Versar INC.

ENVIRONMENTAL RISK MANAGEMENT

Versar INC.

ORIGINAL
(Red)

441601

ANALYTICAL DATA PACKAGE
Metals Analysis

Versar Code VERSCDM - 4
Control No(s) 2565
Client Versar Division 31
Site CDM
Date Reported 5-11-90

Report Contents: I. CLP Metals Results
II. TCLP Results

6850 VERSAR CENTER • P.O. BOX 1549 • SPRINGFIELD, VIRGINIA 22151 • TELEPHONE: (703) 750-3000

Versar INC.

ORIGINAL
(Red)

ANALYTICAL DATA PACKAGE
Metals Analysis

Report Contents

I. CLP Metals Results

6850 VERSAR CENTER • P.O. BOX 1549 • SPRINGFIELD, VIRGINIA 22151 • TELEPHONE: (703) 750-3000

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Versar INC.

TRACE METALS SECTION
ANALYSIS NARRATIVE

Versar Code: VERSCDM - 4
Client: Versar Division 31
Control Number: 2565

Date: June 11, 1990
Site: CDM

This report contains metals analytical results for nine soil samples and two, one total and one dissolved, water samples which were received at Versar, Inc. on April 23, 1990. The samples were analyzed for the following elements:

Aluminum	Antimony	Arsenic	Barium
Beryllium	Cadmium	Calcium	Chromium
Cobalt	Copper	Iron	Lead
Magnesium	Manganese	Mercury	Nickel
Potassium	Selenium	Silver	Sodium
Thallium	Vanadium	Zinc	

Analytical Methods

The samples were prepared and analyzed by the US EPA Contract Laboratory Program (CLP) Statement of Work (SOW) 7/87. The following is a summary of the methods:

Water/Soil Preparation	Method: Exhibit D, Sec. III Water - Part A, D-4 Soil - Part B, D-4
ICP Analysis	Method: 200.7 CLP-M
GFAA Analysis Arsenic Lead Selenium Thallium	Method: 206.3 CLP-M 239.2 CLP-M 270.2 CLP-M 279.2 CLP-M
Mercury - Water/Soil Preparation/Analysis	Method: Water - 245.1 CLP-M Soil - 245.5 CLP-M
Percent Solids Determination	Method: Exhibit D, Sec. IV Part F, D-84

Analytical Results

The report is divided into several sections. A description of each part and any comments concerning them is provided below:

Analytical Results (continued)

Cover Page	-	Cross reference list of the laboratory sample number and the field sample number.
Form I	-	Summary of results for each sample.
Form IIA	-	Initial and continuing calibration verification results. All ICP and graphite furnace atomic absorption (GFAA) recoveries were within the 10 % control limits. All cold vapor atomic absorption (CVAA) recoveries were within the 20 % control limits.
Form IIB	-	CRDL standard results for ICP and GFAA.
Form III	-	Initial and continuing calibration blanks and preparation blank results. All blanks were less than the contract required detection limit (CRDL).
Form IV	-	ICP interference check sample. All recoveries were within the 20 % control limits.
Form VA	-	Spike sample recovery results. All spike recoveries were within the 25 % control limits for all applicable elements.
Form VI	-	Duplicate results. All relative percent differences (RPD) between the sample and the duplicate were within their specified control.
Form VII	-	Laboratory control sample results. All recoveries were within the 20 % control limits for the aqueous LCS. All elements were within their specified control limits for the solid LCS.
Form VIII	-	Standard addition results.
Form IX	-	ICP serial dilution results. All serial dilutions agreed with the original sample results within the 10 % control limits for all applicable elements except for: 10 - Cu, V
Form X	-	Holding times. All analyses for metals were performed within their specified holding times.
Form XI	-	Instrument detection limits.
Form XII	-	ICP interelement correction factors.

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Analytical Results (continued)

Form XIII - ICP linear ranges.

Raw Data - Copies of all raw data associated with this report.

General Discussion

If there are any questions concerning this report, please contact Janet Beckman at (703) 750-3000.

Prepared by: Penelope Clayton

Reviewed by: Helen Repasky

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

SOW No. : 7/87_____

Field Sample No.	Lab Sample ID.
10	16931
11	16932
12	16933
13	16934
14	16935
15	16936
4	16928
8	16929
9	16930
GW-1	16937
GW-1	16948
GW-1D	16937D
GW-1S	16937S

re 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:

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Lab Manager: Helen Rapany

Date: 6-11-90

COVER PAGE - IN

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

10

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : SOIL_____ Lab Sample ID: 16531____

Level (low/med): LOW_____ Date Received: 04/23/90_

% Solids: __22.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11600			P
7440-36-0	Antimony	141			P
7440-38-2	Arsenic	5.8	B	W	F
7440-39-3	Barium	111	B		P
7440-41-7	Beryllium	0.89	U		P
7440-43-9	Cadmium	4.4	U		P
7440-70-2	Calcium	130000			P
7440-47-3	Chromium	32800			P
7440-48-4	Cobalt	4.4	U		P
7440-50-8	Copper	235		E	P
7439-89-6	Iron	886000			P
7439-92-1	Lead	37.7		S	F
7439-95-4	Magnesium	20700			P
7439-96-5	Manganese	20900			P
7439-97-6	Mercury	0.42	U		CV
7440-02-0	Nickel	270			P
7440-09-7	Potassium	832	U		P
7782-49-2	Selenium	2.7	U	W	F
7440-22-4	Silver	35.2			P
7440-23-5	Sodium	546	B		P
7440-28-0	Thallium	0.89	U		F
7440-62-2	Vanadium	204		E	P
7440-66-6	Zinc	22100			P
	Cyanide				NR

Color Before: BLACK____ Clarity Before: _____ Texture: MEDIUM

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

ORIGINAL

11

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : SOIL_____ Lab Sample ID: 16932____

Level (low/med): LOW_____ Date Received: 04/23/90_

% Solids: __94.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17900			P
7440-36-0	Antimony	38.8			P
7440-38-2	Arsenic	11.0			F
7440-39-3	Barium	411			P
7440-41-7	Beryllium	0.18	U		P
7440-43-9	Cadmium	0.88	U		P
7440-70-2	Calcium	22400			P
7440-47-3	Chromium	4070			P
7440-48-4	Cobalt	14.4			P
7440-50-8	Copper	62.0		E	P
7439-89-6	Iron	30700			P
7439-92-1	Lead	73.8			F
7439-95-4	Magnesium	73900			P
7439-96-5	Manganese	3630			P
7439-97-6	Mercury	0.12			CV
7440-02-0	Nickel	28.2			P
7440-09-7	Potassium	366	B		P
7782-49-2	Selenium	2.5		S	F
7440-22-4	Silver	9.9			P
7440-23-5	Sodium	613	B		P
7440-28-0	Thallium	0.21	U	W	F
7440-62-2	Vanadium	1000		E	P
7440-66-6	Zinc	502			P
	Cyanide				NR

Color Before: BLACK____ Clarity Before: _____ Texture: MEDIUM

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

12 ORIGINAL (Red)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : SOIL_____ Lab Sample ID: 16933____

Level (low/med): LOW_____ Date Received: 04/23/90_

% Solids: __93.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8470			P
7440-36-0	Antimony	12.7			P
7440-38-2	Arsenic	7.2		S	F
7440-39-3	Barium	101			P
7440-41-7	Beryllium	0.17	U		P
7440-43-9	Cadmium	1.2			P
7440-70-2	Calcium	84800			P
7440-47-3	Chromium	482			P
7440-48-4	Cobalt	6.6	B		P
7440-50-8	Copper	12.0		E	P
7439-89-6	Iron	103000			P
7439-92-1	Lead	34.1			F
7439-95-4	Magnesium	29700			P
7439-96-5	Manganese	4050			P
7439-97-6	Mercury	0.092	U		CV
7440-02-0	Nickel	11.2			P
7440-09-7	Potassium	450	B		P
7782-49-2	Selenium	3.1	U		F
7440-22-4	Silver	4.2			P
7440-23-5	Sodium	597	B		P
7440-28-0	Thallium	0.21	U	W	F
7440-62-2	Vanadium	238		E	P
7440-66-6	Zinc	173			P
	Cyanide				NR

Color Before: BLACK____ Clarity Before: _____ Texture: MEDIUM

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

13

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : SOIL_____ Lab Sample ID: 16934____

Level (low/med): LOW_____ Date Received: 04/23/90_

% Solids: __39.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1120			P
7440-36-0	Antimony	10.1	U		P
7440-38-2	Arsenic	4.7	B	S	F
7440-39-3	Barium	201			P
7440-41-7	Beryllium	0.46	U		P
7440-43-9	Cadmium	2.3	U		P
7440-70-2	Calcium	228000			P
7440-47-3	Chromium	52.5			P
7440-48-4	Cobalt	2.3	U		P
7440-50-8	Copper	20.8		E	P
7439-89-6	Iron	22500			P
7439-92-1	Lead	73.7		S	F
7439-95-4	Magnesium	18700			P
7439-96-5	Manganese	777			P
7439-97-6	Mercury	0.25	U		CV
7440-02-0	Nickel	19.5			P
7440-09-7	Potassium	432	U		P
7782-49-2	Selenium	1.4	U		F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	174	B		P
7440-28-0	Thallium	0.48	U	W	F
7440-62-2	Vanadium	28.6		E	P
7440-66-6	Zinc	414			P
	Cyanide				NR

Color Before: BLACK____ Clarity Before: _____ Texture: MEDIUM

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

14

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : SOIL_____ Lab Sample ID: 16935____

Level (low/med): LOW_____ Date Received: 04/23/90_

% Solids: __44.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2330			P
7440-36-0	Antimony	8.2	U		P
7440-38-2	Arsenic	2.8	B	W	F
7440-39-3	Barium	189			P
7440-41-7	Beryllium	0.37	U		P
7440-43-9	Cadmium	3.1			P
7440-70-2	Calcium	278000			P
7440-47-3	Chromium	144			P
7440-48-4	Cobalt	3.2	B		P
7440-50-8	Copper	10.1		E	P
7439-89-6	Iron	30500			P
7439-92-1	Lead	41.9			F
7439-95-4	Magnesium	10200			P
7439-96-5	Manganese	1340			P
7439-97-6	Mercury	0.23	U		CV
7440-02-0	Nickel	9.0	B		P
7440-09-7	Potassium	349	U		P
7782-49-2	Selenium	1.3	U	W	F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	189	B		P
7440-28-0	Thallium	0.43	U	W	F
7440-62-2	Vanadium	36.7		E	P
7440-66-6	Zinc	930			P
	Cyanide				NR

Color Before: BLACK____ Clarity Before: _____ Texture: MEDIUM

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

ORIGINAL

15

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : SOIL_____ Lab Sample ID: 16936____

Level (low/med): LOW_____ Date Received: 04/23/90_

% Solids: __92.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8850			P
7440-36-0	Antimony	4.2	U		P
7440-38-2	Arsenic	4.5		S	F
7440-39-3	Barium	83.4			P
7440-41-7	Beryllium	0.31	B		P
7440-43-9	Cadmium	0.95	U		P
7440-70-2	Calcium	12400			P
7440-47-3	Chromium	32.4			P
7440-48-4	Cobalt	4.6	B		P
7440-50-8	Copper	14.6		E	P
7439-89-6	Iron	12500			P
7439-92-1	Lead	61.0			F
7439-95-4	Magnesium	5800			P
7439-96-5	Manganese	667			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	11.7			P
7440-09-7	Potassium	854	B		P
7782-49-2	Selenium	0.62	U		F
7440-22-4	Silver	0.57	U		P
7440-23-5	Sodium	162	B		P
7440-28-0	Thallium	0.21	U	W	F
7440-62-2	Vanadium	17.7		E	P
7440-66-6	Zinc	115			P
	Cyanide				NR

Color Before: BLACK____ Clarity Before: _____ Texture: MEDIUM

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

4

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : SOIL_____ Lab Sample ID: 16928____

Level (low/med): LOW_____ Date Received: 04/23/90_

% Solids: __82.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12200			P
7440-36-0	Antimony	53.4			P
7440-38-2	Arsenic	6.9			F
7440-39-3	Barium	261			P
7440-41-7	Beryllium	0.22	U		P
7440-43-9	Cadmium	4.5			P
7440-70-2	Calcium	102000			P
7440-47-3	Chromium	7310			P
7440-48-4	Cobalt	13.7			P
7440-50-8	Copper	1470		E	P
7439-89-6	Iron	59100			P
7439-92-1	Lead	218			F
7439-95-4	Magnesium	17900			P
7439-96-5	Manganese	10800			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	643			P
7440-09-7	Potassium	208	U		P
7782-49-2	Selenium	0.70	U	W	F
7440-22-4	Silver	11.6			P
7440-23-5	Sodium	147	B		P
7440-28-0	Thallium	0.23	U	W	F
7440-62-2	Vanadium	1130		E	P
7440-66-6	Zinc	1430			P
	Cyanide				NR

Color Before: BLACK____ Clarity Before: _____ Texture: MEDIUM

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

8

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : SOIL_____ Lab Sample ID: 16929____

Level (low/med): LOW_____ Date Received: 04/23/90_

% Solids: __61.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7740			P
7440-36-0	Antimony	142			P
7440-38-2	Arsenic	21.5		S	F
7440-39-3	Barium	96.3			P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	1.6			P
7440-70-2	Calcium	58000			P
7440-47-3	Chromium	9530			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	498		E	P
7439-89-6	Iron	153000			P
7439-92-1	Lead	94.5			F
7439-95-4	Magnesium	9640			P
7439-96-5	Manganese	4810			P
7439-97-6	Mercury	0.16	U		CV
7440-02-0	Nickel	572			P
7440-09-7	Potassium	301	U		P
7782-49-2	Selenium	0.95	U	W	F
7440-22-4	Silver	40.9			P
7440-23-5	Sodium	211	B		P
7440-28-0	Thallium	0.32	U		F
7440-62-2	Vanadium	41.4		E	P
7440-66-6	Zinc	7550			P
	Cyanide				NR

Color Before: BLACK____ Clarity Before: _____ Texture: MEDIUM

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

9 ORIGINAL

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : SOIL_____ Lab Sample ID: 16930____

Level (low/med): LOW_____ Date Received: 04/23/90_

% Solids: __80.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4940			P
7440-36-0	Antimony	57.2			P
7440-38-2	Arsenic	10.6			F
7440-39-3	Barium	195			P
7440-41-7	Beryllium	0.21	U		P
7440-43-9	Cadmium	2.4			P
7440-70-2	Calcium	121000			P
7440-47-3	Chromium	7820			P
7440-48-4	Cobalt	16.0			P
7440-50-8	Copper	1080		E	P
7439-89-6	Iron	70200			P
7439-92-1	Lead	452			F
7439-95-4	Magnesium	24600			P
7439-96-5	Manganese	9080			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	575			P
7440-09-7	Potassium	231	B		P
7782-49-2	Selenium	0.75	U	W	F
7440-22-4	Silver	13.6			P
7440-23-5	Sodium	269	B		P
7440-28-0	Thallium	0.25	U	W	F
7440-62-2	Vanadium	545		E	P
7440-66-6	Zinc	1430			P
	Cyanide				NR

Color Before: BLACK____ Clarity Before: _____ Texture: MEDIUM

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

GW-1

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : WATER_(TOTAL)__ Lab Sample ID: 16937____

Level (low/med): LOW_____ Date Received: 04/23/90_

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21.6	B		P
7440-36-0	Antimony	22.0	U		P
7440-38-2	Arsenic	3.0	U		F
7440-39-3	Barium	2.0	U		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	77.4	B		P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	13.7	B		P
7439-89-6	Iron	10.1	B		P
7439-92-1	Lead	1.9	B	W	F
7439-95-4	Magnesium	8.5	B		P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	11.0	U		P
7440-09-7	Potassium	1090	B		P
7782-49-2	Selenium	3.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	227	B		P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	6.0	B		P
7440-66-6	Zinc	3.0	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

GW-1

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : WATER_(DISS)___ Lab Sample ID: 16948____

Level (low/med): LOW_____ Date Received: 04/23/90_

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21.0	U		P
7440-36-0	Antimony	22.0	U		P
7440-38-2	Arsenic	3.0	U		F
7440-39-3	Barium	6.5	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	59.5	B		P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	12.2	B		P
7439-89-6	Iron	8.4	B		P
7439-92-1	Lead	1.0	U		F
7439-95-4	Magnesium	3.7	B		P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	11.0	U		P
7440-09-7	Potassium	937	U		P
7782-49-2	Selenium	3.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	146	B		P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	4.3	B		P
7440-66-6	Zinc	3.0	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
_DISSOLVED_WATER_ALIQUOT;

FORM I - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	2010.0	1928.69	96.0	500.0	514.22	102.8	518.33	103.7	P
Antimony	978.0	903.31	92.4	500.0	471.80	94.4	480.48	96.1	P
Arsenic	47.0	48.24	102.6	50.0	51.64	103.3	48.62	97.2	F
Barium	1960.0	1981.28	101.1	500.0	505.81	101.2	515.45	103.1	P
Beryllium	483.0	461.69	95.6	500.0	497.18	99.4	502.70	100.5	P
Cadmium	502.0	491.46	97.9	500.0	518.13	103.6	541.91	108.4	P
Calcium	48700.0	52334.93	107.5	20000.0	20172.57	100.9	20446.85	102.2	P
Chromium	510.0	493.22	96.7	500.0	524.03	104.8	530.28	106.1	P
Cobalt	502.0	466.94	93.0	500.0	505.36	101.1	515.31	103.1	P
Copper	515.0	524.47	101.8	500.0	532.44	106.5	533.16	106.6	P
Iron	2040.0	1908.58	93.6	500.0	507.30	101.5	507.45	101.5	P
Lead	97.5	103.96	106.6	25.0	23.98	95.9	24.56	98.2	F
Magnesium	24600.0	23947.35	97.3	500.0	531.76	106.4	536.61	107.3	P
Manganese	504.0	485.93	96.4	500.0	512.98	102.6	523.19	104.6	P
ercury	5.0	4.89	97.8	5.0	4.78	95.6	4.78	95.6	CV
Nickel	480.0	457.80	95.4	500.0	504.82	101.0	514.88	103.0	P
Potassium	49000.0	51567.18	105.2	20000.0	21662.82	108.3	21782.80	108.9	P
Selenium	104.0	103.57	99.6	25.0	23.18	92.7			F
Silver	500.0	461.67	92.3	500.0	514.09	102.8	515.51	103.1	P
Sodium	49600.0	50969.00	102.8	20000.0	20465.34	102.3	20781.14	103.9	P
Thallium	97.0	98.46	101.5	25.0	25.89	103.6	25.25	101.0	F
Vanadium	488.0	470.14	96.3	500.0	506.23	101.2	511.34	102.3	P
Zinc	3100.0	2865.57	92.4	500.0	522.46	104.5	533.18	106.6	P
Cyanide									NR

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

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				500.0	506.00	101.2	510.11	102.0	P
Antimony				500.0	480.26	96.1	483.22	96.6	P
Arsenic	47.0	49.12	104.5	50.0	48.08	96.2	48.43	96.9	F
Barium				500.0	504.81	101.0	495.74	99.1	P
Beryllium				500.0	491.66	98.3	485.29	97.1	P
Cadmium				500.0	541.67	108.3	546.42	109.3	P
Calcium				20000.0	19979.97	99.9	20308.36	101.5	P
Chromium				500.0	516.39	103.3	518.38	103.7	P
Cobalt				500.0	504.91	101.0	504.91	101.0	P
Copper				500.0	521.65	104.3	525.24	105.0	P
Iron				500.0	543.61	108.7	541.74	108.3	P
Lead				25.0	23.98	95.9	23.70	94.8	F
Magnesium				500.0	527.61	105.5	535.29	107.1	P
Manganese				500.0	512.36	102.5	517.31	103.5	P
Mercury	5.0	4.78	95.6	5.0	4.85	97.0			CV
Nickel				500.0	504.41	100.9	503.64	100.7	P
Potassium				20000.0	21934.16	109.7	21963.54	109.8	P
Selenium	104.0	103.72	99.7	25.0	27.43	109.7	25.33	101.3	F
Silver				500.0	505.34	101.1	511.24	102.2	P
Sodium				20000.0	20481.53	102.4	20254.80	101.3	P
Thallium	97.0	98.60	101.6	25.0	26.85	107.4	24.90	99.6	F
Vanadium				500.0	494.02	98.8	497.85	99.6	P
Zinc				500.0	526.79	105.4	529.79	106.0	P
Cyanide									NR

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

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

ORIGINAL (Red)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				500.0	501.90	100.4			P
Antimony				500.0	464.72	92.9			P
Arsenic				50.0	48.43	96.9	48.78	97.6	F
Barium				500.0	495.60	99.1			P
Beryllium				500.0	481.75	96.4			P
Cadmium				500.0	525.72	105.1			P
Calcium				20000.0	19587.73	97.9			P
Chromium				500.0	508.45	101.7			P
Cobalt				500.0	491.81	98.4			P
Copper				500.0	516.61	103.3			P
Iron				500.0	509.94	102.0			P
Lead	97.5	99.87	102.4	25.0	23.46	93.8	24.46	97.8	F
Magnesium				500.0	531.31	106.3			P
Manganese				500.0	503.69	100.7			P
ercury									NR
Nickel				500.0	488.35	97.7			P
Potassium				20000.0	19822.26	99.1			P
Selenium	104.0	100.78	96.9	25.0	25.20	100.8	26.09	104.4	F
Silver				500.0	505.82	101.2			P
Sodium				20000.0	19976.78	99.9			P
Thallium				25.0	26.61	106.4			F
Vanadium				500.0	488.18	97.6			P
Zinc				500.0	520.21	104.0			P
Cyanide									NR

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

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead				25.0	24.97	99.9	23.71	94.8	F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium	104.0	102.33	98.4	25.0	27.43	109.7	26.64	106.6	F
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

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

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron	150000.0	150804.3	100.5	150000.0	150343.6	100.2	155217.1	103.5	P
Lead									NR
Magnesium	50000.0	48438.27	96.9	50000.0	48320.98	96.6	49858.02	99.7	P
Manganese									NR
ercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

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

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron				150000.0	151110.1	100.7	150678.6	100.5	P
Lead									NR
Magnesium				50000.0	49086.41	98.2	48592.59	97.2	P
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

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

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron				150000.0	148288.1	98.9			P
Lead									NR
Magnesium				50000.0	47530.86	95.1			P
Manganese									NR
ercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

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

FORM II (PART 1) - IN

2B
CRDL STANDARD FOR AA AND ICP

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

AA CRDL Standard Source: INOR._VENT._____

ICP CRDL Standard Source: INOR._VENT._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony				120.0	106.97	89.1	119.20	99.3
Arsenic	10.0	11.98	119.8					
Barium								
Beryllium				10.0	8.42	84.2	8.15	81.5
Cadmium				10.0	11.09	110.9	9.21	92.1
Calcium								
Chromium				20.0	21.97	109.8	22.56	112.8
Cobalt				100.0	103.49	103.5	98.06	98.1
Copper				50.0	56.15	112.3	52.55	105.1
Iron								
Lead	5.0	5.38	107.6					
Magnesium								
Manganese				30.0	31.25	104.2	32.81	109.4
ercury								
Nickel				80.0	89.82	112.3	83.09	103.9
Potassium								
Selenium	5.0	5.29	105.8					
Silver				20.0	16.50	82.5	18.54	92.7
Sodium								
Thallium	10.0	9.98	99.8					
Vanadium				100.0	106.12	106.1	100.30	100.3
Zinc				40.0	35.53	88.8	34.78	87.0
Cyanide								

2B
CRDL STANDARD FOR AA AND ICP

Client : VERSAR DIVISION 31 Site: CDM

Lab Name: VERSAR INC. Control No.: 2565 Code: VERSCDM Batch: 4

AA CRDL Standard Source: INOR. VENT.

ICP CRDL Standard Source:

Concentration Units: ug/L

	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
Analyte	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic	10.0	10.73	107.3					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead	5.0	5.30	106.0					
Magnesium								
Manganese								
ercury								
Nickel								
Potassium								
Selenium	5.0	4.95	99.0					
Silver								
Sodium								
Thallium	10.0	10.46	104.6					
Vanadium								
Zinc								
Cyanide								

2B
CRDL STANDARD FOR AA AND ICP

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

AA CRDL Standard Source: INOR._VENT._____

ICP CRDL Standard Source: _____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium	5.0	5.30	106.0					
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

FORM II (PART 2) - IN

2B
CRDL STANDARD FOR AA AND ICP

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

AA CRDL Standard Source: INOR._VENT._____

ICP CRDL Standard Source: _____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
ercury								
Nickel								
Potassium								
Selenium	5.0	4.52	90.4					
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

BLANKS

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Preparation Blank Matrix: WATER_____

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	21.0	U	21.0	U	21.0	U	21.0	U	21.0	U	P
Antimony	22.0	U	22.0	U	22.0	U	22.0	U	22.0	U	P
Arsenic	-3.9	B	3.0	U	3.0	U			-3.1	B	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	-1.1	B	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	P
Calcium	12.1	B	8.0	U	9.7	B	16.8	B	40.0	B	P
Chromium	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	P
Copper	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	P
Iron	18.6	B	12.2	B	11.6	B	23.9	B	15.0	B	P
Lead	1.0	U	1.0	U	1.1	B	1.0	U	1.0	U	F
Magnesium	2.4	B	1.0	U	2.1	B	3.0	B	34.2	B	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Mercury	0.2	U	0.2	U	0.2	U			0.2	U	CV
Nickel	11.0	U	11.0	U	11.0	U	11.0	U	11.0	U	P
Potassium	937.0	U	937.0	U	937.0	U	937.0	U	937.0	U	P
Selenium	3.0	U	3.0	U					3.0	U	F
Silver	3.0	U	3.0	U	-4.1	B	3.0	U	-8.9	B	P
Sodium	45.9	B	51.3	B	45.9	B	72.9	B	40.5	B	P
Thallium	1.0	U	1.0	U	1.0	U			1.0	U	F
Vanadium	3.3	B	5.0	B	3.4	B	4.4	B	3.0	U	P
Zinc	-4.7	B	-6.2	B	-3.2	B	3.0	U	-5.8	B	P
Cyanide											NR

3
BLANKS

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Preparation Blank Matrix: SOIL_____

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			21.0	U	21.0	U			5.622	B	P
Antimony			22.0	U	22.0	U			4.400	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	F
Barium			2.0	U	2.0	U			0.400	U	P
Beryllium			1.0	U	1.0	U			0.200	U	P
Cadmium			5.0	U	5.0	U			1.000	U	P
Calcium			16.8	B	13.5	B			1.840	B	P
Chromium			5.0	U	5.0	U			1.000	U	P
Cobalt			5.0	U	5.0	U			1.084	B	P
Copper			4.0	U	4.0	U			0.800	U	P
Iron			28.4	B	42.0	B			0.800	U	P
Lead			1.7	B					0.200	U	F
Magnesium			3.4	B	10.1	B			0.200	U	P
Manganese			2.0	U	2.0	U			0.400	U	P
Mercury	0.2	U	0.2	U					0.100	U	CV
Nickel			11.0	U	11.0	U			2.200	U	P
Potassium			937.0	U	937.0	U			187.400	U	P
Selenium	3.0	U	3.0	U	3.0	U			0.600	U	F
Silver			-3.7	B	3.0	U			0.600	U	P
Sodium			70.2	B	51.3	B			6.478	B	P
Thallium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	F
Vanadium			5.4	B	3.0	U			0.910	B	P
Zinc			3.0	U	-4.5	B			-0.976	B	P
Cyanide											NR

3
BLANKS

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Preparation Blank Matrix: _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic			3.0	U							F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead	-1.0	B	-1.3	B	1.0	U	1.0	U			F
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium	3.0	U	3.0	U	3.0	U					F
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

FORM III - IN

BLANKS

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Preparation Blank Matrix: _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic											NR
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
' ead			-1.5	B							F
agnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium	3.0	U	3.0	U	3.0	U					F
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

ICP INTERFERENCE CHECK SAMPLE

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: 4-JA_1140___ ICS Source: EPA-LV_____

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found XR	Final Found Sol. A	Final Found Sol. AB	Final Found XR
Aluminum	511000		479636			476859		
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium	481000		441674			437498		
Chromium	25		23			22		
Cobalt								
Copper								
Iron	182650		176762			173955		
Lead								
Magnesium	450900		466951			466006		
Manganese	16		-9			-5		
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

ICP INTERFERENCE CHECK SAMPLE

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: 4-JA_1140___ ICS Source: INOR. VENT._

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum		500000		492250.7	98.5		477559.5	95.5
Antimony								
Arsenic								
Barium		500		502.1	100.4		481.7	96.3
Beryllium		500		431.1	86.2		412.5	82.5
Cadmium		1000		945.4	94.5		916.4	91.6
Calcium		500000		460395.4	92.1		441036.6	88.2
Chromium		500		522.7	104.5		498.2	99.6
Cobalt		500		441.6	88.3		419.4	83.9
Copper		500		482.0	96.4		466.3	93.3
Iron		200000		182998.2	91.5		175836.8	87.9
Lead								
Magnesium		500000		472567.9	94.5		455864.2	91.2
Manganese		500		469.8	94.0		457.9	91.6
Mercury								
Nickel		1000		888.9	88.9		825.8	82.6
Potassium								
Selenium								
Silver		1000		976.3	97.6		941.9	94.2
Sodium								
Thallium								
Vanadium		500		461.1	92.2		439.9	88.0
Zinc		1000		922.5	92.2		887.6	88.8
Cyanide								

5A
SPIKE SAMPLE RECOVERY

FIELD SAMPLE NO.

GW-1S

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : WATER_(TOTAL)__ Level (low/med): LOW__

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	1858.4000		21.6000	B	2000.0	91.8		P
Antimony	75-125	442.0000		22.0000	U	500.0	88.4		P
Arsenic	75-125	39.2000		3.0000	U	40.0	98.0		F
Barium	75-125	1976.0000		2.0000	U	2000.0	98.8		P
Beryllium	75-125	47.0000		1.0000	U	50.0	94.0		P
Cadmium	75-125	62.3000		5.0000	U	50.0	124.6		P
Calcium		105.9000	B	77.4000	B				NR
Chromium	75-125	192.4000		5.0000	U	200.0	96.2		P
Cobalt	75-125	469.2000		5.0000	U	500.0	93.8		P
Copper	75-125	261.3000		13.7000	B	250.0	99.0		P
Iron	75-125	968.5000		10.1000	B	1000.0	95.8		P
Lead	75-125	21.7000		1.9000	B	20.0	99.0		F
Magnesium		3.6000	B	8.5000	B				NR
Manganese	75-125	480.2000		2.0000	U	500.0	96.0		P
Mercury	75-125	0.8000		0.2000	U	1.0	80.0		CV
Nickel	75-125	469.6000		11.0000	U	500.0	93.9		P
Potassium		937.0000	U	1090.7000	B				NR
Selenium	75-125	9.8000		3.0000	U	10.0	98.0		F
Silver	75-125	45.7000		3.0000	U	50.0	91.4		P
Sodium		145.8000	B	226.7000	B				NR
Thallium	75-125	50.5000		1.0000	U	50.0	101.0		F
Vanadium	75-125	468.7000		6.0000	B	500.0	92.5		P
Zinc	75-125	465.7000		3.0000	U	500.0	93.1		P
Cyanide									NR

Comments:

FORM V (PART 1) - IN

6
DUPLICATES

FIELD SAMPLE NO.

GW-1D

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : WATER_(TOTAL)___ Level (low/med): LOW__

% Solids for Sample: __0.0 % Solids for Duplicate: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum	200.0	21.6000	B	21.0000	U			P
Antimony	60.0	22.0000	U	22.0000	U			P
Arsenic	10.0	3.0000	U	3.0000	U			F
Barium	200.0	2.0000	U	2.0000	U			P
Beryllium	5.0	1.0000	U	1.0000	U			P
Cadmium	5.0	5.0000	U	5.0000	U			P
Calcium	5000.0	77.4000	B	58.4000	B	28.0		P
Chromium	10.0	5.0000	U	5.0000	U			P
Cobalt	50.0	5.0000	U	5.0000	U			P
Copper	25.0	13.7000	B	12.2000	B	11.6		P
Iron	100.0	10.1000	B	5.7000	B	55.7		P
Lead	5.0	1.9000	B	1.4000	B	30.3		F
Magnesium	5000.0	8.5000	B	5.2000	B	48.2		P
Manganese	15.0	2.0000	U	2.0000	U			P
Mercury	0.2	0.2000	U	0.2000	U			CV
Nickel	40.0	11.0000	U	11.0000	U			P
Potassium	5000.0	1090.7000	B	937.0000	U			P
Selenium	5.0	3.0000	U	3.0000	U			F
Silver	10.0	3.0000	U	3.0000	U			P
Sodium	5000.0	226.7000	B	194.3000	B	15.4		P
Thallium	10.0	1.0000	U	1.0000	U			F
Vanadium	50.0	6.0000	B	3.3000	B	58.1		P
Zinc	20.0	3.0000	U	3.0000	U			P
Cyanide								NR

FORM VI - IN

LABORATORY CONTROL SAMPLE

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Solid LCS Source: EPA-LV_____

Aqueous LCS Source: EPA-LV____

Analyte	Aqueous (ug/L) True	Aqueous (ug/L) Found	Aqueous (ug/L) %R	Solid (mg/kg) True	Solid (mg/kg) Found	C	Solid (mg/kg) Limits		Solid (mg/kg) %R
Aluminum	2010.0	1916.99	95.4	325.0	322.1		225.0	424.0	99.1
Antimony	978.0	856.19	87.5	211.0	189.0		127.0	294.0	89.6
Arsenic	47.0	49.37	105.0	917.0	801.8		635.0	1199.0	87.4
Barium	1960.0	1989.08	101.5	4.8	5.5	B	0.0	40.0	114.6
Beryllium	483.0	461.27	95.5	19.4	17.7		16.5	22.3	91.2
Cadmium	502.0	474.33	94.5	45.4	48.7		35.7	55.1	107.3
Calcium	48700.0	47109.84	96.7	196200.0	172358.2		166800.0	225600.0	87.8
Chromium	510.0	495.03	97.1	99.6	102.1		79.2	120.0	102.5
Cobalt	502.0	467.39	93.1	144.0	137.3		125.0	162.0	95.3
Copper	515.0	519.43	100.9	6910.0	6820.0		6006.0	7820.0	98.7
Iron	2040.0	1912.30	93.7	22430.0	21435.9		17770.0	27080.0	95.6
Lead	97.5	101.67	104.3	236.0	193.3		188.0	285.0	81.9
Magnesium	24600.0	23960.50	97.4	118100.0	109846.3		100400.0	129900.0	93.0
Manganese	504.0	485.92	96.4	208.0	199.8		177.0	239.0	96.1
Mercury	5.0	4.89	97.8	12.7	11.0		8.5	17.0	86.6
Nickel	480.0	461.01	96.0	60.9	58.9		49.2	72.6	96.7
Potassium	49000.0	51514.94	105.1	50.0	176.8	U	0.0	1000.0	0.0
Selenium	104.0	99.26	95.4	39.2	29.4		19.1	59.4	75.0
Silver	500.0	463.86	92.8	22.2	23.2		15.5	29.0	104.5
Sodium	49600.0	50855.64	102.5	50.0	91.7	B	0.0	1000.0	183.4
Thallium	97.0	101.86	105.0	39.0	34.5		24.6	53.5	88.5
Vanadium	488.0	466.60	95.6	65.8	65.0		51.7	79.9	98.8
Zinc	3100.0	2823.65	91.1	187.0	190.4		138.0	236.0	101.8
Cyanide									

8

STANDARD ADDITION RESULTS

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Concentration Units: ug/L

Field Sample No.	An	Dil.	0 ADD Abs	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
12	AS	1	69.00	10	87.00	20	112.00	30	127.00	34.6	0.9958	
3	AS	1	24.00	10	47.00	20	68.00	30	96.00	9.8	0.9982	
15	AS	1	56.00	10	91.00	20	105.00	30	143.00	20.9	0.9866	+
15	AS	1	58.00	10	89.00	20	119.00	30	139.00	22.1	0.9954	
8	AS	4	39.00	10	58.00	20	83.00	30	105.00	67.8	0.9987	
10	PB	3	43.00	5	55.00	10	69.00	20	101.00	42.5	0.9980	
13	PB	10	45.00	5	59.00	10	79.00	20	104.00	152.6	0.9957	
11	SE	1	27.00	5	38.00	10	52.00	20	72.00	12.1	0.9978	

FORM VIII - IN

9

ICP SERIAL DILUTION

FIELD SAMPLE NO.

10

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : SOIL_____ Level (low/med): LOW__

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	13029.50		13448.20		3.2		P
Antimony	158.40		198.60	B	25.4		P
Arsenic							F
Barium	125.30	B	123.30	B	1.6		P
Beryllium	1.00	U	5.00	U			NR
Cadmium	5.00	U	25.00	U			NR
Calcium	146730.10		155268.20		5.8		P
Chromium	36942.90		39306.00		6.4		P
Cobalt	5.00	U	25.00	U			NR
Copper	264.80		331.40		25.2	E	P
Iron	997948.00		1050974.60		5.3		P
Lead							F
Magnesium	23317.60		25199.60		8.1		P
Manganese	23527.40		25049.60		6.5		P
Mercury							CV
Nickel	303.70		396.80		30.7		P
Potassium	937.00	U	5611.40	B			NR
Selenium							F
Silver	39.70		23.50	B	40.8		P
Sodium	615.40	B	1052.60	B	71.0		P
Thallium							F
Vanadium	230.00		261.80		13.8	E	P
Zinc	24932.90		27413.00		9.9		P
Cyanide							NR

FORM IX - IN

9

ICP SERIAL DILUTION

FIELD SAMPLE NO.

GW-1

Client : VERSAR DIVISION 31 Site: CDM

Lab Name: VERSAR INC. Control No.: 2565 Code: VERSCDM Batch: 4

Matrix : WATER (TOTAL) Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	21.60	B	105.00	U			NR
Antimony	22.00	U	110.00	U			NR
Arsenic							F
Barium	2.00	U	10.00	U			NR
Beryllium	1.00	U	5.00	U			NR
Cadmium	5.00	U	25.00	U			NR
Calcium	77.40	B	121.80	B	57.4		P
Chromium	5.00	U	25.00	U			NR
Cobalt	5.00	U	25.00	U			NR
Copper	13.70	B	20.00	U			NR
Iron	10.10	B	20.00	U			NR
Lead							F
Magnesium	8.50	B	10.60	B	24.7		P
Manganese	2.00	U	10.00	U			NR
Mercury							CV
Nickel	11.00	U	55.00	U			NR
Potassium	1090.70	B	4685.00	U			NR
Selenium							F
Silver	3.00	U	15.00	U			NR
Sodium	226.70	B	404.80	B	78.6		P
Thallium							F
Vanadium	6.00	B	15.00	U			NR
Zinc	3.00	U	15.00	U			NR
Cyanide							NR

FORM IX - IN

10

HOLDING TIMES

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Field Sample No.	Matrix	Date Received	Mercury Prep Date	Mercury Holding Time	Cyanide Prep Date	Cyanide Holding Time
10	SOIL	04/23/90	05/18/90	25		
11	SOIL	04/23/90	05/18/90	25		
12	SOIL	04/23/90	05/18/90	25		
13	SOIL	04/23/90	05/18/90	25		
14	SOIL	04/23/90	05/18/90	25		
15	SOIL	04/23/90	05/18/90	25		
4	SOIL	04/23/90	05/18/90	25		
8	SOIL	04/23/90	05/18/90	25		
9	SOIL	04/23/90	05/18/90	25		
GW-1	WATER	04/23/90	05/16/90	23		
GW-1	WATER	04/23/90	05/16/90	23		
GW-1D	WATER	04/23/90	05/16/90	23		
GW-1S	WATER	04/23/90	05/16/90	23		

FORM X - IN

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: 4-JA_1140_____ Date: 10/01/89

Flame AA ID Number : 2-PE_703_____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.20		200	21.0	P
Antimony	217.50		60	22.0	P
Arsenic			10		NR
Barium	493.40		200	2.0	P
Beryllium	313.00		5	1.0	P
Cadmium	228.80		5	5.0	P
Calcium	317.90		5000	8.0	P
Chromium	267.70		10	5.0	P
Cobalt	228.60		50	5.0	P
Copper	324.70		25	4.0	P
Iron	259.90		100	4.0	P
Lead			5		NR
Magnesium	279.50		5000	1.0	P
Manganese	257.60		15	2.0	P
Mercury	253.70		0.2	0.2	CV
Nickel	231.60		40	11.0	P
Potassium	766.40		5000	937.0	P
Selenium			5		NR
Silver	328.00		10	3.0	P
Sodium	588.90		5000	21.0	P
Thallium			10		NR
Vanadium	292.40		50	3.0	P
Zinc	213.80		20	3.0	P
Cyanide			10		NR

Comments:

INSTRUMENT_DETECTION_LIMITS_FOR_IRON_AND_MAGNESIUM_HIGH_LINES

ANALYTE	WAVELENGTH (nm)	IDL (ug/L)	M
FE	271.40	83.0	P
MG	382.20	31.0	P

FORM XI - IN

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: _____ Date: 10/01/89

Flame AA ID Number : _____

Furnace AA ID Number : 5-PE_5000___

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			5		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium	196.00	BZ	5	3.0	F
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

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FORM XI - IN

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: _____ Date: 10/01/89

Flame AA ID Number : _____

Furnace AA ID Number : 6-PE_5000___

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			5		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium	276.60	BD	10	1.0	F
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

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FORM XI - IN

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: _____ Date: 10/01/89

Flame AA ID Number : _____

Furnace AA ID Number : 8-PE_3030___

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic	193.80	BZ	10	3.0	F
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			5		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

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_____

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FORM XI - IN

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: _____ Date: 10/01/89

Flame AA ID Number : _____

Furnace AA ID Number : 10-PE_3030__

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead	283.30	BZ	5	1.0	F
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

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FORM XI - IN

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: _____ Date: 10/01/89

Flame AA ID Number : _____

Furnace AA ID Number : 11-PE_3030__

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead	283.30	BZ	5	1.0	F
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium	196.00	BZ	5	3.0	F
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

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FORM XI - IN

12A

ICP INTERELEMENT CORRECTION FACTORS (QUARTERLY)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: 4-JA_1140_____ Date: 10/01/89

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	BA
luminum	308.20			-0.0001000		
Antimony	217.50	-0.0002500		-0.0104600	0.0001500	
Arsenic	193.60					
Barium	493.40					
Beryllium	313.00					
Cadmium	228.80			-0.0000100		
Calcium	317.90			-0.0000200	0.0001500	
Chromium	267.70					0.0000500
Cobalt	228.60					
Copper	324.70			-0.0000700		
Iron	259.90	0.0001100				-0.0000400
Lead	220.30					
Magnesium	279.50					
Manganese	257.60			-0.0001100	0.0000100	
Mercury						
Nickel	231.60			-0.0000200		0.0001100
Potassium	766.40	0.0007100	0.0008800	0.0010800		
Selenium	196.00					
Silver	328.00			-0.0001200		
Sodium	588.90					
Thallium	190.80					
Vanadium	292.40	0.0000200		0.0000400		
Zinc	213.80			0.0000900		
Cyanide						

Comments:

FORM XII (PART 1) - IN

12B

ICP INTERELEMENT CORRECTION FACTORS (QUARTERLY)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: 4-JA_1140_____ Date: 10/01/89

Analyte	Wave-length (nm)	Interelement Correction Factors for : BE	CD	CO	CR	CU
luminum	308.20	-0.0011700		-0.0048300		
Antimony	217.50	-0.0217500		0.0003000		
Arsenic	193.60					
Barium	493.40					
Beryllium	313.00					
Cadmium	228.80	0.0024300		-0.0029300		-0.0000600
Calcium	317.90					
Chromium	267.70		-0.0003000			
Cobalt	228.60		-0.0001800		0.0002500	
Copper	324.70			-0.0006400		
Iron	259.90					
Lead	220.30					
Magnesium	279.50					
Manganese	257.60				-0.0001000	
Mercury						
Nickel	231.60			-0.0003200		
Potassium	766.40				-0.0015300	
Selenium	196.00					
Silver	328.00					0.0000300
Sodium	588.90					
Thallium	190.80					
Vanadium	292.40				-0.0020000	
Zinc	213.80					0.0028900
Cyanide						

Comments:

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FORM XII (PART 2) - IN

12B

ICP INTERELEMENT CORRECTION FACTORS (QUARTERLY)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: 4-JA_1140_____ Date: 10/01/89

Analyte	Wave-length (nm)	Interelement Correction Factors for : MN	MO	NI	NS	PB
Aluminum	308.20	0.0014500	0.0130900			
Antimony	217.50		-0.0062900	-0.0071000	0.0005100	0.0001600
Arsenic	193.60					
Barium	493.40					
Beryllium	313.00					
Cadmium	228.80		0.0000500	-0.0000600	0.0050100	
Calcium	317.90				0.0001500	
Chromium	267.70	0.0002600	0.0000500			
Cobalt	228.60		-0.0006000	0.0001200		
Copper	324.70		0.0004600			0.0001000
Iron	259.90	-0.0032800	-0.0001500	0.0000300		-0.0001000
Lead	220.30					
Magnesium	279.50	-0.0000800				
Manganese	257.60		-0.0000800			
Mercury						
Nickel	231.60	-0.0000600	-0.0001600			0.0004000
Potassium	766.40	-0.0002120	0.0071200			0.0052900
Selenium	196.00					
Silver	328.00	0.0001800	0.0001100			
Sodium	588.90					
Thallium	190.80					
Vanadium	292.40	-0.0001000	-0.0070000			
Zinc	213.80	0.0000900	-0.0001000	0.0038100		
Cyanide						

Comments:

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FORM XII (PART 2) - IN

12B

ICP INTERELEMENT CORRECTION FACTORS (QUARTERLY)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: 4-JA_1140_____ Date: 10/01/89

Analyte	Wave-length (nm)	Interelement Correction Factors for : SB	TI	V_	__	__
Aluminum__	308.20		-0.0000300	-0.0036600		
Antimony__	217.50			0.0014100		
Arsenic___	193.60					
Barium____	493.40					
Beryllium_	313.00		-0.0008900	0.0030100		
Cadmium___	228.80	-0.0000200		0.0001400		
Calcium___	317.90					
Chromium__	267.70		0.0000700	-0.0016100		
Cobalt____	228.60		0.0017300			
Copper____	324.70			-0.0001500		
Iron_____	259.90		-0.0006700			
Lead_____	220.30					
Magnesium_	279.50					
Manganese_	257.60					
Mercury___						
Nickel____	231.60	-0.0006100				
Potassium_	766.40	0.0170900	0.0138900	0.0205700		
Selenium__	196.00					
Silver____	328.00		-0.0001600	-0.0041200		
Sodium____	588.90					
Thallium__	190.80					
Vanadium__	292.40		0.0004300			
Zinc_____	213.80		-0.0000500	-0.0028500		
Cyanide___						

Comments:

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FORM XII (PART 2) - IN

ICP LINEAR RANGES (QUARTERLY)

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: 4-JA_1140_____ Date: 10/01/89

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	M
Aluminum	30.00	750000.0	
Antimony	30.00	100000.0	
Arsenic	30.00	100000.0	
Barium	30.00	200000.0	
Beryllium	30.00	100000.0	
Cadmium	30.00	100000.0	
Calcium	30.00	750000.0	
Chromium	30.00	100000.0	
Cobalt	30.00	100000.0	
Copper	30.00	100000.0	
Iron	30.00	100000.0	
Lead	30.00	200000.0	
Magnesium	30.00	30000.0	
Manganese	30.00	100000.0	
Mercury			NR
Nickel	30.00	100000.0	
Potassium	30.00	1000000.0	
Selenium	30.00	100000.0	
Silver	30.00	100000.0	
Sodium	30.00	1000000.0	
Thallium	30.00	100000.0	
Vanadium	30.00	100000.0	
Zinc	30.00	100000.0	
Cyanide			

Comments:

ICP_LINEAR_RANGES_FOR_IRON_AND_MAGNESIUM_HIGH_LINES

ANALYTE	INTEG._TIME_(sec)	CONCENTRATION_(ug/L)	M
FE	30.00	1000000.0	P
MG	30.00	1000000.0	P

FORM XIII - IN

ICP ANALYSIS LOG

PROJECT NUMBER Versedm-4, 4R DATE 5-18-90

ANALYST JK INST. # 4 METHOD ICLP

BATCH COMMENTS 2365 → ccpm * Note: CORR FACTOR = 2 left on - not all dilutions will be required.

BURN #	SAMPLE NUMBER	COMMENTS
QC-1	QC SET 1	ICV0409; ICV3; ICV#; ICB; CCVC1; CCVN1; CCV#1; CCB1
1.	CR11	
2.	ICSA1	
3.	ICSAB1	(I.V.)
4.	PBW	
5.	ICSWA	
6.	LCSWB	
7.	LC3m	
8.	16937	
9.	16937L	/5 serial dil.
10.	16937D	
QC-2	QC SET 2	CCVC2; CCVN2; CCV#2; CCB2
11.	16937S	
12.	16948	
13.	PBS	
14.	ICSSO	/2 corr. factor = 2
15.	16928	*
16.	16928	/5 for Fe *
17.	16929	
18.	16929	/5 for Cr + Fe
19.	16930	PKC 6-6-90
20.	16930	/5 for ~~Cr~~, Fe, Mn
QC-3	QC SET 3	CCVC3; CCVN3; CCV#3; CCB3
21.	16931	*
22.	16931L	/5 for serial dil. *
23.	16932	*
24.	16932	/5 for Ca, Fe, Mn Zero too out of sol'n
25.	16933	PKC 6-6-90
26.	16933	/5 for ~~Cr~~, Mn
27.	16932	/5 for Ca
28.	16934	
29.	16935	
30.	16935	/5 for Ca
QC-4	QC SET 4	CCVC4; CCVN4; CCV#4; CCB4
31.	16936	
32.	CR1P	
33.	ICSAP	
34.	ICSABP	(I.V.)
35.		
36.		
37.		
38.		
39.		
40.		
QC-5	QC SET 5	CCVC5; CCVN5; CCV#5; CCB5

Method: CLP1150 Standard: CAL1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00105	.00405	.0084	.00000	.00135	.00120	.00020
#1	-.00040	.00430	.0067	-.00010	.00140	.00140	.00040
#2	-.00170	.00380	.0100	.00010	.00130	.00100	.00000

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00035	.00035	.00115	.00405	.00135	.27690	.00135
#1	-.00010	.00110	.00140	.00410	.00210	.29500	.00130
#2	-.00060	-.00040	.00090	.00400	.00060	.25880	.00140

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	.00055	.00135	.01760	-.00115	-.0002	-.00330	-.0035
	.00060	.00130	.01760	.00050	-.0002	-.00260	-.0030
#2	.00050	.00140	.01760	-.00280	-.0002	-.00400	-.0040

Elem	Tl1908	V_2924	Zn2138
Avge	.0008	-.00020	.00310
#1	.0007	.00020	.00320
#2	.0008	-.00060	.00300

pm Calibration
pk 5-18-90

Method: CLP1150 Standard: CAL3

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00250	.08545	.0056	.34995	.34860	.00225	.00080
#1	.00180	.08430	.0010	.35070	.34960	.00230	.00040
#2	.00320	.08660	.0102	.34920	.34760	.00220	.00120

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00035	.00020	.00070	.32035	.01240	.23600	.00250
#1	-.00030	.00020	.00060	.32010	.01220	.24940	.00250
#2	-.00040	.00020	.00080	.32060	.01260	.22260	.00250

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	.00065	.00055	1.8923	.44025	-.0003	.13830	-.0026
	.00060	.00060	1.8962	.43880	-.0003	.13900	.0007
#2	.00070	.00050	1.8884	.44170	-.0003	.13760	-.0059

Elem	Tl1908	V_2924	Zn2138
Avge	.0008	-.00315	.00395
#1	.0008	-.00310	.00390
#2	.0007	-.00320	.00400

Method: CLP1150 Standard: CAL4

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00170	.00380	2.277	.00065	.00160	.00175	.01325
#1	.00150	.00410	2.293	.00060	.00160	.00180	.01380
#2	.00190	.00350	2.261	.00070	.00160	.00170	.01270

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00020	.31940	.00040	.00360	.00095	.24980	.00175
#1	-.00020	.32080	.00040	.00350	.00040	.24920	.00180
#2	-.00020	.31800	.00040	.00370	.00150	.25040	.00170

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	.00080	-.00005	.02070	-.00040	.0003	-.00370	2.613
#1	.00080	-.00010	.02120	.00060	.0002	-.00400	2.602
#2	.00080	.00000	.02020	-.00140	.0004	-.00340	2.624

Elem	Tl1908	V_2924	Zn2138
Avge	-.0003	-.00110	.00325
#1	.0001	-.00110	.00330
#2	-.0006	-.00110	.00320

Method: CLP1150 Standard: CAL7

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00065	.00330	.0091	.00000	.00155	.00060	.00040
#1	.00090	.00320	.0124	.00000	.00160	.00030	.00040
#2	.00040	.00340	.0058	.00000	.00150	.00090	.00040

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00015	.00065	.00055	3.2108	.12100	.24780	5.1154
#1	-.00010	.00040	.00060	3.2291	.12080	.23080	5.1346
#2	-.00020	.00090	.00050	3.1924	.12120	.26480	5.0962

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	.07915	.00035	.01940	-.00025	.0005	-.00450	-.0118
[illegible]	.07950	.00040	.01940	.00100	.0004	-.00540	-.0068
#2	.07880	.00030	.01940	-.00150	.0006	-.00360	-.0168

Elem	Tl1908	V_2924	Zn2138
Avge	.0009	-.00070	.00390
#1	.0002	-.00070	.00380
#2	.0015	-.00070	.00400

Method: CLP1150 Standard: CAL8

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00390	.00420	-.0107	.00050	.00145	.00255	.00220
#1	-.00380	.00410	-.0118	.00050	.00150	.00260	.00280
#2	-.00400	.00430	-.0096	.00050	.00140	.00250	.00160

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00015	.00055	.00095	31.044	1.1851	.28470	42.037
#1	.00020	.00030	.00070	31.003	1.1836	.28700	42.046
#2	.00010	.00080	.00120	31.085	1.1867	.28240	42.028

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	.78055	.00050	.01970	.00020	.0012	.00080	-.2226
	.78040	.00060	.02000	-.00080	.0013	.00060	-.2210
#2	.78070	.00040	.01940	.00120	.0012	.00100	-.2241

Elem	Tl1908	V_2924	Zn2138
Avge	.0124	-.00030	.01705
#1	.0126	.00010	.01660
#2	.0121	-.00070	.01750

Method: CLP1150 Standard: CAL5

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00375	.00130	.0008	-.00025	.00205	.00980	.00005
#1	-.00090	.00420	.0051	.00010	.00210	.01150	.00040
#2	-.00660	-.00160	-.0034	-.00060	.00200	.00810	-.00030

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00065	-.00205	.00020	.06145	-.00150	4.2750	.10410
#1	-.00020	.00000	.00050	.07550	.00050	4.1916	.12320
#2	-.00110	-.00410	-.00010	.04740	-.00350	4.3584	.08500

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.00045	-.00020	.01850	-.00300	-.0014	-.00990	-.0098
[illegible]	.00040	.00000	.01880	-.00100	.0004	-.00320	-.0064
[illegible]	-.00130	-.00040	.01820	-.00500	-.0031	-.01660	-.0131

Elem	Tl1908	V_2924	Zn2138
Avge	-.0017	.34495	.00115
#1	-.0007	.33860	.00140
#2	-.0028	.35130	.00090

Method: CLP1150 Standard: CAL6

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00015	.00350	.0040	-.00010	.00130	.00015	.00080
#1	.00010	.00300	.0026	-.00020	.00120	.00010	.00080
#2	.00020	.00400	.0054	.00000	.00140	.00020	.00080

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00010	-.00025	.00125	.02100	.00130	.26300	.03200
#1	-.00020	-.00060	.00120	.02440	.00130	.26600	.03680
#2	.00000	.00010	.00130	.01760	.00130	.26000	.02720

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	.00095	.00010	.01890	.00030	.0393	-.00310	-.0125
#1	.00110	-.00010	.01880	.00090	.0393	-.00240	-.0145
#2	.00080	.00030	.01900	-.00030	.0393	-.00380	-.0105

Elem	Tl1908	V_2924	Zn2138
Avge	.2738	-.00055	.00430
#1	.2774	-.00040	.00430
#2	.2702	-.00070	.00430

Method: CLP1150 Standard: CAL2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.39715	.00275	.0079	-.00010	.00100	.00025	.00090
#1	.39670	.00300	.0081	-.00020	.00100	.00010	.00180
#2	.39760	.00250	.0077	.00000	.00100	.00040	.00000

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00020	.00045	.00005	.00665	.00080	.26400	.01135
#1	-.00040	.00010	.00020	.00810	.00110	.27760	.01290
#2	.00000	.00080	-.00010	.00520	.00050	.25040	.00980

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	.00055	.00000	.01890	-.00260	-.0001	-.00420	-.0040
	.00060	.00000	.01900	-.00370	.0000	-.00280	-.0026
#2	.00050	.00000	.01880	-.00150	-.0002	-.00560	-.0054

Elem	Tl1908	V_2924	Zn2138
Avge	.0000	-.00070	.00210
#1	-.0004	-.00010	.00180
#2	.0003	-.00130	.00240

Method: CLP1150 Sample Name: ICV0489 Operator: HR
Run Time: 05/18/90 17:28:30
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.46168	1.9287	-.0329	1.9813	.46169	52.335	.49147
#1	.46042	1.9334	-.0310	1.9946	.46466	52.588	.49396
#2	.46294	1.9240	-.0348	1.9680	.45872	52.082	.48898

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.46694	.49322	.52447	1.9086	1.7616	51.567	23.947
#1	.47146	.49613	.52951	1.9190	1.7197	51.446	24.067
#2	.46242	.49032	.51944	1.8982	1.8036	51.689	23.828

em	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
ge	23.512	.48593	50.969	.45781	4.507	.02531	.0228
#1	23.605	.48841	51.261	.45107	4.524	.01306	.0138
#2	23.420	.48346	50.677	.46455	4.490	.03755	.0318

Elem	Tl1908	V_2924	Zn2138
Avge	-.0064	.47015	2.8656
#1	.0159	.47129	2.8765
#2	-.0287	.46901	2.8547

Method: CLP1150 Sample Name: ICV3 Operator: HR
Run Time: 05/18/90 17:34:40
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00758	.00409	.9516	.00128	-.00128	.02940	.00514
#1	.00822	.01170	.9451	.00170	-.00128	.03905	.00556
#2	.00695	-.00352	.9580	.00085	-.00128	.01976	.00473

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00136	.00093	.00432	.00651	-.23017	1.0045	.00849
#1	.00136	.00276	.00432	.00760	-.19638	1.2678	.00940
#2	.00136	-.00091	.00432	.00543	-.26396	.74126	.00758

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.19136	-.00033	.05938	.00547	.0039	.90332	.0021
#1	-.16049	-.00094	.07288	.00740	.0075	.90272	-.0014
#2	-.22222	.00029	.04589	.00355	.0002	.90392	.0055

Elem	Tl1908	V_2924	Zn2138
Avge	.0388	.00341	-.00395
#1	.0530	.00412	-.00376
#2	.0245	.00270	-.00414

Method: CLP1150 Sample Name: ICVH Operator: HR
Run Time: 05/18/90 17:47:47
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00764	.00489	.1364	.00014	-.00086	.01322	.00002
#1	.00807	.00839	.1486	.00057	-.00128	.01440	.00023
#2	.00722	.00140	.1242	-.00028	-.00043	.01204	-.00019

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00452	.00427	-.00733	144.82	150.80	.56921	47.571
#1	.00587	.00579	-.00588	144.34	150.24	.82289	47.456
#2	.00316	.00275	-.00878	145.29	151.37	.31552	47.685

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	48.438	-.01173	.03509	.00442	-.0418	.02178	.2429
#1	48.235	-.01146	.04589	.00431	-.0403	.02959	.2662
#2	48.642	-.01200	.02429	.00453	-.0434	.01397	.2197

Elem	Tl1908	V_2924	Zn2138
Avge	-.6550	.00370	.00996
#1	-.6570	.00327	.01053
#2	-.6529	.00412	.00940

Method: CLP1150 Sample Name: ICB Operator: HR
Run Time: 05/18/90 17:56:19
Comment: VERSCDM-4 (2565)
Mode: LONG Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00252	.00292	-.0125	.00014	-.00086	.01207	.00104
#1	-.00339	.00819	-.0087	.00000	-.00100	.01147	.00227
#2	-.00166	-.00235	-.0162	.00028	-.00071	.01267	-.00020

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00136	.00092	.00144	.01861	-.17988	.75523	.00243
#1	.00045	.00215	.00288	.01846	-.13738	.80953	.00253
#2	.00226	-.00030	.00001	.01877	-.22238	.70093	.00233

em	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
ge	-.18519	.00061	.04589	.00406	.0086	-.00125	.0038
#1	-.18519	.00030	.04589	.00364	.0122	.00916	.0069
#2	-.18519	.00091	.04589	.00448	.0050	-.01166	.0007

Elem	Tl1908	V_2924	Zn2138
Avge	.0200	.00327	-.00470
#1	.0671	.00469	-.00451
#2	-.0271	.00185	-.00489

Method: CLP1150 Sample Name: CCVC1 Operator: MK
Run Time: 05/18/90 17:58:40
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00032	.51422	.5328	.50581	.49718	20.173	.00456
#1	.00220	.51598	.5240	.50950	.49902	20.287	.00434
#2	-.00283	.51246	.5416	.50213	.49534	20.058	.00477

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00100	.52403	.00431	.50730	.35257	21.663	.53176
#1	-.00146	.52571	.00287	.50792	.38630	21.665	.53439
#2	-.00055	.52235	.00575	.50668	.31883	21.660	.52913

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.22840	-.00085	20.465	.00174	.0245	.47181	.0225
#1	-.24691	-.00085	20.560	.00302	.0185	.46697	.0213
#2	-.20988	-.00085	20.371	.00046	.0306	.47664	.0236

Elem	Tl1908	V_2924	Zn2138
Avge	-.0008	-.00518	.52247
#1	-.0596	-.00476	.52566
#2	.0580	-.00561	.51927

Method: CLP1150 Sample Name: CCVN1 Operator: HR
Run Time: 05/18/90 18:15:00
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.51409	-.00175	-.0144	.00028	-.00044	.00542	.51813
#1	.51830	.00059	.0000	.00028	-.00058	.00596	.52246
#2	.50988	-.00408	-.0288	.00028	-.00031	.00489	.51381

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.50537	.00179	.53244	.00306	-.19535	.56550	-.00046
#1	.50311	.00224	.52813	.00337	-.20892	.43776	-.00026
#2	.50763	.00134	.53676	.00275	-.18178	.69324	-.00067

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.20370	.51298	.02429	.50482	1.009	.00018	1.729
#1	-.19753	.51298	.02429	.50792	1.021	.00264	1.698
#2	-.20988	.51298	.02429	.50172	.9972	-.00229	1.759

Elem	Tl1908	V_2924	Zn2138
Avge	1.983	.50623	-.00414
#1	1.943	.50268	-.00414
#2	2.023	.50978	-.00414

Method: CLP1150 Sample Name: CCVH1 Operator: HR
Run Time: 05/18/90 18:17:33
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00811	.00546	.1289	.00014	-.00058	.01372	.00518
#1	.00875	.01420	.1370	.00000	-.00100	.01692	.00725
#2	.00746	-.00329	.1208	.00028	-.00015	.01051	.00312

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00497	-.00031	-.00732	144.38	150.34	.60595	47.480
#1	.00497	.00121	-.00586	143.33	149.42	1.0251	47.218
#2	.00497	-.00183	-.00878	145.43	151.27	.18679	47.741

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	48.321	-.01053	.03509	.00987	-.0295	.02965	.2302
#1	47.975	-.01028	.04589	.01049	-.0302	.02821	.2378
#2	48.667	-.01077	.02429	.00925	-.0288	.03110	.2227

Elem	Tl1908	V_2924	Zn2138
Avge	-.6543	.00582	.01053
#1	-.6237	.00582	.01090
#2	-.6849	.00582	.01015

Analysis Report Blank Sample Fri 05-18-90 06:28:57 PM page 1

Method: CLP1150 Sample Name: CCB1 Operator: HR
Run time: 05/18/90 18:26:55
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00089	.00878	.0032	.00043	-.00100	.00541	.00042
#1	-.00014	-.00235	.0081	.00057	-.00100	.00380	.00021
#2	.00193	.01990	-.0016	.00028	-.00100	.00703	.00063

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00181	.00398	.00360	.01225	-.17517	.88064	.00030
#1	.00045	.00184	.00288	.01194	-.17990	.78890	.00091
#2	.00316	.00612	.00432	.01257	-.17044	.97239	-.00030

em	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
ge	-.14815	.00030	.05128	.00375	.0062	.01526	.0138
#1	-.18519	-.00094	.06748	.00385	.0025	.00670	.0164
#2	-.11111	.00154	.03509	.00365	.0098	.02382	.0112

Elem	Tl1908	V_2924	Zn2138
Avge	.0145	.00498	-.00620
#1	.0164	.00299	-.00639
#2	.0126	.00697	-.00602

Method: CLP1150 Sample Name: CRII Operator: HR
Run Time: 05/18/90 18:29:44
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.01651	.00433	.0168	-.00014	.00842	.00811	.01109
#1	.01613	.00023	.0151	.00028	.00842	.01136	.01006
#2	.01688	.00844	.0186	-.00057	.00843	.00487	.01213

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.10349	.02197	.05615	.01111	-.21765	.79063	-.00020
#1	.10259	.02442	.05759	.01360	-.18793	.89393	-.00010
#2	.10440	.01953	.05472	.00863	-.24737	.68733	-.00030

em	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
ge	-.14198	.03126	.05398	.08982	.1065	.10697	.0059
#1	-.12346	.03188	.06208	.09292	.0980	.11250	-.0014
#2	-.16049	.03063	.04589	.08672	.1150	.10144	.0131

Elem	Tl1908	V_2924	Zn2138
Avge	.0137	.10613	.03553
#1	.0537	.10699	.03723
#2	-.0262	.10527	.03384

Method: CLP1150 Sample Name: ICSAI Operator: HR
Run Time: 05/18/90 18:33:19
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00107	479.64	-.3353	.00610	-.00055	441.67	.00126
#1	.00220	482.64	-.2950	.00624	-.00041	443.72	.00022
#2	-.00006	476.63	-.3756	.00595	-.00069	439.63	.00229

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00451	.02282	-.00785	170.60	176.76	-.54984	142.12
#1	.00406	.02191	-.00786	171.54	177.55	-.36085	142.16
#2	.00497	.02373	-.00783	169.67	175.98	-.73884	142.09

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	466.95	-.00930	.41298	.00994	-.0809	-.01133	.1090
#1	469.42	-.00769	.41838	.00954	-.0565	.00186	.0808
#2	464.48	-.01090	.40758	.01035	-.1052	-.02453	.1372

Elem	Tl1908	V_2924	Zn2138
Avge	-1.491	-.00615	.00113
#1	-1.467	-.00579	.00338
#2	-1.515	-.00652	-.00113

Analysis Report

Fri 05-18-90 06:38:43 PM

Method: CLP1150 Sample Name: ICSAB1

Operator: HR

Run Time: 05/18/90 18:36:24

Comment: VERSCDM-4 (2565)

Code: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.97635	492.25	-.3583	.50213	.43113	460.40	.94538
#1	.97489	492.76	-.3670	.50184	.43099	459.96	.94827
#2	.97780	491.74	-.3497	.50241	.43127	460.83	.94250

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.44157	.52273	.48200	175.95	183.00	-.40833	142.27
#1	.43976	.51861	.47985	175.78	182.67	-.10595	142.26
#2	.44337	.52686	.48415	176.12	183.32	-.71072	142.28

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	472.57	.46983	.16735	.88888	.8151	.00216	.1185
#1	473.00	.46826	.16465	.89871	.8083	.00265	.1593
#2	472.14	.47140	.17005	.87905	.8218	.00167	.0776

Elem	Tl1908	V_2924	Zn2138
Avge	-1.593	.46110	.92254
#1	-1.650	.45980	.92235
#2	-1.537	.46239	.92273

Method: CLP1150 Sample Name: PBW Operator: HR
Run Time: 05/18/90 18:46:32
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00887	.01579	-.0036	-.00071	-.00113	.04003	.00000
#1	-.00553	.03394	.0142	-.00057	-.00128	.05031	.00020
#2	L-.01222	-.00235	-.0214	-.00085	-.00099	.02975	-.00020

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00045	-.00198	-.00071	.01504	-.28534	.49585	.03418
#1	-.00136	.00092	-.00143	.01815	-.24695	.46893	.03711
#2	.00045	-.00489	.00001	.01194	-.32373	.52278	.03124

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.17901	.00029	.04049	.00694	-.0107	-.00249	.0079
#1	-.17284	.00091	.04049	.00792	-.0046	.01527	.0060
#2	-.18519	-.00033	.04049	.00597	-.0167	-.02025	.0099

Elem	Tl1908	V_2924	Zn2138
Avge	.0173	.00099	-.00583
#1	.0425	.00270	-.00564
#2	-.0079	-.00072	-.00602

Method: CLP1150 Sample Name: LCSWA Operator: HR
Run Time: 05/18/90 18:49:01
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.46387	1.9170	-.0363	1.9891	.46127	47.110	.47433
#1	.46208	1.9100	-.0425	1.9699	.45759	46.964	.47413
#2	.46566	1.9240	-.0301	2.0082	.46495	47.255	.47453

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.46739	.49503	.51944	1.9123	1.7185	51.515	23.961
#1	.46603	.49580	.51225	1.8979	1.7436	50.854	23.860
#2	.46875	.49427	.52663	1.9267	1.6933	52.176	24.061

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	23.364	.48593	50.856	.46101	4.466	.01799	.0029
#1	23.247	.48160	50.418	.46134	4.442	.03018	-.0124
#2	23.481	.49026	51.293	.46068	4.491	.00580	.0181

Elem	Tl1908	V_2924	Zn2138
Avge	-.0005	.46660	2.8237
#1	.0084	.46618	2.8197
#2	-.0094	.46703	2.8276

Method: CLP1150 Sample Name: LCSWB Operator: HR
Run Time: 05/18/90 18:51:13
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

check table incorrect HR

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00058	.04566	H1.966	.00354	-.00001	.11061	.01361
#1	.00121	.04800	H1.990	.00425	-.00015	.12359	.01010
#2	-.00237	.04331	H1.941	.00284	.00013	.09763	.01712

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00091	.00399	.01079	.01395	-.18291	1.3226	.04944
#1	.00136	.00582	.01007	.01566	-.17895	1.5381	.05733
#2	.00045	.00216	.01151	.01225	-.18687	1.1070	.04156

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.11111	-.00001	.15385	.00224	.0207	L.85620	.0078
#1	-.08642	-.00032	.16465	-.00396	.0146	L.86105	.0216
#2	-.13580	.00030	.14306	.00844	.0268	L.85134	-.0059

Elem	Tl1908	V_2924	Zn2138
Avge	.0291	.00668	.00132
#1	.0090	.00611	.00301
#2	.0493	.00725	-.00038

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Method: CLP1150 Sample Name: LCSM Operator: HR
Run Time: 05/18/90 19:00:06
Comments: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.05121	1.9674	2.028	2.0142	.04941	.07665	.06346
#1	.04917	1.9820	2.037	2.0323	.04898	.07179	.06596
#2	.05325	1.9527	2.019	1.9960	.04984	.08151	.06097

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.50445	.20852	.26275	1.0220	.87064	.96026	.00136
#1	.50852	.20685	.26634	1.0263	.87138	.76918	.00156
#2	.50038	.21019	.25915	1.0176	.86991	1.1513	.00115

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.30247	.52021	.10527	.51325	.5169	.46120	1.843
#1	-.35802	.52485	.09987	.51399	.5182	.45569	1.818
#2	-.24691	.51556	.11067	.51250	.5156	.46671	1.869

Elem	Tl1908	V_2924	Zn2138
Avge	2.054	.49713	.51795
#1	1.966	.50040	.52077
#2	2.142	.49387	.51513

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Method: CLP1150 Sample Name: 16937 Operator: HR
Run Time: 05/18/90 19:03:43
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00167	.02165	-.0167	.00128	-.00114	.07737	.00124
#1	-.00320	.02106	-.0162	.00085	-.00129	.08278	.00020
#2	-.00014	.02224	-.0173	.00170	-.00100	.07196	.00229

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00090	.00078	.01367	.01008	-.17894	1.0907	.00849
#1	-.00136	.00215	.01439	.00977	-.14495	1.3980	.00839
#2	.00316	-.00060	.01295	.01039	-.21293	.78351	.00859

em	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
ge	-.14198	.00154	.22673	.00299	.0158	-.00188	-.0096
#1	-.12346	.00154	.22943	.00321	.0193	.00424	.0026
#2	-.16049	.00153	.22403	.00277	.0122	-.00801	-.0218

Elem	Tl1908	V_2924	Zn2138
Avge	-.0001	.00597	-.00094
#1	.0306	.00668	-.00038
#2	-.0309	.00525	-.00150

Analysis Report Fri 05-18-90 07:08:20 PM page 1

Method: CLP1150 Sample Name: 16937L Operator: HR
Run Time: 05/18/90 19:06:27
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00322	.00584	-.0278	.00043	-.00085	.02435	.00207
#1	-.00193	.00116	-.0365	.00057	-.00043	.02435	.00186
#2	-.00451	.01053	-.0192	.00028	-.00128	.02435	.00227

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00000	.00062	.00288	.00387	-.21351	.79012	.00212
#1	.00045	.00093	.00432	.00418	-.20478	.67003	.00212
#2	-.00045	.00031	.00144	.00356	-.22223	.91020	.00212

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.16049	-.00094	.08098	.00245	.0001	.00057	-.0061
#1	-.14815	-.00094	.08907	.00299	.0073	-.00310	-.0008
#2	-.17284	-.00094	.07288	.00192	-.0072	.00423	-.0114

Elem	Tl1908	V_2924	Zn2138
Avge	.0020	.00270	-.00338
#1	-.0090	.00384	-.00338
#2	.0131	.00156	-.00338

Method: CLP1150 Sample Name: 16937D Operator: HR
Run Time: 05/18/90 19:08:50
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00425	.01579	-.0268	.00028	-.00086	.05843	.00062
#1	-.00271	.01638	-.0351	.00057	-.00100	.05898	-.00020
#2	-.00579	.01521	-.0184	.00000	-.00071	.05789	.00145

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00000	.00016	.01223	.00574	-.24688	.54878	.00526
#1	.00045	.00123	.01151	.00853	-.22995	.21320	.00536
#2	-.00045	-.00091	.01295	.00295	-.26380	.88435	.00516

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.17284	-.00002	.19434	.00491	.0001	.00179	.0065
#1	-.16049	-.00033	.20244	.00641	-.0024	.00303	-.0144
#2	-.18519	.00029	.18624	.00342	.0025	.00056	.0274

Elem	Tl1908	V_2924	Zn2138
Avge	.0096	.00327	-.00357
#1	.0497	.00384	-.00338
#2	-.0304	.00270	-.00376

Method: CLP1150 Sample Name: CCVC2 Operator: HR
Run Time: 05/18/90 19:13:26
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00213	.51833	.5428	.51545	.50271	20.447	.00413
#1	-.00239	.52068	.5538	.51857	.50497	20.498	.00434
#2	-.00188	.51598	.5318	.51233	.50044	20.395	.00393

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00055	.53028	.00071	.50745	.28478	21.783	.53661
#1	.00126	.52968	.00143	.51071	.27642	21.980	.53803
#2	-.00236	.53089	-.00001	.50420	.29314	21.585	.53520

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.22222	-.00148	20.781	.00260	.0028	.48048	-.0095
#1	-.22222	-.00148	20.857	.00303	.0041	.49155	-.0045
#2	-.22222	-.00147	20.706	.00216	.0016	.46942	-.0144

Elem	Tl1908	V_2924	Zn2138
Avge	-.0056	-.00702	.53318
#1	.0328	-.00645	.53619
#2	-.0441	-.00759	.53017

Method: CLP1150 Sample Name: CCVN2 Operator: HR
Run Time: 05/18/90 19:15:45
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.51552	.01642	-.0128	.00113	.00082	.04491	.54192
#1	.51809	.01351	-.0263	.00142	.00110	.05248	.54151
#2	.51295	.01934	.0007	.00085	.00054	.03733	.54232

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.51531	.00456	.53317	.00558	-.18614	.90638	.00085
#1	.51757	.00747	.53245	.00682	-.16467	1.0703	.00095
#2	.51305	.00165	.53388	.00434	-.20762	.74245	.00075

'em	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
ge	-.13580	.52320	.09177	.51489	1.056	.01248	1.786
#1	-.12346	.52289	.10527	.51863	1.068	.01496	1.755
#2	-.14815	.52351	.07828	.51114	1.043	.01001	1.817

Elem	Tl1908	V_2924	Zn2138
Avge	1.977	.51135	-.00263
#1	2.012	.51348	-.00263
#2	1.943	.50922	-.00263

Method: CLP1150 Sample Name: CCVH2 Operator: HR
Run Time: 05/18/90 19:18:08
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00221	-.00899	.1337	.00071	-.00086	.01668	.00084
#1	.00212	-.01717	.1313	.00085	-.00043	.01507	.00022
#2	.00231	-.00080	.1361	.00057	-.00128	.01829	.00147

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00407	.00080	-.01101	148.39	155.22	.47782	49.004
#1	.00316	.00065	-.01318	148.54	155.48	.25684	49.081
#2	.00497	.00095	-.00885	148.24	154.95	.69880	48.927

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	49.858	-.01112	.06748	.00183	-.0551	.01059	.1928
#1	49.951	-.01172	.07828	.00119	-.0577	.01127	.2040
#2	49.765	-.01052	.05668	.00247	-.0525	.00991	.1817

Elem	Tl1908	V_2924	Zn2138
Avge	-.7456	.00284	.01072
#1	-.7828	.00213	.01090
#2	-.7084	.00355	.01053

Method: CLP1150 Sample Name: CCB2 Operator: HR
Run Time: 05/18/90 19:27:26
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00411	.00819	-.0070	-.00043	-.00100	.00974	.00165
#1	-.00450	.01052	-.0146	-.00057	-.00100	.01245	.00144
#2	-.00373	.00585	.0007	-.00028	-.00100	.00703	.00187

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00000	-.00030	.00144	.01163	-.21327	.81724	.00212
#1	-.00136	.00154	.00432	.01163	-.20462	.83021	.00212
#2	.00136	-.00213	-.00143	.01162	-.22191	.80427	.00212

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.16049	-.00125	.04589	.00780	.0025	.00120	.0004
#1	-.18519	-.00032	.04589	.00428	.0122	.00670	-.0135
#2	-.13580	-.00218	.04589	.01133	-.0071	-.00429	.0144

Elem	Tl1908	V_2924	Zn2138
Avge	.0185	.00341	-.00320
#1	-.0090	.00384	-.00451
#2	.0460	.00298	-.00188

Method: CLP1150 Sample Name: 169378 Operator: HR
Run Time: 05/18/90 20:30:25
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.04572	1.8584	1.921	1.9760	.04706	.10588	.06231
#1	.04572	1.8660	1.914	1.9878	.04706	.10101	.06128
#2	.04572	1.8508	1.929	1.9643	.04706	.11074	.06334

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.46920	.19241	.26129	.96850	.77206	.35981	.00358
#1	.46965	.19363	.26057	.96974	.76367	.15982	.00358
#2	.46875	.19119	.26201	.96725	.78044	.55981	.00358

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.32716	.48026	.14576	.46960	.4697	.44195	1.740
#1	-.33333	.48150	.14846	.46692	.4782	.44561	1.774
#2	-.32099	.47902	.14306	.47227	.4612	.43830	1.706

Elem	Tl1908	V_2924	Zn2138
Avge	1.841	.46870	.46569
#1	1.876	.46884	.46362
#2	1.806	.46856	.46776

Method: CLP1150 Sample Name: 16948 Operator: HR
Run Time: 05/18/90 20:33:56
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00181	.01404	.0048	.00652	-.00072	.05951	.00269
#1	-.00296	.01521	.0017	.00737	-.00128	.05789	.00021
#2	-.00065	.01287	.0079	.00567	-.00015	.06113	.00516

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00090	.00062	.01223	.00838	-.22565	.33591	.00374
#1	.00136	-.00030	.01151	.00854	-.21343	.13315	.00394
#2	.00045	.00154	.01295	.00822	-.23787	.53867	.00354

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.17901	.00184	.14576	.00706	-.0156	.01038	-.0004
#1	-.18519	.00277	.14846	.00812	-.0241	.00182	-.0061
#2	-.17284	.00091	.14306	.00599	-.0072	.01895	.0054

Elem	Tl1908	V_2924	Zn2138
Avge	.0424	.00426	-.00150
#1	.0495	.00327	-.00150
#2	.0352	.00526	-.00150

Method: CLP1150 Sample Name: PBS Operator: HR
Run Time: 05/18/90 20:36:38
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00231	.02811	-.0104	.00156	-.00043	.00921	-.00081
#1	-.00166	.03397	-.0015	.00198	-.00044	.00813	-.00390
#2	-.00296	.02225	-.0193	.00113	-.00043	.01029	.00229

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00542	.00398	.00145	.00062	-.19660	.53978	-.00061
#1	.00678	.00459	.00288	-.00078	-.16274	.41463	-.00010
#2	.00407	.00337	.00001	.00202	-.23046	.66493	-.00111

em	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
ge	-.17901	.00030	.03239	-.00064	.0002	.00546	.0072
#1	-.17284	.00030	.03509	.00279	-.0023	.01160	.0119
#2	-.18519	.00029	.02969	-.00407	.0026	-.00069	.0025

Elem	Tl1908	V_2924	Zn2138
Avge	-.0146	.00455	-.00489
#1	-.0058	.00583	-.00489
#2	-.0234	.00327	-.00489

Method: CLP1150 Sample Name: LCSSO Operator: HR
Run Time: 05/18/90 20:39:25
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.12278	1.7071	4.978	.02920	.09388	H913.50	.25836
#1	.11925	1.7036	5.069	.03005	.09473	H917.22	.26250
#2	.12631	1.7106	4.886	.02835	.09303	H909.77	.25422

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.72759	.54129	36.146	113.61	115.54	.06039	273.52
#1	.72940	.53946	36.222	114.00	116.00	.08270	273.62
#2	.72578	.54312	36.070	113.22	115.08	.03808	273.42

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	582.19	1.0589	.48586	.31238	1.213	1.0019	.3004
#1	583.65	1.0627	.50205	.32117	1.297	1.0227	.3019
#2	580.72	1.0552	.46966	.30359	1.129	.98115	.2990

Elem	Tl1908	V_2924	Zn2138
Avge	L-.2507	.34431	1.0092
#1	L-.1529	.34260	1.0107
#2	L-.3484	.34601	1.0077

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Method: CLP1150 Sample Name: 16928 Operator: HR
Run Time: 05/18/90 20:43:59
Comment: VERSCDM-4 (2565)
Mode: LONG Corr. Factor: 2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.05249	55.176	1.113	1.1786	-.00334	458.55	.02034
#1	.05387	55.250	1.096	1.1789	-.00251	459.63	.02654
#2	.05111	55.102	1.129	1.1783	-.00417	457.47	.01414

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.06198	33.029	6.6187	874.50	H1199.2	.21216	76.024
#1	.06468	33.096	6.6445	888.67	H1201.7	.10528	76.220
#2	.05928	32.962	6.5928	860.32	H1196.7	.31905	75.828

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	80.741	48.601	.66400	2.9015	2.804	.24121	1.226
#1	80.889	48.725	.66400	2.9046	2.863	.21745	1.375
#2	80.593	48.477	.66400	2.8985	2.745	.26496	1.078

Elem	Tl1908	V_2924	Zn2138
Avge	-5.296	5.0933	6.4456
#1	-5.254	5.1044	6.4569
#2	-5.339	5.0821	6.4343

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Method: CLP1150 Sample Name: 16928 Operator: HR
Run Time: 05/18/90 20:51:16
Comment: /5 FOR FE VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00844	11.685	.2931	.24667	-.00221	102.27	.00903
#1	.00625	11.696	.2871	.24894	-.00136	102.52	.00364
#2	.01063	11.673	.2991	.24440	-.00305	102.02	.01441

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.01435	7.4223	1.4014	256.88	267.02	.63034	18.080
#1	.01164	7.4342	1.3986	257.55	267.84	.79960	18.132
#2	.01707	7.4104	1.4043	256.20	266.20	.46107	18.028

em	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
vge	16.914	10.929	.22133	.66715	.6585	.07297	.3427
#1	16.988	10.954	.22133	.66032	.6465	.06828	.3555
#2	16.840	10.904	.22133	.67398	.6706	.07766	.3299

Elem	Tl1908	V_2924	Zn2138
Avge	-1.119	1.1088	1.4916
#1	-1.072	1.1111	1.4943
#2	-1.166	1.1065	1.4890

Method: CLP1150 Sample Name: 16929 Operator: HR
Run Time: 05/18/90 20:54:13
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.12757	24.113	2.792	.29997	.00088	180.71	.00511
#1	.12709	24.041	2.802	.29770	.00061	180.26	.00092
#2	.12804	24.185	2.781	.30224	.00114	181.16	.00929

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K 7664	Mg2795
Avge	-.09975	H137.85	1.5512	1160.2	H2260.6	-.57993	30.829
#1	-.11499	H137.37	1.5370	1156.0	H2253.3	-.56798	30.755
#2	-.08450	H138.34	1.5655	1164.4	H2267.9	-.59188	30.903

em	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
ge	30.049	14.974	.65860	1.7812	.0474	.44232	3.516
#1	29.951	14.890	.66400	1.7537	-.0435	.39477	2.689
#2	30.148	15.059	.65321	1.8088	.1382	.48986	4.344

Elem	Tl1908	V 2924	Zn2138
Avge	-10.02	.12907	23.510
#1	-10.21	.12180	23.507
#2	-9.840	.13635	23.513

Method: CLP1150 Sample Name: 16929 Operator: HR
Run Time: 05/18/90 21:00:09
Comment: /5 FOR CR,FE VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.02239	4.9542	.5581	.06011	-.00204	38.676	-.00129
#1	.02601	4.9507	.5572	.05954	-.00148	38.808	-.00210
#2	.01877	4.9577	.5591	.06067	-.00260	38.544	-.00048

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.02193	29.697	.32986	453.50	478.16	1.0818	6.7511
#1	-.01740	29.664	.32986	452.93	478.29	1.8764	6.7521
#2	-.02646	29.731	.32986	454.06	478.02	.28729	6.7500

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	5.9753	3.1912	.22133	.38825	-.0276	.08831	.6119
#1	5.9753	3.1937	.22133	.39680	-.0132	.07249	.5932
#2	5.9753	3.1888	.22133	.37970	-.0421	.10413	.6306

Elem	Tl1908	V_2924	Zn2138
Avge	-2.212	.02859	5.2796
#1	-2.477	.03337	5.2912
#2	-1.948	.02381	5.2679

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Method: CLP1150 Sample Name: 16930 Operator: HR
Run Time: 05/18/90 21:06:02
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.06491	23.597	1.443	.93394	-.01452	H579.04	.01132
#1	.06549	23.621	1.529	.93677	-.01453	H580.17	.01050
#2	.06432	23.573	1.357	.93110	-.01452	H577.92	.01214

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.07626	37.377	5.1485	1140.0	H1556.5	1.1033	105.73
#1	.07804	37.480	5.1556	1139.9	H1559.5	.65105	105.93
#2	.07448	37.273	5.1413	1140.0	H1553.6	1.5556	105.52

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	117.36	H193.71	1.2848	2.7494	2.996	.27328	1.422
#1	117.70	H194.11	1.2902	2.7610	2.983	.27782	1.458
#2	117.01	H193.32	1.2794	2.7377	3.009	.26874	1.387

Elem	Tl1908	V_2924	Zn2138
Avge	-7.244	2.6028	6.8272
#1	-7.674	2.6050	6.8472
#2	-6.814	2.6006	6.8073

Method: CLP1150 Sample Name: 16930 Operator: HR
Run Time: 05/18/90 21:13:14
Comment: /S FOR CA,FE,MN VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.01093	4.8272	.2735	.19195	-.00535	124.64	.00625
#1	.01124	4.7983	.2738	.18996	-.00479	123.90	.00709
#2	.01061	4.8562	.2732	.19393	-.00592	125.38	.00541

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.02050	8.1581	1.0634	321.94	335.41	1.3326	25.112
#1	.02413	8.1206	1.0577	319.79	333.53	1.3399	24.980
#2	.01687	8.1956	1.0692	324.08	337.29	1.3253	25.243

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	23.852	43.387	.32930	.60610	.7098	.05813	.3932
#1	23.753	43.113	.32930	.60328	.7271	.06494	.3721
#2	23.951	43.660	.32930	.60893	.6924	.05132	.4143

Elem	Tl1908	V_2924	Zn2138
Avge	-1.625	.55683	1.5157
#1	-1.757	.55816	1.5131
#2	-1.492	.55549	1.5183

Method: CLP1150 Sample Name: CCVC3 Operator: HR
Run Time: 05/18/90 21:19:29
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00226	.50601	.5261	.50482	.49167	19.980	.00374
#1	-.00110	.50660	.5183	.50014	.48940	19.931	.00520
#2	-.00342	.50542	.5339	.50950	.49393	20.029	.00228

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00191	.51639	.00215	.54362	.33499	21.934	.52762
#1	.00035	.51441	-.00001	.54517	.36864	21.919	.52650
#2	-.00417	.51837	.00431	.54206	.30134	21.950	.52873

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.25309	.00596	20.482	.00356	.0247	.48027	-.0053
#1	-.27161	.00658	20.371	.00154	.0210	.48512	.0009
#2	-.23457	.00534	20.592	.00559	.0283	.47542	-.0114

Elem	Tl1908	V_2924	Zn2138
Avge	-.0189	-.00789	.52679
#1	-.0338	-.00704	.52529
#2	-.0039	-.00874	.52829

Method: CLP1150 Sample Name: CCVN3 Operator: MR
Run Time: 05/18/90 21:21:56
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.50535	.01232	.0003	.00142	-.00013	.05302	.54167
#1	.50856	.01115	.0065	.00170	.00000	.06222	.54478
#2	.50214	.01349	-.0060	.00113	-.00027	.04382	.53857

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.50492	.00467	.52165	.03098	-.12807	.98387	.00257
#1	.50582	.00559	.52237	.03594	-.13592	1.1917	.00318
#2	.50401	.00374	.52093	.02601	-.12021	.77602	.00196

em	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
ge	-.14198	.51237	.09177	.50441	1.040	.02652	1.748
#1	-.13580	.51237	.09987	.50174	1.043	.02957	1.756
#2	-.14815	.51237	.08368	.50708	1.036	.02348	1.741

Elem	Tl1908	V_2924	Zn2138
Avge	2.002	.49402	-.00132
#1	2.055	.49587	-.00038
#2	1.949	.49217	-.00226

Method: CLP1150 Sample Name: CCVH3 Operator: HR
Run Time: 05/18/90 21:24:22
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00384	.00432	.1100	.00085	-.00114	.02721	.00043
#1	.00442	.01195	.1220	.00085	-.00100	.02995	-.00060
#2	.00326	-.00331	.0981	.00085	-.00128	.02446	.00147

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00497	.00121	-.00733	145.00	151.11	.59213	47.747
#1	.00497	.00244	-.00734	145.29	151.58	.74135	47.855
#2	.00497	-.00001	-.00733	144.71	150.64	.44290	47.639

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	49.086	-.01233	.07828	.00977	-.0432	.02486	.1985
#1	49.123	-.01261	.08368	.01331	-.0338	.02623	.1808
#2	49.049	-.01206	.07288	.00624	-.0526	.02348	.2162

Elem	Tl1908	V_2924	Zn2138
Avge	-.6963	.00241	.01429
#1	-.7245	.00355	.01542
#2	-.6682	.00128	.01316

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Method: CLP1150 Sample Name: CCB3 Operator: HR
Run Time: 05/18/90 21:33:46
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00077	.00761	-.0110	.00043	-.00086	.01678	.00228
#1	.00089	.01171	.0160	.00000	-.00128	.02110	.00022
#2	-.00244	.00351	-.0380	.00085	-.00043	.01246	.00434

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00181	.00276	.00144	.02388	-.16277	.74883	.00303
#1	.00226	.00459	.00288	.02497	-.15433	.78377	.00273
#2	.00136	.00093	.00000	.02280	-.17121	.71389	.00334

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.14815	-.00032	.07288	.00535	.0122	.00488	-.0114
#1	-.13580	-.00094	.07828	.00835	.0098	.01284	-.0258
#2	-.16049	.00030	.06748	.00235	.0146	-.00309	.0031

Elem	Tl1908	V_2924	Zn2138
Avge	-.0131	.00441	-.00301
#1	.0344	.00469	-.00301
#2	-.0605	.00412	-.00301

Method: CLP1150 Sample Name: 16931 9 Operator: HR
Run Time: 05/18/90 21:38:45
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.03969	13.030	1.051	.12532	-.00131	146.73	.00076
#1	.04014	13.075	1.037	.12475	-.00074	146.72	-.00298
#2	.03924	12.984	1.065	.12589	-.00187	146.74	.00450

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.01288	36.943	.26485	770.68	997.95	.76446	23.318
#1	-.01741	36.986	.26481	770.97	999.46	.96419	23.346
#2	-.00835	36.900	.26488	770.38	996.44	.56472	23.289

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	22.235	23.527	.61542	.30369	.0071	.15840	1.141
#1	22.296	23.548	.63161	.29516	.0164	.15390	1.226
#2	22.173	23.507	.59922	.31221	-.0023	.16290	1.057

Elem	Tl1908	V_2924	Zn2138
Avge	-4.607	.23001	24.933
#1	-4.676	.22922	24.925
#2	-4.538	.23080	24.941

Method: CLP1150 Sample Name: 16931L Operator: HR
Run Time: 05/18/90 21:44:39
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00471	2.6896	.2025	.02467	-.00124	31.054	.00083
#1	.00134	2.6803	.2001	.02438	-.00152	30.971	.00288
#2	.00808	2.6990	.2049	.02495	-.00096	31.136	-.00123

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00074	7.8612	.06628	202.99	210.19	1.1223	5.0399
#1	-.00287	7.8447	.06197	202.74	209.95	.20842	5.0361
#2	.00435	7.8777	.07059	203.25	210.44	2.0361	5.0438

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	4.4198	5.0099	.21054	.07936	.0072	.03973	.2743
#1	4.3457	4.9994	.22133	.08062	-.0050	.01275	.3071
#2	4.4938	5.0205	.19974	.07810	.0194	.06671	.2415

Elem	Tl1908	V_2924	Zn2138
Avge	-.9537	.05237	5.4826
#1	-.9441	.05007	5.4725
#2	-.9633	.05467	5.4928

Method: CLP1150 Sample Name: 16932 Operator: MR
Run Time: 05/18/90 21:47:29
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.05645	102.23	1.210	2.3411	-.01450	H1161.6	.00181
#1	.05197	102.58	1.213	2.3504	-.01453	H1163.2	.00056
#2	.06093	101.88	1.208	2.3317	-.01447	H1160.0	.00305

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.08200	23.220	.35316	1139.4	H1587.3	2.0847	261.03
#1	.08200	23.260	.35454	1139.8	H1590.3	1.6133	261.07
#2	.08201	23.179	.35178	1139.0	H1584.4	2.5561	261.00

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
ge	421.41	H180.88	3.4928	.16098	1.369	.22131	1.110
#1	423.36	H181.22	3.5036	.15378	1.341	.21078	1.104
#2	419.46	H180.53	3.4820	.16818	1.398	.23185	1.116

Elem	Tl1908	V_2924	Zn2138
Avge	-7.286	5.7219	2.8626
#1	-7.201	5.7365	2.8652
#2	-7.372	5.7073	2.8599

Method: CLP1150 Sample Name: 16933 Operator: HR
Run Time: 05/18/90 21:56:49
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.02541	50.990	.5268	.60760	-.00808	H510.11	.00714
#1	.02343	51.194	.5134	.61015	-.00809	H510.88	.00755
#2	.02738	50.787	.5402	.60505	-.00807	H509.33	.00673

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.03953	2.8995	.07202	493.00	617.42	2.7054	112.73
#1	.03863	2.9069	.07271	500.08	619.04	2.7948	112.69
#2	.04044	2.8922	.07133	485.93	615.79	2.6160	112.77

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	178.96	H104.20	3.5953	.06768	.8485	.07664	.4980
#1	179.75	H104.39	3.6196	.06397	.8405	.07329	.5358
#2	178.16	H104.02	3.5710	.07138	.8565	.08000	.4603

Elem	Tl1908	V_2924	Zn2138
Avge	-2.780	1.4303	1.0415
#1	-2.765	1.4351	1.0423
#2	-2.796	1.4256	1.0408

Method: CLP1150 Sample Name: 16933 Operator: MR
Run Time: 05/18/90 22:11:13
Comment: /5 FOR CA,MN VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00435	10.732	.1014	.12858	-.00190	115.33	.00164
#1	.00459	10.819	.1004	.12986	-.00219	116.21	-.00104
#2	.00411	10.645	.1023	.12730	-.00161	114.45	.00433

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.01069	.65956	.01667	134.34	139.73	1.2614	37.195
#1	.01024	.66275	.01593	135.44	140.78	1.3244	37.460
#2	.01114	.65636	.01741	133.25	138.67	1.1983	36.931

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	38.210	24.388	.78547	.01506	.2201	.02047	.1655
#1	38.519	24.581	.78547	.01584	.2077	.02501	.1622
#2	37.901	24.195	.78547	.01428	.2326	.01594	.1688

Elem	Tl1908	V_2924	Zn2138
Avge	-.7157	.31426	.24309
#1	-.6599	.31641	.24629
#2	-.7716	.31210	.23989

Method: CLP1150 Sample Name: 16932 Operator: HR
Run Time: 05/18/90 22:14:35
Comment: /5 FOR CA VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00382	10.461	.1538	.24312	-.00194	127.82	.00075
#1	.00585	10.459	.1400	.24242	-.00193	127.74	-.00152
#2	.00179	10.464	.1677	.24383	-.00194	127.90	.00303

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00886	2.5881	.03758	168.19	175.20	.87033	41.913
#1	.00795	2.5905	.03830	167.89	175.02	1.0383	41.879
#2	.00976	2.5856	.03686	168.49	175.37	.70234	41.947

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	43.716	20.698	.40488	.02752	.1967	.03755	.1844
#1	43.630	20.654	.40218	.02783	.2007	.03996	.2127
#2	43.802	20.742	.40758	.02720	.1926	.03513	.1561

Elem	Tl1908	V_2924	Zn2138
Avge	-.8592	.61719	.32111
#1	-.8283	.61633	.32149
#2	-.8901	.61804	.32074

Method: CLP1150 Sample Name: 16934 Operator: HR
Run Time: 05/18/90 22:18:11
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00009	2.4398	.0147	.43493	-.00097	494.87	.00373
#1	-.00134	2.4339	.0097	.43436	-.00083	494.22	.00227
#2	.00153	2.4457	.0196	.43550	-.00112	495.53	.00518

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00406	.11389	.04505	48.714	49.397	.21444	37.775
#1	.00225	.11648	.04505	48.665	49.220	.05771	37.739
#2	.00587	.11129	.04504	48.763	49.573	.37116	37.812

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	40.667	1.6846	.37789	.04232	.0625	.01866	.0465
#1	40.580	1.6836	.36979	.04766	.0566	.01621	.0661
#2	40.753	1.6855	.38599	.03698	.0685	.02111	.0268

Elem	Tl1908	V_2924	Zn2138
Avge	-.2362	.06193	.89867
#1	-.2163	.06122	.89942
#2	-.2561	.06264	.89791

Method: CLP1150 Sample Name: 16935 Operator: HR
Run Time: 05/18/90 22:21:18
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00032	6.2575	.0649	.50893	-.00105	H747.85	.00828
#1	.00098	6.2640	.0589	.50695	-.00119	H750.51	.00808
#2	-.00034	6.2511	.0709	.51092	-.00090	H745.19	.00848

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00852	.38704	.02711	81.884	83.503	.16595	27.325
#1	.01033	.39024	.02999	82.064	83.679	.32607	27.392
#2	.00671	.38383	.02424	81.704	83.327	.00583	27.257

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	28.932	3.5988	.50745	.02419	.0702	.01898	.0839
#1	28.951	3.6093	.51015	.02601	.0764	.01903	.0848
#2	28.914	3.5882	.50475	.02237	.0641	.01892	.0830

Elem	Tl1908	V_2924	Zn2138
Avge	-.3794	.09853	2.4988
#1	-.3463	.09840	2.5069
#2	-.4125	.09867	2.4907

Method: CLP1150 Sample Name: 16935 Operator: HR
Run Time: 05/18/90 22:25:08
Comment: /S FOR CA VERSCDM-4 (2565)
Mode: XONE Corr. Factor: 1

Elem	As3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00162	1.2742	.0058	.10576	-.00104	162.49	.00290
#1	-.00162	1.2712	.0036	.10604	-.00133	162.91	.00187
#2	-.00162	1.2771	.0081	.10547	-.00076	162.08	.00393

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00270	.08350	.00827	17.887	18.020	.18459	6.2492
#1	.00224	.08350	.00827	17.928	18.016	.31719	6.2646
#2	.00315	.08350	.00827	17.846	18.024	.05199	6.2339

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	5.9074	.78455	.16735	.00885	.0212	.01407	.0252
#1	5.9012	.79043	.16465	.00746	.0213	.01467	.0359
#2	5.9136	.77867	.17005	.01024	.0211	.01347	.0145

Elem	Tl1908	V_2924	Zn2138
Avge	-.0680	.02489	.55744
#1	-.0753	.02560	.56063
#2	-.0608	.02418	.55424

Method: CLP1150 Sample Name: CCVC4 Operator: MR
Run Time: 05/18/90 22:27:52
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00019	.51011	.5065	.49575	.48529	20.308	.00253
#1	-.00134	.51363	.5238	.49787	.48656	20.431	.00190
#2	.00096	.50660	.4893	.49362	.48402	20.186	.00315

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00035	.51838	.00574	.54174	.38584	21.964	.53530
#1	.00035	.51991	.00862	.54857	.39417	Q22.254	.53884
#2	.00035	.51686	.00287	.53492	.37750	21.673	.53176

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.20988	.00163	20.255	.00816	.0294	.48322	.0156
#1	-.20988	.00163	20.371	.00860	.0136	.48876	.0148
#2	-.20988	.00163	20.139	.00773	.0451	.47768	.0163

Elem	Tl1908	V_2924	Zn2138
Avge	-.0065	-.00576	.52980
#1	.0354	-.00590	.53168
#2	-.0485	-.00562	.52792

Method: CLP1150 Sample Name: CCVN4 Operator: HR
Run Time: 05/18/90 22:32:16
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.51125	.00528	-.0215	.00014	-.00042	.06601	.54643
#1	.51625	.00528	-.0279	.00057	-.00029	.07304	0.55428
#2	.50624	.00528	-.0151	-.00028	-.00056	.05897	.53857

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.50492	.00300	.52525	.02402	-.16035	.66870	.00247
#1	.50763	.00164	.53100	.02573	-.15115	.82749	.00297
#2	.50221	.00436	.51949	.02230	-.16954	.50991	.00196

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
ge	-.18519	.51732	.07288	.50365	1.037	.00447	1.787
#1	-.17284	.52103	.07288	.50258	1.048	.00753	1.788
#2	-.19753	.51360	.07288	.50472	1.026	.00142	1.786

Elem	Tl1908	V_2924	Zn2138
Avge	1.926	.49785	-.00075
#1	1.953	.50098	-.00075
#2	1.899	.49473	-.00075

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Method: CLP1150 Sample Name: CCVH4 Operator: HR
Run Time: 05/18/90 22:34:37
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00354	-.00214	.1112	.00142	-.00114	.04401	.00105
#1	.00404	-.00215	.1031	.00085	-.00128	.04726	.00063
#2	.00303	-.00214	.1193	.00198	-.00100	.04076	.00147

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00452	-.00046	-.00805	143.98	150.68	.67252	47.547
#1	.00316	-.00062	-.01020	143.95	150.61	.85850	47.568
#2	.00588	-.00031	-.00589	144.02	150.75	.48655	47.526

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	48.593	-.01020	.07828	.00538	-.0381	.01805	.1691
#1	48.556	-.00958	.08368	-.00039	-.0429	.02106	.1458
#2	48.630	-.01081	.07288	.01115	-.0333	.01504	.1924

Elem	Tl1908	V_2924	Zn2138
Avge	-.5843	.00398	.01598
#1	-.5983	.00355	.01579
#2	-.5704	.00440	.01617

Method: CLP1150 Sample Name: CCB4 Operator: HR
Run Time: 05/18/90 22:40:32
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00371	.00643	.0000	.00085	-.00100	.01678	.00227
#1	-.00422	.01052	.0006	.00142	-.00100	.01894	.00268
#2	-.00320	.00234	-.0006	.00028	-.00100	.01462	.00187

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00000	.00475	.00072	.02838	-.13292	.84310	.00344
#1	-.00136	.00429	.00000	.02900	-.11216	.92056	.00354
#2	.00135	.00521	.00144	.02776	-.15369	.76565	.00334

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.14815	-.00001	.07018	.00439	.0098	.01100	.0166
#1	-.12346	.00030	.07288	.00492	.0001	.01406	.0362
#2	-.17284	-.00032	.06748	.00385	.0195	.00793	-.0030

Elem	Tl1908	V_2924	Zn2138
Avge	.0177	.00540	-.00244
#1	.0121	.00441	-.00301
#2	.0234	.00640	-.00188

Method: CLP1150 Sample Name: 16936 Operator: HR
Run Time: 05/18/90 22:43:06
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00056	46.406	.0353	.43706	.00166	64.911	.00359
#1	-.00018	46.322	.0375	.43606	.00194	64.995	.00317
#2	-.00094	46.490	.0332	.43805	.00137	64.827	.00400

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.02393	.16995	.07634	65.675	67.266	4.4751	30.325
#1	.02484	.17148	.07347	65.588	67.233	4.6378	30.332
#2	.02303	.16843	.07922	65.762	67.300	4.3125	30.318

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	30.407	3.4948	.84755	.06151	.3717	.01815	.0741
#1	30.395	3.4942	.83945	.05605	.3838	.01628	.0899
#2	30.420	3.4954	.85565	.06696	.3597	.02001	.0582

Elem	Tl1908	V_2924	Zn2138
Avge	-.3800	.09256	.60556
#1	-.3540	.09328	.60726
#2	-.4061	.09185	.60387

Method: CLP1150 Sample Name: CRIF Operator: HR
Run Time: 05/18/90 22:46:26
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.01854	.02247	.0032	.00014	.00815	.05790	.00921
#1	.01713	.02481	-.0086	.00000	.00787	.06547	.00839
#2	.01996	.02013	.0151	.00028	.00843	.05032	.01004

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.09807	.02257	.05255	.05408	-.13521	.50281	.01901
#1	.09807	.02287	.05184	.05951	-.18169	.49637	.02114
#2	.09807	.02227	.05327	.04865	-.08874	.50924	.01689

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.15432	.03281	.05398	.08309	.1052	.11920	-.0064
#1	-.17284	.03374	.05668	.08159	.1101	.11734	-.0046
#2	-.13580	.03188	.05128	.08459	.1004	.12106	-.0083

Elem	Tl1908	V_2924	Zn2138
Avge	.0238	.10031	.03478
#1	.0389	.09931	.03422
#2	.0088	.10130	.03534

Method: CLP1150 Sample Name: ICSAF Operator: HR
Run Time: 05/18/90 22:49:16
Comment: VERSCDM-4 (2565)
Mode: LUNC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00211	476.86	-.3253	.00680	-.00084	437.50	.00105
#1	.00293	475.97	-.4022	.00680	-.00154	436.34	.00106
#2	.00128	477.75	-.2484	.00680	-.00013	438.66	.00105

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00497	.02233	-.00995	167.92	173.96	-1.0225	140.01
#1	.00497	.02186	-.00922	167.27	173.43	-1.1456	139.97
#2	.00497	.02280	-.01068	168.56	174.48	-.89937	140.04

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	466.01	-.00454	.42647	.00957	-.0857	-.00578	.1140
#1	464.59	-.00736	.42377	.01137	-.1114	-.01670	.1035
#2	467.42	-.00172	.42917	.00777	-.0600	.00515	.1245

Elem	Tl1908	V_2924	Zn2138
Avge	-1.572	-.00666	.00395
#1	-1.417	-.00821	.00338
#2	-1.726	-.00512	.00451

Method: CLP1150 Sample Name: ICSA8F Operator: HR
Run Time: 05/18/90 23:10:47
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.94189	477.56	-.2439	.48171	.41249	441.04	.91643
#1	.94044	473.58	-.4189	.47462	.40839	438.95	.91561
#2	.94334	481.54	-.0688	.48880	.41659	443.13	.91725

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.41943	.49816	.46631	169.98	175.84	-.89058	139.42
#1	.41807	.49585	.46130	168.59	174.62	-.76719	139.44
#2	.42078	.50047	.47132	171.37	177.05	-1.0140	139.40

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	455.86	.45787	.15385	.82577	.8482	.02022	.0837
#1	452.31	.45469	.16465	.82264	.8465	.01925	.0661
#2	459.42	.46105	.14306	.82889	.8499	.02120	.1012

Elem	Tl1908	V_2924	Zn2138
Avge	-1.543	.43990	.88757
#1	-1.602	.43714	.88475
#2	-1.485	.44267	.89039

Method: CLP1150 Sample Name: CCVC5 Operator: HR
Run Time: 05/18/90 23:26:13
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00388	.50190	.5324	.49561	.48176	19.588	.00501
#1	.00554	.50658	.5232	.49164	.47921	19.556	.00688
#2	.00221	.49722	.5417	.49957	.48431	19.620	.00315

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00055	.50845	.00575	.50994	.26741	19.822	.53132
#1	-.00055	.50647	.00431	.50824	.26769	19.680	.53312
#2	-.00055	.51043	.00718	.51165	.26712	19.965	.52951

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.22222	.00038	19.977	.00323	.0121	.46473	.0180
#1	-.20988	.00038	19.912	.00280	.0147	.46406	.0167
#2	-.23457	.00038	20.042	.00366	.0094	.46540	.0193

Elem	Tl1908	V_2924	Zn2138
Avge	-.0639	-.00904	.52021
#1	-.0475	-.00819	.52115
#2	-.0804	-.00989	.51927

Method: CLP1150 Sample Name: CCVN5 Operator: HR
Run Time: 05/18/90 23:30:54
Comment: VERSCDM-4 (2565)
Mode: UNC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.50583	-.00293	-.0347	.00028	.00030	.02544	.52572
#1	.50751	.00410	-.0430	.00000	.00030	.02869	.52779
#2	.50415	-.00997	-.0265	.00057	.00031	.02219	.52366

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.49181	-.00116	.51661	.01513	-.19176	.52664	.00957
#1	.49226	-.00085	.51661	.01884	-.13670	.56007	.01017
#2	.49136	-.00147	.51661	.01142	-.24682	.49320	.00897

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.18519	.50369	.05128	.48836	1.073	.01175	1.716
#1	-.17284	.50060	.05668	.47328	1.086	.00372	1.720
#2	-.19753	.50679	.04589	.50344	1.060	.01979	1.712

Elem	Tl1908	V_2924	Zn2138
Avge	1.807	.48819	-.00282
#1	1.774	.48989	-.00150
#2	1.841	.48648	-.00414

Analysis Report QC Standard Fri 05-18-90 11:35:18 PM page 1

Method: CLP1150 Sample Name: CCVH5 Operator: HR
Run Time: 05/18/90 23:33:18
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00873	-.00107	.0724	.00085	-.00058	.01959	.00105
#1	.00811	-.00105	.0711	.00057	-.00100	.02122	.00023
#2	.00935	-.00108	.0736	.00113	-.00015	.01796	.00187

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00452	.00043	-.00944	143.01	148.29	.28416	46.254
#1	.00588	-.00003	-.01016	143.05	148.46	.21907	46.285
#2	.00316	.00089	-.00871	142.97	148.12	.34926	46.224

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	47.531	-.01129	.05938	.00652	-.0435	.03711	.1706
#1	47.605	-.01221	.06208	.01069	-.0383	.03656	.1840
#2	47.457	-.01037	.05668	.00235	-.0487	.03767	.1572

Elem	Tl1908	V_2924	Zn2138
Avge	-.5966	.00554	.01128
#1	-.6695	.00525	.01166
#2	-.5237	.00582	.01090

Method: ICP1150 Sample Name: CCB5 Operator: HK
Run Time: 05/18/90 23:37:58
Comment: VERSCDM-4 (2565)
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00127	-.00879	-.0218	-.00043	-.00071	.01354	.00083
#1	.00062	-.01055	-.0094	-.00085	-.00071	.00921	.00021
#2	.00191	-.00703	-.0341	.00000	-.00071	.01787	.00145

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00136	-.00198	.00072	.04203	-.19674	.31190	.01013
#1	.00136	-.00305	.00001	.04203	-.23859	.44173	.01013
#2	.00136	-.00091	.00144	.04203	-.15489	.18207	.01013

Elem	Mg3822	Mn2576	Na5889	Ni2316	Pb2203	Sb2175	Se1960
Avge	-.19753	-.00001	.05128	.00352	-.0078	-.00431	-.0167
#1	-.20988	.00029	.05668	.00341	-.0130	-.00555	-.0063
#2	-.18519	-.00032	.04589	.00363	-.0025	-.00308	-.0271

Elem	Tl1908	V_2924	Zn2138
Avge	.0147	.00298	-.00451
#1	.0133	.00326	-.00376
#2	.0161	.00270	-.00526

VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: As C DATE: 5-14-90 PAGE 1 OF 11

CODE-BATCH: MESAMPLE-115 (HOH) CONTROL #: 2486
" " (SOIL) 2486
VERSCD m-4 (HOH) 2565

Instrument #: 8
Wavelength: 193.7 Slit: 0.7
Signal: ____ Pk.Ht. ✓ Pk.Area
Background Correction: ✓ BZ ___ BD

Light Source: Westinghouse Buch
Current/Power: 7 Watts 41E E
Tube: EV Pipet Vol.: 10 ul
Replicates: 2 Purge: 0 Ar

Standard Prep.: Date: 05-14-90
Time: 08:20
Source: IV

Matrix Modifiers: ✓ yes ____ no

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	130	1300	2300	2600	20
Ramp (s)	5	5	0	1	1
Hold (s)	30	20	5	3	10
BOC (s)					
Rec. (s)					

Read

CALIBRATION CURVE

CUP	STANDARD	AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB 0 ppb	12			r= 0.9987
2	STD1 10	42			CRA= 12.0
3	STD2 20	60			
4	STD3 50	135			
5	STD4 100	279			
6	ICV# 2	138	48.29	—	[470] 102.6%
7	ICB 0 ppb	0	23.0		

Time of Calibration: 09:45

Analyst: MC

Reviewer: ____

VERSAR, INC. GFAA ANALYSIS LOG SHEET

ELEMENT: As CODE-BATCH: ~~FFMARTIN~~ VERSCDM-4 mc (HOH) CONTROL #: 25

DATE: 5-14-90 TRAY #: ~~3~~ 4 mc CALIB. TIME: 09:

CUP	LAB/EPA SAMPLE #		AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	PBW	+B	2	<3.0			
2		+20	59	18.4			(92.0)
3	LCSM		103	35.0			[40] 87.5%
4	LCSWA	+B	141	49.4			[47.0] 105.1
5		+20	190	67.9			(92.5)
6	16937	+B	2	<3.0			
7		+20	60	18.8			(94.0)
8	16937 D	+B	8	<3.0			RPD = NC
9		+20	69	22.2			(111.0)
10	16937.S		114	39.2			[40] 98.0%
11	CCV1		147	51.64			103.3%
12	CCB1		14	<3.0			
13	16948	+B	10	<3.0			
14		+20	60	18.8			(94.0)
15	CCV2		139	48.62			97.2%
16	CCB2		4	<3.0			
17							
18							
19							
20							
21							
22							
23							
24							
25							
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27							
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29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

CCV= NBS @ 50 ppb

ICV=

( )= % recovery of MSA

* = ____g/____L (____wt.)

SPIKE=(HOH) 40 ug/l

=(SOLID) ____ mg/kg

=(BENCH) ____

ANALYST: MC

ASC Calibration Curve 5-14-90 mc

6g 11

AS
-0.003 0.001

MEAN= -0.002 STD.DEV.= COEF.VAR.= 99.99 %

0.000 AUTOZERO

AS 0001
0.010 0.014

MEAN= 0.012 STD.DEV.= COEF.VAR.= 13.04 %

AS 0002
0.037 0.048

MEAN= 0.042 STD.DEV.= COEF.VAR.= 15.08 %

AS 0003
0.054 0.067

MEAN= 0.060 STD.DEV.= COEF.VAR.= 12.74 %

AS 0004
0.124 0.136

MEAN= 0.135 STD.DEV.= COEF.VAR.= 1.20 %

AS 0005
0.268 0.290

MEAN= 0.279 STD.DEV.= COEF.VAR.= 3.92 %

AS 0006
0.129 0.137

MEAN= 0.136 STD.DEV.= COEF.VAR.= 1.00 %

10 15

AS 0007
0.000 0.001

MEAN= 0.000 STD.DEV.= COEF.VAR.= 99.99 %

10 20

ASC Tray 1 PESAMPLE-115 (HOH) 5-14-90 mc

AS 0001
0.039 0.044

MEAN= 0.041 STD.DEV.= COEF.VAR.= 5.38 %

AS 0002
0.092 0.098

MEAN= 0.096 STD.DEV.= COEF.VAR.= 2.19 %

AS 0003
0.129 0.141

MEAN= 0.136 STD.DEV.= COEF.VAR.= 5.47 %

10 35

AS 0004
0.003 0.002

MEAN= 0.005 STD.DEV.= COEF.VAR.= 99.99 %

10 40

ASC Tray 2 PESAMPLE-115 (Soil) 5-14-90 mc

AS 0001
0.008 0.011

MEAN= 0.010 STD.DEV.= COEF.VAR.= 14.00 %

AS 0002
0.054 0.054

MEAN= 0.054 STD.DEV.= COEF.VAR.= 0.00 %

AS 0003

Tray was not set up correctly Resin

7 of 11

0.139 0.146

MEAN= 0.143 STD.DEV.= COEF.VAR.= 3.25 %

AS 0004

0.195 0.196

MEAN= 0.195 STD.DEV.= COEF.VAR.= 0.35 %

AS 0005

0.097 0.109

MEAN= 0.103 STD.DEV.= COEF.VAR.= 7.97 %

AS 0006

0.254 0.250

MEAN= 0.253 STD.DEV.= COEF.VAR.= 1.58 %

AS 0007

0.167 0.171

MEAN= 0.169 STD.DEV.= COEF.VAR.= 1.75 %

AS 0008

0.215 0.207

MEAN= 0.211 STD.DEV.= COEF.VAR.= 3.81 %

Do Not Use Rerun

AS 0009

0.152 0.169

MEAN= 0.161 STD.DEV.= COEF.VAR.= 7.53 %

AS 0010

0.205 0.211

MEAN= 0.208 STD.DEV.= COEF.VAR.= 2.20 %

AS 0011

0.139 0.125

MEAN= 0.132 STD.DEV.= COEF.VAR.= 7.53 % 11 : 35

AS 0012

0.017 0.010

MEAN= 0.011 STD.DEV.= COEF.VAR.= 46.36 % 11 : 40

ASC End of Tray 2 PESTAMPLE-115 (Soil)
5-14-90 mc

HSC Tray 3 PESAMPLE-115 (Soil) 5-15-90 mc

AS 0001
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] %

AS 0002
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] %

AS 0003
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] %

AS 0004
-0.006 -0.003

MEAN= -0.005 STD.DEV.= COEF.VAR.= 43.53 %

AS 0005
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] %

AS 0006
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] %

AS 0007
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] %

AS 0008
[illegible] [illegible]

MEAN= 0.111 STD.DEV.= COEF.VAR.= 1.47 %

AS 0009
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] %

AS 0010
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] %

AS 0011
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] % 12:35

Sig 11

AS 0012
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] % 12:40

AS 0013
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] %

AS 0014
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= 5.10 %

AS 0015
[illegible] [illegible]

00123

MEAN= 0.195 STD.DEV.= COEF.VAR.= 1.12 %

AS 0016
0.159 0.140

MEAN= 0.149 STD.DEV.= COEF.VAR.= 1.89 %

AS 0017
0.194 0.180

MEAN= 0.198 STD.DEV.= COEF.VAR.= 6.03 %

AS 0018
0.241 0.258

MEAN= 0.249 STD.DEV.= COEF.VAR.= 4.66 %

AS 0019
0.140 0.137

MEAN= 0.139 STD.DEV.= COEF.VAR.= 1.64 % 13:15

AS 0020
0.009 -0.001

MEAN= 0.004 STD.DEV.= COEF.VAR.= 99.99 % 13:20

AS 0021 0.059
AS 0022 0.090
AS 0023 0.119
AS 0024 0.144
AS 0025 0.144 13: 35
AS 0026 0.005 13: 37

98 11

ASC End of Tray 3 TESAMPLE-115(SOIL)
5-14-90 mc

Asc Tray 4 ~~PESA~~ mc VERSCDM-4 (1+0 H)
5-14-90 mc

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AS 0001
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] %

AS 0002
[illegible] 0.057

MEAN= 0.059 STD.DEV.= COEF.VAR.= 4.49 %

AS 0003
[illegible] 0.106

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] %

AS 0004
0.126 0.145

MEAN= 0.141 STD.DEV.= COEF.VAR.= 4.24 %

AS 0005
0.184 0.197

MEAN= [illegible] STD.DEV.= COEF.VAR.= 4.69 %

AS 0006
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= 99.99 %

AS 0007
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= 10.52 %

AS 0008
[illegible] 0.007

MEAN= 0.008 STD.DEV.= COEF.VAR.= 4.23 %

AS 0009
0.067 0.071

MEAN= [illegible] STD.DEV.= COEF.VAR.= 3.35 %

AS 0010
[illegible] 0.114

MEAN= 0.114 STD.DEV.= COEF.VAR.= 0.10 %

AS 0011
[illegible] 0.147

MEAN= [illegible] STD.DEV.= COEF.VAR.= 0.25 % 14:35

AS 0012
[illegible] 0.014

MEAN= [illegible] STD.DEV.= COEF.VAR.= 4.92 % 14:40

AS 0013
[illegible] [illegible]

MEAN= [illegible] STD.DEV.= COEF.VAR.= 0.42 %

AS 0014
[illegible] [illegible]

MEAN= 0.060 STD.DEV.= COEF.VAR.= 0.24 %

AS 0015
[illegible] 0.142

MEAN= [illegible] STD.DEV.= COEF.VAR.= [illegible] % 14:55

AS 0016

[illegible] 0.009

MEAN= [illegible] STD.DEV.= COEF.VAR.= 99.99 % 15:00

ASC End of Tray 4 VERSCDM-4 (HOH) 5-14-90
mc

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VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: AsC/3 DATE: 5-16-90 PAGE 1 OF 10

CODE-BATCH: VERSCDM-4 (soil) / UMD-BASS-2 CONTROL #: 2565 / 2686

Instrument #: 8
Wavelength: 193.7 Slit: 0.7
Signal: ____ Pk.Ht. ✓ Pk.Area
Background Correction: ✓ BZ ____ BD

Light Source: West. Buck
Current/Power: 8 watts 44 E
Tube: LV Pipet Vol.: 10 ul
Replicates: 2 Purge: 0 Ar

Standard Prep.: Date: 05-16-90
Time: 09:30
Source: IV

Matrix Modifiers: ✓ yes ____ no

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	130	1300	2300	2600	20
Ramp (s)	5	5	0	1	1
Hold (s)	30	20	5	3	10
BOC (s)					
Rec. (s)					

Read

CALIBRATION CURVE

CUP	STANDARD	AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB 0 ppb	-7			r= 0.9996
2	STD1 10	28			CRA= 10.73
3	STD2 20	56			
4	STD3 50	143			
5	STD4 100	282			
6	ICV# 2	138	49.12	—	[47.0] 104.5%
7	ICB 0 ppb	-5	<3.0		

Time of Calibration: 09:35

Analyst: MC

Reviewer: ____

VERSAR, INC. GFAA ANALYSIS LOG SHEET

ELEMENT: As CODE-BATCH: VERSCDM-4 (soil) CONTROL #: 2565

DATE: 5-16-90 TRAY #: 1 CALIB. TIME: 09:35

CUP	LAB/EPA SAMPLE #		AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	PBS	+B	-4	<3.0		*	
2		+20	59	21.55			(107.8)
3	LCSS	+B	119	42.49	100 fold		[91.7] 92.7%
4		+20	176	62.39			(99.5)
5	16928	+B	83	29.9			
6		+20	145	51.6			(108.5)
7	16929	+B	208	~~73.6~~ mc			Rerun 4 pt
8		+20	254	89.6			(80.0)
9	16930	+B	119	42.5			
10		+20	178	63.1			(103.0)
11	CCV1		135	48.08			96.2%
12	CCB1		-2	<3.0			
13	16931	+B	16	6.54 W		*	
14		+20	51	18.8			(61.3)
15	16932	+B	148	52.6			
16		+20	203	71.8			(96.0)
17	16933	+B	67	~~24.2~~ mc			Rerun 4 pt
18		+20	102	36.6			(61.5)
19	16934	+B	26	~~10.0~~ mc			Rerun 4pt high C
20		+20	64	23.3			(66.5)
21	16935	+B	16	6.54 W			
22		+20	63	22.9			(81.8)
23	CCV2		136	48.43			96.9%
24	CCB2		-2	<3.0			
25	16936	+B	48	~~13.7~~ mc		*	Rerun 4 pt
26		+20	92	33.1			(77.0)
27	16929	+B	39	mc ~~16~~ 17.0	4 fold		
28		+10	58				r = 0.9987
29		+20	83				m = 2.23
30		+30	105				b = 37.8
31	16933	+B	69	34.6	—		
32		+10	87				r = 0.9958
33		+20	112				m = 1.99
34		+30	127				b = 68.9
35	CCV3		136	48.43			96.9%
36	CCB3		-1	<3.0			
37							
38							
39							
40							

CCV= NBS @ 50 ppb

ICV=

( )= % recovery of MSA

* = 1 g/ 0.2 L (wet wt.)

SPIKE=(HOH) _____ ug/l

=(SOLID) _____ mg/kg

=(BENCH) _____

ANALYST: MC

VERSAR, INC. GFAA ANALYSIS LOG SHEET

ELEMENT: As CODE-BATCH: VERSCDM-4 (soil) CONTROL #: 2565

DATE: 5-16-90 TRAY #: 2 CALIB. TIME: 09:35

CUP	LAB/EPA SAMPLE #		AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	16934	+B	24	9.79	—	*	
2		+10	47				r = 0.9981
3		+20	68				m = 2.37
4		+30	96				b = ~~200~~ mc 23.2
5	16936	+B	56	~~20.9~~ mc	—		Rerun 4 pt
6		+10	91				r = 0.9865
7		+20	105				m = 2.75
8		+30	143				b = 57.5
9	16936	+B	58	22.1			
10		+10	89				r = 0.9954
11		+20	119				m = 2.73
12		+30	139			✓	b = 60.3
13	CCV4		137	~~48.78~~			97.6%
14	CCB4		-2	< 3.0			
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
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30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

CCV= NBS @ 50 ppb
ICV=
( )= % recovery of MSA
* = 1 g/ 0.2 L (wet wt.)

SPIKE=(HOH) _____ ug/l
=(SOLID) _____ mg/kg
=(BENCH) _____

ANALYST: MC

Asc Calibration Curve 5-16-90 MC

AS
-0.002 -0.001

MEAN= -0.001 STD.DEV.= COEF.VAR.= 72.47 %

0.000 AUTOZERO

AS 0001
-0.006 -0.007

MEAN= -0.007 STD.DEV.= COEF.VAR.= 12.17 %

AS 0002
0.025 0.031

MEAN= 0.028 STD.DEV.= COEF.VAR.= 15.41 %

5 of 10

AS 0003
0.056 0.056

MEAN= 0.056 STD.DEV.= COEF.VAR.= 0.36 %

AS 0004
0.144 0.141

MEAN= 0.143 STD.DEV.= COEF.VAR.= 1.38 %

AS 0005
0.284 0.280

MEAN= 0.282 STD.DEV.= COEF.VAR.= 0.97 %

AS 0006
0.137 0.139

MEAN= 0.138 STD.DEV.= COEF.VAR.= 0.80 % 10:05

AS 0007
-0.002 -0.008

MEAN= -0.005 STD.DEV.= COEF.VAR.= 64.38 % 10:10

Asc Tray 1 VERSCDM-4 (Soil) 5-16-90 MC

AS 0001
0.002 -0.010

MEAN= -0.004 STD.DEV.= COEF.VAR.= 99.99 %

AS 0002
0.056 0.062

MEAN= 0.059 STD.DEV.= COEF.VAR.= 7.59 %

AS 0003
0.118 0.120

MEAN= 0.119 STD.DEV.= COEF.VAR.= 1.02 %

AS 0004
0.170 0.181

MEAN= 0.176 STD.DEV.= COEF.VAR.= 4.24 %

AS 0005
0.085 0.081

MEAN= 0.083 STD.DEV.= COEF.VAR.= 3.36 %

AS 0006
0.134 0.156

MEAN= 0.145 STD.DEV.= COEF.VAR.= 10.36 %

AS 0007
0.205 0.212

MEAN= 0.209 STD.DEV.= COEF.VAR.= 3.78 %

AS 0008
0.742 0.744

AsC Tray 1 (cont.) VERSCDM-4(Soil) 5-16-90 mc

MEAN= 0.254 STD.DEV.= COEF.VAR.= 5.44 %

AS 0009
0.109 0.129

MEAN= 0.119 STD.DEV.= COEF.VAR.= 11.78 %

AS 0010
0.175 0.180

MEAN= 0.178 STD.DEV.= COEF.VAR.= 1.78 % ~~11:00~~ mc

AS 0011
0.135 0.137

MEAN= 0.135 STD.DEV.= COEF.VAR.= 2.30 % 11:05 6 of 10

AS 0012
-0.001 -0.002

MEAN= -0.002 STD.DEV.= COEF.VAR.= 27.45 % 11:10

AS 0013
0.019 0.014

MEAN= 0.016 STD.DEV.= COEF.VAR.= 22.02 %

AS 0014
0.051 0.051

MEAN= 0.051 STD.DEV.= COEF.VAR.= 0.41 %

AS 0015
0.151 0.145

MEAN= 0.148 STD.DEV.= COEF.VAR.= 3.06 %

AS 0016
0.183 0.223

MEAN= 0.203 STD.DEV.= COEF.VAR.= 13.80 %

AS 0017
0.066 0.067

MEAN= 0.067 STD.DEV.= COEF.VAR.= 1.74 %

AS 0018
0.099 0.105

MEAN= 0.102 STD.DEV.= COEF.VAR.= 3.85 %

AS 0019
0.022 0.020

MEAN= 0.026 STD.DEV.= COEF.VAR.= 34.02 %

AS 0020
0.064 0.063

MEAN= 0.064 STD.DEV.= COEF.VAR.= 0.92 %

AS 0021
0.012 0.019

MEAN= 0.016 STD.DEV.= COEF.VAR.= 24.18 %

AS 0022
0.060 0.067

MEAN= 0.062 STD.DEV.= COEF.VAR.= 3.35 %

Asc Tray 1 (Cont) VERSCDM-4 (Soil) 5-16-90 mc

AS 0023
0.136 0.137
MEAN= 0.136 STD.DEV.= COEF.VAR.= 0.12 % 12:05
AS 0024
-0.005 0.001
MEAN= -0.002 STD.DEV.= COEF.VAR.= 99.99 % 12:10
AS 0025
0.050 0.046
MEAN= 0.048 STD.DEV.= COEF.VAR.= 5.51 %
AS 0026
0.092 0.093
MEAN= 0.092 STD.DEV.= COEF.VAR.= 1.39 %

7 of 10

AS 0027 0.039
AS 0028 0.058
AS 0029 0.083
AS 0030 0.105
AS 0031 0.069
AS 0032 0.087
AS 0033 0.112
AS 0034 0.127
AS 0035
0.129 0.144
MEAN= 0.136 STD.DEV.= COEF.VAR.= 8.07 % 12:45
AS 0036
0.000 -0.003
MEAN= -0.001 STD.DEV.= COEF.VAR.= 99.99 % 12:50

Asc Tray 2 VERSCDM-4 (Soil) 5-16-90 mc

AS 0001 0.024
AS 0002 0.047
AS 0003 0.068
AS 0004 0.096
AS 0005 0.056
AS 0006 0.091
AS 0007 0.105
AS 0008 0.143

AS 0009 0.058
AS 0010 0.089
AS 0011 0.119
AS 0012 0.139
AS 0013 0.137
AS 0014 -0.002

13:25
13:27

PRERUN

VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: PbC DATE: 5-15-90 PAGE 1 OF 9

CODE-BATCH: ENG/BLOM - 1,2
VERSCDM-4 (SOIL, HOH)

CONTROL #: 2643, 2660
2565

Instrument #: 10
Wavelength: 283.3 Slit: 0.7
Signal: ____ Pk.Ht. 1 Pk.Area
Background Correction: 1 BZ ___ BD

Light Source: EDL
Current/Power: 9W
Tube: LV Pipet Vol.: 15 ul
Replicates: 2 Purge: 0 Ar

Standard Prep.: Date: 5-15-90
Time: 07:30
Source: IV

Matrix Modifiers: 1 yes ___ no

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	110	700	1600	2500	20
Ramp (s)	5	5	0	1	2
Hold (s)	30	15	5	3	8
BOC (s)					
Rec. (s)					

CALIBRATION CURVE

CUP	STANDARD	AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB 0ppb	0			r= 0.9999
2	STD1 5	21			CRA= 5.04
3	STD2 10	42			
4	STD3 20	79			
5	STD4 50	196			
6	ICV# 4	103	26.08	1:3	[97.5] 107.0%
7	ICB 0ppb	3	<1.0		

Time of Calibration: 17:45

Analyst: SLG

Reviewer: [illegible]

VERSAR, INC. GFAA ANALYSIS LOG SHEET Page 3 of 9

RERUN

ELEMENT: PbC CODE-BATCH: VERSCDM-4 (SOIL, HOH) CONTROL #: 2565

DATE: 5-15-90 TRAY #: 1 CALIB. TIME: 17:45

CUP	LAB/EPA SAMPLE #		AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	PBS	+B	1				RERUN -CCV FAILE
2		+10	43				
3	LCSS	+B	42		1:99		
4		+10	83				
5	16928	+B	—				RERUN 1:49 OVER TOPS
6		+10	—				
7	16929	+B	963				
8		+10	938				
9	16930	+B	—				
10		+10	—				
11	CCV1		233				CCV FAILED RERUN
12	CCB1		30				
13	16931	+B	147				RERUN 1:1
14		+10	186				
15	16932	+B	849				RERUN 1:49
16		+10	872				
17	16933	+B	583				RERUN 1:3
18		+10	585				
19	16934	+B	513				
20		+10	543				
21	16935	+B	856				
22		+10	891				
23	CCV2		97				
24	CCB2		7				
25	16936	+B	904				1:99 RERUN 1:9
26		+10	932				
27	PBW	+B	33				
28		+10	48				
29	LCSWB	+B	107				
30		+10	140				
31	16937	+B	8				
32		+10	42				
33	16937D	+B	4				
34		+10	42				
35	CCV3		97				
36	CCB3		2				
37							
38							
39							
40							SKS

CCV= _____

ICV= _____

( )= % recovery of MSA

* = _____g/_____L (_____wt.)

SPIKE=(HOH) _____ug/l

=(SOLID) _____mg/kg

=(BENCH) _____

ANALYST: _____

00134

```
PB
17:45 -0.002            0.000
-----------------------------------------------------------------------
MEAN=    -0.001     STD.DEV.=              COEF.VAR.=  99.99 %
***********************************************************************
  0.000          AUTOZERO
***********************************************************************
PB   0001
17:49 -0.003            0.002
-----------------------------------------------------------------------
MEAN=     0.000     STD.DEV.=              COEF.VAR.=  99.99 %
***********************************************************************
PB   0002
17:53 0.023             0.019
-----------------------------------------------------------------------
MEAN=     0.021     STD.DEV.=              COEF.VAR.=  13.84 %
***********************************************************************
PB   0003
17:57 0.039             0.044
-----------------------------------------------------------------------
MEAN=     0.042     STD.DEV.=              COEF.VAR.=  9.40  %
***********************************************************************
PB   0004
18:01 0.078             0.081
-----------------------------------------------------------------------
MEAN=     0.079     STD.DEV.=              COEF.VAR.=  3.17  %
***********************************************************************
PB   0005
18:05 0.192             0.201
-----------------------------------------------------------------------
MEAN=     0.196     STD.DEV.=              COEF.VAR.=  3.22  %
***********************************************************************
PB   0006
18:09 0.103             0.103
-----------------------------------------------------------------------
MEAN=     0.103     STD.DEV.=              COEF.VAR.=  0.17  %
***********************************************************************
PB   0007
18:13 0.002             0.004
-----------------------------------------------------------------------
MEAN=     0.003     STD.DEV.=              COEF.VAR.=  37.69 %
***********************************************************************
```

Calibration

ENGIBLOM-1, 2
(2643, 2660)
VERSCDM-4 (SOIL, HOH) — PRERUN
(2565)

5-15-90
SLG
#10

5 of 9

18:20 PB 0001
0.005 0.002
MEAN= 0.004 STD.DEV.= COEF.VAR.= 60.27 %

18:24 PB 0002
0.042 0.045
MEAN= 0.043 STD.DEV.= COEF.VAR.= 4.61 %

18:28 PB 0003
0.045 0.042
MEAN= 0.044 STD.DEV.= COEF.VAR.= 4.80 %

18:32 PB 0004
0.087 0.083
MEAN= 0.085 STD.DEV.= COEF.VAR.= 3.56 %

18:36 PB 0005
0.105 0.101
MEAN= 0.103 STD.DEV.= COEF.VAR.= 2.46 %

18:40 PB 0006
0.137 0.146
MEAN= 0.141 STD.DEV.= COEF.VAR.= 4.56 %

18:44 PB 0007
0.096 0.094
MEAN= 0.095 STD.DEV.= COEF.VAR.= 1.10 %

18:48 PB 0008
0.137 0.134
MEAN= 0.136 STD.DEV.= COEF.VAR.= 1.52 %

8:52 PB 0009
0.178 0.174
MEAN= 0.176 STD.DEV.= COEF.VAR.= 1.49 %

18:56 PB 0010
0.079 0.078
MEAN= 0.079 STD.DEV.= COEF.VAR.= 0.98 %

~~18:~~ 19:00 PB 0011
0.099 0.101
MEAN= 0.100 STD.DEV.= COEF.VAR.= 1.06 %

ENGIBLOM -1,2
(2643, 2660)
SLG
#10
tray 1

19:04 PB 0012
0.001 -0.002
MEAN= 0.000 STD.DEV.= COEF.VAR.= 99.99 %

19:08 PB 0013
0.077 0.077
MEAN= 0.077 STD.DEV.= COEF.VAR.= 0.41 %

19:12 PB 0014
0.129 0.137
MEAN= 0.133 STD.DEV.= COEF.VAR.= 4.24 %

12:16 PB 0015
0.171 0.172

6 of 9

```
MEAN=     0.171     STD.DEV.=              COEF.VAR.=  0.77  %
*****************************************************************
PB   0016
  0.127             0.131
-----------------------------------------------------------------
MEAN=     0.129     STD.DEV.=              COEF.VAR.=  1.80  %
*****************************************************************
PB   0017
  0.169             0.158
-----------------------------------------------------------------
MEAN=     0.163     STD.DEV.=              COEF.VAR.=  4.51  %
*****************************************************************
PB   0018
  0.117             0.115
-----------------------------------------------------------------
MEAN=     0.116     STD.DEV.=              COEF.VAR.=  1.46  %
*****************************************************************
PB   0019
  0.155             0.154
-----------------------------------------------------------------
MEAN=     0.154     STD.DEV.=              COEF.VAR.=  0.30  %
*****************************************************************
PB   0020
  0.101             0.102
-----------------------------------------------------------------
MEAN=     0.101     STD.DEV.=              COEF.VAR.=  0.60  %
*****************************************************************
PB - 0021
  0.005            -0.001
-----------------------------------------------------------------
MEAN=     0.002     STD.DEV.=              COEF.VAR.=  99.99 %
*****************************************************************
```

19:20

19:24

19:28

19:32

19:36

19:.0

ENGIBLOM-1,2
(2643, 2660)
SLG
#10
tray 1

7 of 9

PB 0001
0.001 0.000

MEAN= 0.001 STD.DEV.= COEF.VAR.= 99.33 %
****
PB 0002
0.047 0.040

MEAN= 0.043 STD.DEV.= COEF.VAR.= 11.59 %
****
PB 0003
0.043 0.040

MEAN= 0.042 STD.DEV.= COEF.VAR.= 4.23 %
****
PB 0004
0.081 0.086

MEAN= 0.083 STD.DEV.= COEF.VAR.= 4.42 %
****
PB 0005
1.542
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE
1.502
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

MEAN= 1.522 STD.DEV.= COEF.VAR.= 1.83 %
****
PB 0006
1.545
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE
1.579
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

MEAN= 1.562 STD.DEV.= COEF.VAR.= 1.55 %
****
PB 0007
0.980 0.947

MEAN= 0.963 STD.DEV.= COEF.VAR.= 2.43 %
****
PB 0008
0.942 0.934

MEAN= 0.938 STD.DEV.= COEF.VAR.= 0.57 %
****
PB 0009
1.740
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE
1.779
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

MEAN= 1.760 STD.DEV.= COEF.VAR.= 1.57 %
****
PB 0010
1.816
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE
1.872
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

MEAN= 1.844 STD.DEV.= COEF.VAR.= 2.17 %
****

PB 0011
0.302 0.163

MEAN= 0.233 STD.DEV.= COEF.VAR.= 42.17 %
****
PB 0012
0.035 0.026

MEAN= 0.030 STD.DEV.= COEF.VAR.= 20.95 %
****
PB 0013
0.158 0.136

MEAN= 0.147 STD.DEV.= COEF.VAR.= 10.44 %
****
PB 0014
0.188 0.185

PRERUN

EX SKG

VERSCDM-4
(SOIL, HOH)
2565

#10

SKG

tray 1

8 of 9

MEAN= 0.186 STD.DEV.= COEF.VAR.= 1.35 %
****
PB 0015
0.869
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE
0.829

MEAN= 0.849 STD.DEV.= COEF.VAR.= 3.33 %
****
PB 0016
0.891
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE
0.853

MEAN= 0.872 STD.DEV.= COEF.VAR.= 3.07 %
****
PB 0017
0.584 0.582

MEAN= 0.583 STD.DEV.= COEF.VAR.= 0.21 %
****
PB 0018
0.579 0.592

MEAN= 0.585 STD.DEV.= COEF.VAR.= 1.51 %
****
PB 0019
0.512 0.515

MEAN= 0.513 STD.DEV.= COEF.VAR.= 0.48 %
****
PB 0020
0.547 0.540

MEAN= 0.543 STD.DEV.= COEF.VAR.= 0.88 %
****
PB 21
0.362 0.350

MEAN= 0.356 STD.DEV.= COEF.VAR.= 2.35 %
****
PB 22
0.389 0.392

MEAN= 0.391 STD.DEV.= COEF.VAR.= 0.39 %
****
PB 23
0.110 0.085

MEAN= 0.097 STD.DEV.= COEF.VAR.= 17.68 %
****
PB 24
0.010 0.005

MEAN= 0.007 STD.DEV.= COEF.VAR.= 54.73 %
****
PB 25
0.887 0.920

MEAN= 0.904 STD.DEV.= COEF.VAR.= 2.58 %
****
PB 26
0.921 0.942

MEAN= 0.932 STD.DEV.= COEF.VAR.= 1.53 %
****
PB 27
0.044 0.021

MEAN= 0.033 STD.DEV.= COEF.VAR.= 48.09 %
****
PB 28
0.051 0.044

MEAN= 0.048 STD.DEV.= COEF.VAR.= 9.84 %
****
PB 29
0.108 0.107

MEAN= 0.107 STD.DEV.= COEF.VAR.= 0.47 %
****
PB 30
0.139 0.140

PRERUN
VERSCDM-4
(SOIL, HOH)
2565
#10
SLG
tray 1

9 of 9

MEAN= 0.140 STD.DEV.= COEF.VAR.= 0.46 %

****

PB

0.009 0.007

MEAN= 0.008 STD.DEV.= COEF.VAR.= 15.74 %

****

31

PB 32

0.043 0.041

MEAN= 0.042 STD.DEV.= COEF.VAR.= 2.78 %

****

PB 33

0.003 0.005

MEAN= 0.004 STD.DEV.= COEF.VAR.= 39.23 %

****

PB 34

0.043 0.041

MEAN= 0.042 STD.DEV.= COEF.VAR.= 4.45 %

****

PB 35

0.094 0.101

MEAN= 0.097 STD.DEV.= COEF.VAR.= 5.02 %

****

PB 36

0.006 -0.001

MEAN= 0.002 STD.DEV.= COEF.VAR.= 99.99 %

****

PRERUN

SKG

VERSCDM-4

(SOIL, HOH)

2565

#10

tray 1

VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: Pb C DATE: 5-17-90 PAGE 1 OF 11

CODE-BATCH: VERSCDM-4 (HOH) CONTROL #: 2565
ENGIALBA-5 (HOH) 2670

Instrument #: 10
Wavelength: 283.3 Slit: 0.7
Signal: ____ Pk.Ht. ✓ Pk.Area
Background Correction: ✓ BZ ____ BD

Light Source: EDL #5 58 E
Current/Power: 9 watts
Tube: LV Pipet Vol.: 10 ul
Replicates: 2 Purge: 0 Ar

Standard Prep.: Date: 05-17-90
Time: 07:30
Source: I ✓

Matrix Modifiers: ✓ yes ____ no

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	100	700	1600	2500	20
Ramp (s)	5	5	0	1	2
Hold (s)	20	15	5	3	8
BOC (s)					
Rec. (s)					

Bad

CALIBRATION CURVE

CUP	STANDARD	AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB 0 ppb	-4			r= 0.9998
2	STD1 5	16			CRA= 5.38
3	STD2 10	33			
4	STD3 20	66			
5	STD4 50	172			
6	ICV# 4	88	25.99	4fold	[97.5] 106.7%
7	ICB 0 ppb	-2	<1.0		

Time of Calibration: 09:30

Analyst: MC

Reviewer: dow

VERSAR, INC. GFAA ANALYSIS LOG SHEET

ELEMENT: PbC CODE-BATCH: VERSCDM-4 (HOH) CONTROL #: 2565

DATE: 5-17-90 TRAY #: 1 CALIB. TIME: 09:30

CUP	LAB/EPA SAMPLE #		AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	PBW	+B	0	<1.0		* mc	
2		+10	33	10.2		mc	(102.0) 104.3%
3	LCSWB	+B	86	25.4	4fold	mc	[97.9][97.5] ~~103.9~~ % mc
4		+10	118	34.6		mc	(92.0)
5	LCSM		66	19.7		mc	[20] 98.5 %
6	16937	+B	4	1.94W		mc	
7		+10	33	10.2		mc	(82.6)
8	16937D	+B	2	1.37W		mc	RPD = ~~NC~~ 34.4%
9		+10	31	9.67		mc	(83.0)
10	16937S		73	21.7		mc	[20] 98.8%
11	CCV1		81	23.98			95.9%
12	CCB1		-3	<1.0			
13	16948	+B	0	<1.0		* mc	
14		+10	32	9.96		mc	(99.6)
15	PBS	+B	-1	<1.0			
16		+10	32	9.96			(99.6) 86.8%
17	LCSS	+B	33	10.2 ~~10.2~~ mc	100fold		[236] ~~Rerun~~ mc %
18		+10	66	19.7			(95.0) to verify
19	16928	+B	63	18.8	50fold		
20		+10	100	29.4			(106.0)
21	16929	+B	18	5.95	50fold		
22		+10	51	15.4			(94.5)
23	CCV2		83	24.56			98.2%
24	CCB2		1	<1.0			
25	16930	+B	124	36.3	50fold	*	
26		+10	155	45.2			(89.0)
27	16931	+B	65	~~19.4~~ mc	2fold		Rerun 4 pt
28		+10	94	27.7			(83.0)
29	16932	+B	22	7.09	50fold		
30		+10	55	16.5			(94.1)
31	16933	+B	144	~~42.0~~ mc	4fold		Rerun 5fold
32		+10	175	50.9			(89.0) above linear range
33	16934	+B	120	~~35.2~~ mc	4fold		Rerun 4 pt
34		+10	147	42.9			(77.0)
35	CCV3		81	23.98			95.9%
36	CCB3		-2	<1.0			
37							
38							
39							
40							

CCV= NBS@ 25 ppb

ICV=

( )= % recovery of MSA

* = 1 g/ 0.2 L (wet wt.)

SPIKE=(HOH) _____ ug/l

=(SOLID) _____ mg/kg

=(BENCH) _____

ANALYST: MC

VERSAR, INC. GFAA ANALYSIS LOG SHEET

ELEMENT: PbC CODE-BATCH: VERSCDM-4 (Soil) ~~(HOH)~~ CONTROL #: 2565

DATE: 5-17-90 TRAY #: 2 CALIB. TIME: 09:30

CUP	LAB/EPA SAMPLE #		AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	16935	+B	31	9.67	10 fold	*	
2		+10	64	19.1			(94.3)
3	16936	+B	101	29.7	10 fold		
4		+10	133	38.9			(92.0)
5	16931	+B	43	14.2	3 fold		
6		+5	55				r=0.9979
7		+10	69				m=2.92
8		+20	101				b=41.4
9	16934	+B	45	15.2	10 fold		
10		+5	59				r=0.9956
11		+10	79				m=2.99
12		+20	104				b=45.6
13	LCSS	+B	33				~~Lowe~~ mc spiking error
14		+10	32				verified +B value
15	CCV4		80	23.70			94.8%
16	CCB4		3	<1.0			
17	~~LCSS~~ mc	~~+B~~					
18		+10					
19	CCV5						
20	CCB5						
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

CCV= NBS @ 25 ppb
ICV=
( )= % recovery of MSA
* = 1 g/ 0.2 L (wet wt.)

SPIKE=(HOH) ____ ug/l
=(SOLID) ____ mg/kg
=(BENCH) ____

ANALYST: mc

PbC

Calibration Curve 5-17-90 mc

5 of 11

```
  0.006          0.004
-----------------------------------------------------------------------
MEAN=    0.005    STD.DEV.=              COEF.VAR.=  16.77 %
***********************************************************************
  0.000          AUTOZERO
***********************************************************************
PB    0001
 -0.003          -0.005
-----------------------------------------------------------------------
MEAN=   -0.004    STD.DEV.=              COEF.VAR.=  34.06 %
***********************************************************************
PB    0002
  0.017          0.015
-----------------------------------------------------------------------
MEAN=    0.016    STD.DEV.=              COEF.VAR.=  10.91 %
***********************************************************************
PB    0003
  0.033          0.033
-----------------------------------------------------------------------
MEAN=    0.033    STD.DEV.=              COEF.VAR.=  0.59  %
***********************************************************************
PB    0004
  0.065          0.067
-----------------------------------------------------------------------
MEAN=    0.066    STD.DEV.=              COEF.VAR.=  1.60  %
***********************************************************************
PB    0005
  0.173          0.170
-----------------------------------------------------------------------
MEAN=    0.172    STD.DEV.=              COEF.VAR.=  0.86  %
***********************************************************************
PB    0006
  0.090          0.086
-----------------------------------------------------------------------
MEAN=    0.088    STD.DEV.=              COEF.VAR.=  2.98  %          10:00
***********************************************************************
PB    0007
 -0.001          -0.003
-----------------------------------------------------------------------
MEAN=   -0.002    STD.DEV.=              COEF.VAR.=  79.71 %          10:05
***********************************************************************
```

PbC Tray 1 VERSCDM-4 (HOH) (SOIL) 5-17-90 mc

```
PB    0001
 -0.002          0.002
-----------------------------------------------------------------------
MEAN=    0.000    STD.DEV.=              COEF.VAR.=  99.99 %
***********************************************************************
PB    0002
  0.032          0.034
-----------------------------------------------------------------------
MEAN=    0.033    STD.DEV.=              COEF.VAR.=  4.14  %
***********************************************************************
PB    0003
  0.085          0.087
-----------------------------------------------------------------------
MEAN=    0.086    STD.DEV.=              COEF.VAR.=  1.74  %
***********************************************************************
PB    0004
  0.118          0.118
-----------------------------------------------------------------------
MEAN=    0.118    STD.DEV.=              COEF.VAR.=  0.10  %
***********************************************************************
PB    0005
  0.066          0.067
-----------------------------------------------------------------------
MEAN=    0.066    STD.DEV.=              COEF.VAR.=  0.13  %
***********************************************************************
PB    0006
  0.007          0.000
-----------------------------------------------------------------------
MEAN=    0.004    STD.DEV.=              COEF.VAR.=  99.99 %
***********************************************************************
PB    0007
  0.028          0.038
-----------------------------------------------------------------------
MEAN=    0.033    STD.DEV.=              COEF.VAR.=  20.17 %
***********************************************************************
PB    0008
  0.002          0.002
```

MEAN= 0.002 STD.DEV.= COEF.VAR.= 10.39 %

****

PB 0009

0.029 0.033

MEAN= 0.031 STD.DEV.= COEF.VAR.= 7.14 %

****

PB 0010

0.071 0.075

MEAN= 0.073 STD.DEV.= COEF.VAR.= 4.10 %

****

PB 0011

0.079 0.083

MEAN= 0.081 STD.DEV.= COEF.VAR.= 3.57 % 11:00

****

PB 0012

-0.002 -0.003

MEAN= -0.003 STD.DEV.= COEF.VAR.= 41.94 % 11:05

****

PB 0013

0.000 0.001

MEAN= 0.000 STD.DEV.= COEF.VAR.= 99.99 %

****

PB 0014

0.033 0.030

MEAN= 0.032 STD.DEV.= COEF.VAR.= 6.78 %

****

PB 0015

0.001 -0.003

MEAN= -0.001 STD.DEV.= COEF.VAR.= 99.99 %

****

PB 0016

0.032 0.032

MEAN= 0.032 STD.DEV.= COEF.VAR.= 1.00 %

****

PB 0017

0.034 0.033

MEAN= 0.033 STD.DEV.= COEF.VAR.= 1.98 %

****

PB 0018

0.067 0.064

MEAN= 0.066 STD.DEV.= COEF.VAR.= 3.04 %

****

PB 0019

0.064 0.062

MEAN= 0.063 STD.DEV.= COEF.VAR.= 3.05 %

****

PB 0020

0.100 0.100

MEAN= 0.100 STD.DEV.= COEF.VAR.= 0.40 %

****

PB 0021

0.019 0.017

MEAN= 0.018 STD.DEV.= COEF.VAR.= 8.99 %

****

PB 0022

0.048 0.054

MEAN= 0.051 STD.DEV.= COEF.VAR.= 8.78 %

****

PB 0023

0.081 0.085

MEAN= 0.083 STD.DEV.= COEF.VAR.= 3.18 % 12:00

****

6 of 11

P6C Tray1 (cont.) VERSCDM-4 (HOH) (SOIL) 5-17-90 mc

Pb C ~~Calibration Curve~~ Tray 1 mc VERSCDM-4 (1+0M)(Soil) 5-17-90 mc

PB 0024
0.000 0.001
MEAN= 0.001 STD.DEV.= COEF.VAR.= 99.99 % 12:05
****
PB 0025
0.123 0.124
MEAN= 0.124 STD.DEV.= COEF.VAR.= 0.75 %
****
PB 0026
0.156 0.155
MEAN= 0.155 STD.DEV.= COEF.VAR.= 0.17 %
****
PB 0027
0.066 0.065
MEAN= 0.065 STD.DEV.= COEF.VAR.= 0.94 %
****
PB 0028
0.095 0.093
MEAN= 0.094 STD.DEV.= COEF.VAR.= 1.93 %
****
PB 0029
0.022 0.023
MEAN= 0.022 STD.DEV.= COEF.VAR.= 2.41 %
****
PB 0030
0.053 0.057
MEAN= 0.055 STD.DEV.= COEF.VAR.= 4.96 %
****
PB 0031
0.143 0.144
MEAN= 0.144 STD.DEV.= COEF.VAR.= 0.39 %
****
PB 0032
0.178 0.172
MEAN= 0.175 STD.DEV.= COEF.VAR.= 2.38 %
****
PB 0033
0.119 0.121
MEAN= 0.120 STD.DEV.= COEF.VAR.= 1.06 %
****
PB 0034
0.146 0.149
MEAN= 0.147 STD.DEV.= COEF.VAR.= 1.29 %
****

7 of 11

PB 0035
0.081 0.082
MEAN= 0.081 STD.DEV.= COEF.VAR.= 1.24 % 13:00
****
PB 0036
0.000 -0.003
MEAN= -0.002 STD.DEV.= COEF.VAR.= 99.99 % 13:05
****

Pb Tray 2 VERSCDM-4 (soil) 5-17-90 mc

8 of 11

PB 0001
0.031 0.031

MEAN= 0.031 STD.DEV.= COEF.VAR.= 1.29 %

PB 0002
0.062 0.066

MEAN= 0.064 STD.DEV.= COEF.VAR.= 4.85 %

PB 0003
0.104 0.097

MEAN= 0.101 STD.DEV.= COEF.VAR.= 4.75 %

PB 0004
0.133 0.133

MEAN= 0.133 STD.DEV.= COEF.VAR.= 0.12 %

PB 0005 0.043
PB 0006 0.055
PB 0007 0.069
PB 0008 0.101
PB 0009 0.045
PB 0010 0.059
PB 0011 0.079
PB 0012 0.104
PB 0013
0.032 0.034

MEAN= 0.033 STD.DEV.= COEF.VAR.= 2.92 %

PB 0014
0.032 0.032

MEAN= 0.032 STD.DEV.= COEF.VAR.= 2.02 %

PB 0015
0.079 0.082

MEAN= 0.080 STD.DEV.= COEF.VAR.= 2.00 % 14:05 ~~40~~ mc

PB 0016
0.001 0.005

MEAN= 0.003 STD.DEV.= COEF.VAR.= 77.78 % 14:10 ~~45~~ mc

VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: Pb 3 / PbC DATE: 6-11-90 PAGE 1 OF ___

CODE-BATCH: Nyswet - 15 / Engi bloom - 3
Versdm - 4 / GHR / Hite - 7

CONTROL #: 2728
2721
2565
2645

Instrument #: 11
Wavelength: 283.3 Slit: 0.7
Signal: ___ Pk. Ht. ✓ Pk. Area
Background Correction: ✓ BZ ___ BD

Light Source: EDL
Current/Power: 9
Tube: Platform Pipet Vol.: 10 ul
Replicates: 2 Purge: 0 Ar

Standard Prep.: Date: 6-11-90
Time: 0730
Source: Inorganic Ventures

Matrix Modifiers: ✓ yes ___ no

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	120	700	1600	2500	20
Ramp (s)	5	5	0	1	2
Hold (s)	20	15	5	3	8
BOC (s)	–	–	–	–	–
Rec. (s)	–	–	–	–	–

CALIBRATION CURVE

CUP	STANDARD		AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB	0.0 ppb	4			r= 0.9998
2	STD1	5.0	27	~~5.30~~		CRA= 5.30
3	STD2	10.0	47			
4	STD3	20.0	95			
5	STD4	50.0	209			
6	ICV#	4	105	24.97	4 fold	[97.5 ppb]
7	ICB	0.0 ppb	2	-1.00		

Time of Calibration: 0900

Analyst: CJ

Reviewer: ___

VERSAR, INC. GFAA ANALYSIS LOG SHEET Page ____ of ____

ELEMENT: Pb 3/PbC CODE-BATCH: ~~Versecon-4~~ TLN Uuswes - 15/Engibloom-3 CONTROL #: 2565 ~~2721~~ 2.22ln

DATE: 6-11-90 TRAY #: 2 CALIB. TIME: 0900

CUP	LAB/EPA SAMPLE #		AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	20532	+B	69	15.9			
2		+10	111	26.5			(106.0)
3	20533	+B	2	<1.6			
4		+10	46	10.1			(101.0)
5	20525	+B	9	<1.0			Not Needed
6		+10	55	12.4			(124.0)
7	CCV #4		99	23.46			93.8%
8	CCB #4		1	-1.2			
9	20525 D	+B	23	4.3			Not Needed
10		+10	62	14.1			(79.0)
11	20530	+B	49	14.6	10 fold		r = 0.9977
12		+5	75				b/a = 55.6
13		+10	102				m = 3.8
14		+20	127				
15	20530	+B	57	15.4	10 fold		r = 0.9998
16		+5	78				b/a = 66
17		+10	103				m = 3.6
18		+20	130				
19	CCV #5		103	24.46			97.8%
20	CCB #5		5	<1.0			
21	20250	+B	14	2.0			Cont # 2721
22		+10	51	11.4			(99.0)
23	CCV #6		105	24.97			
24	CCB #6		6	<1.0			
25	16933	+B	71	16.4	10 FOLD	0.25	Cont # 2565
26		+10	112	26.7			(103.0)
27	CCV #7		100	23.71			94.8%
28	CCB #7		0	-1.5			
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

CCV= 25ppb

ICV= 97.5ppb

( )= % recovery of MSA

* = 1 g/ 0.2 L (WET wt.)

SPIKE=(HOH) 50 ug/l

=(SOLID) ____ mg/kg

=(BENCH) ____

ANALYST: cf

00140

```
PB
  0.004                0.000
-----------------------------------------------------------------------
MEAN=      0.002      STD.DEV.=                  COEF.VAR.=  99.99 %
***********************************************************************
  0.000             AUTOZERO
***********************************************************************
PB     0001
  0.002                0.006
-----------------------------------------------------------------------
MEAN=      0.004      STD.DEV.=                  COEF.VAR.=  79.38 %
***********************************************************************
PB     0002
  0.025                0.028
-----------------------------------------------------------------------
MEAN=      0.027      STD.DEV.=                  COEF.VAR.=  7.59  %
***********************************************************************
PB     0003
  0.048                0.046
-----------------------------------------------------------------------
MEAN=      0.047      STD.DEV.=                  COEF.VAR.=  1.95  %
***********************************************************************
PB     0004
  0.081                0.088
-----------------------------------------------------------------------
MEAN=      0.085      STD.DEV.=                  COEF.VAR.=  6.59  %
***********************************************************************
PB     0005
  0.206                0.202
-----------------------------------------------------------------------
 AN=       0.204      STD.DEV.=                  COEF.VAR.=  1.61  %
***********************************************************************
PB     0006
  0.106                0.103
-----------------------------------------------------------------------
MEAN=      0.105      STD.DEV.=                  COEF.VAR.=  2.05  %
***********************************************************************
PB     0007
  0.000                0.004
-----------------------------------------------------------------------
MEAN=      0.002      STD.DEV.=                  COEF.VAR.=  99.99 %
***********************************************************************
```

914

916

Pb3 / PbC

CJ

Nuswes-15 / Engibloom-3 / Versom-4

GHR/Hite-7

2728
2721
2565
2645

6-11-90 calibration

PB 0001 0.007
PB 0002 0.013
PB 0003 0.016
PB 0004 0.015
PB 0005 0.035
PB 0006 0.024
PB 0007 0.017
PB 0008 0.558
PB 0009 1.031
PB 0010 0.115
PB 0011 0.003
PB 0012 0.745

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

PB 0013 0.006
~~PB 0014 0.002~~
~~PB 0015 0.049~~ were To Be Run at Double Injection
PB 0014

0.005 0.004

MEAN= 0.005 STD.DEV.= COEF.VAR.= 21.18 %

PB 0015
0.049 0.045

MEAN= 0.047 STD.DEV.= COEF.VAR.= 7.23 %

PB 0016
0.107 0.109

MEAN= 0.108 STD.DEV.= COEF.VAR.= 1.85 %

PB 0017
0.013 0.009

MEAN= 0.011 STD.DEV.= COEF.VAR.= 22.26 %

PB 0018
0.055 0.047

MEAN= 0.051 STD.DEV.= COEF.VAR.= 10.47 %

PB 0019
0.013 0.009

MEAN= 0.011 STD.DEV.= COEF.VAR.= 21.85 %

PB 0020
0.057 0.056

MEAN= 0.057 STD.DEV.= COEF.VAR.= 0.45 %

PB 0021
0.028 0.022

MEAN= 0.025 STD.DEV.= COEF.VAR.= 15.84 %

PB 0022
0.066 0.064

MEAN= 0.065 STD.DEV.= COEF.VAR.= 2.59 %

PB 0023
0.099 0.094

MEAN= 0.097 STD.DEV.= COEF.VAR.= 3.59 %

PB 0024
0.005 0.002

MEAN= 0.003 STD.DEV.= COEF.VAR.= 56.48 %

Pb3/PbC
C
GHR/HITC-7/NUSWES-15/Engibloom-3/UCUSCOM-9
2645 2728 2721 2565
6-11-90 Tray 1

PB 0025
0.119 0.108

MEAN= 0.111 STD.DEV.= COEF.VAR.= 9.95 %

PB 0026

0.012 0.009

MEAN= 0.011 STD.DEV.= COEF.VAR.= 20.79 %

PB 0027

0.054 0.058

MEAN= 0.056 STD.DEV.= COEF.VAR.= 5.82 %

PB 0028

0.032 0.029

MEAN= 0.030 STD.DEV.= COEF.VAR.= 7.49 %

PB 0029

0.074 0.072

MEAN= 0.073 STD.DEV.= COEF.VAR.= 2.83 %

PB 0030

0.026 0.027

MEAN= 0.026 STD.DEV.= COEF.VAR.= 3.97 %

PB 0031

0.067 0.065

MEAN= 0.066 STD.DEV.= COEF.VAR.= 2.16 %

PB 0032

0.016 0.010

MEAN= 0.013 STD.DEV.= COEF.VAR.= 33.42 %

PB 0033

0.060 0.053

MEAN= 0.057 STD.DEV.= COEF.VAR.= 9.21 %

cf 1007 PB 0034

0.100 0.098

MEAN= 0.099 STD.DEV.= COEF.VAR.= 1.66 %

cf 1011 PB 0035

0.006 -0.004

MEAN= 0.001 STD.DEV.= COEF.VAR.= 99.99 %

Pb3 / Pb6 C

cf

GHR/White-7 / Nuswes-15 / Engibloom-3 / Veoscdr

2645 2728 2721 2565

PB 0036

0.051 0.049 6-11-90 Trey 1

MEAN= 0.050 STD.DEV.= COEF.VAR.= 2.44 %

PB 0037

0.098 0.101

MEAN= 0.100 STD.DEV.= COEF.VAR.= 2.39 %

PB 0038

0.118 0.107

MEAN= 0.113 STD.DEV.= COEF.VAR.= 6.75 %

PB 0039

0.150 0.147

MEAN= 0.148 STD.DEV.= COEF.VAR.= 1.42 %

PE 0001
0.072 0.066
MEAN= 0.069 STD.DEV.= COEF.VAR.= 5.77 %
****
PE 0002
0.108 0.115
MEAN= 0.111 STD.DEV.= COEF.VAR.= 4.39 %
****
PE 0003
0.001 0.003
MEAN= 0.002 STD.DEV.= COEF.VAR.= 56.01 %
****
PE 0004
0.047 0.045
MEAN= 0.046 STD.DEV.= COEF.VAR.= 3.11 %
****
PE 0005
0.009 0.009
MEAN= 0.009 STD.DEV.= COEF.VAR.= 1.81 %
****
PE 0006
0.052 0.058
MEAN= 0.055 STD.DEV.= COEF.VAR.= 7.98 %
****
35 E 0007
0.100 0.098
MEAN= 0.099 STD.DEV.= COEF.VAR.= 1.57 %
****
37 PE 0008
0.002 0.000
MEAN= 0.001 STD.DEV.= COEF.VAR.= 39.99 %
****
PE 0009
0.022 0.024
MEAN= 0.023 STD.DEV.= COEF.VAR.= 4.73 %
****
PE 0010
0.063 0.061
MEAN= 0.062 STD.DEV.= COEF.VAR.= 1.81 %
****
PE 0011 0.0[illegible]
E 0012 0.0[illegible]
E 0013 0.[illegible]
PE 0014 0.1[illegible]
PE 0015 0.0[illegible]
PE 0016 0.0[illegible]
PE 0017 0.1[illegible]
PE 0018 0.1[illegible]

Pb3/PbC Cf

GHR/Hite-7 2645 / Nuswrs-15 2728 / Engi bloom-3 2721 /

Verseam-4 2565

Tray 2 6-11-90

49 PE 0019
0.107 0.100
MEAN= 0.103 STD.DEV.= COEF.VAR.= 4.43 %
****
51 PE 0020
0.008 0.003
MEAN= 0.005 STD.DEV.= COEF.VAR.= 53.45 %
****

PB 0021
0.018 0.010
MEAN= 0.014 STD.DEV.= COEF.VAR.= 39.19 %
****
PB 0022
0.052 0.049
MEAN= 0.051 STD.DEV.= COEF.VAR.= 4.37 %
****
1057 PB 0023
0.102 0.108
MEAN= 0.105 STD.DEV.= COEF.VAR.= 3.37 %
****
1059 PB 0024
0.007 0.005
MEAN= 0.006 STD.DEV.= COEF.VAR.= 26.35 %
****
PB 0025
0.072 0.070
MEAN= 0.071 STD.DEV.= COEF.VAR.= 1.72 %
****
PB 0026
0.110 0.114
MEAN= 0.112 STD.DEV.= COEF.VAR.= 2.85 %
****
1105 B 0027
0.097 0.104
MEAN= 0.100 STD.DEV.= COEF.VAR.= 5.45 %
****
1107 PB 0028
0.001 -0.001
MEAN= 0.000 STD.DEV.= COEF.VAR.= 99.99 %
****

Pb3/PbC cj

GHR/Hite-7 / Nuswes-15 / Engiblom-3
2645 / 2728 2721

Verscom-4
2565

Try 2

cj 6-11-90

VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: Sec DATE: 5-16-90 PAGE 1 OF 3

CODE-BATCH: VERSCOM - 4 CONTROL #: 2565

Instrument #: 5
Wavelength: 190.0 Slit: 2.0
Signal: ____ Pk.Ht. X Pk.Area
Background Correction: X BZ ___ BD

Light Source: EDL
Current/Power: 6watts
Tube: LVP Pipet Vol.: 20 ul
Replicates: 2 Purge: 0 Ar

Standard Prep.: Date: 5-16-90
Time: 0730
Source: I.V.

Matrix Modifiers: X yes ____ no

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	120	1000	2000	2500	20
Ramp (s)	5	5	0	1	2
Hold (s)	30	15	5	3	0
BOC (s)		14			
Rec. (s)		15			

CALIBRATION CURVE

CUP	STANDARD	AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB 0.0 ppb	-2			r= .9997
2	STD1 5.0	20			CRA= 5.29
3	STD2 10.0	38			
4	STD3 20.0	76			
5	STD4 50.0	184			
6	ICV# 2	96	25.89	4 FOLD	[104.0] 99.6%
7	ICB	2	< 3.0		

Time of Calibration: 1900

Analyst: CV

Reviewer: [illegible]

VERSAR, INC. GFAA ANALYSIS LOG SHEET

ELEMENT: SEC CODE-BATCH: VERSCOM-4 CONTROL #: 2565

DATE: 5-16-90 TRAY #: 1 CALIB. TIME: 1900

CUP	LAB/EPA SAMPLE #		AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	PBS	B	0	<3.0		*	
2		10	34	9.08			(90.8%)
3	LCSS	B	58	15.6	10 FOLD		[39.2] 79.6%
4		10	96	25.9	↓		(103.0%)
5	16928	B	5	<3.0 W			
6		10	29	7.73			(77.3%)
7	16929	B	6	<3.0 W			
8		10	25	6.64			(66.4%)
9	16930	B	4	<3.0 W			
10		10	25	6.64		*	(66.4%)
11	CCV1		86	23.18			92.7%
12	CCB1		-6	<3.0			
13	16931	B	4	~~<3.0~~ CV		*	
14		10	22	~~5.88~~ CV			(58.0%)
15	16932	B	14	~~7.66~~ CV			RERUN 5 FOLD DIL
16		10	23	~~6.10~~ CV			~~(24.4%)~~ CV
17	16933	B	3	~~<3.0~~ CV			
18		10	23	~~6.10~~ CV			(61.0%)
19	16934	B	6	~~<3.0 W~~ CV			
20		10	28	~~7.46~~ CV			(74.6%)
21	16935	B	0	~~<3.0 W~~ CV			
22		10	25	~~6.64~~ CV		↓	(66.4%)
23	CCV2		76	~~20.47~~ CV			81.9% RERUN CL
24	CCB2		4	~~<3.0~~ CV			13-21.
25	16936	B	—			*	
26		10	—			*	
27	16931	B	—				
28		10	—				
29	16932	B	—				
30		10	—				
31	16933	B	—				
32		10	—				
33	16934	B	—				
34		10	—				
35	CCV3		—				
36	CCB3		—				
37							
38							
39							
40							

CCV= WBS @ 25ppb

ICV=

( )= % recovery of MSA

* = 1 g/ 0.2 L (WET wt.)

SPIKE=(HOH) 10 ug/l

=(SOLID) 2.0 mg/kg

=(BENCH)

ANALYST: CV

VERSCOM-4 CALIB. TRAY 5-16-90 CRV SEC

		-0.003	
		-0.001	
		-0.002	AV
		70.71	CV
		[illegible]	[illegible]
		0.001	
		-0.000	
1		-0.002	AV
		[illegible]	[illegible]
		0.021	
		0.019	
2		0.020	AV
		7.07	CV
		0.037	
		0.036	
3		0.038	AV
		1.69	CV
		0.073	
		0.080	
4		0.076	AV
		6.47	CV
		0.102	
		0.150	
5		0.154	AV
		1.54	CV
		0.101	
		0.091	1855
6		0.096	CV
		7.37	CV
		0.002	
		0.002	1900
7		0.002	AV
		0.00	CV

VERSCOM-4 TRAY #1 5-16-90 CRV SEC

		-0.000	
		0.001	
1		0.000	CV
		[illegible]	[illegible]
		0.037	
		0.031	
2		0.034	AV
		12.48	CV
		0.056	
		0.061	
3		0.058	AV
		6.04	CV
		0.094	
		0.099	
4		0.096	CV
		3.66	CV
		0.002	
		0.008	
5		0.005	AV
		84.35	CV
		0.027	
		0.031	
6		0.029	AV
		9.75	CV
		0.011	
		0.001	
7		0.006	AV
		[illegible]	[illegible]
		0.023	
		0.026	
8		0.025	CV
		8.66	CV
		0.002	
		0.006	
9		0.004	AV
		70.71	CV
		0.029	
		0.021	
10		0.025	AV
		22.63	CV
		0.090	
		0.083	2000
11		0.086	AV
		5.72	CV
		-0.005	
		-0.006	2005
12		-0.006	AV
		12.86	CV

VERSCOM-4 TRAY #1 5-16-90 CRV SEC

		0.004	
		0.004	
13		0.004	AV
		0.00	CV
		0.023	
		0.022	
14		0.022	AV
		3.14	CV
		0.015	
		0.013	
15		0.014	AV
		10.10	CV
		0.025	
		0.022	
16		0.023	CV
		9.03	CV
		0.000	
		0.000	
17		0.000	AV
		[illegible]	[illegible]
		0.024	
		0.021	
18		0.025	AV
		9.43	CV
		0.009	
		0.002	
19		0.006	AV
		69.99	CV
		0.023	
		0.033	
20		0.028	AV
		25.25	CV
		-0.005	
		0.000	
21		0.000	AV
		[illegible]	[illegible]
		0.024	
		0.026	
22		0.025	CV
		5.06	CV
		0.074	
		0.079	2100
23		0.076	AV
		4.62	CV
		0.003	
		0.005	2105
24		0.004	CV
		35.36	CV

VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: Sec DATE: 5-16-90 PAGE 1 OF 4

CODE-BATCH: VERSCOM-4 PESAMPLE-115 CONTROL #: ~~2486~~ CV 2565 2486

Instrument #: 5 Light Source: EDL
Wavelength: 196.0 Slit: 2.0 Current/Power: 6 watts
Signal: ____ Pk.Ht. X Pk.Area Tube: LVP Pipet Vol.: 20 ul
Background Correction: X BZ ___ BD Replicates: 2 Purge: 0 Ar

Standard Prep.: Date: 5-16-90 Matrix Modifiers: X yes ____ no
Time: 0730
Source: I.V.

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	120	1000	2000	2500	20
Ramp (s)	5	5	0	1	2
Hold (s)	30	15	5	3	8
BOC (s)		14			
Rec. (s)		15			

CALIBRATION CURVE

CUP	STANDARD	AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB 0.0 ppb	-1			r= .9998
2	STD1 5.0	15			CRA= 4.95
3	STD2 10.0	33			
4	STD3 20.0	63			
5	STD4 50.0	166			
6	ICV# 2	85	25.93	4 FOLD	[104.0] 99.7 %
7	ICB 0.0 ppb	6	<3.0		

Time of Calibration: 2130

Analyst: CV

Reviewer: [illegible]

VERSAR, INC. GFAA ANALYSIS LOG SHEET

ELEMENT: SeC CODE-BATCH: VERSCOM-4 CONTROL #: 2565

DATE: 5-16-90 TRAY #: 1 CALIB. TIME: 2130

CUP	LAB/EPA SAMPLE #		AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	16935	B	3	<3.0 W		*	
2		10	26	8.25			(82.5%)
3	16936	B	7	<3.0 W CV			
4		10	36	11.2			(112.0%)
5	16931	B	2	<3.0 W			
6		10	24	7.65			(76.5%)
7	16932	B	19	~~6.15~~			RERUN 4 PT.
8		10	33	10.3	FAC		~~(103.0%)~~ CV (41.5%)
9	16933	B	7	~~3.15~~ CV	5-24-90		RERUN 5-FOLD DIL
10		10	22	~~7.05~~ CV			~~(38.9%)~~ CV
11	CCV1		90	27.43			109.7%
12	CCB1		6	<3.0			
13	16934	B	3	<3.0		*	RW
14		10	28	8.85			(88.5%)
15	16933	B	7	<3.0	5 FOLD		
16		10	28	8.85			(88.5%)
17	CCV2		83	~~83~~ CV 25.33			101.3%
18	CCB2		-3	<3.0			
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

CCV= NBS @ 25 ppb

ICV=

( )= % recovery of MSA

* = 1 g/ 0.2 L (WET wt.)

SPIKE=(HOH) 10 ug/l

=(SOLID) 1.0 mg/kg

=(BENCH)

ANALYST: CV

VERSCOM-4 PESAMPLE-115 5-16-90 CRV SEC CALIB. TRAY

		0.001	
		-0.001	
		0.030	GV
		[illegible]	[illegible]
		[illegible]	[illegible]
		-0.003	
		0.001	
1		-0.001	AV
		[illegible]	
		0.016	
		0.014	
2		0.015	AV
		4.45	GV
		0.030	
		0.035	
3		0.033	GV
		10.86	CV
		0.060	
		0.058	
4		0.063	AV
		6.73	CV
		0.168	
		0.154	
5		0.166	AV
		1.70	GV
		0.085	
		0.085	2125
6		0.085	AV
		0.00	GV
		0.004	
		0.008	2130
7		0.006	AV
		47.14	GV

VERSCOM-4 5-16-90 CRV SEC TRAY #1

		0.004	
		0.003	
1		0.003	AV
		20.20	GV
		0.025	
		0.029	
2		0.026	AV
		8.01	GV
		0.007	
		0.007	
3		0.007	GV
		0.00	GV
		0.036	
		0.036	
4		0.036	GV
		0.00	GV
		0.002	
		0.001	
5		0.002	AV
		47.14	CV
		0.026	
		0.021	
6		0.024	GV
		20.20	GV
		0.016	
		0.021	
7		0.019	AV
		13.11	GV
		0.034	
		0.033	
8		0.033	AV
		2.11	GV
		0.010	
		0.008	
9		0.009	GV
		15.71	GV
		0.022	
		0.021	
10		0.022	GV
		3.29	GV
		0.085	
		0.094	2230
11		0.090	AV
		7.11	GV
		0.007	
		0.006	2235
12		0.006	AV
		10.58	GV

VERSCOM-4 5-16-90 CRV SEC TRAY #1

		-0.006	
		0.005	
13		0.003	GV
		[illegible]	[illegible]
		0.031	
		0.026	
14		0.028	AV
		12.41	CV
		0.006	
		0.008	
15		0.007	AV
		20.20	GV
		0.024	
		0.033	
16		0.025	AV
		22.33	GV
		0.083	
		0.053	2300
17		0.055	AV
		0.00	CV
		-0.005	
		0.000	2305
18		-0.003	AV
		[illegible]	[illegible]

PESAMPLE-115 5-16-90 CRV SEC TRAY #1

		0.078	2310
		0.078	
1		0.078	AV
		0.00	GV
		0.002	
		-0.002	2315
2		0.000	AV
		[illegible]	[illegible]
		0.010	
		0.020	2320
3		0.019	AV
		7.44	GV
		-0.009	
		-0.012	
4		-0.005	GV
		89.99	GV
		0.036	
		0.035	
5		0.035	GV
		1.99	GV
		0.078	
		0.079	2335
6		0.078	GV
		0.90	CV
		0.001	
		-0.004	2340
7		-0.002	AV
		[illegible]	[illegible]

VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: Sec DATE: 5-17-90 PAGE 1 OF 6

CODE-BATCH: VERSCOM-4 CONTROL #: 2565
OMCWAUK-98 2690
ENGITULL-1, GSX-MO-2 2679, 2708

Instrument #: 5 Light Source: EDL
Wavelength: 196.0 Slit: 2.0 Current/Power: 6 watts
Signal: ___ Pk.Ht. x Pk.Area Tube: LVP Pipet Vol.: 20 ul
Background Correction: x BZ ___ BD Replicates: 2 Purge: 0 Ar

Standard Prep.: Date: 5-17-90
Time: 0730
Source: I.V.

Matrix Modifiers: x yes ___ no

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	130	1000	2000	2500	20
Ramp (s)	5	5	0	1	2
Hold (s)	~~15~~ 30	15	5	3	8
BOC (s)		14			
Rec. (s)		15			

CALIBRATION CURVE

CUP	STANDARD	AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB 0.0 ppb	5			r= .9999
2	STD1 5.0	23			CRA=5.30
3	STD2 10.0	39			
4	STD3 20.0	71			
5	STD4 50.0	174			
6	ICV# 2	90	25.20	4Fold	[104.0] 96.9%
7	ICB 0.0 ppb	4	43.0		

Time of Calibration: 0930

Analyst: CV

Reviewer: [illegible]

VERSAR, INC. GFAA ANALYSIS LOG SHEET

ELEMENT: Sec CODE-BATCH: VEFSCDM-4 CONTROL #: 2565

DATE: 5-~~18~~ 17-90 TRAY #: 1 CALIB. TIME: ~~2130~~ 1000

CUP	LAB/EPA SAMPLE #		AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	PBW	B	7	<3.0			
2		10	34	8.57			(85.7%)
3	LCSM		42	10.9			[10] 109.0%
4	16937 (S)		38	9.75			[10] 97.5%
5	LCSW A	B	91	~~25.5~~ cv	~~4~~ FOLD		[104] (98.1%) cv RE
6		10	115	~~32.6~~ cv	4 FOLD		(98.1%) cv (71.0%
7	16937	B	8	<3.0			
8		10	38	9.75			(97.5%)
9	16937 D	B	9	<3.0			RPD = NC
10		10	43	11.2			(112.0%)
11	CCV 1		90	25.20			100.8%
12	CCB 1		10	<3.0			
13	16948	B	5	<3.0			
14		10	39	10.0			(100.0%)
15	~~CCV 2~~ cv LCSW A	B	72 ~~19.8~~ cv	19.8	5 FOLD		[104.] 95.2%
16	~~CCB 2~~ cv	10	101	28.5	↓		(87.0%)
17	CCV 2		93	26.09			104.4%
18	CCB 2		6	<3.0			
19							
20							
21							
22							
23							
24							
25							
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34							
35							
36							
37							
38							
39							
40							

CCV= NBS @ 25 ppb

ICV=

( )= % recovery of MSA

* = ____g/____L (____wt.)

SPIKE=(HOH) 10 ug/l

=(SOLID) ____ mg/kg

=(BENCH) ____

ANALYST: CV

CALIB. TRAY 5-17-90 CRV SEC

		-4.994	
		-5.005	
		-4.999	BV
		0.16	BV
		[illegible]	AV
		0.005	
		0.005	
1		0.005	AV
		0.00	BV
		0.024	
		0.021	
2		0.023	BV
		9.43	CV
		0.036	
		0.042	
3		0.039	BV
		10.88	BV
		0.072	
		0.070	
4		0.071	AV
		1.99	BV
		0.169	
		0.179	
5		0.174	AV
		4.06	CV
		0.092	
		0.089	0925
6		0.090	BV
		2.34	BV
		0.005	
		0.004	0930
7		0.004	BV
		15.71	BV

VERSCAN-4 TRAY #1 5-17-90 SEC CRV

		0.002	
		0.013	
1		0.007	AV
		[illegible]	CV
		0.032	
		0.037	
2		0.034	AV
		10.25	BV
		0.044	
		0.040	
3		0.042	BV
		6.73	CV
		0.039	
		0.038	
4		0.038	AV
		1.34	BV
		0.093	
		0.089	
5		0.091	BV
		3.11	BV
		0.117	
		0.114	
6		0.115	BV
		1.34	BV
		0.007	
		0.009	
7		0.008	AV
		17.68	BV
		0.038	
		0.038	
8		0.038	AV
		0.00	CV
		0.009	
		0.010	
9		0.009	AV
		7.44	BV
		0.044	
		0.041	
10		0.043	AV
		4.99	BV
		0.090	
		0.089	1050
11		0.090	AV
		0.79	CV
		0.010	
		0.009	1055
12		0.010	AV
		7.44	CV
		0.002	
		0.007	
13		0.005	AV
		78.57	BV
		0.037	
		0.041	
14		0.039	BV
		7.25	BV

JERSCAN-4 TRAY #1 5-17-90 SEC CRV

		0.099	
		0.103	
	16	0.101	AV
		2.80	CV
		0.072	
		0.071	
	45	0.072	AV
		0.99	BV
		0.095	
		0.091	1100
	47	0.093	BV
		3.04	BV
		0.006	
		0.005	1105
	48	0.006	AV
		12.86	BV

ONC WAUK-98 TRAY #1 5-17-90 SEC CRV

		0.009	
		0.003	
	1	0.006	BV
		70.71	BV
		0.040	
		0.046	
	2	0.043	AV
		9.87	BV
		0.084	
		0.088	
	3	0.086	AV
		3.29	BV
		0.116	
		0.116	
	4	0.117	AV
		1.21	BV
		0.009	
		0.007	
	5	0.008	AV
		17.68	CV
		0.036	
		0.037	
	6	0.036	AV
		1.54	CV
		-0.004	
		0.010	
	7	0.003	BV
		[illegible]	AV
		0.041	
		0.036	
	8	0.039	AV
		9.18	CV
		0.082	
		0.085	1155
	9	0.083	AV
		2.54	BV
		0.006	
		-0.001	1200
	10	0.003	AV

VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: SeC/Se3 DATE: 5/18/90 PAGE 1 OF 4

CODE-BATCH: PRCDupnt-44, Verscdm-4 CONTROL #: 2677, 2565

Instrument #: 11
Wavelength: 196.0 Slit: 0.7
Signal: ____ Pk.Ht. ✓ Pk.Area
Background Correction: ✓ BZ ___ BD

Light Source: EDL
Current/Power: 6 Watts
Tube: ZVP Pipet Vol.: 25 ul
Replicates: 2 Purge: 0 Ar

Standard Prep.: Date: 5/18/90
Time: 0730
Source: Inorg. Vent.

Matrix Modifiers: ✓ yes ___ no

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	120	1000	2000	2500	20
Ramp (s)	5	5	0	1	1
Hold (s)	25	15	5	2	8
BOC (s)					
Rec. (s)					

CALIBRATION CURVE

CUP	STANDARD	AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB 0.0 ppb	3			r= .9984
2	STD1 5.0 ppb	22	4.52		CRA= 4.52
3	STD2 10.0 ppb	50			
4	STD3 20.0 ppb	77			
5	STD4 50.0 ppb	195			
6	ICV#2	102	25.58	4fold	[104] 98.4%
7	ICB 0.0 ppb	4	<3.0		

Time of Calibration: 1800

Analyst: [illegible]

Reviewer: ____

VERSAR, INC. GFAA ANALYSIS LOG SHEET Page 2 of 4

ELEMENT: SeC e Se 3 CODE-BATCH: PRCDupnt-44, Versedm-4 CONTROL #: 2677,256

DATE: 5/18/90 TRAY #: 1 CALIB. TIME: 1800

CUP	LAB/EPA SAMPLE #	AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	~~19382 + B PRCDupnt~~	~~28~~				~~Aeron - High CV~~
2	19382 + B	14	<3.0			
3	+10	31	~~6.89~~			(68.9)
4	19382 + B	19	—			Not needed
5	+10	35				
6	CCV1	109	27.43			109.7%
7	CCB1	4	<3.0			
8	16932 + B Versedm	25	—	~~*~~	*	Aeron Spike error
9	+5	25		~~*~~		
10	+10	54				
11	+20	76				
12	16932 + B	27	12.1			r = .9977
13	+5	38				m = 2.3
14	+10	52				b = 27.4
15	+20	72				
16	CCV2	106	26.64			106.6%
17	CCB2	6	<3.0			
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						

Not needed for this batch PRC 6-8-90

CCV= NBS at 25ppb

ICV= —

( )= % recovery of MSA

* = 1.0 g/ .2 L (Wet wt.)

SPIKE=(HOH) — ug/l

=(SOLID) — mg/kg

=(BENCH) —

ANALYST: DD

```
SE
 -0.002              -0.010
-----------------------------------------------------------------------------
MEAN=     -0.006     STD.DEV.=                COEF.VAR.=  92.62 %
*****************************************************************************
  0.000            AUTOZERO
*****************************************************************************
SE    0001
  0.008              -0.002
-----------------------------------------------------------------------------
MEAN=      0.003     STD.DEV.=                COEF.VAR.=  99.99 %
*****************************************************************************
SE    0002
  0.024               0.020
-----------------------------------------------------------------------------
MEAN=      0.022     STD.DEV.=                COEF.VAR.=  12.89 %
*****************************************************************************
SE    0003
  0.046               0.053
-----------------------------------------------------------------------------
MEAN=      0.050     STD.DEV.=                COEF.VAR.=  10.21 %
*****************************************************************************
SE    0004
  0.079               0.075
-----------------------------------------------------------------------------
MEAN=      0.077     STD.DEV.=                COEF.VAR.=  3.08  %
*****************************************************************************
SE    0005
  0.200               0.189
-----------------------------------------------------------------------------
MEAN=      0.195     STD.DEV.=                COEF.VAR.=  3.90  %
*****************************************************************************
SE    0006
  0.098               0.106                          1830
-----------------------------------------------------------------------------
MEAN=      0.102     STD.DEV.=                COEF.VAR.=  5.87  %
*****************************************************************************
SE    0007
 -0.003               0.010                          1835
-----------------------------------------------------------------------------
MEAN=      0.004     STD.DEV.=                COEF.VAR.=  99.99 %
*****************************************************************************
```

PRCDupnt_44, Verscdm-4

Calibration Tray

5/18/90

DD

```
SE    0001
  0.035              0.021
-----------------------------------------------------------------------
MEAN=     0.028     STD.DEV.=                COEF.VAR.=  36.32 %
***********************************************************************
SE    0002
  0.018              0.011
-----------------------------------------------------------------------
MEAN=     0.014     STD.DEV.=                COEF.VAR.=  34.66 %
***********************************************************************
SE    0003
  0.033              0.030
-----------------------------------------------------------------------
MEAN=     0.031     STD.DEV.=                COEF.VAR.=  5.74  %
***********************************************************************
SE    0004
  0.015              0.022
-----------------------------------------------------------------------
MEAN=     0.019     STD.DEV.=                COEF.VAR.=  25.19 %
***********************************************************************
SE    0005
  0.033              0.037
-----------------------------------------------------------------------
MEAN=     0.035     STD.DEV.=                COEF.VAR.=  7.09  %
***********************************************************************
SE    0006
  0.106              0.111                        1930
-----------------------------------------------------------------------
 AN=      0.109     STD.DEV.=                COEF.VAR.=  3.24  %
***********************************************************************
SE    0007
  0.009              0.000                        1935
-----------------------------------------------------------------------
MEAN=     0.004     STD.DEV.=                COEF.VAR.=  99.99 %
***********************************************************************
SE    0008                0.025
SE    0009                0.025
SE    0010                0.054
SE    0011                0.076
SE    0012                0.027
SE    0013                0.038
SE    0014                0.052
SE    0015                0.072
SE    0016                0.106          2000
SE    0017                0.006          2002
```

PRC - Dupnt. 44
Verscom-4
Tray #1
TB

VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: TlC DATE: 5-16-90 PAGE 1 OF 2

CODE-BATCH: VERSCDM-3,4 ENGIBIDM-1,2 CONTROL #: 2548, 2565, ~~2485~~

Instrument #: 6
Wavelength: 276.6 Slit: 0.7
Signal: ____ Pk.Ht. ✓ Pk.Area
Background Correction: ____ BZ ✓ BD

Light Source: EDL
Current/Power: 7
Tube: LVP Pipet Vol.: 10 ul
Replicates: 2 Purge: 0 Ar

Standard Prep.: Date: 5-16-90
Time: ~~pm 9:0~~ 07:30
Source: Inorg. Vent.

Matrix Modifiers: ____ yes ✓ no

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	110	400	1400	2500	20
Ramp (s)	5	5	0	1	2
Hold (s)	20	15	5	3	8
BOC (s)		14			
Rec. (s)					

CALIBRATION CURVE

CUP	STANDARD		AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB	0	-1			r= .9999
2	STD1	~~10~~ 10	47			CRA= 9.918
3	STD2	20	96			
4	STD3	50	235			
5	STD4	—	~~[illegible]~~			
6	ICV#	#4	116	24.61	4 ~~5~~	[~~98.45~~] DLS% [97
7	ICB	0	0	<1.0		

Time of Calibration: 09:30

Analyst: TLL/EAM

viewer: ____

Calib 8am

10:05 10:00

6	5	4	3	2	1	0	5-16-90
0.004	0.007	0.006	38.57	0.002	-0.003	-0.001	
0.007	0.116	0.235	0.237	0.047	0.045	0.048	
0.000	0.116	0.234	0.096	4.56	0.096	0.096	
0.000	0.115	0.90	0.00	0.047	0.045	0.048	
0.000	0.61	0.235	0.096	0.047	0.045	0.048	
0.000	0.001	0.234	0.237	0.047	0.045	0.048	
0.000	0.000	0.235	0.237	0.047	0.045	0.048	
AV	AV	AV	AV	AV	AV	AV	
CV	CV	CV	CV	CV	CV	CV	

00160

VERSAR, INC. GFAA ANALYSIS LOG SHEET Page 2 of ____

ELEMENT: Tl&C CODE-BATCH: VERSCDM-4 CONTROL #: 2565

DATE: 5-16-90 TRAY #: 1 CALIB. TIME: 9:30

CUP	LAB/EPA SAMPLE #	AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	PBW+B	1	<1.0			
2	+20	102	21.6			(108)
3	ICSWB+B	96	~~20.9~~ 20.4	5FOLD		[97.2] 105.0 %
4	+20	196	41.6			(106)
5	169371+B	2	<1.0			
6	+20	102	21.6			(108)
7	169371D+B	-1	<1.0			
8	+20	97	20.6			(103)
9	169371S	119	25.2	2FOLD		101 %
10	LCSM	120	25.5	2FOLD		101.8 %
1	CCV1	122	25.89			103.6 %
2	CCB1	0	<1.0			
13	116948+B	-1	<1.0			
14	+20	98	20.8			(104)
15	CCV2	119	25.25			101 %
16	CCB2	2	<1.0			
17						
18						
19						
20						
1						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						

CCV= 25 ppb HBS

ICV= ____

( )= % recovery of MSA

* = ____g/____L (____wt.)

SPIKE=(HOH) ~~25~~ 50 ug/l

=(SOLID) ____ mg/kg

=(BENCH) ____

ANALYST: [signature]

VERSCOM-4
5-16-90
EJM
TIC

VERSCOM -4 5-16-90

TIC

gm

	-0.001	
	0.003	
1	0.001	AV
	06	ER
	0.105	
	0.099	
2	0.102	AV
	4.16	CV
	0.093	
	0.098	
3	0.096	AV
	3.70	CV
	0.197	
	0.195	
4	0.196	AV
	0.72	CV
	0.004	
	-0.001	
5	0.002	AV
	06	ER
	0.103	
	0.101	
6	0.102	AV
	1.39	CV
	-0.001	
	-0.002	
7	-0.001	AV
	47.14	CV
	0.097	
	0.097	
8	0.097	AV
	0.00	CV
	0.121	
	0.117	
9	0.119	AV
	2.38	CV
	0.123	
	0.117	
10	0.120	AV
	3.54	CV
	0.120	
14:00	0.124	
11 ~~14:05~~	0.122	AV
	2.32	CV
	-0.000	
	0.001	
12 14:05	0.000	AV
	06	ER
	-0.002	
	-0.001	
13	-0.001	AV
	47.14	CV
	0.097	
	0.099	
14	0.098	AV
	1.44	CV
	0.116	
	0.122	
15 14:15	0.119	AV
	3.57	CV
	0.002	
	0.003	
16 14:20	0.002	AV
	28.28	CV

VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: TEC DATE: 5-19-90 PAGE 1 OF 8

CODE-BATCH: VERSCDM-4 CONTROL #: 2565
OMCWALK-90 2690
ENGALBA-5 2670

Instrument #: 6 Light Source: EDL
Wavelength: 276.6 Slit: 0.7 Current/Power: 7
Signal: ____ Pk.Ht. X Pk.Area Tube: LVP Pipet Vol.: 15 ul
Background Correction: ___ BZ X BD Replicates: 02 Purge: 0 Ar
Tub

Standard Prep.: Date: 5-19-90 Matrix Modifiers: ____ yes X no
Time: 10:30
Source: INORGVENTS

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	110	400	1600	2500	20
Ramp (s)	5	5	0	1	2
Hold (s)	25	15	5	3	8
BOC (s)		14			
Rec. (s)					

CALIBRATION CURVE

CUP	STANDARD	AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB 0ppb	-2			r=0.9994
2	STD1 10	44			CRA= 10.45
3	STD2 20	86			
4	STD3 50	204			
5	STD4 —	—			
6	ICV# 4	102	24.65	4 FOLD	[97.0] 101.6%
7	ICB 0ppb	-1	<1.0		

Time of Calibration: 12:00

Analyst: [illegible]

Reviewer: [illegible]

VERSAR, INC. GFAA ANALYSIS LOG SHEET

ELEMENT: Tl CODE-BATCH: VERSCOM-4 CONTROL #: 2565

DATE: 5-19-90 TRAY #: 1 CALIB. TIME: TLW ~~8~~ 12:00

CUP	LAB/EPA SAMPLE #	AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	PBS+B	-1	<1.0		*	
2	+20	19	19.0			(95.0)
3	LCSS +B	76	18.3	10 Fold		39.1 93.8%
4	TLW ~~+100~~ +20	149	36.2			(89.5)
5	16928+B	-4	TLW ~~<3.0~~ W<1.0			
6	+20	70	16.8			(84.0)
7	16929+B	-1	~~<3~~ <1.0			
8	+20	75	18.0			(90.0)
9	16930+B	-3	<1.0 W			
10	+20	69	16.6			(83.0)
11	~~16931~~ CCV1	111	26.85			107.4%
12	TLW CCB1	-1	<1.0			
13	16931+B	-2	<1.0		*	
14	+20	72	17.3			(86.5)
15	16932+B	-2	<1.0 W			
16	+20	63	15.1			(75.5)
17	16933+B	-3	<1.0 W			
18	+20	62	14.9			(74.5)
19	16934+B	-6	<1.0 W			
20	+20	58	13.9			(69.5)
21	16935+B	-5	<1.0 W			
22	+20	63	15.1			(75.5)
23	CCV2	103	24.90			99.6%
24	CCB2	-1	<1.0			
25	16936+B	-5	<1.0 W		*	
26	+20	67	16.1			(80.5)
27	CCV3	110	26.61			106.4%
28	CCB3	-2	<1.0			
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						

CCV= NBS @ 25

ICV= —

( )= % recovery of MSA

* = 1 g/0.2 L (WET wt.)

SPIKE=(HOH) ug/l

=(SOLID) mg/kg

=(BENCH)

ANALYST: dau

Calib Curve TLC 5-9-90 TLC

	0.003	
	0.004	
0	0.003	AV
	20.20	CV
	0.000	AZ
	-0.001	
	-0.003	
1	-0.002	AV
	70.71	CV
	0.043	
	0.044	
2	0.044	AV
	1.63	CV
	0.085	
	0.088	
3	0.086	AV
	2.45	CV
	0.203	
	0.204	
4	0.204	AV
	0.35	CV
	0.102	
	0.101 1230	
5	0.102	AV
	0.70	CV
	-0.001 1235	
	-0.001	
6	-0.001	AV
	0.00	CV

VERSCDM-4 5-19-90 TRAY 1 TLC

	-0.002	
	-0.001	
1	-0.001	AV
	47.14	CV
	0.079	
	0.079	
2	0.079	AV
	0.00	CV
	0.078	
	0.074	
3	0.076	AV
	3.72	CV
	0.151	
	0.146	
4	0.149	AV
	2.38	CV
	-0.002	
	-0.005	
5	-0.004	AV
	60.61	CV
	0.074	
	0.067	
6	0.070	AV
	7.02	CV
	-0.001	
	-0.000	
7	-0.001	AV
	00	ER
	0.076	
	0.075	
8	0.075	AV
	0.94	CV
	-0.004	
	-0.002	
9	-0.003	AV
	47.14	CV
	0.070	
	0.068	
10	0.069	AV
	2.05	CV
	0.109	
	0.112 1330	
11	0.111	AV
	1.92	CV
	-0.001	
	-0.001 1335	
12	-0.001	AV
	0.00	CV
	-0.003	
	-0.002	
13	-0.002	AV
	28.28	CV

VERSCDM-4 5-19-90 TRAY 1 TLC

	0.074	
	0.070	
14	0.072	AV
	3.93	CV
	-0.003	
	-0.001	
15	-0.002	AV
	70.71	CV
	0.063	
	0.063	
16	0.063	AV
	0.00	CV
	-0.002	
	-0.004	
17	-0.003	AV
	47.14	CV
	0.065	
	0.059	
18	0.062	AV
	6.84	CV
	-0.005	
	-0.006	
19	-0.006	AV
	12.86	CV
	0.059	
	0.058	
20	0.058	AV
	1.21	CV
	-0.004	
	-0.005	
21	-0.005	AV
	15.71	CV
	0.065	
	0.060	
22	0.063	AV
	5.65	CV
	0.102	
	0.103 1430	
23	0.103	AV
	0.69	CV
	-0.000	
	-0.001 1435	
24	-0.001	AV
	05	ER
	-0.005	
	-0.005	
25	-0.005	AV
	0.00	CV
	0.072	
	0.062	
26	0.067	AV
	10.55	CV
	0.110	
	0.110 1450	
27	0.110	AV
	0.00	CV
	-0.001	
	-0.004 1455	
28	-0.002	AV
	84.85	CV

VERSAR, INC.
METALS LABORATORY
COLD VAPOR Hg ANALYSIS SHEET

Project/Batch: VERSCDM-4 2565 Date: 05-16-90

Sample No.: 16937, 16948

****

Instrument: #2 Light Source: _____ EDL ✓ HCL

Wavelength: 254.3 nm. Slit: 0.7 Current/Power: 6mA

Background Correction: — Gas Flow: 3L/MIN

****

Spike = 1.0 ug/l — mg/kg

	Sample/ EPA ID No.	Abs.	Unadj. Conc.	D.F.	Conc. ug/l	Conc. mg/kg —wt.	Comments
1.	0.0 PPb CB	2					r = 0.9987
2.	STD1 0.5 PPb	12					
3.	STD2 2.0	43					
4.	STD3 5.0	99					
5.	STD4 10.0	180					
6.	ICV	92	4.89		4.89		97.8% [5.0]
7.	ICB/PBW	2	<0.2		<0.2		
8.	LCSM	12	0.400		0.4		40.0% [1.0]
9.	CCV1	90	4.78		4.78		95.6% [5.0]
10.	CCB1	3	<0.2		<0.2		
11.	16937	3	<0.2		<0.2		
12.	16937D	2	<0.2		<0.2		RPD=NC
13.	16937S	19	0.793		0.8		80.0% [1.0]
14.	16948	3	<0.2		<0.2		
15.	CCV2	90 ~~4.78~~	4.78		4.78		95.6% [5.0]
16.	CCB2	2	<0.2		<0.2		
17.							
18.							
19.							
20.							
21.							
22.							
23.							
24.							
25.							

ICV = ICV #5 [5.0] PPb CCV = NBS [5.0] PPb

Analyst JM

CALI TIME 23:10

ccv/90 23:25

16663/10

16662/2

16661/9

16660/6

16659/9

16658S/24

16658D/6

16658/5

16657/4

LesM/12

23:14 JCB/PBW/2

JCV/92 23:12

10.0/180 r= 0.9987 23:10

5.0/99

Hg-Analysis

1-VERSEDM-3R (2548) 05-16-90

2-VERSEDM-4 (2565) JM

2.0/43

0.5/12

CB/2

ccB/2

ccV/90 23:46

16948/3

16937/19

16937D/2

16937/3

ccB/2

ccV/92 23:40

16676/1

16675/1

16674/2

ccB/3

23:37

ccV/89 23:35

16673/1

16672/0

16671

JA ~~16671~~/1

16670/4

16669/2

16668/3

16667/8

16666/5

16665/5

16664/5

ccB/3

VERSAR, INC.
METALS LABORATORY
COLD VAPOR Hg ANALYSIS SHEET

Project/Batch: VERSCDM-4 (2565) Date: 05-18-90

Sample No.: 16928 → 16936

****

Instrument: #2 Light Source: EDL ✓ HCL

Wavelength: 254.3 nm. Slit: 0.7 Current/Power: 6mA

Background Correction: – Gas Flow: 3L/MIN

****

Spike = – ug/l – mg/kg

	Sample/ EPA ID No.	Abs.	Unadj. Conc.	D.F.	Conc. ug/l	Conc. mg/kg ~~wet~~ wt.	Comments
1.	0.0 PPb CB	1					r = 0.9999
2.	STD1 0.5 PPb	11					
3.	STD2 2.0	34					
4.	STD3 5.0	84					
5.	STD4 10.0	165					
6.	ICV	80	4.78		4.78		95.6/ [5.0]
7.	ICB/PBS	2	<0.2	0.1L ~~0.2~~	<0.2	<0.1	
8.	LCSS(0287)	95	5.70	1:3	22.81	11.41	89.8/ [12.7]
9.	16928	5	<0.2		<0.2	<0.1	
10.	16929	1	<0.2		<0.2	<0.1	
11.	16930	2	<0.2		<0.2	<0.1	
12.	16931	0	<0.2		<0.2	<0.1	
13.	16932	6	0.256		0.2	0.1	
14.	16933	2	<0.2		<0.2	<0.1	
15.	16934	4	<0.2		<0.2	<0.1	
16.	16935	3	<0.2		<0.2	<0.1	
17.	16936	3	<0.2		<0.2	<0.1	
18.	CCV1	81	4.85		4.85		97.0/ [5.0]
19.	CCB1	2	<0.2		<0.2		
20.							
21.							
22.							
23.							
24.							
25.							

ICV = ICV#5 [5.0] PPb or µg/L CCV = NBS [5.0] PPb or µg/L

Analyst JM

CALI-TIME 21:18

LESS(0287)/93

LCSM/15

21:41 CCB/2

CCV/81 21:39

16936/3

16935/3

16934/4

16933/2

16932/6

16931/0

16930/2

16929/1

16928/5

LESS(0287)/95

21:29 CCB/2

CCV/84 21:27

20153/2

LESS(0287)/101

ICB/PBS/2

21:22

ICV/80 21:20

0.9999

~~0.9998~~ JM 21:18

10.0/165

5.0/84

Hg - ANALYSIS
05-18-90
JM

1. GSXMD-2 (2708)
2. VERSCDM-4 (2565
3. ~~ENGI-TULL-1 (2679)~~
4. ENGI ITH-1,2 (2687,2697)
5. ENGIBLOM-3 (2721)

2.0/34

0.5/11

CB/1

C0178

22:14 CCB/0

CCV/79 22:12

20289/3

20288/3

20287S/20

20287D/1

20287/2

LESS(0287)/115

22:04 CCB/2

CCV/81 22:02

19995S/30

19995D/8

19995/15

19994/2

19993/7

19835/3

19834/16

LESS(0287)/95

21:50 CCB/3

CCV/85 21:48

19453/2

19452S/20

19452D/3

19452/2

Versar INC.

page: ___

Date: 4/30/90

TOTAL SOLIDS

Project No.: 420.1-4/#2565

Metler Balance Calibration

Zero	0.0000	0.0000
50 mg wt.	0.0500	0.0500
1 gram wt.	1.0000	1.0000
50 gram wt.	49.9987	49.9989

NBS Stand. Ref. Material 16326 T.V. = 98.47%

@105°C

Sample #	Cruicible Wt. (g)	Crucible + Sample (g)	Dried Cruc. + Sample (g)	% Solids	%H2O	Comments
Blank	12.6473	—	12.6472	<10mg/l		(-1mg/l)
Check	13.3092	14.3513	14.3378	98.67		(100% Rec)
16938	12.7655	20.5281	19.1382	82.01		
16939	13.0152	20.2479	17.4786	61.7		
16940	12.8396	23.0493	21.0200	80.3		
16941	12.3051	23.5038	14.8037	22.3		
16942	12.3745	23.1522	22.5271	94.2		
16943	12.8758	24.0445	23.3027	93.3		
16944	13.4624	25.0118	18.0543	39.78		
16945	14.6172	27.8189	20.4820	44.4		
16946	12.3449	20.7141	20.1150	92.8		
	no QC					
	requested!					

Analyst M Anderson

Date 5-7-90

5/8/90

VERSAR, INC.
METALS LABORATORY
DIGESTION LOG

Code-Batch: versdm-4

Date: 5-10-90

Method code: DIWC / DHWC

Control No.: 2565

Reference: CLP SOW 787, D

Sample/EPA ID Number		Mtrx.	Init. W/V	Final Vol.	Description * Before	Description * After
PBW		NON	50ml	50ml	Colorless, clear, no	Colorless, clear, no
LCSM						
LCSWA						
LCSWB						
16937					colorless, clear, no	
16937(D)						
16937(S)						
16948						

Comments:

* Description of colors: red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of clarity: clear, cloudy, opaque.
* Description of artifacts: yes or no and describe.

LCSWA & Series No. ICV#1 0489
Prep Date 3-8-90 TLL
LCSWB & Series No. ICV#3 0189
Prep Date 3-8-90

Preparer LCL

Reviewer

VERSAR, INC.
METALS LABORATORY
SPIKE LOG

Code-Batch: versdm-4
Control No.: 2565

Date: 5-10-90
Method code: DWC, CLPSOW787.D4

*** CLP SPIKING ***

☐ HGA WATER: spike = 0.25ml of HGA spiking solution / 50ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Sol'n prep date:_____

☑ ICP WATER: spike = 2.5ml of ICP water spiking solution / 50ml
0.25ml 100ppm Sb & 10ppm Ag / 50ml
0.1ml 100ppm Cr / 50ml

ICP SPIKING SOLUTION: 5ppm Cu - 40 ppm Ba, Al, As, Se, Tl - 20ppm Fe - 10ppm Mn, Ni, Zn, Co, Pb, V - 1ppm Be, Cd
Sol'n prep date: 3-9-90 Sb prep: 5-9-90 Ag prep: 4-4-90 Cr prep: 4-4-90

☐ HGA SOIL: spike = 1ml of HGA spiking solution / 200ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Soln prep date:_____

☐ ICP SOIL: spike = 10ml of ICP Soil Spike Solution / 200ml
1ml 100ppm Sb & 10ppm Ag / 200ml
0.4ml 100ppm Cr / 200ml

ICP SPIKING SOLUTION: 40ppm Ba, As, Se, Tl, - 10ppm Co, Pb, Mn, Ni, V, Zn - 5ppm Cu - 1ppm Be, Cd
Sol'n prep date:_____ Sb prep:_____ Ag prep:_____ Cr prep:_____

*** NON-CLP SPIKING ***

HGA SPIKE = _____ ml of HGA NON-CLP spiking solution / _____ ml

HGA SPIKING SOLUTION: 10 ppm As, Se, Tl, Pb, 200 ppm Y Sol'n prep date:_____

ICP SPIKE = _____ ml of Solution #1 / _____ ml
SPIKING SOLUTION #1: 40 ppm Ba, Be, Cd, Co, Li, Mo, Sr, V - 80 ppm Cu, Pb, Mn, Ni, Se, Tl - 200 ppm Si - 328 ppm Na
Sol'n prep date:_____

ICP SPIKE = _____ ml of Solution #2 / _____ ml
SPIKING SOLUTION #2: 40 ppm B, Cr, Y - 80 ppm As, Sb, Sn, Ti, Zn - 400 ppm Al, Ca, Fe, K, Mg, Na
Sol'n prep date:_____

ICP SPIKE = _____ ml of Solution #3 / _____ ml
SPIKING SOLUTION #3: 40 ppm Ag Sol'n prep date:_____

COMMENTS:_____

Preparer JCK Reviewer_____

VERSAR, INC.
METALS LABORATORY
DIGESTION LOG

Code-Batch: Verscdm-4

Date: 5-10-90

Control No.: 2565

Method code: DIWC / DHWS

Reference: CLP SOW 787, D 4

Sample/EPA ID Number		Mtrx.	Init. W/V	Final Vol.	Description * Before	After	p
PBW		HOH	50ml	50ml	colorless, clear, no	colorless, clear, no	–
LCSW							–
LCSWA							<2
LCSWB							
16937							
16937(D)							
16937(S)							
16948							

Comments:

* Description of colors: red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of clarity: clear, cloudy, opaque.
* Description of artifacts: yes or no and describe.

LCSWA & Series No. KV #2 0887
Prep Date 5-3-90 TLG
LCSWB & Series No. IVC #4 0387
Prep Date 5-3-90 TLG

00183

Preparer TLG

Reviewer

VERSAR, INC.
METALS LABORATORY
SPIKE LOG

Code-Batch: VERSCdm-4
Control No.: 2565

Date: 5-10-90
Method code: DHWC, CLP SOW 787.1

*** CLP SPIKING ***

☑ HGA WATER: spike = 0.25ml of HGA spiking solution / 50ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Sol'n prep date: 3-9-90

☐ ICP WATER: spike = 2.5ml of ICP water spiking solution / 50ml
0.25ml 100ppm Sb & 10ppm Ag / 50ml
0.1ml 100ppm Cr / 50ml

ICP SPIKING SOLUTION: 5ppm Cu - 40 ppm Ba, Al, As, Se, Tl - 20ppm Fe - 10ppm Mn, Ni, Zn, Co, Pb, V - 1ppm Be, Cd
Sol'n prep date:_____ Sb prep:_____ Ag prep:_____ Cr prep:_____

☐ HGA SOIL: spike = 1ml of HGA spiking solution / 200ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Soln prep date:_____

☐ ICP SOIL: spike = 10ml of ICP Soil Spike Solution / 200ml
1ml 100ppm Sb & 10ppm Ag / 200ml
0.4ml 100ppm Cr / 200ml

ICP SPIKING SOLUTION: 40ppm Ba, As, Se, Tl, - 10ppm Co, Pb, Mn, Ni, V, Zn - 5ppm Cu - 1ppm Be, Cd
Sol'n prep date:_____ Sb prep:_____ Ag prep:_____ Cr prep:_____

*** NON-CLP SPIKING ***

HGA SPIKE = _____ ml of HGA NON-CLP spiking solution / _____ ml

HGA SPIKING SOLUTION: 10 ppm As, Se, Tl, Pb, 200 ppm Y Sol'n prep date:_____

ICP SPIKE = _____ ml of Solution #1 / _____ ml
SPIKING SOLUTION #1: 40 ppm Ba, Be, Cd, Co, Li, Mo, Sr, V - 80 ppm Cu, Pb, Mn, Ni, Se, Tl - 200 ppm Si - 328 ppm Na
Sol'n prep date:_____

ICP SPIKE = _____ ml of Solution #2 / _____ ml
SPIKING SOLUTION #2: 40 ppm B, Cr, Y - 80 ppm As, Sb, Sn, Ti, Zn - 400 ppm Al, Ca, Fe, K, Mg, Na
Sol'n prep date:_____

ICP SPIKE = _____ ml of Solution #3 / _____ ml
SPIKING SOLUTION #3: 40 ppm Ag Sol'n prep date:_____

COMMENTS: _____

Preparer [signature] Reviewer_____

VERSAR, INC.
METALS LABORATORY
DIGESTION LOG

Page 1 of 1

Code-Batch: VERSCDM-4

Date: 5-14-90

Control No.: 25605

Method Code: DISC / DHSC

Reference: CLP SOW 787, D

Sample/EPA ID Number		Mtrx.	Init. W/V	Final Vol.	Description * Before	After
DBS		Water Sample	1ml	200ml	clear, colorless	clear, colorless
LCSS		Soil	1.06g		orange, fine	clear, yellow
LCSM		Water	1ml		clear, colorless	clear, colorless
16928		Soil	1.02g		black, medium, no	clear, yellow
16929			1.05g			
16930			1.03g			
16931			1.03g			
16932			1.05g			
16933			1.06g			
16934			1.06g			
16935			1.06g			
16936			1.03g			

Comments:

* Description of colors: red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of texture: fine, medium, coarse.
* Description of artifacts: yes or no and describe.

LCSS & Series No. 0287 4-18-89
LCSS & Series No.

Preparer [illegible]

Reviewer [illegible]

VERSAR, INC.
METALS LABORATORY
DIGESTION LOG

Code-Batch: VERSCOM -4R

Control No.: 2565

Date: 5/17/90 Page 1 of 1

Method Code: (DISC) / DHSC

Reference: CLP SOW 787, D 4

Sample/EPA ID Number		Mtrx.	Init. W/V	Final Vol.	Description * Before	After
PBS		H_2O	1mL	200mL	Clear, colorless	Clear, colorless
LCSS		TM ~~SOIL~~	1.06		orange, fine.	
16928		SOIL	1.00		black, med.	yellow, clear
16929			1.01			
16930			1.19			
16931			1.01		brown, med.	
16932			1.21		black, med.	
16933			1.29		brown, med	
16934			1.09		See. original	Clear, colorless
16935			1.21		Dig. Dup	
16936			1.13		TM	
~~16948~~			1.			H_2O SAMPLE

Comments:

* Description of colors: red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of texture: fine, medium, coarse.
* Description of artifacts: yes or no and describe.

LCSS & Series No. 0287 opened 4/19/90
LCSS & Series No. C0185

VERSAR, INC.
METALS LABORATORY
DIGESTION LOG

Code-Batch: 1985CDm-4

Control No.: 2565

Date: 5-14-90

Method Code: DISC / DHSC

Reference: CLP SOW 787, D

Sample/EPA ID Number		Mtrx.	Init. W/V	Final Vol.	Description * Before	After
PBS		Water	1ml	200ml	clear, colorless	clear, colorless
LCSM		↓	↓	↓	↓	↓
16928		soil	1.05g		brown, medium, no	
16929		↓	1.02g	↓	↓	↓
16930		↓	1.00g	↓	↓	↓
16931		↓	1.01g	↓	↓	↓
16932		↓	1.02g	↓	↓	↓
16933		↓	1.03g	↓	↓	↓
16934		↓	1.04g	↓	↓	↓
16935		↓	1.04g	↓	↓	↓
169360		↓	1.05g	↓	↓	↓
LCSS		↓	1.06g	↓	orange, fine, no	↓

Comments:

* Description of colors: red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of texture: fine, medium, coarse.
* Description of artifacts: yes or no and describe.

LCSS & Series No. 0287 4-18-90
LCSS & Series No.

Preparer [illegible]

Reviewer [illegible]

VERSAR, INC.
METALS LABORATORY
MERCURY DIGESTION LOG

Project-Batch: VERSCDM-4
Control No.: 2565
No. of Samples: 2

Date: 05-16-90
Method Code: HGSC or HGWC
Reference: CLP SOW 787
Reference #: 245.1 or 245

Sample / EPA ID Number		Matrix	Initial Wt./Vol.	Final Vol.	Comments
PBW		HOH	100 mL	100 mL	
LCSM		↓	↓	↓	
16937		H2O			
16937D		↓	↓	↓	
16937S					
16948		↓	↓	↓	

SPIKE = 1.0 ml x 0.1ppm Hg / 100ml = 1.0 ppb.
CCV = 0.50 ml x 1.0ppm Hg / 100ml = 5.0 ppb.
ICV/LCS = 1.0 ml x ICV #5 / 100ml = 5.0 ppb. LCS Series No.: 0689

STANDARD source: Inorg. Ventures Prep Date: 05-16-90 Prep Time: 16:30

0.5ppb = 5ml x 0.01ppm / 100ml.
2.0ppb = 2ml x 0.1ppm / 100ml.
5.0ppb = 5ml x 0.1ppm / 100ml.
10.0ppb = 10ml x 0.1ppm / 100ml.

Preparer JM Reviewer [illegible]

VERSAR, INC.
METALS LABORATORY
MERCURY DIGESTION LOG

Project-Batch: VERSEDM - 4
Control No.: 2565
No. of Samples: 9

Date: 05-18-90
Method Code: HGSC or HGW
Reference: CLP SOW 787
Reference #: 245.1 or 24

Sample / EPA ID Number		Matrix	Initial Wt./Vol.	Final Vol.	Comments
PBS		H2O	10 mL	100 mL	
LCS (0287)		Soil	0.208 g		
16928			0.220 "		
16929			0.208 "		
16930			0.231 "		
16931			0.213 "		
16932			0.226 "		
16933			0.232 "		
16934			0.201 "		
16935			0.200 "		
16936			0.205 "		

SPIKE = — ml x 0.1ppm Hg / 100ml = — ppb.
CCV = 0.50 ml x 1.0ppm Hg / 100ml = 5.0 ppb.
ICV/LCS = 1.0 ml x ICV #5 / 100ml = 5.0 ppb. LCS Series No.: 0689

STANDARD source: Inorg. Venture Prep Date: 05-18-90 Prep Time: 15:45

0.5ppb = 5ml x 0.01ppm / 100ml.
2.0ppb = 2ml x 0.1ppm / 100ml.
5.0ppb = 5ml x 0.1ppm / 100ml.
10.0ppb = 10ml x 0.1ppm / 100ml.

Preparer JT Reviewer DK

Versar INC.

ANALYTICAL DATA PACKAGE
Metals Analysis

Report Contents

II. TCLP Results

6850 VERSAR CENTER • P.O. BOX 1549 • SPRINGFIELD, VIRGINIA 22151 • TELEPHONE: (703) 750-3000

Versar INC.

TRACE METALS SECTION
ANALYSIS NARRATIVE

Versar Code: VERSCDM - 4
Client: Versar Division 31
Control Number: 2565

Date: June 11, 1990
Site: CDM

This report contains metals analytical results for one soil sample which was received at Versar, Inc. on April 23, 1990. The sample was analyzed for the following elements:

Arsenic	Barium	Cadmium	Chromium
Lead	Mercury	Selenium	Silver

Analytical Methods

The sample was extracted according to the Toxicity Characteristic Leachate Procedure (TCLP), Federal Register, volume 51, # 216, part 268. The extract was then prepared and analyzed by the US EPA Test Methods for Evaluating Solid Waste, SW 846, third edition. The following is a summary of the methods:

Water Preparation	Method: ICP - 3010 GFAA - 7060/7740
ICP Analysis	Method: 6010
Mercury - Water Preparation/Analysis	Method: 7470
GFAA Analysis Selenium	Method: 7740

Analytical Results

The report is divided into the following sections. A description of each part and any comments concerning them is provided below:

Cover Page - Cross reference list of the laboratory sample numbers and the field sample numbers.

Form I - Summary of results for each sample.

Versar INC.

Analytical Results (continued)

Form IIA - Initial and continuing calibration verification results. All ICP recoveries were within the 10 % control limits. All graphite furnace atomic absorption (GFAA) and all cold vapor atomic absorption (CVAA) recoveries were within the 20 % control limits.

Form III - Initial and continuing calibration blanks and preparation blank results. All blanks were less than the instrumental detection limit except for:

Extraction Blank # 1 - Ba

Extraction Blank # 2 - Ba, Pb

Form IV - ICP interference check sample. All recoveries were within the 20 % control limits.

Form VA - Spike sample recovery results. A matrix spike was not required to be analyzed for this batch.

Form VI - Duplicate results. All matrix duplicate was not required to be analyzed for this batch.

Raw Data - Copies of all raw data associated with this report.

General Discussion

The level of barium found in the extraction blanks is inherent to the extraction procedure and may be considered insignificant when compared to the sample. The level of lead found in the extraction blank is high enough to be considered significant when compared to the sample. Therefore, the lead sample results may be biased high.

If there are any questions concerning this report, please contact Janet Beckman at (703) 750-3000.

Prepared by: Penelope Clayton

Reviewed by: Helen Rapany

6850 VERSAR CENTER • P.O. BOX 1549 • SPRINGFIELD, VIRGINIA 22151 • TELEPHONE: (703) 750-3000

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

SOW No. : SW_846,_3RD_ED.

Field Sample No.	Lab Sample ID.
_____11_____	____16961_____

re 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:

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Lab Manager: Helen Repasy

Date: 6-11-90

COVER PAGE - IN

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

11

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Matrix : EXTRACT_____ Lab Sample ID: 16418____

Level (low/med): _____ Date Received: 04/19/90_

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	45.0	U		P
7440-39-3	Barium	704			P
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	3.6			P
7440-70-2	Calcium				NR
7440-47-3	Chromium	9.0	U		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	23.0	U		P
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	30.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: ORANGE___ Clarity Before: CLEAR_ Texture: _____

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic	500.0	518.36	103.7	500.0	515.34	103.1	497.47	99.5	P
Barium	500.0	520.79	104.2	500.0	522.16	104.4	517.37	103.5	P
Beryllium									NR
Cadmium	500.0	538.77	107.8	500.0	546.09	109.2	540.35	108.1	P
Calcium									NR
Chromium	500.0	511.04	102.2	500.0	516.27	103.3	508.43	101.7	P
Cobalt									NR
Copper									NR
Iron									NR
Lead	1000.0	1017.64	101.8	1000.0	1013.44	101.3	995.55	99.6	P
Magnesium									NR
Manganese									NR
ercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver	500.0	526.23	105.2	500.0	524.90	105.0	486.01	97.2	P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury and Furnace AA Metals 80-120; ICP Metals 90-110;

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic				500.0	521.30	104.3			P
Barium				500.0	511.91	102.4			P
Beryllium									NR
Cadmium				500.0	545.70	109.1			P
Calcium									NR
Chromium				500.0	507.44	101.5			P
Cobalt									NR
Copper									NR
Iron									NR
Lead				1000.0	1000.83	100.1			P
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver				500.0	487.62	97.5			P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury and Furnace AA Metals 80-120; ICP Metals 90-110;

FORM II (PART 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	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	5.0	5.14	102.8	5.0	4.96	99.2			CV
Nickel									NR
Potassium									NR
Selenium	104.0	108.22	104.1	25.0	21.03	84.1	21.64	86.6	F
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury and Furnace AA Metals 80-120; ICP Metals 90-110;

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	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				25.0	21.03	84.1	20.43	81.7	F
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury and Furnace AA Metals 80-120; ICP Metals 90-110;

3
BLANKS

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Preparation Blank Matrix: WATER_____

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	45.0	U	45.0	U	45.0	U	45.0	U	45.0	U	P
Barium	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	P
Beryllium											NR
Cadmium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Calcium											NR
Chromium	9.0	U	9.0	U	9.0	U	9.0	U	9.0	U	P
Cobalt											NR
Copper											NR
Iron											NR
Lead	23.0	U	23.0	U	23.0	U	23.0	U	23.0	U	P
Magnesium											NR
Manganese											NR
Mercury	0.2	U	0.2	U					0.2	U	CV
Nickel											NR
Potassium											NR
Selenium	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	F
Silver	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	P
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

FORM III - IN

3
BLANKS

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Preparation Blank Matrix: EXTRACT_____

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic									45.0	U	P
Barium									32.8		P
Beryllium											NR
Cadmium									2.0	U	P
Calcium											NR
Chromium									9.0	U	P
Cobalt											NR
Copper											NR
Iron											NR
Lead									23.0	U	P
Magnesium											NR
Manganese											NR
Mercury									0.2	U	CV
Nickel											NR
Potassium											NR
Selenium									3.0	U	F
Silver			3.0	U					3.0	U	P
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

FORM III - IN

3
BLANKS

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

Preparation Blank Matrix: EXTRACT_____

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic									45.0	U	P
Barium									39.6		P
Beryllium											NR
Cadmium									2.0	U	P
Calcium											NR
Chromium									9.0	U	P
Cobalt											NR
Copper											NR
Iron											NR
Lead									23.2		P
agnesium											NR
Manganese											NR
Mercury									0.2	U	CV
Nickel											NR
Potassium											NR
Selenium									3.0	U	F
Silver									3.0	U	P
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

FORM III - IN

ICP INTERFERENCE CHECK SAMPLE

Client : VERSAR_DIVISION_31__ Site: CDM_____

Lab Name: VERSAR_INC. Control No.: 2565____ Code: VERSCDM_ Batch: 4_____

ICP ID Number: 9-ICAP_61___ ICS Source: INOR._VENT._

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum								
Antimony								
Arsenic								
Barium		500		519.4	103.9		516.0	103.2
Beryllium								
Cadmium		1000		992.8	99.3		1004.8	100.5
Calcium								
Chromium		500		531.5	106.3		514.0	102.8
Cobalt								
Copper								
Iron								
Lead		1000		938.4	93.8		927.0	92.7
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver		1000		995.6	99.6		932.9	93.3
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

2536B 1/2

ICP ANALYSIS LOG

PROJECT NUMBER Versadm 2,3 CLPM T 2,4 TCLM DATE May 15, 1990

ANALYST LCK/HR INST. # 9 METHOD CLP, 787

BATCH COMMENTS Ag, Al, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Sb, V, Zn

BURN #	SAMPLE NUMBER	COMMENTS
QC-1	QC SET 1	~~TCLP489~~, TCV3, TCVH, TCB, CCVC1, CCVN1, CCVH1, CCB1
1.	CRIT	
2.	ICSAT	
3.	ICSABT	1/1 SOURCE
4.	PBS	
5.	LCSH	
6.	LCSS12	Keep even though failed per WNL orders
7.	16401	
8.	16401L	1:5 serial dilution
9.	16401(D)	
10.	16401(S)	failed for Sb
QC-2	QC SET 2	CCVC2, CCVN2, CCVH2, CCB2
11.	16401(P)	post digestion spk Sb 120ppb did not work.
12.	16402	
13.	MS 120@Sb	-120ppb Sb
14.	16403	
15.	16404	
16.	16405	
17.	16432	
18.	PBW	
19.	LCSH	
20.	LCSW1	
QC-3	QC SET 3	CCVC3, CCVN3, CCVH3, CCB3
21.	LCSW2	
22.	16657	
23.	16657(L)	1:5 serial dilution
24.	16657(D)	
25.	16657(S)	
26.	16657 P	Sb @ 120 ppb
27.	16658	
28.	16659	
29.	16660	
30.	16661	
QC-4	QC SET 4	CCVC4; CCVN4; CCVH4; CCB4
31.	16662	
32.	16663	
33.	16664	
34.	16665	
35.	16666	
36.	16667	
37.	16668	
38.	16669	
39.	16670	
40.	16671	
QC-5	QC SET 5	CCVC5; CCVN5; CCVH5; CCB5

ICP ANALYSIS LOG

PROJECT NUMBER Versedm - 2+3 ; 2+4 TCLM DATE 5-15-90

ANALYST HR INST. # 9 METHOD ICLP

BATCH COMMENTS 2536, 2548 → CLPM 2536, 2565 → TCLM (Ag, As, Ba, Cd, Cr, Pb)

BURN #	SAMPLE NUMBER	COMMENTS
QC-5	QC SET 5	see p1
41.	16672	
42.	16673	
43.	16674	
44.	16675	
45.	16676	
46.	PBW	TCLM
47.	PBEX	
48.	PBEX-2	
49.	LCSM	
50.	16418	
QC-6	QC SET 6	CCVC6; CCVN6; CCVH6; CCB6
51.	16418L	1/5 serial dil.
52.	16418D	
53.	16418S	
54.	16960	
55.	CRIF	
56.	ICSAF	
57.	ICSABF	(1.N.)
58.		
59.		
60.		
QC-7	QC SET 7	CCVC7; CCVN7; CCVH7; CCB7
61.		
62.		
63.		
64.		
65.		
66.		
67.		
68.		
69.		
70.		
QC-	QC SET	
71.		
72.		
73.		
74.		
75.		
76.		
77.		
78.		
79.		
80.		
QC-	QC SET	

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Method: CLPICAP Standard: CAL1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00040	.00620	.00080	.00000	.00000	.00090	.00000
#1	-.00040	.00530	.00080	.00000	.00000	.00080	.00000
#2	-.00040	.00710	.00080	.00000	.00000	.00100	.00000

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K 7664	Mg2795
Avge	-.00005	-.00075	.00235	.00110	.00000	.03205	.00040
#1	-.00010	.00000	.00170	.00080	.00000	.03177	.00040
#2	.00000	-.00150	.00300	.00140	.00000	.03233	.00040

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	.00005	.00000	-.00020	.03390	.00010	-.00030	-.00050
	-.00030	.00000	.00000	.03340	.00000	-.00020	-.00040
[illegible]	.00040	.00000	-.00040	.03440	.00020	-.00040	-.00060

Elem	Se1960	Ti1908	V 2924	Y 3710	Zn2138
Avge	.00000	.00060	.00000	.00000	.00000
#1	.00000	.00080	.00000	.00010	.00000
#2	.00000	.00040	.00000	-.00010	.00000

Calibration
5-15-90
ICAP
[illegible]

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Method: CLPICAP Standard: CAL2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.04440	.00710	.00265	.00000	.00000	.98530	.05510
#1	.04400	.00760	.00210	.00000	.00000	.98420	.05460
#2	.04480	.00660	.00320	.00000	.00000	.98640	.05560

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K 7664	Mg2795
Avge	.07660	.00040	.13400	.00000	.00020	.03346	.17960
#1	.07660	.00000	.13470	-.00020	.00028	.03450	.17980
#2	.07660	.00080	.13330	.00020	.00012	.03242	.17940

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	.15590	.13860	.00000	.03570	.00030	-.00050	-.00030
	.15560	.13860	.00000	.03480	.00020	-.00020	-.00020
	.15620	.13860	.00000	.03660	.00040	-.00080	-.00040

Elem	Se1960	Tl1908	V 2924	Y 3710	Zn2138
Avge	.00030	.00100	.00035	.00000	.04535
#1	.00040	.00100	.00070	.00000	.04520
#2	.00020	.00100	.00000	.00000	.04550

Method: CLPICAP Standard: CAL3

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00050	.33550	.00225	.14630	.49600	.00250	.00040
#1	.00100	.33640	.00240	.14480	.49330	.00240	.00040
#2	.00000	.33460	.00210	.14780	.49870	.00160	.00040

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K 7664	Mg2795
Avge	-.00030	.00010	.00210	.24465	.00200	.03256	.00120
#1	-.00020	.00170	.00210	.24500	.00200	.03490	.00120
#2	-.00040	-.00150	.00210	.24430	.00200	.03021	.00120

Elem	Mo3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	.00135	.00010	.07690	5.5199	.06480	-.00055	.03440
	.00380	.00020	.07720	5.4526	.06440	-.00060	.03420
	-.00110	.00000	.07660	5.5872	.06520	-.00050	.03460

Elem	Se1960	Tl1908	V 2924	Y 3710	Zn2138
Avge	-.00040	-.00060	-.00230	.00010	.00040
#1	-.00040	-.00020	-.00220	.00010	.00040
#2	-.00040	-.00100	-.00240	.00010	.00040

Method: CLAICAP Standard: CAL4

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00015	.00740	.67270	.00000	.00000	.00170	.00405
#1	.00000	.00690	.67020	.00000	.00000	.00160	.00400
#2	.00030	.00790	.67520	.00000	.00000	.00180	.00410

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K 7664	Mg2795
Avge	.00005	.30470	.00190	.00110	.00020	.03405	.00040
#1	.00000	.30190	.00170	.00100	.00000	.03285	.00040
#2	.00010	.30750	.00210	.00120	.00040	.03525	.00040

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	.00140	.00000	.00000	.03540	-.00030	.00000	.00030
	-.00040	.00000	.00000	.03480	-.00060	.00000	.00040
#2	.00320	.00000	.00000	.03600	.00000	.00000	.00020

Elem	Se1960	Ti1908	V 2924	Y 3710	Zn2138
Avge	.14110	.00180	.00000	-.00005	.00040
#1	.14200	.00180	.00000	-.00010	.00040
#2	.14020	.00180	.00000	.00000	.00040

Method: CLPICAP Standard: CAL7

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00020	.00750	-.00150	.00000	.00000	.00070	.00040
#1	-.00010	.00880	-.00040	.00000	.00000	.00120	.00040
#2	-.00030	.00620	-.00260	.00000	.00000	.00020	.00040

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K 7664	Mg2795
Avge	.00000	.00105	.00200	2.4625	.01866	.03319	1.8184
#1	-.00010	.00150	.00210	2.4328	.01840	.03271	1.7890
#2	.00010	.00060	.00190	2.4922	.01892	.03366	1.8479

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	1.5792	.00015	-.00105	.03500	-.00010	.00030	-.00100
	1.5678	.00030	-.00100	.03520	-.00040	.00080	-.00080
#2	1.5906	.00000	-.00110	.03480	.00020	-.00020	-.00120

Elem	Se1960	Tl1908	V 2924	Y 3710	Zn2138
Avge	-.00090	.00020	.00050	.00005	.00040
#1	-.00040	-.00060	.00000	.00010	.00040
#2	-.00140	.00100	.00100	.00000	.00040

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Method: CLPICAP Standard: CAL8

Elem	Ab3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00370	.00570	-.04255	.00040	.00000	.00120	.00040
#1	-.00380	.00580	-.04140	.00040	.00000	.00100	.00040
#2	-.00360	.00560	-.04370	.00040	.00000	.00140	.00040

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K 7664	Mg2795
Avge	.00050	-.00065	.00350	24.331	.18356	.03278	15.917
#1	.00020	-.00130	.00350	24.296	.18430	.03143	15.942
#2	.00080	.00000	.00350	24.366	.18282	.03412	15.893

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	15.751	-.00060	-.01130	.03630	-.00070	.00125	-.00570
	15.754	-.00060	-.01140	.03660	-.00060	.00080	-.00540
	15.747	-.00060	-.01120	.03600	-.00080	.00170	-.00600

Elem	Se1960	Tl1908	V 2924	Y 3710	Zn2138
Avge	-.01630	.01350	.00260	-.00015	.00360
#1	-.01620	.01400	.00240	-.00020	.00360
#2	-.01640	.01300	.00280	-.00010	.00360

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Method: CLPICAP Standard: CALS

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00100	.01025	.00320	.00000	.00370	.01360	.00000
#1	-.00100	.00950	.00300	.00000	.00370	.01360	.00000
#2	-.00100	.01100	.00340	.00000	.00370	.01360	.00000

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K 7664	Mg2795
Avge	.00000	-.00355	.00170	.00330	-.00038	.19482	.00260
#1	.00000	-.00290	.00150	.00440	-.00045	.19565	.00320
#2	.00000	-.00420	.00190	.00220	-.00031	.19400	.00200

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.03830	.00000	.00000	.03700	.00000	-.00040	.00010
1	-.03780	.00000	.00000	.03640	.00000	-.00060	-.00040
2	-.03880	.00000	.00000	.03760	.00000	-.00020	.00060

Elem	Se1960	Tl1908	V 2924	Y 3710	Zn2138
Avge	.00000	-.00060	.19525	.23280	-.00020
#1	.00000	-.00060	.19570	.23320	-.00020
#2	.00000	-.00060	.19480	.23240	-.00020

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Method: CLPICAP Standard: CAL6

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00000	.00805	.00170	.00000	.00000	.00075	.00000
#1	.00000	.00910	.00220	.00000	.00000	.00110	.00000
#2	.00000	.00700	.00120	.00000	.00000	.00040	.00000

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K 7664	Mg2795
Avge	.00005	.00185	.00160	.00120	.00000	.03387	.00040
#1	.00010	.00200	.00170	.00100	.00000	.03447	.00040
#2	.00000	.00170	.00150	.00140	.00000	.03327	.00040

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	.00230	.00000	.00000	.03850	.00030	.04730	-.00010
	.00320	.00000	.00000	.03980	.00020	.04700	-.00040
#2	.00140	.00000	.00000	.03720	.00040	.04760	.00020

Elem	Se1960	Ti1908	V 2924	Y 3710	Zn2138
Avge	.00080	.30280	.00000	.00000	.00000
#1	.00140	.30880	.00000	.00000	.00000
#2	.00020	.29680	.00000	.00000	.00000

Method: CLPICAP Standard: CAL1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00050	.00650	.00230	.00000	.00000	.00110	.00000
#1	.00060	.00580	.00220	.00000	.00000	.00120	.00000
#2	.00040	.00720	.00240	.00000	.00000	.00100	.00000

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00000	.00000	.00170	.00095	-.00003	.03373	.00060
#1	.00000	.00000	.00170	.00110	-.00006	.03410	.00080
#2	.00000	.00000	.00170	.00080	.00000	.03337	.00040

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	.00250	.00000	.00000	.03310	.00005	.00020	-.00025
#1	.00200	.00000	.00000	.03280	-.00020	.00000	-.00030
#2	.00300	.00000	.00000	.03340	.00030	.00040	-.00020

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	-.00050	.00000	.00000	-.00005	.00000
#1	-.00040	.00000	.00000	-.00010	.00000
#2	-.00060	.00000	.00000	.00000	.00000

Method: CLPICAP Standard: CAL2

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.22510	.00580	.00215	.00000	.00000	.00050	.00000
#1	.22500	.00650	.00160	.00000	.00000	.00040	.00000
#2	.22520	.00510	.00270	.00000	.00000	.00060	.00000

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00000	.00000	.00170	.00040	.00000	.03232	.00000
#1	.00000	.00000	.00170	.00040	.00000	.03195	.00000
#2	.00000	.00000	.00170	.00040	.00000	.03268	.00000

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	.00105	.00000	.00010	.03440	.00010	.00030	-.00005
#1	.00170	.00000	-.00020	.03560	.00020	.00040	-.00040
#2	.00040	.00000	.00040	.03320	.00000	.00020	.00030

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.00010	.00050	.00000	.00000	.00000
#1	.00000	.00060	.00000	.00000	.00000
#2	.00020	.00040	.00000	.00000	.00000

Method: CLPICAP Sample Name: CCVC1 Operator: LCK
Run Time: 05/15/90 15:27:42
Comment: 2536B VERSCDM2,3
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00604	.49646	.51836	.52080	.51020	20.477	.00249
#1	-.00738	.49478	.52434	.52216	.51020	20.357	.00246
#2	-.00471	.49814	.51239	.51943	.51019	20.597	.00253

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00128	.51104	-.01559	.50069	.24538	19.495	.50349
#1	-.00263	.50956	-.01559	.49700	.24550	18.945	.50265
#2	.00519	.51253	-.01558	.50439	.24527	20.044	.50432

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	.48978	.00091	1.8233	20.079	-.00250	.00201	.50868
#1	.47939	-.00126	1.8240	20.161	-.00404	-.01481	.52014
#2	.50017	.00307	1.8227	19.997	-.00097	.01883	.49722

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.01816	-.06444	-.00308	1.9984	.52221
#1	.03933	-.06116	-.00411	1.9976	.52222
#2	-.00302	-.06772	-.00206	1.9993	.52221

Method: CLPICAP Sample Name: CCVN1 Operator: LCK
Run Time: 05/15/90 15:30:11
Comment: 2536B VERSCDM2.3
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.52623	.00051	.03375	.00000	.00512	.00178	.53877
#1	.52313	.00158	.03131	-.00001	.00513	.00377	.53516
#2	.52934	-.00055	.03620	.00000	.00512	-.00021	.54238

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.52121	.00578	.52603	-.00272	-.13329	.65165	.00008
#1	.51990	.00692	.52603	-.00272	-.05603	.66671	.00008
#2	.52252	.00464	.52603	-.00272	-.21054	.63660	.00009

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.01574	.52161	.00374	.01192	.52473	1.0176	.00534
#1	-.01752	.52090	.00516	.00462	.52628	1.0071	.00548
#2	-.01396	.52232	.00233	.01922	.52319	1.0282	.00521

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	2.0594	1.9228	.50336	.00043	.00507
#1	2.0673	1.9307	.50310	.00086	.00505
#2	2.0514	1.9149	.50362	.00000	.00509

Method: CLPICAP Sample Name: CCVH1 Operator: LCK
Run Time: 05/15/90 15:33:05
Comment: 2536B VERSCDM2,3
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00013	-.00440	.00004	-.00060	-.00072	.00308	.00270
#1	.00020	-.00467	.00415	-.00060	-.00072	.00263	.00451
#2	.00006	-.00413	-.00406	-.00059	-.00071	.00352	.00090

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00162	.00108	-.01792	149.15	149.14	.38521	46.986
#1	.00227	.00141	-.01791	149.63	149.52	.19601	47.001
#2	-.00552	.00075	-.01793	148.67	148.76	.57441	46.970

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	49.558	.00022	.00028	-.00120	.00333	-.00462	-.01837
#1	49.596	.00030	.00150	-.00669	.00644	-.01519	-.01626
#2	49.520	.00013	-.00093	.00429	.00022	.00595	-.02048

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.16512	-.05719	-.00609	-.00086	.00754
#1	.18394	-.08865	-.00615	-.00086	.00746
#2	.14629	-.02573	-.00604	-.00086	.00762

Method: CLPICAP Sample Name: CCB1 Operator: LCK
Run Time: 05/15/90 15:36:09
Comment: 2536, VERSCDM 2,3 SOILS, HOH, 3,4 EXTRACTS
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00226	-.00095	.03594	.00000	.00000	-.00910	-.00015
#1	-.00137	.00120	.02552	.00000	.00000	-.00706	-.00011
#2	-.00315	-.00310	.04635	.00000	.00000	-.01114	-.00020

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00067	.00000	-.01481	.00822	-.18346	.22010	.00112
#1	.00067	-.00246	-.01481	.01191	-.18344	.54224	.00224
#2	.00067	.00245	-.01481	.00452	-.18349	-.10204	.00001

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.01758	-.00004	.00557	.00638	.00310	.00843	.00539
#1	-.01473	-.00004	.00232	.00457	.00773	.01474	.00255
#2	-.02043	-.00004	.00881	.00819	-.00153	.00213	.00823

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	-.00905	-.02566	.00007	-.00043	.00013
#1	-.03025	-.03889	.00004	-.00043	.00011
#2	.01215	-.01243	.00009	-.00043	.00015

Method: CLPICAP Sample Name: ICSABI Operator: LCK
Run Time: 05/15/90 15:47:52
Comment: 2536B, VERSCDM 2.3
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.99560	491.16	-.22350	.51945	.42733	490.49	.99285
#1	1.0068	493.25	-.05241	.52013	.43033	496.41	.99937
#2	.98439	489.08	-.39458	.51878	.42434	484.58	.98632

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.46054	.53146	.51093	177.26	177.64	-.19724	L228.68
#1	.46763	.54317	.51099	179.04	179.37	.01719	L230.75
#2	.45346	.51975	.51088	175.48	175.92	-.41166	L226.61

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	462.73	.49818	-.00491	-.11022	.93958	.93844	-.01746
#1	465.13	.50443	.00542	-.11697	.95505	.98124	-.00017
#2	460.33	.49193	-.01524	-.10348	.92411	.89563	-.03475

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.03058	.02875	.47736	.00349	.91685
#1	.15859	.08013	.48125	.00311	.92304
#2	-.09744	-.02264	.47346	.00388	.91066

Method: CLPICAP Sample Name: CCVC2 Operator: LCK
Run Time: 05/15/90 16:45:32
Comment: 2536B VERSCDM2,3
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00671	.49301	.51534	.52216	.51020	20.627	-.00112
#1	-.00738	.49259	.50643	.52216	.51020	20.631	-.00109
#2	-.00604	.49342	.52426	.52216	.51020	20.623	-.00116

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00261	.51628	-.01560	.50274	.24560	18.820	.50628
#1	-.00262	.51873	-.01559	.50192	.24556	18.872	.50544
#2	-.00260	.51382	-.01560	.50356	.24564	18.769	.50711

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	.51656	.00055	1.8421	20.092	-.00326	.00514	.53012
#1	.51156	.00091	1.8344	19.975	.00057	-.00010	.50863
#2	.52155	.00019	1.8499	20.210	-.00709	.01038	0.55160

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.00411	-.04791	-.00321	2.0118	.53110
#1	.01107	-.02806	-.00352	2.0122	.53109
#2	-.00285	-.06776	-.00291	2.0113	.53112

Method: CLPICAP Sample Name: CCVN2 Operator: LCK
Run Time: 05/15/90 16:49:19
Comment: 2536B VERSCDM2,3
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.52491	-.00348	.01314	-.00001	.00512	-.00732	.54609
#1	.52402	-.00152	.02232	-.00001	.00511	-.00427	.54605
#2	.52579	-.00544	.00396	.00000	.00512	-.01037	.54613

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.51990	.00875	.53058	-.00270	-.09420	.04788	.00008
#1	.51990	.01220	.53058	-.00106	-.05538	.35511	.00008
#2	.51990	.00530	.53058	-.00435	-.13301	-.25936	.00008

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.02825	.52955	.00121	.01011	.53553	1.0134	.00543
#1	-.02097	.53100	.00256	.00828	.52009	1.0197	-.00600
#2	-.03553	.52809	-.00015	.01194	Q.55096	1.0071	.01685

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	2.0315	1.9608	.50514	.00000	.00056
#1	2.1095	1.9077	.50617	.00000	.00061
#2	1.9536	2.0139	.50411	.00000	.00050

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Method: CLPICAP Sample Name: CCVH2 Operator: LCK
Run Time: 05/15/90 16:52:11
Comment: 2536B VERSCDM2,3
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00175	-.00276	-.03311	-.00059	.00372	.00546	.00102
#1	.00084	-.00167	.00339	-.00059	.00373	.00443	.00086
#2	.00266	-.00385	-.06962	-.00059	.00371	.00648	.00118

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00234	.00124	-.01757	148.33	148.21	.59191	47.113
#1	.00234	-.00255	-.01947	148.43	148.10	.08233	46.919
#2	.00233	.00502	-.01566	148.23	148.32	1.1015	47.307

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	49.371	.00217	-.00303	-.00933	.00173	.00188	-.03289
#1	49.374	.00287	-.00449	-.01935	-.00598	.00190	-.01590
#2	49.368	.00148	-.00157	.00069	.00944	.00186	-.04988

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.16750	.03958	-.00545	-.00086	.00772
#1	.15232	.05990	-.00698	-.00086	.00778
#2	.18269	.01925	-.00392	-.00086	.00766

Method: CLPICAP Sample Name: CCB2 Operator: LCK
Run Time: 05/15/90 16:58:18
Comment: 2536, VERSCDM 2,3 SOILS, HOH, 3,4 EXTRACTS
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00315	-.00200	.01511	.00000	.00000	-.00661	-.00006
#1	-.00315	-.00125	.00171	.00000	.00000	-.00408	-.00001
#2	-.00315	-.00275	.02852	.00000	.00000	-.00915	-.00012

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00067	.00245	-.01481	-.00246	-.18349	.50032	-.00167
#1	.00067	.00737	-.01481	-.00205	-.18352	.89593	-.00111
#2	.00066	-.00246	-.01481	-.00287	-.18346	.10471	-.00222

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.02347	-.00004	.00232	.00183	-.00769	.01264	.01397
#1	-.01776	-.00004	.00492	.00820	-.00770	.01054	.01395
#2	-.02919	-.00004	-.00027	-.00454	-.00768	.01474	.01399

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	-.00920	-.04220	.00005	.00000	.00017
#1	.01183	-.01243	.00007	.00000	.00017
#2	-.03024	-.07198	.00003	.00000	.00017

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Method: CLPICAP Sample Name: PBW Operator: HR
Run Time: 05/15/90 22:12:16
Comment: 2536B; VERSCDM-2,4 TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00019	.00500	.00840	.00000	.00383	.01169	-.00006
#1	.00017	.00300	.00765	.00000	.00363	.01218	-.00006
#2	.00021	.00699	.00915	.00000	.00403	.01120	-.00006

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00064	.00246	-.01443	-.00102	-.07405	-.00334	.00000
#1	-.00194	.00148	-.01557	-.00123	-.18314	-.17475	.00001
#2	.00065	.00345	-.01328	-.00082	.03503	.16807	.00000

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.01395	.00143	.00378	.01549	-.00462	.00947	.01274
#1	-.01776	.00140	.00492	.00820	.00155	.00633	.01112
#2	-.01013	.00145	.00265	.02278	-.01079	.01260	.01435

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.00618	-.00628	.00082	.00000	.00014
#1	.01188	-.00580	.00059	.00000	.00014
#2	.00049	-.00675	.00106	.00000	.00014

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Method: CLPICAP Sample Name: PBEX Operator: HR
Run Time: 05/15/90 22:15:36
Comment: 2536B; VERSCDM-2,4 TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00022	.02606	.01265	.03281	.00181	.07363	-.00006
#1	.00020	.02955	.00273	.03281	.00362	.08329	-.00003
#2	-.00064	.02257	.02256	.03281	.00000	.06398	-.00010

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00065	.00687	-.00228	.01868	-.10631	-.28808	.00893
#1	.00065	.00803	.00190	.02093	-.02889	-.32260	.00893
#2	.00066	.00572	-.00646	.01642	-.18373	-.25357	.00893

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.00538	.00142	.00373	.65897	-.00462	.01474	.01122
#1	-.00505	.00144	.00515	.65349	-.00462	.01473	.01423
#2	-.00570	.00140	.00232	.66444	-.00462	.01476	.00822

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	-.00123	.01040	.00005	.00000	H.02671
#1	.07005	.02000	.00109	.00000	H.02666
#2	-.07251	.00080	-.00100	.00000	H.02675

Analysis Report Blank Sample Tue 05-15-90 10:23:59 PM page 1

Method: CLPICAP Sample Name: PBEX-2 Operator: HR
Run Time: 05/15/90 22:21:33
Comment: 2536B; VERSCDM-2,4 TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00058	.01995	.00913	.03965	.00383	.07718	-.00005
#1	.00099	.01981	.02253	.04101	.00403	.07820	-.00010
#2	.00017	.02009	-.00427	.03828	.00363	.07616	.00000

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00326	.00672	-.00342	.00615	-.18357	-.16457	.01117
#1	.00587	.00345	-.00342	.00533	-.18373	-.05917	.01117
#2	.00066	.00999	-.00342	.00698	-.18341	-.26998	.01117

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.00569	.00140	.00362	H1246.6	-.00308	.02317	.01109
#1	-.00123	.00140	.00232	H1245.6	-.00461	.01897	.01970
#2	-.01016	.00140	.00492	H1247.7	-.00156	.02736	.00249

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.02594	.02730	.00085	.00000	H.04005
#1	.04011	.00745	.00110	.00000	H.04450
#2	.01177	.04715	.00060	.00000	H.03560

Method: CLPICAP Sample Name: CCVC5 Operator: HR
Run Time: 05/15/90 22:31:55
Comment: 2536B; VERSCDM-2,3,4 CLPM & TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00407	.49742	.49747	.51738	.50898	20.572	.00073
#1	-.00405	.49772	.49448	.51601	.50817	20.657	-.00105
#2	-.00409	.49712	.50046	.51875	.50979	20.487	.00251

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00327	.50844	-.01597	.50870	.35519	20.031	.50097
#1	-.00393	.51057	-.01635	.50931	.46450	20.188	.50097
#2	-.00261	.50630	-.01560	.50809	.24589	19.873	.50097

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	.47889	.00129	1.8417	19.429	-.00714	-.00854	.51890
#1	.47529	.00096	1.8412	19.375	-.00404	-.00226	.52338
#2	.48249	.00163	1.8421	19.483	-.01024	-.01482	.51441

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	-.02985	-.01859	-.00176	2.0122	.53000
#1	-.00037	-.02899	-.00126	2.0097	.53108
#2	-.05932	-.00819	-.00226	2.0148	.52891

Method: CLPICAP Sample Name: CCVN6 Operator: HR
Run Time: 05/15/90 22:35:56
Comment: 25368; VERSCDM-2,3;2,4 CLPM & TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.48602	-.00712	.01625	-.00001	.00245	-.00628	.54035
#1	.48439	-.00558	.01031	-.00001	.00246	-.00425	.54039
#2	.48765	-.00866	.02219	-.00001	.00245	-.00832	.54032

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.51468	.00263	.52527	-.00231	-.05334	.70804	.00008
#1	.51729	-.00082	.52603	-.00272	-.05378	.62071	.00008
#2	.51207	.00608	.52451	-.00189	-.05290	.79536	.00008

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.01967	.52523	-.00003	-.00539	.52476	.99556	.01128
#1	-.02282	.52523	.00257	-.00995	.52940	.99030	.02276
#2	-.01651	.52523	-.00262	-.00082	.52012	1.0008	-.00019

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	2.1306	1.8448	.51334	.00000	.00066
#1	2.0954	1.8680	.51231	.00000	.00063
#2	2.1658	1.8216	.51438	.00000	.00069

Method: CLPICAP Sample Name: CCVH6 Operator: HR
Run Time: 05/15/90 22:38:44
Comment: 2536B: VERSCDM-2,3;2,4 CLPM & TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00639	-.00435	.00781	-.00063	.00369	.00799	.00089
#1	.00598	-.00544	.01374	-.00063	.00369	.00901	.00086
#2	.00680	-.00326	.00187	-.00063	.00370	.00698	.00091

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00078	-.00116	-.01769	148.49	156.99	.53002	46.319
#1	-.00078	-.00246	-.01769	148.58	156.99	.45094	46.326
#2	-.00079	.00014	-.01768	148.40	156.99	.60909	46.313

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	48.929	.00342	.00280	-.00309	-.00269	-.00409	.02416
#1	49.010	.00342	.00604	-.00676	.00038	.00430	.01128
#2	48.847	.00342	-.00045	.00058	-.00577	-.01249	.03704

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.26915	-.09303	-.00853	-.00086	.00618
#1	.26215	-.10793	-.00798	-.00086	.00617
#2	.27614	-.07813	-.00907	-.00086	.00619

Method: CLPICAP Sample Name: CCB6 Operator: HR
Run Time: 05/15/90 22:44:14
Comment: 2536B; VERSCDM-2,3;2,4
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00064	-.00476	.01213	.00000	.00444	-.00966	-.00007
#1	.00017	-.00400	.01362	.00000	.00444	-.00916	-.00008
#2	-.00146	-.00553	.01064	.00000	.00444	-.01017	-.00007

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00067	.00311	-.01481	-.00246	-.18347	.38447	-.00055
#1	.00067	.00376	-.01481	-.00041	-.18347	.07069	.00001
#2	.00067	.00245	-.01481	-.00451	-.18348	.69825	-.00111

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.02985	.00068	.00492	.00456	-.00464	.00634	-.00322
#1	-.03558	-.00004	.00492	.00456	-.00466	.01474	-.00895
#2	-.02413	.00140	.00492	.00456	-.00461	-.00207	.00251

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	-.00218	-.00415	.00006	.00000	.00016
#1	-.01625	.05045	.00007	.00000	.00016
#2	.01190	-.05875	.00006	.00000	.00016

Method: CLPICAP Sample Name: 16960 Operator: HR
Run Time: 05/15/90 22:56:58
Comment: 2536B; VERSCDM-2,4 TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00232	.17129	-.00087	.70436	.00224	H1605.8	.00365
#1	.00254	.17488	-.00706	.70470	.00224	H1606.4	.00369
#2	.00210	.16770	.00531	.70402	.00224	H1605.3	.00362

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00648	.00358	-.01455	8.0429	8.5052	-.08825	79.498
#1	.00778	.00752	-.01454	8.0258	8.5820	-.04474	79.205
#2	.00517	-.00036	-.01455	8.0600	8.4283	-.13176	79.791

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	102.41	25.557	.00660	1.7694	.01070	.01416	.03231
#1	102.36	25.469	.00931	1.8241	.01226	.01520	.03242
#2	102.46	25.645	.00389	1.7147	.00913	.01312	.03219

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.09466	.03334	.02053	.01414	.15778
#1	.05338	-.00219	.02000	.01458	.15887
#2	.13595	.06886	.02106	.01371	.15669

Method: CLPICAP Sample Name: CRIF Operator: HR
Run Time: 05/15/90 22:59:59
Comment: 2536B; VERSCDM-2,3; 2,4 CLPM & TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.01851	-.00295	.03104	.00000	.01239	.05064	.00910
#1	.01811	-.00752	.02659	.00000	.01239	.06791	.00732
#2	.01892	.00161	.03549	.00000	.01239	.03337	.01087

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.10239	.02431	.03688	.00086	-.17061	.47120	.00336
#1	.10238	.02463	.03688	.00044	-.17072	.49096	.00448
#2	.10239	.02399	.03688	.00127	-.17050	.45143	.00224

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.02961	.03315	.00106	.03009	.07742	.10946	.12614
#1	-.03787	.03315	-.00024	.03739	.07586	.09896	.12327
#2	-.02135	.03315	.00236	.02279	.07897	.11997	.12900

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.03308	-.01294	.10219	.00000	.04429
#1	.04009	-.00137	.10165	.00000	.04430
#2	.02607	-.02452	.10272	.00000	.04429

Method: CLPICAP Sample Name: ICSAF Operator: HR
Run Time: 05/15/90 23:03:09
Comment: 2536B; VERSCDM-2,3; 2,4 CLPM & TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00428	477.21	-.02051	.00474	.00094	466.15	-.00421
#1	.00443	477.23	-.06294	.00474	.00073	466.21	-.00582
#2	.00414	477.19	.02193	.00473	.00114	466.09	-.00259

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00029	.01838	-.00855	171.41	183.09	-.40329	224.78
#1	.00160	.01821	-.00856	171.55	182.76	-.29652	224.16
#2	-.00103	.01854	-.00854	171.28	183.42	-.51006	225.41

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	449.42	.01247	.00565	.13260	-.00089	-.00943	.00292
#1	449.40	.01240	-.00003	.13991	-.00243	-.00619	.02814
#2	449.45	.01254	.01132	.12528	.00064	-.01267	-.02230

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.14990	.02016	-.00728	.00287	-.01740
#1	.18778	.06296	-.00700	.00287	-.01289
#2	.11201	-.02265	-.00756	.00287	-.02191

Method: CLPICAP Sample Name: ICSABF Operator: HR
Run Time: 05/15/90 23:06:48
Comment: 2536B; VERSCDM-2,3; 2,4 CLPM & TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.93291	494.84	-.04860	.51598	.42663	493.25	1.0048
#1	.93672	496.31	-.01609	.51871	.42783	495.21	1.0136
#2	.92910	493.36	-.08110	.51325	.42544	491.29	.99595

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.46035	.51402	.50984	179.31	192.04	-.04114	L227.18
#1	.46161	.51848	.50987	179.68	192.83	-.22320	L227.52
#2	.45910	.50955	.50982	178.94	191.24	.14092	L226.84

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	462.03	.51527	-.00442	-.11615	.92593	.92702	.00088
#1	463.54	.51768	-.00584	-.10695	.93678	.94236	.04668
#2	460.52	.51286	-.00300	-.12535	.91507	.91167	-.04492

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.16716	-.14836	.48219	.00308	.92542
#1	.15608	-.09768	.48414	.00310	.92960
#2	.17824	-.19904	.48023	.00307	.92123

Method: CLPICAP Sample Name: CCVC7 Operator: HR
Run Time: 05/15/90 23:12:28
Comment: 2536B; VERSCDM-2,3;2,4 CLPM & TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	-.00120	.48663	.52130	.51191	.50414	20.425	-.00113
#1	-.00120	.48465	.51684	.51259	.50495	20.425	-.00112
#2	-.00120	.48861	.52577	.51123	.50334	20.424	-.00114

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00194	.50745	-.01635	.49988	.46379	20.486	.49650
#1	.00128	.50761	-.01711	.50193	.46384	20.267	.49762
#2	.00259	.50729	-.01559	.49783	.46373	20.705	.49539

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	.47126	-.00049	1.8379	19.192	.00675	.00299	.51481
#1	.46592	-.00121	1.8373	19.229	.01139	.00824	.51482
#2	.47660	.00023	1.8386	19.154	.00211	-.00226	.51480

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.00683	.00410	-.00233	1.9937	.53104
#1	.04199	-.02237	-.00233	1.9950	.53102
#2	-.02833	.03057	-.00232	1.9924	.53105

Method: CLPICAP Sample Name: CCVN7 Operator: HR
Run Time: 05/15/90 23:16:07
Comment: 2536B; VERSCDM-2,3;2,4 CLPM & TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.48763	-.00529	.02431	.00000	.00246	-.00122	.54571
#1	.48926	.00019	.02442	.00000	.00245	-.00426	.54572
#2	.48599	-.01077	.02419	.00000	.00247	.00183	.54570

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.51469	.00179	.51995	-.00229	-.18550	.73922	.00009
#1	.51730	.00214	.52147	-.00106	-.16272	.50865	.00009
#2	.51209	.00144	.51843	-.00352	-.20829	.96980	.00009

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.02348	.53098	.00237	.02743	.52628	1.0008	.00818
#1	-.02410	.53169	.00240	.02469	.53865	1.0071	.01683
#2	-.02286	.53026	.00234	.03016	.51391	.99453	-.00048

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	2.1079	1.9017	.51155	.00000	.00071
#1	2.1786	1.8916	.51338	.00000	.00066
#2	2.0373	1.9117	.50972	.00000	.00077

Method: CLPICAP Sample Name: CCVH7 Operator: HR
Run Time: 05/15/90 23:19:15
Comment: 2536B; VERSCDM-2,3;2,4 CLPM & TCLP
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00772	-.00689	-.01768	-.00063	.00370	.00917	.00100
#1	.00761	-.00267	-.01325	-.00063	.00370	.01205	.00098
#2	.00784	-.01112	-.02210	-.00063	.00370	.00629	.00102

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	-.00082	.00276	-.01843	148.17	157.62	.39554	45.865
#1	-.00078	.00407	-.01769	147.97	156.96	.49050	45.869
#2	-.00085	.00145	-.01917	148.38	158.27	.30058	45.862

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	48.779	.00356	.00437	.00240	-.00269	-.00422	-.00197
#1	48.748	.00486	.00340	.00789	.00038	.01273	-.01172
#2	48.811	.00226	.00533	-.00310	-.00575	-.02116	.00778

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	.29074	-.19335	-.00966	-.00129	.00607
#1	.30379	-.18053	-.00904	-.00086	.00618
#2	.27769	-.20616	-.01029	-.00173	.00597

Method: CLPICAP Sample Name: CCB7 Operator: HR
Run Time: 05/15/90 23:24:55
Comment: 2536B; VERSCDM-2,3;2,4
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avge	.00038	-.00322	.01213	.00000	.00444	-.00560	-.00007
#1	-.00024	-.00460	-.00126	.00000	.00444	-.00916	-.00002
#2	.00099	-.00185	.02552	.00000	.00444	-.00204	-.00012

Elem	Co2286	Cr2677	Cu3247	Fe2599	Fe2714	K_7664	Mg2795
Avge	.00197	.00344	-.01557	-.00246	-.18361	.94862	.00001
#1	.00067	.00245	-.01481	-.00287	-.18349	.92884	.00001
#2	.00328	.00442	-.01633	-.00205	-.18372	.96839	.00001

Elem	Mg3832	Mn2576	Mo2023	Na5889	Ni2316	Pb2203	Sb2068
Avge	-.02157	.00068	.00362	.00912	-.00307	-.00101	.01111
#1	-.02284	-.00004	.00232	.02279	-.00462	-.00837	.01398
#2	-.02031	.00140	.00492	-.00456	-.00153	.00634	.00823

Elem	Se1960	Tl1908	V_2924	Y_3710	Zn2138
Avge	-.03033	-.00581	.00006	.00000	.00016
#1	-.04449	-.00581	.00005	.00000	.00016
#2	-.01617	-.00580	.00007	.00000	.00016

VERSAR, INC.
TRACE METALS SECTION
GFAA ANALYSIS LOG SHEET

ELEMENT: SEC / SE3 DATE: 5-15-90 PAGE 1 OF 5

CODE-BATCH: PESAMPLE -115
VERSCDM -2, 4, 2R
VERSSEAL -1

CONTROL #: 2486
2536, 2565, 2
2561

Instrument #: 5
Wavelength: 196.0 Slit: 2.0
Signal: ____ Pk.Ht. X Pk.Area
Background Correction: X BZ ___ BD

Light Source: EDL
Current/Power: 6 watts
Tube: LVP Pipet Vol.: 15 ul
Replicates: 2 Purge: 0 Ar

Standard Prep.: Date: 5-15-90
Time: 0730
Source: I.V.

Matrix Modifiers: X yes ____ no

FURNACE CONDITIONS

Step	1	2	3	4	5
Temp °C	130	1000	2000	2500	20
Ramp (s)	5	5	0	1	2
Hold (s)	30	15	5	3	8
BOC (s)		14			
Rec. (s)		15			

CALIBRATION CURVE

CUP	STANDARD	AV. ABS.	UNADJ. CONC.	D.F.	COMMENTS
1	CB 0.0 ppb	-1			r= .9998
2	STD1 5.0	14			CRA= 4.78
3	STD2 10.0	30			
4	STD3 20.0	66			
5	STD4 50.0	164			
6	ICV# 2	88	27.05	4 FOLD	[104.0] 104.0%
7	ICB 0.0 ppb	-1	<3.0		

Time of Calibration: 1800

Analyst: CV

Reviewer: HR

VERSAR, INC. GFAA ANALYSIS LOG SHEET

ELEMENT: SE 3 CODE-BATCH: VERSCOM - 2, ~~VERSSEAL~~ CV VERSCOM - 4 VERSSEAL - 1, VERSCOM - 2R CONTROL #: 2536 2565 2561, 2581

DATE: 5-15-90 TRAY #: 1 CALIB. TIME: 1800

CUP	LAB/EPA SAMPLE #		AV. ABS.	UNADJ. CONC.	D.F.	*	COMMENTS
1	PBW (2536, 2565)	B	1	<3.0			
2		10	29	9.29			(92.9%)
3	EXT. BLK 1	B	-6	<3.0W			
4		10	22	7.19			(71.9%)
5	EXT BLK 2	B	1	<3.0			
6		10	30	9.60			(96.0%)
7	LCSM		16	5.38			[10] 53.8%
8	16418 S		6	<3.0			RERUN TO VERIFY
9	16418 ~~D~~ CV	B	1	<3.0W			
10		10	18	5.98			(59.8%)
11	CCV 1		68	21.03			84.1%
12	CCB 1		0	<3.0			
13	16418 D	B	-3	<3.0W			RPD = NC
14		10	18	5.98			(59.8%
15	16960	B	2	<3.0			RERUN TO GET MSA
16	~~PB~~ CV	10	4	<3.0			(SPIKE NOT ADDED?)
17	PBW (2561)	B	-2	<3.0			
18		10	28	8.99			(89.9%)
19	EXT. BLK.	B	-1	<3.0W			
20		10	24	7.79			(77.9%)
21	16892	B	-2	<3.0W			
22		10	26	8.39			(83.9%)
23	CCV 2		70	21.63			86.5%
24	CCB 2		-1	<3.0			
25	~~16418 S R~~ CV 16418SR		105	32.2			[50] 64.4%
26	16960	B	-1	~~<3.0W~~			RERUN 10 FOLD DIL
27		10	5	—			
28	~~CCV 3~~ CV PBW (2566R)	B	-3	<3.0			
29	~~CCB 3~~ CV	10	28	8.99			(89.9%)
30	LCSM R		125	38.2			[50] 76.4%
31	CCV 3		68	21.03			
32	CCB 3		0	<3.0			
33	16960	B	-3	<3.0W	10 FOLD		
34		10	22	7.18			(71.8%)
35	CCV 4		66	20.43			81.7%
36	CCB 4		3	<3.0			
37							
38							
39							
40							

CCV= NBS @ 25 ppb

ICV=

( )= % recovery of MSA

* = ____g/____L (____wt.)

SPIKE=(HOH) 10 ug/l

=(SOLID) ____mg/kg

=(BENCH) ____

ANALYST: CV

CALIB. TRAY PESAMPLE -115 SEC CRV 5-15-90

	-0.000		
	-0.002		
	-0.001	AV	
	[illegible]	[illegible]	
	[illegible]	[illegible]	
	0.001		
	-0.004		
1	-0.001	AV	
	[illegible]	[illegible]	
	0.039		
	0.019		
2	0.014	AV	
	50.51	CV	
	0.035		
	0.020		
3	0.030	AV	
	20.87	CV	
	0.007		
	0.005		
4	0.006	AV	
	2.14	CV	
	0.161		
	0.166		
5	0.164	AV	
	2.16	CV	
	0.090		
	0.087		1755
6	0.088	AV	
	2.40	CV	
	-0.004		
	0.003		1800
7	-0.001	AV	
	[illegible]	[illegible]	

TRAY # 1 PESAMPLE -115 SEC CRV 5-15-90

	0.081		
	0.084		1805
1	0.083	AV	
	2.57	CV	
	0.003		
	-0.001		1810
2	0.001	AV	
	[illegible]	[illegible]	
	0.019		
	0.016		1815
3	0.017	AV	
	12.12	CV	
	-0.001		
	-0.001		
4	-0.001	AV	
	0.00	CV	
	0.033		
	0.034		
5	0.033	AV	
	2.11	CV	
	0.021		
	0.019		
6	0.020	AV	
	7.07	CV	
	0.053		
	0.048		
7	0.051	AV	
	7.00	CV	
	0.019		
	0.016		
8	0.018	AV	
	12.12	CV	
	0.047		
	0.050		
9	0.049	AV	
	4.37	CV	
	0.045		
	0.049		
10	0.047	AV	
	5.02	CV	
	0.073		
	0.072		1855
11	0.073	AV	
	0.98	CV	
	-0.005		
	-0.001		1900
12	-0.003	AV	
	94.28	CV	

VERSCDM 2,4,2R , VERSSEAL-1 TRAY #1 S-15-90 CRV SE3

		0.001	
		-0.000	
1		0.001	GV
		[illegible]	[illegible]
		0.032	
		0.027	
2		0.029	GV
		11.99	CV
		-0.009	
		-0.002	
3		-0.006	AV
		89.99	CV
		0.023	
		0.021	
4		0.022	AV
		6.43	CV
		0.002	
		-0.000	
5		0.001	AV
		[illegible]	[illegible]
		0.027	
		0.032	
6		0.030	GV
		11.99	CV
		0.015	
		0.010	
7		0.016	AV
		4.56	CV
		0.003	
		0.003	
8		0.006	GV
		64.28	CV
		0.000	
		0.002	
9		0.001	AV
		[illegible]	[illegible]
		0.012	
		0.023	
10		0.018	AV
		44.45	GV
		0.067	
		0.070	2000
11		0.068	AV
		3.10	GV
		0.001	
		-0.000	2005
12		0.000	AV
		[illegible]	[illegible]

VERSCDM 2,4,2R , VERSSEAL-1 TRAY #1 S-15-90 CRV SE3

		-0.004	
		-0.003	
13		-0.003	GV
		20.20	CV
		0.015	
		0.022	
14		0.018	GV
		26.76	CV
		0.000	
		0.004	
15		0.002	AV
		[illegible]	[illegible]
		0.005	
		0.002	
16		0.004	AV
		60.61	CV
		-0.006	
		0.001	
17		-0.002	AV
		[illegible]	[illegible]
		0.028	
		0.028	
18		0.028	AV
		0.00	GV
		-0.002	
		-0.001	
19		-0.001	AV
		47.14	CV
		0.025	
		0.023	
20		0.024	AV
		5.89	GV
		-0.000	
		-0.004	
21		-0.002	AV
		[illegible]	[illegible]
		0.026	
		0.025	
22		0.026	GV
		8.01	CV
		0.069	
		0.072	2100
23		0.070	GV
		3.01	GV
		-0.003	
		0.010	2105
24		-0.001	GV
		[illegible]	[illegible]

VERSCDM-2,4,2R CRV SE3 S-15-90 TRAY #1 VERSSEAL-1

		0.108	
		0.102	
25		0.105	GV
		4.04	GV
		-0.003	
		0.002	
26		-0.001	AV
		[illegible]	[illegible]
		0.009	
		0.002	
27		0.005	GV
		89.99	CV
		-0.006	
		0.001	
28		-0.003	AV
		[illegible]	[illegible]
		0.028	
		0.027	
29		0.026	AV
		2.57	GV
		0.121	
		0.129	
30		0.125	AV
		4.53	GV
		0.070	
		0.067	2140
31		0.066	AV
		3.10	GV
		0.002	
		-0.002	2145
32		0.000	GV
		[illegible]	[illegible]
		-0.003	
		-0.003	
33		-0.003	AV
		0.00	GV
		0.023	
		0.021	
34		0.022	AV
		6.43	CV
		0.002	
		0.009	2200
35		0.006	AV
		7.56	GV
		0.007	
		-0.001	2205
36		0.003	AV
		[illegible]	[illegible]

VERSAR, INC.
INORGANIC CHEMISTRY LABORATORY
MERCURY ANALYSIS SHEET

CALIBRATION

CALIBRATION CURVE

Standards ug/L	Signal peak ht
S0 0	2
S1 0.5	10
S2 2	40
S3 5	80
S4 10	171

CORRELATION: 0.9985

STANDARD INFORMATION

INITIAL CALIBRATION VERIFICATION
Source: EPA-LV Prep Date: 05/12/90 Conc: 5 ug/L

CONTINUING CALIBRATION VERIFICATION
Source: NBS Prep Date: 05/12/90 Conc: 5 ug/L

LABORATORY CONTROL SOLUTION
Source: EPA-LV Prep Date: 05/12/90 Conc: 5 ug/L

PRE-DIGESTION SPIKE
Source: Fisher
Conc: 4 ug/L

POST-DIGESTION SPIKE
Source: Fisher
Conc: ug/L

CODE-BATCH SPECIFICS

CONTROL NO.: 2536 ANALYST: T.L.U. DATE: 05/12/90

MATRIX: TCLP METHOD: HGW

TIME OF CALIBRATION: 14:00 CODE-BATCH: VERSCDM-2,4

INSTRUMENT SPECIFICS

INSTRUMENT ID NO.: 2 AIR FLOW: 3 LPM

INSTRUMENT MODEL: 703 LAMP SOURCE: HCL

Sample/ EPA ID No.	Signal	Unadj. Conc.	D.F.	Adj. Conc. ug/L	True Value	% Rec	Comments
ICV	88	5.1423	1	5.142309	5	102.8	
ICB/PBW	1	-0.072	1	-0.07232			
EXTBLK-1	3	0.0475	1	0.047553			
EXTBLK-2	3	0.0475	1	0.047553			
16418	2	-0.012	1	-0.01238			
16418D	2	-0.012	1	-0.01238			
16418S	34	1.9056	1	1.905641	2	95.28	
16960	1	-0.072	1	-0.07232			
CCVC1	85	4.9624	1	4.962494	5	99.24	
CCB1	2	-0.012	1	-0.01238			
			1	0			
			1	0			
			1	0			
			1	0			
			1	0			
			1	0			
			1	0			
			1	0			
			1	0			
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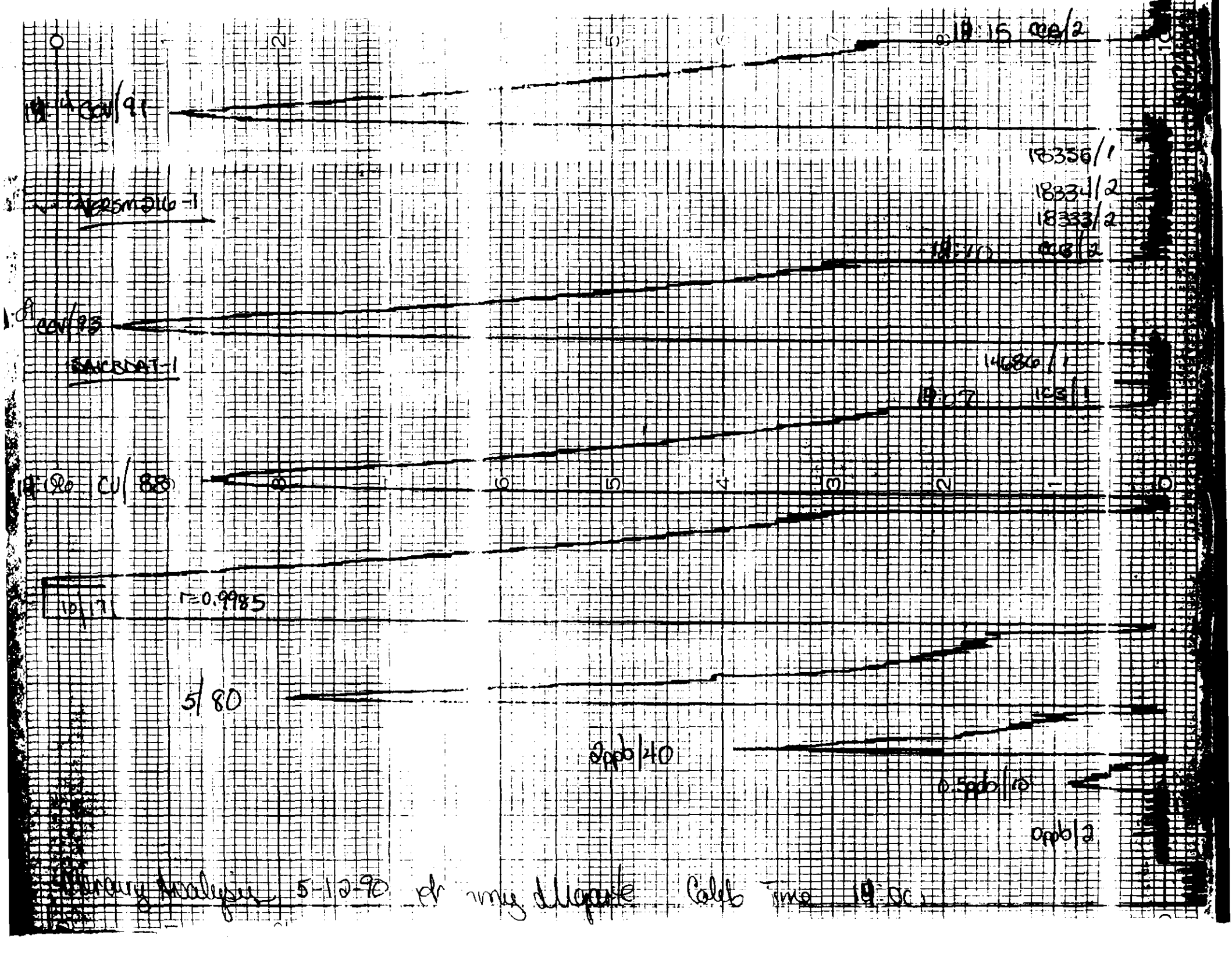
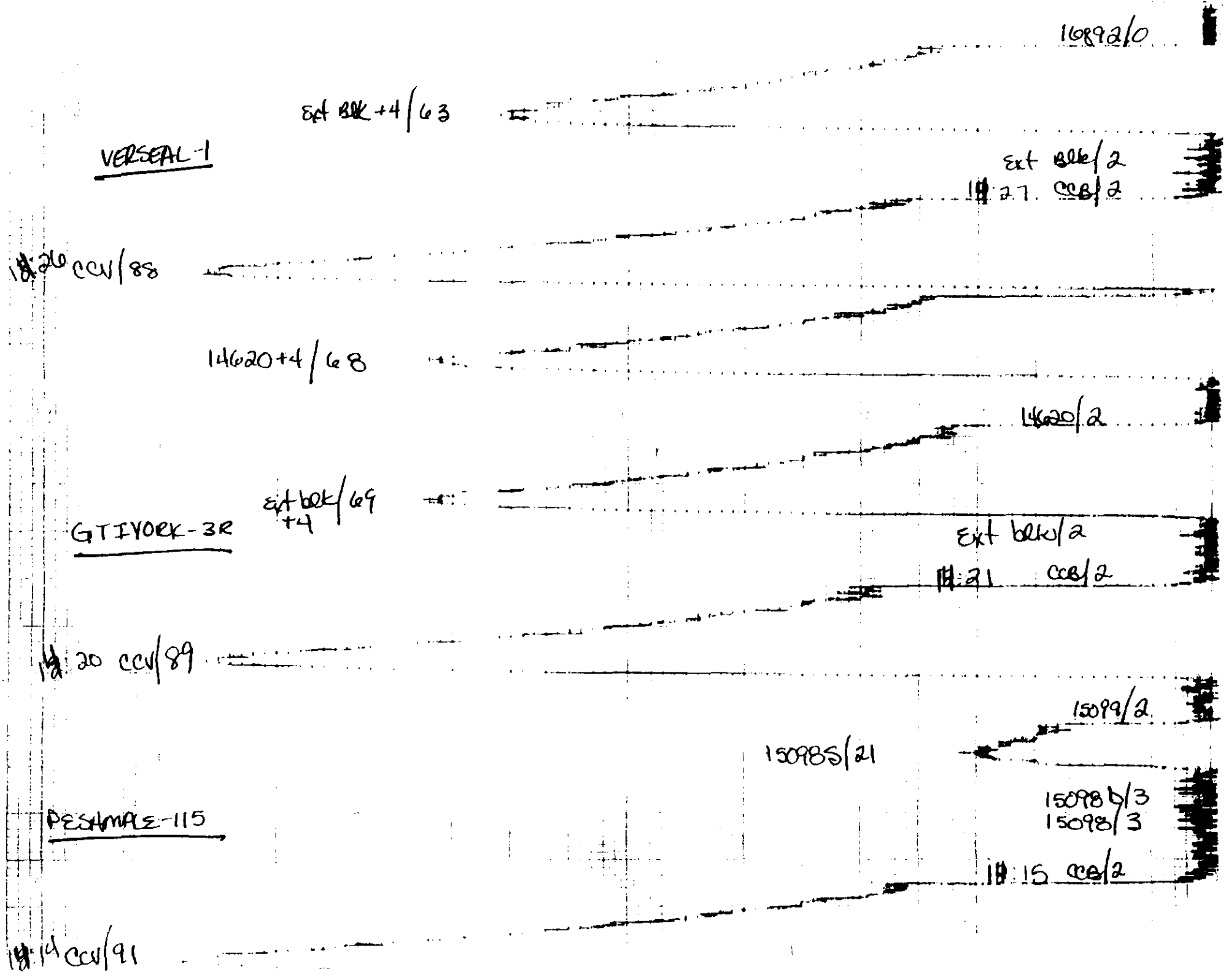
			1	0			
			1	0			
			1	0			
			1	0			
			1	0			
			1	0			
			1	0			

ajM

On disks #1


18:15 ppb/2
18:4 ppb/1
18356/1
18334/2
18333/2
NEPSM016-1
18:10 ppb/2
ppb/3
SAICBAT-1
14686/1
18:07 ICS/1
18:20 CU/88
10/17
r=0.9985
5/80
2ppb/40
0.5ppb/10
0ppb/2
Calibration analysis 5-12-90 of my Mopple Calib Time 18:00


16892/0
Ext Blk +4/63
VERSEAL-1
Ext blk/2
1#27 CCB/2
1#26 CCV/88
14620+4/68
14620/2
Ext blk +4/69
GTIYORK-3R
Ext blk/2
1#21 CCB/2
1#20 CCV/89
15099/2
15098S/21
15098b/3
15098/3
PESHMALE-115
1#15 CCB/2
1#14 CCV/91

15053/2

64/1505 2+4

15052/2

EXTBLK+4/70

ARCGAIN-62

ext blk/1

14:44 CCB/2

14:43 CCV/85

169600/1

164185/34

164185/2

164185/2

Ext blank 2/3

Ext blank 1/3

VERSCOM-2,4(TCLP)

14:36 CCB/2

14:35 CCV/85

OMCWAUK-9

182668/2

14:33 CCB/0

14:32 CCV/88

00245

Versar INC.
LABORATORY OPERATIONS
TRACE METALS SECTION

TOXICITY CHARACTERISTIC LEACHATE PROCEDURE TCLX, TCLM

Project: VersCDM

Date: 04/26/90

Batch: 2,4 (2536, 2565)

Start time: 14:00

Stop time: 8:30

Lab no.	Wt. (g)	% Solids	Extr. Sol'n & ml. used	pH Init.	pH Fin.	Comments & Sample description
16418	90.00g	100%	1800mL Ext Fluid #1	5.16	5.56	H, F, Dry, yes, rocks
16960	90.02g	100%	1800 mL Ext Fluid #2	3.32	5.93	H, F, Dry, yes rocks
EXT Blank #1	—	0%	1800mL #1	4.98	4.99 ~~5.18~~ 1015	—
Ext Blank #2	—	0%	1800mL #2	2.83	2.84	—

Description: Homogenous/ Nonhomogenous
Texture-Fine, Med. or Course
Wet/Dry
Artifacts

pH Meter calibration:

pH solution: 4

pH solution: 7

Preparer: KK

Versar INC.
LABORATORY OPERATIONS
TRACE METALS SECTION

TOXICITY CHARACTERISTIC LEACHATE PROCEDURE TCLP, TCLM
EXTRACTION FLUID DETERMINATION

Project: VersCDM

Date: 04/26/90

Batch: 2,4 (2536, 2565)

Lab No.	pH (initial)	pH (final)	Extraction Fluid
16418	4.64	—	Ext. Fluid #1
16960	5.82	11.79	Ext Fluid #2
EXT #1 BLANK	—	—	Ext. Fluid #1
EXT #2 BLANK	—	—	EXT. Fluid #2

pH Meter calibrated on:
pH solution: 4
pH solution: 7

Comments: If init. pH < 5, extr. fluid #1. If init. pH >5, add 3.5ml 1.0N HCl, heat to 50°C for 10 min, cool. If final pH < 5, extr. fluid #1. If final pH > 5, extr. fluid #2.

Preparer: KAS

Analytical Difficulties

Project: VersCDM

Method Code: TCLX

Batch: 2,4(2536,2565)

For this analysis no liquid/solid separation or percent solids determination was performed because the samples were 100% solids.

Reviewer: [illegible]

Date:

Analyst: KKB

Date: 04/26/90

VERSAR, INC.
METALS LABORATORY
DIGESTION LOG

Code-Batch: Versdm2,4 TCLP Extracts
Date: 05-09-90
Method Code: DIS / DIWR / DIW
Control No.: 2536, 2565
Reference: SW-846 3rd. ed.
Digestion Type: ICP Method: 7

Sample/EPA ID Number		Mtrx.	Init. W/V	Final Vol.	Description * Before	After	pH
PBW		HOH	50ml	50ml	Colorless, clear, no	colorless, clear, no	—
~~acetic~~ TCLP ext. blk		~~acetic~~ TCLP extract					<2
LCSM		HOH					—
16418		~~acetic~~ TCLP extract			colorless, ~~clear, yes~~ cloudy * no ice		<2
16418(D)							
16418(S)							
ck 16960 ~~16892~~					orange, clear, no		

Comments: ~~* artifact → a filiment type precipitate~~. ck

* Description of colors:	red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of texture:	fine, medium, coarse.
* Description of clarity:	clear, cloudy, opaque.
* Description of artifacts:	yes or no and describe.

Preparer [illegible] Reviewer [illegible]

VERSAR, INC.
METALS LABORATORY
SPIKE LOG

Code-Batch: Verscdm 2,4 TCLP extracts
Control No.: 2536, 2565

Date: 05-09-90
Method code: DIWT 3010

*** CLP SPIKING ***

☐ HGA WATER: spike = 0.25ml of HGA spiking solution / 50ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Sol'n prep date:_____

☐ ICP WATER: spike = 2.5ml of ICP water spiking solution / 50ml
0.25ml 100ppm Sb & 10ppm Ag / 50ml
0.1ml 100ppm Cr / 50ml

ICP SPIKING SOLUTION: 5ppm Cu - 40 ppm Ba, Al, As, Se, Tl - 20ppm Fe - 10ppm Mn, Ni, Zn, Co, Pb, V - 1ppm Be, Cd
Sol'n prep date:_____ Sb prep:_____ Ag prep:_____ Cr prep:_____

☐ HGA SOIL: spike = 1ml of HGA spiking solution / 200ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Soln prep date:_____

☐ ICP SOIL: spike = 10ml of ICP Soil Spike Solution / 200ml
1ml 100ppm Sb & 10ppm Ag / 200ml
0.4ml 100ppm Cr / 200ml

ICP SPIKING SOLUTION: 40ppm Ba, As, Se, Tl, - 10ppm Co, Pb, Mn, Ni, V, Zn - 5ppm Cu - 1ppm Be, Cd
Sol'n prep date:_____ Sb prep:_____ Ag prep:_____ Cr prep:_____

*** NON-CLP SPIKING ***

HGA SPIKE = _____ ml of HGA NON-CLP spiking solution / _____ ml

HGA SPIKING SOLUTION: 10 ppm As, Se, Tl, Pb, 200 ppm Y Sol'n prep date:_____

ICP SPIKE = 2.5 ml of Solution #1 / 50 ml
SPIKING SOLUTION #1: 40 ppm Ba, Be, Cd, Co, Li, Mo, Sr, V - 80 ppm Cu, Pb, Mn, Ni, Se, Tl - 200 ppm Si - 328 ppm Na
Sol'n prep date: 3-9-90

ICP SPIKE = 2.5 ml of Solution #2 / 50 ml
SPIKING SOLUTION #2: 40 ppm B, Cr, Y - 80 ppm As, Sb, Sn, Ti, Zn - 400 ppm Al, Ca, Fe, K, Mg, Na
Sol'n prep date: 4-9-90

ICP SPIKE = 2.5 ml of Solution #3 / 50 ml
SPIKING SOLUTION #3: 40 ppm Ag Sol'n prep date: 4-4-90

COMMENTS:_____

Preparer [signature] Reviewer [signature]

VERSAR, INC.
METALS LABORATORY
DIGESTION LOG

Code-Batch: Versdm 2,4 TCLP extracts
Date: 05-09-90
Method code: DHS / DHWT / DSA3
Control No.: 2536, 2565
Reference: SW-846 3rd. ed.
Digestion Type: HGA Method: 7060 / 7740

Sample/EPA ID Number		Mtrx.	Init. W/V	Final Vol.	Description * Before	After	F
PBW		HOH	50ml	50ml	see DIWT	Clear, colorless, no	-
LCSM							-
TCLP ext. blk		TCLP extract					<
16418							
16418(D)							
16418(S)							
16960							
~~16892~~							-

Comments:

* Description of colors: red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of texture: fine, medium, coarse.
* Description of clarity: clear, cloudy, opaque.
* Description of artifacts: yes or no and describe.

Preparer [signature]
Reviewer [signature]

VERSAR, INC.
METALS LABORATORY
SPIKE LOG

Code-Batch: Verscdm 2,4 TCL Pextracts
Control No.: 2536, 2565

Date: 05-09-90
Method code: DSA3 7060/7740

*** CLP SPIKING ***

☐ HGA WATER: spike = 0.25ml of HGA spiking solution / 50ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Sol'n prep date:_____

☐ ICP WATER: spike = 2.5ml of ICP water spiking solution / 50ml
0.25ml 100ppm Sb & 10ppm Ag / 50ml
0.1ml 100ppm Cr / 50ml

ICP SPIKING SOLUTION: 5ppm Cu - 40 ppm Ba, Al, As, Se, Tl - 20ppm Fe - 10ppm Mn, Ni, Zn, Co, Pb, V - 1ppm Be, Cd
Sol'n prep date:_____ Sb prep:_____ Ag prep:_____ Cr prep:_____

☐ HGA SOIL: spike = 1ml of HGA spiking solution / 200ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Soln prep date:_____

☐ ICP SOIL: spike = 10ml of ICP Soil Spike Solution / 200ml
1ml 100ppm Sb & 10ppm Ag / 200ml
0.4ml 100ppm Cr / 200ml

ICP SPIKING SOLUTION: 40ppm Ba, As, Se, Tl, - 10ppm Co, Pb, Mn, Ni, V, Zn - 5ppm Cu - 1ppm Be, Cd
Sol'n prep date:_____ Sb prep:_____ Ag prep:_____ Cr prep:_____

*** NON-CLP SPIKING ***

HGA SPIKE = ~~0.25~~ 0.025 ml of HGA NON-CLP spiking solution / 50 ml

HGA SPIKING SOLUTION: 10 ppm As, Se, Tl, Pb, 200 ppm Y Sol'n prep date: 3-9-90

ICP SPIKE = _____ ml of Solution #1 / _____ ml
SPIKING SOLUTION #1: 40 ppm Ba, Be, Cd, Co, Li, Mo, Sr, V - 80 ppm Cu, Pb, Mn, Ni, Se, Tl - 200 ppm Si - 328 ppm Na
Sol'n prep date:_____

ICP SPIKE = _____ ml of Solution #2 / _____ ml
SPIKING SOLUTION #2: 40 ppm B, Cr, Y - 80 ppm As, Sb, Sn, Ti, Zn - 400 ppm Al, Ca, Fe, K, Mg, Na
Sol'n prep date:_____

ICP SPIKE = _____ ml of Solution #3 / _____ ml
SPIKING SOLUTION #3: 40 ppm Ag Sol'n prep date:_____

COMMENTS:_____

Preparer [signature] Reviewer [signature]

VERSAR, INC.
METALS LABORATORY
MERCURY DIGESTION LOG

Project-Batch: VERSCDM-2,4
Control No.: 2536, 2545
No. of Samples: 2 TCLP

Date: 5-12-90
Method Code: HGW or HGS
Reference: SW846 3rd Ed
Method No: 7470 or 7471

Sample / EPA ID Number		Matrix	Initial Wt./Vol.	Final Vol.	Comments
PBW		H_2O	100ml	100ml	
Ext Blk #1		TCLP			
Ext Blk #2					
16418					
16418B					
16418S					
16960					

SPIKE = 2 ml x 0.1ppm Hg / 100ml = 2 ppb.
CCV = 0.50 ml x 1.0ppm Hg / 100ml = 5.0 ppb.
ICV/LCS = 1 ml x ICV #5 / 100ml = 5 ppb. LCS Series No.: 5689

STANDARD source: INORG VENTS Prep Date: 5-12-90 Prep Time: 12:00

0.5ppb = 5ml x 0.01ppm / 100ml.
2.0ppb = 2ml x 0.1ppm / 100ml.
5.0ppb = 5ml x 0.1ppm / 100ml.
10.0ppb = 10ml x 0.1ppm / 100ml.

00255

Preparer [illegible] Reviewer [illegible]