108105

WESTON
MANAGERS DESIGNERS/CONSULTANTS

Trip Report

Jack's Creek Site
Maitland, Mifflin County, PA

24 May 1996

SATA
Site Assessment Technical Assistance

TDD No. 9603-016
Contract No. 68-S5-3002

AR304594

WESTON
MANAGERS DESIGNERS/CONSULTANTS
5 Underwood Court, Delran, New Jersey 08075-1229
609-461-4003 • 215-238-0338 • Fax 609-461-4916

SITE ASSESSMENT TECHNICAL ASSISTANCE EPA CONTRACT 68-S5-3002

20 May 1996

Mr. Garth Connor (3HW21)
Remedial Project Manager
U.S. Environmental Protection Agency
841 Chestnut Building
Philadelphia, PA 19107

TDD No. 03-9603-016
DCN No. B0000260

Subject: Jack's Creek Sampling Plan

Dear Mr. Connor:

Enclosed is the Jack's Creek - Trip Report for your review. Please feel free to contact me at (215) 238-0338, Ext. 202 regarding any aspect of this plan.

Very truly yours,

ROY F. WESTON, INC.

for Jeffrey A. Levinson
Site Leader

Attachments

cc: TDD File

Jack's Trip ltr

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TRIP REPORT

Jack's Creek Site
Maitland, Mifflin County, Pennsylvania

TDD No. 9603-016
Contract No. 68-S5-3002

1.0 INTRODUCTION

On 25 March 1996, the Roy F. Weston, Inc. (WESTON), Site Assessment Technical Assistance (SATA) Team was directed by the U.S. Environmental Protection Agency (EPA) Remedial Project Manager (RPM) Garth Connor to conduct residential well sampling at the Jack's Creek Site located in Maitland, Mifflin County, Pennsylvania.

2.0 BACKGROUND

2.1 Site Description

The Jack's Creek Site is located on Maitland Road, Maitland, Mifflin County, Pennsylvania. Situated in a narrow valley within the Valley and Ridge Province in Central Pennsylvania, the site is directly adjacent to Jack's Creek, four miles east of the confluence with the Juniata River at Lewistown (see Figure 1: Site Location Map). The climate of Mifflin County is temperate with temperatures ranging from 19.5°F in January to 85.5°F degrees in July. Precipitation is evenly distributed throughout the year. The average annual precipitation is 38.71 inches. The maximum 47-year rainfall for the area is 3.99 inches.

The site encompasses 105 acres, 95 acres of which are owned and used by Joseph Krentzman and Sons scrap yard, who store and reprocess scrap metal. Twenty-four acres of the site are within the 100 year floodplain, and 0.2 acres have been classified as wetlands. Approximately 12 buildings are standing on the site, and the current owner uses at least four of them (Gannet-Flemming, 1993).

2.2 Regulatory History

The Sitkin Smelting Company operated a smelter on site between 1958 and 1977, producing brass and bronze ingots and recycling metals. Two large waste piles exist at the site as a result of Sitkin's operations - a ball mill tailings pile with 60,000 yd^3 (estimated to weigh140,000 tons) of dense, amorphous aluminum-iron-zinc silicates and a 6,000 yd^3 aluminum dross pile. In addition to the two piles, lead contamination in concentrations greater than 10,000 parts per million (ppm) is evident in surface soils found on approximately 20% of the site. Soil with more than 3,000 ppm of lead is found on approximately 50% of the site. Most of the contamination is limited to the top two feet of soil. In 1986, a battery casing fire released millions of gallons of lead-contaminated waste to the environment (Gannet-Flemming, 1993).

In 1991, as a result of elevated levels of lead in nearby residential wells, the EPA allocated money to provide bottled water to those residences with lead concentrations above the 5 ppb acceptable risk ceiling recommended by the

Agency for Toxic Substances and Disease Registry (ATSDR) (EPA,1992). A subsequent sampling event, conducted by EPA, revealed that the elevated lead concentrations in nearby residential drinking water may have been caused by solder in the residence's plumbing and not derived from the site (EPA, 1992). The OSC decided that bottled water was no longer necessary, and delivery was stopped. In 1993, Gannet Flemming performed a Remedial Investigation/Feasibility Study (RI/FS) of the site for the EPA. As part of that study, a total of six residential wells were sampled on three separate occasions. The analysis of those samples revealed the nature of the contamination to be mainly inorganics such as copper, iron, lead, and mercury. The last time residential well sampling was conducted at the site was in 1993.

3.0 SITE ACTIVITIES

On 8 April 1996, an EPA residential well sampling event, led by RPM Garth Connor, was initiated to collect data regarding site operations and their relevance to a number of environmental statutes enforced by EPA. SATA personnel Jeffrey Levinson and Mike Davis performed this residential well sampling event.

3.1 Sampling Activities

During the 8 April 1996 residential well sampling event, SATA collected four residential well samples (see Figure 2) and one trip blank to be analyzed for target analyte list (TAL) metals. All samples were collected from locations near the site and picked at random with the goal of determining the potential threat to human health from hazardous substances suspected to be present. Sampling locations are identified in Figure 2 of this report.

4.0 ANALYTICAL RESULTS

Based on the fact that previously documented lead concentrations were determined to have been cause by solder in the residence's plumbing and not by the site, the RPM decided that the current lead values would not be considered. However, the concentration of lead detected in the Krentzman office well is above the 5 ppb ceiling recommended by ATSDR for the site in 1991. Water from the Krentzman office tap is not used for drinking, but Krentzman office workers do use that water for washing dishes and possibly their hands. As reflected in Table 1, concentrations of TAL metals, with the exception of lead, do not exceed Maximum Contaminant Levels (EPA, 1995).

Table 1
Jack's Creek Sampling Results: 8 April 1996

Analyte	MCL (ug/L)	Pastor Marks	Krentzman	Stine	Snyder	Trip Blank
Aluminum	-	U	U	202	15.9 B	63.9 B
Antimony	6	U	U	U	2.8 B	U
Arsenic	50	U	U	U	U	U
Barium	2,000	22.8 B	43.5 B	60.6 B	29.4 B	69.2 B
Beryllium	4	U	U	U	U	U
Cadmium	5	U	U	U	U	U
Calcium	-	46400	57500	78600	22300	4330 B
Chromium	100	U	U	U	U	U
Cobalt	-	U	U	U	U	U
Copper	1,300/T.T.	9.2 B	46.3	56.7	24.3 B	U
Iron	-	U	U	289	24.6 B	U
Lead	0/T.T.*	U	6.1	1.8 B	1.3 B	U
Magnesium	-	8940	16000	18300	4850 B	2090 B
Manganese	-	U	U	15.8	U	23.5
Mercury	2	U	U	U	U	U
Nickel	100	U	3.7 B	U	U	U
Potassium	-	885 B	1120 B	1320 B	692 B	1280 B
Selenium	50	U	U	U	U	U
Silver	-	U	U	U	U	U
Sodium	-	3570 B	10700	7250	750 B	3470 B
Thallium	2	U	U	U	U	U
Vanadium	-	U	U	U	U	U
Zinc	-	5.1 B	34.1	26.8	15.4 B	5.7 B

NOTES: 1) "B" - the result was above the instrument's detection limit, but still below the detection limit required by the terms of the laboratory contract.

2) "T.T." - refers to the lowest value that can reasonably be achieved with available treatment technologies.

5.0 METEOROLOGICAL CONDITIONS

The ambient meteorological conditions during the 8 April 1996 residential well sampling event as reported by the National Weather Service radio are summarized below:

Table 1

Meteorological Conditions

Temperature	65°
Winds	0-5 from the E
Conditions	sunny, partly overcast
Humidity	75%

6.0 FUTURE ACTIONS/RECOMMENDATIONS

SATA received the analytical results for the 8 April 1996 residential well sampling event on 3 May 1996. The full analytical package along with a data quality and usability report, with the quality assurance/quality control review, is being forwarded to RPM Garth Connor along with this report. Future actions will be contingent on the RPM's direction.

7.0 REFERENCES

EPA (U.S. Environmental Protection Agency). 1994. *National Primary Drinking Water Standards.* Office of Water, Washington, DC. EPA 810-F-94-001A. February.

EPA. 1992. *Federal On-Scene Coordinator's Report for Sitkin Smelting/Jack's Creek NPL Site.*

EPA. 1991. *Compendium of ERT Groundwater Sampling Procedures.* Office of Solid Waste and Emergency Response, Washington DC. EPA/540/p-91/008.

Gannet-Flemming. 1993. *Jack's Creek Site Remedial Investigation/Feasibility Study..*

SATA (Site Assessment Technical Assistance). 1996. *Compendium of SATA Standard Operating Procedures* (Draft). Delran, NJ.

EPA. 1992. Federal On-Scene Coordinators Report for Sitkin Smelting/Jack's Creek NPL Site. p. A59

EPA. 1993. Federal Safe Drinking Water Act. Maximum Contaminant Levels (MCL).

ATTACHMENTS:
1 - Data Quality Report
2 - Analytical Data Package
3 - Sampling Plan

Attachment 1

DATA QUALITY REPORT

JACK'S CREEK
MAITLAND, MIFFLIN CO., PA

TDD NO. 9603-16
EPA CONTRACT NO. 68-S5-3002

1.0 INTRODUCTION

This report provides a general review of the data package submitted by Southwest Laboratory of Oklahoma, Inc. (SWOK) in Broken Arrow, Oklahoma, for five water samples collected at the Jack's Creek Site on 8 April 1996. The samples were received at SWOK on 18 April 1996. The samples were analyzed for total analyte list (TAL) metals.

2.0 ANALYTICAL METHODOLOGY

The samples were analyzed by Contract Laboratory Program (CLP) ILMO3.0.

3.0 DATA REVIEW COMMENTS

3.1 Chain-of-Custody

Signed chain-of-custody records were received.

3.2 Metals

The holding times were met. All calibration data met criteria. The ICP interference check sample (ICS) met criteria. The laboratory control sample (LCS) met criteria.

The preparation blank contained the following contaminants: sodium at 82.307 ug/l and zinc at 2.007 ug/l. The continuing calibration blank contained the following contaminants: antimony at 2.2 ug/l and lead at 1.2ug/l. The trip blank had the following contaminants: aluminum at 63.9 ug/l, barium at 69.2 ug/l, calcium at 4330 ug/l, magnesium at 2090 ug/l, manganese at 23.5 ug/l, potassium at 1280 ug/l, sodium at 3470 ug/l and zinc at 5.7 ug/l. The results of aluminum, antimony, barium, calcium, lead, magnesium, manganese, potassium, sodium and zinc in all samples were not greater than five times of the blank contamination; therefore, these parameters should be considered as "B" or blank contamination as per Table 1 in Summary.

The duplicate sample met criteria, except aluminum, because its relative percent difference (RPD) was greater than 120%. Since aluminum had already been qualified as "B" due to blank contamination, no further data was qualified. The matrix spike/matrix spike duplicate (MS/MSD) recoveries met criteria. For ICP serial dilution, the following analytes did not meet criteria: copper, potassium and zinc.

The copper results in Sample 31904 and 31905 should be qualified as "J" or approximate. Potassium and zinc had already been qualified as "B" due to blank contamination; therefore, no further data was qualified.

4.0 SUMMARY

In accordance with the Region III Modifications to the Laboratory Data Validation Functional Guidelines, April 1993, accept the metal data as presented and refer to the Table 1 for the qualified data.

Table 1. Sample Qualify Summary

Metal	Sample Qualified as "B"	Sample Qualified as "J"
aluminum	31905	
antimony	31906	
barium	31901, 31904	
calcium	31901, 31904, 31905, 31906	
copper		31904, 31905
lead	31904	
magnesium	31901, 31904, 31905	
manganese	31905	
potassium	31901, 31904	
sodium	31901, 31904, 31905	
zinc	31901, 31904, 31905	

Attachment 2

COVER SHEET

LAB CODE: SWOR

CASE #: 25319

SDG #: 25319

SAS # (if applicable): _____

CONTRACT #: _____

(check one)

___ ORGANIC SOW 2/88

___ ORGANIC SOW OLM01.0

X INORGANIC SOW ~~7/88~~ ILM03.0 ~~ILM02.0~~ 10/91.

___ INORGANIC SOW ILM01.0 3/90

___ LOW CONCENTRATION ORGANIC SOW OLC01.0

___ LOW CONCENTRATION INORGANIC SOW ILC01.0

___ HIGH CONCENTRATION ORGANIC SOW 9/88

___ HIGH CONCENTRATION INORGANIC SOW HCIN

THIS DATA PACKAGE CONTAINS:

X RAS data only

___ SAS data only

___ RAS+SAS data

___ regional request/additional data

___ other (please explain below):

_____

FULL INORGANICS
COMPLETE SDG FILE (CSF)
INVENTORY SHEET

Lab Name: SOUTHWEST LAB OF OKLAHOMA City/State: BROKEN ARROW, OK

Case No 25319 SDG No. 25319 SDG Nos. to Follow: _____ _____ _____

SAS No. _____ Contract No 68-D3-0040 SOW No. ILM03.0

All documents delivered in the Complete SDG File must be original documents where possible. (Reference Exhibit B, Section II F and Section III U)

		Page Nos. From	Page Nos. To	(Please Check:) Lab	Region
1.	Inventory Sheet (DC-2) (Do not number)			✓	
2.	Cover Page	2	2	✓	
3.	Inorganic Analysis Data Sheet (Form I-IN)	3	7	✓	
4.	Initial & Continuing Calibration Verification (Form IIA-IN)	8	10	✓	
5.	CRDL Standards For AA and ICP (Form IIB-IN)	11	12	✓	
6.	Blanks (Form III-IN)	13	15	✓	
7.	ICP Interference Check Sample (Form IV-IN)	16	16	✓	
8.	Spike Sample Recovery (Form VA-IN)	17	18	✓	
9.	Post Digest Spike Sample Recovery (Form VB-IN)	NA	NA	✓	
10.	Duplicates (Form VI-IN)	19	21	✓	
11.	Laboratory Control Sample (Form VII-IN)	22	23	✓	
12.	Standard Addition Results (Form VIII-IN)	24	24	✓	
13.	ICP Serial Dilutions (Form IX-IN)	25	25	✓	
14.	Instrument Detection Limits (Form X-IN)	26	28	✓	
15.	ICP Interelement Correction Factors (Form XIA-IN)	29	29	✓	
16.	ICP Interelement Correction Factors (Form XIB-IN)	30	31	✓	
17.	ICP Linear Ranges (Form XII-IN)	32	32	✓	
18.	Preparation Log (Form XIII-IN)	33	35	✓	
19.	Analysis Run Log (Form XIV-IN)	36	40	✓	
20.	ICP Raw Data	41	72	✓	
21.	Furnace AA Raw Data	73	79	✓	
22.	Mercury Raw Data	80	85	✓	

	Page Nos. From	Page Nos. To	(Please Check:) Lab	(Please Check:) Region
23. Cyanide Raw Data	NA	NA	✓	
24. Preparation Logs Raw Data	85A	87	✓	
25. Percent Solids Determination Log	NA	NA	✓	
26. Traffic Report	1	1	✓	
27. EPA Shipping/Receiving Documents				
Airbill (No. of Shipments 1)	99	99	✓	
Chain-of-Custody Records	094A	094A	✓	
Sample Tags	NA	NA	✓	
Sample Log-In Sheet (Lab & DC1)	100	100	✓	
SDG Cover Sheet	NA	NA	✓	
28. Misc. Shipping/Receiving Records (list all individual records)				
Telephone Logs	NA	NA	✓	
Worksheets			✓	
			✓	
29. Internal Lab Sample Transfer Records & Tracking Sheets (describe or list)			✓	
			✓	
			✓	
30. Internal Original Sample Prep & Analysis Records (describe or list)				
Prep Records	NA	NA	✓	
Analysis Records			✓	
Description			✓	
31. Other Records (describe or list)				
Telephone Communication Log	NA	NA	✓	
Stock & Standard Solutions	90	91	✓	
Case narrative	1	1	✓	
32. ~~Comments:~~ Instructions + requisitions	92	98		

Completed by (CLP Lab): Susan Pohl (Signature) — SUSAN POHL ~~Stephanie Gruver~~ 5/29/96 Data Reductionist (Print Name & Title) — 5/29/96 (Date)

Audited by (EPA):

(Signature) — (Print Name & Title) — (Date)

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1500 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

INORGANICS CLP QUALIFIER FLAGS

B	The reported values was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL), if the analyte was analyzed for but not detected, a "U" must be entered.
E	The reported value is estimated because of the presence of interference. An explanatory note must be included under Comments on the Cover Page (if the problem applies to all samples) or on the specific FORM I - IN (if it is an isolated problem).
M	Duplicate injection precision not met.
N	Spike sample recovery not within control limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
W	Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance. (See Exhibit E.)
*	Duplicate analysis not within control limits.
+	Correlation coefficient for the MSA is less than 0.995.

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

SDG NARRATIVE

CONTRACT: WEST-MPD	DATE: 05/2/96
CASE:25319	SOW NO.: ILM03.0
SDG: 25319	EPISODE NO.: 25319

INORGANIC METAL FRACTION:

Five water samples plus one spike and one spike duplicate was submitted for ICP, GFAA, and Hg analysis. The sample analyses were completed according to SOW ILM03.0.

No major problems occurred during the digestion or analyses of these samples.
The prep batch for the GFAA Tl has a spike dupilcate instead of a sample duplicate. There is not enough sample to reprep a sample duplicate. The validity of the method is unaffected as the sample read non-detected and the requirement for duplicate analysis has been fulfilled.

Initial and Continuing Calibration Checks: No problems.

Initial and Continuing Calibration Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit, in the Calibration Blanks: Sb, Pb. No action required.

Linearity near the CRDL (CRA & CRI): No problems.

Preparation Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Preparation Blank: Na, Zn. No action required.

Lab Control Spikes: No problems.

Matrix Spike (MSD): No problems.

Duplicate (LCSD): No problems.

Serial Dilution (ICP): No problems.

Sincerely,

Deborah J. Beree for...
Jason D. Ruckman
Inorganic Program Manager

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.:25319_

SOW No.: ILM03

EPA Sample No.	Lab Sample ID
31901	2531901
31901D	2531903D
31901SD	2531903SD
31901S	2531902S
31904	2531904
31905	2531905
31906	2531906
31907	2531907

Were ICP interelement corrections applied ? Yes/No YES

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

Comments:
BATCH_#'S: ICP=960423I2
F=960426F11
AV=960422HG1

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

Signature: [signature] Name: Deborah J. Beree for... Jason D. Ruckman

Date: May 2, 1996 Title: Inorganic Program Manager

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

31901

Lab Name: SOUTHWEST_LAB_OF_OK Contract: _____
Lab Code: SWOK Case No.: 25319 SAS No.: _____ SDG No.: 25319
Matrix (soil/water): WATER Lab Sample ID: 2531901
Level (low/med): LOW Date Received: 04/18/96
% 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	10.0	U		P
7440-36-0	Antimony	2.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	22.8	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	46400			P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	2.0	U		P
7440-50-8	Copper	9.2	B		P
7439-89-6	Iron	16.0	U		P
7439-92-1	Lead	1.0	U		P
7439-95-4	Magnesium	8940			P
7439-96-5	Manganese	1.0	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	1.0	U		P
7440-09-7	Potassium	885	B		P
7782-49-2	Selenium	3.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3570	B		P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	1.0	U		P
7440-66-6	Zinc	5.1	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
CLIENT_ID_=_MARKS_-_TAP

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

31904

Lab Name: SOUTHWEST_LAB_OF_OK Contract: _____
Lab Code: SWOK Case No.: 25319 SAS No.: _____ SDG No.: 25319
Matrix (soil/water): WATER Lab Sample ID: 2531904
Level (low/med): LOW Date Received: 04/18/96
% 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	10.0	U		P
7440-36-0	Antimony	2.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	43.5	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	57500			P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	2.0	U		P
7440-50-8	Copper	46.3			P
7439-89-6	Iron	16.0	U		P
7439-92-1	Lead	6.1			P
7439-95-4	Magnesium	16000			P
7439-96-5	Manganese	1.0	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.7	B		P
7440-09-7	Potassium	1120	B		P
7782-49-2	Selenium	3.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	10700			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	1.0	U		P
7440-66-6	Zinc	34.1			P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
CLIENT_ID = KRENTZMAN - TAP

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

31905

Lab Name: SOUTHWEST_LAB_OF_OK Contract: _____
Lab Code: SWOK Case No.: 25319 SAS No.: _____ SDG No.: 25319
Matrix (soil/water): WATER Lab Sample ID: 2531905
Level (low/med): LOW Date Received: 04/18/96
% 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	202			P
7440-36-0	Antimony	2.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	60.6	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	78600			P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	2.0	U		P
7440-50-8	Copper	56.7			P
7439-89-6	Iron	289			P
7439-92-1	Lead	1.8	B		P
7439-95-4	Magnesium	18300			P
7439-96-5	Manganese	15.8			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	1.0	U		P
7440-09-7	Potassium	1320	B		P
7782-49-2	Selenium	3.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	7250			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	1.0	U		P
7440-66-6	Zinc	26.8			P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
CLIENT_ID_=_STINE_-_TAP

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

31906

Lab Name: SOUTHWEST_LAB_OF_OK Contract: _____
Lab Code: SWOK Case No.: 25319 SAS No.: _____ SDG No.: 25319
Matrix (soil/water): WATER Lab Sample ID: 2531906
Level (low/med): LOW Date Received: 04/18/96
% 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	15.9	B		P
7440-36-0	Antimony	2.8	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	29.4	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	22300			P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	2.0	U		P
7440-50-8	Copper	24.3	B		P
7439-89-6	Iron	24.6	B		P
7439-92-1	Lead	1.3	B		P
7439-95-4	Magnesium	4850	B		P
7439-96-5	Manganese	1.0	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	1.0	U		P
7440-09-7	Potassium	692	B		P
7782-49-2	Selenium	3.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	750	B		P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	1.0	U		P
7440-66-6	Zinc	15.4	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
CLIENT_ID_=_SNYDER_-_TAP

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

31907

Lab Name: SOUTHWEST_LAB_OF_OK Contract: _____
Lab Code: SWOK Case No.: 25319 SAS No.: _____ SDG No.: 25319
Matrix (soil/water): WATER Lab Sample ID: 2531907
Level (low/med): LOW Date Received: 04/18/96
% 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	63.9	B		P
7440-36-0	Antimony	2.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	69.2	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	4330	B		P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	2.0	U		P
7440-50-8	Copper	2.0	U		P
7439-89-6	Iron	16.0	U		P
7439-92-1	Lead	1.0	U		P
7439-95-4	Magnesium	2090	B		P
7439-96-5	Manganese	23.5			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	1.0	U		P
7440-09-7	Potassium	1280	B		P
7782-49-2	Selenium	3.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3470	B		P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	1.0	U		P
7440-66-6	Zinc	5.7	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
CLIENT_ID = TRIP_BLANK

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No. _____ SDG No.: 25319_

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: IN.VEN._____

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	1000.0	1031.89	103.2	5000.0	5041.37	100.8	5002.31	100.0	P
Antimony	500.0	522.50	104.5	500.0	496.97	99.4	492.10	98.4	P
Arsenic	250.0	259.04	103.6	500.0	488.46	97.7	486.46	97.3	P
Barium	1000.0	1042.38	104.2	500.0	524.32	104.9	522.37	104.5	P
Beryllium	25.0	25.40	101.6	500.0	495.04	99.0	491.61	98.3	P
Cadmium	125.0	126.88	101.5	500.0	505.83	101.2	500.57	100.1	P
Calcium	2500.0	2523.54	100.9	5000.0	4948.53	99.0	4918.82	98.4	P
Chromium	100.0	102.18	102.2	500.0	505.63	101.1	503.20	100.6	P
Cobalt	250.0	255.97	102.4	500.0	506.62	101.3	503.24	100.6	P
Copper	125.0	129.13	103.3	500.0	502.27	100.5	499.80	100.0	P
Iron	500.0	512.09	102.4	5000.0	5027.90	100.6	4998.41	100.0	P
Lead	250.0	254.13	101.7	500.0	501.75	100.3	497.25	99.4	P
Magnesium	2500.0	2547.32	101.9	5000.0	4946.91	98.9	4907.41	98.1	P
Manganese	250.0	257.28	102.9	500.0	501.95	100.4	499.20	99.8	P
Mercury	4.9	4.71	96.1	5.0	4.96	99.2	4.98	99.6	AV
Nickel	250.0	255.27	102.1	500.0	506.10	101.2	502.59	100.5	P
Potassium	2500.0	2564.89	102.6	5000.0	4952.43	99.0	4948.90	99.0	P
Selenium	250.0	252.15	100.9	500.0	496.51	99.3	494.78	99.0	P
Silver	125.0	126.29	101.0	500.0	503.05	100.6	501.02	100.2	P
Sodium	2500.0	2649.55	106.0	5000.0	5007.45	100.1	4989.02	99.8	P
Thallium	25.0	24.70	98.8	25.0	24.80	99.2	26.10	104.4	F
Vanadium	250.0	260.64	104.3	500.0	504.92	101.0	502.20	100.4	P
Zinc	250.0	256.84	102.7	500.0	508.72	101.7	504.61	100.9	P

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

FORM II (PART 1) - IN

ILM02.1

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: IN.VEN._____

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				5000.0	4964.53	99.3			P
Antimony				500.0	491.42	98.3			P
Arsenic				500.0	481.40	96.3			P
Barium				500.0	519.02	103.8			P
Beryllium				500.0	488.75	97.7			P
Cadmium				500.0	496.72	99.3			P
Calcium				5000.0	4868.36	97.4			P
Chromium				500.0	497.91	99.6			P
Cobalt				500.0	500.91	100.2			P
Copper				500.0	495.59	99.1			P
Iron				5000.0	4942.00	98.8			P
Lead				500.0	494.01	98.8			P
Magnesium				5000.0	4861.76	97.2			P
Manganese				500.0	494.53	98.9			P
Mercury									NR
Nickel				500.0	499.68	99.9			P
Potassium				5000.0	4910.63	98.2			P
Selenium				500.0	493.59	98.7			P
Silver				500.0	497.59	99.5			P
Sodium				5000.0	4937.64	98.8			P
Thallium				25.0	25.60	102.4	26.70	106.8	F
Vanadium				500.0	496.87	99.4			P
Zinc				500.0	502.44	100.5			P

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

FORM II (PART 1) - IN

ILM02.1

AR304618

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: IN.VEN._____

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_									NR
Silver___									NR
Sodium___									NR
Thallium_	25.0	26.00	104.0	25.0	25.10	100.4	25.50	102.0	F_
Vanadium_									NR
Zinc_____									NR

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

FORM II (PART 1) - IN

ILM02.1

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

AA CRDL Standard Source: PLASMACHEM__

ICP CRDL Standard Source: IN.VEN._____

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	123.45	102.9	119.67	99.7
Arsenic				20.0	20.45	102.2	22.08	110.4
Barium								
Beryllium				10.0	10.33	103.3	10.21	102.1
Cadmium				10.0	10.34	103.4	10.10	101.0
Calcium								
Chromium				20.0	20.67	103.3	20.08	100.4
Cobalt				100.0	101.96	102.0	101.12	101.1
Copper				50.0	51.28	102.6	50.28	100.6
Iron								
Lead				6.0	6.96	116.0	5.99	99.8
Magnesium								
Manganese				30.0	30.74	102.5	30.28	100.9
Mercury	0.2	0.22	110.0					
Nickel				80.0	81.56	101.9	80.33	100.4
Potassium								
Selenium				10.0	9.99	99.9	9.77	97.7
Silver				20.0	20.24	101.2	19.39	96.9
Sodium								
Thallium	10.0	10.10	101.0					
Vanadium				100.0	105.58	105.6	103.63	103.6
Zinc				40.0	43.04	107.6	41.74	104.3

FORM II (PART 2) - IN

ILM02.1

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

AA CRDL Standard Source: PLASMACHEM__

ICP CRDL Standard Source: IN.VEN._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium	10.0	10.50	105.0					
Vanadium								
Zinc								

FORM II (PART 2) - IN

ILM02.1

U.S. EPA - CLP

3
BLANKS

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

Preparation Blank Matrix (soil/water): 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	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Antimony	2.0	U	2.2	B	2.2	B	2.0	U	2.000	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Cadmium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Calcium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Chromium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Cobalt	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Copper	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Iron	16.0	U	16.0	U	16.0	U	16.0	U	16.000	U	P
Lead	1.0	U	1.0	U	1.0	U	1.2	B	1.000	U	P
Magnesium	7.0	U	7.0	U	7.0	U	7.0	U	7.000	U	P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Mercury	0.2	U	0.2	U	0.2	U			0.200	U	AV
Nickel	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Potassium	62.0	U	62.0	U	62.0	U	62.0	U	62.000	U	P
Selenium	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Sodium	8.0	U	8.0	U	8.0	U	8.0	U	82.307	B	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	F
Vanadium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Zinc	2.0	U	2.0	U	2.0	U	2.0	U	2.007	B	P

U.S. EPA - CLP

3
BLANKS

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

Preparation Blank Matrix (soil/water): _____

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
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium			2.0	U							F
Vanadium											NR
Zinc											NR

FORM III - IN

ILM02.1

U.S. EPA - CLP

3
BLANKS

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

Preparation Blank Matrix (soil/water): _____

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
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium	2.0	U	2.0	U	2.0	U					F
Vanadium											NR
Zinc											NR

FORM III - IN

ILM02.1

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: SOUTHWEST_LAB_OF_OK Contract: _____

Lab Code: SWOK Case No.: 25319 SAS No: _____ SDG No.: 25319

ICP ID Number: TJA#2 ICS Source: EPA-LV91

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	464201	467822.2	93.6	462575	463897.7	92.8
Antimony	0	0	-5	-1.4		-4	-3.6	
Arsenic	0	0	-1	-1.0		1	-0.4	
Barium	0	500	0	504.0	100.8	0	499.9	100.0
Beryllium	0	500	0	454.4	90.9	0	449.3	89.9
Cadmium	0	1000	0	873.3	87.3	0	858.9	85.9
Calcium	500000	500000	465222	468425.6	93.7	463549	462315.6	92.5
Chromium	0	500	0	449.0	89.8	0	443.9	88.8
Cobalt	0	500	0	436.0	87.2	0	432.2	86.4
Copper	0	500	-4	504.8	101.0	-3	498.9	99.8
Iron	200000	200000	179227	180561.0	90.3	178199	177924.7	89.0
Lead	0	1000	-1	881.7	88.2	0	870.7	87.1
Magnesium	500000	500000	467756	471458.8	94.3	465494	464578.6	92.9
Manganese	0	500	2	459.0	91.8	2	453.7	90.7
Mercury								
Nickel	0	1000	-1	856.6	85.7	-1	844.9	84.5
Potassium	0	0	1	-0.7		9	-10.7	
Selenium	0	0	-2	-2.5		-3	-1.5	
Silver	0	1000	-1	1001.3	100.1	-1	993.1	99.3
Sodium	0	0	56	69.6		66	67.6	
Thallium								
Vanadium	0	500	0	469.1	93.8	0	464.0	92.8
Zinc	0	1000	-10	926.9	92.7	-9	916.2	91.6

FORM IV - IN

ILM02.1

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

31901S

Lab Name: SOUTHWEST_LAB_OF_OK Contract:

Lab Code: SWOK Case No.: 25319 SAS No.: SDG No.: 25319

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0

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	2049.4030		10.0000	U	2000.00	102.5		P
Antimony	75-125	509.7900		2.0000	U	500.00	102.0		P
Arsenic	75-125	2075.3820		3.0000	U	2000.00	103.8		P
Barium	75-125	2090.5180		22.8010	B	2000.00	103.4		P
Beryllium	75-125	50.1050		1.0000	U	50.00	100.2		P
Cadmium	75-125	48.2240		1.0000	U	50.00	96.4		P
Calcium									NR
Chromium	75-125	197.5650		1.0000	U	200.00	98.8		P
Cobalt	75-125	481.6230		2.0000	U	500.00	96.3		P
Copper	75-125	257.5660		9.2290	B	250.00	99.3		P
Iron	75-125	1017.4130		16.0000	U	1000.00	101.7		P
Lead	75-125	496.4560		1.0000	U	500.00	99.3		P
Magnesium									NR
Manganese	75-125	499.6570		1.0000	U	500.00	99.9		P
Mercury	75-125	1.0100		0.2000	U	1.00	101.0		AV
Nickel	75-125	483.5170		1.0000	U	500.00	96.7		P
Potassium									NR
Selenium	75-125	2104.2560		3.0000	U	2000.00	105.2		P
Silver	75-125	49.3030		2.0000	U	50.00	98.6		P
Sodium									NR
Thallium	75-125	45.4000		2.0000	U	50.00	90.8		F
Vanadium	75-125	501.5750		1.0000	U	500.00	100.3		P
Zinc	75-125	499.7120		5.0690	B	500.00	98.9		P

Comments:
CLIENT_ID = MARKS - TAP_MS

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

31901SD

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract:_____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_
Matrix: __WATER_____ Level (low/med): _LOW____
% Solids for Sample: __0.0

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_									NR
Antimony_									NR
Arsenic__									NR
Barium___									NR
Beryllium									NR
Cadmium__									NR
Calcium__									NR
Chromium_									NR
Cobalt___									NR
Copper___									NR
Iron____									NR
Lead____									NR
Magnesium									NR
Manganese									NR
Mercury__									NR
Nickel___									NR
Potassium									NR
Selenium_									NR
Silver___									NR
Sodium___									NR
Thallium_	75-125	41.9000		2.0000	U	50.00	83.8		F
Vanadium_									NR
Zinc____									NR

Comments:
CLIENT_ID_=_MARKS_-_TAP_DUP

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

LCSWD

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

Matrix (soil/water): WATER 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		2059.2510		2042.1960		0.8		P
Antimony		511.1930		509.3560		0.4		P
Arsenic		2089.6070		2080.7930		0.4		P
Barium		2066.8350		2057.7850		0.4		P
Beryllium		50.2400		50.0320		0.4		P
Cadmium		48.7430		48.5380		0.4		P
Calcium	5000.0	19765.2480		19674.4530		0.5		P
Chromium		198.5380		197.6660		0.4		P
Cobalt		488.4790		485.5790		0.6		P
Copper		248.4310		246.8770		0.6		P
Iron		1018.6030		1013.9940		0.5		P
Lead		501.9010		499.9850		0.4		P
Magnesium	5000.0	20320.0820		20238.5230		0.4		P
Manganese		502.2330		499.7330		0.5		P
Mercury	0.2	0.8770		0.9300		5.9		AV
Nickel		490.1680		488.7330		0.3		P
Potassium	5000.0	16976.3750		16896.3030		0.5		P
Selenium		2117.3180		2106.3800		0.5		P
Silver	10.0	49.0180		48.7120		0.6		P
Sodium	5000.0	18402.6110		18395.2560		0.0		P
Thallium		56.0000		57.6000		2.8		F
Vanadium		502.3870		499.7180		0.5		P
Zinc		500.2100		497.2960		0.6		P

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

31901D

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

Matrix (soil/water): WATER 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		10.0000	U	13.0930	B	200.0		P
Antimony		2.0000	U	2.0000	U			P
Arsenic		3.0000	U	3.0000	U			P
Barium		22.8010	B	23.3060	B	2.2		P
Beryllium		1.0000	U	1.0000	U			P
Cadmium		1.0000	U	1.0000	U			P
Calcium		46443.9570		46584.1990		0.3		P
Chromium		1.0000	U	1.0000	U			P
Cobalt		2.0000	U	2.0000	U			P
Copper		9.2290	B	9.7470	B	5.5		P
Iron		16.0000	U	16.0000	U			P
Lead		1.0000	U	1.0000	U			P
Magnesium	5000.0	8940.7540		8960.2460		0.2		P
Manganese		1.0000	U	1.0000	U			P
Mercury		0.2000	U	0.2000	U			AV
Nickel		1.0000	U	1.0000	U			P
Potassium		885.1830	B	928.9080	B	4.8		P
Selenium		3.0000	U	3.0000	U			P
Silver		2.0000	U	2.0000	U			P
Sodium		3570.2480	B	3641.3730	B	2.0		P
Thallium								NR
Vanadium		1.0000	U	1.0000	U			P
Zinc		5.0690	B	5.2870	B	4.2		P

FORM VI - IN

ILM02.1

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

31901SD

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

Matrix (soil/water): WATER 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_								NR
Antimony_								NR
Arsenic__								NR
Barium___								NR
Beryllium								NR
Cadmium__								NR
Calcium__								NR
Chromium_								NR
Cobalt___								NR
Copper___								NR
Iron____								NR
Lead____								NR
Magnesium								NR
Manganese								NR
Mercury__								NR
Nickel___								NR
Potassium								NR
Selenium_								NR
Silver___								NR
Sodium___								NR
Thallium_		45.4000		41.9000		8.0		F
Vanadium_								NR
Zinc____								NR

FORM VI - IN

ILM02.1

U.S. EPA - CLP

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LABORATORY CONTROL SAMPLE

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

Solid LCS Source: _____

Aqueous LCS Source: EPA0392_____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	2000.0	2059.25	103.0						
Antimony	500.0	511.19	102.2						
Arsenic	2000.0	2089.61	104.5						
Barium	2000.0	2066.83	103.3						
Beryllium	50.0	50.24	100.5						
Cadmium	50.0	48.74	97.5						
Calcium	20000.0	19765.25	98.8						
Chromium	200.0	198.54	99.3						
Cobalt	500.0	488.48	97.7						
Copper	250.0	248.43	99.4						
Iron	1000.0	1018.60	101.9						
Lead	500.0	501.90	100.4						
agnesium	20000.0	20320.08	101.6						
Manganese	500.0	502.23	100.4						
Mercury	1.0	0.88	87.7						
Nickel	500.0	490.17	98.0						
Potassium	20000.0	16976.37	84.9						
Selenium	2000.0	2117.32	105.9						
Silver	50.0	49.02	98.0						
Sodium	20000.0	18402.61	92.0						
Thallium	50.0	56.00	112.0						
Vanadium	500.0	502.39	100.5						
Zinc	500.0	500.21	100.0						

FORM VII - IN

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U.S. EPA - CLP

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LABORATORY CONTROL SAMPLE

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

Solid LCS Source: _____

Aqueous LCS Source: EPA0392_____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	2000.0	2042.20	102.1						
Antimony	500.0	509.36	101.9						
Arsenic	2000.0	2080.79	104.0						
Barium	2000.0	2057.78	102.9						
Beryllium	50.0	50.03	100.1						
Cadmium	50.0	48.54	97.1						
Calcium	20000.0	19674.45	98.4						
Chromium	200.0	197.67	98.8						
Cobalt	500.0	485.58	97.1						
Copper	250.0	246.88	98.8						
Iron	1000.0	1013.99	101.4						
Lead	500.0	499.98	100.0						
Magnesium	20000.0	20238.52	101.2						
Manganese	500.0	499.73	99.9						
Mercury	1.0	0.93	93.0						
Nickel	500.0	488.73	97.7						
Potassium	20000.0	16896.30	84.5						
Selenium	2000.0	2106.38	105.3						
Silver	50.0	48.71	97.4						
Sodium	20000.0	18395.26	92.0						
Thallium	50.0	57.60	115.2						
Vanadium	500.0	499.72	99.9						
Zinc	500.0	497.30	99.5						

FORM VII - IN

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STANDARD ADDITION RESULTS

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract:_____

Lab Code: SWOK__ Case No.: 25319 SAS No.:_____ SDG No.:25319_

Concentration Units: ug/L

EPA Sample No.	An	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

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ICP SERIAL DILUTION

EPA SAMPLE NO.

31901L

Lab Name: SOUTHWEST_LAB_OF_OK Contract: _____

Lab Code: SWOK Case No.: 25319 SAS No.: _____ SDG No.: 25319

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

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	10.00	U	50.00	U			P
Antimony	2.00	U	10.00	U			P
Arsenic	3.00	U	15.00	U			P
Barium	22.80	B	21.66	B	5.0		P
Beryllium	1.00	U	5.00	U			P
Cadmium	1.00	U	5.00	U			P
Calcium	46443.96		46351.30		0.2		P
Chromium	1.00	U	5.00	U			P
Cobalt	2.00	U	10.00	U			P
Copper	9.23	B	15.12	B	63.8		P
Iron	16.00	U	80.00	U			P
Lead	1.00	U	5.00	U			P
Magnesium	8940.75		8886.89	B	0.6		P
Manganese	1.00	U	5.00	U			P
Mercury							NR
Nickel	1.00	U	5.00	U			P
Potassium	885.18	B	1023.09	B	15.6		P
Selenium	3.00	U	15.00	U			P
Silver	2.00	U	10.00	U			P
Sodium	3570.25	B	3754.20	B	5.2		P
Thallium							NR
Vanadium	1.00	U	5.00	U			P
Zinc	5.07	B	12.80	B	152.5		P

FORM IX - IN

ILM02.1

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10
Instrument Detection Limits (Quarterly)

Lab Name: SOUTHWEST_LAB_OF_OK Contract: _____
Lab Code: SWOK Case No.: 25319 SAS No.: _____ SDG No.: 25319
ICP ID Number: TJA#2 Date: 04/08/96
Flame AA ID Number : _____
Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	10.0	P
Antimony	206.83		6	2.0	P
Arsenic	189.04		10	3.0	P
Barium	493.41		200	1.0	P
Beryllium	313.04		4	1.0	P
Cadmium	226.50		5	1.0	P
Calcium	317.93		5000	4.0	P
Chromium	267.72		10	1.0	P
Cobalt	228.61		50	2.0	P
Copper	324.75		25	2.0	P
Iron	271.44		100	16.0	P
Lead	220.35		3	1.0	P
Magnesium	279.08		5000	7.0	P
Manganese	257.61		15	1.0	P
Mercury			0.2		NR
Nickel	231.60		40	1.0	P
Potassium	766.49		5000	62.0	P
Selenium	196.02		5	3.0	P
Silver	328.07		10	2.0	P
Sodium	588.99		5000	8.0	P
Thallium			2		NR
Vanadium	292.40		50	1.0	P
Zinc	213.86		20	2.0	P

Comments:

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Lab Name: SOUTHWEST LAB OF OK Contract: _____
Lab Code: SWOK Case No.: 25319 SAS No.: _____ SDG No.: 25319
ICP ID Number: _____ Date: 05/01/96
Flame AA ID Number : _____
Furnace AA ID Number : VAR400B

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			6		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			4		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		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	276.80	BZ	2	2.0	F
Vanadium			50		NR
Zinc			20		NR

Comments:

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Lab Name: SOUTHWEST_LAB_OF_OK
Lab Code: SWOK Case No.: 25319
ICP ID Number:
Flame AA ID Number : PS200A
Furnace AA ID Number :

Contract:
SAS No.:
Date: 04/08/96
SDG No.: 25319

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			6		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			4		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.30		0.2	0.2	AV
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			2		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

11A
ICP Interelement Correction Factors (Annually)

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

ICP ID Number: TJA#2_____ Date: 01/09/96

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	CO_
Aluminum	308.21	0.0000000	0.0000000	0.0000000	0.0000000	0.0001000
Antimony	206.83	0.0000000	0.0000000	0.0000410	0.0000000	0.0000000
Arsenic	189.04	0.0000130	0.0000000	-0.0000310	0.0000000	0.0000000
Barium	493.41	0.0000000	0.0000000	0.0000030	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.50	0.0000000	0.0000000	0.0000720	0.0000000	-0.0001130
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	-0.0000060	0.0000000	0.0000000
Cobalt	228.61	0.0000000	0.0000000	0.0000150	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	-0.0000330	0.0000000	-0.0000330
Iron	271.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0841670
Lead	220.35	0.0004430	0.0000000	0.0000670	0.0000000	-0.0008170
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000060	0.0000000	0.0000220	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000110	0.0000000	0.0005350
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.02	0.0000000	0.0000000	-0.0000030	0.0000000	0.0005920
Silver	328.07	0.0000000	0.0000000	0.0000030	0.0000000	0.0000000
Sodium	588.99	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	-0.0000090	0.0000000	-0.0000380	0.0000000	0.0034840
Vanadium	292.40	0.0000000	0.0000000	0.0002100	0.0000000	0.0000000
Zinc	213.86	0.0000050	0.0000000	0.0001000	0.0000000	0.0000000

Comments:

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11B
ICP Interelement Correction Factors (Annually)

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

ICP ID Number: TJA#2_____ Date: 01/09/96

Analyte	Wave-length (nm)	Interelement Correction Factors for : CR_	CU_	MN_	NI_	V__
Aluminum_	308.21	0.0000000	0.0000000	0.0005340	0.0000000	0.0229990
Antimony_	206.83	0.0103930	0.0000000	0.0000000	-0.0011890	-0.0072660
Arsenic__	189.04	0.0001810	0.0000000	0.0000000	0.0000000	0.0000000
Barium___	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000650
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0001950
Cadmium__	226.50	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium__	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium_	267.72	0.0000000	0.0000000	0.0001520	0.0000000	0.0001000
Cobalt___	228.61	0.0003160	0.0000340	0.0000000	0.0001630	0.0000000
Copper___	324.75	-0.0001050	0.0000000	0.0000000	0.0000000	0.0000000
Iron____	271.44	0.0009740	0.0000000	0.0000000	0.0000000	0.0107230
Lead____	220.35	0.0000000	-0.0000840	0.0000000	0.0002950	0.0000900
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury__						
Nickel___	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium_	196.02	0.0000000	0.0000000	0.0006580	0.0000000	0.0004810
Silver___	328.07	0.0000000	0.0000190	0.0000000	0.0000000	0.0000650
Sodium___	588.99	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium_	190.86	0.0002370	0.0000000	-0.0018450	0.0000000	0.0020640
Vanadium_	292.40	0.0000210	0.0000000	0.0000000	0.0000000	0.0000000
Zinc____	213.86	0.0000000	0.0004890	0.0000000	0.0057060	0.0000000

Comments:

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11B
ICP Interelement Correction Factors (Annually)

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

ICP ID Number: TJA#2_____ Date: 01/09/96

Analyte	Wave-length (nm)	Interelement Correction Factors for : ZN_	___	___	___	___
Aluminum	308.21	0.0000000				
Antimony	206.83	0.0000000				
Arsenic	189.04	0.0000000				
Barium	493.41	0.0003620				
Beryllium	313.04	0.0002810				
Cadmium	226.50	0.0000000				
Calcium	317.93	0.0000000				
Chromium	267.72	0.0000000				
Cobalt	228.61	0.0000000				
Copper	324.75	0.0000000				
Iron	271.44	0.0000000				
Lead	220.35	0.0000000				
agnesium	279.08	0.0000000				
Manganese	257.61	0.0000000				
Mercury						
Nickel	231.60	0.0000000				
Potassium	766.49	0.0000000				
Selenium	196.02	0.0000000				
Silver	328.07	0.0000000				
Sodium	588.99	0.0000000				
Thallium	190.86	0.0000000				
Vanadium	292.40	0.0000000				
Zinc	213.86	0.0000000				

Comments:

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12
ICP Linear Ranges (Quarterly)

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319 SAS No.: _____ SDG No.: 25319_

ICP ID Number: TJA#2_____ Date: 04/12/96

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	15.00	600000.0	P
Antimony	15.00	40000.0	P
Arsenic	15.00	30000.0	P
Barium	15.00	20000.0	P
Beryllium	15.00	5000.0	P
Cadmium	15.00	20000.0	P
Calcium	15.00	600000.0	P
Chromium	15.00	50000.0	P
Cobalt	15.00	40000.0	P
Copper	15.00	50000.0	P
Iron	15.00	500000.0	P
Lead	15.00	40000.0	P
Magnesium	15.00	600000.0	P
Manganese	15.00	20000.0	P
Mercury			NR
Nickel	15.00	40000.0	P
Potassium	15.00	70000.0	P
Selenium	15.00	20000.0	P
Silver	15.00	40000.0	P
Sodium	15.00	50000.0	P
Thallium	15.00	40000.0	P
Vanadium	15.00	40000.0	P
Zinc	15.00	10000.0	P

Comments:

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PREPARATION LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.:_25319 SAS No.: _____ SDG No.:25319_

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
31901	04/23/96		100
31901D	04/23/96		100
31901S	04/23/96		100
31904	04/23/96		100
31905	04/23/96		100
31906	04/23/96		100
31907	04/23/96		100
LCSW	04/23/96		100
LCSWD	04/23/96		100
PBW	04/23/96		100

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PREPARATION LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.:_25319 SAS No.: _____ SDG No.:25319_

Method: F_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
31901	04/26/96		50
31901S	04/26/96		50
31901SD	04/26/96		50
31904	04/26/96		100
31905	04/26/96		100
31906	04/26/96		100
31907	04/26/96		100
LCSW	04/26/96		100
LCSWD	04/26/96		100
PBW	04/26/96		100

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13
PREPARATION LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.:_25319 SAS No.: _____ SDG No.:25319_

Method: AV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
31901	04/22/96		100
31901D	04/22/96		100
31901S	04/22/96		100
31904	04/22/96		100
31905	04/22/96		100
31906	04/22/96		100
31907	04/22/96		100
LCSW	04/22/96		100
LCSWD	04/22/96		100
PBW	04/22/96		100

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ANALYSIS RUN LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319_ SAS No.: _____ SDG No.:25319_

Instrument ID Number: TJA#2_____ Method: P_

Start Date: 04/26/96 End Date: 04/26/96

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN		
S0	1.00	1526		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
S	1.00	1531		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
ICV	1.00	1535		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
ICB	1.00	1539		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
ICSA	1.00	1544		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
ICSAB	1.00	1548		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
CRI	1.00	1557		_	X	X	_	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	_	X	X	_	
CCV	1.00	1601		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
CCB	1.00	1605		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
PBW	1.00	1610		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
CSW	1.00	1614		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
LCSWD	1.00	1618		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
31901	1.00	1622		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
31901L	5.00	1627		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
31901S	1.00	1631		X	X	X	X	X	X	_	X	X	X	X	X	_	X	_	X	_	X	X	_	_	X	X	_	
31901D	1.00	1635		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
31904	1.00	1640		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
31905	1.00	1644		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
ZZZZZZ	1.00	1649																										
CCV	1.00	1653		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
CCB	1.00	1657		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
31906	1.00	1702		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
31907	1.00	1706		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
ZZZZZZ	1.00	1711																										
ICSA	1.00	1715		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
ICSAB	1.00	1719		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
CRI	1.00	1728		_	X	X	_	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	_	X	X	_	
CCV	1.00	1733		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	
CCB	1.00	1737		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	_	X	X	_	

FORM XIV - IN ILM02.1

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319_ SAS No.: _____ SDG No.:25319_

Instrument ID Number: VAR400B_____ Method: F_

Start Date: 05/01/96 End Date: 05/01/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
S0	1.00	1708																						X			
S10	1.00	1714																						X			
S25	1.00	1720																						X			
S50	1.00	1725																						X			
ICV	1.00	1731																						X			
ICB	1.00	1737																						X			
CRA	1.00	1743																						X			
CRAA	1.00	1749	105.0																					X			
CCV	1.00	1755																						X			
CCB	1.00	1801																						X			
3W	1.00	1807																						X			
PBWA	1.00	1813	108.0																					X			
LCSW	1.00	1819																									
LCSWA	1.00	1825	-9999.9																								
LCSWD	1.00	1831																									
LCSWDA	1.00	1837	-9999.9																								
31901	1.00	1843																						X			
31901A	1.00	1849	96.0																					X			
CCV	1.00	1855																						X			
CCB	1.00	1901																						X			
31901S	1.00	1907																						X			
ZZZZZZ	1.00	1913																									
31901SD	1.00	1919																						X			
ZZZZZZ	1.00	1925																									
31904	1.00	1931																						X			
31904A	1.00	1937	94.0																					X			
31905	1.00	1943																						X			
31905A	1.00	1949	97.5																					X			
CCV	1.00	1955																						X			
CCB	1.00	2001																						X			
31906	1.00	2007																						X			
31906A	1.00	2013	105.5																					X			

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: _____

Lab Code: SWOK__ Case No.: 25319_ SAS No.: _____ SDG No.:25319_

Instrument ID Number: VAR400B_____ Method: F_

Start Date: 05/01/96 End Date: 05/01/96

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN		
LCSW	2.00	2019																						X				
LCSWA	2.00	2025	112.0																					X				
LCSWD	2.00	2031																						X				
LCSWDA	2.00	2037	115.2																					X				
CCV	1.00	2043																						X				
CCB	1.00	2049																						X				

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ANALYSIS RUN LOG

Lab Name: SOUTHWEST LAB OF OK Contract: _____

Lab Code: SWOK Case No.: 25319 SAS No.: _____ SDG No.: 25319

Instrument ID Number: VAR400B Method: F

Start Date: 05/02/96 End Date: 05/02/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
S0	1.00	1020																						K			
S10	1.00	1026																						K			
S25	1.00	1032																						K			
S50	1.00	1037																						K			
ICV	1.00	1043																						K			
ICB	1.00	1049																						K			
CRA	1.00	1055																						K			
CRAR	1.00	1101	100.0																					K			
CCV	1.00	1107																						K			
CCB	1.00	1113																						K			
1907	1.00	1119																						K			
1907R	1.00	1125	107.5																					K			
CCV	1.00	1131																						K			
CCB	1.00	1137																						K			

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: SOUTHWEST LAB OF OK Contract: _____

Lab Code: SWOK Case No.: 25319 SAS No.: _____ SDG No.: 25319

Instrument ID Number: PS200A Method: AV

Start Date: 04/22/96 End Date: 04/22/96

EPA Sample No.	D/F	Time	G R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
S0	1.00	0911																K									
S0.2	1.00	0914																K									
S0.5	1.00	0917																K									
S1	1.00	0919																K									
S5	1.00	0922																K									
S10	1.00	0925																K									
ICV	1.00	1019																K									
ICB	1.00	1021																K									
CRA	1.00	1024																K									
CCV	1.00	1027																K									
CB	1.00	1030																K									
PBW	1.00	1127																K									
LCSW	1.00	1130																K									
LCSWD	1.00	1133																K									
31901	1.00	1135																K									
31901S	1.00	1138																K									
31901D	1.00	1141																K									
31904	1.00	1143																K									
31905	1.00	1146																K									
31906	1.00	1148																K									
31907	1.00	1151																K									
CCV	1.00	1154																K									
CCB	1.00	1157																K									

FORM XIV - IN ILMO2.1

ICP Run Log
Inorganics Department Southwest Laboratories of Oklahoma

ılyst: JLW

Date: 04/26/1996

QC Reference: 66347 Method: ILM03.0

Instrument: TJA ET2

Source: ?

Client ID	LAB ID	Time	DF	Analytes:
	STD0	15:26	1.00	Sb, Al, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Mg, Mn, Ni, K, Ag, Na, V, Zn, Ag, Pb, Se
	STD1	15:31	1.00	
	ICV	15:35	1.00	
	ICB	15:39	1.00	
	ICSA	15:44	1.00	
	ICSAB	15:48	1.00	
	CRI	15:57	1.00	NO Al, Ba, Ca, Fe, K, Mg, Na
	CCV	16:01	1.00	
	CCB	16:05	1.00	
PBW	PBW960423B	16:10	1.00	
LCSW	LCW960423B	16:14	1.00	
LCSWD	LDW960423B	16:18	1.00	
31901	25319.01	16:22	1.00	
31901L	25319.01L	16:27	1.00	
31902S	25319.02S	16:31	1.00	
31903D	25319.03D	16:35	1.00	
31904	25319.04	16:40	1.00	
31905	25319.05	16:44	1.00	
	ZZZZZZ	16:49	1.00	
	CCV	16:53	1.00	
	CCB	16:57	1.00	
31906	25319.06	17:02	1.00	
31907	25319.07	17:06	1.00	
	ZZZZZZ1	17:11	1.00	
	ICSA	17:15	1.00	
	ICSAB	17:19	1.00	
	CRI	17:28	1.00	NO Al, Ba, Ca, Fe, K, Mg, Na
	CCV	17:33	1.00	
	CCB	17:37	1.00	

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

ICP/TRACE ICP DATA REVIEW SHEET

Instrument: TJA #2 Method: ICM03.0
Analyst: BK (JCW) Date: _____
Reviewer: JCW Date: 4-29-96
File: T2042615.ASC QC Ref. #: 66347
Prep Batch(s): 9604 23I2

Analyst	Reviewer	
	JCW	- Correct Instrument ID., Method, File was entered into the IDB.
		AS VERIFY
	JCW	- Review of every Run QC sample was made.
	JCW	- Review of the Prep Batch QC was made.
	JCW	- Matrix Spikes were checked for required post spikes and clearly marked on reanalyzes log.
	JCW	- Review was made to locate samples out of linear range. If interfering elements are high list samples and elements that might be affected: _____
		Reanalyzes Log and Runlog clearly identifies what needs to be reanalyzed and what passed QC requirements.
		PB VERIFY
QC		- All required elements for samples have been labeled as passing requirements.
		- Dilutions were checked against original samples.
		UPLOAD
		Results uploaded to LIMS were double checked against Raw Data.

Comments: No Problem / See attached Case Narrative / See attached Override Report / See attached Reanalyzes Log

CANNOT VERIFY ICM03.0 THROUGH DATA BASE

JCM 3.0

4-24
R4

SWLD / AATS Sample Digestion Record

Date : 04/23/1996 Batch: 960423I2 Analyst: TG
: MT600 ACID DIGESTION - ICP/AA Client: WESTMPD Matrix: W

LAB ID	Client ID	TYP	Initial Wt/Vol		Final Wt/Vol		Color Before	Color After	Texture	pH	Comments
PBW960423B		LB	100	ML	100	ML					
LCW960423B		BS	100	ML	100	ML					1.0 ML OF DS1-1-34.DS1-1-31.DS
LDW960423B		BS	100	ML	100	ML					1.0 ML OF DS1-1-34.DS1-1-31.DS
25319.01	MARKS - TAP		100	ML	100	ML	CO/CL	CO/CL		<2	
.01L 25319.02S	MARKS - TAP	MS	100	ML	100	ML	CO/CL	CO/CL		<2	1.0 ML OF DS1-1-34.DS1-1-31.DS
25319.03D	MARKS - TAP	DUP	100	ML	100	ML	CO/CL	CO/CL		<2	
25319.04	KRENTZMAN - TAP		100	ML	100	ML	CO/CL	CO/CL		<2	
25319.05	STINE - TAP		100	ML	100	ML	CO/CL	CO/CL		<2	
25319.06	SNYDER - TAP		100	ML	100	ML	CO/CL	CO/CL		<2	
25319.07	TRIP BLANK		100	ML	100	ML	CO/CL	CO/CL		<2	

Sb 6

Be 4

15:26
15:31

Standardization Rpt. Fri 04-26-96 03:31:00 PM

Method: 61ET2 Standard: STD0

Elem	As	Tl	Al	Ba	Be	Cd	Ca
Avge	.02423	-.13461	.99380	.00692	-9.5584	.47844	.02384
SDev	.03627	.04430	.01443	.00901	.0081	.02448	.00352
%RSD	149.68	32.912	1.4516	130.17	.08479	5.1176	14.783
#1	.03115	-.18576	1.0084	.01731	-9.5661	.49844	.02769
#2	-.01500	-.10846	.97957	.00231	-9.5591	.45113	.02077
#3	.05654	-.10961	.99341	.00115	-9.5499	.48574	.02308

Elem	Cr	Co	Cu	Fe	Mg	Mn	Ni
Avge	.09846	-.00269	.33460	-.01846	.00692	.01731	.01231
SDev	.04582	.00751	.01248	.03102	.00416	.00416	.00176
%RSD	46.542	278.85	3.7299	168.05	60.093	24.037	14.321
#1	.13153	.00462	.33114	.01731	.01154	.02192	.01385
#2	.04615	-.01038	.32421	-.03808	.00577	.01385	.01269
#3	.11769	-.00231	.34844	-.03461	.00346	.01615	.01038

Elem	K	Ag	Na	V	Zn	220Pb1	220Pb2
Avge	.17807	.05269	-.69843	.00462	-.00154	.42575	.04077
SDev	.06672	.05368	.00581	.00808	.00133	.11692	.11557
%RSD	37.471	101.87	.83148	175.00	86.603	27.462	283.49
#1	.19730	.10730	-.70381	.01385	.00000	.49498	.08307
#2	.10384	.00000	-.69920	.00115	-.00231	.29075	.12922
#3	.23307	.05077	-.69227	-.00115	-.00231	.49151	-.09000

Elem	196Se1	196Se2	206Sb1	206Sb2	B	Sc	Sr
Avge	-.31498	.22460	-.15845	-.02461	.61305	.13153	.39306
SDev	.02703	.16657	.19359	.10392	.10991	.05364	.12400
%RSD	8.5827	74.162	122.17	422.20	17.928	40.778	31.548
#1	-.30114	.31729	-.07615	-.12115	.73727	.19038	.52844
#2	-.34614	.32421	-.01961	.08538	.52844	.08538	.28499
#3	-.29768	.03231	-.37960	-.03808	.57343	.11884	.36575

DATA REVIEWED JW 4-29-96

Reviewed 4-29-96

T2042615.ASC

AR304653

Standardization Rpt. Fri 04-26-96 03:35:19 PM page 1

Method: 61ET2 Standard: STD1

Elem	As	Tl	Al	Ba	Be	Cd	Ca
Avge	45.229	27.661	45.132	44.135	2277.4	1370.0	22.813
SDev	.355	.169	.336	.339	18.1	10.3	.175
%RSD	.78438	.61183	.74368	.76784	.79664	.75213	.76655
#1	44.820	27.469	44.750	43.746	2256.5	1358.1	22.611
#2	45.456	27.791	45.380	44.362	2288.6	1375.9	22.915
#3	45.411	27.721	45.265	44.299	2287.3	1376.0	22.912

Elem	Cr	Co	Cu	Fe	Mg	Mn	Ni
Avge	180.00	14.196	37.453	52.469	7.5046	75.425	29.219
SDev	1.40	.123	.292	.436	.0573	.577	.218
%RSD	.77706	.86850	.77913	.83029	.76337	.76441	.74448
#1	178.39	14.054	37.116	51.968	7.4385	74.762	28.968
#2	180.89	14.277	37.626	52.760	7.5377	75.809	29.349
#3	180.73	14.257	37.617	52.677	7.5377	75.705	29.341

Elem	K	Ag	Na	V	Zn	220Pb1	220Pb2
Avge	36.153	76.849	37.477	16.575	16.021	235.94	151.24
SDev	.321	.581	.099	.135	.129	1.17	1.48
%RSD	.88880	.75634	.26309	.81650	.80247	.49639	.97543
#1	35.782	76.179	37.369	16.420	15.873	234.60	149.54
#2	36.351	77.218	37.562	16.664	16.095	236.40	152.11
#3	36.326	77.149	37.502	16.642	16.095	236.80	152.08

Elem	196Se1	196Se2	206Sb1	206Sb2	B	Sc	Sr
Avge	31.671	42.499	105.75	61.647	403.39	610.15	1489.5
SDev	.077	.498	1.52	.614	3.58	4.79	11.6
%RSD	.24281	1.1713	1.4397	.99530	.88678	.78531	.77743
#1	31.583	41.934	104.11	60.943	399.26	604.63	1476.2
#2	31.725	42.876	106.04	62.067	405.26	613.23	1496.9
#3	31.705	42.686	107.11	61.932	405.64	612.60	1495.5

Method: 61ET2 Sample Name: ICV Operator:
Run Time: 04/26/96 15:35:24
Comment:
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	259.04	250.90	254.13	252.15	522.50	1031.9	1042.4
SDev	2.90	2.08	1.01	1.57	1.36	1.4	5.8
%RSD	1.1214	.83035	.39790	.62202	.26011	.13625	.55713
#1	262.39	248.51	253.00	252.92	521.31	1033.5	1035.8
#2	257.26	251.87	254.44	253.17	522.22	1030.8	1046.6
#3	257.47	252.32	254.96	250.34	523.98	1031.4	1044.8
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	250.00	250.00	250.00	250.00	500.00	1000.0	1000.0
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	25.396	126.88	2523.5	102.18	255.97	129.13	512.09
SDev	.327	.32	9.2	.31	.63	.36	2.28
%RSD	1.2892	.25257	.36611	.30651	.24800	.28200	.44521
#1	25.752	126.55	2512.9	101.82	255.24	128.99	514.46
#2	25.328	127.19	2529.6	102.38	256.38	129.55	509.91
#3	25.108	126.90	2528.1	102.35	256.30	128.86	511.91
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	25.000	125.00	2500.0	100.00	250.00	125.00	500.00
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2547.3	257.28	255.27	2564.9	126.29	2649.6	260.64
SDev	5.8	1.03	.76	15.9	.64	9.1	.93
%RSD	.22871	.39997	.29855	.61821	.50608	.34303	.35584
#1	2540.7	256.10	254.40	2546.7	127.01	2653.4	259.62
#2	2551.4	258.00	255.59	2572.1	125.80	2639.2	260.87
#3	2549.9	257.74	255.82	2575.9	126.07	2656.1	261.43
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2500.0	250.00	250.00	2500.0	125.00	2500.0	250.00
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	256.84	254.16	254.11	255.80	250.30	519.77	523.86
SDev	.67	1.28	.91	1.42	1.67	5.01	1.20
%RSD	.26071	.50483	.35865	.55671	.66594	.96297	.22952
#1	256.09	252.87	253.06	256.15	251.29	514.11	524.89
#2	257.03	254.17	254.56	257.02	251.24	521.57	522.54
#3	257.39	255.43	254.70	254.24	248.38	523.63	524.14
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	250.00						

Method: 61ET2 Sample Name: ICB Operator:
Run Time: 04/26/96 15:39:42
Comment:
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.67217	.55303	.27231	.92947	1.5731	-6.2848	.38369
SDev	1.3985	2.3286	.49336	.74371	1.4753	3.0995	.51939
%RSD	208.06	421.06	181.18	80.015	93.783	49.317	135.37
#1	1.8633	1.7713	.06343	.07710	3.0263	-2.7093	.96784
#2	1.0210	-2.1320	.83575	1.4463	1.6162	-8.2084	.20930
#3	-.86777	2.0198	-.08225	1.2650	.07671	-7.9368	-.02605
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	10.000	10.000	3.0000	5.0000	60.000	200.00	200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.07347	-.14286	-1.5189	-.20098	.05428	-.09328	-2.1479
SDev	.01920	.02572	1.9168	.14329	.23462	.59045	1.8501
%RSD	26.127	18.003	126.20	71.295	432.24	633.00	86.132
#1	-.05131	-.11350	.67506	-.08558	.18967	.49719	-.01662
#2	-.08510	-.16137	-2.3627	-.36136	-.21664	-.09332	-3.0878
#3	-.08400	-.15372	-2.8690	-.15600	.18981	-.68370	-3.3394
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	5.0000	5.0000	5000.0	10.000	50.000	25.000	100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-1.0259	-.01520	-.02636	-8.8732	-.28547	.60446	-.16245
SDev	3.5538	.15973	.31365	7.2735	.40576	.62914	.28992
%RSD	346.41	1051.1	1189.9	81.972	142.14	104.08	178.46
#1	3.0777	.16839	.32931	-6.2006	.12520	1.3097	.06965
#2	-3.0777	-.09169	-.26338	-17.105	-.29549	.10074	-.06957
#3	-3.0777	-.12229	-.14501	-3.3141	-.68613	.40297	-.48744
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	5000.0	15.000	40.000	5000.0	10.000	5000.0	50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.02476	.37077	.20578	4.5050	-.87187	.58724	2.0521
SDev	.14320	.94544	.97891	1.4304	.40742	1.9100	1.5618
%RSD	578.46	254.99	475.70	31.752	46.729	325.24	76.107
#1	.16722	1.4565	-.65033	2.8545	-1.3252	1.3927	3.8292
#2	.02624	-.07355	1.2730	5.3845	-.53634	1.9626	1.4292
#3	-.11918	-.27067	-.00536	5.2761	-.75406	-1.5935	.89785
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	.00000						

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Method: 61ET2 Sample Name: 1CSA Operator:
Run Time: 04/26/96 15:44:00
Comment:
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-1.3543	5.1865	-.74253	-2.0876	-5.0318	464200.	.04718
SDev	.9638	3.6586	.81583	3.3048	2.7585	1800.	.01589
%RSD	71.171	70.540	109.87	158.31	54.821	.38773	33.691
#1	-.26419	9.1786	-1.5734	-4.9859	-7.4109	462180.	.04312
#2	-1.7049	4.3873	-.71159	-2.7882	-2.0081	465630.	.03371
#3	-2.0937	1.9936	.05740	1.5114	-5.6763	464790.	.06471
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	20.000	20.000	6.0000	10.000	120.00	550000.	400.00
Low	-20.000	-20.000	-6.0000	-10.000	-120.00	400000.	-400.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.14730	.08508	465220.	-.29993	.46537	-4.0971	179230.
SDev	.02143	.03265	1368.	.21003	.21656	.3476	522.
%RSD	14.551	38.377	.29416	70.028	46.535	8.4835	.29107
#1	.16165	.06867	463840.	-.07182	.62949	-4.4276	178710.
#2	.12266	.12268	466580.	-.48532	.21992	-4.1292	179750.
#3	.15759	.06388	465250.	-.34265	.54671	-3.7346	179230.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.000	10.000	500000.	20.000	100.00	50.000	240000.
Low	-10.000	-10.000	400000.	-20.000	-100.00	-50.000	160000.

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	467760.	2.3307	-.50916	1.2829	-.89607	55.913	.20596
SDev	1244.	.0243	.22086	10.103	.41545	.761	.35818
%RSD	.26592	1.0433	43.378	787.53	46.363	1.3603	173.91
#1	466550.	2.3555	-.56940	-8.7663	-1.3392	56.013	-.06169
#2	469030.	2.3299	-.26442	1.1760	-.83360	55.107	.61285
#3	467690.	2.3068	-.69365	11.439	-.51540	56.618	.06672
Errors	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	LC Pass
High	550000.	30.000	80.000		20.000		100.00
Low	400000.	-30.000	-80.000		-20.000		-100.00

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-9.6226	-3.3377	.53869	11.700	-8.9941	-.64348	-7.2394
SDev	.1539	2.8303	2.5961	3.780	3.2854	8.26528	3.7624
%RSD	1.5991	84.798	481.93	32.308	36.528	1284.5	51.971
#1	-9.5033	-.09769	-2.3267	7.5584	-11.271	-9.9629	-6.1490
#2	-9.5682	-4.5871	1.2086	12.577	-10.484	2.2339	-4.1426
#3	-9.7963	-5.3282	2.7342	14.964	-5.2278	5.7985	-11.427
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	40.000						

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Method: 61ET2 Sample Name: ICSAB Operator:
Run Time: 04/26/96 15:48:18
Comment:
de: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.99713	4.1683	881.73	-2.5027	-1.4158	467820.	504.01
SDev	1.65236	1.0665	8.19	.8703	1.2957	1874.	2.82
%RSD	165.71	25.587	.92935	34.774	91.518	.40052	.55894
#1	-.81802	5.2020	872.28	-2.4664	-2.7278	465830.	501.04
#2	.55838	4.2312	886.05	-3.3906	-.13702	468080.	504.33
#3	-2.7317	3.0717	886.87	-1.6511	-1.3826	469560.	506.65
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	20.000	20.000	1200.0	10.000	10.000	550000.	600.00
Low	-20.000	-20.000	800.00	-10.000	-10.000	400000.	400.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	454.40	873.27	468430.	449.05	436.03	504.81	180560.
SDev	2.35	4.19	2025.	2.41	1.81	2.63	780.
%RSD	.51768	.47997	.43237	.53740	.41564	.52022	.43172
#1	451.86	868.78	466300.	446.62	434.00	502.13	179750.
#2	454.84	873.93	468650.	449.08	436.60	504.91	180620.
#3	456.51	877.09	470330.	451.45	437.49	507.38	181310.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600.00	1200.0	500000.	600.00	600.00	600.00	240000.
Low	400.00	800.00	400000.	400.00	400.00	400.00	160000.

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	471460.	458.99	856.57	-.74834	1001.3	69.614	469.08
SDev	2151.	2.19	4.59	7.24994	4.7	1.090	2.02
%RSD	.45622	.47728	.53622	968.80	.46783	1.5654	.43013
#1	469150.	456.63	851.68	2.7796	996.29	69.312	466.94
#2	471830.	459.36	857.24	-9.0870	1002.1	68.707	469.36
#3	473400.	460.97	860.79	4.0624	1005.6	70.823	470.95
Errors	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	LC Pass
High	550000.	600.00	1200.0		1200.0		600.00
Low	400000.	400.00	800.00		800.00		400.00

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	926.91	878.78	883.20	4.7439	-6.1393	5.0989	-4.6865
SDev	4.95	1.01	12.68	4.6468	2.6949	7.1315	1.8983
%RSD	.53420	.11443	1.4361	97.954	43.896	139.86	40.507
#1	921.58	879.71	868.55	10.099	-8.7621	-3.0723	-2.5694
#2	927.78	877.71	890.19	2.3580	-6.2783	10.069	-5.2529
#3	931.36	878.91	890.84	1.7747	-3.3776	8.3004	-6.2371
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	1200.0						

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Method: 61ET2 Sample Name: CRI Operator:
Run Time: 04/26/96 15:57:08
Comment:
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	20.450	19.361	6.9608	9.9895	123.45	431.63	420.51
SDev	1.894	.833	.4592	.6018	1.22	2.04	1.78
%RSD	9.2603	4.3034	6.5968	6.0241	.98911	.47222	.42449
#1	19.370	18.436	7.4902	10.057	122.51	430.59	419.00
#2	22.637	20.054	6.7210	10.555	124.83	430.32	420.05
#3	19.344	19.592	6.6711	9.3569	123.01	433.98	422.48
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High	30.000	30.000	9.0000	15.000	180.00		
Low	10.000	10.000	3.0000	5.0000	60.000		

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	10.334	10.343	10016.	20.666	101.96	51.282	214.04
SDev	.052	.068	37.	.206	.80	.135	1.11
%RSD	.50675	.65961	.37117	.99795	.78535	.26418	.51988
#1	10.304	10.283	9989.9	20.517	101.31	51.127	214.47
#2	10.304	10.417	10000.	20.902	101.72	51.375	214.87
#3	10.394	10.328	10059.	20.581	102.85	51.344	212.77
Errors	LC Pass	LC Pass	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	15.000	15.000		30.000	150.00	75.000	
Low	5.0000	5.0000		10.000	50.000	25.000	

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	10229.	30.736	81.558	10015.	20.236	10079.	105.58
SDev	42.	.111	.225	48.	.239	11.	.39
%RSD	.40898	.36035	.27535	.48068	1.1788	.10658	.36730
#1	10193.	30.680	81.308	9991.2	20.507	10066.	105.23
#2	10218.	30.665	81.742	9982.9	20.056	10085.	105.51
#3	10275.	30.864	81.623	10070.	20.146	10084.	105.99
Errors	NOCHECK	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	LC Pass
High		45.000	120.00		30.000		150.00
Low		15.000	40.000		10.000		50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	43.039	8.0909	6.3825	15.575	7.1833	126.01	122.16
SDev	.110	1.7221	.7836	2.801	.8544	2.39	2.87
%RSD	.25549	21.284	12.277	17.983	11.894	1.8936	2.3487
#1	42.944	9.0050	6.7197	17.720	6.2120	126.21	120.65
#2	43.014	9.1632	5.4868	16.599	7.5193	123.53	125.47
#3	43.159	6.1046	6.9411	12.406	7.8186	128.29	120.36
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	60.000						

Analysis Report QC Standard Fri 04-26-96 04:05:40 PM page 1

Method: 61ET2 Sample Name: CCV Operator:
Run Time: 04/26/96 16:01:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	488.46	500.25	501.75	496.51	496.97	5041.4	524.32
SDev	2.06	4.69	3.25	3.69	3.54	11.5	1.04
%RSD	.42270	.93852	.64849	.74273	.71184	.22743	.19807
#1	486.07	496.68	498.43	493.88	493.12	5028.3	523.14
#2	489.72	498.50	501.87	494.92	497.71	5046.1	524.76
#3	489.57	505.57	504.94	500.73	500.07	5049.7	525.07
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.00	500.00	500.00	500.00	500.00	5000.0	500.00
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	495.04	505.83	4948.5	505.63	506.62	502.27	5027.9
SDev	.99	.72	4.3	.99	1.38	1.42	17.9
%RSD	.20050	.14136	.08701	.19544	.27153	.28195	.35601
#1	493.90	505.01	4943.6	504.60	505.46	501.17	5008.5
#2	495.57	506.32	4950.2	505.73	508.14	501.79	5043.7
#3	495.66	506.17	4951.7	506.57	506.27	503.87	5031.5
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.00	500.00	5000.0	500.00	500.00	500.00	5000.0
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4946.9	501.95	506.10	4952.4	503.05	5007.5	504.92
SDev	7.7	1.05	.27	8.2	1.22	21.6	1.19
%RSD	.15657	.20986	.05414	.16650	.24314	.43091	.23576
#1	4939.7	500.74	505.94	4949.5	501.64	4988.1	503.55
#2	4955.1	502.40	505.94	4961.7	503.75	5003.5	505.50
#3	4945.9	502.70	506.41	4946.0	503.78	5030.7	505.71
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.0	500.00	500.00	5000.0	500.00	5000.0	500.00
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	508.72	502.45	501.38	496.84	496.33	498.37	496.25
SDev	.56	3.42	3.23	3.70	5.56	5.64	2.66
%RSD	.11085	.68081	.64398	.74457	1.1209	1.1318	.53699
#1	508.07	499.44	497.91	499.77	490.93	491.88	493.72
#2	509.01	501.75	501.91	492.69	496.03	501.10	496.01
#3	509.08	506.17	504.30	498.07	502.04	502.13	499.03
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	500.00						

Analysis Report QC Standard Fri 04-26-96 04:09:58 PM

Method: 61ET2 Sample Name: CCB Operator:
Run Time: 04/26/96 16:05:45
Comment:
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.42529	-.81716	.56621	-.15969	2.1848	-3.4081	.28781
SDev	.36129	1.30890	.40887	.91015	2.4346	1.7440	.16332
%RSD	84.950	160.18	72.212	569.94	111.44	51.172	56.748
#1	-.20419	-1.5517	.83802	.65830	4.9021	-1.9218	.47089
#2	-.22947	.69403	.76460	-1.1401	1.4501	-2.9745	.23546
#3	-.84221	-1.5939	.09599	.00275	.20203	-5.3279	.15707
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	10.000	10.000	3.0000	5.0000	60.000	200.00	200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.23176	.19095	-.84383	.13466	.43351	.25902	2.4040
SDev	.17331	.12950	2.67906	.04512	.35437	.11767	3.6948
%RSD	74.777	67.821	317.49	33.506	81.747	45.430	153.70
#1	.43059	.33838	2.1939	.13895	.59615	.12433	-.05021
#2	.15201	.13890	-1.8564	.08755	.02700	.31087	6.6534
#3	.11269	.09557	-2.8690	.17748	.67736	.34187	.60873
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	5.0000	5.0000	5000.0	10.000	50.000	25.000	100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.0518	.20913	.32915	-1.3898	.08012	-2.4179	.06959
SDev	1.7769	.19023	.24680	16.3661	.03005	.6291	.12055
%RSD	86.603	90.961	74.979	1177.6	37.505	26.021	173.23
#1	3.0777	.42860	.13144	-18.067	.05008	-1.7127	-.00000
#2	.00000	.09163	.25027	-.74834	.08009	-2.9216	.20879
#3	3.0777	.10716	.60575	14.646	.11018	-2.6193	-.00002
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	5000.0	15.000	40.000	5000.0	10.000	5000.0	50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.21947	.03352	.81520	1.1077	-.80715	4.5370	.99497
SDev	.15217	1.4712	.18185	2.6560	2.02816	3.4623	2.3779
%RSD	69.338	4389.0	22.307	239.77	251.27	76.313	238.99
#1	-.04906	1.2690	.60526	-1.1208	1.5339	8.3496	3.1648
#2	-.26755	.42549	.91683	.39729	-1.9226	1.5886	1.3671
#3	-.34179	-1.5939	.92352	4.0467	-2.0328	3.6730	-1.5470
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	.00000						

Analysis Report Fri 04-26-96 04:14:16 PM

Method: 61ET2 Sample Name: PBW960423B Operator:
Run Time: 04/26/96 16:10:03
Comment: PBW .
de: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.1573	4.3191	.38735	1.6445	1.0804	-3.2327	.06900
SDev	1.5859	2.0836	.57074	1.0968	.8160	.2580	.03017
%RSD	137.03	48.241	147.35	66.692	75.524	7.9803	43.718
#1	2.6802	6.5056	.66321	.38895	2.0221	-3.2333	.05163
#2	1.2764	2.3566	-.26892	2.4157	.58009	-3.4904	.10384
#3	-.48481	4.0950	.76775	2.1289	.63918	-2.9744	.05154
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.000	10.000	3.0000	5.0000	60.000	200.00	200.00
Low	-10.000	-20.000	-3.0000	-5.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.14717	.24958	3.3753	-.34010	.21692	-.15533	3.3846
SDev	.02916	.13301	.2923	.17359	.51643	.37677	2.9704
%RSD	19.812	53.294	8.6602	51.041	238.08	242.56	87.763
#1	.17777	.38184	3.2065	-.20112	.51499	-.37280	5.0606
#2	.14401	.25107	3.7128	-.28450	-.37941	.27972	5.1381
#3	.11972	.11583	3.2065	-.53468	.51518	-.37292	-.04505
rrors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.0000	5.0000	5000.0	10.000	50.000	25.000	100.00
Low	-5.0000	-5.0000	-5000.0	-10.000	-50.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-3.5907	.00501	-.03968	8.5525	-.27049	82.307	.04637
SDev	.8885	.02331	.41543	5.2797	.18545	1.317	.17532
%RSD	24.744	465.52	1046.8	61.733	68.561	1.6006	378.13
#1	-3.0777	.03046	-.02669	11.439	-.22040	82.912	.06954
#2	-4.6166	-.00015	.36909	2.4588	-.11522	83.214	-.13939
#3	-3.0777	-.01529	-.46146	11.760	-.47583	80.796	.20894
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5000.0	15.000	40.000	5000.0	10.000	5000.0	50.000
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	-50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.0066	-.82807	.97766	6.9379	-1.0156	.49555	1.3590
SDev	.2094	1.14640	.71192	2.0601	1.0070	1.4493	.6334
%RSD	10.434	138.44	72.819	29.693	99.150	292.47	46.606
#1	1.7649	-1.5068	1.7308	5.2032	-2.0317	2.0494	1.9945
#2	2.1249	-1.4729	.31569	9.2149	-.99725	.25695	.72779
3	2.1301	.49553	.88653	6.3957	-.01794	-.81969	1.3547
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	20.000						

Method: 61ET2 Sample Name: LCW960423B Operator:
Run Time: 04/26/96 16:14:20
Comment: LCS
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2089.6	2008.9	501.90	2117.3	511.19	2059.3	2066.8
SDev	7.2	7.1	3.34	14.6	2.56	5.8	8.0
%RSD	.34323	.35242	.66459	.69073	.50093	.28297	.38544
#1	2094.7	2003.1	498.43	2101.9	508.46	2057.0	2072.3
#2	2081.4	2007.0	502.20	2119.0	511.57	2054.9	2057.7
#3	2092.7	2016.8	505.08	2131.0	513.54	2065.9	2070.5
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	2410.0	2410.0	602.50	2410.0	602.50	2410.0	2410.0
Low	1590.0	1590.0	397.50	1590.0	397.50	1590.0	1590.0

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	50.240	48.743	19765.	198.54	488.48	248.43	1018.6
SDev	.159	.132	61.	.60	1.51	1.09	3.4
%RSD	.31656	.27127	.31047	.30456	.30965	.43979	.33744
#1	50.258	48.735	19783.	198.65	488.67	248.00	1022.5
#2	50.073	48.615	19697.	197.88	486.88	247.62	1016.0
#3	50.389	48.879	19816.	199.08	489.89	249.67	1017.3
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	60.250	60.250	24100.	240.00	602.50	301.00	1205.0
Low	39.750	39.750	15900.	159.00	397.50	199.00	795.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	20320.	502.23	490.17	16976.	49.018	18403.	502.39
SDev	61.	1.48	1.68	66.	.474	19.	.97
%RSD	.30010	.29475	.34258	.38829	.96759	.10323	.19257
#1	20314.	502.70	490.18	17049.	48.527	18386.	502.87
#2	20262.	500.58	488.48	16921.	49.053	18398.	501.27
#3	20384.	503.42	491.84	16959.	49.473	18423.	503.01
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	24100.	602.50	602.50	24100.	60.250	24100.	602.50
Low	15900.	397.50	397.50	15900.	39.750	15900.	397.50

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	500.21	500.46	502.61	2106.4	2122.7	517.78	507.89
SDev	1.48	2.06	3.97	4.4	20.0	5.39	1.23
%RSD	.29657	.41077	.79024	.20913	.94342	1.0411	.24214
#1	500.38	498.29	498.48	2103.4	2101.2	512.42	506.47
#2	498.65	500.71	502.93	2104.5	2126.2	517.72	508.49
#3	501.60	502.38	506.40	2111.5	2140.8	523.20	508.70
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	602.50						

Method: 61ET2 Sample Name: LDW960423B Operator:
Run Time: 04/26/96 16:18:37
Comment: LCSD
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2080.8	1998.1	499.99	2106.4	509.36	2042.2	2057.8
SDev	4.9	5.3	3.35	16.7	3.50	4.2	5.1
%RSD	.23717	.26379	.66934	.79269	.68711	.20678	.24750
#1	2076.1	1996.5	497.37	2091.2	505.35	2039.5	2058.7
#2	2080.3	1993.9	498.83	2103.6	510.93	2040.0	2052.3
#3	2086.0	2004.1	503.76	2124.3	511.79	2047.1	2062.4
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	2410.0	2410.0	602.50	2410.0	602.50	2410.0	2410.0
Low	1590.0	1590.0	397.50	1590.0	397.50	1590.0	1590.0

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	50.032	48.538	19674.	197.67	485.58	246.88	1014.0
SDev	.080	.017	28.	.30	.51	.00	.7
%RSD	.16031	.03514	.14166	.15280	.10455	.00002	.06559
#1	50.020	48.556	19676.	197.33	485.42	246.88	1013.5
#2	49.959	48.522	19646.	197.77	485.17	246.88	1013.7
#3	50.118	48.535	19702.	197.90	486.15	246.88	1014.7
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	60.250	60.250	24100.	240.00	602.50	301.00	1205.0
Low	39.750	39.750	15900.	159.00	397.50	199.00	795.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	20239.	499.73	488.73	16896.	48.712	18395.	499.72
SDev	24.	.85	.14	43.	.772	53.	1.05
%RSD	.12030	.17051	.02839	.25543	1.5853	.29047	.20920
#1	20233.	499.66	488.88	16868.	47.821	18339.	499.67
#2	20217.	498.92	488.60	16874.	49.143	18401.	498.70
#3	20265.	500.62	488.72	16946.	49.173	18446.	500.79
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	24100.	602.50	602.50	24100.	60.250	24100.	602.50
Low	15900.	397.50	397.50	15900.	39.750	15900.	397.50

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	497.30	499.66	500.13	2098.8	2110.2	514.72	506.66
SDev	.36	1.32	4.43	13.5	19.0	6.52	2.65
%RSD	.07192	.26452	.88595	.64372	.90028	1.2668	.52221
#1	497.05	499.21	496.44	2083.7	2095.0	508.29	503.86
#2	497.13	498.63	498.92	2102.7	2104.1	514.53	509.11
#3	497.71	501.15	505.04	2109.9	2131.5	521.33	507.01
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	602.50						

Analysis Report Fri 04-26-96 04:27:06 PM

Method: 61ET2 Sample Name: 25319.01 Operator:
Run Time: 04/26/96 16:22:53
Comment: 31901
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.7697	3.3092	.64192	.67128	.33030	3.4012	22.801
SDev	2.1164	.4782	1.1268	1.6919	1.5012	2.0987	.765
%RSD	119.59	14.451	175.54	252.05	454.50	61.704	3.3570
#1	4.2114	3.6797	1.5462	2.6245	1.9855	3.5676	23.646
#2	.63811	2.7694	.99998	-.34153	-.05130	5.4117	22.600
#3	.45960	3.4785	-.62045	-.26913	-.94329	1.2242	22.155
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30000.	40000.	40000.	20000.	40000.	600000.	20000.
Low	-10.000	-10.000	-3.0000	-5.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.16917	-.18202	46444.	-.00872	.27062	9.2292	3.5999
SDev	.03148	.08955	230.	.09582	.65038	.4204	1.9456
%RSD	18.607	49.198	.49589	1099.3	240.33	4.5548	54.045
#1	.20089	-.16411	46192.	-.04726	.92103	9.1981	1.6920
#2	.16868	-.10278	46496.	.10037	.27055	9.6642	3.5266
#3	.13794	-.27918	46644.	-.07926	-.37973	8.8252	5.5811
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5000.0	20000.	600000.	50000.	40000.	50000.	500000.
Low	-5.0000	-5.0000	-5000.0	-10.000	-50.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	8940.8	.57641	.44782	885.18	-.30574	3570.2	.20886
SDev	38.1	.24224	.27640	19.26	.27392	14.5	.31919
%RSD	.42615	42.026	61.722	2.1758	89.593	.40477	152.83
#1	8897.7	.84179	.64513	895.98	-.35584	3564.6	.55712
#2	8954.6	.52028	.56640	896.62	-.01023	3559.5	.13921
#3	8970.0	.36717	.13191	862.95	-.55115	3586.7	-.06976
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600000.	20000.	40000.	70000.	40000.	50000.	40000.
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	-50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5.0687	-.42401	1.1575	7.3229	-2.6679	-.70121	.83213
SDev	.2531	1.37591	1.0039	3.0919	1.5184	1.20120	2.7904
%RSD	4.9925	324.50	86.726	42.223	56.916	171.30	335.33
#1	5.3094	.62022	1.9919	10.333	-1.2432	-1.6524	3.7903
#2	5.0919	.09085	1.4372	7.4795	-4.2653	-1.0998	.45904
#3	4.8049	-1.9831	.04346	4.1556	-2.4950	.64863	-1.7530
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	10000.						

Method: 61ET2 Sample Name: 25319.01L Operator:
Run Time: 04/26/96 16:27:10
Comment: 31901L
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.87638	2.9346	.60624	-.59603	-.05735	-4.1871	4.3328
SDev	.97077	1.6194	.63309	1.52713	1.13236	2.0327	.0840
%RSD	110.77	55.184	104.43	256.22	1974.4	48.547	1.9394
#1	.10220	3.8062	-.03102	-.23062	-.08511	-5.8471	4.3677
#2	1.9655	1.0660	1.2351	.71525	-1.1756	-1.9200	4.3938
#3	.56143	3.9315	.61467	-2.2727	1.0886	-4.7941	4.2370
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30000.	40000.	40000.	20000.	40000.	600000.	20000.
Low	-10.000	-10.000	-3.0000	-5.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.10870	-.13554	9270.3	.22882	.32502	3.0246	2.0464
SDev	.00604	.04271	10.9	.15550	.52897	.0648	5.9804
%RSD	5.5514	31.509	.11769	67.959	162.75	2.1427	292.24
#1	.11475	-.16752	9281.6	.08768	.35215	3.0453	1.3042
#2	.10867	-.08704	9259.8	.39552	.83990	3.0766	8.3633
#3	.10268	-.15207	9269.4	.20326	-.21699	2.9520	-3.5283
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5000.0	20000.	600000.	50000.	40000.	50000.	500000.
Low	-5.0000	-5.0000	-5000.0	-10.000	-50.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1777.4	.05608	.06568	204.62	-.65118	750.84	-.23220
SDev	1.5	.01748	.18288	5.13	.60332	.91	.17514
%RSD	.08658	31.164	278.42	2.5095	92.650	.12076	75.429
#1	1777.4	.04591	.17109	204.83	-.32562	750.84	-.20896
#2	1778.9	.07626	-.14549	209.64	-.28058	751.75	-.06983
#3	1775.8	.04607	.17145	199.38	-1.3473	749.93	-.41780
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600000.	20000.	40000.	70000.	40000.	50000.	40000.
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	-50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.5605	.57015	.80698	2.7944	-2.3048	-.39739	.09879
SDev	.0007	.93557	1.0487	2.9356	.9759	.43450	1.7878
%RSD	.02890	164.09	172.77	105.05	42.341	109.34	1809.6
#1	2.5600	.01895	-.07331	2.5294	-1.6243	-.86191	.28939
#2	2.5614	.04111	1.8147	5.8535	-1.8673	-.00096	-1.7767
#3	2.5602	1.6504	.07958	.00031	-3.4229	-.32929	1.7836
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	10000.						

Analysis Report Fri 04-26-96 04:35:49 PM

Method: 61ET2 Sample Name: 25319.02S Operator:
Run Time: 04/26/96 16:31:33
Comment: 31902S
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2075.4	1983.6	496.46	2104.3	509.79	2049.4	2090.5
SDev	9.4	11.5	1.61	8.8	1.60	12.7	11.2
%RSD	.45266	.57921	.32347	.41932	.31386	.61859	.53650
#1	2064.5	1970.3	494.83	2095.3	508.84	2034.8	2077.7
#2	2080.9	1990.7	496.49	2104.6	508.89	2055.9	2098.3
#3	2080.7	1989.7	498.04	2112.9	511.64	2057.5	2095.6
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30000.	40000.	40000.	20000.	40000.	600000.	20000.
Low	-10.000	-10.000	-3.0000	-5.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	50.105	48.224	65091.	197.57	481.62	257.57	1017.4
SDev	.264	.093	336.	.80	2.07	1.43	5.5
%RSD	.52710	.19291	.51656	.40675	.43001	.55388	.54179
#1	49.800	48.119	64704.	196.64	479.24	255.98	1011.1
#2	50.262	48.295	65310.	197.97	482.65	257.97	1021.5
#3	50.253	48.260	65260.	198.09	482.98	258.75	1019.7
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5000.0	20000.	600000.	50000.	40000.	50000.	500000.
Low	-5.0000	-5.0000	-5000.0	-10.000	-50.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	28969.	499.66	483.52	17857.	49.303	21317.	501.57
SDev	149.	2.47	2.55	122.	.282	33.	2.31
%RSD	.51568	.49477	.52682	.68238	.57228	.15260	.46140
#1	28797.	496.81	480.58	17717.	49.458	21281.	498.91
#2	29061.	501.26	485.12	17914.	48.977	21325.	503.01
#3	29049.	500.90	484.85	17940.	49.473	21345.	502.81
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600000.	20000.	40000.	70000.	40000.	50000.	40000.
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	-50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	499.71	495.77	496.78	2096.6	2108.1	517.46	505.94
SDev	2.23	.62	2.47	1.9	14.0	3.41	.91
%RSD	.44677	.12478	.49754	.08902	.66556	.65861	.17948
#1	497.17	496.20	494.13	2098.7	2093.5	514.55	505.97
#2	501.35	495.07	497.20	2095.4	2109.2	516.61	505.02
#3	500.62	496.06	499.02	2095.7	2121.5	521.21	506.84
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	10000.						

Analysis Report Fri 04-26-96 04:40:12 PM

Method: 61ET2 Sample Name: 25319.03D Operator:
Run Time: 04/26/96 16:35:56
Comment: 31903D
de: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.45954	5.4140	.67177	2.0042	.50570	13.093	23.306
SDev	.50835	1.5222	.77611	2.5231	.84980	.659	.567
%RSD	110.62	28.115	115.53	125.89	168.04	5.0354	2.4309
#1	1.0463	7.1702	1.1059	4.5025	1.2429	12.481	23.908
#2	.17897	4.5978	-.22426	2.0532	-.42374	13.792	23.228
#3	.15331	4.4741	1.1336	-.54300	.69792	13.007	22.783
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30000.	40000.	40000.	20000.	40000.	600000.	20000.
Low	-10.000	-10.000	-3.0000	-5.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.14745	-.20912	46584.	.10241	.48739	9.7472	9.5725
SDev	.03033	.01220	122.	.24313	.38417	.0474	7.4429
%RSD	20.568	5.8355	.26085	237.40	78.823	.48587	77.753
#1	.18226	-.19703	46457.	-.05360	.18940	9.7885	1.0900
#2	.12675	-.20889	46597.	-.02171	.92098	9.7577	15.010
#3	.13333	-.22143	46699.	.38255	.35180	9.6955	12.617
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5000.0	20000.	600000.	50000.	40000.	50000.	500000.
Low	-5.0000	-5.0000	-5000.0	-10.000	-50.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	8960.2	.42308	.22363	928.91	-.10043	3641.4	.32480
SDev	23.0	.13037	.31924	3.72	.42071	10.3	.04027
%RSD	.25723	30.815	142.75	.40017	418.92	.28280	12.398
#1	8934.6	.55093	-.06600	932.86	-.40091	3629.6	.34820
#2	8966.9	.42800	.56593	925.49	-.28077	3645.9	.34791
#3	8979.2	.29032	.17097	928.37	.38039	3648.6	.27830
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600000.	20000.	40000.	70000.	40000.	50000.	40000.
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	-50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5.2866	-1.3656	1.6730	5.7448	.12039	.52218	.48362
SDev	.0854	.7880	.8011	.3483	3.9197	1.6825	1.6298
%RSD	1.6160	57.704	47.883	6.0637	3255.9	322.21	336.99
#1	5.3852	-.69252	1.9877	5.3475	4.0663	1.5691	1.0660
#2	5.2361	-2.2324	.76235	5.9975	.06751	1.4160	-1.3573
#3	5.2385	-1.1719	2.2689	5.8896	-3.7726	-1.4186	1.7422
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	10000.						

Analysis Report Fri 04-26-96 04:44:35 PM

Method: 61ET2 Sample Name: 25319.04 Operator:
Run Time: 04/26/96 16:40:19
Comment: 31904
de: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.1574	1.1506	6.1180	1.7622	1.9346	6.2889	43.500
SDev	1.7352	2.4825	.3418	2.7239	1.0498	2.1315	.258
%RSD	149.93	215.76	5.5867	154.57	54.267	33.893	.59293
#1	2.2718	-.22042	6.5100	3.7203	2.8581	7.2507	43.203
#2	-.84191	-.34407	5.8822	-1.3485	.79275	7.7700	43.622
#3	2.0422	4.0162	5.9619	2.9147	2.1530	3.8460	43.674
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30000.	40000.	40000.	20000.	40000.	600000.	20000.
Low	-10.000	-10.000	-3.0000	-5.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.14466	.38530	57521.	-.03444	.94634	46.301	12.423
SDev	.01110	.01310	359.	.07782	.04693	.173	1.561
%RSD	7.6751	3.3992	.62358	225.94	4.9591	.37367	12.568
#1	.14752	.37137	57130.	.01049	1.0005	46.270	10.791
#2	.15404	.38716	57597.	-.12430	.91927	46.146	13.903
#3	.13240	.39737	57836.	.01048	.91922	46.488	12.575
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5000.0	20000.	600000.	50000.	40000.	50000.	500000.
Low	-5.0000	-5.0000	-5000.0	-10.000	-50.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	16049.	.27506	3.7415	1115.2	.02911	10682.	-.02347
SDev	103.	.01536	.0228	7.3	.34701	34.	.14496
%RSD	.64029	5.5847	.60972	.65725	1192.0	.32173	617.49
#1	15936.	.29042	3.7678	1110.5	.22947	10644.	-.06987
#2	16072.	.25970	3.7283	1111.5	.22944	10712.	.13900
#3	16138.	.27507	3.7283	1123.7	-.37158	10688.	-.13955
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600000.	20000.	40000.	70000.	40000.	50000.	40000.
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	-50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	34.086	4.8954	6.7120	8.6477	-1.6939	2.5610	1.6076
SDev	.437	1.8685	.4376	2.4338	3.1010	.3614	1.6281
%RSD	1.2827	38.168	6.5190	28.144	183.07	14.114	101.27
#1	33.627	7.0498	6.2229	11.274	-.06960	2.7459	2.9003
#2	34.134	3.9179	6.8469	6.4675	-5.2697	2.7926	-.22085
#3	34.497	3.7184	7.0662	8.2021	.25759	2.1445	2.1434
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	10000.						

Method: 61ET2 Sample Name: 25319.05 Operator:
Run Time: 04/26/96 16:44:43
Comment: 31905
de: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.3849	1.3505	1.8431	1.3193	-.59723	201.92	60.573
SDev	.1995	2.4424	.2802	.9623	.45829	2.29	.318
%RSD	14.406	180.84	15.203	72.944	76.736	1.1318	.52529
#1	1.5125	4.0639	1.8033	.93113	-.13119	202.97	60.207
#2	1.1550	-.67220	1.5850	.61164	-.61314	203.49	60.783
#3	1.4872	.65998	2.1411	2.4151	-1.0474	199.30	60.730
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30000.	40000.	40000.	20000.	40000.	600000.	20000.
Low	-10.000	-10.000	-3.0000	-5.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.16196	-.15987	78610.	.11519	.13260	56.716	289.02
SDev	.00901	.05969	467.	.05372	.12420	.408	5.67
%RSD	5.5617	37.338	.59465	46.634	93.661	.71866	1.9616
#1	.15156	-.10112	78075.	.08101	.02416	56.281	288.51
#2	.16716	-.22047	78817.	.08745	.10555	56.778	283.62
#3	.16716	-.15803	78939.	.17711	.26809	57.089	294.92
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5000.0	20000.	600000.	50000.	40000.	50000.	500000.
Low	-5.0000	-5.0000	-5000.0	-10.000	-50.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	18278.	15.806	.44475	1324.2	-.49839	7249.0	.06357
SDev	127.	.097	.34468	11.9	.19611	21.6	.12062
%RSD	.69642	.61496	77.499	.89785	39.348	.29799	189.73
#1	18132.	15.694	.84011	1320.3	-.70372	7230.4	-.07570
#2	18334.	15.862	.28671	1337.6	-.31304	7272.7	.13333
#3	18368.	15.862	.20744	1314.8	-.47839	7244.0	.13309
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600000.	20000.	40000.	70000.	40000.	50000.	40000.
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	-50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	26.756	1.7105	1.8922	10.937	-3.5029	-.10849	-.85540
SDev	.153	1.9345	1.2420	3.915	3.0880	1.21629	1.25618
%RSD	.57075	113.10	65.639	35.798	88.155	1121.1	146.85
#1	26.585	3.7363	.81970	15.202	-6.2169	-.88120	.22992
#2	26.806	1.5126	1.6038	10.106	-4.1488	-.73780	-.56467
#3	26.878	-.11752	3.2530	7.5044	-.14305	1.2935	-2.2315
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	10000.						

Analysis Report Fri 04-26-96 04:53:22 PM

Method: 61ET2 Sample Name: ZZZZZZ Operator:
Run Time: 04/26/96 16:49:06
Comment:
de: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.15316	1.2999	-.13737	1.3047	.58018	-11.524	-.11348
SDev	1.9251	.2374	.25181	.3731	1.1523	2.768	.09178
%RSD	1256.9	18.260	183.30	28.596	198.60	24.019	80.876
#1	-2.0673	1.5637	-.42417	.90288	1.2766	-11.091	-.10481
#2	1.1740	1.2324	.04746	1.3710	1.2138	-14.482	-.20928
#3	1.3528	1.1036	-.03540	1.6402	-.74984	-8.9977	-.02634
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30000.	40000.	40000.	20000.	40000.	600000.	20000.
Low	-10.000	-10.000	-3.0000	-5.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.03595	-.21127	40.166	-.08330	-.05419	.54889	-4.5055
SDev	.00728	.05359	26.517	.20057	.56917	.07824	3.0845
%RSD	20.265	25.366	66.017	240.79	1050.4	14.255	68.460
#1	-.04220	-.16485	70.037	.10056	-.05424	.55932	-1.3264
#2	-.02795	-.19904	31.053	-.05325	-.62333	.46596	-7.4857
#3	-.03769	-.26992	19.408	-.29719	.51501	.62139	-4.7043
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5000.0	20000.	600000.	50000.	40000.	50000.	500000.
Low	-5.0000	-5.0000	-5000.0	-10.000	-50.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5.6425	-.13244	.03961	1.1760	-.29549	7.3543	-.23205
SDev	7.1077	.05786	.14993	13.344	.48290	1.9818	.40803
%RSD	125.97	43.685	378.53	1134.7	163.43	26.948	175.84
#1	13.850	-.10704	-.06584	12.401	-.05510	9.1676	-.06962
#2	1.5389	-.19865	.21124	-13.577	-.85140	7.6565	-.69628
#3	1.5389	-.09163	-.02658	4.7039	.02004	5.2387	.06975
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600000.	20000.	40000.	70000.	40000.	50000.	40000.
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	-50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.48367	.12931	-.28800	4.2884	-.20078	-.16838	.94113
SDev	.15151	3.0047	1.44667	1.1850	.83413	2.88220	3.1667
%RSD	31.324	2323.6	502.32	27.632	415.44	1711.8	336.48
#1	.53248	-.24429	-.53140	4.8423	-1.0804	-1.6587	2.7302
#2	.31378	3.3033	-1.5975	2.9279	.57884	-2.0003	2.8084
#3	.60476	-2.6711	1.2649	5.0949	-.10079	3.1539	-2.7152
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	10000.						

Analysis Report QC Standard Fri 04-26-96 04:57:46 PM page 1

Method: 61ET2 Sample Name: CCV Operator:
Run Time: 04/26/96 16:53:30
Comment:
de: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	486.46	496.08	497.25	494.78	492.10	5002.3	522.37
SDev	.49	3.37	2.82	4.44	3.93	22.8	2.38
%RSD	.10085	.67959	.56759	.89709	.79958	.45511	.45649
#1	486.38	492.36	494.11	490.11	487.57	4977.0	519.64
#2	486.02	496.97	498.06	498.94	494.72	5008.7	523.48
#3	486.99	498.92	499.58	495.29	494.00	5021.2	524.00
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.00	500.00	500.00	500.00	500.00	5000.0	500.00
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	491.61	500.57	4918.8	503.20	503.24	499.80	4998.4
SDev	2.29	2.98	21.6	2.04	1.92	1.72	28.2
%RSD	.46578	.59590	.44008	.40463	.38152	.34363	.56502
#1	489.04	497.25	4894.5	500.91	501.07	497.87	4966.7
#2	492.35	501.44	4926.9	503.89	503.91	500.36	5007.5
#3	493.44	503.03	4936.0	504.80	504.73	501.17	5021.0
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.00	500.00	5000.0	500.00	500.00	500.00	5000.0
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4907.4	499.20	502.59	4948.9	501.02	4989.0	502.21
SDev	25.7	2.19	2.48	20.3	2.66	14.2	2.25
%RSD	.52378	.43863	.49407	.40982	.53109	.28562	.44824
#1	4879.7	496.77	499.82	4925.5	498.08	4982.7	499.79
#2	4912.0	499.84	503.37	4960.1	501.72	5005.3	502.58
#3	4930.5	501.00	504.60	4961.1	503.27	4979.0	504.25
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.0	500.00	500.00	5000.0	500.00	5000.0	500.00
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	504.61	496.03	497.84	495.43	494.45	494.01	491.13
SDev	1.67	1.39	3.77	4.73	6.27	9.47	1.50
%RSD	.33148	.28119	.75649	.95530	1.2691	1.9163	.30462
#1	502.75	494.62	493.84	495.88	487.21	483.12	489.79
#2	505.12	497.41	498.37	499.92	498.44	498.65	492.74
#3	505.98	496.07	501.32	490.48	497.68	500.27	490.86
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	500.00						

Analysis Report QC Standard Fri 04-26-96 05:02:11 PM

Method: 61ET2 Sample Name: CCB Operator:
Run Time: 04/26/96 16:57:55
Comment:
de: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.86801	2.5055	.88085	-.00537	2.1561	-8.2124	.20934
SDev	.22106	2.1648	.57700	1.06250	1.0850	4.6540	.14562
%RSD	25.468	86.400	65.505	19774.	50.322	56.671	69.559
#1	.74026	4.7604	1.3684	-.43047	3.3481	-4.5484	.36629
#2	.74050	.44378	.24381	-.78951	1.2263	-6.6397	.18313
#3	1.1233	2.3124	1.0304	1.2039	1.8938	-13.449	.07861
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	10.000	10.000	3.0000	5.0000	60.000	200.00	200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.25564	.18097	-1.6877	.18809	.43347	.13477	4.4750
SDev	.17902	.20973	1.6275	.22150	.35427	.31279	3.2186
%RSD	70.027	115.89	96.436	117.76	81.730	232.09	71.923
#1	.45627	.39970	.16876	.43400	.67723	.46623	3.0467
#2	.19846	.16162	-2.3627	.12603	.59609	-.15519	8.1606
#3	.11220	-.01842	-2.8690	.00424	.02708	.09327	2.2178
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	5.0000	5.0000	5000.0	10.000	50.000	25.000	100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.51295	.22440	.44772	-.10690	.05506	2.2164	.09276
SDev	2.35064	.19382	.39511	11.5770	.34798	.6045	.17526
%RSD	458.26	86.373	88.251	10829.	631.95	27.273	188.94
#1	1.5389	.44382	.84290	-13.256	-.23545	2.8208	.27850
#2	.00000	.15283	.44759	4.3832	.44072	2.2164	.06947
#3	-3.0777	.07654	.05267	8.5525	-.04008	1.6119	-.06969
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	5000.0	15.000	40.000	5000.0	10.000	5000.0	50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.31660	.99634	.80581	-.55455	.25533	2.6356	1.9025
SDev	.08148	1.3299	.28754	1.17327	2.0509	1.6020	1.2839
%RSD	25.737	133.47	35.684	211.57	803.22	60.784	67.487
#1	-.27081	2.3601	.85525	-1.1210	-.09908	4.1859	2.9155
#2	-.26831	-.29677	.49675	.79447	-1.5952	2.7344	.45852
#3	-.41068	.92567	1.0654	-1.3371	2.4603	.98643	2.3335
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	.00000						

Analysis Report Fri 04-26-96 05:06:35 PM

Method: 61ET2 Sample Name: 25319.06 Operator:
Run Time: 04/26/96 17:02:19
Comment: 31906
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.71523	4.5218	1.3076	1.5246	2.7579	15.898	29.441
SDev	1.8820	2.0962	.9921	2.1850	1.1926	1.714	.099
%RSD	263.13	46.359	75.870	143.32	43.243	10.782	.33623
#1	2.0936	6.6408	1.9032	-.80597	1.4655	14.325	29.398
#2	-1.4289	4.4754	1.8573	3.5270	3.8158	17.725	29.371
#3	1.4811	2.4491	.16235	1.8528	2.9924	15.643	29.554
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30000.	40000.	40000.	20000.	40000.	600000.	20000.
Low	-10.000	-10.000	-3.0000	-5.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.19732	-.21891	22294.	.01235	.35127	24.301	24.606
SDev	.00443	.04628	93.	.28926	.70871	.062	3.632
%RSD	2.2455	21.140	.41904	2342.4	201.76	.25583	14.762
#1	.19243	-.26871	22242.	-.11811	.02612	24.238	25.077
#2	.19843	-.17724	22238.	.34386	1.1642	24.301	20.761
#3	.20108	-.21077	22402.	-.18870	-.13653	24.363	27.980
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5000.0	20000.	600000.	50000.	40000.	50000.	500000.
Low	-5.0000	-5.0000	-5000.0	-10.000	-50.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4850.5	.82053	.89554	692.00	-.27105	749.53	-.09338
SDev	20.0	.02343	.16470	19.11	.30659	5.62	.31411
%RSD	.41244	2.8549	18.391	2.7610	113.11	.75040	336.40
#1	4839.7	.79501	.76395	676.93	-.34117	743.59	-.07017
#2	4838.2	.84106	.84244	713.49	.06453	754.77	.20849
#3	4873.6	.82552	1.0802	685.59	-.53650	750.24	-.41845
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600000.	20000.	40000.	70000.	40000.	50000.	40000.
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	-50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	15.379	1.1705	1.3589	9.4186	-2.4356	1.2486	3.4986
SDev	.191	.9490	1.0214	3.8469	1.5824	1.1368	1.4650
%RSD	1.2420	81.081	75.169	40.844	64.967	91.043	41.875
#1	15.162	1.5936	2.0407	4.9861	-3.7154	.08106	2.1437
#2	15.452	1.8343	1.8515	11.887	-.66638	1.3129	5.0532
#3	15.523	.08347	.18448	11.382	-2.9251	2.3519	3.2987
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	10000.						

Analysis Report Fri 04-26-96 05:10:59 PM

Method: 61ET2 Sample Name: 25319.07 Operator:
Run Time: 04/26/96 17:06:43
Comment: 31907
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.39951	2.6212	.31861	.98055	.37062	63.925	69.172
SDev	1.4119	2.0409	.53968	.55888	.41718	1.785	.314
%RSD	353.39	77.860	169.38	56.997	112.56	2.7915	.45425
#1	1.3267	1.5252	.11044	.68813	.68217	62.525	68.850
#2	-1.2254	1.3626	-.08598	.62854	.53303	63.316	69.190
#3	1.0972	4.9760	.93137	1.6250	-.10334	65.935	69.477
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30000.	40000.	40000.	20000.	40000.	600000.	20000.
Low	-10.000	-10.000	-3.0000	-5.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.22324	-.15805	4326.3	.06897	.92121	1.3883	15.312
SDev	.00656	.04383	10.5	.21491	.08137	.2291	5.742
%RSD	2.9407	27.728	.24164	311.58	8.8331	16.504	37.499
#1	.21918	-.16968	4314.3	.02631	.83991	1.3053	8.8075
#2	.21972	-.10959	4331.0	-.12141	1.0026	1.2122	17.452
#3	.23081	-.19489	4333.5	.30201	.92108	1.6474	19.677
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5000.0	20000.	600000.	50000.	40000.	50000.	500000.
Low	-5.0000	-5.0000	-5000.0	-10.000	-50.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2094.9	23.526	.68451	1283.9	-.59612	3469.6	-.18604
SDev	7.3	.151	.41086	17.0	.43313	11.0	.10649
%RSD	.34715	.64004	60.022	1.3275	72.658	.31771	57.238
#1	2086.7	23.357	.92180	1279.9	-.98678	3461.2	-.06983
#2	2097.5	23.648	.21009	1269.3	-.67126	3482.1	-.27894
#3	2100.5	23.571	.92164	1302.7	-.13034	3465.5	-.20935
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600000.	20000.	40000.	70000.	40000.	50000.	40000.
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	-50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5.6722	-.42582	.67347	6.1511	-1.6182	-1.1455	1.1147
SDev	.1428	1.25884	.46823	.9576	.3782	1.5370	.4942
%RSD	2.5175	295.63	69.525	15.568	23.374	134.18	44.338
#1	5.6711	-1.6131	.95475	5.4767	-1.7197	-1.1333	1.5759
#2	5.5299	-.55852	.13295	5.7295	-1.9354	.38539	.59300
#3	5.8155	.89411	.93269	7.2472	-1.1996	-2.6886	1.1752
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	10000.						

Analysis Report Fri 04-26-96 05:15:23 PM

Method: 61ET2 Sample Name: ZZZZZZ1 Operator:
Run Time: 04/26/96 17:11:07
Comment:
de: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.3822	2.6427	.81165	.00371	-1.7345	-10.646	-.05268
SDev	1.2969	.6103	.87081	.30312	2.3333	.918	.11977
%RSD	54.441	23.093	107.29	8162.0	134.53	8.6217	227.36
#1	3.8798	1.9385	1.4279	-.15805	-.89879	-10.570	.07799
#2	1.6334	2.9735	1.1917	.35340	-4.3706	-9.7693	-.15725
#3	1.6335	3.0163	-.18458	-.18421	.06592	-11.600	-.07879
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30000.	40000.	40000.	20000.	40000.	600000.	20000.
Low	-10.000	-10.000	-3.0000	-5.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.04937	-.16013	1.1814	-.17311	.02715	.69390	-4.3625
SDev	.01507	.04575	1.5189	.50020	.16251	.37471	7.2166
%RSD	30.525	28.570	128.57	288.95	598.45	54.001	165.43
#1	-.03618	-.12638	2.7002	.22879	.02701	1.0877	3.1038
#2	-.04614	-.21220	1.1814	-.73330	-.13528	.65229	-11.300
#3	-.06579	-.14181	-.33753	-.01481	.18973	.34174	-4.8908
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5000.0	20000.	600000.	50000.	40000.	50000.	500000.
Low	-5.0000	-5.0000	-5000.0	-10.000	-50.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-4.6166	-.11204	-.05267	7.8041	-.66612	8.8654	-.39456
SDev	2.6654	.04652	.16471	10.792	.23289	.6045	.40795
%RSD	57.735	41.523	312.71	138.29	34.962	6.8182	103.39
#1	-3.0777	-.06127	-.18452	20.098	-.43079	8.8654	.06957
#2	-7.6943	-.15262	.13196	3.4210	-.67108	8.2610	-.55690
#3	-3.0777	-.12222	-.10546	-.10691	-.89649	9.4699	-.69634
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600000.	20000.	40000.	70000.	40000.	50000.	40000.
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	-50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.1851	1.5556	.42241	1.7830	-.89962	-2.4230	-1.4041
SDev	.0724	.7381	.94213	2.0889	1.49820	1.7339	2.8252
%RSD	6.1091	47.449	223.04	117.16	166.54	71.559	201.21
#1	1.2579	1.9792	1.1349	2.7463	-1.6239	-.83953	-.94226
#2	1.1842	1.9844	.77806	-.61382	.82309	-4.2758	-4.4318
#3	1.1131	.70332	-.64577	3.2164	-1.8981	-2.1537	1.1617
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	10000.						

Method: 61ET2 Sample Name: ICSA Operator:
Run Time: 04/26/96 17:15:31
Comment:
de: CONC - Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.61625	6.3878	.35857	-3.2980	-4.1683	462580.	.00399
SDev	.95827	2.6749	.95869	1.5613	2.6679	651.	.05283
%RSD	155.50	41.876	267.36	47.341	64.004	.14073	1323.3
#1	-.18105	8.8095	-.68076	-3.6482	-4.8663	461930.	-.05543
#2	1.6794	6.8372	.54818	-1.5914	-6.4178	462550.	.02172
#3	.35042	3.5166	1.2083	-4.6545	-1.2208	463240.	.04568
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	20.000	20.000	6.0000	10.000	120.00	550000.	400.00
Low	-20.000	-20.000	-6.0000	-10.000	-120.00	400000.	-400.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.15924	.24630	463550.	-.08134	.17028	-3.2145	178200.
SDev	.01023	.13290	354.	.16353	.16870	.2240	195.
%RSD	6.4255	53.961	.07634	201.06	99.074	6.9674	.10923
#1	.16515	.39840	463250.	-.00370	-.01889	-3.4146	178020.
#2	.16514	.18791	463460.	-.26922	.22461	-3.2563	178180.
#3	.14742	.15258	463940.	.02892	.30513	-2.9725	178400.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.000	10.000	500000.	20.000	100.00	50.000	240000.
Low	-10.000	-10.000	400000.	-20.000	-100.00	-50.000	160000.

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	465490.	2.3499	-.70851	9.1939	-1.2315	66.188	.22755
SDev	618.	.0685	.02084	12.557	.2304	1.822	.18029
%RSD	.13275	2.9171	2.9410	136.58	18.707	2.7524	79.232
#1	464880.	2.2733	-.71956	-4.9177	-1.4860	68.103	.09212
#2	465480.	2.3712	-.72149	19.136	-1.1713	65.987	.15834
#3	466120.	2.4054	-.68447	13.363	-1.0372	64.476	.43220
Errors	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	LC Pass
High	550000.	30.000	80.000		20.000		100.00
Low	400000.	-30.000	-80.000		-20.000		-100.00

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-9.2881	-2.5833	1.8137	6.3681	-8.1442	.62393	-6.5779
SDev	.2518	2.0266	2.4451	8.6971	5.5353	8.9886	4.6741
%RSD	2.7113	78.448	134.81	136.57	67.966	1440.6	71.059
#1	-9.1772	-.29468	-.88934	16.343	-13.656	-9.5835	-2.5218
#2	-9.5764	-3.3052	2.4590	.36959	-2.5856	4.0997	-11.690
#3	-9.1108	-4.1502	3.8715	2.3921	-8.1912	7.3556	-5.5222
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	40.000						

Analysis Report Fri 04-26-96 05:24:10 PM

Method: 61ET2 Sample Name: ICSAB Operator:
Run Time: 04/26/96 17:19:54
Comment:
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.39146	6.8719	870.70	-1.5192	-3.5917	463900.	499.88
SDev	2.61541	1.6555	5.41	3.3111	1.3611	1203.	1.42
%RSD	668.12	24.090	.62093	217.96	37.897	.25933	.28433
#1	1.8291	8.7546	864.46	.28948	-5.1530	462870.	498.74
#2	-3.2744	6.2174	873.77	.49374	-2.6544	463600.	499.44
#3	.27088	5.6438	873.87	-5.3407	-2.9677	465220.	501.47
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	20.000	20.000	1200.0	10.000	10.000	550000.	600.00
Low	-20.000	-20.000	800.00	-10.000	-10.000	400000.	400.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	449.26	858.90	462320.	443.88	432.25	498.87	177920.
SDev	1.38	2.30	1138.	1.48	1.63	1.53	471.
%RSD	.30696	.26741	.24623	.33317	.37816	.30577	.26469
#1	447.90	856.84	461280.	442.46	430.51	497.46	177500.
#2	449.23	858.48	462130.	443.75	432.46	498.68	177840.
#3	450.65	861.38	463530.	445.41	433.76	500.49	178430.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600.00	1200.0	500000.	600.00	600.00	600.00	240000.
Low	400.00	800.00	400000.	400.00	400.00	400.00	160000.

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	464580.	453.67	844.94	-10.691	993.11	67.599	464.01
SDev	1236.	1.15	2.93	9.958	2.72	.629	1.49
%RSD	.26613	.25381	.34656	93.145	.27366	.93070	.32060
#1	463370.	452.47	842.89	-10.049	990.36	68.103	462.74
#2	464530.	453.77	843.64	-1.0691	993.17	67.800	463.64
#3	465840.	454.77	848.29	-20.954	995.80	66.894	465.65
Errors	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	LC Pass
High	550000.	600.00	1200.0		1200.0		600.00
Low	400000.	400.00	800.00		800.00		400.00

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	916.19	866.86	872.61	9.1110	-6.8473	.34832	-5.5753
SDev	2.19	2.42	7.64	3.0808	3.4593	5.5793	1.6070
%RSD	.23945	.27865	.87503	33.814	50.521	1601.8	28.823
#1	913.80	865.61	863.87	11.307	-5.2325	-4.4924	-5.4970
#2	916.65	865.32	877.98	10.436	-4.4906	6.4503	-7.2199
#3	918.12	869.64	875.97	5.5893	-10.819	-.91290	-4.0088
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	1200.0						

Analysis Report Fri 04-26-96 05:33:06 PM

Method: 61ET2 Sample Name: CRI Operator:
Run Time: 04/26/96 17:28:51
Comment:
de: CONC . Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	22.084	22.146	5.9866	9.7661	119.67	409.32	415.78
SDev	.304	1.924	.6731	.5508	1.00	.40	1.85
%RSD	1.3777	8.6864	11.244	5.6399	.83867	.09792	.44590
#1	21.744	20.476	5.9339	10.394	120.82	409.40	413.72
#2	22.330	21.713	6.6845	9.5427	119.16	409.67	417.30
#3	22.178	24.249	5.3413	9.3622	119.02	408.88	416.33
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High	30.000	30.000	9.0000	15.000	180.00		
Low	10.000	10.000	3.0000	5.0000	60.000		

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	10.207	10.101	9867.7	20.079	101.12	50.277	205.47
SDev	.041	.076	36.3	.219	.76	.207	6.75
%RSD	.40404	.75396	.36790	1.0924	.74714	.41139	3.2831
#1	10.160	10.125	9825.8	20.331	100.25	50.039	210.58
#2	10.230	10.162	9890.6	19.972	101.47	50.380	197.83
#3	10.232	10.016	9886.6	19.933	101.63	50.412	208.02
Errors	LC Pass	LC Pass	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	15.000	15.000		30.000	150.00	75.000	
Low	5.0000	5.0000		10.000	50.000	25.000	

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	10067.	30.278	80.333	9972.5	19.395	9921.1	103.63
SDev	39.	.079	.023	34.0	.508	39.8	.07
%RSD	.38397	.25974	.02808	.34054	2.6168	.40101	.06708
#1	10023.	30.191	80.320	9933.5	19.695	9953.5	103.70
#2	10089.	30.298	80.320	9988.7	18.809	9876.7	103.56
#3	10090.	30.344	80.359	9995.4	19.680	9933.2	103.63
Errors	NOCHECK	LC Pass	LC Pass	NOCHECK	LC Pass	NOCHECK	LC Pass
High		45.000	120.00		30.000		150.00
Low		15.000	40.000		10.000		50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	41.743	7.5582	5.1855	12.204	8.5335	119.54	119.72
SDev	.275	1.9915	.3411	.701	1.1741	2.26	1.81
%RSD	.65777	26.349	6.5770	5.7479	13.759	1.8946	1.5115
#1	41.428	6.6365	5.5636	11.434	9.8597	119.92	121.26
#2	41.936	9.8435	5.0919	12.373	8.1141	117.11	120.17
#3	41.863	6.1944	4.9010	12.806	7.6266	121.59	117.72
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	60.000						

Analysis Report QC Standard Fri 04-26-96 05:37:31 PM

Method: 61ET2 Sample Name: CCV Operator:
Run Time: 04/26/96 17:33:14
Comment:
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	481.40	498.89	494.01	493.59	491.42	4964.5	519.02
SDev	1.98	3.63	2.27	5.56	3.65	5.0	.71
%RSD	.41086	.72779	.45900	1.1270	.74250	.10093	.13613
#1	479.92	498.95	492.03	487.19	487.28	4962.2	518.33
#2	480.64	495.22	493.53	496.26	494.18	4961.1	519.74
#3	483.65	502.48	496.49	497.31	492.80	4970.3	518.98
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.00	500.00	500.00	500.00	500.00	5000.0	500.00
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	488.75	496.72	4868.4	497.91	500.91	495.59	4942.0
SDev	.79	.70	1.5	.62	1.02	.47	16.2
%RSD	.16243	.14153	.03002	.12418	.20268	.09416	.32767
#1	487.83	495.98	4869.2	497.19	500.10	495.32	4923.4
#2	489.23	497.37	4866.7	498.27	500.58	496.13	4952.6
#3	489.18	496.82	4869.2	498.26	502.05	495.32	4950.0
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.00	500.00	5000.0	500.00	500.00	500.00	5000.0
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4861.8	494.53	499.68	4910.6	497.59	4937.6	496.87
SDev	7.3	.36	.42	12.5	.95	13.2	.62
%RSD	.14959	.07303	.08371	.25541	.19118	.26681	.12451
#1	4853.6	494.12	499.30	4922.6	496.50	4943.7	496.17
#2	4864.3	494.65	499.62	4897.6	497.96	4922.5	497.08
#3	4867.4	494.81	500.13	4911.7	498.29	4946.7	497.35
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.0	500.00	500.00	5000.0	500.00	5000.0	500.00
Range	10.500	10.500	10.500	10.500	10.500	10.500	10.500

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	502.44	495.34	493.33	496.89	491.92	494.62	489.81
SDev	.92	.54	3.13	6.15	5.82	7.65	3.04
%RSD	.18216	.10871	.63493	1.2381	1.1841	1.5473	.62119
#1	501.45	494.85	490.60	490.35	485.60	486.40	487.71
#2	502.61	495.27	492.64	502.56	493.09	495.91	493.30
#3	503.26	495.92	496.75	497.76	497.07	501.54	488.41
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	500.00						

Analysis Report QC Standard Fri 04-26-96 05:41:55 PM

Method: 61ET2 Sample Name: CCB Operator:
Run Time: 04/26/96 17:37:39
Comment:
Mode: CONC Corr. Factor: 1

Elem	As	Tl	Pb	Se	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.0890	2.0884	1.1983	-.11576	1.2092	-6.1119	.13093
SDev	.7999	.5420	.4430	.93798	1.0799	1.5927	.20757
%RSD	73.451	25.952	36.973	810.30	89.314	26.059	158.54
#1	.20427	1.4791	1.7048	-.01990	1.1738	-5.0661	.36628
#2	1.3017	2.2693	.88271	-1.0980	2.3063	-5.3247	.05249
#3	1.7611	2.5167	1.0073	.77061	.14729	-7.9449	-.02599
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	10.000	10.000	3.0000	5.0000	60.000	200.00	200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.17545	.10999	-1.1814	.14115	.51483	.30040	-.93009
SDev	.19573	.17888	1.7780	.20205	.43018	.49745	3.32041
%RSD	111.56	162.63	150.51	143.14	83.557	165.60	357.00
#1	.39931	.27839	.67506	.34422	1.0026	-.18634	2.5786
#2	.09052	.12937	-1.3501	-.05986	.18968	.80791	-1.3459
#3	.03653	-.07779	-2.8690	.13909	.35220	.27962	-4.0230
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	5.0000	5.0000	5000.0	10.000	50.000	25.000	100.00

Elem	Mg	Mn	Ni	K	Ag	Na	V
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-1.5389	.15314	.23691	-5.5591	-.31053	.20148	-.09284
SDev	1.5389	.21689	.18696	21.7498	.40348	.46166	.08035
%RSD	100.00	141.63	78.918	391.25	129.93	229.13	86.545
#1	.00000	.39792	.09167	-30.575	-.23542	.10074	-.00006
#2	-1.5389	.07661	.17121	8.8732	-.74629	.70519	-.13926
#3	-3.0777	-.01512	.44786	5.0246	.05011	-.20150	-.13921
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Range	5000.0	15.000	40.000	5000.0	10.000	5000.0	50.000

Elem	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1	206Sb2
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.31540	3.2507	.15489	2.3123	-1.3435	.99213	1.3044
SDev	.11133	1.4754	1.3330	2.4875	1.8585	2.0835	1.0926
%RSD	35.298	45.387	860.61	107.58	138.34	210.00	83.763
#1	-.19364	2.0306	1.5246	-.54290	.22772	2.5458	.47584
#2	-.41200	4.8905	-1.1382	3.4690	-3.3950	1.8060	2.5426
#3	-.34057	2.8311	.07830	4.0110	-.86316	-1.3754	.89470
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	.00000						

FURNACE RUN LOG

INORGANICS DEPARTMENT

Reviewed 2 days later

AATS / SWOK

WAVELENGTH:			INTEGRATION TIME:	INSTRUMENT:	ANALYST/DATE:
Arsenic	=	193.70	5.0 Sec.	VAR 4008	JK 5-1-96 17:08
Lead	=	283.30			
Selenium	=	196.00	BKGRND CORRECTION:	DATA FILE:	ELEMENT RAN:
Thallium	=	276.00	BZ	VB050116	AS PB SE TL

#	Lab ID #	Client ID #	Used	Used
1.	S0	Az	X	0.9977
2.	S10	0.046	X	
3.	S25	0.103	X	
4.	S50	0.186	X	
5.	ICV		X	98.8%
6.	ICB		X	
7.	CRA		X	101.6%
8.		A	X	
9.	CCV		X	99.2%
10.	CCB		X	
11.	PBW	25319.01 960426C	X	
12.	A	A	X	
13.	LCW	25319.01 960426C		HI
14.	A	A		L
15.	LDW	25319.01 960426C		HI
16.	A	A		L
17.	25319.01	31901	X	
18.	A	A	X	
19.	CCV		X	104.4%
20.	CCB		X	
21.	25319.025	319025	X	
22.	ZZZZZ			
23.	25319.035	319035	X	
24.	ZZZZZ			
25.	25319.04	31904	X	
26.	A	A	X	
27.	25319.05	31905	X	
28.	A	A	X	
29.	CCV		X	102.4%
30.	CCB		X	
31.	25319.06	31906	X	
32.	A	A	X	
33.	LCW	25319.01 960426C	X	2x
34.	A	A	X	L
35.	LDW	25319.01 960426C	X	2x
36.	A	A	X	L
37.	CCV		X	106.8%
38.	CCB		X	
39.		BLANK		
40.	CCV		X	96.4%

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Varian SpectrAA 300/400 Zeeman
QC Protocol Report

VAR400B
5-1-96
JK

OPERATOR
DATE 05/01/96
BATCH VB050116

PROGRAM 40 T1

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS R = 0.9977		
BLANK QC	0.0		0.008	0.009 01May96	0.008 17:08 CONCENTRATION LESS THAN IDL	-1.5
STANDARD 1 QC	10.0	3.1	0.046	0.045 01May96	0.047 17:14	10.9
STANDARD 2 QC	25.0	0.0	0.103	0.103 01May96	0.103 17:20	26.4
STANDARD 3 QC	50.0	0.5	0.186	0.185 01May96	0.186 17:25	49.0
ICV QC	24.7	0.6	0.102	0.103 01May96 %R =	0.102 17:31 99.0	/25.0 = 98.8%
ICB QC	0.6	99.9	0.003	0.000 01May96 ABS =	0.005 17:37 0.003 CONCENTRATION LESS THAN IDL	
cra QC	10.1	0.5	0.046	0.046 01May96	0.046 17:43	101.0%
QCSPIKE A QC	31.1	1.6	0.124	0.126 01May96 %R =	0.123 17:49 104.7	
CCV 1 QC	24.8	2.2	0.103	0.101 01May96 %R =	0.104 17:55 99.2	/25.0 = 99.2%
CCB 1 QC	0.4	65.3	0.002	0.003 01May96 ABS =	0.001 18:01 0.003 CONCENTRATION LESS THAN IDL	
pbw960426c QC 25319.01	0.7	35.3	0.003	0.002 01May96	0.004 18:07 CONCENTRATION LESS THAN IDL	

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS	
QCSPIKE A QC PBW960426C	21.6	5.1	0.091	0.088 01May96 %R =	0.094 18:13 107.8
1cw960426c QC 25319.01	54.3	2.8	0.198	0.202 01May96 RPD =	0.194 18:19 195.1
QCSPIKE A QC LDW960426C	OVER E	0.8	0.260	0.259 01May96 %R =	0.262 18:25 -271.7 %R LESS THAN MINIMUM LIMIT
1dw960426c QC 25319.01	53.8 N	0.0	0.197	0.197 01May96 %R =	0.197 18:31 -1.1
QCSPIKE A QC LDW960426C	OVER E	0.6	0.257	0.258 01May96 %R =	0.256 18:37 -268.9 %R LESS THAN MINIMUM LIMIT
25319.01 QC 31901	1.0	34.1	0.004	0.005 01May96	0.003 18:43 CONCENTRATION LESS THAN IDL
QCSPIKE A QC 31901	19.2	2.9	0.082	0.080 01May96 %R =	0.084 18:49 95.7 96.0%
CCV 2 QC	26.1	0.7	0.107	0.108 01May96 %R =	0.107 18:55 104.6 /25.0=104.4%
CCB 2 QC	0.5	86.7	0.002	0.001 01May96 ABS =	0.004 19:01 0.003 CONCENTRATION LESS THAN IDL
25319.02s QC 31902S	45.4	0.4	0.171	0.172 01May96	0.171 19:07
~~QCSPIKE A~~ QC ZZZZZ JK 5-1-96	OVER E	0.7	0.259	0.258 01May96 %R =	0.260 19:13 -227.2 %R LESS THAN MINIMUM LIMIT
25319.03sd QC 319035D	41.9	1.7	0.160	0.162 01May96	0.158 19:19
~~QCSPIKE A~~ QC ZZZZZ JK 5-1-96	OVER E	2.9	0.239	0.234 01May96 %R =	0.244 19:25 -209.5 %R LESS THAN MINIMUM LIMIT
25319.04 QC 31904	0.7	25.4	0.003	0.002 01May96	0.004 19:31 CONCENTRATION LESS THAN IDL

HI

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS		
QCSPIKE A QC 31904	18.8	3.3	0.081	0.079	0.083	94.0%
				01May96	19:37	
				%R =	93.8	
25319.05 QC 31905	0.9	84.8	0.004	0.007	0.002	
				01May96	19:43	
				CONCENTRATION LESS THAN IDL		
QCSPIKE A QC 31905	19.5	3.9	0.083	0.081	0.086	97.5%
				01May96	19:49	
				%R =	97.4	
CCV 3 QC	25.6	1.0	0.105	0.106	0.105	/25.0 = 102.4%
				01May96	19:55	
				%R =	102.2	
CCB 3 QC	1.0	4.6	0.005	0.004	0.005	
				01May96	20:01	
				ABS =	0.005	
25319.06 QC 31906	1.1	23.2	0.005	0.004	0.006	
				01May96	20:07	
QCSPIKE A QC 319	21.1	0.8	0.089	0.089	0.090	105.5%
				01May96	20:13	
				%R =	99.9	
1cw960426c- QC 25319.01	28.0	0.5	0.114	0.114	0.113	2x = 56.0
				01May96	20:19	
QCSPIKE A QC 1cw960426c	51.6	1.5	0.190	0.188	0.192	117%
				01May96	20:25	
				%R =	118.2	
				%R FAILED. REPEAT BY STANDARD ADDITIONS		
1dw960426c- QC 25319.01	28.8	1.4	0.117	0.116	0.118	2x = 57.6
				01May96	20:31	
QCSPIKE A QC 1dw960426c	51.0	0.9	0.189	0.187	0.190	115.2%
				01May96	20:37	
				%R =	111.1	
CCV 4 QC	26.7	2.0	0.109	0.111	0.108	/25.0 = 106.8%
				01May96	20:43	
				%R =	106.7	
CCB 4 QC	1.0	43.9	0.004	0.006	0.003	
				01May96	20:49	
				ABS =	0.005	
				CONCENTRATION LESS THAN IDL		

FURNACE RUN LOG

INORGANICS DEPARTMENT

Reviewed 3 05/01/96

AATS / SWOK

WAVELENGTH:			INTEGRATION TIME:	INSTRUMENT:	ANALYST/DATE:
Arsenic	=	193.70	5.0 Sec.	VAR 400B	JK 5-2-96
Lead	=	283.30			10:20
Selenium	=	196.00	BKGRND CORRECTION:	DATA FILE:	ELEMENT RAN:
Thallium	=	276.00	B2	V13050210	AS PB SE TL

#	Lab ID #	Client ID #	Used	Used
1.	S0	A1	X	0.9967
2.	S10	0.052	X	
3.	S25	0.121	X	
4.	S50	0.212	X	
5.	ICV		X	104.0%
6.	ICB		X	
7.	CRA		X	105.0%
8.		A	X	
9.	CCV		X	100.4%
10.	CCB		X	
11.	25319.03	31903	X	
12.	A	A	X	
13.	CCV		X	102.0%
14.	CCB		X	
15.				
16.				
17.				
18.				
19.				
20.				

#	Lab ID #	Client ID #	Used	Used
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.	JK 5-2-96			
30.				
31.				
32.				
33.				
34.				
35.				
36.				
37.				
38.				
39.				
40.				

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AR304686

Varian SpectrAA 300/400 Zeeman
QC Protocol Report

VAR400B
5-2-96
JK

OPERATOR
DATE 05/02/96
BATCH VB050210

PROGRAM 40 T1

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS R - 0.9967		
BLANK QC	0.0		0.006	0.005	0.007	-1.6
				02May96	10:20	
				CONCENTRATION LESS THAN IDL		
STANDARD 1 QC	10.0	2.9	0.052	0.051	0.054	10.7
				02May96	10:26	
STANDARD 2 QC	25.0	1.0	0.121	0.120	0.122	27.1
				02May96	10:32	
STANDARD 3 QC	50.0	1.7	0.212	0.210	0.215	48.8
				02May96	10:37	
ICV QC	26.0	0.1	0.125	0.125	0.125	25.0 = 104.0%
				02May96	10:43	
				%R =	104.1	
ICB QC	0.8	52.4	0.004	0.006	0.003	
				02May96	10:49	
				ABS =	0.005	
				CONCENTRATION LESS THAN IDL		
cra QC	10.5	1.6	0.055	0.054	0.055	105.0%
				02May96	10:55	
QCSPIKE A QC	30.5	1.2	0.144	0.142	0.145	
				02May96	11:01	
				%R =	100.3	
CCV 1 QC	25.1	2.8	0.121	0.124	0.119	25.0 = 100.4%
				02May96	11:07	
				%R =	100.2	
CCB 1 QC	0.7	51.1	0.004	0.005	0.002	
				02May96	11:13	
				ABS =	0.004	
				CONCENTRATION LESS THAN IDL		
25319.07 QC 31907	1.0	12.8	0.005	0.005	0.005	
				02May96	11:19	
				CONCENTRATION LESS THAN IDL		

SAMPLE	CONC ug/l	%RSD	MEAN ABS	READINGS		
QCSPIKE A QC 31907.	21.5	0.2	0.106	0.106 02May96 %R =	0.106 11:25 107.5	107.5%
CCV 2 QC	25.5	0.5	0.123	0.123 02May96 %R =	0.123 11:31 101.8	/25.0 = 102.0%
CCB 2 QC	0.3	79.9	0.002	0.001 02May96 ABS =	0.003 11:37 0.002	

CONCENTRATION LESS THAN IDL

MERCURY RUN LOG

INORGANIC DEPARTMENT

TM

Analyst Sn

Date 4-22-96

Instrument Leeman PS200DA

Element Hg (03426JG)

Wavelength 254

Data File 96APR22

DATA REVIEWED BY DJB 4-24-96

CLIENT ID	SWL ID	TIME OF ANALYSIS	USED	COMMENTS
S0 ug/l	-593	911	X	
S0.2	5689	914	X	
S0.5	14217	917	X	
S1	34135	918	X	
S5	212646	922	X	
S10	391124	925	X	.998853
ICV		1019	X	
ICB		1021	X	
CRA		1024	X	
CCV		1027	X	
CCB		1030	X	
PBW960422A		1027	X	
LCW960422A		1130	X	
LDW960422A		1133	X	
31901	25319.01	1135	X	
31902S	25319.02S	1138	X	
31903D	25319.03D	1141	X	
31904	25319.04	1143	X	
31905	25319.05	1146	X	
31906	25319.06	1148	X	
31907	25319.07	1151	X	

MERCURY RUN LOG

INORGANIC DEPARTMENT

Analyst: Sm

Date: 4-22-96

Instrument: Leeman PS200A

Element: Hg

Wavelength: 254

Data File: 96APR22

CLIENT ID	SWL ID	TIME OF ANALYSIS	USED	COMMENTS
CCV		1154	X	
CCB		1157	X	
ICV		1202	X	
ICB		1204	X	
CRI		1207	X	
CCV		1210	X	
CCB		1213	X	
PBW960422B	(25290.01)	1228	X	Reanalyzed
LCW960422B	(25290.01)	1231	X	
LDW960422B	(25290.01)	1233	X	
29001	25290.01	1236	X	
29002	25290.02	1239	X	
29003S	25290.03S	1241	X	
29005D	25290.05D	1244	X	
29006	25290.06	1247	X	
30801	25308.01	1249	X	
30802	25308.02	1252	X	
CCV		1254	X	
CCB		1257	X	
30803	25308.03	1300	X	
30804	25308.04	1302	X	

Leeman PS200A
HG Sn

082

Folder: 96APR22 Page 1

09:11:43 22 Apr 1996 Protocol: MERCURY PRP7470

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Standard: 1 Rep: 1 Seq: 0 09:11:43 22 Apr 1996 HG

Hg .000 ppb -593
S0 Ave. Int. = -593 S. D. = 0

*** Standard: 2 Rep: 1 Seq: 1 09:14:26 22 Apr 1996 HG

Hg .200 ppb 5689
S0.2 Ave. Int. = 5689 S. D. = 0

*** Standard: 3 Rep: 1 Seq: 2 09:17:09 22 Apr 1996 HG

Hg .500 ppb 14217
S0.5 Ave. Int. = 14217 S. D. = 0

*** Standard: 4 Rep: 1 Seq: 3 09:19:53 22 Apr 1996 HG

Hg 1.00 ppb 34135
S1 Ave. Int. = 34135 S. D. = 0

*** Standard: 5 Rep: 1 Seq: 4 09:22:36 22 Apr 1996 HG

Hg 5.00 ppb 212646
S5 Ave. Int. = 212646 S. D. = 0

*** Standard: 6 Rep: 1 Seq: 5 09:25:21 22 Apr 1996 HG

Hg 10.0 ppb 391124
S10 Ave. Int. = 391124 S. D. = 0

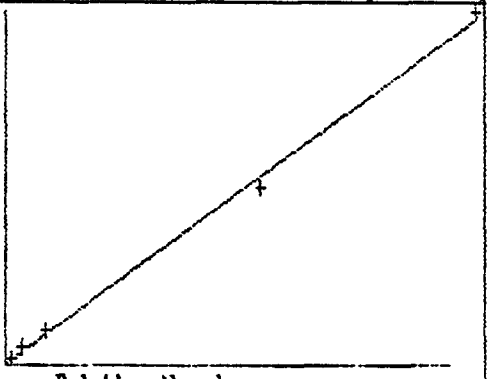
Protocol: MERCURY PRF7470
Rev: 3.005 Time: 09:25:27 22 Apr 1996
Folder: 96APR22 Seq: 6 Print: On
User: Batch: Id: Std6Rep1 Cup: Gas: 0.30 LPM
State: Idle Macro STANDARD 44: F3 Print Xait: Off Autosampler: On

CALIBRATION: Line Calibration

Line: Hg

	Conc.	Calc.	Dev.	Accepted LiNear	
S1	.000	.032	.032	Quadratic	
S2	.200	.189	-.011	WtdLinear	
S3	.500	.402	-.098		C
S4	1.00	.900	-.100	Accept	o
S5	5.00	5.36	.359		n
S6	10.0	9.82	-.183	StdAdd	c

A .0000000 r .998853
B 2.49798e-5 C 4.71421e-2



	Mean	%RSD	
S1	-593	0	-593
S2	5689	0	5689
S3	14217	0	14217
S4	34135	0	34135
S5	212646	0	212646
S6	391124	0	391124

New calibration coefficients stored

Line Conc. Units SD/RSD 1 2 3 4 5

*** Check Standard: 2 Ck2ICV Seq: 6 10:19:16 22 Apr 1996 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		96.2	4.71	4.90	ppb	.000

96.2%

*** Check Standard: 3 Ck3ICB Seq: 7 10:21:56 22 Apr 1996 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg	H	106000	.011	.000	ppb	.000

*** Check Standard: 4 Ck4CRA Seq: 8 10:24:37 22 Apr 1996 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		112.	.224	.200	ppb	.000

112%

*** Check Standard: 5 Ck5CCV Seq: 9 10:27:18 22 Apr 1996 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		99.3	4.96	5.00	ppb	.000

99.3%

*** Check Standard: 6 Ck6CCB Seq: 10 10:30:00 22 Apr 1996 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg	L	-75900	-.008	.000	ppb	.000

*** Sample ID: PBW960422A Seq: 11 11:27:54 22 Apr 1996 HG
25319.01
Hg .021 L ppb .000 .021

*** Sample ID: LCW960422A Seq: 12 11:30:32 22 Apr 1996 HG
25319.01
Hg .877 ppb .000 .877 88%

*** Sample ID: LDW960422A Seq: 13 11:33:10 22 Apr 1996 HG
25319.01
Hg .930 ppb .000 .930 93%

*** Sample ID: 25319.01 Seq: 14 11:35:48 22 Apr 1996 HG
31901
Hg .004 L ppb .000 .004

*** Sample ID: 25319.02S Seq: 15 11:38:26 22 Apr 1996 HG
31902S
Hg 1.01 ppb .000 1.01 101%

*** Sample ID: 25319.03D Seq: 16 11:41:04 22 Apr 1996 HG
31903D
Hg .001 L ppb .000 .001

*** Sample ID: 25319.04 Seq: 17 11:43:42 22 Apr 1996 HG
31904
Hg .022 L ppb .000 .022

Folder: 96APR22 Page 3
11:46:20 22 Apr 1996 Protocol: MERCURY PRP7470

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: 25319.05 Seq: 18 11:46:20 22 Apr 1996 HG

			31905		
Hg	.013	L ppb	.000	.013	

*** Sample ID: 25319.06 Seq: 19 11:48:58 22 Apr 1996 HG

			31906		
Hg	.017	L ppb	.000	.017	

*** Sample ID: 25319.07 Seq: 20 11:51:38 22 Apr 1996 HG

			31907		
Hg	.014	L ppb	.000	.014	

*** Check Standard: 5 Ck5CCV Seq: 21 11:54:19 22 Apr 1996 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		99.6	4.98	5.00	ppb	.000

100%

*** Check Standard: 6 Ck6CCB Seq: 22 11:57:01 22 Apr 1996 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg	L	-81400	-.008	.000	ppb	.000

085A

EWLO / AATS Sample Digestion Record

Date : 04/23/1996 Batch: 960423I2 Analyst: TG
T MT600 ACID DIGESTION - ICP/AA Client: WESTMPD Matrix: W

LAB ID	Client ID	TYP	Initial Wt/Vol	Final Wt/Vol	Color Before	Color After	Texture	pH	Comments
PBW960423B		LB	100 ML	100 ML					
LCW960423B		BS	100 ML	100 ML					1.0 ML OF DS1-1-34.DS1-1-31.DS
LDW960423B		BS	100 ML	100 ML					1.0 ML OF DS1-1-34.DS1-1-31.DS
25319.01	MARKS - TAP		100 ML	100 ML	co/cc	co/cc	c2		
25319.02S	MARKS - TAP	MS	100 ML	100 ML					1.0 ML OF DS1-1-34.DS1-1-31.DS
25319.03D	MARKS - TAP	DUP	100 ML	100 ML					
25319.04	KRENTZMAN - TAP		100 ML	100 ML					
25319.05	STINE - TAP		100 ML	100 ML					
25319.06	SNYDER - TAP		100 ML	100 ML					
25319.07	TRIP BLANK		100 ML	100 ML					

4/23/96

AR304695

SWLO / AATS Sample Digestion Record

: 04/23/1996 Batch: 960423I2 Analyst: TG
: MT600 ACID DIGESTION - ICP/AA Client: WESTMPD Matrix: W

LAB ID	Client ID	TYP	Initial Wt/Vol		Final Wt/Vol		Color Before	Color After	Texture	pH	Comments
PBW960423B		LB	100	ML	100	ML					
LCW960423B		BS	100	ML	100	ML					1.0 ML OF DS1-1-34,DS1-1-31,DS
LDW960423B		BS	100	ML	100	ML					1.0 ML OF DS1-1-34,DS1-1-31,DS
25319.01	MARKS - TAP		100	ML	100	ML	CO/CL	CO/CL		<2	
25319.02S	MARKS - TAP	MS	100	ML	100	ML	CO/CL	CO/CL		<2	1.0 ML OF DS1-1-34,DS1-1-31,DS
25319.03D	MARKS - TAP	DUP	100	ML	100	ML	CO/CL	CO/CL		<2	
25319.04	KRENTZMAN - TAP		100	ML	100	ML	CO/CL	CO/CL		<2	
25319.05	STINE - TAP		100	ML	100	ML	CO/CL	CO/CL		<2	
25319.06	SNYDER - TAP		100	ML	100	ML	CO/CL	CO/CL		<2	
25319.07	TRIP BLANK		100	ML	100	ML	CO/CL	CO/CL		<2	

SAMPLE DIGESTION RECORD

INORGANICS DEPARTMENT

Digestion Date: 4/26/86 Digestion Batch #: 860426 F1 Analyst: TE

Matrix: H_2O Type of Analysis: MT610 (Flow) Client: West - MPD Page 14 of Book 184

Sample ID	Client ID	Beaker #	Initial Wt/Vol g/mL	Final Vol (mL)	Description, Water-Color, Clarity, Soil-Color, Texture Artifacts	pH <2>	Comments (Spiking Sol)	Soil Preparation Pan wt(g)	Wet wt(g)	Dry wt (g)	Solid %
PBW860426C			100 mL	100 mL			DI				
LCW860426C			↓	↓			1.0 mL of DSI-1-26				
LDW860426C			↓	↓			1.0 mL of DSI-1-26				
2531901			50 mL	50 mL							
.025			↓	↓			0.5 mL of DSI-1-26				
.0350			↓	↓			0.5 mL of DSI-1-26				
.04			100 mL	100 mL							
.05			↓	↓							
.06			↓	↓							
.07			↓	↓							

TE 4/26/86

SWLO / AATS

1700 West Albany • Broken Arrow, OK 74012-1421 • (918) 251-2858 • Fax (918) 251-2599 [IN029-1193-01]

AR304697

087

SWLD / AATS Sample Digestion Record

Date : 04/22/1996 Batch: 960422HG0 Analyst: SR
T MT620 ACID DIGESTION - COLD VAPOR Client: STANDARD Matrix: ST

LAB ID	Client ID	TYP	Initial Wt/Vol	Final Wt/Vol	Color Before	Color After	Texture	pH	Comments
STD-0	0.0	LB	100 ML	100 ML					
STD-1	0.2	BS	100 ML	100 ML					0.2 ML HG1-1-39-1
STD-2	0.5	BS	100 ML	100 ML					0.5 ML HG1-1-39-1
STD-3	1.0	BS	100 ML	100 ML					1.0 ML HG1-1-39-1
STD-4	5.0	BS	100 ML	100 ML					5.0 ML HG1-1-39-1
STD-5	10.0	BS	100 ML	100 ML					10.0 ML HG1-139-1
ICV	1.0	BS	100 ML	100 ML					1.0 ML M1-14-11
ICB	0.0	LB	100 ML	100 ML					
CRA	0.2	BS	100 ML	100 ML					0.2 ML HG1-1-39-1
CCV	5.0	BS	100 ML	100 ML					5.0 ML HG1-1-39-1
CCB	0.0	LB	100 ML	100 ML					
HG1-1-39	100	BS	100 ML	100 ML					1.0 ML HG1-1-39-1

SWLD / AATS Sample Digestion Record

Date : 04/22/1996 Batch: 960422HG1 Analyst: SR
T MT620 ACID DIGESTION - COLD VAPOR Client: WAEST-MD Matrix: W

LAB ID	Client ID	TYP	Initial Wt/Vol		Final Wt/Vol		Color Before	Color After	Texture	pH	Comments
PBW960422A	25319.01	LB	100	ML	100	ML					
LCW960422A	25319.01	BS	100	ML	100	ML					1.0 ML HG1-1-39-1
LDW960422A	25319.01	BS	100	ML	100	ML					1.0 ML HG1-1-39-1
25319.01	MARKS - TAP		100	ML	100	ML					
25319.02S	MARKS - TAP	MS	100	ML	100	ML					1.0 ML HG1-1-39-1
25319.03D	MARKS - TAP	DUP	100	ML	100	ML					
25319.04	KRENTZMAN - TAP		100	ML	100	ML					
25319.05	STINE - TAP		100	ML	100	ML					
25319.06	SNYDER - TAP		100	ML	100	ML					
25319.07	TRIP BLANK		100	ML	100	ML					

STOCK MIXTURE SOLUTION PREPARATION LOG
(Multi-Component)

ORGANICS DEPARTMENT

PAGE: 33 OF BOOK: T2-1

Mixture ID#: STD1 Analyst: EJV Date: 01/04/96 Approved:

Component Compound	Parent ID#	Conc. of Parent Soln.	Vol. of Parent Soln. (ml)	Total Vol. of Mixture (ml)	Matrix	Component Concentration	Unit
Na, Ca, Mg, K	M1-3-6	10,000	1.0 ml/s	1000 ml/s	5% HNO_3	10.0	mg/l
Al, Cd, Cr, Cu, Ni, Ag, Zn, Sc,	M1-28-5	1,000				1.0	
B, Mo, V							
As, Se, Pb, Tl, Be, Co, Fe, Mn,	M1-8-10						
Sr, Sb, Si, Sn, Ti							
Ba	M1-6-10						
Fe	M1-1-1	10,000	0.9 ml/s			9.0	
Al	M1-2-1					9.0	
Li	M1-28-11	10,000	5.0 ml/s	1000 ml/s	5% HNO_3	50	mg/l

EJV 01/04/96

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY • BROKEN ARROW, OKLAHOMA 74012 • OFFICE (918) 251-2858 • FAX (918) 251-2599

[IN051-0495-01]

AR304700

PREPARATION OF GFAA CALIBRATION STANDARDS AND ICV'S/CCV'S

ICV INTERMEDIATE:
(As,Pb,Se,Tl)
0.1 ml ICV STOCK — 1% HNO3 100 ml — PREPARED EVERY 8 WEEKS = 1000 ug/l As,Pb,Se,Tl

ICV:
1ml ICV INTERMEDIATE — 1% HNO3 100 ml — PREPARED WEEKLY =25 ug/l As,Pb,Se,Tl

STOCK 1:
10.0 ml 1000 mg/l As
10.0 ml 1000 mg/l Pb
5.0 ml 1000 mg/l Tl
5.0 ml 1000 mg/l Se
— 1% HNO3 500 ml — PREPARED EVERY 8 WEEKS = 20.0 mg/l As, Pb = 10.0 mg/l Se, Tl

STOCK 1A:
50.0 ml STOCK 1 — 1% HNO3 500 ml — PREPARED WEEKLY =2000 ug/l As, Pb =1000 ug/l Se, Tl

STOCK 2:
5.0 ml 1000 mg/l Tl
1.5 ml 1000 mg/l Pb
— 1% HNO3 500 ml — PREPARED EVERY 8 WEEKS =1000 ug/l Tl = 300 ug/l Pb

STD 1:
5.0 ml STOCK 1A — 1% HNO3 100 ml — PREPARED DAILY =100 ug/l As, Pb =50 ug/l Se, Tl

STD 2:
2.5 ml STOCK 1A — 1% HNO3 100 ml — PREPARED DAILY =50 ug/l As, Pb =25 ug/l Se, Tl

STD 3:
2.5 ml STOCK 1A — 1% HNO3 200 ml — PREPARED DAILY =25 ug/l As, Pb =12.5 ug/l Se, Tl

STD 4:
1.0 ml STOCK 1A — 1% HNO3 100 ml — PREPARED DAILY =20 ug/l As, Pb =10 ug/l Se, Tl

STD 5:
0.5 ml STOCK 1A — 1% HNO3 100 ml — PREPARED DAILY =10 ug/l As, Pb =5.0 ug/l Se, Tl

STD 6
1.0 ml STOCK 2 — 1% HNO3 100ml — PREPARED DAILY =3.0 ug/l As, Pb =1.5 ug/l Se, Tl

Pd-Mg(NO3)2 MATRIX MODIFIER:
1.33 gm Pd(NO3)2
0.57 gm Mg(NO3)2
— 1% HNO3 200 ml — PREPARED MONTHLY =0.30% Pd =0.20% Mg(NO3)2

Mg(NO3)2 MATRIX MODIFIER:
5.0 gm Mg(NO3)2-6H20 — 1% HNO3 100 ml — PREPARED MONTHLY =5% Mg(NO3)2

SOURCES:
1000 mg/l STANDARDS FOR As, Pb, Se, Tl — NIST TRACEABLE STANDARDS
ICV STOCK (1000 mg/l MIX OF As, Pb, Se, Tl — NIST TRACEABLE PREMADE FROM A DIFFERENT SOURCE THAN CALIBRATION STDS

SIGNED: _____ DATE: _____

ENVIRONMENT PROTECTION AGENCY
Office of Enforcement

REGION 3
841 Chestnut St.
Philadelphia, Pennsylvania 19107

CHAIN OF CUSTODY RECORD

PROJ. NO.: 2271
PROJECT NAME: Jacks Creek 04/96-02
SAMPLERS: (Signature) [signature]

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TAL - Metals						REMARKS
01-T	4-8-96	1344		X	Marks - Tap	1	X						
02-T	4-8-96	1420		X	Krentzman - Tap	1	X						
03-T	4-8-96	1553		X	Stine - Tap	1	X						
04-T	4-8-96	1713		X	Snyder - Tap	1	X						
05-B	4-9-96	1200		X	Trip Blank	1	X						

AR304702

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	4-12-96 1300				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) [signature]	Date / Time 4/18/96 0915	Remarks intact	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

2 01811

0911

Precautionary Measures Against Hidden Hazards in Laboratory Samples

Notice to Laboratory Personnel

Background

Under the authority of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980, Section 311 of the Clean Water Act, and Subtitle I of the Resource Conservation and Recovery Act (RCRA), EPA has been delegated the responsibility to undertake response actions with respect to the release or potential release of oil, petroleum or hazardous substances that pose a substantial threat to human health or welfare, or the environment. In addition, EPA provides technical assistance to help mitigate endangerment of the public health, welfare or environment during other emergencies or natural disasters.

EPA's successful implementation of these emergency response action responsibilities requires that technical support capabilities be provided in the form of contracted Technical Assistance Teams (TAT) for each EPA Region. The WESTON TAT Contract 68-WO-0036 provides support to EPA Regions I, II, III, IV, ERT - Edison, and Headquarters - Washington, DC.

Hazard Communication

The samples which accompany this notice have been shipped to your laboratory for analysis in accordance with applicable D.O.T. or IATA Regulations and were collected by the WESTON TAT and were tentatively designated by the field response team as either environmental or hazardous material samples.

In general, *Environmental Samples* are collected from streams, farm ponds, small lakes, wells, and off-site soils that are not reasonably expected to be contaminated with hazardous materials. Samples of on-site soils or water, and materials collected from drums, bulk storage tanks, obviously contaminated ponds, impoundments, lagoons pools and leachates from hazardous waste sites are considered *Hazardous Samples*. Samples which are obtained from a known radioactive material contamination site or which demonstrate beta or gamma activity greater than three times average background as scanned with a Geiger-Mueller radiation survey meter are considered *Radioactive Samples*. Samples which are collected from septic tanks, wastewater or sewage treatment plants or cooling tower water may pose *Biological Hazards*.

The samples which accompany this notice have been tentatively classified by the field response team as:

X Environmental ____ Hazardous ____ Comb.(Envir.& Haz.) ____ Radioactive ____ Biological Hazard

The field team, which collected the samples, used the following Level(s) of personal protedtion as designated by EPA and OSHA conventions to provide protection against possible radiological or chemical exposure:

____ Level A ____ Level B ____ Level C X Level D

This information is intended for use as a guide for the safe handling of these laboratory samples in accordance with EPA and OSHA regulations. The sample classification(s) and Levels of personal protection used by the WESTON TAT are not represented to be, nor are they adequate or applicable in all situations, nor are they intended to serve as substitutes for professional/personal judgement.

This form was prepared by: Jeffrey A. Levinson 4/12/96

Analytical Services TDD No.: 04/96-02 Date: ___/___/___

WESTON Office: Delran, NJ Phone: (609) 461 - 4003 Fax: (609) 461 - 4916

Laboratory Name: Southwest Laboratory of Oklahoma

AR304703

/Hazcom for Laboratory Personnel/To be attached to each Chain-of-custody Form.

TERMS AND CONDITIONS SUPPLEMENT
APPLICABLE TO A LL FEDERAL CONTRACT PURCHASE ORDERS

1. Procurement Integrity

Subcontractor shall indemnify, defend and save harmless Roy F. Weston. Inc. (WESTON®). its affiliates and subsidiaries. their officers. directors and employees and their successors. heirs and representatives from any responsibility or liability in any way for claims. losses damages or expenses arising out of Subcontractor's failure to comply with or violation of the provisions of the "Federal Procurement Policy Act as amended". Subcontractor's compliance shall be through implementation of Federal Acquisition Regulation Part 3.104, "Procurement Integrity".

PURCHASE ORDER < $100K FOR FIXED PRICE COMMERICAL SUPPLIES /SERVICES

2. Federal Acquisition Regulation (FAR)

a) The following clauses set forth in Part 52 of the Federal Acquisition Regulation. as in affect on the date of the Order. are hereby incorporated in this Order by reference.

Where necessary to make the context of the clauses incorporated by this Article applicable to the Order, the term "Government" and equivalent phrases shall mean Purchaser, the term "Contractor shall mean Seller, and the term "contract" shall mean this Order. However, the term Government and equivalent phrases does not mean Purchaser for the following clauses:

52.215-1 Examination of Records by Comptroller General
52.215-2 Audit Negotiations

The clauses below incorporate both solicitation and/or order clauses. as appropriate. The clauses are shown by the dollar threshold applicable.

<u>Applicable to All Orders and/or Solicitations as Appropriate</u>

52.203-1 Officials Not to Benefit
52.203-3 Gratuities
52.203-5 Covenant Against Contingent Fees
52.203-6 Restrictions on Subcontractor Sales to the Government
52.203-7 Anti-Kickback Procedure

252.223-7500	Drug-Free Work Place > $25.000
252.225-7014	Duty-Free Entry - Additional Provisions > $100.000
52.212-8	Defense Priority and Allocation Requirement
52.21213	Stop-Work Order
52.215-26	Integrity of Unit Prices
52.219-8	Utilization of Small Business Concerns and Small Disadvantaged Business Concerns
52.219-13	Utilization of Women-owned Small Business
52.222-1	Notice to the Government of Labor Disputes
52.222-3	Convict Labor
52.223-3	Hazardous Material Identification and Material Safety Data
52.225-3	Buy American Act- Supplies
52.227-11	Patent Rights - Retention by the Contractor (Short Form)
52.227-14	Rights in Data - General
52.228-5	Insurance - Work on a Government Installation
52.228-7	Insurance - Liability to Third Persons
52.244-1	Subparagraph (g) - Subcontracting No subcontract placed under this Order shall provide for payment on a cost plus a percentage of cost basis and any fee payable under cost reimbursement subcontracts shall not exceed the fee limitations in Subsection 15.903 (d) of the FAR.
52.244-5	Competition The Seller shall select Subcontractors on a competitive basis to the maximum extent consistent with the objectives and requirements of this order.

Additional clauses incorporated by reference for orders in excess of $2.500.

52.222-36	Affirmative Action for Handicapped Workers

Additional clauses incorporated by reference for orders in excess of $10.000.

52.215-1	Examination of Records by Comptroller General
52.215-2	Audit - Negotiations
52.222-20	Walsh-Healy Public Contracts Act
52.222-26	Equal Opportunity ($10,000 or an aggregate of $10,000)
55.222-35	Affirmative Action for Special Disabled and Vietnam Era Veterans
55.222-37	Employment Reports on Special Disabled Veterans of the Vietnam Era

WESTON
5 Underwood Court, Delran, New Jersey 08075-1229
609-461-4003 · 215-238-0338 · Fax 609-461-4916

SITE ASSESSMENT/TECHNICAL ASSISTANCE EPA CONTRACT 68-S5-3002

April 9, 1996

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 WEST ALBANY
BROKEN ARROW, OK 74012
ATTN: DAVID LeMASTER

SUBJECT: Confirmation to Proceed with Analysis
SITE ID# 04/96-02
PO# 53-10309

Dear David LeMaster:

This letter grants your firm confirmation to proceed with the analysis of samples for Roy F. Weston, Inc. (WESTON®) on the behalf of our client, the U.S. Environmental Protection Agency. All work will be performed within the terms presented in this letter and on the Request for Bid Form. Method detection limits are those specified in the EPA test method(s) unless otherwise stated.

The date for our receipt of the complete hard copy of the analytical package with associated QA is 24 April 1996. (We do not consider results via facsimile machines to be the complete data package). For delay not due to acts of God, a reduction in the total charge will be three percent for the first day, two percent for the second day, and an additional one percent for each additional day. (Weekends and WESTON-observed holidays are included in the turn-around time, but are not counted in determining the late penalty.)

The attached supplemental provisions (SATA 9/95) are to be applied and are binding pertaining to this agreement.

In regard to payment, WESTON's terms are net 45 from the day of invoice or receipt of the analytical package, whichever is later. If a late penalty must be invoked and your invoice does not include this penalty, a letter detailing the penalty will be written by WESTON for your information and our files which may result in delayed payment.

The following holidays are not considered delivery days, they are: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving, and Christmas. The turnaround time begins with the date and time of the delivery of the sample(s) to your laboratory. In the event the samples are delivered after 10:30 AM, the turnaround time will begin on the following day.

CONFIRMATION TO PROCEED WITH ANALYSIS

DATE: April 9, 1996
LABORATORY NAME: Southwest Laboratory of Oklahoma, Inc.
P.O. No.: 53-10309

WRITTEN APPROVAL FOR SUBCONTRACTING ANY PORTION OF THIS WORK BY YOUR FIRM MUST BE GRANTED BY THE REGIONAL LABORATORY COORDINATOR ON BEHALF OR WESTON PRIOR TO THE PERFORMANCE OF ANY WORK STATED IN THE AGREEMENT.

The laboratory is responsible for disposal of samples and return of shipping coolers. WESTON will not dispose of any samples or pay additional shipping or freight costs.

If you have any questions or require additional information about this project, please contact Joshua Cope at (609) 461-4003 Ext. 241. Please have an authorized representative of your company sign the signature line below, indicating that Southwest Laboratory of Oklahoma, Inc. agrees to the terms set forth in this letter. This letter must be signed by a person empowered to bind the company. Please return a copy of the signed letter via fax to Joshua Cope or Marian Murphy at (609) 461-4916.

Sincerely,

for ROY F. WESTON, INC.

Authorized Laboratory Signature_____

Position_____

Attachments: Completed Request for Bid Form
Supplemental Provisions (SATA 9/95)

097

WESTON®

EXPENDABLE MATERIALS REQUISITION

No. E - 03 - 4348

TO: JANICE CHAPMAN, ZPMO

PURCHASING USE ONLY
Purchase Order Assigned:
Purchase Order Date:

FROM: JOSHUA COPE DATE:

Request that we obtain: x Purchase ____ Rent ____ Repair ____ Price Quotation ____ Other

FROM:(Vendor name if preference)
1. SWLOK
1700 West Albany
Broken Arrow, OK 74012
Attn: David LeMaster

918 25 12858

SHIP TO: ROY F. WESTON
5 UNDERWOOD COURT
DELRAN, NJ 08075

SHIP VIA: BEST MEANS

FOB DESTINATION TERMS NET 45 DAYS

DELIVERY REQUIRED BY: 4/24/96

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
1.	5	Water FOR TAL Metals by CLP SOW ILM03.0	132.00	660.00
2.	1	MS&Dupe FOR Item 1.	132.00	264.00
		DELIVERABLES INCLUDE:		
		TWO COPIES OF FULL CLP TYPE DATA PACKAGE WITHOUT ELECTRONIC DELIVERABLES		
		RETURNED SIGNED COPY OF THE CHAIN-OF-CUSTODY FORM SENT WITH THE SAMPLES.		
		GL CODE: 47120		
		SITE ID: 03/96-02 TDD# 9603-16 PCS# 2273		
		Is this purchase in your Operating Plan? Yes( ) No( ) TOTAL COST		$924.00

Charge above item to: 11098 - 213 - 003 - 2273 (Work Order No.) SATA/ U.S. EPA (Project/Client Title) FP/001055 (Div./Dept No.)

Project Director/Manager or Responsible Head Approval _____ Date _____

Business Mgr.Rev. _____ Date _____

Purchasing Approval _____ Date _____

AR304708

WESTON

Req No E03-4348

___ RENT/LEASE
___ REPAIR
___ BLANKET
___ BLANKET RELEASE RELEASE #___
___ BLANKET PO #___
___ OTHER ___

FORWARD TOP 3 COPIES TO DATA INPUT CLERK.
RETAIN 4TH COPY FOR YOUR FILES

CAPITAL ☐ **EXPENDABLE** ☒

SEE REVERSE SIDE FOR INSTRUCTIONS

DATE: 7Apr7[redacted] PAGE: 1 of 1

REQUISITION NO.: MR 17155

PURCHASE ORDER NO.: 53-1030[redacted]

ITEM NO.	WESTON CODE	VENDOR PART #	ITEM DESCRIPTION	QUANTITY/UNIT	ESTIMATED UNIT PRICE	ESTIMATED EXTENDED PRICE	RECOMMENDED SUPPLIER ADDRESS.CONTACT/PHONE
1			Water For TAL metals by CLP SOW ILM03.0	(20) ~~132~~ 5	132	660	SWLOK 1700 west Albany Broken Arrow, OK 7401
2			Mst Dupe for item 1.	1	132	264	
			Deliverables: Two copies of CLP Type Data Package without electronic deliverables. Returned signed copies of COC sent with samples.				Site ID# 4/96-02

TOTAL REQUISITION COST: $924.00

ITEM NO.

QUANTITY OR %	100	WORK ORDER NO.	11098213003227300
DELIVER TO PERSON	Joshua Cope	PRIME CONTRACT	68-S5-3002
DELIVERY LOCATION	DL3	SUBCONTRACT	NA
DELIVERY LOCATION		DPAS RATING	00000
DELIVERY DATE	24 Apr 96 PREMIUM TRANSPORTATION Y N	CLIENT TYPE	F03
AFE NUMBER		ACCT FLEXFIELD	01 00105 5 47120 000

PHONE: 609 461 4003

REQUISITIONER: [signature]

DATE: 9 April 1996

PD/PM/DM APPROVAL: Marian Murphy

DATE: 09 April 1996

DIVISION/REGION APPROVAL:

DATE:

RFW 04-05-001 94

PURCHASING / ORIGINAL

AR304709

9683293152

SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER

TRACKING NUMBER 9683293152

099

From (Your Name) Please Print: Jeffrey A. Lawson
Company: Roy F. Weston Inc
Street Address: 5 Underwood Ct.
City: Delran State: NJ ZIP Required: 08075
Phone Number: 609 461-4003
Department/Floor No.

Recipient's Name (Please Print): David LeMaster
Company: Southwest Laboratories of Oklahoma
Exact Street Address (We cannot deliver to P.O. Boxes or P.O. Zip Codes.): ~~Broken Arrow~~ 1700 West Albany
City: Broken Arrow State: OK ZIP Required: 74012
Phone Number: (918) 251-2858
Department/Floor No.

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional: 1st 24 characters will appear on invoice.)

HOLD AT FEDEX LOCATION Print FEDEX Address Here (Not available at all locations)
Street Address
City State ZIP Required

3 PAYMENT: Sender / Bill Recipient's FedEx Acct / Bill Credit Card / Bill C/Credit Card / Bill to below (recipient) — X
Acct. No. 1545-8122-7

4 SERVICES (Check only one box)
Priority Overnight / Standard Overnight / Economy Two-Day / Government Overnight — X
Freight Service: Overnight Freight / Two-Day Freight

5 DELIVERY AND SPECIAL HANDLING (Check services required)
Hold at FedEx Location Weekday / Deliver Weekday — X
Saturday Service: Hold at FedEx Location Saturday / Deliver Saturday
Special Handling: X Dangerous Goods / Dry Ice

6 Pieces / Weight: 1 / 1 26 Pounds
DIM Shipment (cubic weight)
L x W x H

Signature / Date
Received by / Shipment Party / Chg. To Del. / Chg. To Hold
Street Address
State / Zip
Date, Time Received / FedEx Employee Number

Rec'd by 09:15 14/18/96

SIGNATURE RELEASE UNAVAILABLE

Federal Express Use: Base Charges / Declared Value Charge / Other 1 / Other 2 / Total Charges

REVISION DATE 11/94
Part # 146187,146188
FORMAT #219 GBFE 1/96
219
©1994 FEDEX PRINTED IN U.S.A.

INSTRUCTIONS (Mark appropriate boxes)
- Dangerous Goods as per attached Shipper's Declaration — X
- Dangerous Goods Shipper's Declaration not required
- Cargo Aircraft only

9683293152 Page ___ of ___ Pages

Two completed and signed copies of this Declaration must be handed to the operator.

WARNING

Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.

TRANSPORT DETAILS

This shipment is within the limitations prescribed for: (delete non applicable)
~~PASSENGER AND CARGO AIRCRAFT~~ / CARGO AIRCRAFT ONLY

Airport of Departure: PHL

Airport of Destination: TUL

Shipment type: (delete non-applicable)
NON-RADIOACTIVE ~~RADIOACTIVE~~

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Declaration

Proper Shipping Name	Class or Division	UN or ID No.	Packing Group	Subsidiary Risk	Quantity and type of packing	Packing Inst.	Authorization
Nitric Acid < 20%	8	~~UN 2030~~ UN 2031	II		14G @ 5L	813, II	

Additional Handling Information

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled, and are in all respects in the proper condition for transport by air according to the applicable International and National Governmental Regulations.

Name of Shipper: Atif Marouf, RSO
Place and Date: Delran, NJ 4/17/96

1-800-255-3924

ACCEPTABLE FOR PASSENGER AIRCRAFT. THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS OR TREATMENT.

AR304710

SAMPLE LOG-IN SHEET

Lab Name: Southwest Laboratory of Oklahoma

Page 1 of 1

Received by (Print Name): Matt McGomber

Log-in Date: 4-18-96

Received by (Signature): [signature]

Case Number: EPA No. 68-S5-3002

Sample Delivery Group No.:

SAS Number:

Remarks:

1. Custody Seal(s) — Present/Absent* — Intact/Broken
2. Custody Seal Nos. — N/A
3. Chain-of Custody Records — Present/Absent*
4. Traffic Reports or Packing Lists — Present/Absent*
5. Airbill — Airbill/Sticker — Present/Absent*
   Airbill No. — 9683293152
7. Sample Tags — Present/Absent*
   Sample Tag Numbers — Listed/Not Listed on Chain-of-Custody
8. Sample Condition — Intact/Broken*/Leaking
9. Does information on custody records, traffic reports, and sample tags agree? — Yes/No*
10. Date Received at Lab — 4-18-96
11. Time Received — 0915

EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc.
MARKS-TAP		25319.01	intact 4°C
MARKS-TAP	MS	.02	
MARKS-TAP	DUP	.03	
KRENTZMAN-TAP		.04	
STINE-TAP		.05	
SNYDER-TAP		.06	
TRIP BLANK		.07	

Sample Transfer

Fraction	Fraction
Area #	Area #
By [signature]	By [signature]
On	On

* Contact SMO and attach record of resolution.

Reviewed By	Logbook No.
Date	Logbook Page No.

AR304711

Attachment 3

SAMPLING PLAN

Jack's Creek Site
Maitland, Mifflin County, PA

TDD No. 03-9603-16
EPA CONTRACT No. 68-S5-3002

1.0 INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the U.S. Environmental Protection Agency (EPA), Region III Eastern PA Section of the Remedial Branch, has directed the Roy F. Weston, Inc. (WESTON•), Site Assessment Technical Assistance (SATA) team to conduct residential well sampling at the Jack's Creek Site, in Maitland, Mifflin County, Pennsylvania. The sampling will investigate the threat to human health and the environment posed by the site.

2.0 SITE DESCRIPTION

2.1 Location

The Jack's Creek Site is located on Maitland Road, Maitland, Mifflin County, Pennsylvania. Situated in a narrow valley within the Valley and Ridge Province in Central Pennsylvania, the Site is directly adjacent to Jack's Creek, four miles east of the confluence with the Juniata River at Lewistown (See Figure 1: Site Location Map). The climate of Mifflin County is temperate with temperatures ranging from 19.5 degrees in January to 85.5 degrees in July. Precipitation is evenly distributed throughout the year. The average annual precipitation is 38.71 inches. The maximum 47-year rainfall for the area is 3.99 inches.

2.2 Site Description

The site encompasses 105 acres, 95 acres of which are owned and used by Joseph Krentzman and Sons scrap yard, who store and reprocess scrap metal. Twenty-four acres of the Site are within the 100 year floodplain, and 0.2 acres have been classified as wetlands. Approximately 12 buildings are standing on the Site, and the current owner uses at least four of them (Gannet- Flemming, 1993).

2.3 Background

Sitkin Smelting Company operated a smelter on site between 1958 and 1977, producing brass and bronze ingots and recycling metals. Two large waste piles exist at the Site as a result of Sitkin's operations - a ball mill tailings pile with 60,000 $yd.^3$ (140,000 tons) of dense, amorphous aluminum-iron-zinc silicates and a 6,000 yd^3 aluminum dross pile. In addition to the two piles, lead contamination in concentrations greater than 10,000 parts per million (ppm) is evident in surface soils found on approximately 20% of the Site. Soil with more than 3,000 ppm of lead is found on approximately 50% of the Site. Most of the contamination is limited to the top two feet of soil. In 1986, a battery casing fire released millions of gallons of lead-contaminated waste to the environment (Gannet-Flemming, 1993).

In 1993, Gannet Flemming performed a Remedial Investigation/Feasibility Study (RI/FS) of the Site for the EPA. As part of that study, a total of six residential wells were sampled in three separate rounds. The analysis of those samples revealed the nature of the contamination to be mainly inorganic. The EPA Superfund Removal Branch resampled the wells of those same six houses. As a result of that sampling event, EPA began supplying the residents with bottled drinking water. After a subsequent sampling event, it was determined that bottled water was no longer necessary, and delivery was stopped. Approximately two years have passed since residential well sampling was conducted at the Site.

3.0 PROJECT DESCRIPTION

3.1 Objective

The objective of this sampling event is to determine the concentration of Target Analyte List (TAL) metals contaminants in the residential wells associated with the Site.

3.2 Scope of Work

The scope of work is as follows: to collect groundwater samples from five residential wells surrounding the Site, and have the samples analyzed for TAL metals.

The following table identifies the proposed sampling locations and their matrices. In addition, the sample locations are illustrated in Figure 2, Sampling Location Map:

Table 1
Sample Locations

Sample Identifier	Matrix	Type of Sample	Location
GWR-01	Water	Grab	Tap - Kitchen sink
GWR-02	Water	Grab	Tap - Kitchen sink
GWR-04	Water	Grab	Tap - Kitchen sink
GWR-04 - DUPE	Water	Grab	Tap - Kitchen sink
GWR-05	Water	Grab	Tap - Kitchen sink
GWR-06	Water	Grab	Tap - Kitchen sink
Field Blank	De-ionized Water	Grab	Field

3.3 Data Use

The data will be evaluated using Maximum Contaminant Levels (MCL) to determine if the contamination in the groundwater poses a potential threat to human health.

4.0 SAMPLE COLLECTION

Non sampling data collection activities will include verifying the existence of the two large waste piles and noting the present activities on Site.

5.0 SAMPLING PROCEDURES

5.1 Groundwater

Sampling will be conducted according to EPA Emergency Response Team (ERT) Procedure #2007, Groundwater Well Sampling; (EPA, 1991)

5.2 Sample and Equipment Decontamination

All sampling equipment, except for a pH-conductivity meter, will be dedicated to the sampling event. The pH-conductivity meter will be decontaminated after each sample. All PPE waste will be double-bagged and disposed as dry industrial waste.

6.0 ANALYTICAL PARAMETERS

The collected samples will be analyzed for TAL Metals using Contract Laboratory Program (CLP) SOW ILMO 3.0. The samples will be collected in 1L high density

polyethylene (HDPE) bottles, and preserved with nitric acid (HNO_3) at a pH of less than 2. The holding time for all of the samples will be six months.

7.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PROCEDURES

7.1 Quality Control (QC) of Field Activities

The SATA Site Leader, will be responsible for ensuring that sample quality and integrity are maintained in accordance with the SATA Quality Assurance Project Plan, and that sampling labeling and documentation procedures are performed as described in Section 7.3 of this sampling plan.

7.2 Sample Packaging and Storage

Sample containers will be labeled and shipped with a sample tag affixed to each container. Samples will be placed in plastic zipping bags. Bagged containers will be placed in appropriate transport containers and the containers will be packed with appropriate absorbent material, such as vermiculite, and preserved with ice, if necessary. All sample documents will be affixed to the underside of each transport container lid. The lid will be sealed with shipping tape and custody seals will be affixed to the transport container. Transport containers will be labeled with the origin and destination locations.

Regulations for packaging, marking, labeling, and shipping of hazardous materials and wastes are promulgated by the U.S. Department of Transportation (DOT). Air carriers which transport hazardous materials, in particular, Federal Express, require compliance with the current International Air Transport Association (IATA) regulations, which applies to shipment and transport of hazardous materials by air carrier. SATA will follow IATA regulations to ensure compliance.

7.3 Field QC

Field QC will consist of one field blank, one field duplicate, sample documentation as referenced in SATA SOP No. 103, Chain of Custody Documentation and SATA SOP No.101, Logbook Documentation (SATA, 1996). Field blanks will be taken to test for contamination that could possibly be introduced by the sample containers and preservatives. Field duplicate samples will test the reproducibility of sampling procedures and results.

7.4 Laboratory QC

Laboratory QC will consist of all QC stated in the Contract Laboratory Program (CLP) Statement of Work (SOW) and include all forms and deliverables required by the SOW.

7.5 Data Validation

Data validation will be performed by EPA Region III Central Regional Laboratory's Quality Assurance members in accordance with EPA Region III Modifications to the EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review.

8.0 REPORTS

Information gathered from this sampling event will be compiled into a Trip Report. The report will include the data collection methods, sample locations, data summary tables with qualifiers applied during data validation, and a Data Quality Report. The Trip Report will be submitted to EPA upon completion of the data analysis and evaluation.

8.0 REFERENCES

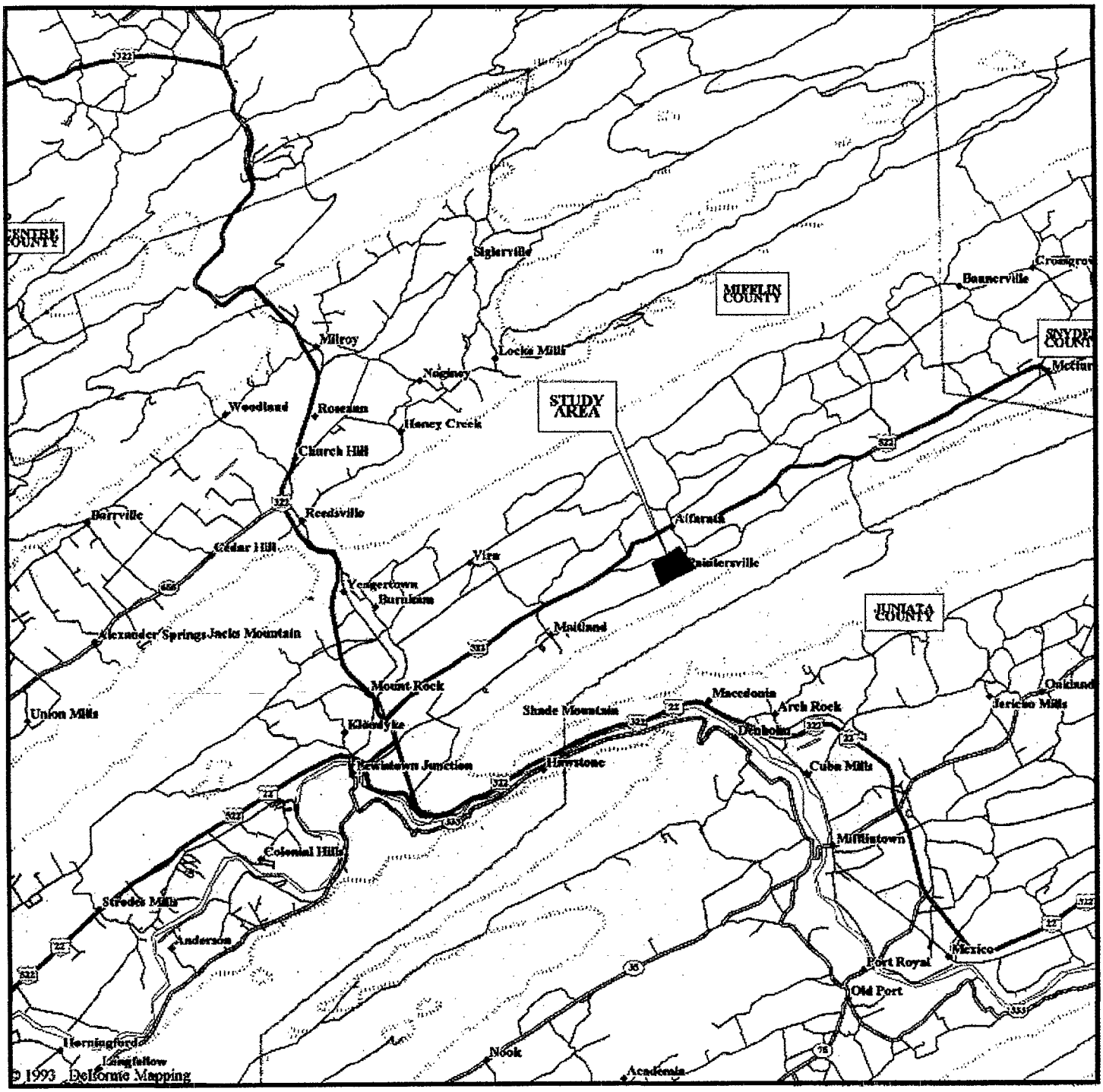
Gannet-Flemming, 1993; Remedial Investigation/Feasibility Study, Jack's Creek Site.

SATA (Site Assessment Technical Assistance). 1996. Compendium of SATA Standard Operating Procedures (Draft). Delran, NJ.

EPA. 1991. Compendium of ERT Groundwater Sampling Procedures. Office of Solid Waste and Emergency Response, Washington DC. EPA/540/p-91/008.

WESTON FEDERAL PROGRAMS DIVISION	Jack's Creek Maitland, Mifflin Co., PA	TDD #: 9603-016 PCS #: 2273

Figure 1



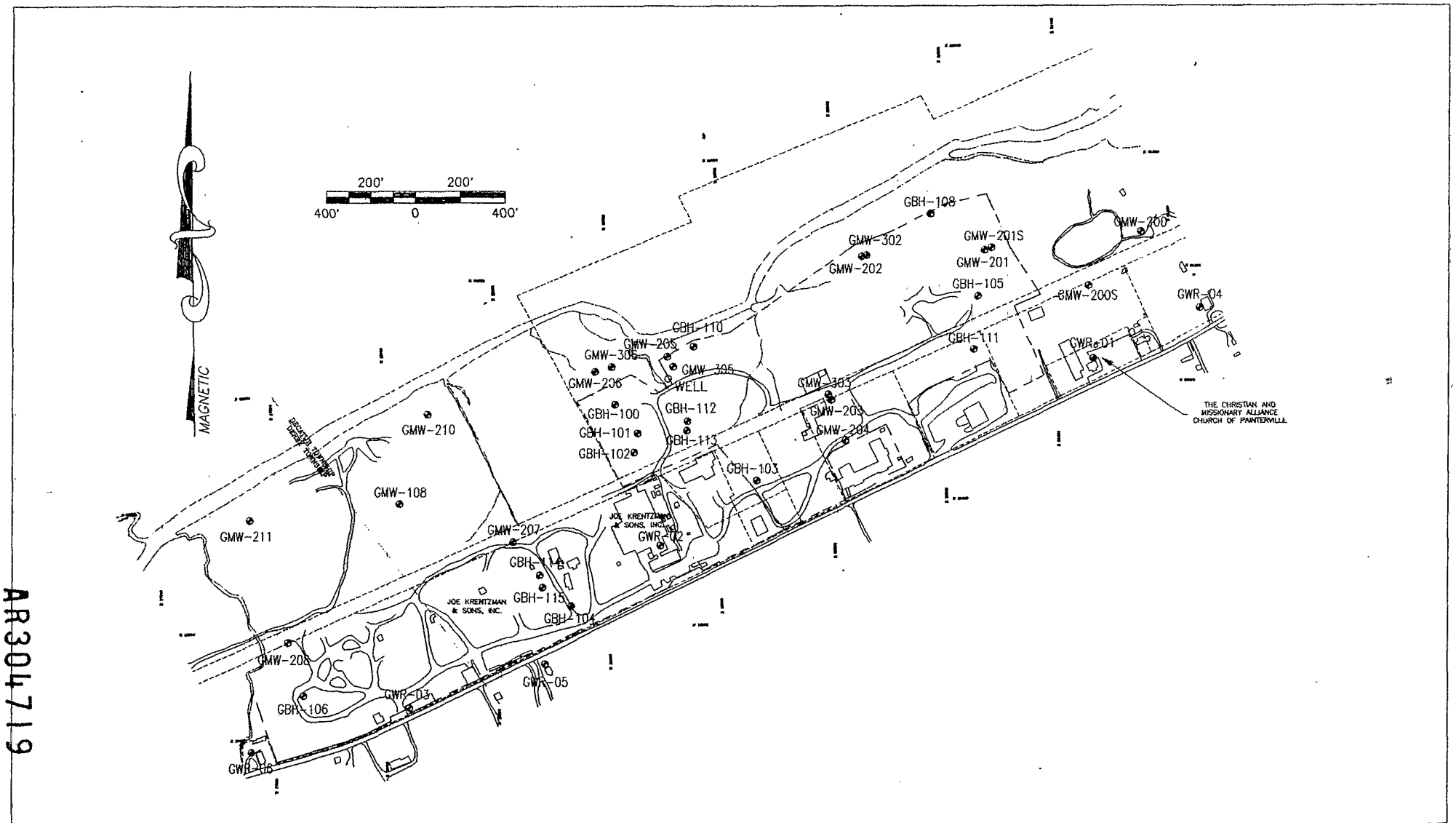
Scale 1:175,000 (at center)

2 Miles

5 KM

AR304718

Figure 2



JACK'S CREEK SITE
SITUATED NEAR MAITLAND
MIFFLIN CO[redacted] PENNSYLVANIA

NO.	DATE	APPR.	REVISION

U.S. ENVIRONMENTAL PROTECTION AGENCY
SITE ASSESSMENT TECHNICAL ASSISTANCE - REGION III
WESTON FEDERAL PROGRAMS DIVISION
DELRAN [redacted] NEW JERSEY

CHECKED		DATE
SITE LEAD	MIKE DAVIS	
OPC	JACK OTINS	
RPM	GARTH CONNOR	

SAMPLE LOCATION MAP

DWG.# 1	SHEET# 1
DRAWN [redacted]VINS	DATE MARCH 22, 1996
[redacted] SCALE	PCS# 2273

AR304719