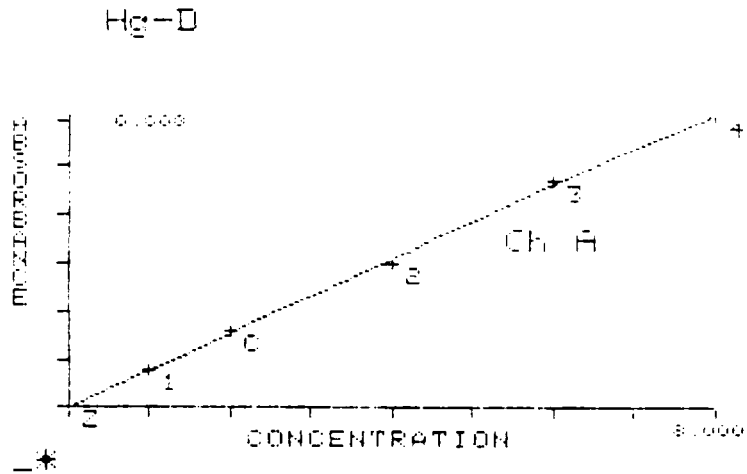
AG
SB

Case Name: 4756 A
File Name: 43900122 2230
2230

NO.	SAMPLE ID	COMMENTS	NO.	SAMPLE NO.	COMMENTS
	ICV		2300	CCB	01:00
	ICB		2305	1 309699	01:05
1	CRA	✓	2310	2 309699	01:00
2	CRA	IA	2315	3 309700	01:15
3	315348	✓ PBS	2320	4 309700	01:20
4	315348	IA	2325	5 309700	01:25
5	307694	✓ CCS 50x	2330	6 309700	01:30
6	309694	✓ CCS 50x A	2335	7	
7	309694	✓ CCS 10x	2340	8	
8	309694	✓ CCS 10x A	2345	9	
9	309703		2350	10	
10	309703	IA	2355	CCV 3	SPEX 01:35
	CCV	SPEX	00:00	CCB 3	01:40
	CCB		00:05	1	
1	309692	✓ (309703)	00:10	2	
2	309693	✓ (309703)	00:15	3	
3	309693	✓ (309703) A	00:20	4	
4	309691		00:25	5	
5	309691	IA	00:30	6	
6	309701		00:35	7	
7	309701	IA	00:40	8	
8	309702		00:45	9	
9	309702	IA	00:50	10	
10				CCV	
	CCV	SPEX	00:55	CCB	

INJECTS	SAMPLES	DILUTIONS	PST DIG SPR	CALIB QC	QC SAMPLES	INST HRS
74	6	2	2	13	5	2 hrs

Hg-D
 Standard Z
 Abs -0.003
 AUTO ZERO
 12 20:04
 Wed 3 JAN 1990
 Hg-D
 Standard C
 Abs 0.079
 Standard 1
 Abs 0.038
 Standard 2
 Abs 0.151
 Standard 3
 Abs 0.235
 Standard 4
 Abs 0.303



CALIBRATE A		
STD	CONC	MEAN
Z	0.000	0.000
C	2.000	0.079
1	1.000	0.038
2	4.000	0.151
3	6.000	0.235
4	8.000	0.303

APP CONC	
STD Z	0.000
STD C	2.061
STD 1	1.003
STD 2	3.895
STD 3	6.081
STD 4	7.978

Hg Analysis
 1/8/90
 ICV-5 (0782) (1:2 T=2.45)
 CCV: T=3
 Units: µg/l
 Pags: 1-4
 DBA
 13756A



Ha-D
SN= 000001
Conc 2.379
SN= 000000
Conc -0.082

ICV 979.

ICB

SN= 307628
Conc -0.017
SN= 306006
Conc 2.855
SN= 306018
Conc 2.197
SN= 306023
Conc 0.694
SN= 312022
Conc -0.146
SN= 310737
Conc 2.907
SN= 311451
Conc -0.019
SN= 310735
Conc 0.726
SN= 309919
Conc -0.055
SN= 310736
Conc -0.073

Rep BIK

Rep BIK

BS

SS(311451)

D(311451)

SN= 000003
Conc 2.717
SN= 000000
Conc -0.137

CCV 909.

CCB

SN= 309958
Conc -0.019
SN= 310376
Conc -0.082
SN= 310377
Conc -0.091
SN= 311320
Conc -0.046
SN= 311452
Conc -0.028
SN= 311591
Conc -0.046
SN= 311929
Conc -0.091
SN= 311932
Conc 0.108
SN= 311944
Conc -0.101
SN= 309694
Conc 6.539

Rep BIK

BS

1.5

SN= 000003 CCV 91%
 Conc 2.725
 SN= 000000 CCB
 Conc -0.064
 SN= 309703 /
 Conc -0.091
 SN= 309692 SSC(309703)
 Conc 1.341
 SN= 309693 P(309703) /
 Conc -0.091
 SN= 309691 /
 Conc -0.082
 SN= 309699 /
 Conc -0.073
 SN= 309700 /
 Conc 0.009
 SN= 309701 /
 Conc -0.055
 SN= 309702 /
 Conc -0.091
 SN= 311942 Prep BK
 Conc -0.055
 SN= 000010 I.S Generic BS
 Conc 6.016

SN= 000003 CCV 93%
 Conc 2.794
 SN= 000000 CCB
 Conc 0.009

SN= 310763
 Conc -0.101

SN= 000003 CCV 101%
 Conc 3.028
 SN= 000000 CCB
 Conc -0.028

Hg-D
SN# 000001
Conc 1 1.006
Mean 1.006
Conc 2 1.015
Mean 1.010
Conc 3 0.979
Mean 1.000
Conc 4 1.032
Mean 1.008
Conc 5 0.979
Mean 1.002
Conc 6 0.935
Mean 0.991
Conc 7 0.935
Mean 0.983
Hg-D
Mean 0.983
SD 0.038
RSD 03.84

IDL

Hg-D
SN# 000003
Conc 2.967
SN# 000000
Conc 0.118

CCV 99%

CCB

ELEMENTS AS/SE CD
PB/TL Hg AG
SB

Operator: David Allen

Case Name:
File Name:

NO.	SAMPLE ID	COMMENTS	NO.	SAMPLE NO.	COMMENTS
	ICV	1918		CCB	2033
	ICB	1921	1	309703	2036
1	307688	Pap Blk 1924	2	309692	DS (309703) 2039
2	306006	1927	3	309693	DL 309703) 2042
3	306018	1930	4	309691	2045
4	306023	1933	5	309699	2048
5	312022	Pap Blk 1936	6	309700	2051
6	310737	BS 1939	7	309701	2054
7	310737 311451	1942	8	309702	2057
8	310735	ISS (311451) 1945	9	311942	Pap Blk 2000
9	310736	DL (311451) 1948	10	Generic LCS (10)	1.5 2103
920	309919	1951		CCV	2106
	CCV	1954		CCB	2109
	CCB	1957	1	310763	2112
1	309958	2000	2	CCV	2115
2	30376	2003	3	CCB	2118
3	310377	2006	4	IDL x7	(x7.2) 2139
4	311320	2008-2009	5	CCV	2142
5	311452	2012	6	CCB	2145
6	311591	2015	7		
7	311929	2018	8		
8	311932	2021	9		
9	311944	Pap Blk 2024	10		
10	309694	BS 1.5 2027		CCV	
	CCV	2030		CCB	

INJECTS	SAMPLES	DILUTIONS	PST	DIG	SPK	CALIB	QC	QC SAMPLES	INST	HRS
	21	2				12		17		2

CASE TYPE: Platinum H₂
 SDG ID : 178101-18756A (755/103)

COMPUHEM CORP MERCURY PREPARATION LOG
POSTER
 PREPARATION ANALYSIS CODE : -162

PREPARED BY: Eric S. Wagoner
 DATE: 01-01-90

CN	LAB ID	DATE REC'D	CUSTOMER ID	INITIAL (WT / VOL)	FINAL VOL	DESCRIPTION		PH
						BEFORE	AFTER	
1	309691	12-20-89	R201A	0.20g	100µL	Adl	Adl	
2	305699		R201R	0.20g				
3	305700		R202TAR	0.20g		Adl	Adl	
4	309701		R202A	0.20g		Adl	Adl	
5	309702		R202R	0.20g				
6	309703	12-20-89	R2020	0.20g	100µL	Adl	Adl	
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21	309692		SAMPLE SPIKE	0.20g	100µL	REF CON: (309705)		
22	309693		DUPLICATE SAMPLE	0.20g		REF CON: (309705)		
23	309694		LAB CTRL SAMPLE	0.20g		85		
24	311777		PREP BLANK	100µL	100µL	DH0		

SAMPLE SPIKE:

QC PREPARATION INFORMATION

LABORATORY CONTROL SAMPLE:

1.0µL 1099649 → 100µL

0.20g Solid LCS 0287

Page no. 00001
12/29/89

PERIODIC CHECKS - FRAMES 800 SYSTEM - INORGANICS REPORT FORM

QC - ICV - 6 (0789)
T = 94

DESCRIPTION	RUN INFORMATION	SAMPLE ID	TEST #1
Date of Run	12-29-89		1.00
Time of Run	14:12		1.00
Operator	REC		1.00
Comment	CYANIDE ANAL. *		1.00
	= 2:1 FREE LAB		1.00
	DILUTION		1.00
			1.00
API ChemName	CYANIDE		1.00
API Units	UG/L		1.00
Peak1	Cup: 1 -> PRIM	300PPB	294.08
Peak2	Cup: 1 -> CALB	300PPB	297.52
Peak3	Cup: 2 -> CALB	200PPB	203.28
Peak4	Cup: 3 -> CALB	100PPB	99.98
Peak5	Cup: 4 -> CALB	50PPB	51.44
Peak6	Cup: 5 -> CALB	10PPB	9.31
Peak7	Cup: 6 -> CALB	0PPB	0.19
Peak8	Cup: 1 -> HIGH	300PPB	295.97
Peak9	Cup: 6 -> LOW	0PPB	0.24
Peak10	Cup: 6 -> LOW	0PPB	0.29
Peak11	Cup: 3 -> ISMP	100PPB	98.18
Peak12	Cup: 3 -> ISMP	100PPB	97.19
Peak13	Cup: 3 -> ISMP	100PPB	96.34
Peak14	Cup: 7 -> SAMP	ICV	65.55
Peak15	Cup: 8 -> SAMP	ICB	0.24
Peak16	Cup: 11 -> SAMP	S11495PB	1.52

ICV
Failed

70%
T = 94

TABLE 11.00N TRACUS 800 SYSTEM JOURNAL/SIS REPORT FORM

DESCRIPTION	RUN INFORMATION	SAMPLE ID	TEST #1
Peak 17	Cup: 12 -> SAMP	309548	1.25
Peak 18	Cup: 13 -> SAMP	309552SS (309548)	94.75
Peak 19	Cup: 14 -> SAMP	309553DUP (309548)	1.98
Peak 20	Cup: 15 -> SAMP	310566	1.49
Peak 21	Cup: 16 -> SAMP	311066	1.41
Peak 22	Cup: 17 -> SAMP	309554LCS	92.54 T=112 83%
Peak 23	Cup: 18 -> SAMP	309548n	28.95
Peak 24	Cup: 19 -> SAMP	BLK	0.36
Peak 25	Cup: 20 -> SAMP	BLK	-1.18
Peak 26	Cup: 9 -> SAMP	CCV	92.77 T=100 95%
Peak 27	Cup: 10 -> SAMP	CCB	-1.38
Peak 28	Cup: 21 -> SAMP	ICV	90.21 T=94 96%
Peak 29	Cup: 22 -> SAMP	ICB	-1.55
Peak 30	Cup: 23 -> SAMP	310258FR	-1.45
Peak 31	Cup: 24 -> SAMP	308651LCS	108.51 T=112 95%
Peak 32	Cup: 25 -> SAMP	308645	25.14
Peak 33	Cup: 26 -> SAMP	308649SS (308645)	64.13
Peak 34	Cup: 27 -> SAMP	308650DUP (308645)	-1.41
Peak 35	Cup: 28 -> SAMP	308653	-1.63
Peak 36	Cup: 29 -> SAMP	308654	-1.72
Peak 37	Cup: 30 -> SAMP	308655	-2.55
Peak 38	Cup: 9 -> SAMP	CCV	92.45 T=100 92%
Peak 39	Cup: 10 -> SAMP	CCB	-1.53
Peak 40	Cup: 31 -> SAMP	308656	-1.32
Peak 41	Cup: 32 -> SAMP	308657	-1.65

ICV
failed

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12/29/89

T E C H N I C U N TRACCS 800 SYSTEM 1-ANALYSIS REPORT FORM

DESCRIPTION	RUN INFORMATION	SAMPLEID	TEST #1
Peak42	Cup: 33 -> SAMP	308658	-1.89
Peak43	Cup: 34 -> SAMP	308659	-1.41
Peak44	Cup: 35 -> SAMP	309130	-1.6
Peak45	Cup: 36 -> SAMP	309131	-2.09
Peak46	Cup: 37 -> SAMP	309132	-1.11
Peak47	Cup: 38 -> SAMP	309133	-1.75
Peak48	Cup: 39 -> SAMP	309134	-1.85
Peak49	Cup: 40 -> SAMP	309135	-1.41
Peak50	Cup: 9 -> SAMP	CCV	93.26 94% T=100
Peak51	Cup: 10 -> SAMP	CCB	-1.40
Peak52	Cup: 41 -> SAMP	309136	-1.70
Peak53	Cup: 42 -> SAMP	309137	-1.95
Peak54	Cup: 43 -> SAMP	309138	-1.54
Peak55	Cup: 44 -> SAMP	309139	-1.79
Peak56	Cup: 45 -> SAMP	309140	-1.1
Peak57	Cup: 46 -> SAMP	308645A	54.05
Peak58	Cup: 47 -> SAMP	BLK	-1.30
Peak59	Cup: 48 -> SAMP	BLK	-1.47
Peak60	Cup: 49 -> SAMP	BLK	-2.14
Peak61	Cup: 50 -> SAMP	BLK	-1.73
Peak62	Cup: 9 -> SAMP	CCV	93.45 93% T=100
Peak63	Cup: 10 -> SAMP	CCB	-1.53
Peak64	Cup: 51 -> SAMP	ICV	88.10 94% T=94
Peak65	Cup: 52 -> SAMP	ICB	-1.85
Peak66	Cup: 53 -> SAMP	311610FB	-1.58

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12/29/89

TECHNICAL REPORT TRANS 800 SYSTEM 1-ANALYSIS REPORT FORM

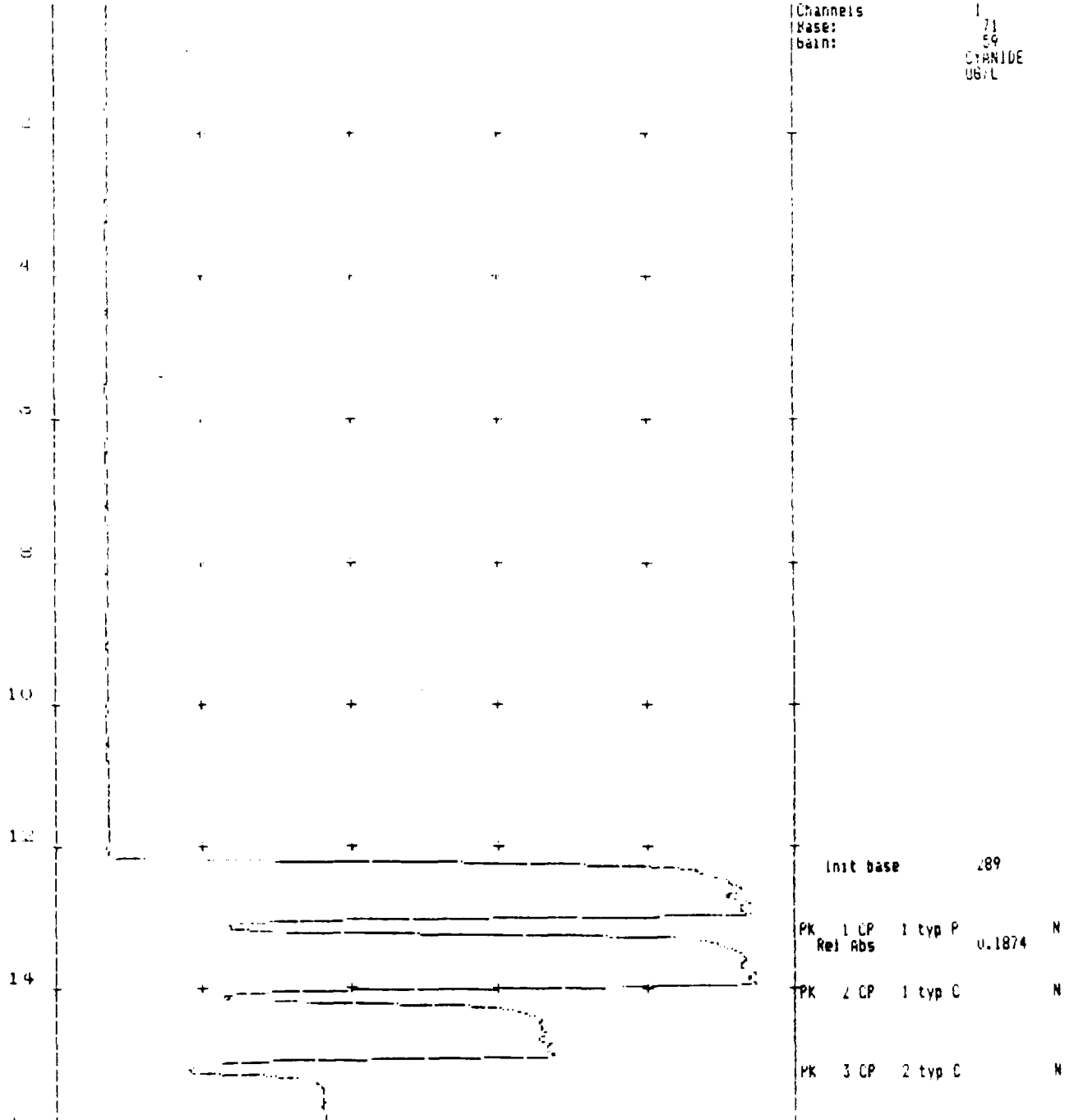
DESCRIPTION	RUN INFORMATION	SAMPLE ID	TEST #1
Peak 67	Cup: 54 -> SAMP	309697LCS	101.17 90% T=112
Peak 68	Cup: 55 -> SAMP	309691	17.81
Peak 69	Cup: 56 -> SAMP	309695SS (309691)	80.54
Peak 70	Cup: 57 -> SAMP	309696UUP (309691)	5.60
Peak 71	Cup: 58 -> SAMP	309699	-1.88
Peak 72	Cup: 59 -> SAMP	309700	4.92
Peak 73	Cup: 60 -> SAMP	309701	-1.11
Peak 74	Cup: 9 -> SAMP	CCV	43.37 99% T=94
Peak 75	Cup: 10 -> SAMP	CCB	-1.58
Peak 76	Cup: 61 -> SAMP	309702	-1.54
Peak 77	Cup: 62 -> SAMP	309703	-1.60
Peak 78	Cup: 63 -> SAMP	309691A	43.92
Peak 79	Cup: 64 -> SAMP	BLF	-1.11
Peak 80	Cup: 65 -> SAMP	BLF	-1.11
Peak 81	Cup: 66 -> SAMP	BLF	-1.11
Peak 82	Cup: 9 -> SAMP	CCV	43.34
Peak 83	Cup: 10 -> SAMP	CCB	-1.19
Peak 84	Cup: 3 -> ISMP	100FPB	97.14
Peak 85	Cup: 3 -> ISMP	100FPB	97.55
Peak 86	Cup: 3 -> ISMP	100FPB	97.28
Peak 87	Cup: 1 -> GAIN	300FPB	295.87

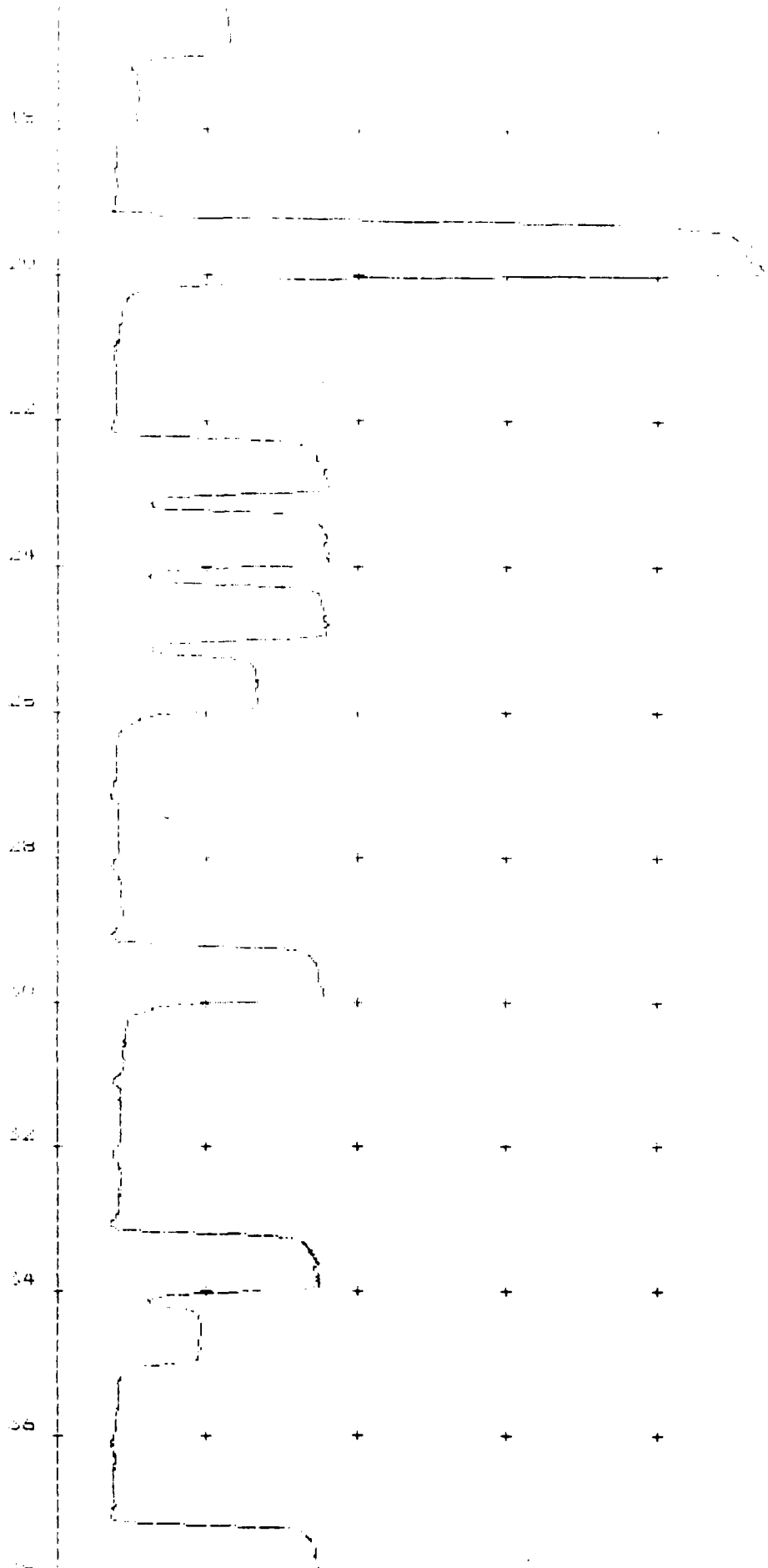
Chart minimum: 0%, maximum 100%.
 Active channels: 1

Input Filename: B:CN1229A.INP
 Time: 14:12 Date: 12-29-89
 Operator: RFL

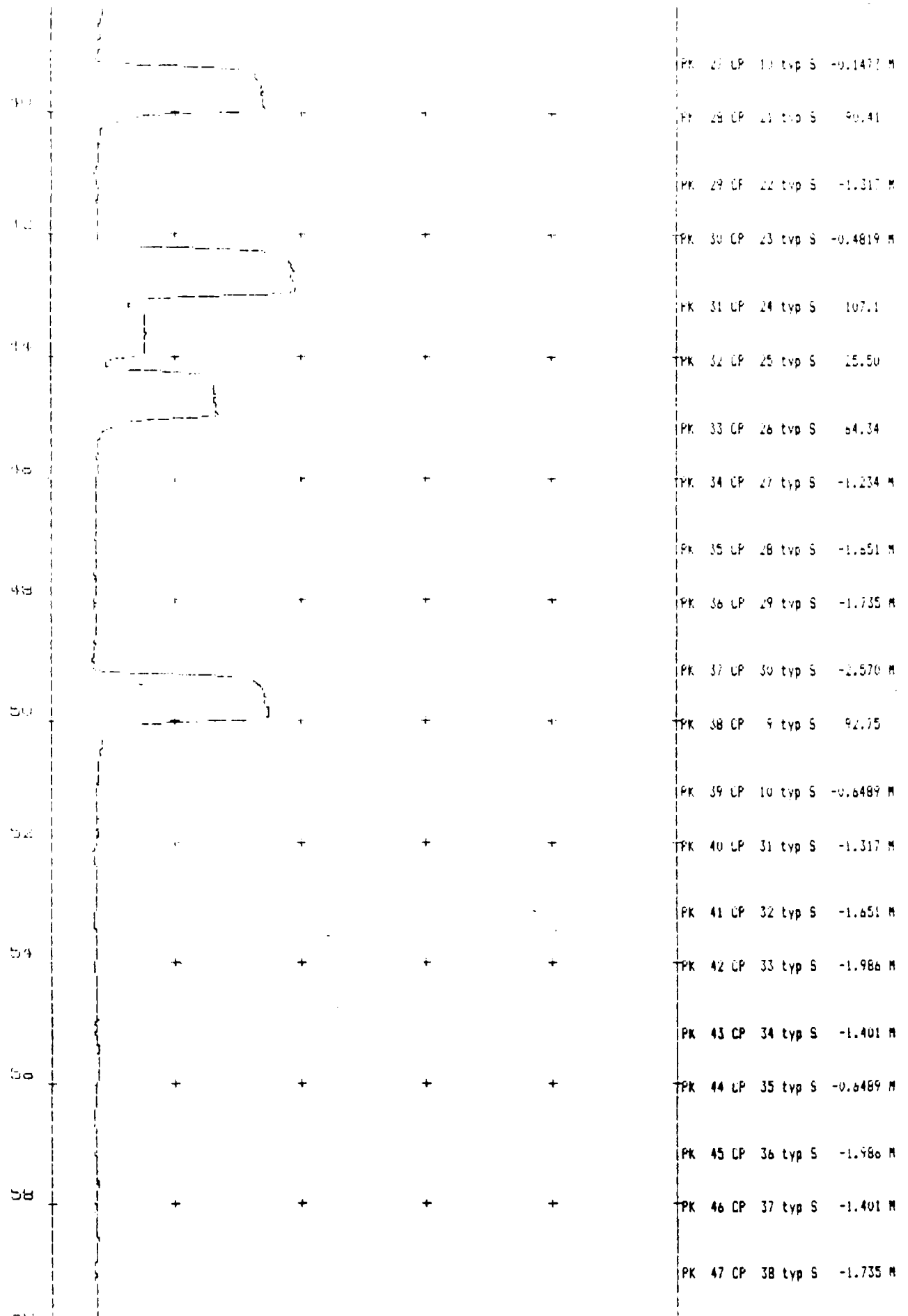
Comment: CYANIDE RNAL. * = 2:1 PREP LAB DILUTION

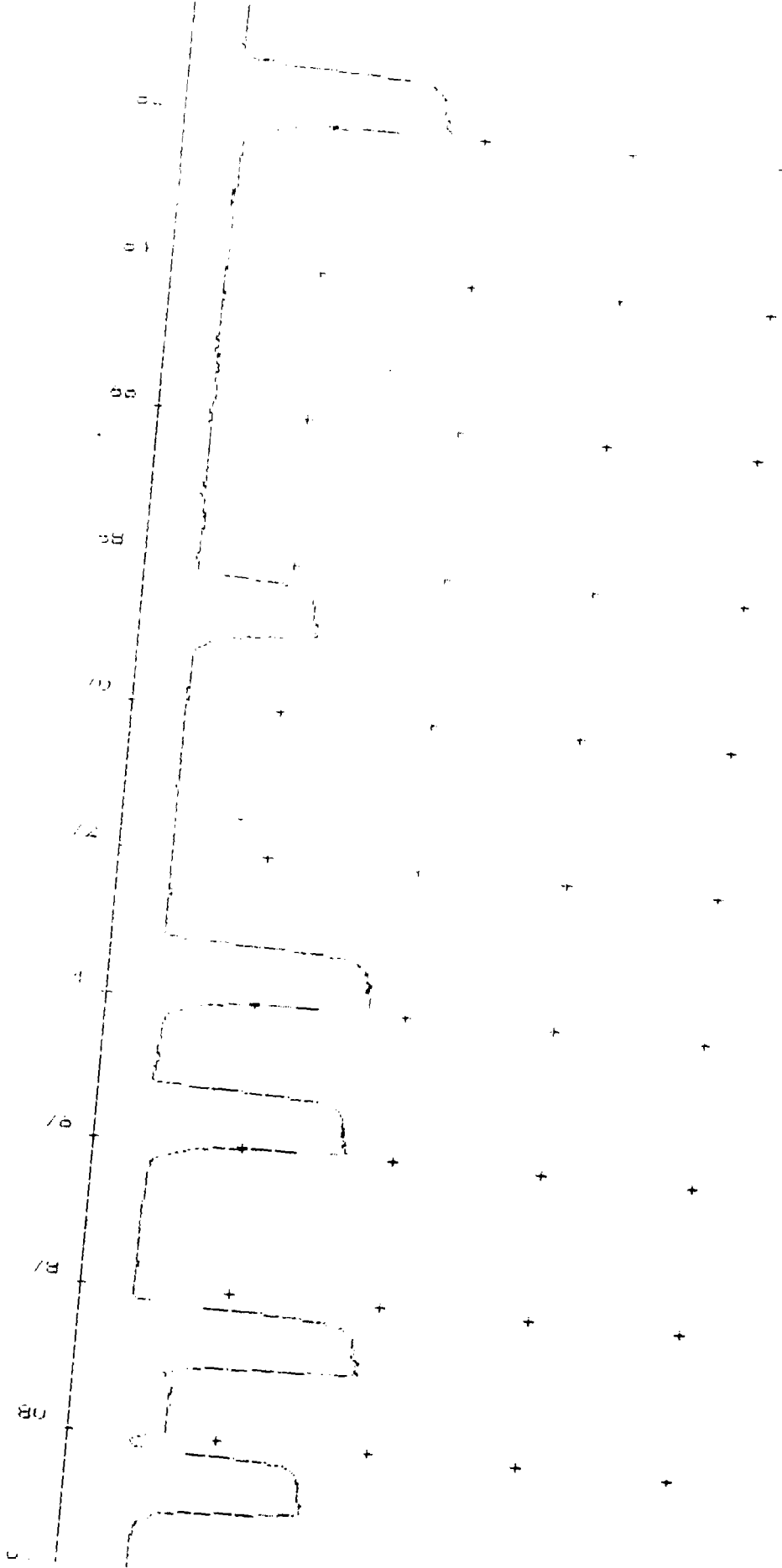
There are 154624 (bytes) free on disk.
 File B:CN1229A.CH.CHK will take approximately 14660 (bytes).



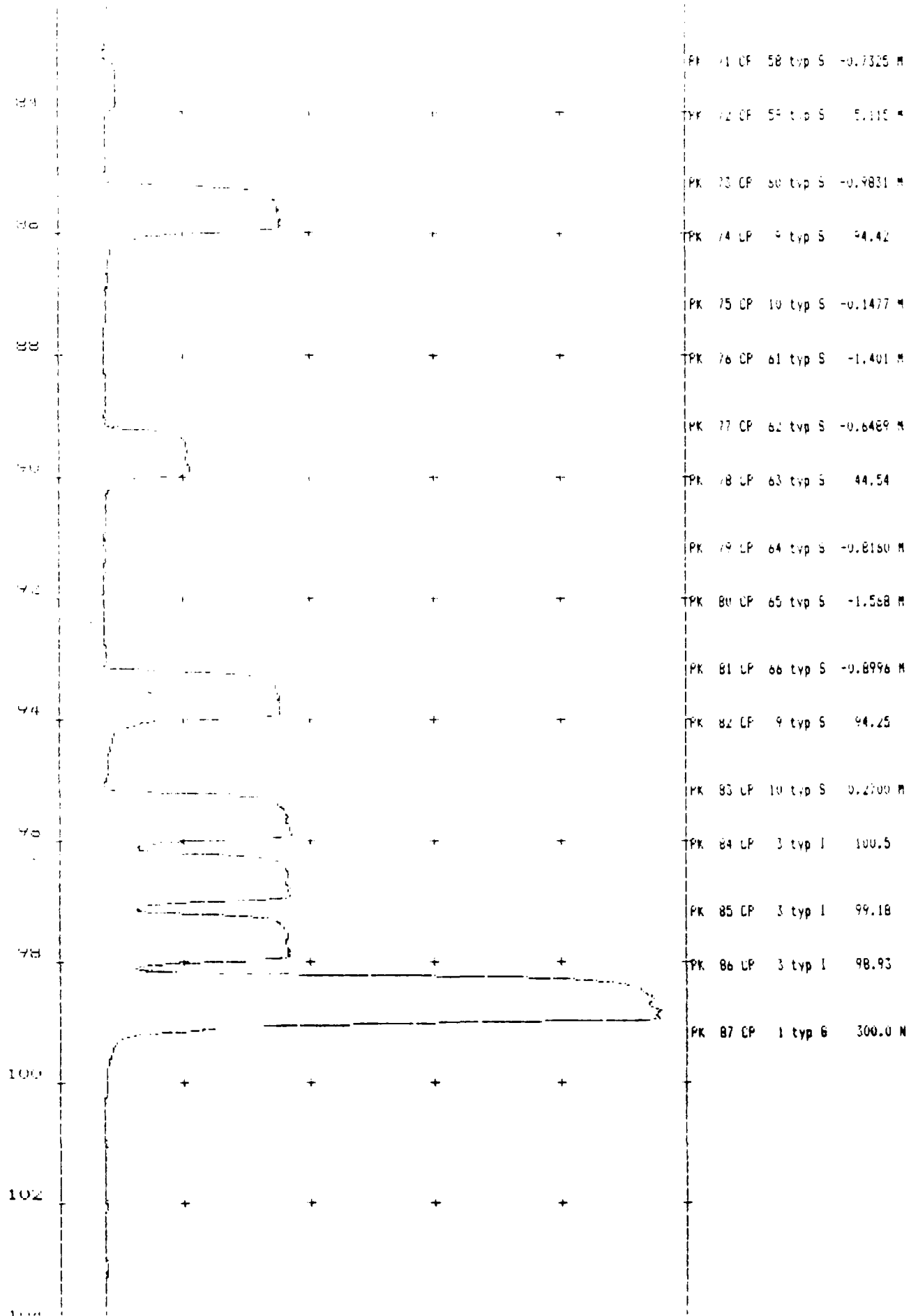


PK 5 CP	1 typ U	
PK 6 CP	5 typ U	M
PK 7 CP	5 typ U	0.1023 M
PK 8 CP	1 typ M	295.2 M
PK 9 CP	5 typ L	1.022 M
PK 10 CP	6 typ L	0.1864 M
PK 11 CP	3 typ I	97.93 M
PK 12 CP	3 typ I	97.26
PK 13 CP	3 typ I	96.42
PK 14 CP	1 typ S	65.68
PK 15 CP	8 typ S	0.3535 M
PK 16 CP	11 typ S	1.440 M
PK 17 CP	12 typ S	3.277 M
PK 18 CP	13 typ S	94.67
PK 19 CP	14 typ S	4.196 M
PK 20 CP	15 typ S	2.442 M
PK 21 CP	16 typ S	1.857 M
PK 22 CP	17 typ S	92.58
PK 23 CP	18 typ S	39.20
PK 24 CP	19 typ S	0.4371 M
PK 25 CP	20 typ S	-0.2313 M





- PK 49 CP 40 typ S -1.401 M
- PK 50 CP 41 typ S -4.42 M
- PK 51 CP 42 typ S -0.06418 M
- PK 52 CP 43 typ S -0.0469 M
- PK 53 CP 44 typ S -1.902 M
- PK 54 CP 45 typ S -1.484 M
- PK 55 CP 46 typ S -1.735 M
- PK 56 CP 47 typ S -1.651 M
- PK 57 CP 48 typ S 54.49
- PK 58 CP 49 typ S -1.067 M
- PK 59 CP 50 typ S -1.401 M
- PK 60 CP 51 typ S -2.069 M
- PK 61 CP 52 typ S -1.651 M
- PK 62 CP 53 typ S 44.25
- PK 63 CP 54 typ S -0.1477 M
- PK 64 CP 55 typ S 88.90
- PK 65 CP 56 typ S -1.484 M
- PK 66 CP 57 typ S -1.484 M
- PK 67 CP 58 typ S 102.4 M
- PK 68 CP 59 typ S 18.40
- PK 69 CP 60 typ S 81.89



Last base 293
 Conc. -1.818e+00
 Anal 1: uncorr linear fit 3.421e+00 -2.630e+01.

Time: 13:12: Date: 12-29-89
 Operator: PFL

Comment: CYANIDE ANAL. * = 2:1 PREP LAB DILUTION

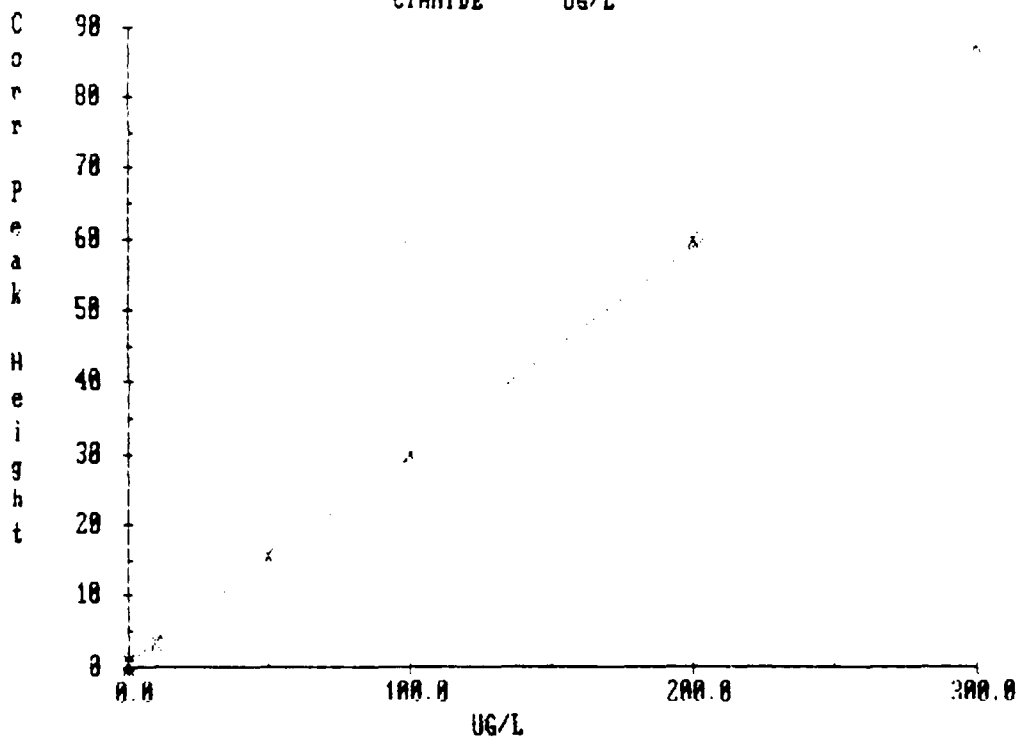
Channels 1
 Base: 71
 Gain: 59

CYANIDE
 UG/L

Base drift correction made
 Carryover correction made
 Gain drift correction made
 Init base 289

PK	CP	Typ	Conc.
PK 1	CP 1	typ F	294.1 N
			0.1874
PK 2	CP 1	typ L	297.5 N
PK 3	CP 2	typ U	203.3 N
PK 4	CP 3	typ U	100.0
PK 5	CP 4	typ U	51.44
PK 6	CP 5	typ U	9.614 M
PK 7	CP 6	typ U	0.1887 M
PK 8	CP 1	typ H	296.0 N
PK 9	CP 6	typ L	0.2427 M
PK 10	CP 6	typ L	0.2860 M
PK 11	CP 3	typ I	98.18 N
PK 12	CP 3	typ I	97.19
PK 13	CP 3	typ I	96.34
PK 14	CP 7	typ S	65.55
PK 15	CP 8	typ S	0.2385 M
PK 16	CP 11	typ S	1.517 M
PK 17	CP 12	typ S	3.349 M
PK 18	CP 13	typ S	94.76
PK 19	CP 14	typ S	3.979 M
PK 20	CP 15	typ S	2.491 M
PK 21	CP 16	typ S	1.907 M
PK 22	CP 17	typ S	92.59
PK 23	CP 18	typ S	38.95
PK 24	CP 19	typ S	0.3646 M
PK 25	CP 20	typ S	-0.1911 M
PK 26	CP 9	typ S	92.77
PK 27	CP 10	typ S	-0.3925 M
PK 28	CP 21	typ S	90.31
PK 29	CP 22	typ S	-1.561 M
PK 30	CP 23	typ S	-0.4561 M
PK 31	CP 24	typ S	106.9
PK 32	CP 25	typ S	25.14
PK 33	CP 26	typ S	64.13
PK 34	CP 27	typ S	-1.418 M
PK 35	CP 28	typ S	-1.643 M
PK 36	CP 29	typ S	-1.728 M
PK 37	CP 30	typ S	-2.565 M
PK 38	CP 9	typ S	92.45
PK 39	CP 10	typ S	-0.9395 M
PK 40	CP 31	typ S	-1.330 M

TRACS 800 Calibration Curve
B:CN1229ACH.CHR analy. 1
CYANIDE UG/L



CYANIDE RUN LOG

CompuChem Laboratories Inc.

Date: 12-29-89

Operator: 1577/RL

Calibration: See footnote #1 on pg #1

Case Name: Various
File Name: CN1229A CH

NO.	SAMPLE ID	COMMENTS	NO.	SAMPLE ID	COMMENTS
7	ICV	See Footnote (1)	10	CCB	
8	ICB		31	308656	
11	311495	PB	32	308657	
12	309548		33	308658	
13	309552	SS (309548)	34	308659	
14	309553	Dup (309548)	35	309130	
15	310566		36	309131	
16	311066		37	309132	
17	309554	LCS	38	309133	
18	309548	A	39	309134	
19	DLK		40	309135	
20	DLK		9	CCV	See Footnote (2)
9	CCV	See Footnote (2)	10	CCB	
10	CCB		41	309136	
21	ICV		42	309137	
22	ICB		43	309138	
23	310258	PB	44	309139	
24	308651	LCS	45	309140	
25	308645		46	308645	A
26	308649	SS (308645)	47	BLK	
27	308650	DUP (308645)	48	DLK	
28	308653		49	DLK	
29	308654		2050	DLK	
30	308655		9	CCV	See Footnote (2)
9	CCV	See Footnote (2)	10	CCB	

(1) ICV Solns = ICV