

**general
testing
corporation**



water and wastewater testing specialists

710 Exchange Street
Rochester, NY 14608
(716) 454-3760

85 Trinity Place
Hoboken, NJ 07031
(201) 486-5242

October 22, 1986

Mr. Wayne Davis
URS/Dalton
3506 Warrensville Center Road
Cleveland, OH 44122

Re: P.A.S. Environmental Assessment Study

Dear Mr. Davis:

Enclosed are reports covering the analysis of seven waters and eight sediments received at General Testing on 5/8/86. The samples were referenced as having come from the above mentioned site. The analyses requested were the twenty four contract laboratory metals, cyanide and phenol. In addition, several wet chemistry (classical) parameters were requested on the waters as non-CLP type work. Also requested was grain size analysis on the sediments.

All quality control and documentation inherent in the contract laboratory protocol have been provided within. Please see section cover pages for particular notes.

I hope you find all in order. Please call should you have any questions.

Sincerely,

GENERAL TESTING CORPORATION

Marshall Shannon
Ass't Laboratory Director

MS/jrj

REPORT INDEX

		<u>Page #</u>
SECTION A	Analytical Data for Non CLP Parameters on Waters	1
SECTION B	Analytical Data for CLP Parameters on Waters	3
SECTION C	Quality Control for CLP Parameters on Waters	11
SECTION D	Analytical Data for CLP Parameters on Sediments	28
SECTION E	Quality Control for CLP Parameters on Sediments	37
SECTION F	Grain Size Analysis on Sediments	46
SECTION G	Raw Data for CLP Parameters on Waters & Sediments	62
SECTION H	Chain of Custody Documentation	334

SECTION A

Analytical Data for Non CLP
Parameters on Waters

Section A

Presented in this section is analytical data covering the analysis of seven waters for non-CLP parameters. The analyses requested were Ammonia, TKN, Nitrate, Nitrite, Phenolics, Orth-Phosphate, Total Phosphorus, Dissolved Solids, Suspended Solids and Total Organic Carbon. All analyses were performed via methodology as found in EPA 600/4-79-020 revised 3/83, Methods for the Chemical Analysis of Water and Wastes.



LABORATORY REPORT

Job No. 61024 Date 8/14/86

Client Mr. Wayne Davis
URS/Dalton
3605 Warrensville Ctr. Rd
Cleveland, Ohio 44122

Sample(s) Reference
PAS Environmental Assessment Study

Date Samples (x) received () collected by General Testing 5/7/86

ANALYTICAL RESULTS

(mg/l unless stated otherwise)

P.O. # _____				
Sample Description	A	B	C	D
	PAS-US- WNC-2A	PAS-US- WC-1A	PAS-US- WC-1	PAS-US- WNC-2
Date(s)	5/7/86	5/7/86	5/7/86	5/7/86
Time(s)	09:00	09:45	10:15	10:45
pH	7.20	7.65	7.44	8.11
Nitrogen, Ammonia N	0.11	0.34	4.4	0.15
Nitrogen, Kjeldahl N	0.86	0.41	0.42	0.71
Nitrogen, Nitrate N	0.67	<0.10	0.40	0.79
Nitrogen, Nitrite N	<0.05	<0.05	<0.05	<0.05
Phenolics	<0.005	<0.005	<0.005	<0.005
Phosphate, Ortho as P	0.16	<0.05	<0.05	0.15
Phosphorous, Total as P	0.32	0.07	<0.05	0.23
Solids, Dissolved at 180°C	330	200	600	400
Solids, Suspended	1.3	3.7	6.7	2.2
TOC	10.0	5.7	7.8	9.4

Analytical procedures in accordance with Standard Methods for the Examination of Water and Wastewater, 15th Edition and Methods for Chemical Analysis of Water and Wastes, EPA. (<) indicates lowest detectable concentration with procedure used. Data on quality control performed with above sample(s) is available upon request.

Asst Laboratory Director

general testing corporation



water and wastewater testing specialists

710 Exchange Street
Rochester, NY 14609
(716) 454-3760

85 Trinity Place
Hackensack, NJ 07601
(201) 488-5242

LABORATORY REPORT

Job No. 61024 Date 8/14/86

Client

Mr. Wayne Davis
URS/Dalton
3605 Warrensville Ctr. Rd.
Cleveland, Ohio 44122

Sample(s) Reference

PAS Environmental Assessment Study

Date Samples (x) received () collected by General Testing 5/7/86

ANALYTICAL RESULTS

(mg/l unless stated otherwise)

P.O. # _____

Sample Description	E	F	G
	PAS-DS WNC-3	PAS-OS WNC-3	PAS-DS WNC-6
Date(s)	5/7/86	5/7/86	5/7/86
Time(s)	11:30	14:00	15:00
pH	7.72	7.68	7.61
Nitrogen, Ammonia N	0.77	1.7	0.32
Nitrogen, Kjeldahl N	1.5	3.2	1.2
Nitrogen, Nitrate N	0.1	0.74	1.2
Nitrogen, Nitrite N	0.06	0.05	0.07
Phenolics	<0.005	<0.005	<0.005
Phosphate, Ortho as P	0.10	<0.05	0.07
Phosphorous, Total as P	0.16	<0.05	0.12
Solids, Dissolved at 180°C	530	590	510
Solids, Suspended	19	6.6	9.0
TOC	9.2	8.1	8.8

Analytical procedures in accordance with Standard Methods for the Examination of Water and Wastewater, 15th Edition and Methods for Chemical Analysis of Water and Wastes, EPA. (<) indicates lowest detectable concentration with procedure used. Data on quality control performed with above sample(s) is available upon request.

Asst Laboratory Director

general testing corporation

710 Exchange Street
Rochester, N.Y. 14608
(716) 454-3700

85 Trinity Place
Hackensack, N.J. 07601
(201) 459-0242

LABORATORY REPORT

Job No. R61428 Date 07/24/86

Client **Mr. Wayne Davis**
URS Engineers
3506 Warrensville Center Rd.
Cleveland, OH 44122

Sample(s) Reference
PAS Oswego

Date Samples () received () collected by General Testing **06/18/86**

ANALYTICAL RESULTS

(mg/l unless stated otherwise)

P.O. # _____ Sample Description	A	B	C	D
	PAS-US WC-1	PAS-US WC-1A	PAS-US WNC-2	PAS-US WNC-2A
Date(s)	6/18/86	6/18/86	6/18/86	6/18/86
Time(s)	11:15	10:00	11:15	08:30
Cyanide, Total	<0.01	<0.01	<0.01	<0.01
Solids, Dissolved at 180 °C	460	230	420	370
Solids, Suspended	6.6	6.3	8.6	2.0
Nitrogen, Ammonia	2.0	0.28	0.16	0.19
Nitrogen, Kjeldahl	2.6	0.67	0.88	0.88
Nitrogen, Nitrate	0.45	<0.05	0.87	0.64
Nitrogen, Nitrite	<0.05	<0.05	<0.05	<0.05
Phosphate, Ortho as P	<0.05	<0.05	0.33	<0.05
Phosphorous, Total as P	<0.05	<0.05	0.45	<0.05
TOC	13	11	16	16

NY CERT. NY CERT. NY CERT. NY CERT.

Analytical procedures in accordance with Standard Methods for the Examination of Water and Wastewater, 15th Edition and Methods for Chemical Analysis of Water and Wastes, EPA. < indicates lowest detectable concentration with procedure used. Data on quality control performed with above samples available upon request.



Laboratory Director

Asst

general testing corporation

710 Exchange Street
Rochester, NY 14506
(716) 454-3750

85 Trinity Place
Hackensack, N.J. 07601
(201) 488-8242

LABORATORY REPORT

Job No. R61428 Date 07/24/86

Client **Mr. Wayne Davis**
URS Engineers
3506 Warrensville Center Rd.
Cleveland, OH 44122

Sample(s) Reference
PAS Oswego

Date Samples () received () collected by General Testing 06/18/86

ANALYTICAL RESULTS

(mg/l unless stated otherwise)

Sample Description	E	F	G
	PAS-DS WC-3	PAS-DS WNC-4	PAS-DS WNC-6
Date(s)	6/18/86	6/18/86	6/18/86
Time(s)	07:30	11:00	12:00
Cyanide, Total	<0.01	<0.01	<0.01
Solids, Dissolved at 180 °C	380	450	680
Solids, Suspended	8.2	4.0	19
Nitrogen, Ammonia	0.50	0.45	0.40
Nitrogen, Kjeldahl	1.2	1.1	1.1
Nitrogen, Nitrate	0.60	0.64	0.68
Nitrogen, Nitrite	<0.05	<0.05	<0.05
Phosphate, Ortho as P	<0.05	0.15	0.13
Phosphorous, Total as P	<0.05	0.20	0.26
TOC	13	15	15

NY CERT. NY CERT. NY CERT.

Analytical procedures in accordance with Standard Methods for the Examination of Water and Wastewater, 15th Edition and Methods for Chemical Analysis of Water and Wastes, EPA 821-B-83-010 are used. (<) indicates lowest detectable concentration with procedure used. Data on quality control performed with above samples is available upon request.

Marshall D. ...

Act I Laboratory Director

Parameter	TCN	Ammonia	Nitrate	TKN	Nitrite	TDS	TSS	TP04
Method Blank	<0.01	<0.05	<0.05	<0.20	<0.05	<2.0	<2.0	<0.05
Precision:								
Job #	61428D	61428G	61428A	61428A	61428G	61428G	61461	61428A
Original Result	<0.01	0.398	0.446	2.58	<0.05	676	14.0	<0.05
Duplicate Result	<0.01	0.396	0.453	2.54	<0.05	576	12.5	<0.05
Job #	61428D	61428G	61428A	61428A	61428G			61428A
Sample Value	<0.01	0.397	0.450	2.56	<0.05			<0.05
Spike Added	0.05	0.200	0.200	1.00	0.200			0.200
Spiked Result	0.0467	0.553	0.640	3.54	0.537			0.215
% Recovery	93.4%	73%	95%	98%	107%			108%
Blank Spike:								
Spike Added	0.050	0.200	0.200	0.500	0.200			0.200
Spiked Result	0.0482	0.209	0.188	0.753	0.172			0.140
% Recovery	96.4%	105%	94%	151%	86%			70%
IPA References:								
Known #1	0.561	1.52	1.43	5.28		140	507	1.15
Result #1	0.535	1.33	1.27	5.11		146	435	1085
% Recovery #1	95.4%	87.5%	88.8%	96.8%		104%	85.7%	94.3%
Known #2	0.561	0.150	0.14	0.32		140		0.10
Result #2	0.550	0.137	0.136	0.484		153		0.0898
% Recovery #2	98%	91.3%	97.1%	151%		109%		89.8%

CHAIN OF CUSTODY RECORD

URS Company, Inc.

Job No. 101429 #1

Day _____ of _____

SAMPLER (Signature)

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
NS-US-WC-1	6-18-86	11:15 AM	1		✓	H ₂ SO ₄	TDS
"	"	"	"		✓	ICE	NO ₂ - H ₂ O
"	"	"	"		✓	H ₂ SO ₄	NO ₂ H ₂ O TDS
"	"	"	"		✓	NaOH	TOT. CHLORIDE
"	"	"	"		✓	ICE	TDS, TSS
"	"	"	"		✓	ICE	NO ₂
"	"	"	"		✓	H ₂ SO ₄ ⁶⁵⁰	TLC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date/Time 6/18/86 2:30 PM
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature) <i>Verla Set</i>	Received by: (Signature)	Date/Time
<i>St. On ... 6/17/86 67C</i>		
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Name and Location of Laboratory

Return Completed Chain Of Custody Record To

URS Company Inc.
625 Delaware Ave.
Buffalo, New York 14202

CHAIN OF CUSTODY RECORD

URS Company, Inc.

Job No. 101428 51A

Day _____ of _____

SAMPLER (Signature)

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
45-UB-WC-1A water	6/28/85	10:00 AM	1A		✓		
"	"	"	"		✓	ICE	
"	"	"	"		✓	H ₂ O ₂	NO ₂ , NH ₂ , TDS
"	"	"	"		✓	N ₂ O ₄	TOT. CHLORIDES
"	"	"	"		✓	ICE	TDS, TSS
"	"	"	"		✓	ICE	NO ₂
"	"	"	"		✓	H ₂ SO ₄	TOC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date/Time 6/28/85 2:30P
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature) GTC 6/28/85	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Name and Location of Laboratory

Return Completed Chain Of Custody Record To

URS Company Inc.
625 Delaware Ave.
Buffalo, New York 14202

CHAIN OF CUSTODY RECORD

URS Company, Inc.

Job No. 1-1428 31-0

Day _____ of _____

SAMPLER (Signature)

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-115-WPC-2	6-18-86	11:45 AM	2		✓	H ₂ SO ₄	TOT. PHOSPHATE
"	"	"	"		✓	ICE	GETTING PHOSPHATE
"	"	"	"		✓	H ₂ SO ₄	NO ₃ , NH ₄ , TSS
"	"	"	"		✓	NaOH	TOT. CYANIDE
"	"	"	"		✓	ICE	TDS, TSS
"	"	"	"		✓	ICE	NO ₂
"	"	"	"		✓	^{CO₂} H ₂ SO ₄	TOC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date/Time 6/18/86 2:30P
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature) <i>OTC</i>	Received by: (Signature)	Date/Time
<i>the Sat 1/1/1986 6/17/86</i>		
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Name and Location of Laboratory

Return Completed Chain Of Custody Record To

URS Company Inc.
625 Delaware Ave.
Buffalo, New York 14202

CHAIN OF CUSTODY RECORD

URS Company, Inc.

Job No. 14208 104

Day _____ of _____

SAMPLER (Signature)

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
145-02 - WPC-20	6/1/86	11:00 AM	2A		✓	H ₂ S ₀₄	TOT. PHOSPHATE
"	"	"	"		✓	ICE	OR-THE PHOSPHATE
"	"	"	"		✓	H ₂ SO ₄	NO ₃ , NH ₄ , TSS
"	"	"	"		✓	Nash	TOT. CYANIDE
"	"	"	"		✓	ICE	TDS, TSS
"	"	"	"		✓	ICE	NO ₂
"	"	"	"		✓	H ₂ SO ₄	TOC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date/Time 6/1/86 2:50P
Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature)	Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Name and Location of Laboratory

Return Completed Chain Of Custody Record To

URS Company Inc.
625 Delaware Ave.
Buffalo, New York 14202

CHAIN OF CUSTODY RECORD

URS Company, Inc.

Job No. 6128 43

Day _____ of _____

SAMPLER (Signature)

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
015-25-112-3		7:20 AM	3		✓	H ₂ SO ₄	TOT. PHOSPHATE
"	"	"	"		✓	ICE	TOT. AMMONIA
"	"	"	"		✓	H ₂ SO ₄	NO ₂ -NH ₃ TREN
"	"	"	"		✓	NaOH	TOT. CHLORIDE
"	"	"	"		✓	ICE	TDS, TSS
"	"	"	"		✓	ICE	NO ₂
"	"	"	"		✓	H ₂ SO ₄	TOC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) 	Received by: (Signature) 	Date/Time 6/18/86 2:30 P
Relinquished by: (Signature) 	Received by: (Signature)	Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature) GTC 7/1/86	Received by: (Signature)	Date/Time 6/17/86
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Name and Location of Laboratory

Return Completed Chain Of Custody Record To

URS Company Inc.
625 Delaware Ave.
Buffalo, New York 14202

CHAIN OF CUSTODY RECORD

URS Company, Inc.

Job No. 61425-1-4

Day _____ of _____

SAMPLER (Signature) _____

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
Sub-DS-WHC-4	6/18/86	11:00 AM	4		✓	H ₂ SO ₄	TESTING
"	"	"	"		✓	ICE	GRAB
"	"	"	"		✓	H ₂ SO ₄	Al ₂ O ₃ , NH ₄ , TSS
"	"	"	"		✓	NaOH	TOT. CHLORIDE
"	"	"	"		✓	ICE	TDS, TSS
"	"	"	"		✓	ICE	NO ₂
"	"	"	"		✓	H ₂ SO ₄	TOC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) _____ <i>George S. D.</i>	Received by: (Signature) _____ <i>M. Shuman</i>	Date/Time 6/18/86 2:30 PM
Relinquished by: (Signature) _____	Received by: (Signature) _____	Date/Time

DISPATCHED BY: (Signature) _____

METHOD OF SHIPMENT: _____

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature) _____ <i>WTC</i>	Received by: (Signature) _____	Date/Time
Relinquished by: (Signature) _____	Received by: (Signature) _____	Date/Time

Name and Location of Laboratory _____

Return Completed Chain Of Custody Record To

URS Company Inc.
625 Delaware Ave.
Buffalo, New York 14202

CHAIN OF CUSTODY RECORD

URS Company, Inc.

Job No. 61429 #6

Day _____ of _____

SAMPLER (Signature)

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
SAS-TS-WNC-6	6/18/86	11:45	6		✓	H ₂ SO ₄	TOTAL ALKALITY
"	6/18/86	12:00	11		✓	ICE	VERTICAL PROFILE
"	"	"	"		✓	H ₂ SO ₄	NO ₃ , NH ₄ -TGA
"	"	"	"		✓	NO ₃	TOTAL ALKALITY
"	"	"	"		✓	ICE	TDS, TS
"	"	"	"		✓	ICE	NO ₃
"	"	"	"		✓	H ₂ SO ₄	TDS

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date/Time 6/18/86 2:30 PM
Relinquished by: (Signature) 	Received by: (Signature) 	Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) 	Date/Time
Relinquished by: (Signature) 	Received by: (Signature) 	Date/Time

Name and Location of Laboratory

Return Completed Chain Of Custody Record To

URS Company Inc.
625 Delaware Ave.
Buffalo, New York 14202

SECTION B

Analytical Data for CLP
Parameters on Waters

SECTION B

Presented in this section is analytical data covering the analysis of seven waters for all CLP Inorganic parameters. Antimony, Arsenic and Selenium were performed via Hydride Generation techniques. Chromium, Lead, Thallium and Vanadium were performed via Furnace AA techniques. Mercury was performed via a Cold Vapor AA technique. All remaining metals were performed via Flame AA techniques. Cyanide was analyzed via EPA Methods #335.2 and 335.3.

*general testing
corporation*

710 Exchange Street

C Rochester, NY 14608

Date 8/14/86

COVER PAGE

INORGANIC ANALYSIS DATA PACKAGE

Lab Name General Testing Corporation

Job No. 61024

URS Dalton

Q.C. Report No. 1

SAMPLE NUMBERS

Lab ID No.

Lab ID No.

A PAS-US-WNC-2A

G PAS-DS-WNC-6

B PAS-US WC-1A

C PAS-US-WC-1

D PAS-US-WNC-2

E PAS-DS-WNC-4

F PAS-DS-WNC-3

Comments: _____

Footnotes:

NR - not required by contract at this time

Form I:

Value - If the result is a value greater than or equal to the instrument detection limit but less than the contract required detection limit. Report the value in brackets (i.e., [10]). Indicate the analytical method used with P (for ICP/Flame AA) or F (for furnace).

U - Indicates the element was analyzed for but not detected. Report with the detection limit value (e.g., 100).

E - Indicates a value estimated or not reported due to the presence of interference. Explanatory not included on cover page.

S - Indicates value determined by Method of Standard Addition.

R - Indicates spike sample recovery is not within control limits.

- Indicates duplicate analysis is not within control limits.

+ - Indicates the correlation coefficient for Method of Standard Addition is less than 0.995.

Sample No. PAS-US-WNC-2A

Date: 8/14/86

g t
C 710 Exchange Street
Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 61024

LAB SAMPLE ID NUMBER: A

QC REPORT NUMBER: 1

Elements Identified and Measured

Concentration: Low Medium

Matrix: Water x Soil Sludge

(ug/l) or mg/kg dry weight (circle one)

1. <u>Aluminum</u>	<u>100 u</u>	14. <u>Magnesium</u>	<u>14,800</u>
2. <u>Antimony</u>	<u>10 u</u>	15. <u>Manganese</u>	<u>147</u>
3. <u>Arsenic</u>	<u>[2.16]</u>	16. <u>Mercury</u>	<u>0.2 u</u>
4. <u>Barium</u>	<u>100 u</u>	17. <u>Nickel</u>	<u>40 u</u>
5. <u>Beryllium</u>	<u>5 u</u>	18. <u>Potassium</u>	<u>[3580]</u>
6. <u>Cadmium</u>	<u>5 u</u>	19. <u>Selenium</u>	<u>4 u</u>
7. <u>Calcium</u>	<u>50,800</u>	20. <u>Silver</u>	<u>10 u</u>
8. <u>Chromium</u>	<u>5 u F</u>	21. <u>Sodium</u>	<u>27,400</u>
9. <u>Cobalt</u>	<u>50 u</u>	22. <u>Thallium</u>	<u>10 u F</u>
10. <u>Copper</u>	<u>20 u</u>	23. <u>Tin</u>	<u>24</u>
11. <u>Iron</u>	<u>176</u>	24. <u>Vanadium</u>	<u>50 u F</u>
12. <u>Lead</u>	<u>16 F</u>	25. <u>Zinc</u>	<u>843</u>
13. <u>Cyanide</u>	<u>10 u F</u>	26. <u>Percent Solids (%)</u>	<u> </u>

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS:

Lab Manager

Marshall M...

710 Exchange Street
Rochester, NY 14608

Sample No. PAS-US-WC-1A

Date: 8/14/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 61024

LAB SAMPLE ID NUMBER: B

QC REPORT NUMBER: 1

Elements Identified and Measured

Concentration: Low Medium

Matrix: Water x Soil Sludge

ug/l or mg/kg dry weight (circle one)

1. Aluminum	100 u	14. Magnesium	9,920
2. Antimony	10 u	15. Manganese	86
3. Arsenic	2 u	16. Mercury	0.2 u
4. Barium	100 u	17. Nickel	40 u
5. Beryllium	5 u	18. Potassium	[890]
6. Cadmium	5 u	19. Selenium	4 u
7. Calcium	34,500	20. Silver	10 u
8. Chromium	5 u F	21. Sodium	16,700
9. Cobalt	50 u	22. Thallium	10 u F
10. Copper	20 u	23. Tin	28
11. Iron	173	24. Vanadium	50 u F
12. Lead	11 F	25. Zinc	507
13. Cyanide	10 u R	26. Percent Solids (%)	

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS:

Lab Manager

Marshall Hanna

Sample No. PAS-US-WC-1

Date: 8/14/86

710 Exchange Street

Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 61024

LAB SAMPLE ID NUMBER: C

QC REPORT NUMBER: 1

Elements Identified and Measured

Concentration: Low Medium

Matrix: Water X Soil Sludge

(ug/l) or mg/kg dry weight (circle one)

1. <u>Aluminum</u>	<u>100 u</u>	14. <u>Magnesium</u>	<u>16,600</u>
2. <u>Antimony</u>	<u>10 u</u>	15. <u>Manganese</u>	<u>826</u>
3. <u>Arsenic</u>	<u>2 u</u>	16. <u>Mercury</u>	<u>0.2 u</u>
4. <u>Barium</u>	<u>100 u</u>	17. <u>Nickel</u>	<u>40 u</u>
5. <u>Beryllium</u>	<u>5 u</u>	18. <u>Potassium</u>	<u>10,050</u>
6. <u>Cadmium</u>	<u>5 u</u>	19. <u>Selenium</u>	<u>4 u</u>
7. <u>Calcium</u>	<u>49,700</u>	20. <u>Silver</u>	<u>10 u</u>
8. <u>Chromium</u>	<u>5 u F</u>	21. <u>Sodium</u>	<u>116,000</u>
9. <u>Cobalt</u>	<u>50 u</u>	22. <u>Thallium</u>	<u>10 u P</u>
10. <u>Copper</u>	<u>20 u</u>	23. <u>Tin</u>	<u>30</u>
11. <u>Iron</u>	<u>4,250</u>	24. <u>Vanadium</u>	<u>50 u F</u>
12. <u>Lead</u>	<u>3.8 F</u>	25. <u>Zinc</u>	<u>853</u>
13. <u>Cyanide</u>	<u>10 u R</u>	26. <u>Percent Solids (%)</u>	<u> </u>

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: _____

Lab Manager

Marshall M...

Sample No. PAS-US-WNC-2

Date: 8/14/86

gt
C 710 Exchange Street
Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 61024

LAB SAMPLE ID NUMBER: D

QC REPORT NUMBER: 1

Elements Identified and Measured

Concentration: Low Medium

Matrix: Water X Soil Sludge

(ug/l) or mg/kg dry weight (circle one)

1. Aluminum	<u>100 u</u>	14. Magnesium	<u>15,300</u>
2. Antimony	<u>10 u</u>	15. Manganese	<u>98</u>
3. Arsenic	<u>[2.00]</u>	16. Mercury	<u>0.2 u</u>
4. Barium	<u>210</u>	17. Nickel	<u>40 u</u>
5. Beryllium	<u>5 u</u>	18. Potassium	<u>[4670]</u>
6. Cadmium	<u>5 u</u>	19. Selenium	<u>4 u</u>
7. Calcium	<u>54,600</u>	20. Silver	<u>10 u</u>
8. Chromium	<u>5 u F</u>	21. Sodium	<u>36,900</u>
9. Cobalt	<u>50 u</u>	22. Thallium	<u>10 u F</u>
10. Copper	<u>20 u</u>	23. Tin	<u>22</u>
11. Iron	<u>215</u>	24. Vanadium	<u>50 u F</u>
12. Lead	<u>17 F</u>	25. Zinc	<u>648</u>
13. Cyanide	<u>10 u R</u>	26. Percent Solids (%)	<u> </u>

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: _____

Lab Manager Marshall M. ...

Sample No. PAS-DS-WNC-4

710 Exchange Street

Rochester, NY 14608

Date: 8/14/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 61024

LAB SAMPLE ID NUMBER: E

QC REPORT NUMBER: 1

Elements Identified and Measured

Concentration: Low Medium

Matrix: Water X Soil Sludge

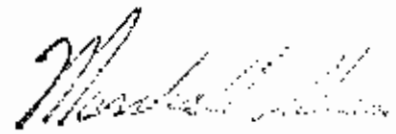
ug/l or mg/kg dry weight (circle one)

1. Aluminum	100 u	14. Magnesium	16,600
2. Antimony	10 u	15. Manganese	379
3. Arsenic	2 u	16. Mercury	0.2 u
4. Barium	[180]	17. Nickel	40 u
5. Beryllium	5 u	18. Potassium	8,550
6. Cadmium	5 u	19. Selenium	4 u
7. Calcium	51,100	20. Silver	10 u
8. Chromium	5 u F	21. Sodium	73,500
9. Cobalt	50 u	22. Thallium	10 u F
10. Copper	20 u	23. Tin	24
11. Iron	1,170	24. Vanadium	50 u F
12. Lead	27 F	25. Zinc	939
13. Cyanide	10 u R	26. Percent Solids (%)	

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: _____

Lab Manager



Sample No. PAS-05-WNC-3

Date: 8/14/86

gt
C 710 Exchange Street
Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 61024

LAB SAMPLE ID NUMBER: F

QC REPORT NUMBER: 1

Elements Identified and Measured

Concentration: Low Medium

Matrix: Water X Soil Sludge

ug/l or mg/kg dry weight (circle one)

1. <u>Aluminum</u>	<u>380</u>	14. <u>Magnesium</u>	<u>16,100</u>
2. <u>Antimony</u>	<u>10 u</u>	15. <u>Manganese</u>	<u>527</u>
3. <u>Arsenic</u>	<u>2 u</u>	16. <u>Mercury</u>	<u>0.2 u</u>
4. <u>Barium</u>	<u>230</u>	17. <u>Nickel</u>	<u>53</u>
5. <u>Beryllium</u>	<u>5 u</u>	18. <u>Potassium</u>	<u>13,700</u>
6. <u>Cadmium</u>	<u>5 u</u>	19. <u>Selenium</u>	<u>4 u</u>
7. <u>Calcium</u>	<u>51,500</u>	20. <u>Silver</u>	<u>10 u</u>
8. <u>Chromium</u>	<u>5 u F</u>	21. <u>Sodium</u>	<u>113,000</u>
9. <u>Cobalt</u>	<u>50 u</u>	22. <u>Thallium</u>	<u>10 u F</u>
10. <u>Copper</u>	<u>20 u</u>	23. <u>Tin</u>	<u>19</u>
11. <u>Iron</u>	<u>1520</u>	24. <u>Vanadium</u>	<u>50 u F</u>
12. <u>Lead</u>	<u>37 F</u>	25. <u>Zinc</u>	<u>789</u>
13. <u>Cyanide</u>	<u>13R</u>	26. <u>Percent Solids (%)</u>	<u> </u>

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: _____

Lab Manager Marshall Minner

SECTION C

Quality Control for Cl,P
Parameters on Waters

SECTION C

Presented in this section is Quality Control for Inorganic CLP parameters on the seven waters covered in Section B of this report.

The spiked recoveries for Calcium, Sodium and Zinc cannot be calculated due to sample values greater than 4 x the amount spiked into the sample. The spiked recovery for Cyanide was found to be out of control and has been flagged with an "R". All duplicate analysis were within control limits. No EPA samples are available for Tin as initial calibration checks and as such none have been reported.

**general testing
corporation**

710 Exchange Street
Rochester, NY 14608

FORM II

Q.C. Report No. 1

INITIAL AND CONTINUING CALIBRATION VERIFICATION³

Lab Name General Testing Corporation

Job No. 61024

Date _____

Units ug/l

Compound	Initial Calib. ¹			Continuing Calib. ²					
	True Value	Found	% R	True Value	Found	% R	Found	% R	Method ⁴
1. Aluminum	214	220	103	729	760	104			P
2. Antimony	98	104	106	98	110	112			Hydride
3. Arsenic	92	95	103	20	22.6	113			Hydride
4. Barium	734	760	104	367	400	109			P
5. Beryllium	48	55	115	235	227	97			P
6. Cadmium	39	32	82						P
7. Calcium	5300	5300	100	5300	5450	103			P
8. Chromium	261	264	101	261	276	106			F
9. Cobalt	261	236	90						P
10. Copper	339	314	93	339	314	93			P
11. Iron	796	861	108						P
12. Lead	435	486	112	435	459	106			F
13. Magnesium	8400	8990	107	1800	1700	94	1700	94	P
14. Manganese	26	25	96	348	354	102			P
15. Mercury	4.4	3.7	84	8.8	7.8	89			Cold Vapor
16. Nickel	207	212	102	207	182	88			P
17. Potassium	9800	9960	102	2100	2320	110	1980	94	P
18. Selenium	5.0	5.11	102	16	15	94			Hydride
19. Silver	52	50	96	52	51	98			P
20. Sodium	8200	7940	97	8200	7930	97			P
21. Thallium	25.2	26.6	106	63	64.2	102			F
22. Tin	-	-	-	-	-	-			
23. Vanadium	846	1150	135	846	1000	118			F
24. Zinc	418	400	97						P
Other:									
Other:									

1. Initial Calibration Source EPA Checks 2. Continuing Calibration Source EPA Checks

3. Control Limits: Mercury and Tin 80-120; All other compounds 90-110

4. Indicate Analytical Method Used: P - ICP/Flame AA, F - Furnace

**general testing
corporation**

710 Exchange Street
Rochester, NY 14608

FORM III

Q.C. Report No. 1

BLANKS

Lab Name General Testing Corporation Job No. 61024

Date _____ Units ug/l

Matrix Water

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value				Preparation Blank	
		1	2	3	4	1	2
Metals:							
1. Aluminum	<100	<100				<100	
2. Antimony	<10	<10				<10	
3. Arsenic	<2	<2				<2	
4. Barium	<100	<100				<100	
5. Beryllium	<5	<5				<5	
6. Cadmium	<5	<5				<5	
7. Calcium	<500	<500				<500	
8. Chromium	<5	<5				<5	
9. Cobalt	<50	<50				<50	
10. Copper	<20	<20				<20	
11. Iron	<50	<50				<50	
12. Lead	<5	<5				<5	
13. Magnesium	<250	<250				<250	
14. Manganese	<10	<10				<10	
15. Mercury	<0.2	<0.2				<0.2	
16. Nickel	<40	<40				<40	
17. Potassium	<250	<250				<250	
18. Selenium	<4	<4				<4	
19. Silver	<10	<10				<10	
20. Sodium	<100	<100				<100	
21. Thallium	<10	<10				<10	
22. Tin	<10	<10				<10	
23. Vanadium	<50	<50				<50	
Other: Zinc	<10	<10				<10	
Cyanide	<10	<10				<10	

**general testing
corporation**

g_t 710 Exchange Street
C Rochester, NY 14608

FLAME AA

FORM V

Q.C. Report No. 1

SPIKE SAMPLE RECOVERY

Lab Name General Testing Corporation

Job No. 61024

Lab Sample ID No. A

Date _____

Units ug/l

Matrix Water

Compound	Control Limit % R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	% R ¹
Metals:					
1. Aluminum	75-125				
2. Antimony	"				
3. Arsenic	"	13.0	2.16	10.0	108
4. Barium	"	570	<100	500	114
5. Beryllium	"				
6. Cadmium	"	42	<5	50	84
7. Calcium	"	57.9	50.8	12.5	"A"
8. Chromium	"				
9. Cobalt	"	222	<50	250	89
10. Copper	"	100	<20	100	100
11. Iron	"	387	176	250	84
12. Lead	"				
13. Magnesium	"	20,200	14,800	6250	86
14. Manganese	"	190	147	50	86
15. Mercury	"	2.0	<0.2	2.0	100
16. Nickel	"	212	<40	250	85
17. Potassium	"	9790	3580	6250	99
18. Selenium	"	12.0	<4	10	120
19. Silver	"	50	<10	50	100
20. Sodium	"	26.2	27.4	2.50	"A"
21. Thallium	"				
22. Tin	"	71	24	50	94
23. Vanadium	"				
24. Zinc	"	659	843	50	"A"
Other:					
Cyanide	"	49	<10	80	62.5 "R"

¹ %R = [(SSR - SR) / SA] x 100

"A" = Sample > 4 x spiking level

"R" - Out of control

**general testing
corporation**

g t 710 Exchange Street
C Rochester, NY 14608

FLAME AA

FORM V

Q.C. Report No. 1

SPIKE SAMPLE RECOVERY

Lab Name General Testing Corporation

Job No. 61024

Lab Sample ID No. 6

Date _____

Units ug/L

Matrix Water

Compound	Control Limit % R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	% R ¹
Metals:					
1. Aluminum	75-125	530	<100	500	106
2. Antimony	"				
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"				
6. Cadmium	"				
7. Calcium	"				
8. Chromium	"				
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"				
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"				
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"				
22. Tin	"				
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

¹ %R = [(SSR - SR) / SA] x 100

"R"-Out of control

710 Exchange Street
Rochester, NY 14608

FORM V

Q.C. Report No. 1

SPIKE SAMPLE RECOVERY

Lab Name General Testing Corporation

Job No. 61024

Lab Sample ID No. C

Date _____

Units ug/L

Matrix Water

Compound	Control Limit % R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	% R ¹
Metals:					
1. Aluminum	75-125				
2. Antimony	"				
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"	47	<5	50	94
6. Cadmium	"				
7. Calcium	"				
8. Chromium	"				
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"				
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"				
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"				
22. Tin	"				
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

¹ %R = [(SSR - SR)/SA] x 100

"R"-Out of control

710 Exchange Street
Rochester, NY 14608

FORM V

Q.C. Report No. 1

SPIKE SAMPLE RECOVERY

Lab Name General Testing Corporation

Job No. 61024

Lab Sample ID No. A

Date _____

Units ug/l

Matrix Water

Compound	Control Limit % R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	% R ¹
Metals:					
1. Aluminum	75-125				
2. Antimony	"				
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"				
6. Cadmium	"				
7. Calcium	"				
8. Chromium	"	18.2	<5	20	91
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"	28.0	16.2	10	118
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"				
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"	21	<10	20	105
22. Tin	"				
23. Vanadium	"	122	<50	100	122
24. Zinc	"				
Other:					
Cyanide	"				

¹ %R = [(SSR - SR) / SA] x 100

"R"-out of control

gt
C 710 Exchange Street
Rochester, NY 14608

FORM V

Q.C. Report No. 1

SPIKE SAMPLE RECOVERY

Lab Name General Testing Corporation

Job No. 61024

Lab Sample ID No. E

Date _____

Units ug/l

Matrix Water

Compound	Control Limit % R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	% R ¹
Metals:					
1. Aluminum	75-125				
2. Antimony	"	49.6	<10	50	99
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"				
6. Cadmium	"				
7. Calcium	"				
8. Chromium	"				
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"				
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"				
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"				
22. Tin	"				
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

¹ %R = [(SSR - SR) / SA] x 100

"R"-Out of control

**general testing
corporation**

710 Exchange Street

FORM VI

C Rochester, NY 14608 Q.C. Report No. 1

DUPLICATES

Lab Name General Testing Corporation

Job No. 61024

Lab Sample ID No. A

Date _____

Units ug/l

Matrix Water

Compound	Control Limit ¹	Sample (S)	Duplicate (D)	RPD ²
Metals:				
1. Aluminum				
2. Antimony				
3. Arsenic	±2.0 ug/l	2.12	2.20	3.7 ug/l
4. Barium	±100 ug/l	<100	<100	NC
5. Beryllium				
6. Cadmium	±5 ug/l	<5	<5	NC
7. Calcium	20%	50,500	51,000	0.99%
8. Chromium				
9. Cobalt	±50 ug/l	<50	<50	NC
10. Copper	±20 ug/l	<20	<20	NC
11. Iron	±50 ug/l	166	187	21 ug/l
12. Lead				
13. Magnesium	20%	15,300	14,400	6.1%
14. Manganese	20%	145	149	2.7%
15. Mercury	±0.2 ug/l	<0.2	<0.2	NC
16. Nickel	±40 ug/l	<40	<40	NC
17. Potassium	20%	3600	3500	1.4%
18. Selenium	±4 ug/l	<4	<4	NC
19. Silver	±10 ug/l	<10	<10	NC
20. Sodium	20%	27,800	26,900	3.3%
21. Thallium				
22. Tin	±10 ug/l	24	23	1 ug/l
23. Vanadium				
24. Zinc	20%	763	923	19%
Other:				
Cyanide	±10 ug/l	<10	33	NC

* Out of Control

¹ To be added at a later date.

² RPD = $[|S-D| / ((S+D)/2)] \times 100$

NC - Non calculable RPD due to value(s) less than CRDL

**general testing
corporation**

g t 710 Exchange Street
C Rochesler, NY 14608

FORM VI

Q.C. Report No. 1

DUPLICATES

Lab Name General Testing Corporation

Job No. 61024

Lab Sample ID No. G

Date _____

Units ug/l

Matrix Water

Compound	Control Limit ¹	Sample(S)	Duplicate(D)	RPD ²
Metals:				
1. Aluminum	±100 ug/l	<100	<100	NC
2. Antimony				
3. Arsenic				
4. Barium				
5. Beryllium				
6. Cadmium				
7. Calcium				
8. Chromium				
9. Cobalt				
10. Copper				
11. Iron				
12. Lead				
13. Magnesium				
14. Manganese				
15. Mercury				
16. Nickel				
17. Potassium				
18. Selenium				
19. Silver				
20. Sodium				
21. Thallium				
22. Tin				
23. Vanadium				
24. Zinc				
Other:				
Cyanide				

* Out of Control

¹ To be added at a later date.

² RPD = $[|S-D| / ((S+D)/2)] \times 100$

NC - Non calculable RPD due to value(s) less than CRDL

**general testing
corporation**

gt 710 Exchange Street
C Rochester, NY 14608 Q.C. Report No. 1

FORM VI

DUPLICATES

Lab Name General Testing Corporation Job No. 61024
Lab Sample ID No. E
Date _____ Units ug/l
Matrix Water

Compound	Control Limit ¹	Sample (S)	Duplicate (D)	RPD ²
Metals:				
1. Aluminum				
2. Antimony	±10 ug/l	<10	<10	NC
3. Arsenic				
4. Barium				
5. Beryllium				
6. Cadmium				
7. Calcium				
8. Chromium				
9. Cobalt				
10. Copper				
11. Iron				
12. Lead				
13. Magnesium				
14. Manganese				
15. Mercury				
16. Nickel				
17. Potassium				
18. Selenium				
19. Silver				
20. Sodium				
21. Thallium				
22. Tin				
23. Vanadium				
24. Zinc				
Mer:				
Cyanide				

* Out of Control
¹ To be added at a later date. ² RPD = $\frac{|(S-D)|}{((S+D)/2)} \times 100$
 NC - Non calculable RPD due to value(s) less than CRCL

**general testing
corporation**

g f 710 Exchange Street
C Rochester, NY 14608 Q.C. Report No. 1

FORM VI

DUPLICATES

Lab Name General Testing Corporation

Job No. 61024

Lab Sample ID No. C

Date _____

Units ug/l

Matrix Water

Compound	Control Limit ¹	Sample(S)	Duplicate(D)	RPD ²
Metals:				
1. Aluminum				
2. Antimony				
3. Arsenic				
4. Barium				
5. Beryllium	±5 ug/l	<5	<5	NC
6. Cadmium				
7. Calcium				
8. Chromium				
9. Cobalt				
10. Copper				
11. Iron				
12. Lead				
13. Magnesium				
14. Manganese				
15. Mercury				
16. Nickel				
17. Potassium				
18. Selenium				
19. Silver				
20. Sodium				
21. Thallium				
22. Tin				
23. Vanadium				
24. Zinc				
Other:				
Cyanide				

* Out of Control

¹ To be added at a later date.

² RPD = $[|s-d| / ((s+d)/2)] \times 100$

NC - Non calculable RPD due to value(s) less than CRDL

**general testing
corporation**

FURNACE

9 t 710 Exchange Street
C Rochester, NY 14608

FORM VI

Q.C. Report No. 1

DUPLICATES

Lab Name General Testing Corporation

Job No. 61024

Lab Sample ID No. A

Date _____

Units ug/l

Matrix Water

Compound	Control Limit ¹	Sample(S)	Duplicate(D)	RPD ²
Metals:				
1. Aluminum				
2. Antimony				
3. Arsenic				
4. Barium				
5. Beryllium				
6. Cadmium				
7. Calcium				
8. Chromium	±5 ug/l	<5	<5	NC
9. Cobalt				
10. Copper				
11. Iron				
12. Lead	±5 ug/l	15.3	17.1	1.8 ug/l
13. Magnesium				
14. Manganese				
15. Mercury				
16. Nickel				
17. Potassium				
18. Selenium				
19. Silver				
20. Sodium				
21. Thallium	±10 ug/l	<10	<10	NC
22. Tin	±50 ug/l	<50	<50	NC
23. Vanadium				
24. Zinc				
Other:				
Cyanide				

* Out of Control

¹ To be added at a later date.

² RPD = $[|S-D| / ((S+D)/2)] \times 100$

NC - Non calculable RPD due to value(s) less than CRDL

*general testing
corporation*

710 Exchange Street
Rochester, NY 14608

FORM VII

Q.C. Report No. 1

INSTRUMENT DETECTION LIMITS AND
LABORATORY CONTROL SAMPLE

Lab Name General Testing Corporation

Job No. 61024

Date _____

LCS Units (ug/l) mg/kg
(circle one)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Blank Spike Lab Control Sample		
		ICP/AA	Furnace	True	Found	%R
Metals:						
1. Aluminum	200	100		500	480	96
2. Antimony	60	10		50	47.6	95
3. Arsenic	10	2		10.0	9.98	100
4. Barium	200	100		500	460	92
5. Beryllium	5	5		50	44	88
6. Cadmium	5	5		50	44	88
7. Calcium	5000	500		2500	2170	87
8. Chromium	10		5	250	236	94
9. Cobalt	50	50		250	225	90
10. Copper	25	20		100	92	93
11. Iron	100	50		250	279	112
12. Lead	5		5	10.0	12.5	125
13. Magnesium	5000	250		1250	1200	96
14. Manganese	15	10		50	55	110
15. Mercury	0.2	0.2		2.0	2.0	100
16. Nickel	40	40		250	227	89
17. Potassium	5000	250		1250	1320	106
18. Selenium	5	4		10	8.16	82
19. Silver	10	10		50	50	100
20. Sodium	5000	100		500	570	114
21. Thallium	10	10		20	19.5	98
22. Tin	40	10		50	50	100
23. Vanadium	50		50	1250	1210	97
24. Zinc	20	10		50	42	84
Other:						
Cyanide	10			80	82	103

g t 710 Exchange Street
C Rochester, NY 14608

Form IX (Quarterly)
Instrument Detection Limits

Laboratory Name General Testing Corporation

ICP/~~Flame~~ AA (Circle One)

Model Number IL 751 (A)

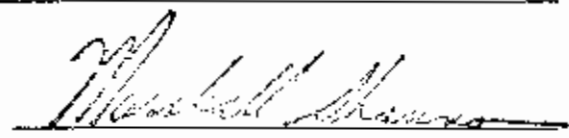
Date _____

Furnace AA Number _____

Element	Wavelength (nm)	CDL (ug/l)	IDL (ug/l)	Element	Wavelength (nm)	CDL (ug/l)	IDL (ug/l)
1. Aluminum	309.3	200 P		13. Magnesium	285.2	5000 P	
2. Antimony	217.6 (B)	60 P		14. Manganese	279.5	15 P	
3. Arsenic		10		14. Mercury		0.2	
4. Barium	553.5	200 P		16. Nickel		40	
5. Beryllium		5		17. Potassium	766.5	5000 P	
6. Cadmium		5		18. Selenium		5	
7. Calcium	422.7	5000 P		19. Silver	328.1	10 P	
8. Chromium		10		20. Sodium	589.0	5000 P	
9. Cobalt	240.7 (B)	50 P		21. Thallium	276.8	10 P	
10. Copper		25		22. Tin		40	
11. Iron		100		23. Vanadium	318.5	50 P	
12. Lead		5		24. Zinc		20	

- Footnotes:
- Indicate the instrument for which the IDL applies with a P (for ICP/Flame AA) or a F (for Furnace AA) behind the IDL value.
 - Indicate elements commonly run with background correction (AA) with a B behind the analytical wavelength.
 - If more than one ICP/Flame or Furnace AA is used, submit separate Forms IX-XI for each instrument.

Comments: _____



Lab Manager

**general testing
corporation**

g
t
c 710 Exchange Street
Rochester, NY 14608

Form IX (Quarterly)
Instrument Detection Limits

Laboratory Name General Testing Corporation

ICP/Flame AA (Circle One)

Model Number Varian 975

Date _____

Furnace AA Number _____

Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)	Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)
1. Aluminum		200		13. Magnesium		5000	
2. Antimony		60		14. Manganese		15	
3. Arsenic		10		14. Mercury		0.2	
4. Barium		200		16. Nickel	232.0 (B)	40 P	40
5. Beryllium	234.9 (B)	5 P	5	17. Potassium		5000	
6. Cadmium	228.8 (B)	5 P	5	18. Selenium		5	
7. Calcium		5000		19. Silver		10	
8. Chromium	357.9	10 P	50	20. Sodium		5000	
9. Cobalt		50		21. Thallium		10	
10. Copper	324.7	25 P	20	22. Tin		40	
11. Iron	248.3	100 P	50	23. Vanadium		50	
12. Lead	217.0 (B)	5 P	50	24. Zinc	213.9 (B)	20 P	10

- Footnotes:
- Indicate the instrument for which the IDL applies with a P (for ICP/Flame AA) or a F (for Furnace AA) behind the IDL value.
 - Indicate elements commonly run with background correction (AA) with a B behind the analytical wavelength.
 - If more than one ICP/Flame or Furnace AA is used, submit separate Forms IX-XI for each instrument.

Comments: _____

Michael M...

Lab Manager

**general testing
corporation**

10/1

g
t
C 710 Exchange Street
Rochester, NY 14608

Form IX (Quarterly)
Instrument Detection Limits

Laboratory Name General Testing Corporation

ICP/Flame AA (Circle One)

Model Number IL 751 (B)

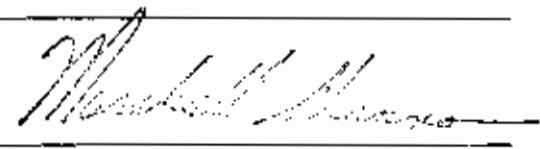
Date _____

Hydride Generator VGA 76

Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)	Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)
1. Aluminum		200		13. Magnesium		5000	
2. Antimony	217.6	Hydride 60	5	14. Manganese		15	
3. Arsenic	193.7	Hydride 10	1	15. Mercury	253.7	Cold Vapor 0.2	0.2
4. Barium		200		16. Nickel		40	
5. Beryllium		5		17. Potassium		5000	
6. Cadmium		5		18. Selenium	196.0	Hydride 5	1
7. Calcium		5000		19. Silver		10	
8. Chromium		10		20. Sodium		5000	
9. Cobalt		50		21. Thallium		10	
10. Copper		25		22. Tin	235.5	Hydride 40	10
11. Iron		100		23. Vanadium		50	
12. Lead		5		24. Zinc		20	

- Footnotes:
- Indicate the instrument for which the IDL applies with a P (for ICP/Flame AA) or a F (for Furnace AA) behind the IDL value.
 - Indicate elements commonly run with background correction (AA) with a B behind the analytical wavelength.
 - If more than one ICP/Flame or Furnace AA is used, submit separate Forms IX-XI for each instrument.

Comments: _____



Lab Manager

**general testing
corporation**

223

9
t
C 710 Exchange Street
Rochester, NY 14608

Form IX (Quarterly)
Instrument Detection Limits

Laboratory Name General Testing Corporation

ICP/Flame AA (Circle One)

Model Number Varian 975

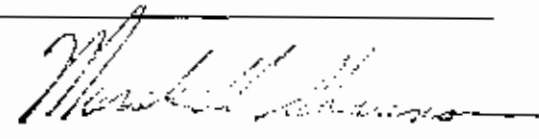
Date _____

Furnace AA Number GTA 95

Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)	Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)
1. Aluminum		200		13. Magnesium		5000	
2. Antimony		60		14. Manganese		15	
3. Arsenic		10		14. Mercury		0.2	
4. Barium		200		16. Nickel		40	
5. Beryllium		5		17. Potassium		5000	
6. Cadmium		5		18. Selenium		5	
7. Calcium		5000		19. Silver		10	
8. Chromium	357.9	10 F	10	20. Sodium		5000	
9. Cobalt		50		21. Thallium	276.8	10 F	10
10. Copper		25		22. Tin		40	
11. Iron		100		23. Vanadium	318.5	50 F	50
12. Lead	283.3	5 F	5	24. Zinc		20	

- Footnotes:
- Indicate the instrument for which the IDL applies with a P (for ICP/Flame AA) or a F (for Furnace AA) behind the IDL value.
 - Indicate elements commonly run with background correction (AA) with a B behind the analytical wavelength.
 - If more than one ICP/Flame or Furnace AA is used, submit separate Forms IX-XI for each instrument.

Comments: _____



Lab Manager

SECTION D

Analytical Data for CLP
Parameters on Sediments

SECTION D

Presented in this section is analytical data covering the analysis of eight sediments for all Inorganic CLP parameters. Arsenic, Selenium and Antimony were performed via Hydride Generation techniques. Mercury was performed via a Cold Vapor AA technique. All other metals were performed via Flame AA Techniques. Cyanide was analyzed via EPA Method #9010 which can be found in SW846.

Sample No. PAS-US-WNC-2A

Date: _____

91
710 Exchange Street

100
Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: _____

LAB SAMPLE ID NUMBER: A

QC REPORT NUMBER: 2

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil _____ Sludge _____ Other X

ug/l or (mg/kg dry weight) (circle one)

1. Aluminum	14,000	14. Magnesium	4600
2. Antimony	1.5 u	15. Manganese	340 *
3. Arsenic	7.1	16. Mercury	0.074 *
4. Barium	110	17. Nickel	10 *
5. Beryllium	1.5 u	18. Potassium	1400
6. Cadmium	1.5 u	19. Selenium	0.60
7. Calcium	2600	20. Silver	1.5 u
8. Chromium	28	21. Sodium	120
9. Cobalt	14	22. Thallium	39 u
10. Copper	26	23. Tin	1.5 u
11. Iron	1300	24. Vanadium	35
12. Lead	29* R	25. Zinc	92
13. Cyanide	0.83 u	26. Percent Solids (%)	65.11

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: Phenol - <0.28

Lab Manager

Marshall

Ass:

Sample No. PAS-US-WC-1A

Date: 8/14/86

gt 710 Exchange Street
C Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: _____

LAB SAMPLE ID NUMBER: B

QC REPORT NUMBER: 2

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil _____ Sludge _____ Other x _____

ug/l or (mg/kg dry weight) (circle one)

1. <u>Aluminum</u>	<u>8400</u>	14. <u>Magnesium</u>	<u>3100</u>
2. <u>Antimony</u>	<u>1.4 u</u>	15. <u>Manganese</u>	<u>200 *</u>
3. <u>Arsenic</u>	<u>4.0</u>	16. <u>Mercury</u>	<u>0.061*</u>
4. <u>Barium</u>	<u>53</u>	17. <u>Nickel</u>	<u>10*</u>
5. <u>Beryllium</u>	<u>1.4 u</u>	18. <u>Potassium</u>	<u>1070</u>
6. <u>Cadmium</u>	<u>1.4 u</u>	19. <u>Selenium</u>	<u>0.3 u</u>
7. <u>Calcium</u>	<u>6200</u>	20. <u>Silver</u>	<u>1.4 u</u>
8. <u>Chromium</u>	<u>21</u>	21. <u>Sodium</u>	<u>180</u>
9. <u>Cobalt</u>	<u>7 u</u>	22. <u>Thallium</u>	<u>36 u</u>
10. <u>Copper</u>	<u>20</u>	23. <u>Tin</u>	<u>1.4 u</u>
11. <u>Iron</u>	<u>1300</u>	24. <u>Vanadium</u>	<u>34</u>
12. <u>Lead</u>	<u>9.7*R</u>	25. <u>Zinc</u>	<u>67</u>
13. <u>Cyanide</u>	<u>0.68 u</u>	26. <u>Percent Solids (%)</u>	<u>70.56</u>

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: Phenol - <0.09

Lab Manager

Marshall

Sample No. PAS-US-WC-1

Date: 8/14/86

g_t 710 Exchange Street
c Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 61025

LAB SAMPLE ID NUMBER: c

QC REPORT NUMBER: 2

Elements Identified and Measured

Concentration: Low Medium

Matrix: Water Soil Sludge Other x

ug/l or mg/kg dry weight (circle one)

1. <u>Aluminum</u>	<u>10,200</u>	14. <u>Magnesium</u>	<u>3800</u>
2. <u>Antimony</u>	<u>1.9 u</u>	15. <u>Manganese</u>	<u>4000 *</u>
3. <u>Arsenic</u>	<u>4.9</u>	16. <u>Mercury</u>	<u>0.08 u *</u>
4. <u>Barium</u>	<u>250</u>	17. <u>Nickel</u>	<u>15 *</u>
5. <u>Beryllium</u>	<u>1.9 u</u>	18. <u>Potassium</u>	<u>1,360</u>
6. <u>Cadmium</u>	<u>1.9 u</u>	19. <u>Selenium</u>	<u>0.4 u</u>
7. <u>Calcium</u>	<u>12,500</u>	20. <u>Silver</u>	<u>1.9 u</u>
8. <u>Chromium</u>	<u>23</u>	21. <u>Sodium</u>	<u>770</u>
9. <u>Cobalt</u>	<u>9.5</u>	22. <u>Thallium</u>	<u>47</u>
10. <u>Copper</u>	<u>23</u>	23. <u>Tin</u>	<u>1.9 u</u>
11. <u>Iron</u>	<u>5700</u>	24. <u>Vanadium</u>	<u>53</u>
12. <u>Lead</u>	<u>9.1*R</u>	25. <u>Zinc</u>	<u>180</u>
13. <u>Cyanide</u>	<u>0.85 u</u>	26. <u>Percent Solids (%)</u>	<u>52.99</u>

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: Phenol - <0.09

Lab Manager Marshall King

Sample No. PAS-US-WNC-2

Date: 8/14/86

710 Exchange Street
Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 61025

LAB SAMPLE ID NUMBER: D

QC REPORT NUMBER: 2

Elements Identified and Measured

Concentration: Low Medium


Matrix: Water Soil Sludge Other x

ug/l or mg/kg dry weight (circle one)

1. <u>Aluminum</u>	<u>13,500</u>	14. <u>Magnesium</u>	<u>8700</u>
2. <u>Antimony</u>	<u>1.2 u</u>	15. <u>Manganese</u>	<u>870 *</u>
3. <u>Arsenic</u>	<u>3.8</u>	16. <u>Mercury</u>	<u>0.50 u *</u>
4. <u>Barium</u>	<u>140</u>	17. <u>Nickel</u>	<u>22 *</u>
5. <u>Beryllium</u>	<u>1.2 u</u>	18. <u>Potassium</u>	<u>1200</u>
6. <u>Cadmium</u>	<u>1.2 u</u>	19. <u>Selenium</u>	<u>0.2 u</u>
7. <u>Calcium</u>	<u>19,700</u>	20. <u>Silver</u>	<u>1.2 u</u>
8. <u>Chromium</u>	<u>26</u>	21. <u>Sodium</u>	<u>170</u>
9. <u>Cobalt</u>	<u>12</u>	22. <u>Thallium</u>	<u>31 u</u>
10. <u>Copper</u>	<u>31</u>	23. <u>Tin</u>	<u>1.2 u</u>
11. <u>Iron</u>	<u>4200</u>	24. <u>Vanadium</u>	<u>37</u>
12. <u>Lead</u>	<u>18 *R</u>	25. <u>Zinc</u>	<u>110</u>
13. <u>Cyanide</u>	<u>0.59 u</u>	26. <u>Percent Solids (%)</u>	<u>81.14</u>

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: Phenol - <0.05

Lab Manager 

Sample No. PAS-DS-WNC-4

Date: 8/14/86

710 Exchange Street
Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 61025

LAB SAMPLE ID NUMBER: E

QC REPORT NUMBER: _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil _____ Sludge _____ Other x

ug/l or mg/kg dry weight (circle one)

1. Aluminum	7100	14. Magnesium	1900
2. Antimony	1.6 u	15. Manganese	120 *
3. Arsenic	4.1	16. Mercury	0.06 u *
4. Barium	63	17. Nickel	7.5 *
5. Beryllium	1.2 u	18. Potassium	960
6. Cadmium	1.2 u	19. Selenium	0.3 u
7. Calcium	2400	20. Silver	1.6 u
8. Chromium	8 u	21. Sodium	280
9. Cobalt	8 u	22. Thallium	41 u
10. Copper	8.6	23. Tin	1.6 u
11. Iron	700	24. Vanadium	41 u
12. Lead	8 u *R	25. Zinc	34
13. Cyanide	0.75 u	26. Percent Solids (%)	61.90

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: Phenol - <0.08

Lab Manager

Asst

Sample No. PAS-OS-WC-3

710 Exchange Street

Rochester, NY 14608

Date: 8/14/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 61025

LAB SAMPLE ID NUMBER: F

QC REPORT NUMBER: 2

Elements Identified and Measured

Concentration: Low Medium

Matrix: Water Soil Sludge Other x

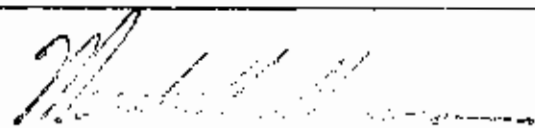
ug/l or mg/kg dry weight (circle one)

1. <u>Aluminum</u>	<u>15,000</u>	14. <u>Magnesium</u>	<u>4500</u>
2. <u>Antimony</u>	<u>1.5 u</u>	15. <u>Manganese</u>	<u>730 *</u>
3. <u>Arsenic</u>	<u>4.0</u>	16. <u>Mercury</u>	<u>0.088*</u>
4. <u>Barium</u>	<u>150</u>	17. <u>Nickel</u>	<u>16 *</u>
5. <u>Beryllium</u>	<u>1.5 u</u>	18. <u>Potassium</u>	<u>1500</u>
6. <u>Cadmium</u>	<u>1.5 u</u>	19. <u>Selenium</u>	<u>0.3 u</u>
7. <u>Calcium</u>	<u>3400</u>	20. <u>Silver</u>	<u>1.5 u</u>
8. <u>Chromium</u>	<u>30</u>	21. <u>Sodium</u>	<u>350</u>
9. <u>Cobalt</u>	<u>14</u>	22. <u>Thallium</u>	<u>48 u</u>
10. <u>Copper</u>	<u>24</u>	23. <u>Tin</u>	<u>1.5 u</u>
11. <u>Iron</u>	<u>3900</u>	24. <u>Vanadium</u>	<u>45 u</u>
12. <u>Lead</u>	<u>45 *R</u>	25. <u>Zinc</u>	<u>140</u>
13. <u>Cyanide</u>	<u>0.62 u</u>	26. <u>Percent Solids (%)</u>	<u>67.04</u>

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: Phenol - 0.23

Lab Manager



Sample No. PAS-DS-WNC-6

710 Exchange Street

Rochester, NY 14608

Date: 8/14/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 61025

LAB SAMPLE ID NUMBER: G

QC REPORT NUMBER: 2

Elements Identified and Measured

Concentration: Low Medium

Matrix: Water Soil Sludge Other x

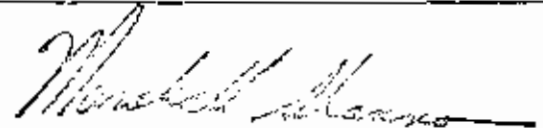
ug/l or (mg/kg dry weight) (circle one)

1. <u>Aluminum</u>	<u>19,000</u>	14. <u>Magnesium</u>	<u>4900</u>
2. <u>Antimony</u>	<u>2.1 u</u>	15. <u>Manganese</u>	<u>1400 *</u>
3. <u>Arsenic</u>	<u>8.9</u>	16. <u>Mercury</u>	<u>0.17 *</u>
4. <u>Barium</u>	<u>210</u>	17. <u>Nickel</u>	<u>30 *</u>
5. <u>Beryllium</u>	<u>2.1 u</u>	18. <u>Potassium</u>	<u>2300</u>
6. <u>Cadmium</u>	<u>2.1 u</u>	19. <u>Selenium</u>	<u>0.72</u>
7. <u>Calcium</u>	<u>5500</u>	20. <u>Silver</u>	<u>2.1 u</u>
8. <u>Chromium</u>	<u>30</u>	21. <u>Sodium</u>	<u>320</u>
9. <u>Cobalt</u>	<u>11 u</u>	22. <u>Thallium</u>	<u>53 u</u>
10. <u>Copper</u>	<u>47</u>	23. <u>Tin</u>	<u>2.1 u</u>
11. <u>Iron</u>	<u>2300</u>	24. <u>Vanadium</u>	<u>75 u</u>
12. <u>Lead</u>	<u>64 *R</u>	25. <u>Zinc</u>	<u>180</u>
13. <u>Cyanide</u>	<u>1.1 u</u>	26. <u>Percent Solids (8)</u>	<u>47.03</u>

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: Phenol - 0.26

Lab Manager



Assl

Sample No. PAS-MP-7

Date: 8/14/86

9
710 Exchange Street
C Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation JOB NUMBER: 61025
LAB SAMPLE ID NUMBER: H QC REPORT NUMBER: 2

Elements Identified and Measured

Concentration: Low Medium

Matrix: Water Soil Sludge Other x

ug/l or mg/kg dry weight (circle one)

1. <u>Aluminum</u>	<u>11,000</u>	14. <u>Magnesium</u>	<u>2800</u>
2. <u>Antimony</u>	<u>2.8 u</u>	15. <u>Manganese</u>	<u>1900 *</u>
3. <u>Arsenic</u>	<u>4.8</u>	16. <u>Mercury</u>	<u>0.11 u*</u>
4. <u>Barium</u>	<u>93</u>	17. <u>Nickel</u>	<u>14 u *</u>
5. <u>Beryllium</u>	<u>2.8 u</u>	18. <u>Potassium</u>	<u>1800</u>
6. <u>Cadmium</u>	<u>2.8 u</u>	19. <u>Selenium</u>	<u>0.6 u</u>
7. <u>Calcium</u>	<u>7600</u>	20. <u>Silver</u>	<u>2.8 u</u>
8. <u>Chromium</u>	<u>28</u>	21. <u>Sodium</u>	<u>480</u>
9. <u>Cobalt</u>	<u>14</u>	22. <u>Thallium</u>	<u>71 u</u>
10. <u>Copper</u>	<u>140</u>	23. <u>Tin</u>	<u>2.8 u</u>
11. <u>Iron</u>	<u>2100</u>	24. <u>Vanadium</u>	<u>71 u</u>
12. <u>Lead</u>	<u>56 *R</u>	25. <u>Zinc</u>	<u>110</u>
13. <u>Cyanide</u>	<u>1.4 u</u>	26. <u>Percent Solids (%)</u>	<u>35.40</u>

Footnotes: Standard result qualifiers are used as defined on Cover Page.

COMMENTS: Phenol - 0.17

Lab Manager _____

SECTION E

Quality Control for CLP
Parameters on Sediments

SECTION E

Presented in this section is Quality Control for the inorganic parameters covered in Section D of this report. Spiked recoveries for Aluminum, Iron, Magnesium, Manganese and Zinc cannot be calculated due to sample values greater than 4 x the amount added to the sample. All remaining spiked recoveries were within control limits. Duplicate analyses for Lead, Manganese, Mercury and Nickel were found to be out of control and have been flagged with an *. All remaining duplicates were within control limits. No EPA samples are available as calibration checks for Tin and as such none have been reported.

**general testing
corporation**

91 C 710 Exchange Street
Rochester, NY 14608

FORM II

Q.C. Report No. 2

INITIAL AND CONTINUING CALIBRATION VERIFICATION³

Lab Name General Testing Corporation

Job No. 61025

Date _____

Units ug/l

Compound	Initial Calib. ¹			Continuing Calib. ²					Method ⁴
	True Value	Found	% R	True Value	Found	% R	Found	% R	
Metals:									
1. Aluminum	730	700	96	730	710	97			P
2. Antimony	98	104	106	98	110	112			Hydride
3. Arsenic	235	218	93	235	229	97			Hydride
4. Barium	734	940	101	10,000	1010	101	9820	98	P
5. Beryllium	235	227	97	235	242	103			P
6. Cadmium	39	36	92	20	20	100			P
7. Calcium	40,600	43,600	107	40,600	42,100	104			P
8. Chromium	261	270	103	86	83	90			P
9. Cobalt	261	260	103						P
10. Copper	339	322	98	18	16	89			P
11. Iron	796	781	98	796	794	100			P
12. Lead	435	456	105	435	437	100			P
13. Magnesium	8400	7960	95	1800	1680	93			P
14. Manganese	26	25	96	348	329	95			P
15. Mercury	4.4	3.7	84	6.8	7.8	89			Cold Vapor
16. Nickel	207	239	115	207	197	95			P
17. Potassium	9800	10,400	106	2100	2270	108			P
18. Selenium	4.0	4.0	100	50.2	48.0	96			Hydride
19. Silver	52	56	108	52	55	106			P
20. Sodium	8200	8050	98	1500	1670	111			P
21. Thallium	500	510	102	500	530	106			P
22. Tin	-	-	-	-	-	-			P
23. Vanadium	846	880	104	258	270	105			P
24. Zinc	20	20	100	418	396	95			P
Other:									
C: nide									

1. Initial Calibration Source EPA Checks 2. Continuing Calibration Source EPA Checks

3. Control Limits: Mercury and Tin 80-120; All other compounds 90-110

4. Indicate Analytical Method Used: P - ICP/Flame AA, F - Furnace

**general testing
corporation**

g_t 710 Exchange Street
C Rochester, NY 14608

FORM III

Q.C. Report No. 2

BLANKS

Lab Name General Testing Corporation

Job No. 61025

Date _____

Units ug/l

Matrix Water

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration				Preparation Blank		
		Blank Value	1	2	3	4	1	2
Metals:								
1. Aluminum	<100	<100					<100	
2. Antimony	<5	<5					<5	
3. Arsenic	<2	<2					<2	
4. Barium	<100	<100					<100	
5. Beryllium	<10	<10					<10	
6. Cadmium	<10	<10					<10	
7. Calcium	<500	<500					<500	
8. Chromium	<50	<50					<50	
9. Cobalt	<50	<50					<50	
10. Copper	<20	<20					<20	
11. Iron	<50	<50					<50	
12. Lead	<50	<50					<50	
13. Magnesium	<250	<250					<250	
14. Manganese	<10	<10					<10	
15. Mercury	<0.2	<0.2					<0.2	
16. Nickel	<50	<50					<50	
17. Potassium	<250	<250					<250	
18. Selenium	<2	<2					<2	
19. Silver	<10	<10					<10	
20. Sodium	<100	<100					<100	
21. Thallium	<250	<250					<250	
22. Tin	<10	<10					<10	
23. Vanadium	<250	<250					<250	
Other: Zinc	<10	<10					<10	
Cyanide	<10	<10					<10	

**general testing
corporation**

710 Exchange Street
Rochester, NY 14608

FORM V

Q.C. Report No. 2

SPIKE SAMPLE RECOVERY

Lab Name General Testing Corporation

Job No. 61025

Lab Sample ID No. A

Date _____

Units mg/kg wet weight

Matrix Sediment

Compound	Control Limit % R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	% R ¹
Metals:					
1. Aluminum	75-125		9300	5.0	"A"
2. Antimony	"	4.6	<1	4.8	96
3. Arsenic	"	5.54	4.65	0.96	93
4. Barium	"	130	74	50	112
5. Beryllium	"	5.6	<1	4.7	119
6. Cadmium	"	5.1	<1	5.0	102
7. Calcium	"	3000	1700	1250	104
8. Chromium	"	42.3	17.5	24.8	100
9. Cobalt	"	31	9.1	23.6	93
10. Copper	"	28.6	17	9.8	118
11. Iron	"	-	860	25	"A"
12. Lead	"	35	19	24	67 "R"
13. Magnesium	"	3200	3000	625	"A"
14. Manganese	"	-	220	5	"A"
15. Mercury	"	0.356	0.048	0.27	114
16. Nickel	"	31	6.6	24.5	100
17. Potassium	"	1700	925	622	125
18. Selenium	"	1.25	0.39	0.96	90
19. Silver	"	5.10	<1	4.90	104
20. Sodium	"	349	81	249	108
21. Thallium	"	125	<25	118	106
22. Tin	"	5.67	<1	4.98	114
23. Vanadium	"	137	23	124	92
24. Zinc	"	56	60	5	"A"
Other:					
Cyanide	"	1.87	<0.54	2.22	84.2

¹ %R = [(SSR - SR)/SA] x 100

"R"-Out of control

**general testing
corporation**

46

91
C 710 Exchange Street
Rochester, NY 14608

FORM VI

Q.C. Report No. 2

DUPLICATES

Lab Name General Testing Corporation

Job No. 61025

Lab Sample ID No. A

Date _____

Units mg/kg wet weight

Matrix Sediment

Compound	Control Limit ¹	Sample (S)	Duplicate (D)	RPD ²
Metals:				
1. Aluminum	20%	9700	8900	8.6%
2. Antimony	20%	<1	<1	NC
3. Arsenic	20%	4.7	4.6	2.2%
4. Barium	20%	81	68	17%
5. Beryllium	20%	<1	<1	NC
6. Cadmium	20%	<1	<1	NC
7. Calcium	20%	1800	1500	18%
8. Chromium	20%	18	17	5.7%
9. Cobalt	20%	9.0	9.2	2.2%
10. Copper	20%	16	18	12%
11. Iron	20%	810	910	12%
12. Lead	20%	14	24	59*%
13. Magnesium	20%	3200	2800	13%
14. Manganese	20%	240	190	23*%
15. Mercury	20%	0.060	0.037	47*%
16. Nickel	20%	7.5	5.7	27*%
17. Potassium	20%	960	890	7.6%
18. Selenium	20%	0.39	0.39	0%
19. Silver	20%	<1	<1	NC
20. Sodium	20%	87	74	16%
21. Thallium	20%	<25	<25	NC
22. Tin	20%	<1	<1	NC
23. Vanadium	20%	22	24	8.7%
24. Zinc	20%	59	60	1.7%
Other:				
Cyanide	20%	<0.54	<0.54	NC

* Out of Control

¹ To be added at a later date. ² RPD = $[|S-D| / ((S+D)/2)] \times 100$

NC - Non calculable RPD due to value(s) less than CRDL

general testing
corporation

710 Exchange Street

Rochester, NY 14608

FORM VII

Q.C. Report No. 2

INSTRUMENT DETECTION LIMITS AND
LABORATORY CONTROL SAMPLE

Lab Name General Testing Corporation

Job No. 61025

Date _____

LCS Units ug/l mg/kg
(circle one)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Blank Spike Lab Control Sample		
		ICP/AA	Furnace	True	Found	SR
Metals:						
1. Aluminum	200	100		500	550	110
2. Antimony	60	5		50	47.6	95
3. Arsenic	10	2		50	56	112
4. Barium	200	100		500	510	102
5. Beryllium	5	10		50	57	114
6. Cadmium	5	10		50	47	94
7. Calcium	5000	500		2500	2130	85
8. Chromium	10	50		250	250	100
9. Cobalt	50	50		250	237	95
10. Copper	25	20		100	97	97
11. Iron	100	50		250	285	114
12. Lead	5	50		250	200	80
13. Magnesium	5000	250		1250	1270	102
14. Manganese	15	10		50	45	90
15. Mercury	0.2	0.2		2.0	2.0	100
16. Nickel	40	50		250	264	106
17. Potassium	5000	250		1250	1340	107
18. Selenium	5	2		50	56	112
19. Silver	10	10		50	54	108
20. Sodium	5000	100		500	560	112
21. Thallium	10	250		1250	1240	99
22. Tin	40	10		50	53	106
23. Vanadium	50	250		1250	1260	101
24. Zinc	20	10		50	55	110
Other:						
Cyanide	10	10		80.0	82.0	103

710 Exchange Street

Rochester, NY 14608

Form IX (Quarterly)

Instrument Detection Limits

Laboratory Name General Testing Corporation

ICP/Flame AA (Circle One)

Model Number IL 751 (A)

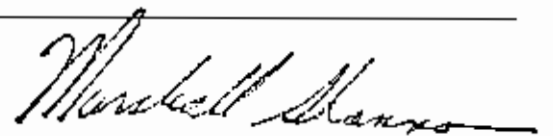
Date _____

Furnace AA Number _____

Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)	Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)
1. Aluminum	309.3	200 P		13. Magnesium	285.2	5000 P	
2. Antimony	217.6 (B)	60 P		14. Manganese	279.5	15 P	
3. Arsenic		10		14. Mercury		0.2	
4. Barium	553.5	200 P		16. Nickel		40	
5. Beryllium		5		17. Potassium	766.5	5000 P	
6. Cadmium		5		18. Selenium		5	
7. Calcium	422.7	5000 P		19. Silver	328.1	10 P	
8. Chromium		10		20. Sodium	589.0	5000 P	
9. Cobalt	240.7 (B)	50 P		21. Thallium	276.8	10 P	
10. Copper		25		22. Tin		40	
11. Iron		100		23. Vanadium	318.5	50 P	
12. Lead		5		24. Zinc		20	

- Footnotes:
- Indicate the instrument for which the IDL applies with a P (for ICP/Flame AA) or a F (for Furnace AA) behind the IDL value.
 - Indicate elements commonly run with background correction (AA) with a B behind the analytical wavelength.
 - If more than one ICP/Flame or Furnace AA is used, submit separate Forms IX-XI for each instrument.

Comments: _____



Lab Manager

**general testing
corporation**

710 Exchange Street
Rochester, NY 14608

Form IX (Quarterly)
Instrument Detection Limits

Laboratory Name General Testing Corporation

ICP/Flame AA (Circle One)

Model Number IL 751 (B)

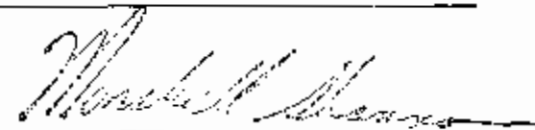
Date _____

Hydride Generator VGA-76

Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)	Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)
1. Aluminum		200		13. Magnesium		5000	
2. Antimony	217.6	Hydride 60	5	14. Manganese		15	
3. Arsenic	193.7	Hydride 10	1	14. Mercury	253.7	Cold Vapor 0.2	0.2
4. Barium		200		16. Nickel		40	
5. Beryllium		5		17. Potassium		5000	
6. Cadmium		5		18. Selenium	196.0	Hydride 5	1
7. Calcium		5000		19. Silver		10	
8. Chromium		10		20. Sodium		5000	
9. Cobalt		50		21. Thallium		10	
10. Copper		25		22. Tin	235.5	Hydride 40	10
11. Iron		100		23. Vanadium		50	
12. Lead		5		24. Zinc		20	

- Footnotes:
- Indicate the instrument for which the IDL applies with a P (for ICP/Flame AA) or a F (for Furnace AA) behind the IDL value.
 - Indicate elements commonly run with background correction (AA) with a B behind the analytical wavelength.
 - If more than one ICP/Flame or Furnace AA is used, submit separate Forms IX-XI for each instrument.

Comments: _____



Lab Manager

**general testing
corporation**

9_t 710 Exchange Street
C Rochester, NY 14608

Form IX (Quarterly)
Instrument Detection Limits

Laboratory Name General Testing Corporation

ICP/Flame AA (Circle One)

Model Number Varian 975

Date _____

Furnace AA Number GTA 95

Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)	Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)
1. Aluminum		200		13. Magnesium		5000	
2. Antimony		60		14. Manganese		15	
3. Arsenic		10		14. Mercury		0.2	
4. Barium		200		16. Nickel		40	
5. Beryllium		5		17. Potassium		5000	
6. Cadmium		5		18. Selenium		5	
7. Calcium		5000		19. Silver		10	
8. Chromium	357.9	10 F	10	20. Sodium		5000	
9. Cobalt		50		21. Thallium	276.8	10 F	10
10. Copper		25		22. Tin		40	
11. Iron		100		23. Vanadium	318.5	50 F	50
12. Lead	283.3	5 F	5	24. Zinc		20	

- Footnotes:
- Indicate the instrument for which the IDL applies with a P (for ICP/Flame AA) or a F (for Furnace AA) behind the IDL value.
 - Indicate elements commonly run with background correction (AA) with a B behind the analytical wavelength.
 - If more than one ICP/Flame or Furnace AA is used, submit separate Forms IX-XI for each instrument.

Comments: _____

Michael M...

Lab Manager

general testing
corporation

9
f
C 710 Exchange Street
Rochester, NY 14608

Form IX (Quarterly)
Instrument Detection Limits

Laboratory Name General Testing Corporation

ICP/Flame AA (Circle One)

Model Number Varian 975

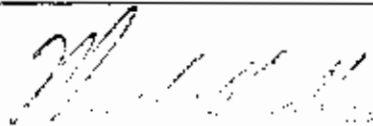
Date _____

Furnace AA Number _____

Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)	Element	Wavelength (nm)	CRDL (ug/l)	IDL (ug/l)
1. Aluminum		200		13. Magnesium		5000	
2. Antimony		60		14. Manganese		15	
3. Arsenic		10		14. Mercury		0.2	
4. Barium		200		16. Nickel	232.0 B	40 P	40
5. Beryllium	234.9 B	5 P	5	17. Potassium		5000	
6. Cadmium	228.8 B	5 P	5	18. Selenium		5	
7. Calcium		5000		19. Silver		10	
8. Chromium	357.9	10 P	50	20. Sodium		5000	
9. Cobalt		50		21. Thallium		10	
10. Copper	324.7	25 P	20	22. Tin		40	
11. Iron	248.3	100 P	50	23. Vanadium		50	
12. Lead	217.0 B	5 P	50	24. Zinc	213.9 B	20 P	10

- Footnotes:
- Indicate the instrument for which the IDL applies with a P (for ICP/Flame AA) or a F (for Furnace AA) behind the IDL value.
 - Indicate elements commonly run with background correction (AA) with a B behind the analytical wavelength.
 - If more than one ICP/Flame or Furnace AA is used, submit separate Forms IX-XI for each instrument.

Comments: _____

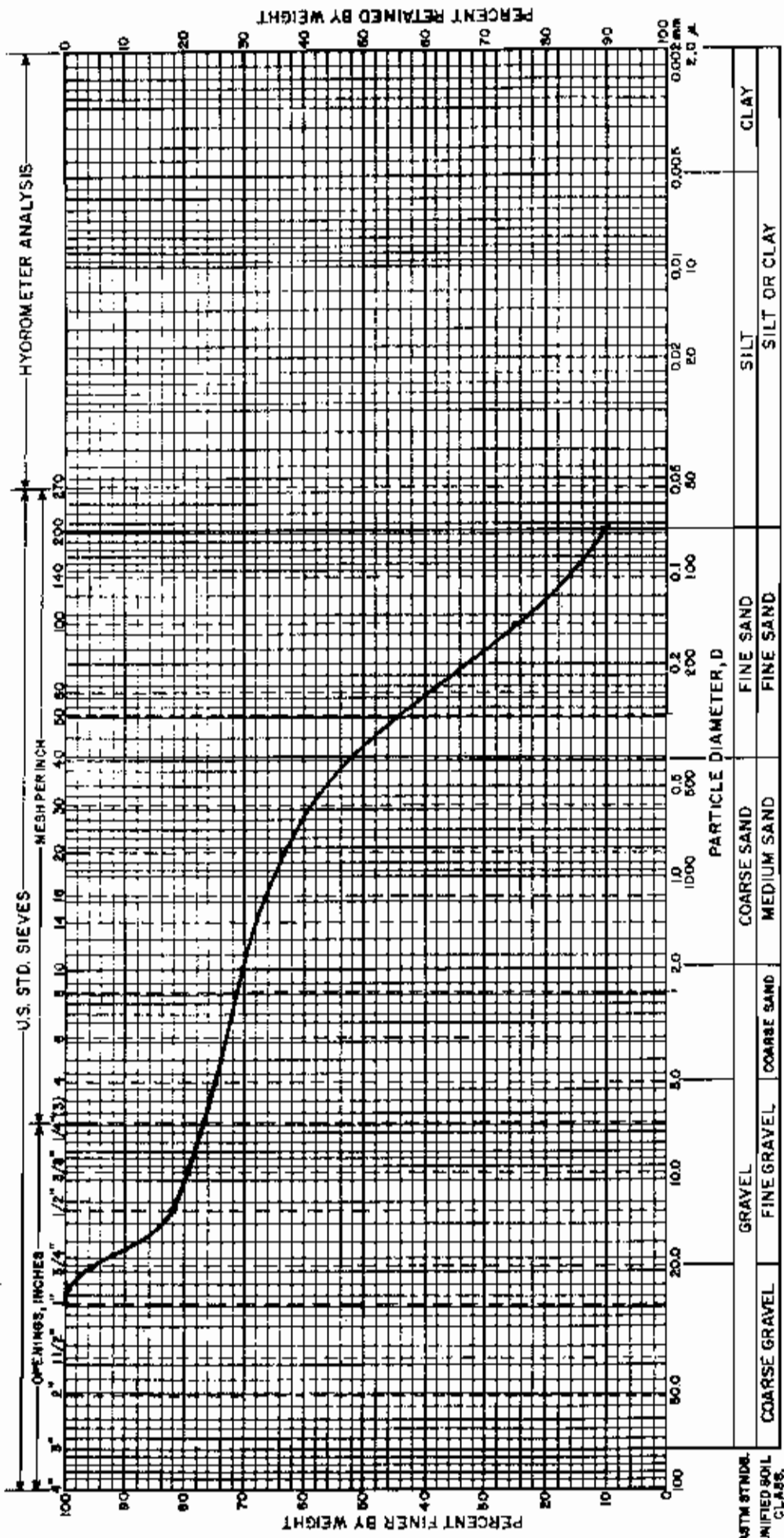


Lab Manager

SECTION F

Grain Size Analysis
on Sediments

GRAIN SIZE DISTRIBUTION CURVE



Report No. 1



MECHANICAL ANALYSIS

U.R.S./Dalton
General Testing Corp.

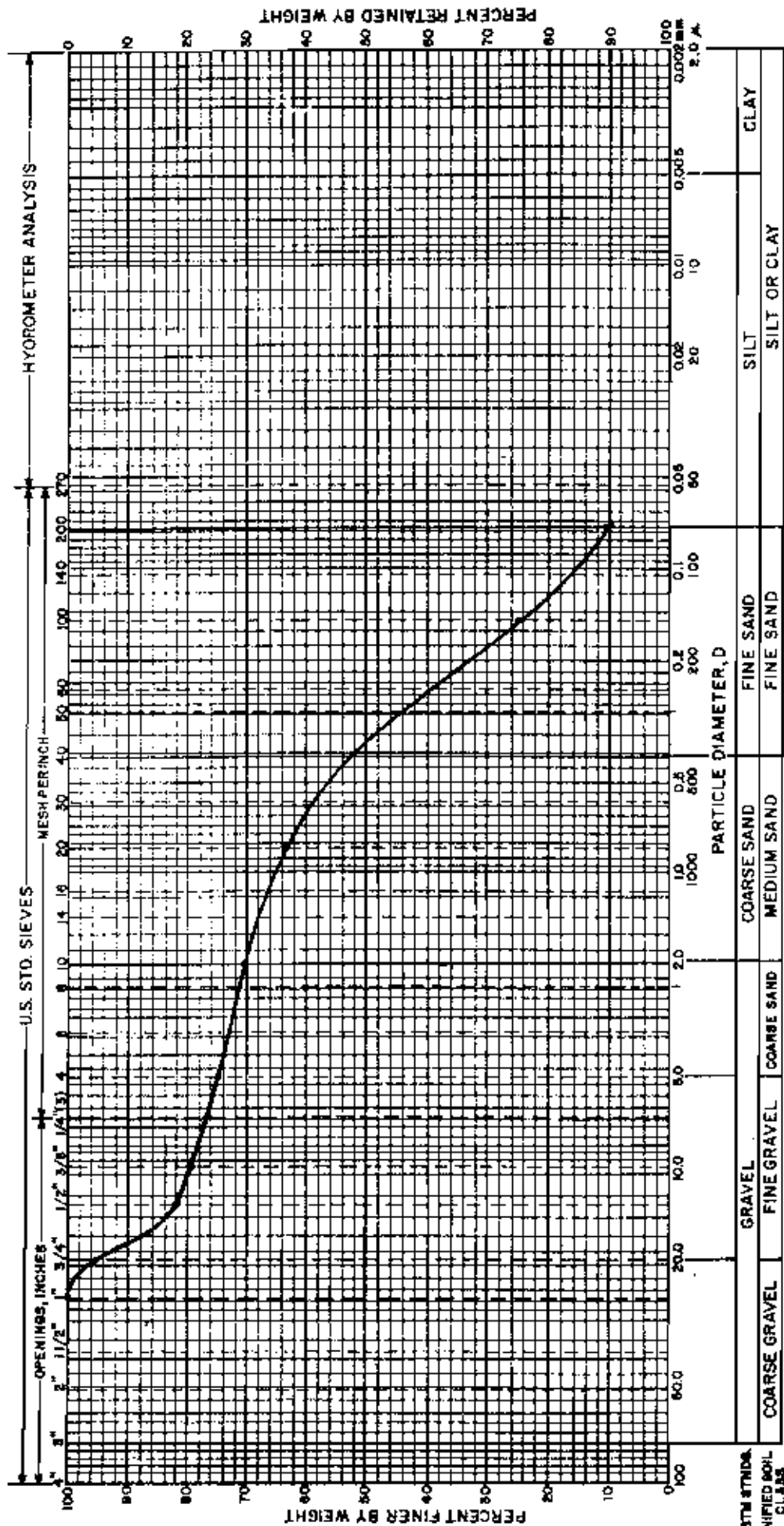
DR. BY (S) CK'D. DATE: 5/20/86 PROJ. NO. RT-86-51

SAMPLE INFORMATION: R6-103 Dark brown organic fine to coarse SAND, some Gravel, trace silt, organic material

- 1" - 100.0 #10 - 70.4 #200 - 10.4
 - 3/4" - 95.6 #20 - 63.9
 - 1/2" - 61.1 #40 - 52.2
 - #4 - 75.3 #100 - 25.1
- Sample A
(washed method)

NOTE: VISUAL SOIL CLASSIFICATIONS ON E.S.I. SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

GRAIN SIZE DISTRIBUTION CURVE



Report No. 1



MECHANICAL ANALYSIS

U.R.S./Dalton
General Testing Corp.

DR. BY: J. CK'D. DATE: 5/20/86 PROJ. NO. RPI-86-51

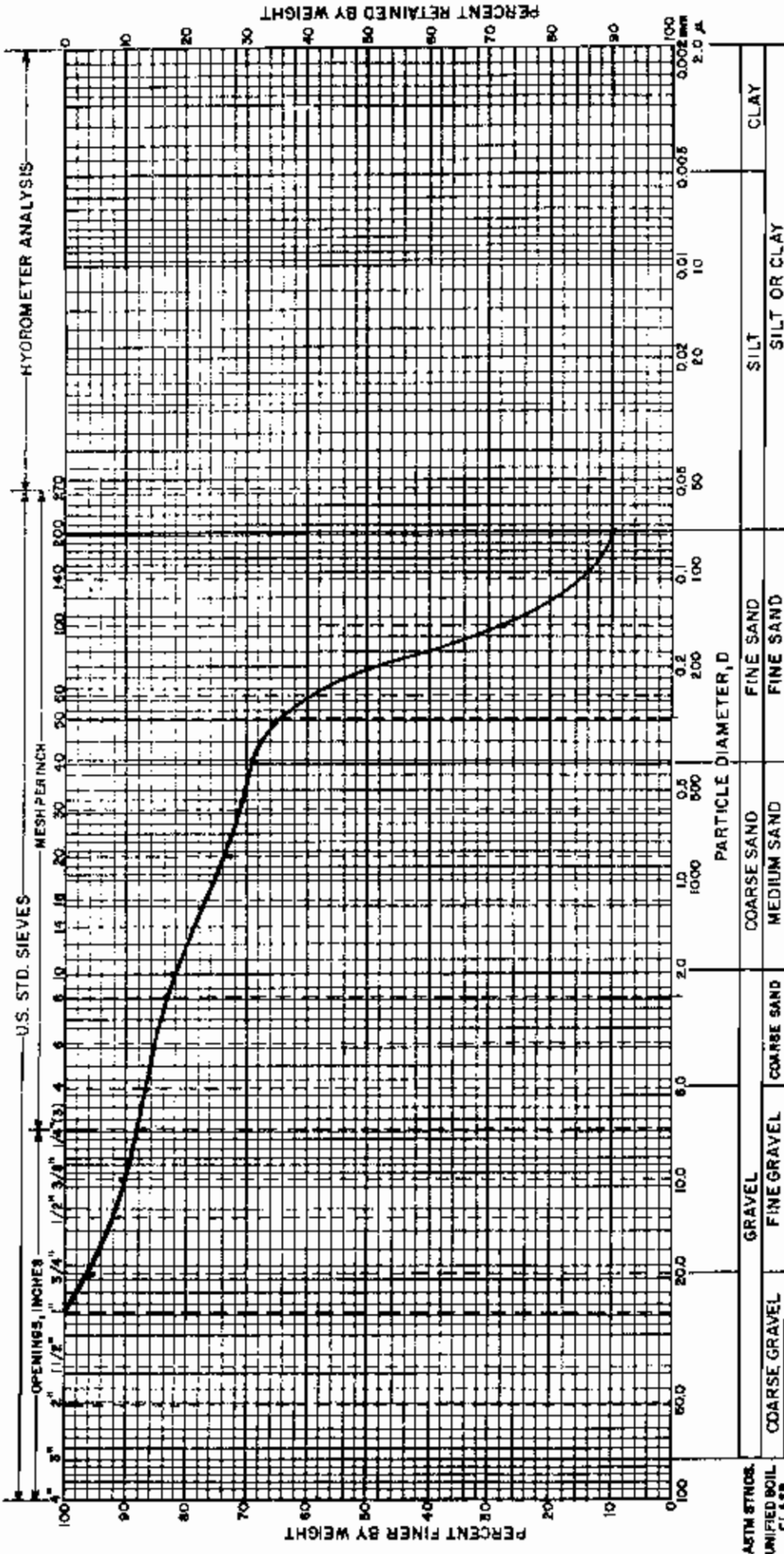
SAMPLE INFORMATION: 86-103 Dark brown organic fine to coarse SAND, some Gravel, trace silt, organic material

1" - 100.0	#10 - 70.4	#200 - 10.4
3/4" - 95.6	#20 - 61.9	
1/2" - 81.1	#40 - 52.2	
#4 - 75.3	#100 - 25.1	

Sample A
(washed method)

NOTE: VISUAL SOIL CLASSIFICATIONS ON E.I. SUBSURFACE LOSS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

GRAIN SIZE DISTRIBUTION CURVE



Report No. 2



MECHANICAL ANALYSIS

U.R.S. Dalton
General Testing Corp.

DLBY: GJ CK'D DATE: 5/20/86 PROJ. NO. 86-51

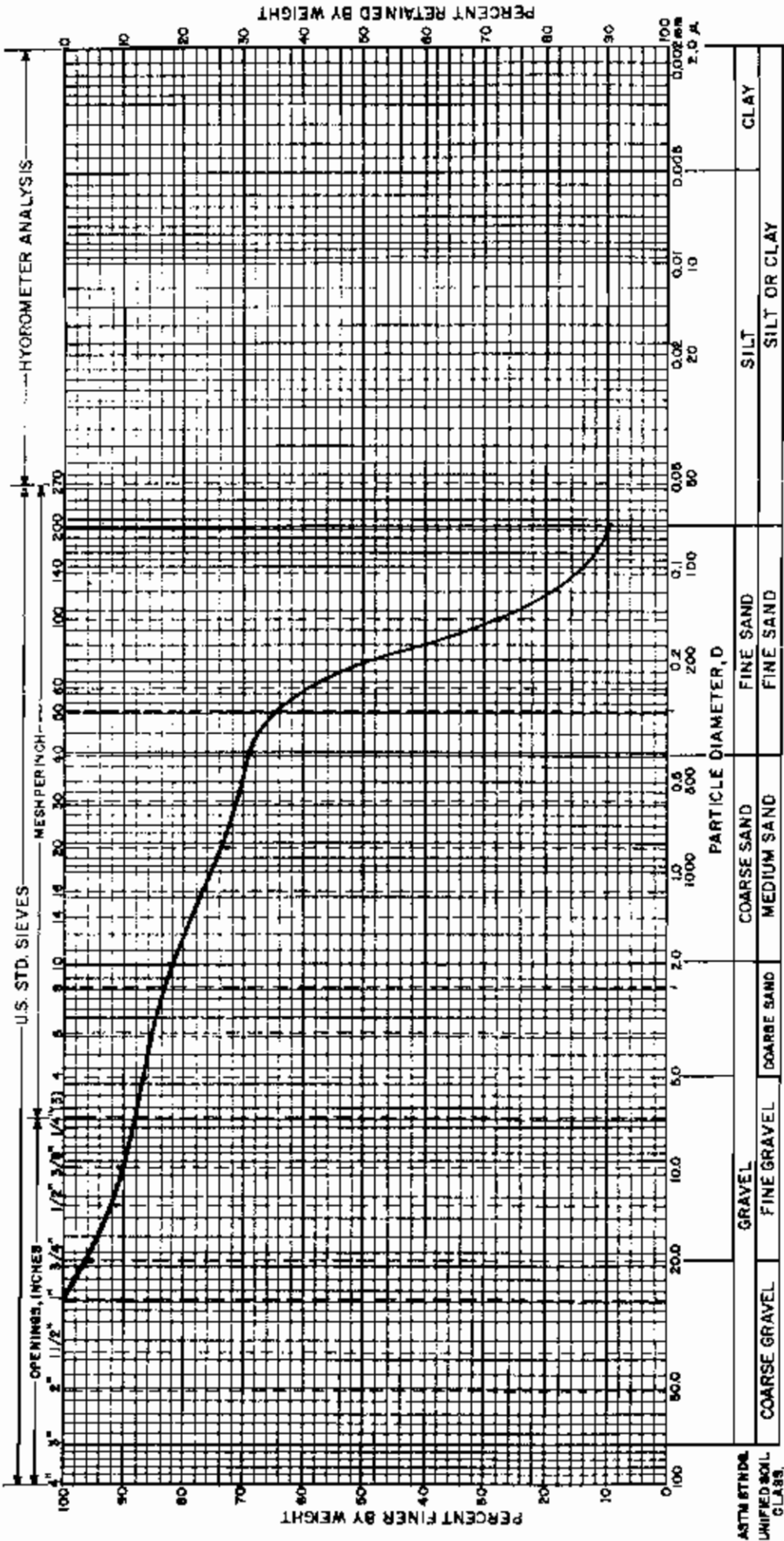
SAMPLE INFORMATION: 86-104 Lt. brown organic fine to coarse SAND, little gravel, trace silt, organic material

1"	- 100.0	#10	- 82.3	#200	- 10.0
3/4"	- 95.6	#20	- 72.9		
1/2"	- 91.2	#40	- 58.9		
#4	- 86.8	#100	- 27.8		

Sample B.
(washed method)

NOTE: VISUAL SOIL CLASSIFICATIONS ON U.S.I. SURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

GRAIN SIZE DISTRIBUTION CURVE



Report No. 2



MECHANICAL ANALYSIS

SAMPLE INFORMATION: 86-104 Lt. brown organic fine to coarse SAND, little gravel, trace silt, organic material

- 1" - 100.0 #10 - 82.3 #200 - 10.0
- 3/4" - 95.6 #20 - 72.9
- 1/2" - 91.2 #40 - 58.9
- #4 - 86.8 #100 - 27.8

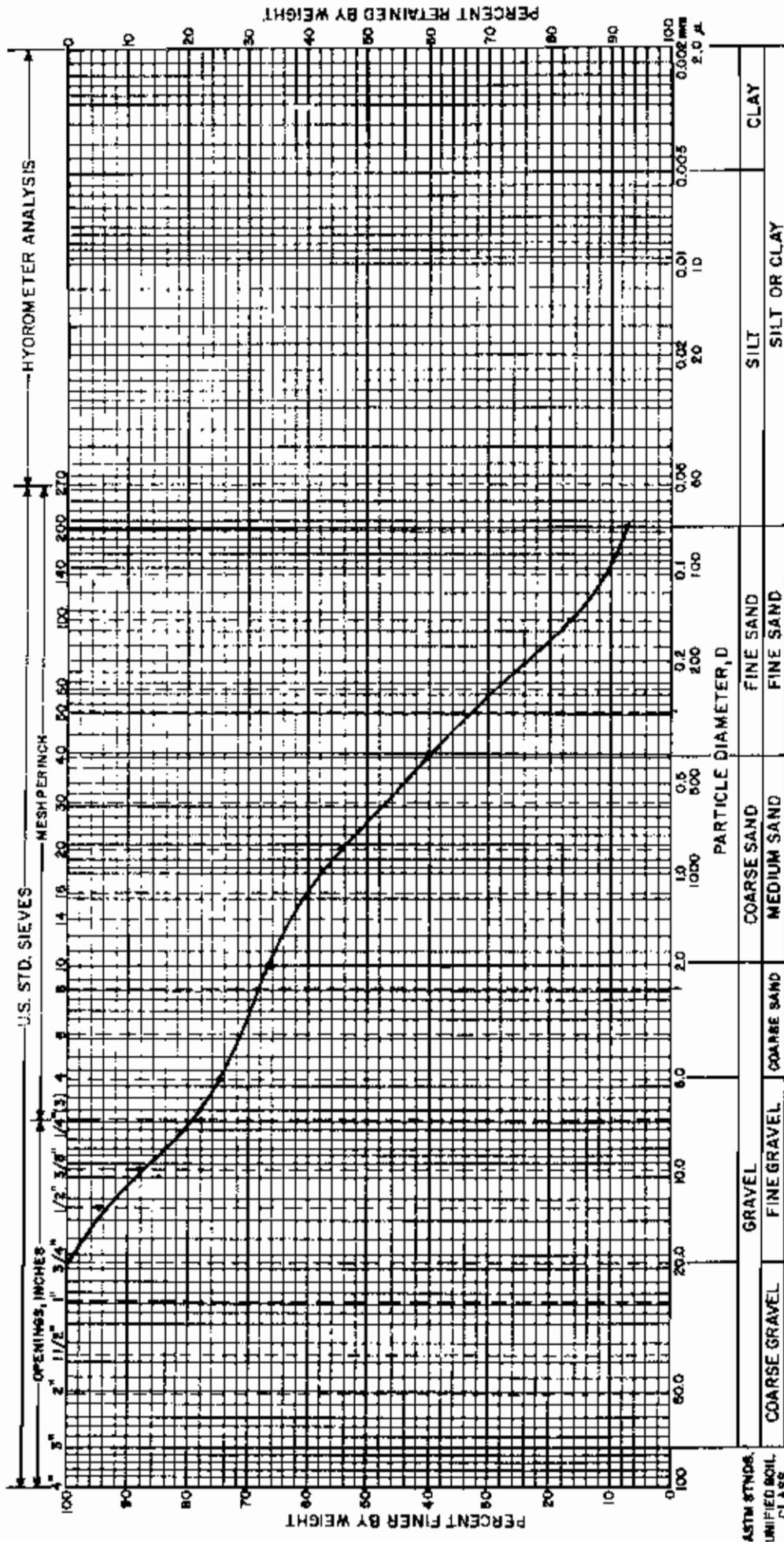
Sample B.
(washed method)

NOTE: VISUAL SOIL CLASSIFICATIONS ON E.S.I. SURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

U.R.S. Dalton
General Testing Corp.

DR. BY: G.T. CK'D: [Signature] DATE: 5/20/86 PROJ. NO. RT-86-51

GRAIN SIZE DISTRIBUTION CURVE



Report No. 3



MECHANICAL ANALYSIS

SAMPLE INFORMATION: 86-105 Lt. brown organic fine to coarse sand, some Gravel, trace silt, trace shells, organic material

3/4"	- 100.0	#10 - 66.1	#200 - 7.1
1/2"	- 94.5	#20 - 54.5	
3/8"	- 88.4	#40 - 40.9	
#4	- 74.5	#100 - 16.8	

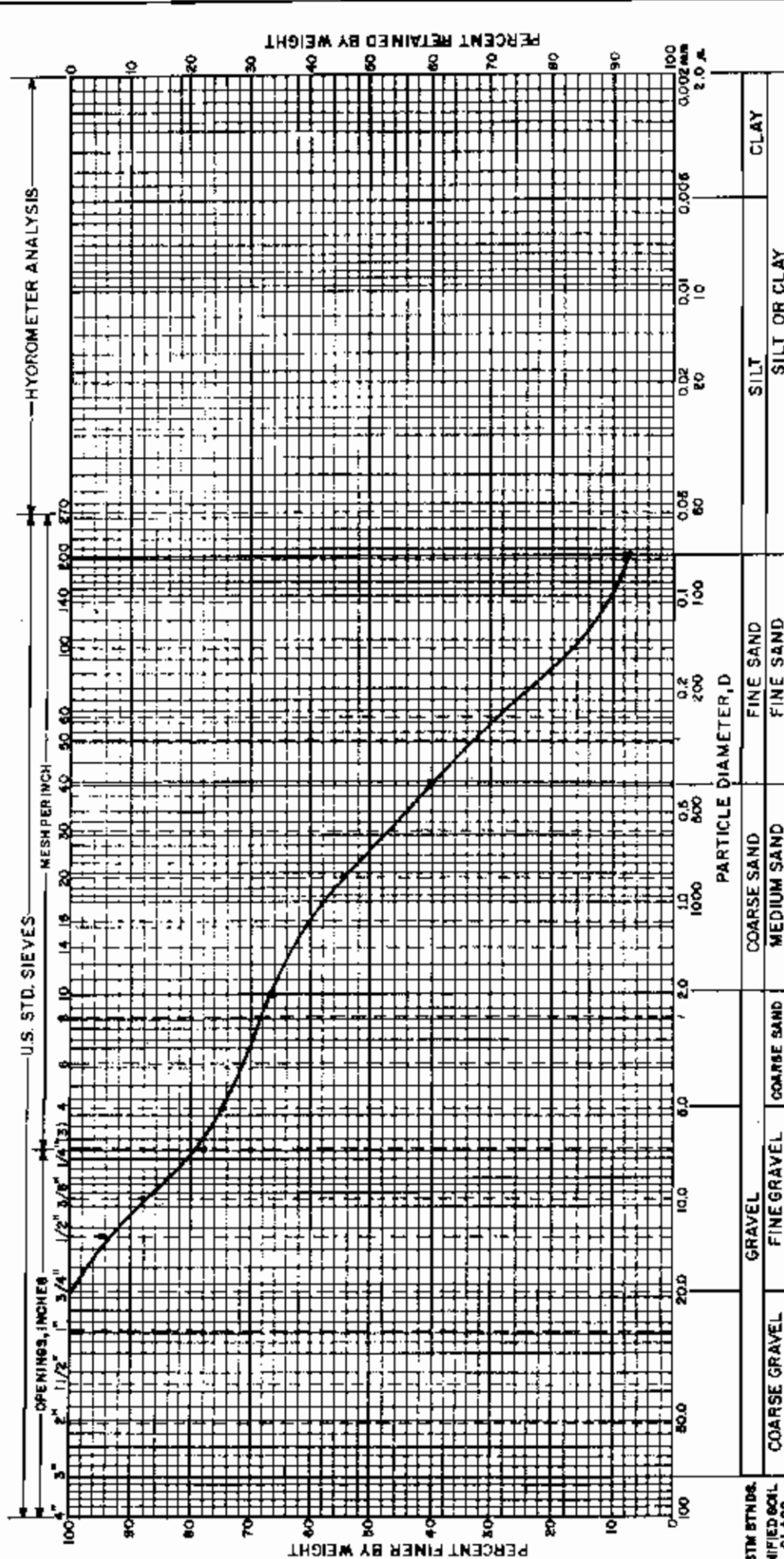
Sample C
(washed method)

U.R.S. /Dalton
General Testing Corp.

NOTE: USUAL SOIL CLASSIFICATIONS ON E.S.I. SURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

(washed method)

GRAIN SIZE DISTRIBUTION CURVE



U.S. STD. SIEVES
MESH PER INCH
HYDROMETER ANALYSIS
ASTM STD. UNIFIED SOIL CLASS.

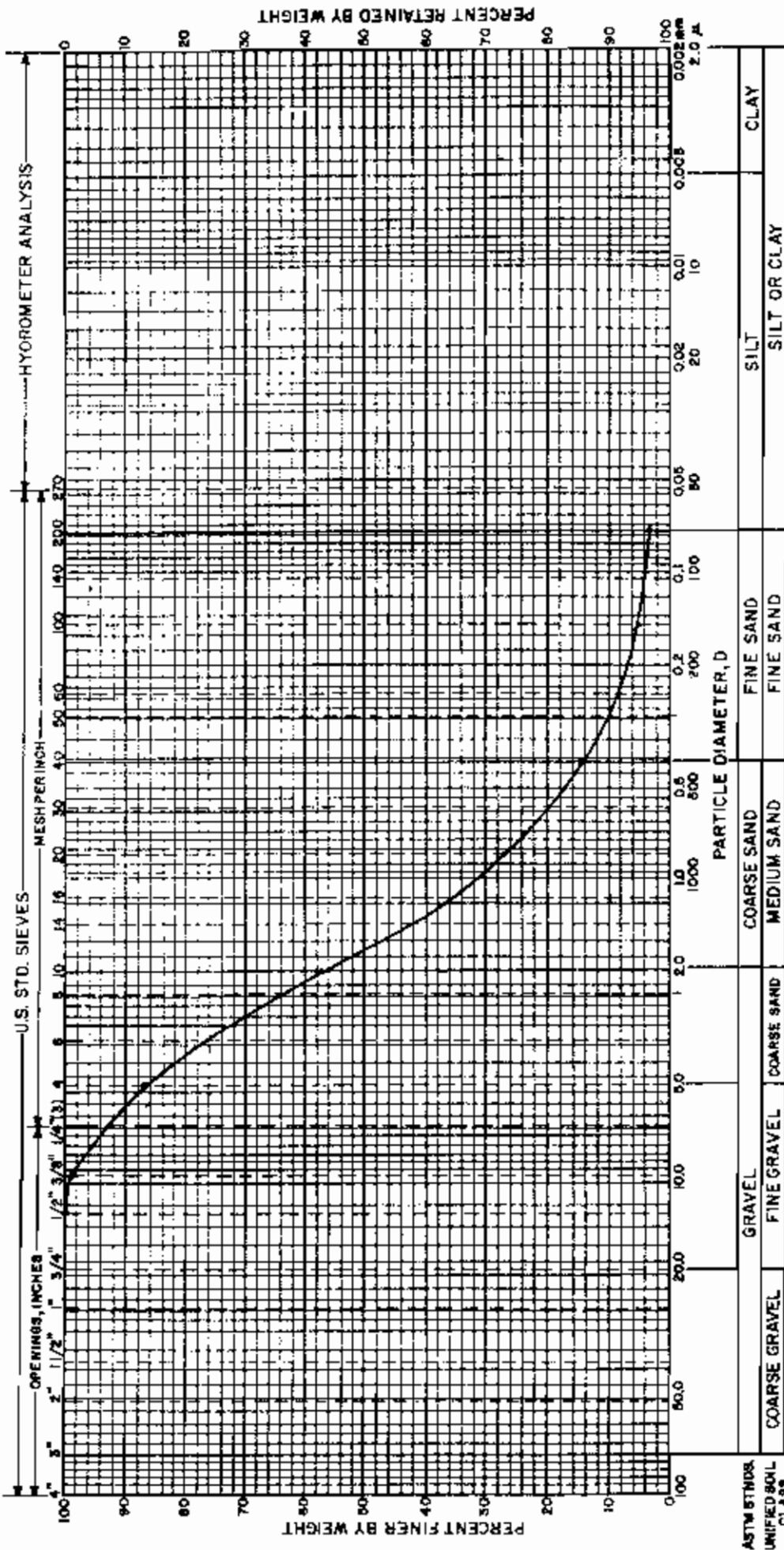
Report No. 3
EMPIRE SOILS INVESTIGATIONS INC.
 MECHANICAL ANALYSIS
 U.R.S. /Dalton
 General Testing Corp.
 DR. BY: GJ CK'D DATE: 5/20/86 PROJ. NO. RT-86-51

SAMPLE INFORMATION: 86-105 Lt. brown organic fine to coarse SAND, some Gravel, trace silt, trace shells, organic material

- 3/4" - 100.0 #10 - 66.1 #200 - 7.1
 - 1/2" - 94.5 #20 - 54.5
 - 3/8" - 88.4 #40 - 40.9
 - #4 - 74.5 #100 - 16.8
- Sample C
(washed method)

NOTE: VISUAL SOIL CLASSIFICATIONS ON E.S.I. SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

GRAIN SIZE DISTRIBUTION CURVE



Report No. 4

EMPIRE SOILS INVESTIGATIONS INC.
 MECHANICAL ANALYSIS

U.R.S. / Dalton
 General Testing Corp.

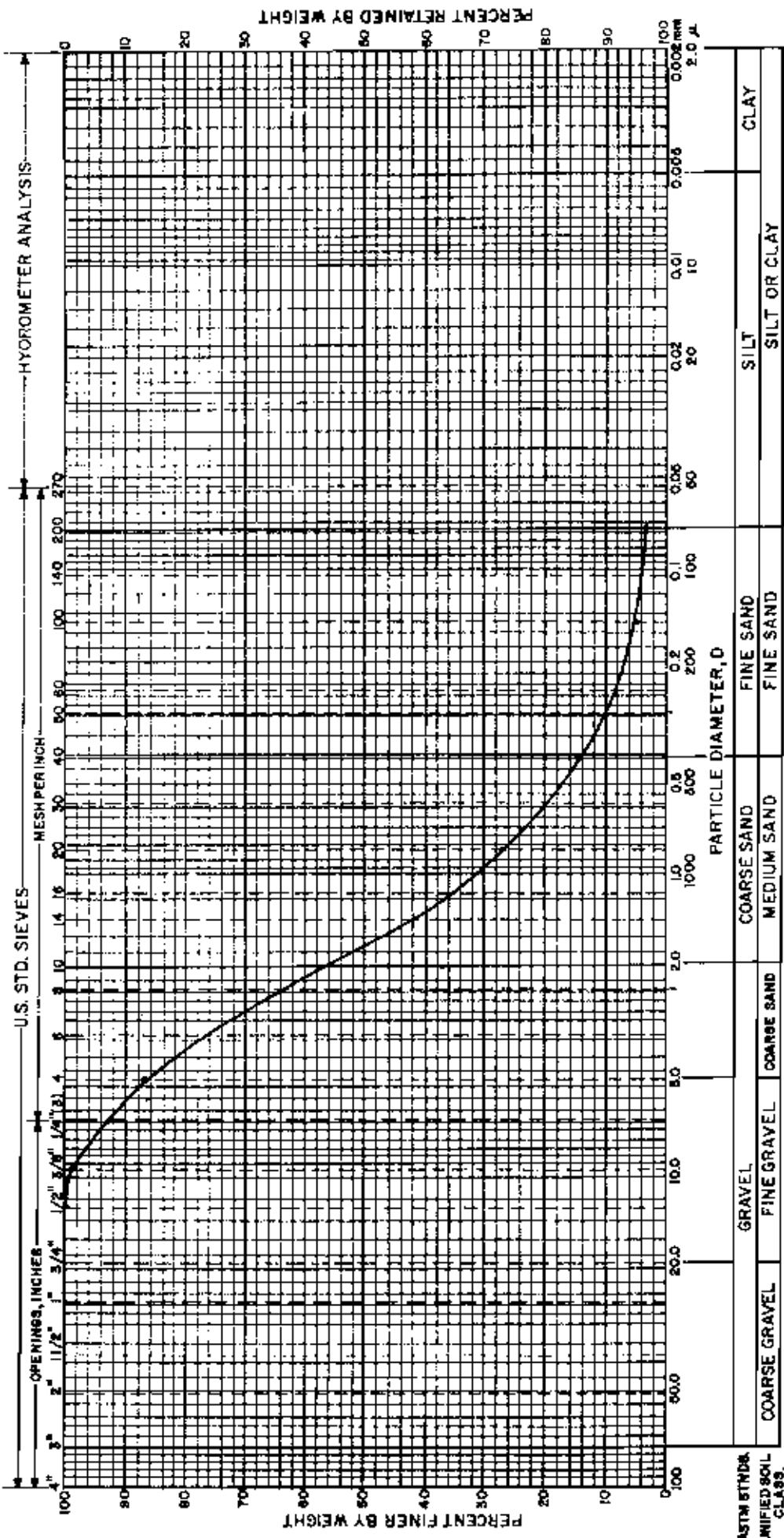
DR. BY GJT
 DATE: 5/20/86
 PROJ. NO. RT-86-51

SAMPLE INFORMATION: 86-106 Brown fine to coarse SAND, little fine gravel, trace silt

1/2"	-	100.0	#40	-	14.9
#4	-	87.0	#100	-	5.2
#10	-	57.8	#200	-	3.1
#20	-	26.9			

NOTE: VISUAL SOIL CLASSIFICATIONS ON E.S.I. SURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.
 Sample D (washed method)

GRAIN SIZE DISTRIBUTION CURVE



Report No. 4



MECHANICAL ANALYSIS

U.R.S. / Dalton
General Testing Corp.

DR. BT/GJ CK'D. *[Signature]* DATE: 5/20/86 PROJ. NO. RT-86-51

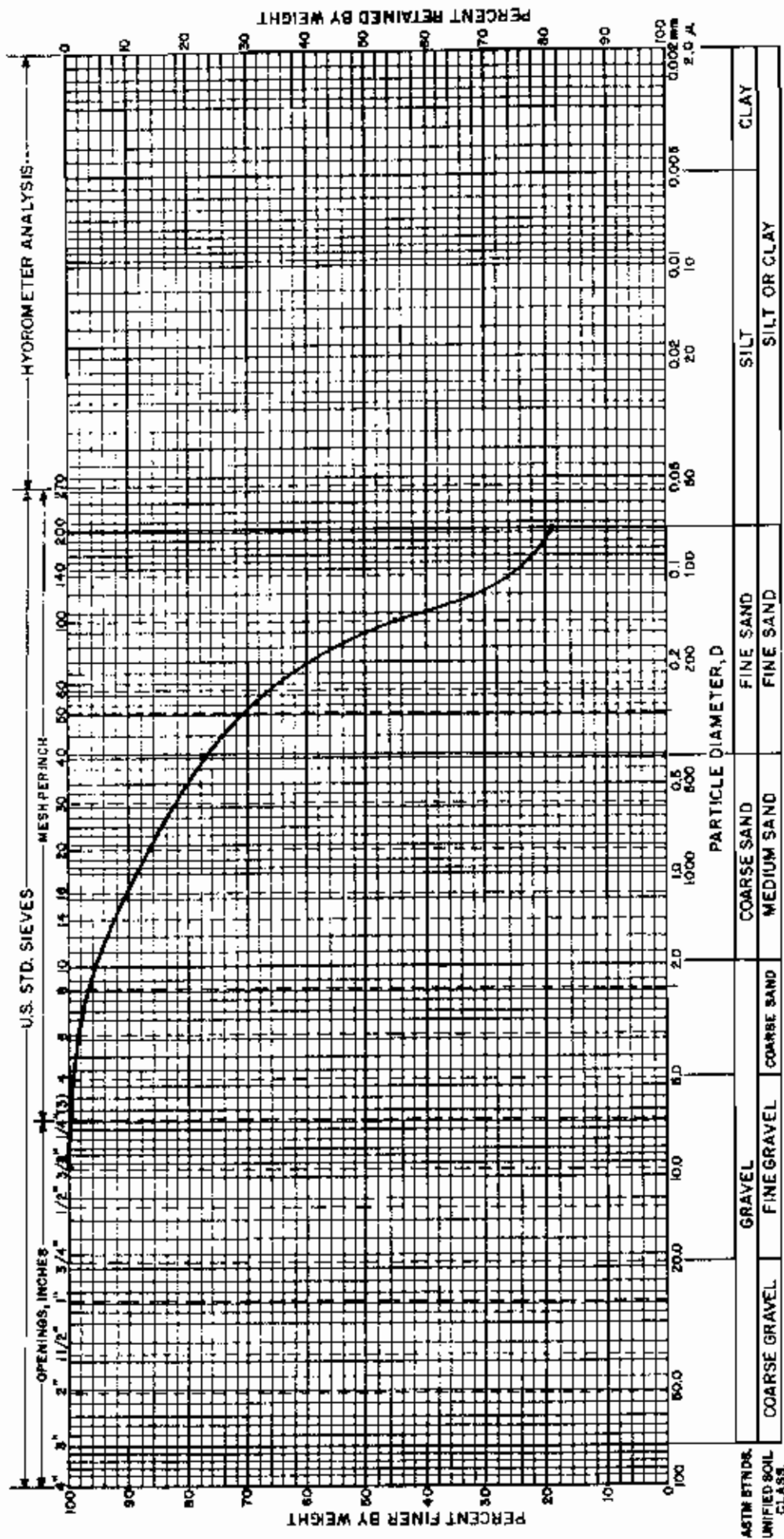
SAMPLE INFORMATION: 86-106 Brown fine to coarse SAND, little fine gravel, trace silt

- 1/2" - 100.0
- #4 - 87.0
- #10 - 57.8
- #20 - 26.9

Sample D
(washed method)

NOTE: VISUAL SOIL CLASSIFICATIONS OR U.S. SUBSURFACE LOSS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

GRAIN SIZE DISTRIBUTION CURVE



Report No. 5



MECHANICAL ANALYSIS

D.R.S. / Dalton
General Testing Corp.

DRY: GJ CK'D [Signature] DATE: 5/20/86 PROJ. NO. RT-86-51

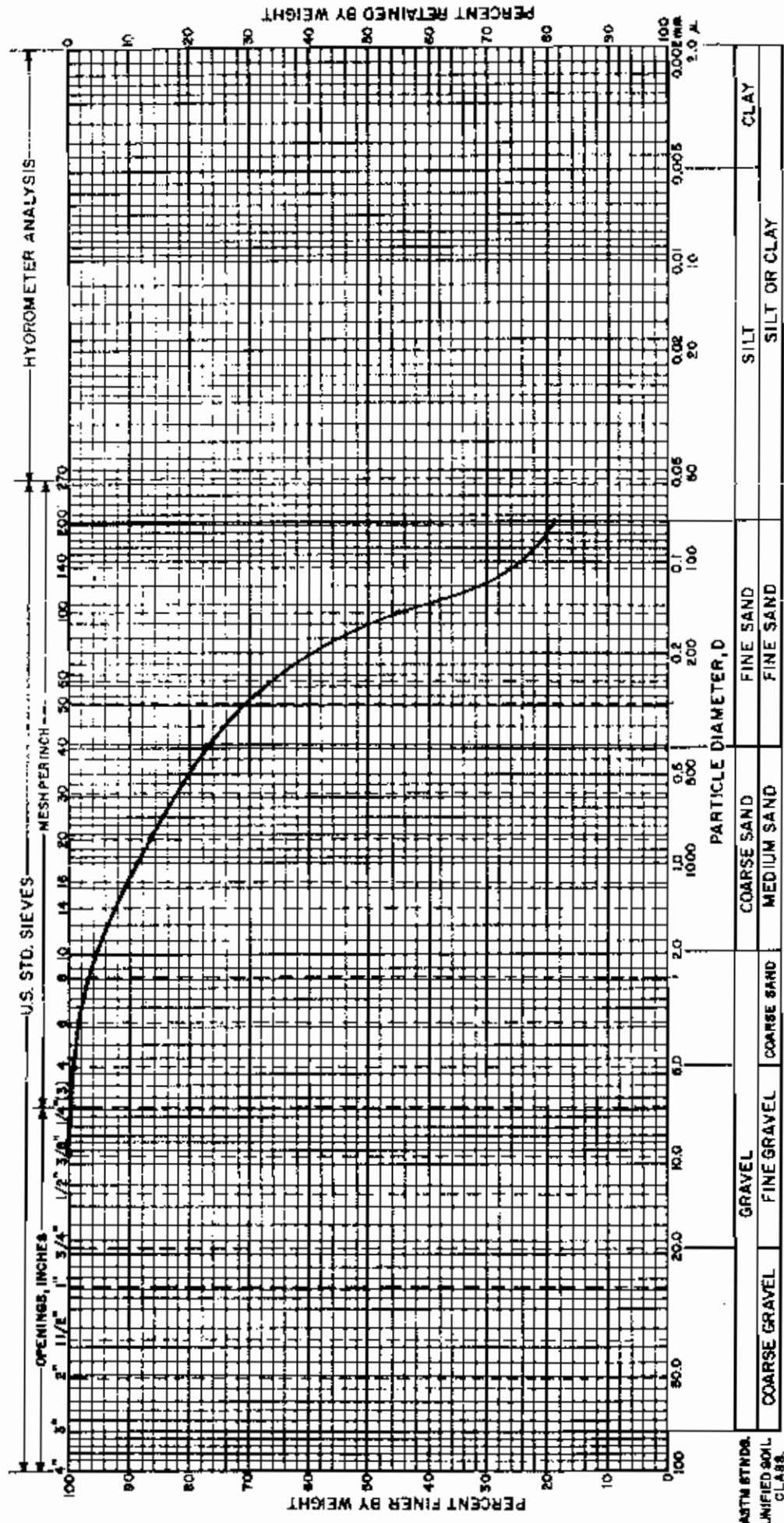
SAMPLE INFORMATION: 86-107 Dark brown organic fine to medium SAND, little silt, organic material

- 3/8" - 100.0 #100 - 45.7
- #4 - 99.5 #200 - 16.8
- #10 - 96.0
- #40 - 77.1

Sample E
(washed method)

NOTE: VISUAL SOIL CLASSIFICATIONS ON E.A.I. SURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

GRAIN SIZE DISTRIBUTION CURVE



Report No. 5



MECHANICAL ANALYSIS

U.R.S. / Dalton
 General Testing Corp.

DR. BY: GJ CK'D: *[Signature]* DATE: 5/20/86
 PROJ. NO. RT-86-51

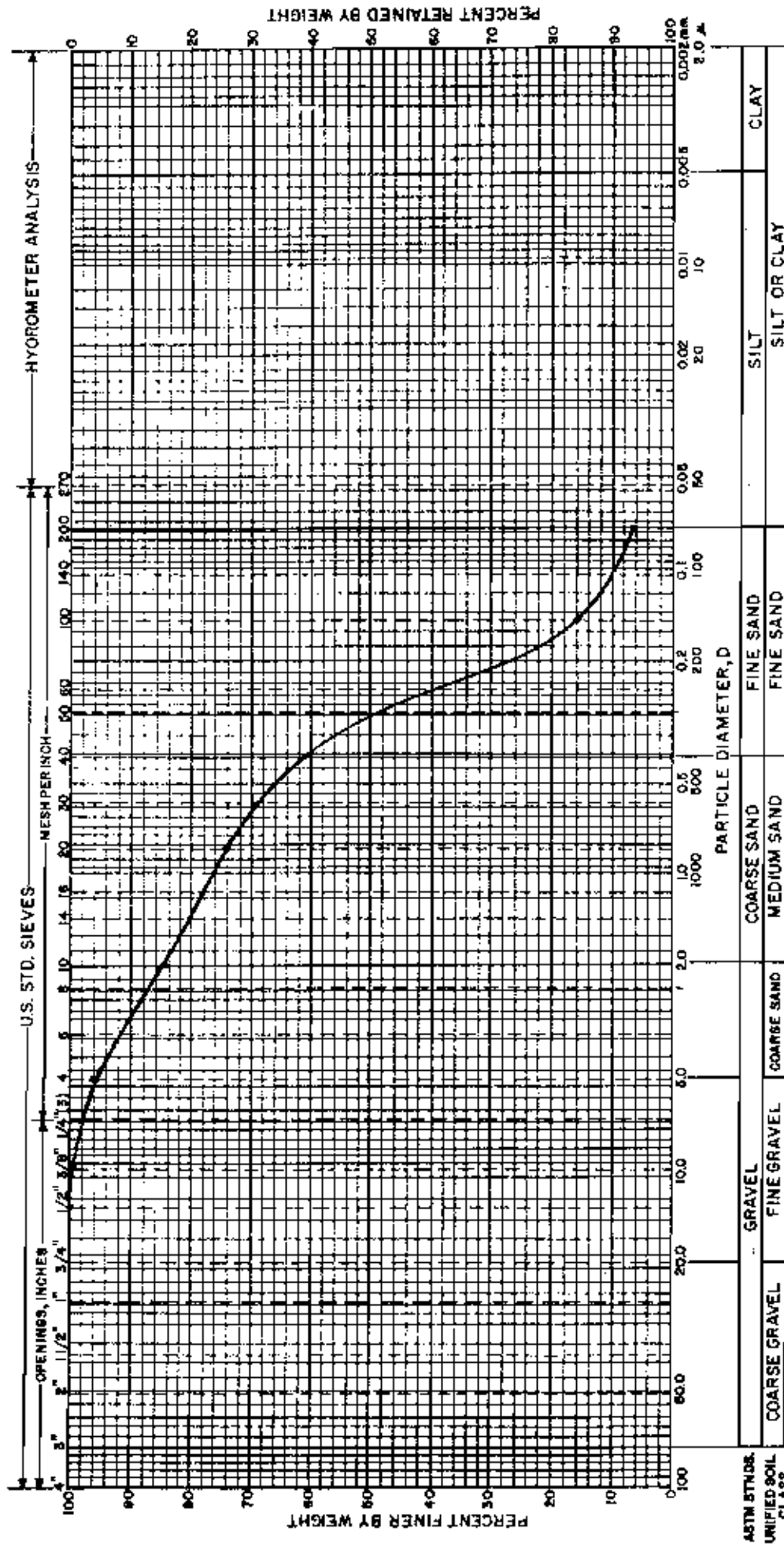
SAMPLE INFORMATION: 86-107 Dark brown organic fine to medium SAND, little silt, organic material

- 3/8" - 100.0
 - #4 - 99.5
 - #10 - 96.0
 - #40 - 77.1
- #100 - 45.7
 #200 - 18.8

NOTE: VISUAL SOIL CLASSIFICATIONS ON E.S.I. SUBSURFACE LOSS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

Sample E
 (washed method)

GRAIN SIZE DISTRIBUTION CURVE



Report No. 6



MECHANICAL ANALYSIS

SAMPLE INFORMATION: 86-108 1t. brown organic fine to coarse SAND, trace silt, shells, organic material

1/2"	-	100.0
#4	-	96.4
#10	-	85.2
#40	-	60.2

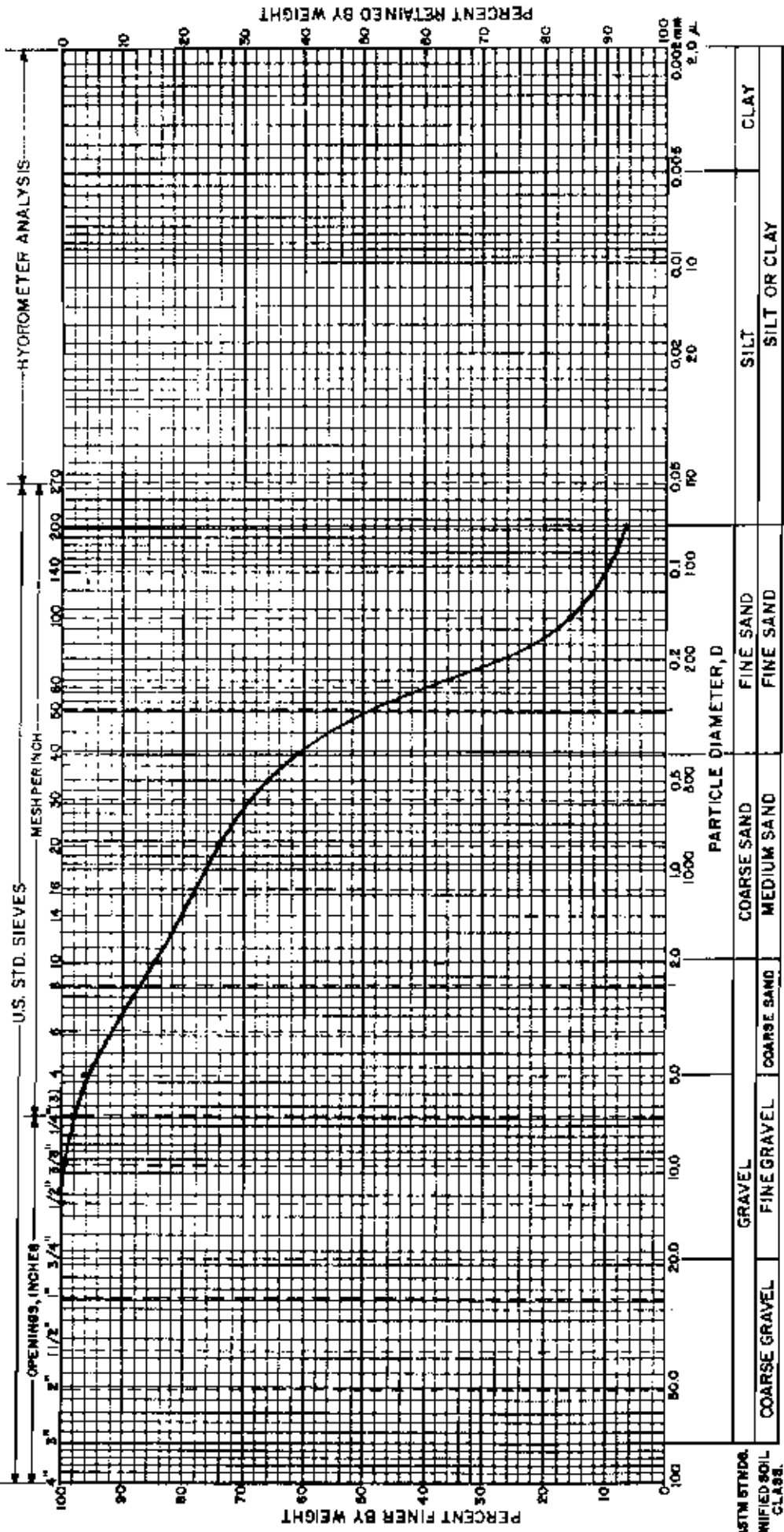
U.R.S./Dalton
General Testing Corp.

Sample # (washed method)

NOTE: VISUAL SOIL CLASSIFICATIONS ON E.S.I. SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

DATE: 5/20/86 PROJ. NO. RT-86-51

GRAIN SIZE DISTRIBUTION CURVE



Report No. 5



MECHANICAL ANALYSIS

SAMPLE INFORMATION: 86-108 Lt. brown organic fine to coarse SAND, trace silt, shells, organic material

1/2" -	100.0	#100 -	15.7
#4 -	96.4	#200 -	6.8
#10 -	85.2		
#40 -	60.2		

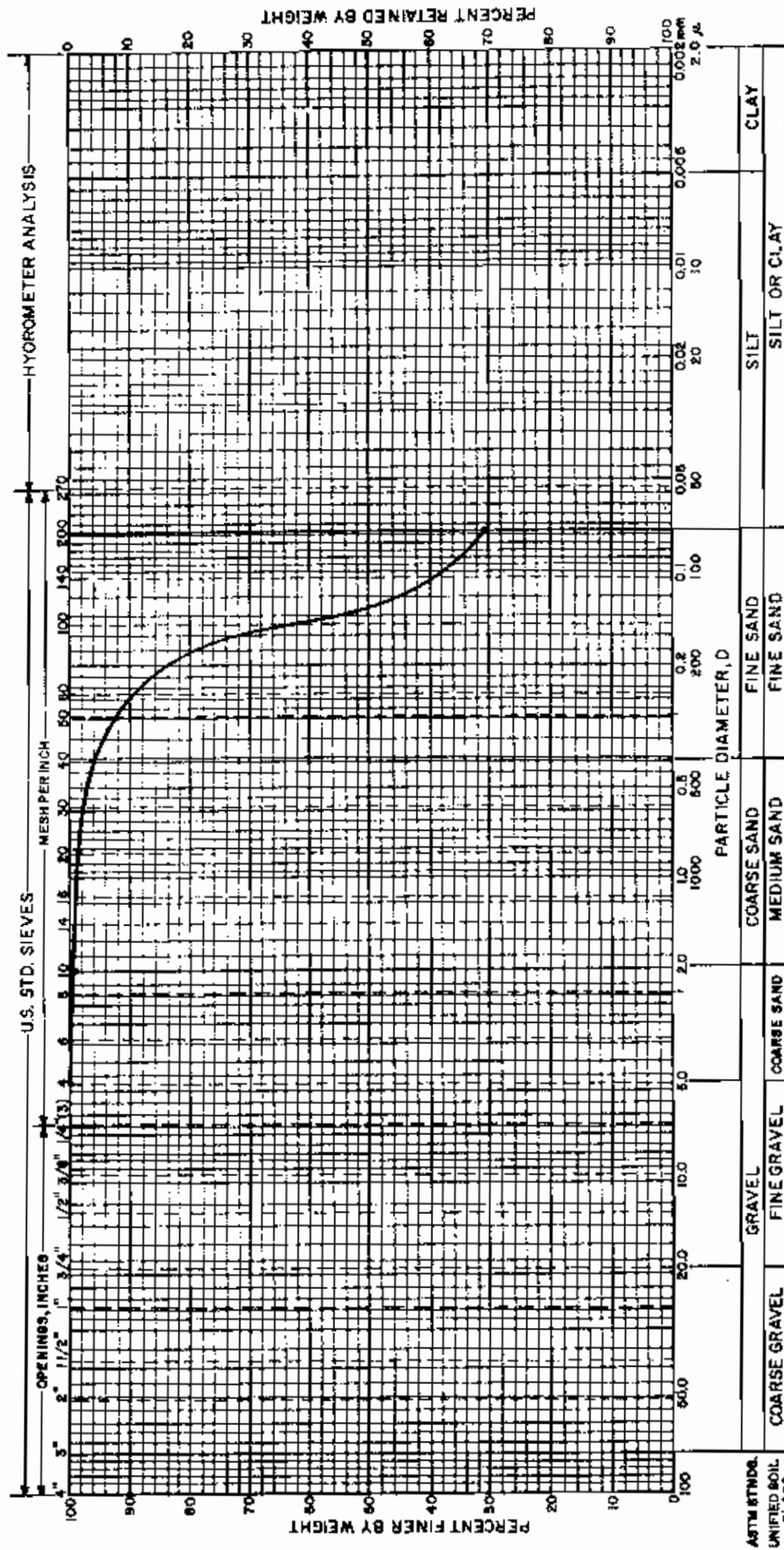
U.R.S./Dalton
General Testing Corp.

Sample #
(washed method)

NOTE: VISUAL SOIL CLASSIFICATIONS ON E.G. SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

DR. BY: CAC CKD DATE: 5/20/86 PROJ. NO. RT-86-51

GRAIN SIZE DISTRIBUTION CURVE



Report No. 7



SAMPLE INFORMATION: 86-109 Brown organic fine SAND, some SILT, organic material

- #4 - 100.0
- #10 - 99.6
- #40 - 96.3
- #100 - 62.2
- #200 - 30.2

NOTE: VISUAL SOIL CLASSIFICATIONS ON #1 SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

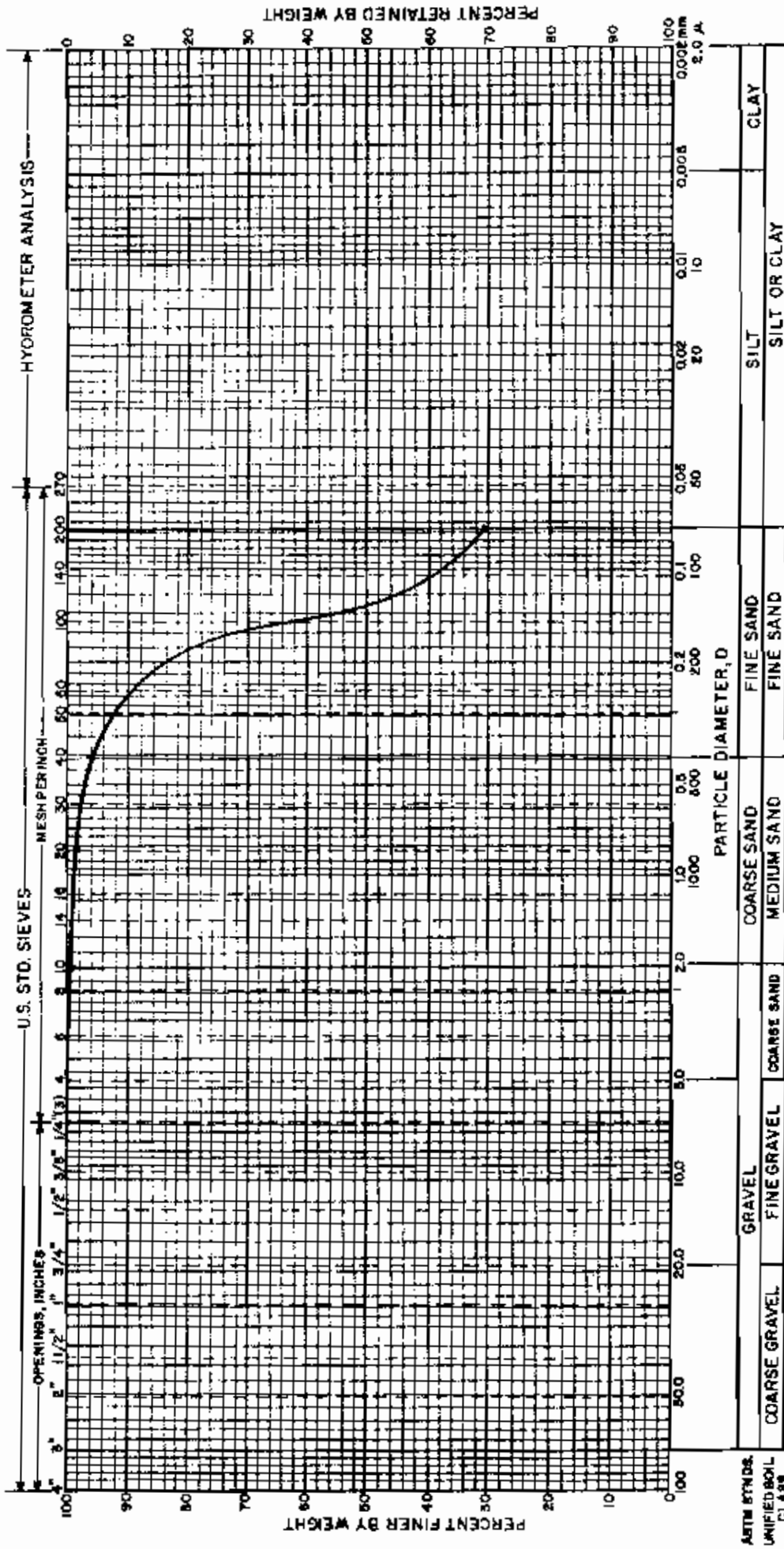
H. R. S. Dalton
General Testing Corp.

Sample G
(washed method)

DR. BY [Signature] CK'D. [Signature] DATE: 5/20/86 PROJ. NO. RT-86-51

MECHANICAL ANALYSIS

GRAIN SIZE DISTRIBUTION CURVE



Report No. 7



SAMPLE INFORMATION: 86-109 Brown organic fine SAND, some silt, organic material

- #4 - 100.0
- #10 - 99.6
- #40 - 96.3
- #100 - 62.2
- #200 - 30.2

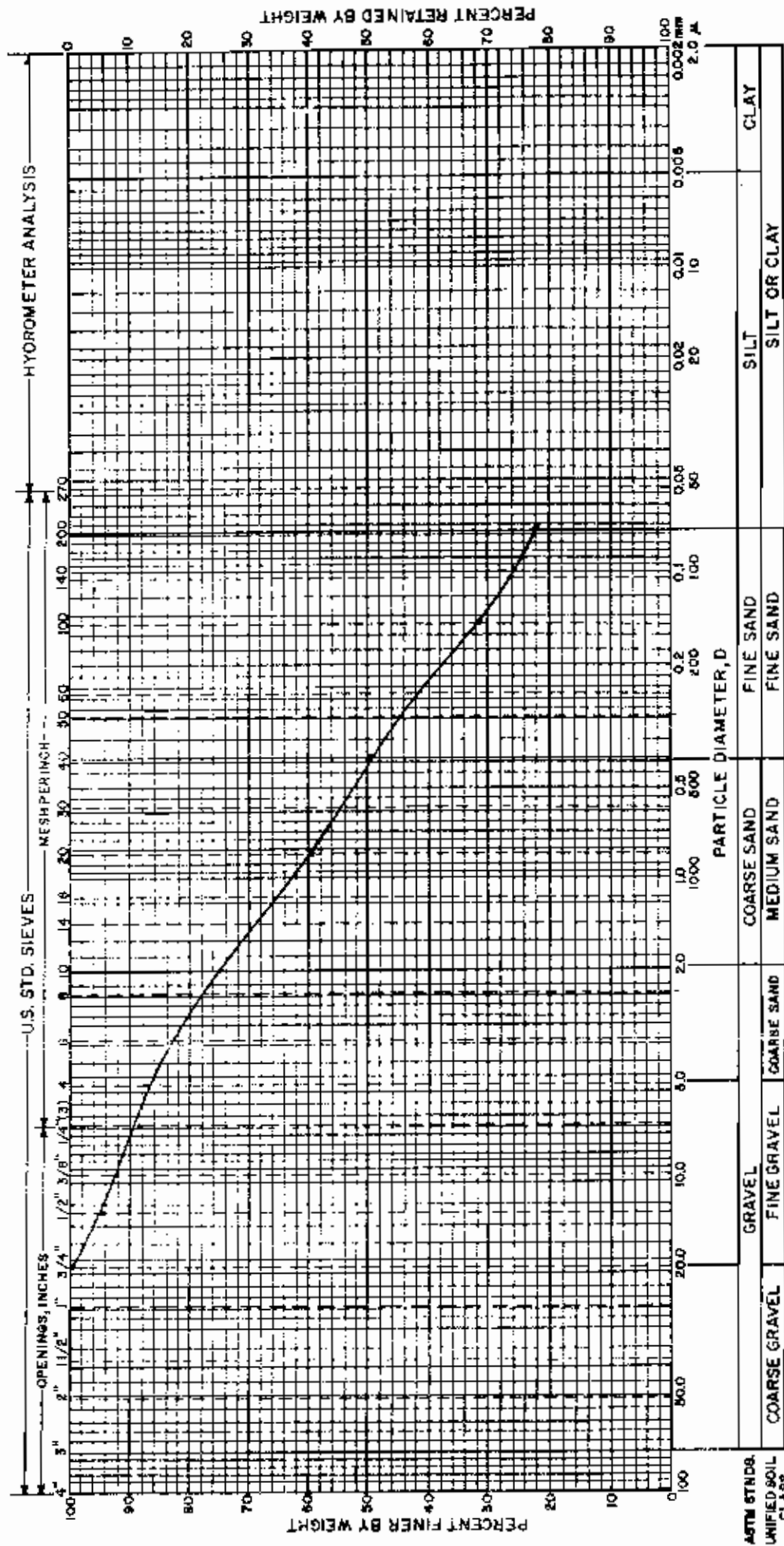
NOTE: VISUAL SOIL CLASSIFICATIONS OR E.S.I. SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

U.R.S./Dalton
General Testing Corp.

DR. BY GJ CK'D. *[Signature]* DATE: 5/20/86 PROJ. NO. RT-86-51

MECHANICAL ANALYSIS

GRAIN SIZE DISTRIBUTION CURVE



Report No. 8



MECHANICAL ANALYSIS

G.R.S./Dalton
General Testing Corp.

DR BY: GJ CK'D: [Signature] DATE: 5/20/86 PROJ. NO. RT-86-51

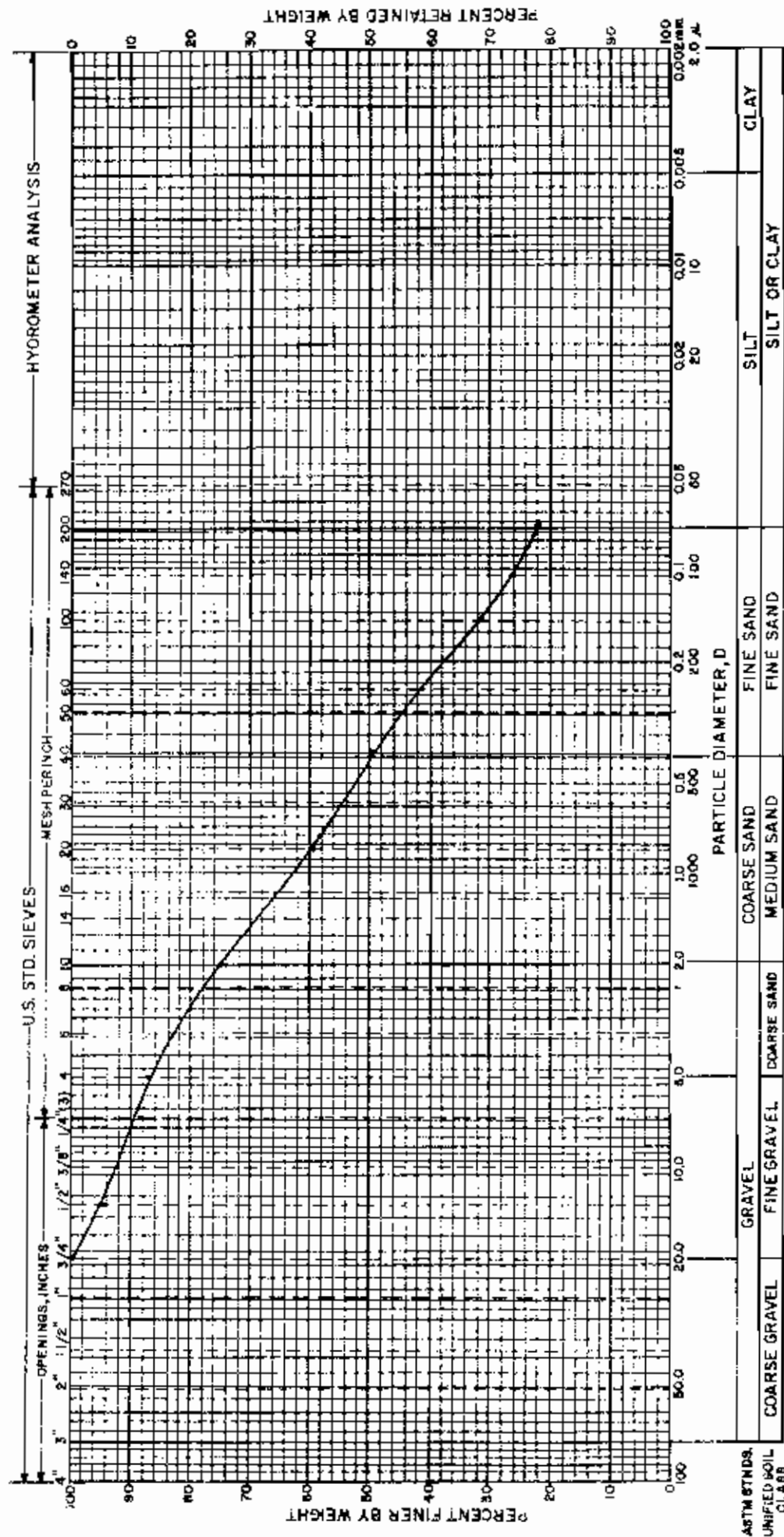
SAMPLE INFORMATION: 86-110 Brown PEAT, trace silt, sand

3/4" - 100.0 #40 - 49.3
#4 37.6 #200 - 22.0
#10 74.8

Sample H
(washed method)

NOTE: VISUAL SOIL CLASSIFICATIONS ON E.S.I. SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

GRAIN SIZE DISTRIBUTION CURVE



Report No. 8



MECHANICAL ANALYSIS

U.R.S./Dalton
General Testing Corp.

DR. BY: GJ CK'D: [Signature] DATE: 5/20/86 PROJ. NO. RT-86-51

SAMPLE INFORMATION: 86-110 Hydrom Prat, trace silt, sand

3/4"	-	100.0	#40	-	49.3
#4	-	87.6	#200	-	22.0
#10	-	74.8			

Sample H
(washed method)

NOTE: VISUAL SOIL CLASSIFICATIONS ON U.S.I. SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.

SECTION G

Raw Data for CLP Parameters
on Waters and Sediments

SECTION G

Raw Data for CLP Parameters

		<u>Page</u>
Subpart G1	Raw Data for Aluminum	62
Subpart G2	Raw Data for Antimony	76
Subpart G3	Raw Data for Arsenic	86
Subpart G4	Raw Data for Barium	92
Subpart G5	Raw Data for Beryllium	113
Subpart G6	Raw Data for Cadmium, Lead & Iron	121
Subpart G7	Raw Data for Calcium	157
Subpart G8	Raw Data for Chromium & Vanadium	167
Subpart G9	Raw Data for Cobalt	181
Subpart G10	Raw Data for Copper & Nickel	187
Subpart G11	Raw Data for Magnesium	209
Subpart G12	Raw Data for Manganese	218
Subpart G13	Raw Data for Mercury	228
Subpart G14	Raw Data for Potassium	241
Subpart G15	Raw Data for Selenium	251
Subpart G16	Raw Data for Silver	262
Subpart G17	Raw Data for Sodium	277
Subpart G18	Raw Data for Thallium	288
Subpart G19	Raw Data for Tin	297
Subpart G20	Raw Data for Zinc	301
Subpart G21	Digestion Records (Metals)	308
Subpart G22	Raw Data for Cyanide	311
Subpart G23	Raw Data for Phenolics	321

Subpart G1: Aluminum

METALS ANALYSIS DATA SHEET

REV. 62

METAL Al

DATE 6/10/84

ANALYST adl

REVIEWER JM 6/12/84

INSTRUMENT (AA)

Current 705.9 nm
460 a
D₂ off

Voltage 2 V
 Split 1.0 nm
 Integ. 4 sec

ANALYSIS METHOD

Flame Hydride
 Gas N₂O / Air Acid
 Reduc.

INITIAL CALIBRATION

NCI added to side + samples
 recall

STANDARDS:	#1	#2	#3	#4	#5
Stock	5.0	1.0	1.0	0.50	0.10
Conc, ug/ml					
Absorbance		0.114			

EPA Check	Known	Mean	SD	RSD	% Recovered
WR184 1x2	0.214	0.22	0.02	26	103
WR184 2	0.729	0.76	0.05	6.5	104

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61159-ALL	<0.1						<0.1	✓
61159-B LL	<0.1						<0.1	✓
61160-A LL	<0.1						<0.1	✓
61204-B sol	0.25						0.25	✓
61243-B sol	0.21						0.21	✓
61255-B sol	0.90						0.90	✓
61264-D sol	0.38						0.38	✓
61264-E sol	0.40						0.40	✓
61264-F sol	0.20						0.20	✓
61288 sol	1.78						1.78	✓
61304-B sol	0.45	1/10					4.50	✓
5648-A sol	2.46	1/10					24.6	✓
5648-B sol	<0.1	1/10					<0.1	✓
BK 6/2	<0.1							
BK SPK	0.48						4.6?	
61024-A	<0.1						<0.1	✓
61024-B	<0.1						<0.1	✓
61024-C	<0.1						<0.1	✓
61024-D	<0.1						<0.1	✓
61024-E	<0.1						<0.1	✓
61024-F	0.38						0.38	✓
61024-G	<0.1						<0.1	✓
61024-G20	<0.1						<0.1	✓
61024-SPK	0.53						10.6?	
61024	<0.1							

METALS ANALYSIS SHEET

METAL _____ DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____ ANALYSIS METHOD _____

Current _____ nm Voltage _____ V
 a _____ Split _____ nm
 D₂ _____ Integ. _____ sec

Flame _____ Hydride _____
 Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61195-A	0.66						0.68 ✓	
61195-AGC	0.71							
61195-ASPK	1.70						102% ✓	
61195-B	<0.1						<0.1 ✓	
61195-D	0.37						0.37 ✓	
61195-E	0.15						0.15 ✓	
61195-F	0.38						0.38 ✓	
61195-G	2.36						2.36 ✓	
BLK 4/4	<0.1							
BLK SPK	0.45							
61203-A	<0.1						<0.1 ✓	
61203-B	<0.1						<0.1 ✓	
61203-D	<0.1						<0.1 ✓	
61203-F	0.85						0.85 ✓	
61203-G	<0.1						<0.1 ✓	
61204-A	<0.1						<0.1 ✓	
61204-AGC	<0.1						<0.1 ✓	
61204-ASPK	0.55						110% ✓	
61203-E	<0.1						<0.1 ✓	
61203-A	1.10						1.10 ✓	
BLK 4/5	<0.1							
BLK SPK	0.51						102% ✓	
61288	2.06						1.33 ✓	
61288-AGC	1.81							
61288 SPK	2.41						94% ✓	

METALS ANALYSIS DATA SHEET

REV. _____

METAL _____ DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____ ANALYSIS METHOD _____

Current _____ nm Voltage _____ V
 Split _____ nm
 D₂ _____ Integ. _____ sec

Flame _____ Hydride _____
 Gas / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered

ANALYSIS

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61304-A	0.65						0.65 ✓	
BK 6/c	<0.1							
BK SPK	0.97						0.97	
61255	1.32						1.32 ✓	
61264-A	2.80						2.80 ✓	
61264-B	7.25						7.25 ✓	
61264-C	2.59						2.59 ✓	
61160-B501	<0.1						<0.1 ✓	

APP CON.

STD 1 02.01
 STD 2 18.00
 STD 3 00.97
 STD 4 00.54
 STD 5 00.09

STATISTICS

CON 01 00.10
 02 00.19
 03 00.13
 04 00.20
 05 00.10
 06 00.24
 07 00.20

MEAN 00.17
 SD 00.05
 RSD 32.06

STATISTICS

CON 01 00.27
 02 00.29
 03 00.16
 04 00.29
 05 00.26
 06 00.21
 07 00.25
 08 00.21
 09 00.14
 10 00.15

MEAN 00.22
 SD 00.06
 RSD 28.41

STATISTICS

CON 01 00.70
 02 00.75
 03 00.69
 04 00.79
 05 00.79
 06 00.70
 07 00.79
 08 00.76
 09 00.79
 10 00.84

MEAN 00.76
 SD 00.05
 RSD 06.49
 AUTO CAL

STD 1
 ACT CON 02.00
 ORG CON 02.17
 NEW CON 02.00
 34 -00.17
 AUTO CAL

STD 1
 ACT CON 02.00
 ORG CON 02.13
 NEW CON 02.00
 56 00.11
 57 -00.02
 58 -00.10
 AUTO CAL

STD 1
 ACT CON 02.00
 ORG CON 01.84
 NEW CON 02.00

CON 02.00
 SIG 0.023
 0.022
 0.022
 0.022

MEAN 0.022

STD 2

CON 10.00
 SIG 0.114
 0.115
 0.114
 0.114

MEAN 0.114

STD 3

CON 01.00
 SIG 0.011
 0.012
 0.010
 0.010

MEAN 0.011

STD 4

CON 00.50
 SIG 0.007
 0.006
 0.007
 0.006

MEAN 0.006

STD 5

CON 00.10
 SIG -0.000
 -0.000
 0.000

MEAN 0.001

INITIALS ANALYSIS DATA SHEET

REV 69

METAL Al DATE 6/3/86 ANALYST MJM REVIEWER WLN 6/4/86
 INSTRUMENT (AA) 202.3 nm Voltage 460 V
 Wavelength 5 nm Split 1.0 nm
 D₂ OFF Integ. 4 sec
 ANALYSIS METHOD Flame Hydride
Gas H₂O / Acet Acid
Reduc.

INITIAL CALIBRATION

-100ul KCl to stds/sample

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	5.00	10.00	1.00	0.50	0.10
	Absorbance	0.059	0.115	0.011	0.006	0.001
EPA Check	Known	Mean	SD	RSD	% Recovered	
WT 2842	0.73	0.70	0.06	8.20	96%	

ANALYSIS

Recal 4.81 to 5.00

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Bik 5/30	<0.1						<0.1	
B.S.	0.55		110%				0.55	
61238A	1.02	1/100	102	100ml	1.00g	dry		10,000 ug
A DUP	0.96	1/100	96		1.03g		9.700	9,300 "
ASPK	- spiked too low				1.02g			
B	1.17	1/100	117		1.00g			12,000 "
C	7.11	1/10	71.1		1.05g			6,800 "
D	10.34	1/10	103		1.02g			10,000 "
E	8.10	1/10	81.0		1.02g			7,900 "
F	8.26	1/10	82.6		1.00g			8,300 "
G	7.73	1/10	77.3		1.07g			7,200 "
H	10.83	1/10	108		1.00g			11,000 "
I	8.88	1/10	88.8		1.04g			8,500 "
J	1.16	1/100	116		1.02g			11,000 "
K	1.12	1/100	112		1.02g			11,000 "
L	10.34	1/10	103		1.00g			10,000 "
M	10.22	1/10	102		1.07g			9,500 "
N	8.19	1/10	81.9		1.03g			8,000 "
O	10.76	1/10	108		1.03g			10,000 "
ODUP	10.24	1/10	102		1.10g		9.700	9,300 "
OSPK	10.73	1/10	107	✓	1.06g	✓	- spiked too low	
Bik - 5/30	<0.1						<0.1	
B.S.	0.83		83%				0.83	
6113A	<0.1			100	1.05g	dry		<10 ug/g
B	<0.1			100	1.00g	✓		10 "

METAL _____ DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA)

ANALYSIS METHOD

Current _____ nm Voltage _____ V
 Split _____ nm Flame _____ Hydride
 D₂ _____ Integ. _____ sec Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
W ₂	0.73	0.71	0.08	11.51	97%

ANALYSIS

Revol. 5.31 to 5.00

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61113C	<0.01			100ml	1.00g	wet		<10 ug/g
CDP	<0.01				1.02			<10 "
CSPK	0.58		116%		1.00			58 "
61196A	2.60	100	260		100ml		260	
61010 SOL	0.13						0.13	
61026 SOL	<0.1						<0.1	
61121B SOL	0.18						0.18	
61196B SOL	0.10						0.10	
60917B SOL	<0.1						<0.1	
Blk 5/15	<0.1						<0.1	
B.S.	0.47		94%				0.47	
61110	0.73						0.73	
61043A	0.72						0.72	0.71
ADP	0.70						0.70	
ASPK	1.05		68%				1.05 * 11.34 / 6.570	
61026	0.25						0.25	
Blk 5/16	<0.1						<0.1	
B.S.	0.54		108%				0.54	
61075A	<0.1						<0.1	
ADP	<0.1						<0.1	
ASPK	0.58		116%				0.58	
61052	0.22						0.22	
Blk 5/17	<0.1						<0.1	
B.S.	0.75		151%				0.75	
61125A	1.0	100	105	200ml	2.11g	wet		9.700 ug/g

Subpart G2: Antimony

STATISTICS

CON 01 84.83
 02 84.79
 03 84.74

STATISTICS

CON 01 88.80
 02 88.81
 03 88.67
 04 88.83
 05 88.63
 06 88.74
 07 88.73
 08 88.66
 09 88.62
 10 88.63

MEAN 88.71

SD 88.00

RSD 11.51

AUTO CAL

STD 1

ACT CON 85.00

ORG CON 85.31

NEW CON 85.00

STD 1 85.00

STD 2 18.00

STD 3 88.67

STD 4 88.53

STD 5 88.11

AUTO CAL

STD 1

ACT CON 85.00

ORG CON 84.81

NEW CON 85.00

13 81.17

14 80.84

15 80.81

16 80.83

STATISTICS

CON 01 88.68

02 88.62

03 88.71

04 88.72

05 88.68

06 88.82

07 88.76

08 88.78

09 88.64

10 88.73

MEAN 88.78

SD 88.86

RSD 88.20

STATISTICS

STD 1

CON 85.00

SIG 0.059

0.059

MEAN 8.059

STD 2

CON 16.00

SIG 8.116

8.116

8.114

MEAN 8.115

STD 3

CON 81.00

SIG 8.811

8.812

8.811

MEAN 8.811

STD 4

CON 88.50

SIG 8.887

8.886

8.886

MEAN 8.886

STD 5

CON 88.10

SIG 8.881

8.881

8.882

8.881

MEAN 8.881

APP CON

METALS ANALYSIS DATA SHEET

REV. 76

METAL Sb DATE 7/24/76 ANALYST MM REVIEWER MM 7/25/76

INSTRUMENT (AA)

ANALYSIS METHOD

Wavelength 217.6 nm
 Slit 7 nm
 D₂ OFF
 Voltage 7.00 V
 Split 0.5 nm
 Integ. 4 sec

Flame _____ Hydride _____
 Gas 1 Acid HCl
 Reduc. NaBH₄

INITIAL CALIBRATION

STANDARDS:

	#1	#2	#3	#4	#5
Stock	0.030	0.050	0.020	0.010	0.005
7/24	0.685	0.790	0.560	0.269	0.136
EPA Check	Known	Mean	SD	RSD	% Recovered
TM32	0.099	0.104	0.0005	4.58	106%

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Bk 7/10	<0.005			100	50		<0.01	
B.S.	0.0221		88%	100	50		0.0442	
5870A	0.0170			100	0.50			3.4
AQC	0.0148				0.50			3.0
B	0.0268				0.50			5.2
C	0.0205				0.52			3.9
C SPK	0.0441		96%		0.51			8.639 = 4.749g
D	0.0072				0.50			1.4
F	0.0275				0.50			5.5
G	0.0086				0.50			1.7
Bk 7/23	<0.005				50		<0.01	
B.S.	0.0238		95%				0.0476	
11024A	<0.005						<0.01	
B	<0.005						<0.01	
C	<0.005						<0.01	
D	<0.005						<0.01	
E	<0.005						<0.01	
EAC	<0.005						<0.01	
F SPK	0.0247		99%				0.0496	
F	<0.005						<0.01	
G	<0.005						<0.01	
H 7/24	<0.005						<0.01	
B.S.	0.0266		106%				0.0532	
11024A	<0.005				0.57			<1
BK	<0.005				0.49			<1

METALS ANALYSIS DATA SHEET

REV

78

METAL _____ DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA)

ANALYSIS METHOD

rent _____ nm Voltage _____ V
 a _____ Split _____ nm
 D₂ _____ Integ. _____ sec

Flame _____ Hydride _____
 Gas / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
TH3-2	0.098(%)	0.10	0.0004	3.37	112%

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61025B	<0.005			100	0.49			<1
C	<0.005				0.53			<1
D	<0.005				0.50			<1
E	<0.005				0.52			<1
F	<0.005				0.55			<1
G	<0.005				0.50			<1
H	<0.005				0.53			<1
Blk 7/18	<0.005				50		<0.01	
B.S.	0.0273		109%				0.0546	
5954R PR	<0.005	Y ₁₀	<0.05				<0.1	✓
SPK (102)	0.0221		111%		✓			
5954	<0.005				0.50g			<1 ✓
QC	<0.005				0.50g			<1
SPK	0.0217		86%	V	0.50g			43/50 86%

Subpart C3: Arsenic

METALS ANALYSIS DATA SHEET

86

METAL As DATE 5/31/86 ANALYST JB REVIEWER GC 7/17/86
 INSTRUMENT (AA) 193.7 nm ANALYSIS METHOD Hydride
 Current 4 a Voltage 620 V Flame Air / Acet Acid HCl
 D₂ off Split 1.0 nm Reduc. NaBH₄
 Integ. 1 sec

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	0.020	0.030	0.010	0.005	0.001
<u>5/31/86</u>	Absorbance	0.623	0.764	0.384	0.207	0.045
EPA Check	Known	Mean	SD	RSD	% Recovered	
WS 378 3	0.020	0.027	0.08	2.87	135	
WS 378 14x2	0.092	0.095	0.21	2.18	103	

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
BLK 5/22	<1 (ppb)			110				
BS	4.52							
5614-A HE	<1						<0.002	
B	<1						<0.002	
5527-F	6.30				50ml		0.0126	
5508-H	<1						<0.002	
5623-D	<1						<0.002	
61067-A	<1						<0.002	
B	<1						<0.002	
C	1.0						0.0020	
D	<1						<0.002	
D(QC)	<1						<0.002	
C(SPK)	4.72							
BLK 2	<1							
BS	4.21							
61068-A	<1						<0.002	
C	<1						<0.002	
C(QC)	<1						<0.002	
C(SPK)	4.74							
D	<1						<0.002	
D	4.26						0.0084	
61072-A	6.94						0.0179	
B	<1						<0.002	
E	<1						<0.002	
F	<1						<0.002	

METALS ANALYSIS DATA SHEET

82

METAL _____ DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____ ANALYSIS METHOD _____ 2

Current _____ nm Voltage _____ V
 a _____ Split _____ nm
 D₂ _____ Integ. _____ sec
 Flame _____ Hydride _____
 Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml		0.030			
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
14#2	0.092 9.2	10.6	0.32	3.02	115
3	2.0	2.26	0.12	4.40	113

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION				FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
1072-G(GC)	<1			100			<0.002	✓
G(spK)	5.10							
BLK 3	<1							
BS	4.27							
61076	15.3						0.0326	✓
11069	<1						<0.002	✓
61095 EPT	<1	1/10					<0.02	✓
(0.005)	5.61							
10956 EPT	4.69						0.0469	✓
(0.005)	9.98		10.90					
5620 EPT	<1						<0.02	✓
(0.005)	5.70							
BLK 5/23	<1							
BS	5.22							
5618-A	<1						<0.002	✓
B	<1						<0.002	✓
B(GC)	<1						<0.002	
B(spK)	3.93							
C	1.65						0.0033	✓
D	2.02						0.0040	✓
E	4.29						0.0085	✓
	<1						<0.002	✓
G	10.0						0.0000	✓
H	1.39							✓
I	<1							✓
BLK ₂	<1							✓

METALS ANALYSIS DATA SHEET

84

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V
 _____ a Split _____ nm
 D₂ _____ Integ. _____ sec
 Flame _____ Hydride _____
 Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
14x2	9.2	10.5	0.36	3.45	114
3	2.0	2.4	0.07	2.67	120

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
BS	4.99			100	50			
61024-A	1.06						0.00212	0.00216
A(GC)	1.10						0.00220	
A(spk)	6.50							
B	<1						<0.002	
C	<1						<0.002	
D	1.00						0.00200	
E	<1						<0.002	
F	<1						<0.002	
G	<1						<0.002	
5612-A	2.76						0.00552	0.00555
A(GC)	3.13						0.00626	
A(spk)	7.98							
B	see last page							
BLK ₃	<1							
BS	5.00							
BLK 5/27	<1							
BS	5.61							
60941-A	1.5						0.0030	
B	<1						<0.002	
C	<1						<0.002	
D	<1						<0.002	
E	<1						<0.002	
F	<1						<0.002	
G	<1						<0.002	
H	<1						<0.002	

METALS ANALYSIS DATA SHEET

REV.

86

METAL As DATE 7/25/86 ANALYST MM REVIEWER _____

INSTRUMENT (AA)
 Wavelength 193.7 nm
 Slit 0.5 nm
 Integ. OFF sec

Voltage 630 V
 Split 1.0 nm
 Integ. 1 sec

ANALYSIS METHOD
 Flame _____ Hydride _____
 Gas / Acid HCl
 Reduc. NaBH4

INITIAL CALIBRATION

STANDARDS:	#1 20.1	#2 30.0	#3 9.9	#4 5.0	#5 2.2
Stock Conc, ug/ml	<u>0.030</u>	<u>0.030</u>	<u>0.010</u>	<u>0.005</u>	<u>0.002</u>
Absorbance	<u>0.522</u>	<u>0.700</u>	<u>0.258</u>	<u>0.127</u>	<u>0.055</u>
EPA Check WP 2842	Known <u>0.235 (10%)</u>	Mean <u>0.218</u>	SD <u>0.0005</u>	RSD <u>2.37</u>	% Recovered <u>93%</u>

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Bk 2/18	<0.001			100	50		<0.002	
B.S.	0.0048		96%				0.0096	
5954A EPT	<0.001	1/2					<0.02	
SPE ↓	0.0055		110%					
5954	0.0263			100	0.50g			5.3
QC	0.0264				0.50			5.3
SPE	0.0319		110%		0.50			6.4-5.3=1.1/1.0
61749A	0.0185				0.50			3.7
B	0.0101				0.50			2.0
C	0.0107				0.50			2.1
D	0.0094				0.50			1.9
E	0.0146				0.52			2.8
E SPE	0.0190				0.51			3.7-2.8=0.9/0.9
61633	0.0123				0.50			2.5
QC	0.0121				0.50			2.4
61708 EPT	<0.001	1/2	<0.01		50		<0.02	
SPE	0.0053							
61707	<0.001	1/2	<0.01				<0.02	
SPE 1/2	0.0046		92%					
61737B	0.0072	1/2	0.072		50		0.144	
E EPT	<0.001	1/2	<0.01				<0.02	
SPE	0.0057		114%					
K	<0.001	1/2	<0.01				<0.02	
QC	0.0154		100%					
L	<0.001	1/2	<0.01				<0.02	

2

METALS ANALYSIS DATA SHEET

REV.

88

METAL _____ DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____ ANALYSIS METHOD _____

Current _____ nm Voltage _____ V

Split _____ nm

Integ. _____ sec

Flame _____ Hydride _____

Gas _____ / _____ Acid _____

Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
2	0.235 (1/2)	0.227	0.0005	2.44	97%

ANALYSIS

local

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
5933A EPT	<0.001	1/10	<0.01	100	50		<0.02	
SPK	0.0052		104%					
Bik 7133	<0.001						<0.002	
B.S.	0.0053		106%				0.0106	
61766 EPT	<0.001	1/10	<0.01				<0.02	
SPK	0.0055		110%					
61778A	<0.001	1/10	<0.01				<0.02	
SPK	0.0054		108%					
B	<0.001	1/10	<0.01				<0.02	
SPK	0.0052		104%					
C	<0.001	1/10	<0.01				<0.02	
SPK	0.0056		112%					
D	<0.001	1/10	<0.01				<0.02	
SPK	0.0052		104%					
E	<0.001	1/10	<0.01				<0.02	
SPK	0.0055		110%					
F	<0.001	1/10	<0.01				<0.02	
SPK	0.0056		110%					
G	<0.001	1/10	<0.01				<0.02	
SPK	0.0055		110%					
	0.0021	1/10	0.021				0.042	
SPK	0.0070		93%					
H	<0.001	1/10	<0.01				<0.02	
SPK	0.0057		114%					
I	<0.001	1/10	<0.01				<0.02	

METALS ANALYSIS DATA SHEET

REV.

90

METAL _____ DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____ ANALYSIS METHOD _____

Flame _____ Hydride _____

Current _____ nm Voltage _____ V

Split _____ nm

D₂ _____ Integ. _____ sec

Gas _____ / _____ Acid _____

Reduc. _____

INITIAL CALIBRATION

STANDARDS: #1 #2 #3 #4 #5

Stock _____ Conc, ug/ml _____

Absorbance _____

EPA Check 2 Known 0.255 (1%) Mean 0.228 SD 0.0006 RSD 2.74 % Recovered 97%

ANALYSIS

level 0.0201 ± 0.0200

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61778 L ^{SPK}	<0.001	Y ₁₀	<0.01	100	50		<0.02	
61766A	0.0036	Y ₁₀	0.036		0.30 g		Reduct	18
AQC	0.0035	Y ₁₀	0.035		0.78 g			13
ASPK					0.23 g			
61773A	0.0014				50		0.0028	
B	<0.001						<0.002	
61765 ^{SPK}	<0.001	Y ₁₀	<0.01				<0.02	
Bike #24	<0.001						<0.002	
BS	0.0056		112%		✓		0.0112	
61035A	0.0241				0.51			4.7 y 4.6
AQC	0.0223				0.49			4.6 g
ASPK	0.0298		92%		0.52			5.54 - 4.65 = 0.89%
B	0.0135				0.49			2.8
C	0.0139				0.53			2.6
D	0.0155				0.50			3.1
E	0.0128				0.53			2.5
F	0.0015				0.55			2.7
G	0.0009				0.50			4.2
H	0.0089				0.53			1.7
BR-25	<0.001				50		<0.002	
B...	0.0057		110%				0.0114	
...	<0.001						<0.002	
...	0.0013						0.0026	

Subpart C4: Barium

METAL Ba DATE 5/16/86 ANALYST NMM REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current 553.5 nm Voltage 380 V 5/30/86 Flame _____ Hydride _____
 Split 6 nm Gas N₂O / Acet Acid _____
 Integ. 4 sec Reduc. _____
8.12 PM 5/19/86

INITIAL CALIBRATION

-100ul KCl to samples/std

STANDARDS:	#1	#2	#3	#4	#5
Stock	Conc, ug/ml <u>2.00</u>	<u>10.00</u>	<u>1.00</u>	<u>0.50</u>	<u>0.10</u>
	Absorbance	<u>0.432</u>			<u>0.004</u>
EPA Check	Known	Mean	SD	RSD	% Recovered
<u>WS 378 14X2</u>	<u>0.734</u>	<u>0.76</u>	<u>0.08</u>	<u>2.23</u>	<u>104%</u>
<u>WB 378 14</u>	<u>0.367</u>	<u>0.40</u>	<u>0.02</u>	<u>5.06</u>	<u>109%</u>

ANALYSIS

Dilute - 1.60 to 2.00

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Blk 5/7	<0.1						<0.1	
B.S.	0.53		106%				0.53	
61005	0.23						0.23	
POP	0.22						0.22	
SPK	0.68		90%				0.68	
Blk 5/8	<0.1						<0.1	
B.S.	0.48		96%				0.48	
60930 ^{err}	<0.1	1/10					<1	
SPK	0.45		90%					
60853A	<0.1						<0.1	✓
B	<0.1						<0.1	✓
C	<0.1						<0.1	✓
D	<0.1						<0.1	✓
E	<0.1						<0.1	✓
E POP	<0.1						<0.1	✓
60930 ^{err} ESPK	0.26		52%				0.26	✓
F	<0.1						<0.1	✓
G	<0.1						<0.1	✓
Blk 5/9	<0.1						<0.1	
B.S.	0.54		108%				0.54	
60919A ^{err}	<0.1	1/10					<1	
SPK	0.47		94%					
B	<0.1						<1	
SPK	0.46		92%					
C	<0.1						<1	
SPK ✓	0.56	✓	112%					

②

METALS ANALYSIS DATA SHEET

REV.

94

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V
 a Split _____ nm
 D₂ Integ. _____ sec
 Flame _____ Hydride
 Gas / _____ Acid
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
14X2	0.734	0.75	0.03	3.61	102.4%
14	0.307	0.33	0.03	9.53	90%

ANALYSIS

① Lead - 2.18 to 2.00

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
60852A	<0.1						<0.1	✓
B	<0.1	1/10					<1	✓
J	<0.1	1/10					<1	✓
N	<0.1						<0.1	✓
P	<0.1						<0.1	✓
Pdp	<0.1						<0.1	✓
Pcp	0.52		104%				0.52	✓
R	0.11	1/10					1.1	✓
S	<0.1						<0.1	✓
U	0.25						0.25	✓
V	<0.1						<0.1	✓
AE	<0.1						<0.1	✓
AF	<0.1						<0.1	✓
AG	<0.1						<0.1	✓
AH	<0.1	1/10					<1	✓
AI	0.42						0.42	✓
AJ	1.43						1.43	✓
AL	<0.1						<0.1	✓
AM	<0.1						<0.1	✓
AN	<0.1						<0.1	✓
AO	<0.1						<0.1	✓
AP	<0.1						<0.1	✓
AMS	0.59		118%				0.59	✓
AP	<0.1						<0.1	✓
60847	5.41			50	0.50g			540/mg
60848	<0.1						<0.1	
60849	0.44		9.2%				0.44	

3
 METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V Flame _____ Hydride _____
 a _____ Split _____ nm Gas _____ / _____ Acid _____
 D₂ _____ Integ. _____ sec Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	_____	_____	_____	_____	_____
Conc, ug/ml	_____	_____	_____	_____	_____
Absorbance	_____	_____	_____	_____	_____
EPA Check	Known	Mean	SD	RSD	% Recovered
14x2	0.734	0.73	0.02	4.51	99%
14	0.367	0.39	0.03	8.31	106%

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61012C EPA	1.02	1/10					10.2	✓
SPK	1.50	✓	96%					
D	1.26	1/100					12.6	✓
SPK	1.73	✓	94%					
E	1.04	1/10					10.4	✓
SPK	1.55		102%					
61029A	<0.1						<1	✓
SPK	0.53		106%					
B	<0.1						<1	✓
SPK	0.55		110%					
60955	<0.1						<1	✓
SPK ✓	0.47	✓	94%					
621073 B	0.23						0.23	✓
C	<0.1						<0.1	✓
D	<0.1						<0.1	✓
E	<0.1						<0.1	✓
EPA	<0.1						<0.1	✓
ESPK	0.54						0.54	✓
F	<0.1						<0.1	✓
H	0.46						0.46	✓
I	0.46						0.46	✓
K	<0.1						<0.1	✓
L	0.94						0.94	✓
M	<0.1						<0.1	✓
MCP	<0.1						<0.1	✓
MSPK	0.49						0.49	✓

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V
 Split _____ nm Flame _____ Hydride _____
 D₂ _____ Integ. _____ sec Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
14x2	0.754	0.71	0.03	3.64	97%
14	0.367	0.40	0.03	7.44	109%

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION				FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61074A	<0.1						<0.1 ✓	
Blk 5/4	<0.1						<0.1	
B.S.	0.47						0.47	
61072A	0.20						0.20 ✓	
B	0.16						0.16 ✓	
C	0.22						0.22 ✓	
E	0.21						0.21	
ENDP	0.20						0.20 ✓	
F	<0.1						<0.1 ✓	
FSPK	0.54						0.54	
G	<0.1						<0.1 ✓	
5664 G	0.23						0.23 •	
G	0.21						0.21 •	
H	0.26						0.26 •	
H	0.27						0.27 •	
60879 H	0.12						0.12 •	
H	0.13						0.13 •	
I	0.27						0.27 w	
I	0.28						0.28 •	
60980 I	0.23						0.23 •	
I	0.22						0.22 •	
J	0.39						0.39 •	
J	0.38						0.38 •	
5612 A	0.16						0.16 ✓	
B	0.16						0.16 ✓	
B.D.P	0.15						0.15	

TESTS

STD 1
 CON 02.00
 SIG 0.049
 0.048
 0.049
 0.049

MEAN 0.049
 STD 2
 CON 10.00
 SIG 0.230
 0.235
 0.232

MEAN 0.232

STD 3
 CON 01.00
 SIG 0.022
 0.023
 0.023
 0.023

MEAN 0.023

STD 4
 CON 00.50
 SIG 0.012
 0.012
 0.012

MEAN 0.012

STD 5
 CON 00.10
 SIG 0.003
 0.004
 0.004

MEAN 0.004

APP CON

STD 1 02.01

STD 2 10.00

STD 3 00.97

STD 4 00.52

STD 5

STATISTICS

CON 01 00.73
 02 00.77
 03 00.76
 04 00.76
 05 00.76
 06 00.76
 07 00.74
 08 00.77
 09 00.74
 10 00.78

MEAN 00.76

SD 00.02

RSD 02.23

CON 01 00.38
 02 00.41
 03 00.38
 04 00.41
 05 00.40
 06 00.41
 07 00.40
 08 00.40
 09 00.35
 10 00.12

MEAN 00.37

SD 00.09

RSD 24.10

CON 01 00.42
 02 00.41
 03 00.39
 04 00.41
 05 00.41
 06 00.40
 07 00.40
 08 00.43
 09 00.38
 10 00.36

MEAN 00.40

SD 00.02

RSD 05.06
 AUTO CAL

STD 1

ACT CON 02.00

ORG CON 01.60

NEW CON 02.00
 AUTO DEL

STD 1

ACT CON 02.00

ORG CON 02.10

NEW CON 02.00

STATISTICS

CON 01 00.91
 02 00.93
 03 00.93
 04 00.93

AUTO ZERO A

00.00

STATISTICS

CON 01 00.79
 02 00.73
 03 00.80
 04 00.76
 05 00.78
 06 00.75
 07 00.72
 08 00.73
 09 00.72
 10 00.76

MEAN 00.75

SD 00.03

RSD 03.61

CON 01 00.37
 02 00.34
 03 00.37
 04 00.32
 05 00.30
 06 00.31
 07 00.37
 08 00.33
 09 00.36
 10 00.28

MEAN 00.33

SD 00.03

RSD 09.53

STATISTICS

CON	01	00.48
	02	00.46
	03	00.48
	04	00.37
	05	00.39
	06	00.48
	07	00.36

MEAN 00.40

SD 00.03

RSD 07.44

CON	01	00.72
	02	00.75
	03	00.69
	04	00.69
	05	00.72
	06	00.71
	07	00.72
	08	00.74
	09	00.66
	10	00.72

MEAN 00.71

SD 00.03

RSD 03.64

CON 01 00.43

METAL Ba - DATE 5/29/86 ANALYST JB REVIEWER dc/27M/5/31/86
 INSTRUMENT (AA) 5535 nm Voltage 380 V ANALYSIS METHOD Flame Hydride
 Current 5 a Split 1.0 mm Gas N₂O / Acet Acid
 D₂ off Integ. 4 sec 6/2/86 Reduc.

INITIAL CALIBRATION

-100 µPKCl added to sample/stds

STANDARDS:	#1	#2	#3	#4	#5
Stock	2.00	10.00	1.00	0.50	0.10
Conc, ug/ml					
Absorbance	0.040	0.185	0.020	0.010	0.002
EPA Check	Known	Mean	SD	RSD	% Recovered
WS 378 14x2	0.734	0.74	0.002	1.	101%
WP 581 TMBL 2	10.0	10.10	0.07	0.68	101%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
5620-A ^{opt} A-E	<.1	1/10	<.1				<.1	
0.50	0.46		92%					
60956-CH ^{opt}	<.1		<.1				<.1	
0.50	0.48		96%					
61095 DN ^{opt}	<.1		<.1				<.1	
0.50	0.48		96%					
BLK 5/15	<.1						<.1	
BS	0.52	±104%					0.52	
60854 A ETC	0.86			50ml	0.51g			84
B	0.71				0.50g			71
C	0.23				0.50g			23
D	0.82				0.51g			80
E	1.61				0.56g			161
E(QC)	1.58				0.50g			158
E(SPK)	1.94				0.56g			194
60941-A Xcv	<.1						<.1	
A(QC)	<.1						<.1	
A(SPK)	0.33		66%				0.33	
BLK 5/16	<.1						<.1	
BS	0.52		104%				0.52	
61008-A DN	0.52						0.52	
B	<.1	1/10	<.1				<.1	
C	<.1	1/10	<.1				<.1	
D	4.06	1/100	406				406	
E	2.74	1/100	274				274	
F	1.2	1/10	1.2				1.2	

2

METAL _____ DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA)

ANALYSIS METHOD

Current _____ nm	Voltage _____ V	Flame _____ Hydride
D ₂ _____ a	Split _____ nm	Gas _____ / _____ Acid
	Integ. _____ sec	Reduc. _____

INITIAL CALIBRATION

STANDARDS: #1 #2 #3 #4 #5

Stock _____	Conc, ug/ml _____	_____	_____	_____	_____
	Absorbance _____	_____	_____	_____	_____

EPA Check	Known	Mean	SD	RSD	% Recovered
14x2	0.734	0.81	0.02	2.01	111%
TIME 2	10.0	9.82	0.75	7.62	98%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61008-G DN	<.1	1/10	<1				<1	✓
H	0.25						0.25	✓
T	<.1						<0.1	✓
J	0.32	1/10	3.2				3.2	✓
K	0.1						<0.1	✓
L	<.1						<0.1	✓
M	<.1	1/10	<1				<1	✓
W								
N(LO)	<.1	1/10	<1				<1	
N(SPK)	<.1	1/10	<1		Spiked too low		<1	
O	0.37	1/10	3.7				3.7	✓
P	<.1						<0.1	✓
Q	1.36	1/10	13.6				13.6	✓
R	<.1						<0.1	✓
R(QA)	<.1						<0.1	
R(SPK)	0.60		120%				0.60	
S	1.05						1.05	
T	0.62						0.62	
U	0.51						0.51	✓
V	<.1	1/10	<1				<1	✓
61076-A WML	0.50						0.50	
A(QA)	0.56						0.56	
A(SPK)	1.01						1.01	
BLK 5/21	<.1						<0.1	
BS	0.51						0.51	
BLK 5/21	<.1						<0.1	

3

METAL _____ DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____ ANALYSIS METHOD _____

Current _____ nm Voltage _____ V
 Split _____ nm
 D₂ _____ Integ. _____ sec
 Flame _____ Hydride _____
 Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	_____	_____	_____	_____	_____
Conc, ug/ml	_____	_____	_____	_____	_____
Absorbance	_____	_____	_____	_____	_____
EPA Check	Known	Mean	SD	RSD	% Recovered
14 x 2	0.734	0.78	0.02	2.12	106%
TM 112	10.00	10.08	0.08	0.82	101%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
6110 Belfast	0.60						0.60	0.59
6110 (RD)	0.58						0.58	
" (spk)	1.05		1.05 - 1.59 = 0.46 222				1.05	
61008-A ^{DN} _{SPK}	0.41						0.41	
B	<1	1/10	<1				<1	
C	<1	1/10	<1				<1	
D	4.04	1/100	404				404	
E	2.80	1/100	280				280	
F	0.16	1/10	1.6				1.6	
BLK 5/19	<1						<0.1	
BS	0.82		1610.82% of 0.82%				0.82	
61025-A VRS	0.88			200	2.16			19.81 ug/g
A (RC)	0.74			200	2.18			68 "
A (spk)	1.32			200	2.01			130 "
B	0.610			200	2.19			37 "
C	1.37			200	2.07			130 "
D	1.07			200	2.02			110 "
E	0.40			200	2.07			39 "
F	1.05			200	2.10			100 "
G	0.99			200	2.00			99 "
H	0.34			200	2.03			33 "
61008-G ^{DN}	<0.1	1/10	<1				<1	
H	0.29						0.29	
I	<0.1						<0.1	
K	<0.1	1/10	<1				<0.1	
L	<0.1						<0.1	

APP CON

STD 1

02.00

STD 2

10.00

STD 3

01.00

STD 4

00.49

STD 5

00.10

STATISTICS

CON 01	00.70
02	00.75
03	00.74
04	00.74
05	00.72
06	00.74
07	00.70
08	00.73
09	00.60

MEAN 00.73

SD 00.05

RSD 07.22

STATISTICS

CON 01	10.04
02	10.00
03	10.07
04	10.02
05	10.17
06	10.01
07	10.11
08	10.17
09	10.16
10	10.20

MEAN 10.10

SD 00.07

RSD 07.22

STD 1

CON 02.00
SIG 0.040
0.040
0.039

MEAN 0.040

STD 2

CON 10.00
SIG 0.106
0.105
0.105

MEAN 0.105

STD 3

CON 01.00
SIG 0.020
0.020
0.019

MEAN 0.020
09 -0.000
10 -0.001

STD 4

CON 00.50
SIG 0.009
0.010
0.009
0.009

MEAN 0.010

STD 5

CON 00.10
SIG 0.001
0.001
0.001

CON 01	00.70
02	00.75
03	00.74
04	00.74
05	00.72
06	00.74
07	00.70
08	00.73
09	00.60

MEAN 00.73

SD 00.05

RSD 07.22

CON 01	10.04
02	10.00
03	10.07
04	10.02
05	10.17
06	10.01
07	10.11
08	10.17
09	10.16
10	10.20

MEAN 10.10

SD 00.07

RSD 07.22

STATISTICS

RSD 07.22

SD 00.05

MEAN 00.73

RSD 07.22

SD 00.05

MEAN 00.73

RSD 07.22

SD 00.05

MEAN 00.73

RSD 07.22

SD 00.05

MEAN 00.73

01	00.41
02	00.43
03	00.46
04	00.47
05	00.45
06	00.46
07	00.47
08	00.48
09	00.47
10	00.48

MEAN 00.46

SD 00.02

RSD	03.95
62	02.08
63	01.99

STATISTICS

CON 01	00.81
02	00.84
03	00.80
04	00.81
05	00.83
06	00.81
07	00.80
08	00.81
09	00.81
10	00.78

MEAN 00.81

SD 00.02

RSD 02.01

STATISTICS

CON 01	10.44
02	10.59
03	10.34
04	10.34
05	10.16
06	10.05
07	09.87
08	09.19
09	08.46
10	00.77

MEAN 09.82

SD 00.75

RSD 07.62

CON 01 00.81
 02 00.84
 03 00.89
 04 00.93
 05 00.89
 06 00.90
 07 00.88
 08 00.93
 09 00.86
 10 00.66

MEAN 00.86
 SD 00.08
 RSD 09.36

CON 01 14.92
 02 12.74
 03 14.77
 04 15.27
 05 14.41
 06 15.26
 07 06.14
 08 10.05
 09 13.67
 10 01.65

CON 01 00.26
 02 00.10
 03 00.02
 04 00.06
 05 00.02

STATISTICS

CON 01 13.15
 02 11.40
 03 12.47
 04 12.36
 05 13.10
 06 12.29
 07 06.48
 08 12.60
 09 12.80
 10 06.64

MEAN 11.35
 SD 02.57
 RSD 22.62

STD 1
 02.00

STD 2
 05.17

STD 3
 00.98

STD 4
 00.51

STD 5
 00.12

STATISTICS

CON 01 00.83
 02 00.77
 03 00.81
 04 00.64
 05 00.83
 06 00.78
 07 00.82
 08 00.81
 09 00.72
 10 00.74

MEAN 00.79

SD 00.04

RSD 05.11

CON 01 09.45
 02 11.25
 03 08.34
 04 10.63
 05 11.75
 06 09.71
 07 09.47
 08 10.01
 09 11.13
 10 10.82

MEAN 10.26

SD 01.04

SD 10.15

STD 1
 CON 02.00
 SIG 0.040
 0.041
 0.041
 0.039
 MEAN 0.040

STD 2
 CON 10.00
 SIG 0.179
 0.184
 0.179
 0.192

MEAN 0.184
 STD 3

CON 01.00
 SIG 0.019
 0.018
 0.018

MEAN 0.018
 STD 4

CON 00.50
 SIG 0.008
 0.008
 0.008
 0.010

MEAN 0.009
 STD 5

CON 00.10
 SIG 0.000
 0.001
 0.001
 0.004
 0.002

MEAN 0.002
 FLEX 09.72

APP CON

Subpart G5: Beryllium

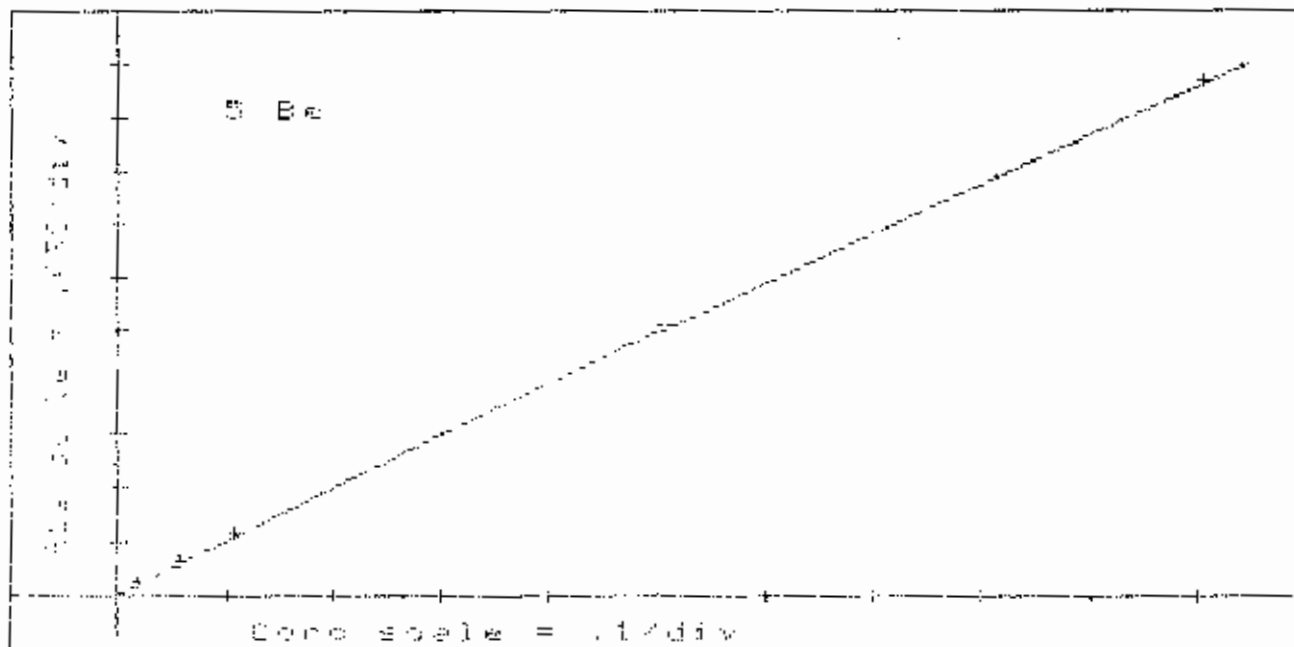
GENERAL TESTING CORP WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
OPERATOR: JB
DATE: 7/14/86
BATCH: Be

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 5 Be

SOLUTION	CONC PPM	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.4%	0.228	0.227	0.228	0.229	1.000
STANDARD 1	0.010	0.0%	0.004	0.004	0.004	0.005	1.000
STANDARD 2*	0.050	0.0%	0.020	0.021	0.020	0.020	1.000
STANDARD 3	0.100	2.6%	0.038	0.037	0.038	0.039	1.000
STANDARD 4	0.500	0.5%	0.187	0.186	0.187	0.188	1.000
STANDARD 5	1.000	0.6%	0.363	0.361	0.364	0.365	1.000



WR284 1x2	0.035	0.0%	0.022	0.022	0.022	0.022	1.000
WR284 2	0.227	1.2%	0.083	0.087	0.087	0.083	1.000
BLK 5/15	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
BS	0.044	5.6%	0.018	0.019	0.017	0.018	1.000
61024-A	0.000	0.0%	0.000	-0.001	-0.001	0.000	1.000
61024-B	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
61024-C	0.000	0.0%	0.000	0.000	0.000	-0.001	1.000
61024-C (DC)	0.000	0.0%	0.000	0.000	-0.001	0.000	1.000
61024-C (SPK)	0.047	0.0%	0.019	0.019	0.019	0.019	1.000
61024-D	0.000	0.0%	0.000	0.000	-0.001	0.000	1.000
61024-E	0.000	0.0%	0.000	-0.001	0.000	0.000	1.000
61024-F	0.000	0.0%	0.000	-0.001	0.000	0.000	1.000
61024-G	0.000	0.0%	0.000	0.000	-0.001	0.000	1.000

GENERAL TESTING CORP WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JB
 DATE: 7/14/86
 BATCH: Be

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Be PPM
WR284 1x2	0.035
WR284 2	0.227
BLK 5/15	0.000 < 0.005
BS	0.044 88%
61024-A	0.000 < 0.005 ✓
61024-B	0.000 < 0.005 ✓
61024-C	0.000 < 0.005 ✓
61024-C (DC)	0.000 < 0.005
61024-C (SPK)	0.047 94%
61024-D	0.000 < 0.005 ✓
61024-E	0.000 < 0.005 ✓
61024-F	0.000 < 0.005 ✓
61024-G	0.000 < 0.005 ✓

METALS ANALYSIS DATA SHEET

REV. 116

METAL Be DATE 6/5/86 ANALYST MM REVIEWER _____
 INSTRUMENT (AA) 234.9 nm Voltage 530 V Flame Hydride
 Wavelength 234.9 nm Split 1.0 nm Gas N₂O / Acet Acid
 D₂ ON Integ. 4 sec Reduc. _____

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	0.500	1.000	0.200	0.100	0.010
	Absorbance		0.315			0.008
EPA Check MP 284 Z	Known	Mean	SD	RSD	% Recovered	
	0.235	0.227	0.17	7.61	97%	

ANALYSIS

Recalibrate 0.509 to 0.500

INSTRUMENT ANALYSIS			DIGESTION				FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Bk 5/15	<0.01							
B.S.	0.048		96%					
61024 A	<0.01							
B	<0.01							
C	<0.01							
COMP	<0.01							
CSPK	0.053		106%					
D	<0.01							
E	<0.01							
F	<0.01							
G	<0.01							
5612 A	<0.01							
ADP	<0.01							
ASPK	0.046		92%					
B	<0.01							
Bk 5/19	<0.01							
B.S.	0.157		114%					
61025 A	<0.01			50	0.53	wet		<1 ug/g
ADP	<0.01				0.53			<1 "
ASPK	0.059		118%		0.53		54/47 = 114%	516 "
B	<0.01				0.57			<1 "
C	<0.01				0.55			<1 "
D	<0.01				0.52			<1 "
E	<0.01				0.57			<1 "
F	<0.01				0.56			<1 "

METALS ANALYSIS DATA SHEET

REV.

METAL _____ DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____ ANALYSIS METHOD _____

Current _____ nm Voltage _____ V

Split _____ nm Gas _____ / _____ Acid _____

D₂ _____ Integ. _____ sec Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
2	0.235	0.242	0.008	3.50	103%

ANALYSIS

Recalibrate 0.504 to 0.500

INSTRUMENT ANALYSIS			DIGESTION				FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61025 H	<0.01			50	0.51	wet		<1 "
5670 A	<0.01 ✓							
ADP	<0.01							
ASPC	0.049		98%					
B	<0.01 ✓							
Blk 5/22	<0.01							
B.S	0.041		82%					
5618 A	<0.01 ✓							
B	<0.01 ✓							
BDP	<0.01							
BSK	0.051		102%					
C	<0.01 ✓							
D	<0.01 ✓							
E	<0.01 ✓							
F	<0.01 ✓							
G	<0.01 ✓							
H	<0.01 ✓							
I	<0.01 ✓							
5648 A (CS)	<0.01 ✓							
B	<0.01 ✓							

AUTO CAL

STD 1

ACT CON 0.500

ORG CON 0.500

NEW CON 0.500

17 0.034

STATISTICS

CON 01 0.272

STATISTICS

CON 01 0.251

02 0.242

03 0.246

04 0.231

05 0.244

06 0.235

07 0.259

08 0.233

09 0.238

10 0.241

MEAN 0.242

SD 0.008

RSD 03.50

AUTO CAL

STD 1

ACT CON 0.500

ORG CON 0.504

NEW CON 0.500

STATISTICS

CON 01 0.190

02 0.213

03 0.225

04 0.217

05 0.232

06 0.230

07 0.236

08 0.238

09 0.231

10 0.254

MEAN 0.227

SD 0.017

RSD 07.61

STD 1

CON 05.00

SIG 0.171

0.163

0.173

MEAN 0.170

STD 1

CON 0.500

MEAN 0.170

STD 2

CON 1.000

SIG 0.310

0.317

0.310

MEAN 0.315

STD 3

CON 0.200

SIG 0.059

0.064

0.063

MEAN 0.062

STD 4

CON 0.100

SIG 0.025

0.030

0.027

MEAN 0.027

STD 5

CON 0.010

SIG 0.008

0.010

0.010

0.008

MEAN 0.008

APP CON

STD 1

0.500

STD 2

1.000

STD 3

0.200

STD 4

0.008

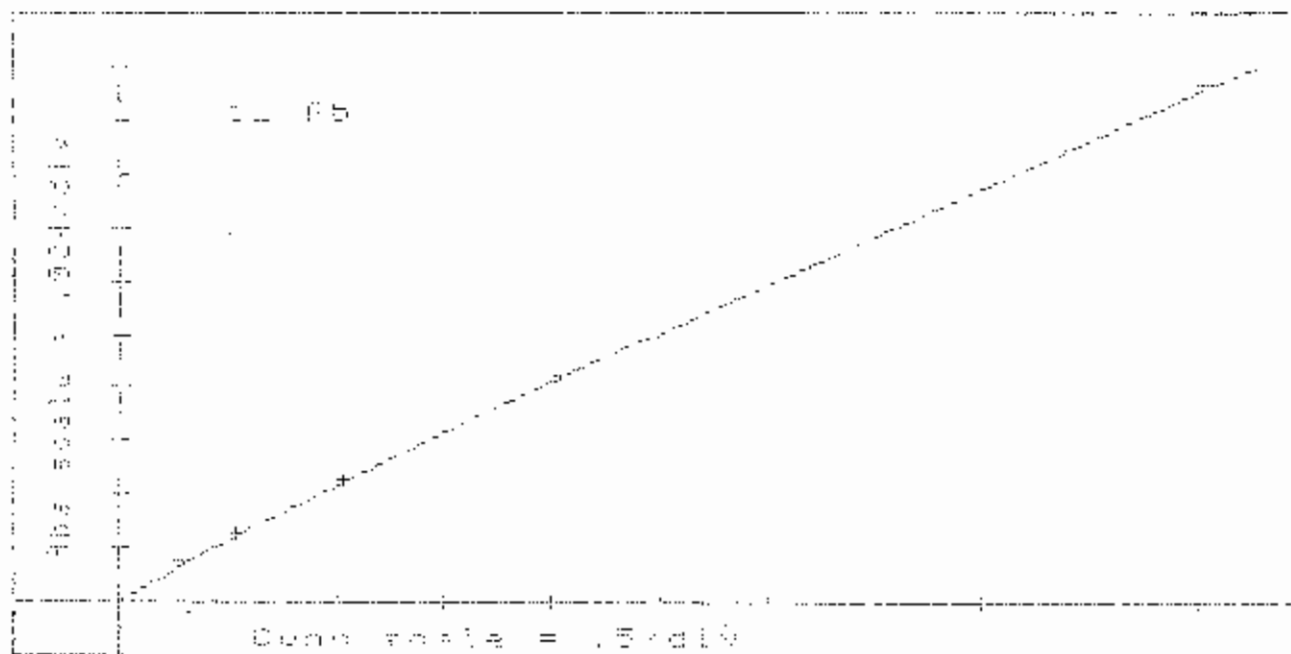
STD 5

0.008

Subpart G6: Cadmium
Lead
Iron

AUTO-PROGRAM 12 P5

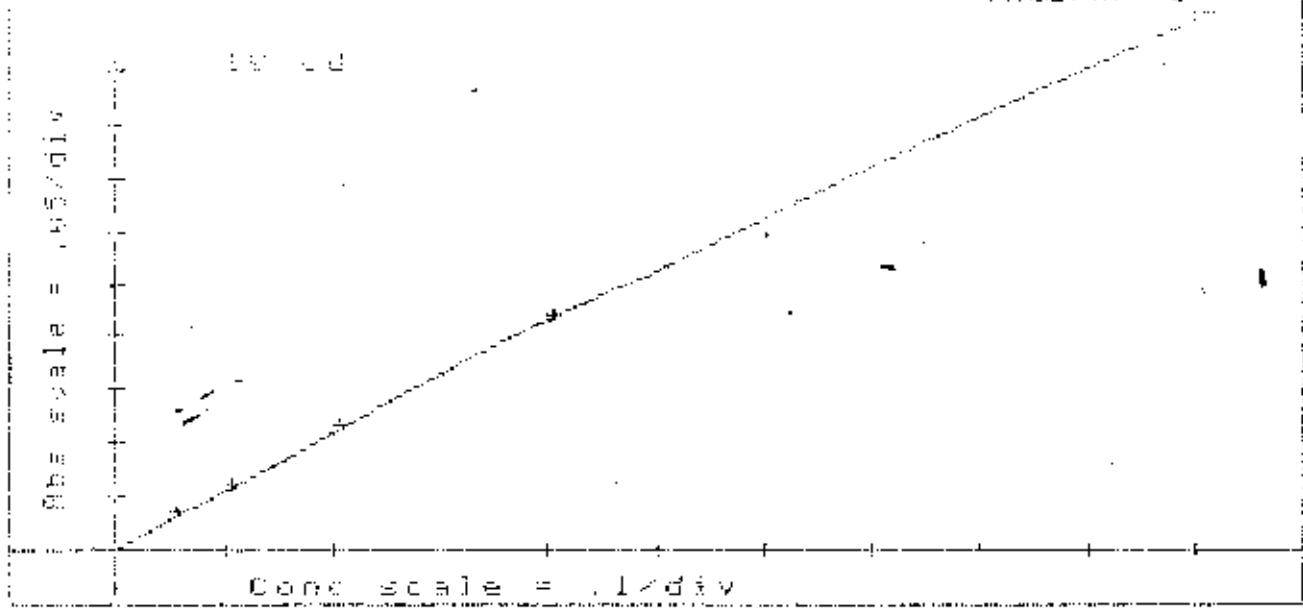
SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			SLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 1	0.250	7.1%	0.014	0.012	0.014	0.013	1.000
STANDARD 2	0.500	5.7%	0.027	0.027	0.028	0.025	1.000
STANDARD 3	1.000	5.0%	0.051	0.050	0.053	0.052	1.000
STANDARD 4	2.000	4.8%	0.100	0.099	0.099	0.098	1.000
STANDARD 5	5.000	4.4%	0.250	0.247	0.249	0.229	1.000



STANDARD 6	0.050	22.7%	0.003	0.003	0.005	0.001	1.000
STANDARD 7	0.440	5.3%	0.024	0.023	0.022	0.020	1.000
STANDARD 8	0.000	100.0%	-0.002	0.000	-0.004	-0.003	1.000
STANDARD 9	0.020	7.1%	0.011	0.011	0.013	0.013	1.000
STANDARD 10	0.110	100.0%	0.001	0.000	0.007	0.003	1.000
STANDARD 11	0.117	15.1%	0.003	0.003	0.006	0.003	1.000
STANDARD 12	0.020	13.0%	0.017	0.017	0.015	0.011	1.000
STANDARD 13	0.110	14.1%	0.007	0.001	0.003	0.003	1.000
STANDARD 14	0.050	22.7%	0.003	0.001	0.002	0.002	1.000
STANDARD 15	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 16	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 17	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 18	0.000	0.0%	0.000	0.000	0.000	0.000	1.000

AUTO-PROGRAM 10 P6

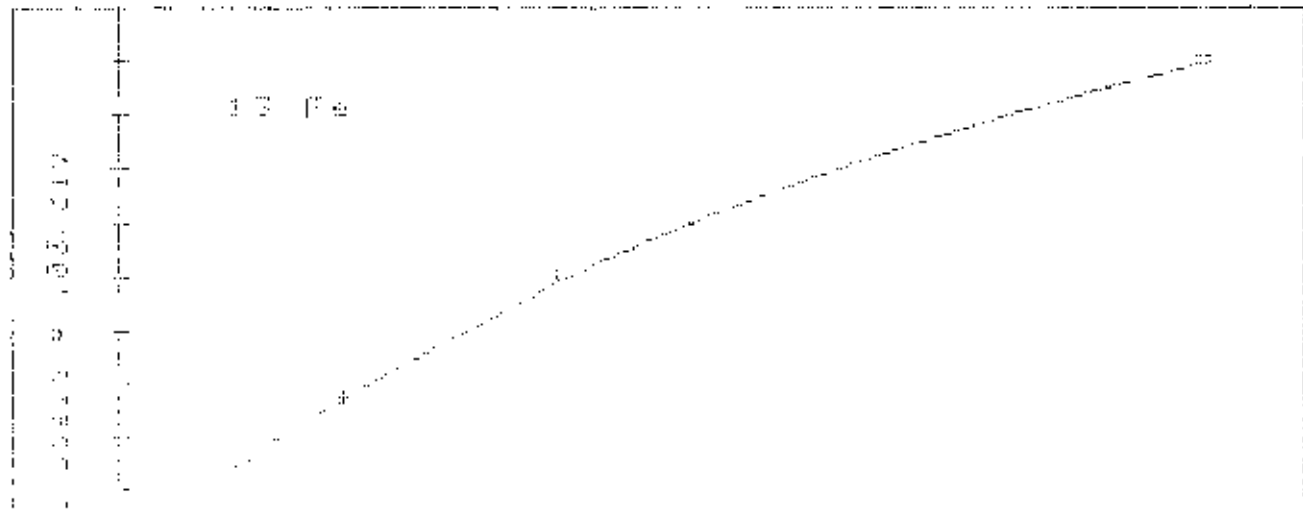
SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			SLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 1	0.125	7.1%	0.001	0.001	0.002	0.001	1.000
STANDARD 2	0.250	5.7%	0.002	0.002	0.002	0.001	1.000
STANDARD 3	0.500	5.0%	0.004	0.004	0.002	0.001	1.000
STANDARD 4	1.000	4.8%	0.008	0.008	0.002	0.001	1.000
STANDARD 5	5.000	4.4%	0.030	0.031	0.002	0.001	1.000



WFB4 1*2	0.010	16.7%	0.004	0.008 0.005 0.007	1.000
WFB4 2	0.032	5.6%	0.012	0.019 0.017 0.020	1.000
BLK 5/15	0.000	100.0%	-0.001	0.000-0.002-0.001	1.000
BLK SPK	0.044	4.0%	0.025	0.025 0.026 0.024	1.000
61024 A	0.000	100.0%	-0.001	0.000-0.003-0.001	1.000
61024 ASD	0.000	33.3%	-0.003	-0.003-0.004-0.002	1.000
61024 ASPK	0.042	4.2%	0.024	0.025 0.025 0.024	1.000
61024 B	0.000	50.0%	-0.002	-0.002-0.001-0.003	1.000
61024 C	0.000	50.0%	-0.002	-0.003-0.002-0.003	1.000
61024 D	0.000	100.0%	-0.001	-0.002-0.001-0.002	1.000
61024 E	0.000	200.0%	-0.001	-0.001 0.000-0.004	1.000
61024 F	0.000	100.0%	-0.001	-0.003 0.000 0.000	1.000
61024 G	0.000	50.0%	-0.002	-0.003 0.000-0.003	1.000

AUTO-PROGRAM 13 Fe

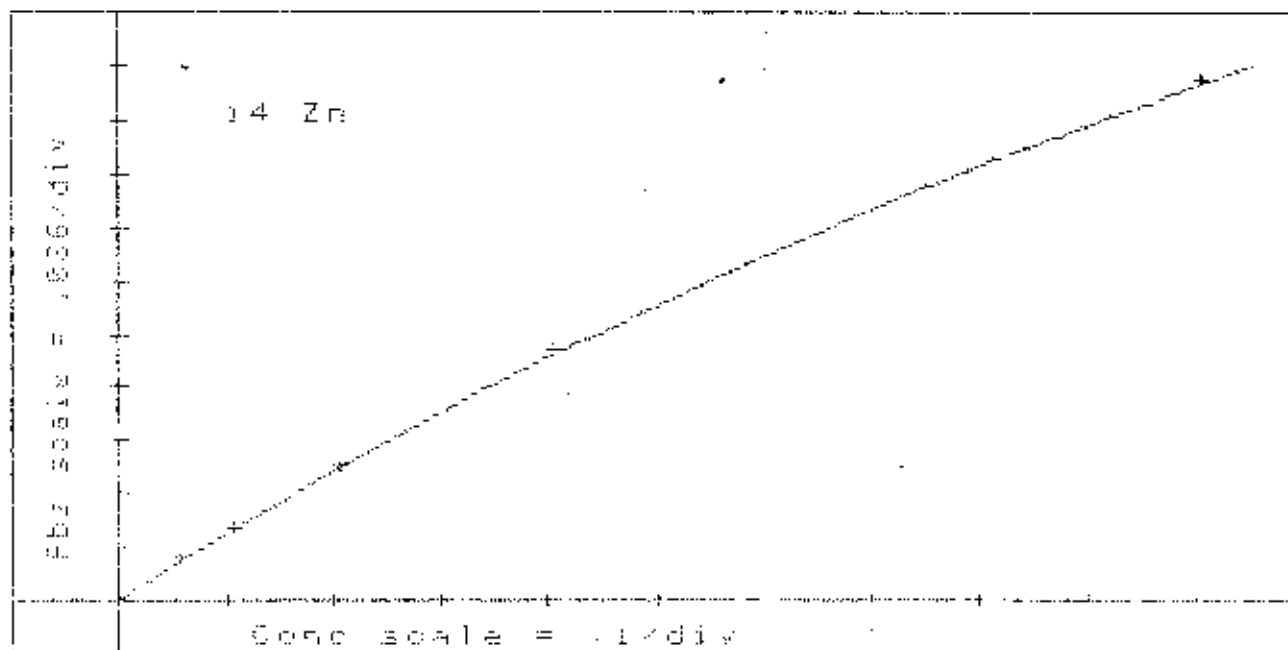
SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	50.0%	0.002	0.001 0.004 0.001	1.000
STANDARD 1	0.250	0.0%	0.034	0.037 0.036 0.036	1.000
STANDARD 2	0.500	0.0%	0.067	0.067 0.067 0.068	1.000
STANDARD 3	1.000	0.0%	0.136	0.138 0.109 0.107	1.000
STANDARD 4	2.000	0.0%	0.171	0.177 0.177 0.175	1.000
STANDARD 5	2.000	0.0%	0.298	0.293 0.297 0.301	1.000



WP284 1*2	0.041	0.0%	0.006	0.007	0.006	0.006	1.000
284 2	0.861	1.0%	0.097	0.098	0.098	0.101	1.000
BLK 5/15	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
BLK SPK	0.279	2.5%	0.040	0.039	0.041	0.042	1.000
61024 A	0.166	8.3%	0.024	0.024	0.022	0.026	1.000
61024 AGC	0.187	3.7%	0.027	0.027	0.028	0.026	1.000
61024 ASFK	0.307	3.7%	0.054	0.055	0.056	0.052	1.000
61024 B	0.173	4.0%	0.025	0.027	0.025	0.024	1.000
61024 C	4.252	0.4%	0.274	0.274	0.276	0.274	1.000
61024 D	0.215	6.5%	0.031	0.029	0.031	0.033	1.000
61024 E	1.172	1.7%	0.120	0.118	0.122	0.122	1.000
61024 F	1.519	0.7%	0.143	0.143	0.143	0.145	1.000
61024 G	0.509	2.9%	0.068	0.068	0.070	0.066	1.000

AUTO-PROGRAM 14 Zn

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	2.6%	0.038	0.039	0.038	0.037	1.000
STANDARD 1	0.050	4.3%	0.023	0.024	0.021	0.024	1.000
STANDARD 2	0.100	2.3%	0.044	0.045	0.043	0.045	1.000
STANDARD 3	0.200	1.2%	0.086	0.087	0.086	0.085	1.000
STANDARD 4	0.400	0.6%	0.164	0.164	0.165	0.165	1.000
STANDARD 5	1.000	0.3%	0.346	0.344	0.347	0.347	1.000



WP284 1*2	0.019	11.1%	0.009	0.010	0.010	0.009	1.000
284 2	0.408	0.6%	0.167	0.167	0.168	0.160	1.000
BLK 5/15	0.010	0.0%	0.003	0.005	0.005	0.005	1.000
BLK SPK	0.490	0.5%	0.137	0.137	0.138	0.154	1.000
61024 A	0.766	0.4%	0.254	0.254	0.255	0.253	1.000
61024 AGC	0.926	0.0%	0.377	0.376	0.379	0.363	1.000
61024 ASFK	0.607	0.0%	0.250	0.251	0.249	0.254	1.000
61024 B	0.576	0.0%	0.191	0.191	0.191	0.191	1.000
61024 C	0.377	0.3%	0.111	0.112	0.111	0.111	1.000

61024 E	0.943	0.6%	0.032	0.334	0.373	0.329	1.000
61024 F	0.776	0.3%	0.237	0.287	0.287	0.286	1.000
61024 G	0.662	0.4%	0.253	0.253	0.253	0.255	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 07/8/86
 BATCH:

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Pb mg/L	Cd mg/L	Fe mg/L	Zn mg/L
WP284 1*2	0.053	0.010	0.041	0.017
WP284 2	0.440	0.032	0.861	0.408
BLK 5/15	0.000<0.05	0.000<0.05	0.000<0.05	0.010
BLK 5PK	0.250	0.044	0.279	0.492
61024 A	0.017<0.05	0.000<0.05	0.156	0.756
61024 ADD	0.017<0.05	0.000<0.05	0.187	0.924
61024 A5PI	0.233	0.042	0.387	0.662
61024 B	0.017<0.05	0.000<0.05	0.173	0.512
61024 C	0.053	0.000<0.05	4.257 4.25	0.837
61024 D	0.000<0.05	0.000<0.05	0.215	0.657
61024 E	0.000<0.05	0.000<0.05	1.172 1.17	0.943
61024 F	0.035<0.05	0.000<0.05	1.519	0.716
61024 G	0.000<0.05	0.000<0.05	0.509	0.662

report
Zn

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: D. DUMBLETON

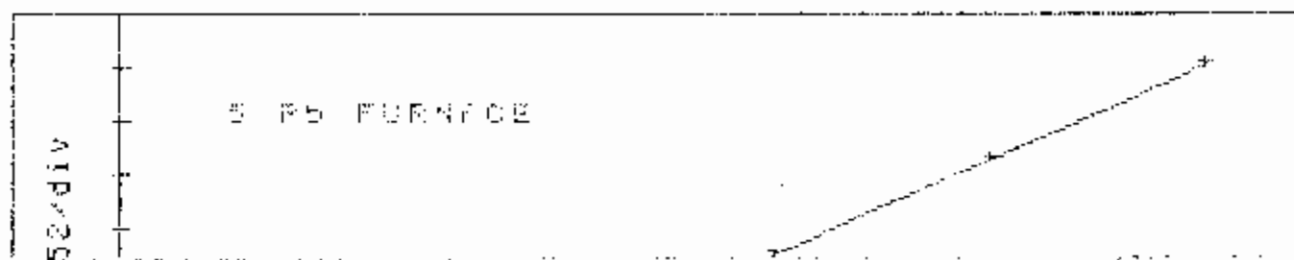
DATE: 07/10/86

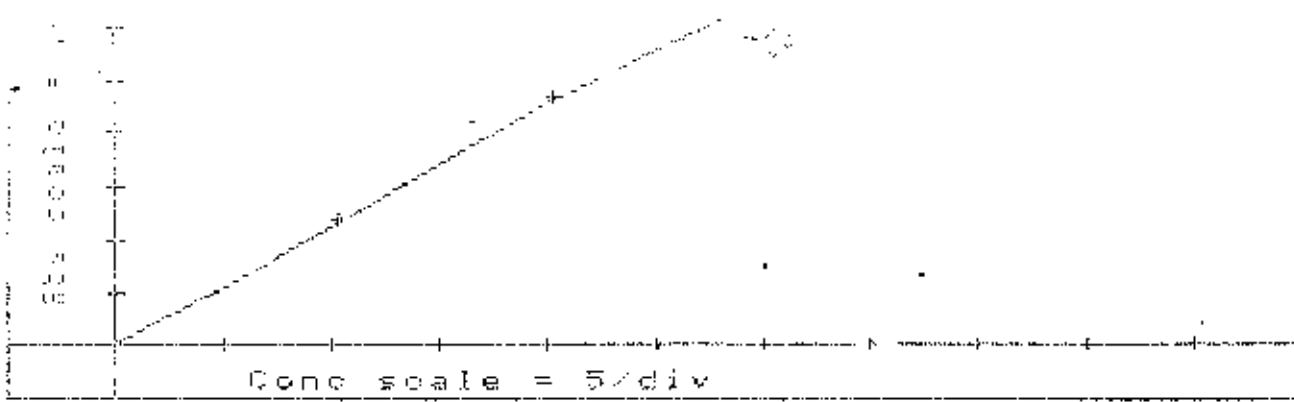
BATCH:

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 5 Pb FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS		RESLOPE FACTOR
BLANK	0.000	33.3%	0.006	0.008	0.005	1.000
STANDARD 1	10.00	0.0%	0.117	0.117	0.117	1.000
STANDARD 2	20.00	2.1%	0.234	0.231	0.239	1.000
STANDARD 3	30.00	0.6%	0.335	0.334	0.337	1.000
STANDARD 4	40.00	0.5%	0.427	0.425	0.429	1.000
STANDARD 5	50.00	1.7%	0.519	0.525	0.510	1.000





SP224 1*2	*	104.9	3.3%	0.125	0.120	0.126	1.000
SP224 2	*	485.8	2.4%	0.505	0.457	0.514	1.000
10L 1		26.19	0.7%	0.299	0.297	0.301	1.000
2		26.29	2.3%	0.300	0.305	0.295	1.000
3		25.89	0.3%	0.296	0.297	0.295	1.000
4		26.60	0.7%	0.303	0.305	0.302	1.000
5		26.60	0.0%	0.303	0.303	0.303	1.000
6		26.60	5.0%	0.303	0.314	0.292	1.000
7		27.22	2.9%	0.309	0.302	0.316	1.000
BLK 3/15		0.000	0.0%	-0.002	-0.002	-0.002	1.000
BLK SPK		12.49	1.4%	0.147	0.145	0.149	1.000
61024 A		15.27	0.6%	0.180	0.181	0.180	1.000
61024 ADD		17.08	1.0%	0.201	0.203	0.199	1.000
SPK		27.95	2.8%	0.316	0.323	0.310	1.000
61024 B		11.24	0.8%	0.132	0.132	0.133	1.000
BLANK		0.000	0.0%	-0.001	-0.001	-0.001	1.000
RESLOPE		22.11	4.3%	0.257	0.265	0.249	.904
1*2		10.22	0.8%	0.133	0.132	0.134	.904
2		45.91	0.4%	0.525	0.524	0.527	.904
61024 BSPK		19.40	0.4%	0.250	0.251	0.249	.904
61024 C		37.55	3.2%	0.441	0.452	0.431	.904
SPK		48.51	0.5%	0.550	0.548	0.553	.904
61024 D		16.62	2.3%	0.216	0.212	0.220	.904
SPK		20.44	0.6%	0.347	0.351	0.347	.904
61024 E		27.11	0.6%	0.335	0.334	0.337	.904
SPK		38.85	0.2%	0.452	0.452	0.453	.904
61024 F		36.85	0.5%	0.434	0.436	0.433	.904
SPK		43.17	0.4%	0.547	0.546	0.549	.904
61024 G		25.81	0.3%	0.322	0.321	0.323	.904
OFF		35.95	1.2%	0.425	0.422	0.429	.904

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 07/10/86
 BATCH:

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULT WITH *

SOLUTION	Pb ug/l
SP 117	* 104.9
SP224 2	* 485.8
10L 1	26.19
2	26.29
3	25.89
4	26.60
5	26.60

7	27.22
ELK 5/15	0.000
ELK SPK	12.49
61024 A	15.27 > 0.016 ✓
61024 ACC	17.08
SPK	27.95 118%
61324 B	11.24 0.011 ✓
1*2	10.24
2	45.91
61024 BSK	19.40 12%
61024 C	37.55 0.038 ✓
SPK	48.51 109%
61024 D	16.62 0.017 ✓
SPK	28.44 118%
61024 E	27.11 0.027 ✓
SPK	38.68 115%
61024 F	36.85 0.037 ✓
SPK	48.19 114%
61024 G	25.64 0.024 ✓
SPK	35.95 101%

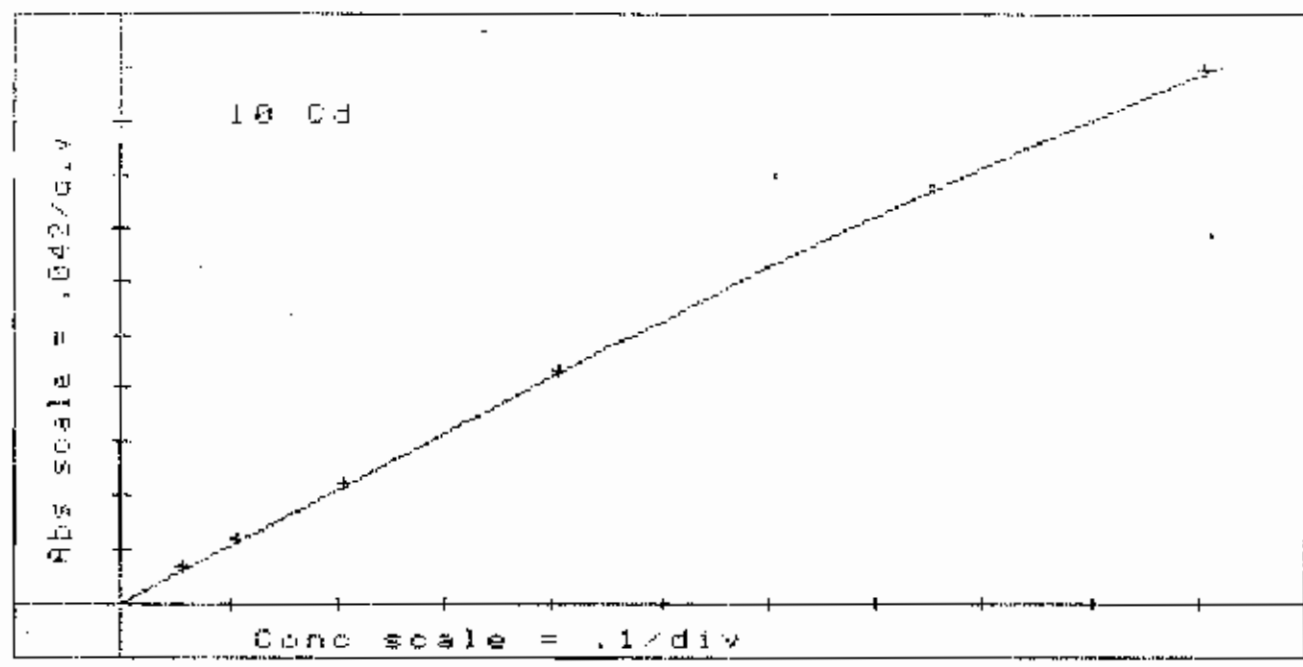
SOLUTION	CONC	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
WP284-1	0.137	2.1%	0.012	0.011 0.015 0.012	1.000
WP284-1	0.137	2.1%	0.012	0.017 0.007 0.010	1.000
BLANK	0.000	0.0%	0.000	0.010 0.001 0.001	1.000
RESLOPE	0.021	0.0%	0.022	0.025 0.020 0.023	.957
WP284 1x2	0.090	25.0%	0.033	0.032 0.005 0.020	.959
WP284 2	0.437	3.3%	0.019	0.013 0.020 0.020	.959
123	0.092	9.0%	0.004	0.004 0.004 0.005	.959
61023 (QC)	0.095	25.0%	0.004	0.004 0.003 0.006	.959
61023 (SPK)	0.372	6.3%	0.016	0.017 0.016 0.017	.959
BLK 5/21	0.023	100.0%	0.001	0.002 0.002-0.001	.959
BS	0.215	11.1%	0.007	0.009 0.011 0.009	.959
5670-A	0.000	0.0%	0.000	0.000-0.002 0.001	.959
5670-A (QC)	0.000	0.0%	0.000	0.000 0.001 0.000	.957
5670-A (SPK)	0.262	9.1%	0.011	0.012 0.009 0.012	.959
5670-B6	0.479	0.0%	0.021	0.021 0.021 0.022	.959
61095	0.000	0.0%	0.000	-0.001 0.000 0.000	.959
61110	0.000	0.0%	0.000	0.001 0.000-0.001	.959
61110 (QC)	0.000	0.0%	0.000	-0.002 0.002 0.002	.959
61110 (SPK)	0.284	8.3%	0.012	0.011 0.012 0.013	.959
61121-A	0.047	50.0%	0.002	0.004 0.001 0.003	.959
61121-A (QC)	0.095	50.0%	0.004	0.006 0.005 0.002	.959
61121-A (SPK)	0.264	2.3%	0.012	0.011 0.014 0.013	.959
61121-B sol	0.023	100.0%	0.001	0.001 0.002 0.000	.959
BLK 5/23	0.000	0.0%	0.000	0.003 0.000-0.001	.959
BLANK	0.000	0.0%	0.000	0.000 0.001-0.002	.959
RESLOPE	0.543	4.3%	0.023	0.022 0.025 0.024	.92
WP284 1x2	0.092	25.0%	0.004	0.003 0.004 0.006	.92
WP284 2	0.460	0.0%	0.021	0.021 0.021 0.022	.92
BS 5/23	0.273	16.7%	0.012	0.015 0.012 0.011	.92
61140-A	0.046	100.0%	0.002	0.004 0.000 0.003	.92
61140-B	0.069	33.3%	0.003	0.002 0.003 0.004	.92
61140-C	0.092	0.0%	0.004	0.004 0.004 0.005	.92
61140-D (QC)	0.023 0.05	300.0%	0.001 3	0.004 0.002- 0.003	.92
61140-D (SPK)	0.336	6.7%	0.015	0.017 0.014 0.015	.92
61140-D	0.046 0.69	100.0%	0.002 3	0.004- 0.001 0.003	.92
61010-B sol	0.161	0.0%	0.007	0.007 0.007 0.008	.92
61026-B sol	0.069	33.3%	0.003	0.002 0.004 0.004	.92
61145-A	0.046	150.0%	0.002	0.005 0.003-0.001	.92
61145-A (QC)	0.023	100.0%	0.001	0.002 0.003 0.000	.92
61145-A (SPK)	0.294	7.7%	0.013	0.014 0.013 0.012	.92
61209-A	0.046	50.0%	0.002	0.003 0.000 0.003	.92
61209-A (QC)	0.046	50.0%	0.002	0.003 0.000 0.003	.92
61209-A (SPK)	0.273	25.0%	0.012	0.016 0.011 0.009	.92
61209-B	0.046	0.0%	0.002	0.002 0.003 0.002	.92
61209-C	0.069	0.0%	0.003	0.005 0.004 0.003	.92
5648-A	1.516	2.6%	0.076	0.074 0.078 0.078	.92
BLANK	0.000	0.0%	0.000	0.002 0.000-0.002	.92
RESLOPE	0.586	4.0%	0.025	0.025 0.024 0.027	.853
WP284 2	0.388	5.3%	0.019	0.019 0.021 0.019	.853
5648-B	0.000	0.0%	0.000	-0.001-0.001 0.002	.853
61140-E fi1	0.191	11.1%	0.009	0.010 0.007 0.010	.853
61140-E (SPK)	0.426	4.8%	0.021	0.021 0.023 0.020	.853
61147/10 Cd	0.021	100.0%	0.001	0.000 0.001 0.003	.853
	0.021	200.0%	0.001	0.001 0.000 0.004	.853
	0.292	7.1%	0.014	0.013 0.016 0.014	.853

AUTO-PROGRAM 10 Cd

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000 0.000 0.002	1.000
STANDARD 1	0.050	4.3%	0.023	0.024 0.024 0.023	1.000
STANDARD 2	0.100	7.7%	0.044	0.044 0.044 0.045	1.000
STANDARD 3	0.200	7.7%	0.087	0.088 0.089 0.089	1.000

0.400 1.7% 0.17% 0.173 0.17% 0.17%
 1.000 0.3% 0.417 0.412 0.413 0.411

1.000
 1.000 134



WP284 1x2	0.010	40.0%	0.005	0.008	0.005	0.004	1.000
WP284 2	0.028	7.7%	0.013	0.015	0.013	0.013	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: JB
 DATE: 6/6/86
 BATCH: Pb and Cd

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Pb mg/L	Cd mg/L
WP284 1x2	0.050	58% 0.010
WP284 2	0.456	105% 0.009
6620A EFTX 1/2 (SPK)	0.000	<.5 O.B.
6095B EFTX 1/2 (SPK)	0.000	<.5 ✓
61095 EFTX (SPK)	0.050	> repeated on sample 66+67
ELK 5/17	0.000	<.05
3E	0.200	80%
61025-A	0.125	12 ug/s
61025-A (SPK)	0.150	14 " > 13 ug/s
61025-A (SPK)	0.297	29.6 " 67% w/ spike
61025-B	0.075	6.8 ug/s
61025-C	0.050	4.8 "
61025-D	0.150	15 " IFB
61025-E	0.000	<5 "
61025-F	0.320	30 "
61025-G	0.297	30 "
61025-H	0.200	20 "
WP284 1x2	0.070	82%
WP284 2	0.427	100%
61025-I	0.095	9.3 ug/s ✓
61025-J	0.091	"
61025-K	0.075	"

$$\frac{29.6 - 13}{24.9} = 67\%$$

$$\frac{37.2 - 9.3}{25} = 112\%$$

BB	0.015	85%
5670-A	0.000	<.05✓
5670-A (BC)	0.000	
5670-A (SPK)	0.262	105%
5670-B6	0.479✓	105%
6109B	0.000	<.05✓
6110	0.000	<.05✓
6110 (QC)	0.000	
61110 (SPK)	0.284	114%
61121-A	0.047	
61121-A (QC)	0.095	> 0.091✓
61121-A (SPK)	0.284	85% } D.B.
61121-B sol	0.023	<.05✓
BLK 5/23	0.000	<.05
WP284 1R2	0.092	107%
WP284 2	0.460	106%
BB 5/23	0.273	109%
61140-A	0.046	0.050✓
61140-B	0.069	
61160-B	0.092	
61140-C (QC)	0.069	> 0.080✓
61140-C (SPK)	0.336	102%
61140-D	0.068	
61010-B sol	0.161	0.8.
61026-B sol	0.069	0.8.
61145-A	0.046	<.05✓
61145-A (QC)	0.023	
61145-A (SPK)	0.294	118%
61209-A	0.046	
61209-A (QC)	0.046	<.05✓
61209-A (SPK)	0.273	109%
61209-B	0.066	<.05✓
61209-C	0.069	
5648-A	1.516	1.52✓
WP284 2	0.388	89%
5648-B	0.000	<.01 ✓ 0.05
61140-E fil	0.191	
61140-E (SPK)	0.426	94%
61147/10 Cd	0.021	
61095-B 66	0.021	<.5✓
61095-B 67	0.292	

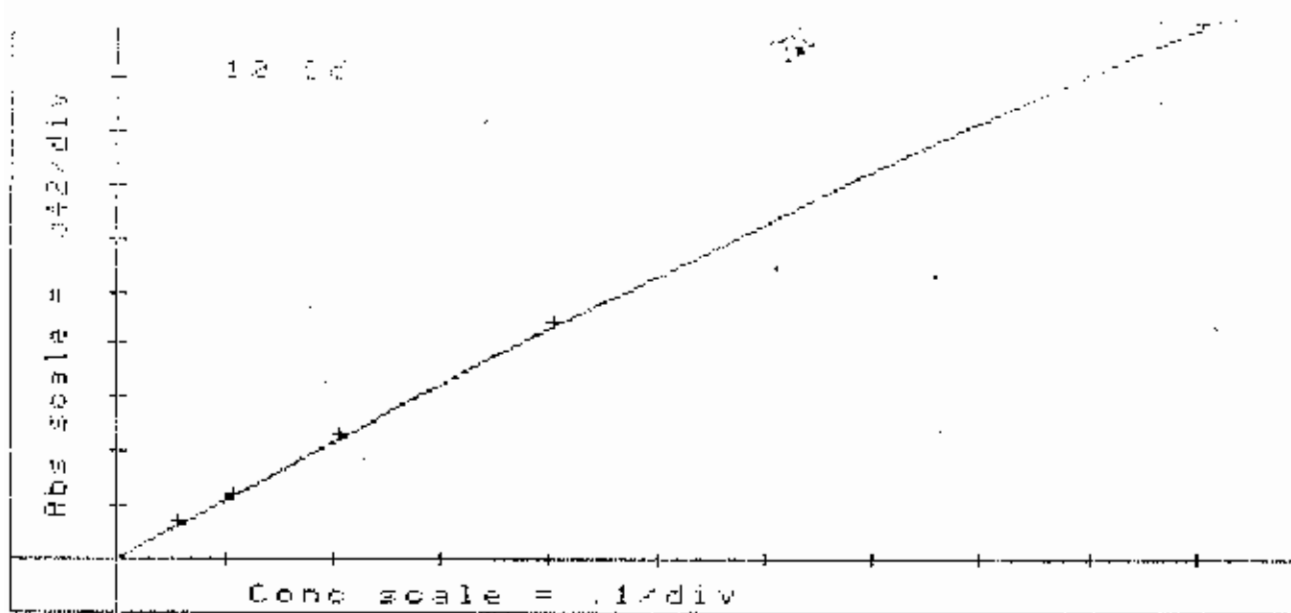
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIATION AA-975
 OPERATOR: JB
 DATE: 6/6/86
 BATCH: Bb and Cd

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 10 Cd

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.002	0.003	0.002	0.002	1.000
STANDARD 1	0.050	4.3%	0.023	0.075	0.022	0.022	1.000
STANDARD 2	0.100	2.2%	0.045	0.045	0.047	0.045	1.000
STANDARD 3	0.200	1.1%	0.090	0.092	0.090	0.090	1.000
STANDARD 4	0.400	1.1%	0.179	0.177	0.160	0.161	1.000
STANDARD 5	1.000	1.1%	0.437	0.414	0.417	0.420	1.000



WP284 1x2	0.017	12.5%	0.008	0.007	0.008	0.009	1.000
WP284 2	0.036	5.9%	0.017	0.018	0.016	0.018	1.000
5620A EPTX	0.000	0.0%	0.000	-0.001	0.000	0.000	1.000
" (SPK)	0.045	4.8%	0.021	0.023	0.022	0.020	1.000
60956 EPTX	0.000	0.0%	0.000	0.000	0.002	0.000	1.000
" (SPK)	0.050	8.7%	0.023	0.026	0.022	0.023	1.000
61095 EPTX	0.000	0.0%	0.000	0.003	-0.003	0.002	1.000
" (SPK)	0.045	4.8%	0.021	0.021	0.020	0.022	1.000
BLK 5/19	0.002	100.0%	0.001	0.001	0.000	0.003	1.000
BS	0.047	4.5%	0.022	0.021	0.024	0.023	1.000
61025-A	0.004	50.0%	0.002	0.002	0.003	0.003	1.000
61025-A(QD)	0.002	100.0%	0.001	0.002	0.001	0.002	1.000
61025-A (SPK)	0.000	0.0%	0.000	0.002	0.000	0.003	1.000
61025-B	0.000	0.0%	0.000	-0.001	0.003	0.000	1.000
61025-C	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
61025-D	0.000	0.0%	-0.001	-0.001	-0.001	-0.001	1.000
61025-E	0.000	0.0%	0.000	-0.002	0.000	0.001	1.000
61025-F	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
61025-G	0.006	33.3%	0.003	0.003	0.004	0.004	1.000
61025-H	0.002	100.0%	0.001	0.001	0.003	0.000	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
REBLOPE	0.097	6.8%	0.044	0.043	0.043	0.042	1.003
WP284 1x2	0.020	11.1%	0.009	0.008	0.010	0.010	1.003
WP284 2	0.038	11.8%	0.017	0.020	0.015	0.013	1.003
61023	0.053	4.2%	0.024	0.024	0.023	0.026	1.003
61023(QD)	0.058	0.0%	0.026	0.026	0.026	0.027	1.003
61023 (SPK)	0.107	0.0%	0.047	0.046	0.047	0.047	1.003
BLK 5/21	0.000	100.0%	-0.001	-0.001	-0.003	-0.001	1.003
BS	0.049	4.5%	0.022	0.022	0.023	0.021	1.003
5670-A	0.000	100.0%	-0.001	0.000	0.000	-0.003	1.003
5670-A(QD)	0.000	0.0%	0.000	0.001	0.001	0.000	1.003
5670-A (SPK)	0.047	4.8%	0.021	0.021	0.023	0.020	1.003
5670-B6	0.000	0.0%	0.000	-0.001	0.002	0.000	1.003
61093	0.000	0.0%	0.000	0.001	0.000	0.000	1.003
61110	0.000	0.0%	0.000	-0.001	-0.001	0.000	1.003
61110(QD)	0.002	200.0%	0.001	0.001	0.003	0.001	1.003
61110 (SPK)	0.044	5.0%	0.020	0.022	0.020	0.020	1.003
61121-A	0.004	50.0%	0.002	0.003	0.002	0.001	1.003
61121-A(QD)	0.004	50.0%	0.002	0.001	0.000	0.000	1.003
61121-A (SPK)	0.056	4.0%	0.023	0.025	0.025	0.023	1.003
61121-B (SPK)	0.090	70.0%	0.031	0.025	0.022	0.022	1.003
61121-C (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-D (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-E (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-F (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-G (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-H (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-I (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-J (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-K (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-L (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-M (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-N (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-O (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-P (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-Q (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-R (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-S (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-T (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-U (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-V (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-W (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-X (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-Y (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003
61121-Z (SPK)	0.090	0.0%	0.031	0.025	0.022	0.022	1.003

61140-A	0.001	0.0%	0.001	0.008	0.015	0.008	1.03
61140-B	0.001	0.0%	0.001	0.017	0.015	0.013	1.03
61140-C	0.001	0.0%	0.001	0.025	0.023	0.021	1.03
61140-D	0.001	0.0%	0.001	0.031	0.001	0.001	1.03
61140-E	0.000	0.0%	0.001	0.030	0.001	0.001	1.03
61140-F	0.004	50.0%	0.002	0.003	0.003	0.003	1.03
61140-G (QC)	0.000	0.0%	0.003	0.000	0.002	0.000	1.03
61140-H (SPK)	0.051	4.3%	0.025	0.025	0.023	0.023	1.03
61140-I	0.002	100.0%	0.001	0.002	0.001	0.000	1.03
61010-B sol	0.008	0.0%	0.004	0.004	0.004	0.005	1.03
61026-B sol	0.002	200.0%	0.001	0.000	0.001	0.004	1.03
61145-A	0.002	100.0%	0.001	0.002	0.002	0.000	1.03
61145-A (QC)	0.000	100.0%	-0.001	-0.001	0.000	-0.002	1.03
61145-A (SPK)	0.047	4.8%	0.021	0.022	0.023	0.020	1.03
61209-A	0.002	100.0%	0.001	0.003	0.001	0.000	1.03
61209-A (QC)	0.002	100.0%	0.001	0.000	0.003	0.000	1.03
61209-A (SPK)	0.047	4.8%	0.021	0.022	0.022	0.021	1.03
61209-B	0.000	100.0%	-0.001	0.000	-0.003	0.000	1.03
61209-C	0.000	0.0%	0.000	0.000	0.000	0.002	1.03
5648-A	0.011	0.0%	0.005	0.005	0.006	0.005	1.03
BLANK	0.000	0.0%	0.000	0.002	0.000	-0.001	1.03
RESLOPE	0.097	7.3%	0.044	0.043	0.044	0.046	1.03
WF284 2	0.038	5.9%	0.017	0.016	0.016	0.019	1.03
5648-B	0.002	100.0%	0.001	0.001	0.002	0.002	1.03
61140-E fil	0.000	0.0%	0.000	-0.001	0.000	0.000	1.03
61140-E (SPK)	0.047	14.3%	0.021	0.018	0.021	0.025	1.03
61147/10 Cd	0.063	3.6%	0.028	0.029	0.029	0.027	1.03
	0.545	0.4%	0.235	0.237	0.234	0.235	1.03

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JB
 DATE: 6/6/86
 BATCH: Pb and Cd

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Cd mg/L	
WF284 1x2	0.017	85%
WF284 2	0.036	92%
5620A EPTX	0.000	<.1 O.B.
" (SPK)	0.045	<.1
60956 EPTX	0.000	<.1 ✓
" (SPK)	0.050	<.1 ✓
61095 EPTX	0.000	<.1 ✓
" (SPK)	0.045	<.1 ✓
BLK 5/19	0.002	<.01
BS	0.047	94%
61025-A	0.004	<1 ug/lg
61025-A (QC)	0.002	<1 ug/lg
61025-A (SPK)	0.000	no spike
61025-B	0.000	<1 ug/lg
61025-C	0.000	<1 "
61025-D	0.000	<1 "
61025-E	0.000	<1 "
61025-F	0.000	<1 "
61025-G	0.006	<1 "
61025-H	0.002	<1 "
WF284 1x2	0.020	100%
WF284 2	0.038	97%
61003	0.053	5.3 ug/lg
61003 (QC)	0.058	5.7 "
61003 (SPK)	0.102	10.7 "

} repeat analysis

IFB

> 5.6 ug/lg ✓

10.7 - 5.6 / 5.0 = 102%

ES	0.049	98%
5670-A	0.000	<.01
5670-A(BC)	0.000	
5670-A(SPK)	0.047	94%
5671-ES	0.000	<.01
6109B	0.000	<.01
61110	0.000	<.01
61110(BC)	0.002	
61110(SPK)	0.044	88%
61121-A	0.004	<.01
61121-A(BC)	0.004	
61121-A(SPK)	0.056	112% } O.B.
61121-B sol	0.002	<.01
BLK 5/23	0.000	<.01
WP2B4 1x2	0.017	85%
WP2B4 2	0.040	102%
ES 5/23	0.051	102%
61140-A	0.002	<.01
61140-B	0.000	<.01
61140-C	0.004	<.01
61140-C(BC)	0.000	
61140-C(SPK)	0.051	102%
61140-D	0.002	<.01
61010-B sol	0.008	<.01 O.B.
61026-3 sol	0.002	<.01 O.B.
61145-A	0.002	
61145-A(BC)	0.000	<.01 O.B.
61145-A(SPK)	0.047	94%
61209-A	0.002	<.01
61209-A(BC)	0.062	
61209-A(SPK)	0.047	94%
61209-B	0.000	<.01
61209-C	0.000	<.01
5648-A	0.011	
WP264 2	0.038	97%
5648-B	0.002	<.01
61140-E fil	0.000	<.01
61140-E(SPK)	0.047	94%
61147/10 Cd	0.065	
61147 Cd	0.545	

QUALITY CONTROL

Pb

A #	True Value	Recovery				% Recovery
WP284 1x2	0.086	0.050	0.070	0.092	- 0.071	82
" 2	0.435	0.456	0.437	0.460	0.388	100

ACCURACY:

6/6

SPIKED RECOVERY ANALYSIS

Control Limit: _____

Warning Limit: _____

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
BS 5/19	0.200	<.05	0.200	0.250	80
61023 ug/g	37.2	9.3	27.9	25.0	112
BS 5/21	0.215	<.05	0.215	0.250	86
5670-A	0.262	<.05	0.262	"	105
61121-A	0.284	0.071	0.213	"	85
BS 5/23	0.273	<.01	0.273	"	109
61140-C	0.336	0.080	0.256	"	102
61145-A	0.294	<.05	0.294	"	118
61209-A	0.273	<.05	0.273	"	109
61140-E	0.426	0.191	0.235	"	94
PRECISION: 61110- 2	0.284	DUPLICATE ANALYSIS 0.284		Control Limit: 0.260	117
				Warning Limit: _____	

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{1A-B1}{A+B} \times 200$
61023 ug/g	9.3	9.3	0
5670-A	<.05	<.05	NC
61110- 2	<.05	<.05	NC
61121-A	0.095	0.047	(53)
61140-C	0.069	0.092	(28) / etc
61145-A	<.05	<.05	NC
61209-A	<.05	<.05	NC

cd

QUALITY CONTROL

QA #	True Value	Recovery				% Recovery
WP284 1x2	0.018	0.017	0.020	0.017	0.018	100
" 2	0.039	0.036	0.038	0.040	0.038	97

ACCURACY: 6/6

SPIKED RECOVERY ANALYSIS

Control Limit: _____
Warning Limit: _____

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
BS 5/19	0.047	<.01	0.047	0.050	94
61023 49/9	10.7	5.6	5.1	5.0	102
BS 5/21	0.049	<.01	0.049	0.050	98
5670-A	0.047	<.01	0.047	"	94
61110	0.044	<.01	0.044	"	88
61121-A	0.056	<.01	0.056	"	112
BS 5/23	0.051	<.01	0.051	"	102
61140-C	0.051	<.01	0.051	"	102
61145-A	0.047	<.01	0.047	"	94
61209-A	0.047	<.01	0.047	"	94

PRECISION: 61140-E

0.047

DUPLICATE ANALYSIS

0.047

Control Limit: _____
Warning Limit: _____

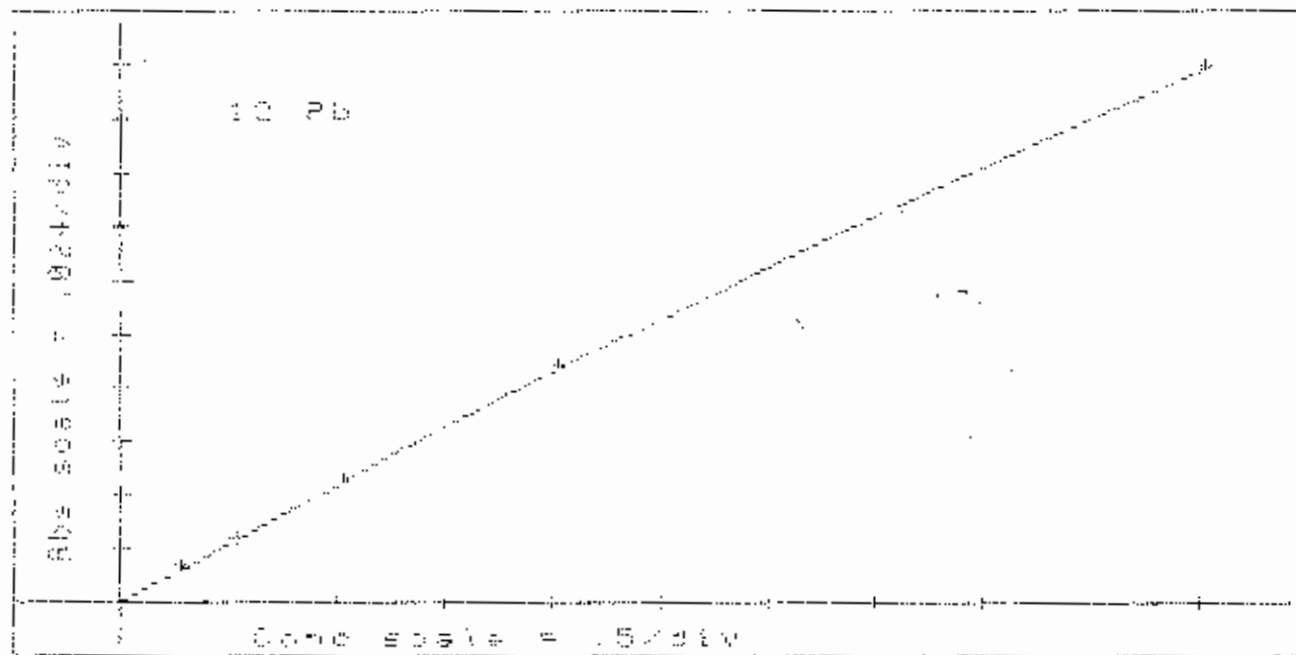
SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{1A-B1}{(A+B)} \times 200$
61023 49/9	5.2	5.7	9.2
5670-A	<.01	<.01	NC
61110	<.01	<.01	NC
61121-A	<.01	<.01	NC
61140-C	<.01	<.01	NC
61145-A	<.01	<.01	NC
61209-A	<.01	<.01	NC
61140-E	<.01	<.01	NC

DATE: 11/10/81
 ANALYST: J. J. ...
 METHOD: ...
 INSTRUMENT: ...

RESIDUAL ANALYSIS RELATIONSHIP BETWEEN MEAN ABS AND ABSORPTANCE READINGS FOR LEAD DETERMINED WITH ...

AUTO-PROGRAM 12 Pb

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORPTANCE READINGS	RESLOPE FACTOR
BLANK	0.000	0.00	0.000	0.000 0.000 0.000	1.000
STANDARD 1	0.250	10.0%	0.010	0.011 0.011 0.010	1.000
STANDARD 2	0.500	10.0%	0.020	0.021 0.021 0.024	1.000
STANDARD 3	1.000	10.0%	0.040	0.040 0.040 0.051	1.000
STANDARD 4	2.000	10.0%	0.080	0.082 0.082 0.103	1.000
STANDARD 5	5.000	10.0%	0.200	0.202 0.201 0.207	1.000



57254 1x2	0.057	68.7%	0.007	0.005 0.003 0.001	1.000
57254 2	0.425	9.1%	0.022	0.025 0.021 0.030	1.000
57498 EPTX	0.000	0.0%	0.000	-0.002 0.000 0.000	1.000
" (SPK)	0.192	10.0%	0.010	0.012 0.011 0.009	1.000
57498 EPTX	0.000	0.0%	0.000	0.000 0.000 0.001	1.000
" (SPK)	0.330	8.3%	0.012	0.014 0.013 0.011	1.000
57498 EPTX	0.000	0.0%	0.000	-0.003 0.003 0.001	1.000
" (SPK)	0.211	9.1%	0.011	0.010 0.013 0.011	1.000
57498 EPTX	0.038	100.0%	0.002	0.011 0.001 0.035	1.000
" (SPK)	0.250	7.7%	0.013	0.013 0.015 0.013	1.000
57808 EPTX	0.000	0.0%	0.000	-0.002 0.000 0.002	1.000
" (SPK)	0.175	11.1%	0.007	0.010 0.008 0.010	1.000
302 EPTX	0.000	0.1%	0.000	0.000 0.000 0.002	1.000
" (SPK)	0.200	8.1%	0.012	0.012 0.011 0.012	1.000
51316 EPTX	0.000	0.0%	0.000	0.001 0.000 0.000	1.000

SOLUTION	Fb mg/L	
WP204 1&2	0.076	88%
WP204 2	0.127	97%
57491 EPTX	1/10 0.000	repeat analysis
" (SPK)	0.190	
57492 EPTX	1/10 0.000	<.5 ✓
" (SPK)	0.230	
57493 EPTX	1/10 0.000	<.5 ✓
" (SPK)	0.211	
57478 EPTX	1/10 0.038	<.5 ✓
" (SPK)	0.222	
57508 EPTX	1/10 0.000	repeat analysis
" (SPK)	0.173	
57509 EPTX	1/10 0.000	<.5 ✓
" (SPK)	0.230	
61316 EPTX	1/10 0.000	<.5 ✓
" (SPK)	0.211	
61338 EPTX	1/10 0.000	<.5 ✓
" (SPK)	0.211	
BLK 6/9	0.000	<.05
38	0.211	84%
WP204 1&2	0.113	131%
WP204 2	0.500	115%
5699-2	?	
5699-B (DO)	?	
5699-R (SPK)	?	
5693-3	1.000	94 ug/g ✓
6137A	0.090	
BLK 6/10	0.000	<.05
6137B	0.272	109%
61343	0.000	<.05 ✓
61347	0.048	
61348	0.000	<.05 ✓
61348 (DO)	0.043	
61348 (SPK)	0.295	118%
61355-A	0.022	<.05
61356	0.136	
61376 (DO)	0.109	> 0.148
61356 (SPK)	0.431	113%
61308-B	0.113	
61308-C (DO)	0.048	> 0.090 ✓
AF203 1, 2	0.000	98%
" (SPK)	0.660	106%
61308-D (SPK)	0.641	100%
BLK 6/10	0.000	<.05
61377	0.243	96%
61378	0.000	<.05 ✓
61378-B (DO)	0.000	
61378-C (SPK)	0.300	120%
61379	0.000	<.05 ✓
61379-B	0.020	<.05 ✓
61379-C	0.000	<.05 ✓
61379-D	0.000	<.05 ✓
61381-B	0.000	<.05 ✓
61381-C (DO)	0.000	
61381-D (SPK)	0.300	120%
61382	0.000	<.05 ✓
61382-B	0.040	<.05 ✓
61382-C	0.000	
61382-D	0.000	<.05 ✓
61382-E	0.000	101% ✓

repeat?

3711-R	0.055	2.05
61025-A	0.140	14 ug/g
61025-4 (DF)	0.040	24 "
61025-A (BF)	0.360	35.2
61025-C		

> 19 ug/g

$$\frac{35.2 - 19}{24.5} = 66\%$$

PB

QUALITY CONTROL

PA #	True Value	Recovery				% Recovery
1P284 1x2	0.086	0.076	0.113	0.080	- 0.090	104
1P284 2	0.435	0.423	0.500	0.460	0.440 - 0.456	105

ACCURACY:

SPIKED RECOVERY ANALYSIS

Control Limit: _____

Warning Limit: _____

6/19

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
BS 6/9	0.211	<.05	0.211	0.250	84
BS 6/10	0.272	<.05	0.272	"	109
61348	0.295	<.05	0.295	"	118
61336	0.431	0.148	0.283	"	113
61208-C	0.340	0.090	0.250	"	100
61330-A	0.300	<.05	0.300	"	120
" - E	0.300	<.05	0.300	"	120
61334	0.240	<.05	0.240	"	96

PRECISION:

DUPLICATE ANALYSIS

Control Limit: _____

Warning Limit: _____

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{1A-B1}{(A+B)} \times 200$
61348	<.05	<.05	NC
61336	0.136	0.159	16
61208-C	0.113	0.068	50
61330-A	<.05	<.05	NC
" E	<.05	<.05	NC
61334	<.05	<.05	NC

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

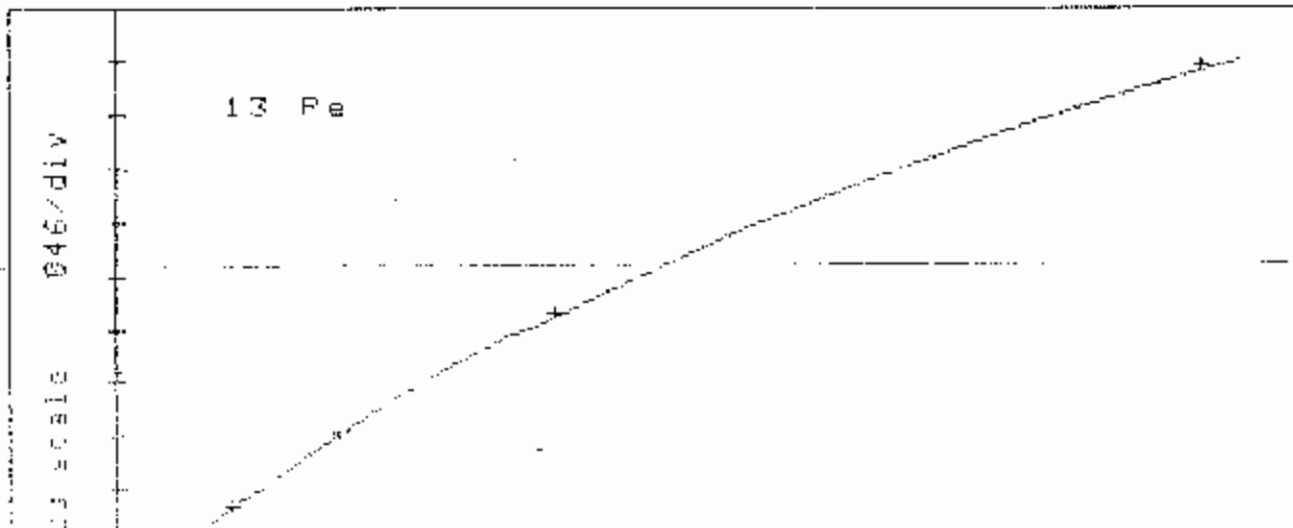
VARIAN AA-975
OPERATOR: D. DUMBLETON
DATE: 05/28/86
BATCH:

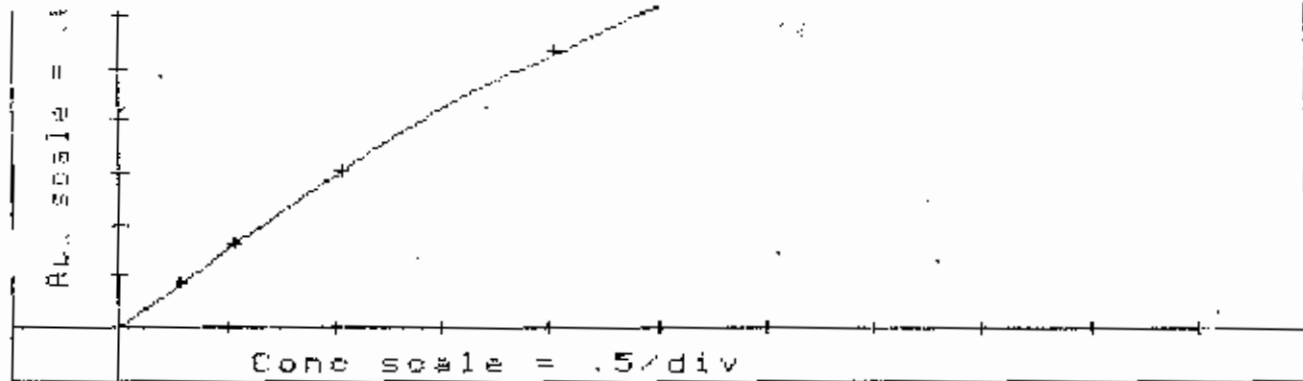
6812 774 6/4/86

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 13 Fe

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	14.3%	-0.007	-0.007-0.006-0.009	1.000
STANDARD 1	0.250	3.1%	0.032	0.034 0.032 0.032	1.000
STANDARD 2	0.500	2.9%	0.068	0.069 0.065 0.070	1.000
STANDARD 3	1.000	0.7%	0.132	0.134 0.134 0.135	1.000
STANDARD 4	2.000	0.4%	0.259	0.248 0.238 0.240	1.000
STANDARD 5	5.000	0.2%	0.449	0.451 0.449 0.448	1.000





WP284 1*2	0.039	60.0%	0.005	0.002	0.007	0.008	1.000
WP284 2	0.768	0.9%	0.106	0.106	0.105	0.108	1.000
564B Asol 1/9 *	B	0.8%	0.728	0.734	0.729	0.722	1.000
BLK 5/19	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
BLK SPK	0.285	5.4%	0.037	0.036	0.040	0.037	1.000
61025 A 1/9 *	9	0.2%	0.867	0.868	0.869	0.865	1.000
61025 ADD 1/9 *	10	0.0%	0.968	0.968	0.968	0.969	1.000
61025 B 1/9 *	10	0.2%	0.971	0.971	0.974	0.970	1.000
61025 C 1/9 *	13	0.4%	1.174	1.178	1.168	1.177	1.000
61025 D 1/9 *	13	0.3%	1.186	1.190	1.181	1.188	1.000
61025 E 1/9 *	5	1.7%	0.524	0.534	0.523	0.515	1.000
61025 F 1/9 *	12	0.3%	1.156	1.159	1.153	1.157	1.000
61025 G 1/9 *	10	0.2%	0.979	0.981	0.977	0.981	1.000
61025 H 1/9 *	8	0.4%	0.801	0.798	0.801	0.804	1.000
61104	* 34.81	0.6%	0.357	0.358	0.354	0.359	1.000
BLK 5/20	0.000	0.0%	0.000	0.000	0.001	0.001	1.000
FLK SPK	0.271	5.7%	0.035	0.035	0.033	0.037	1.000
61020 5/20 *	12	0.4%	1.107	1.111	1.108	1.102	1.000
61020 QC 5/20 *	12	0.4%	1.118	1.118	1.114	1.124	1.000
61068 A	0.132	11.8%	0.017	0.015	0.016	0.020	1.000
BLANK	0.000	50.0%	-0.002	-0.003	-0.005	-0.002	1.000
RESLOPE	0.520	2.8%	0.071	0.072	0.069	0.073	.961
1*2	0.082	27.3%	0.011	0.010	0.010	0.015	.961
2	0.752	0.9%	0.108	0.108	0.110	0.108	.961
IDL 0.25 1	0.281	2.6%	0.038	0.037	0.040	0.038	.961
2	0.274	2.7%	0.037	0.036	0.038	0.037	.961
3	0.260	2.9%	0.035	0.036	0.036	0.035	.961
4	0.260	5.7%	0.035	0.033	0.037	0.036	.961
5	0.260	2.9%	0.035	0.037	0.035	0.035	.961
6	0.260	8.6%	0.035	0.034	0.033	0.039	.961
7	0.260	5.7%	0.035	0.038	0.035	0.034	.961
61068 C	0.288	7.7%	0.039	0.036	0.040	0.042	.961
61068 D	0.045	16.7%	0.006	0.007	0.005	0.007	.961
61068 E	* 33.45	0.8%	0.357	0.361	0.357	0.355	.961
61068 EQC	* 33.59	1.4%	0.358	0.359	0.363	0.353	.961
61123 1/21 *	14	0.6%	1.265	1.266	1.273	1.257	.961
61123 QC 1/21 *	14	0.9%	1.271	1.273	1.282	1.259	.961
BLK 5/21	0.150	5.0%	0.020	0.022	0.019	0.021	.961
BLK SPK	0.142	5.3%	0.019	0.021	0.020	0.018	.961
61067 A	0.225	3.3%	0.030	0.028	0.031	0.031	.961
61067 ADD	0.301	4.9%	0.041	0.044	0.039	0.042	.961
61067 ASPK	0.441	3.2%	0.062	0.065	0.061	0.061	.961
NK	0.000	0.0%	0.000	0.000	0.002	0.000	.961
RESLOPE	0.506	2.9%	0.069	0.067	0.071	0.069	.988
1*2	0.061	37.5%	0.008	0.005	0.011	0.010	.988
2	0.781	0.9%	0.109	0.100	0.110	0.110	.988
61067 B	0.056	14.3%	0.007	0.005	0.008	0.007	.988
61067 C	4.510	0.5%	0.425	0.408	0.431	0.407	.988
61067 D	0.014	14.3%	0.007	0.004	0.007	0.007	.988
61067 E	0.007	10.0%	0.010	0.010	0.010	0.010	.988

61109 LC	0.036	40.0%	0.005	0.004	0.003	0.005	.988
61103 SPK	0.282	5.4%	0.037	0.035	0.040	0.037	.988
	0.392	0.0%	0.053	0.053	0.053	0.053	.988
	0.854	0.9%	0.116	0.112	0.117	0.115	.988
	1.107	4.0%	0.150	0.157	0.150	0.144	.988
	1.011	1.4%	0.138	0.138	0.141	0.136	.988
	3.065	0.9%	0.330	0.327	0.334	0.329	.988
	3.674	1.1%	0.373	0.378	0.369	0.372	.988
	0.439	3.3%	0.060	0.058	0.061	0.063	.988
	2.691	0.0%	0.301	0.301	0.301	0.301	.988
	1.156	0.6%	0.156	0.155	0.158	0.156	.988
	0.773	0.9%	0.108	0.107	0.108	0.110	.988
	1.951	0.8%	0.237	0.236	0.237	0.240	.988
	2.018	0.8%	0.243	0.246	0.242	0.242	.988
BLANK	0.000	100.0%	0.001	0.002	0.003	0.000	.988
RESLOPE	0.493	1.5%	0.067	0.068	0.068	0.065	1.014
	0.031	50.0%	0.004	0.007	0.002	0.005	1.014
	0.794	0.9%	0.108	0.108	0.109	0.107	1.014
> 7		0.7%	0.707	0.713	0.703	0.707	1.014
> 7		0.6%	0.710	0.710	0.714	0.706	1.014
	0.597	3.7%	0.081	0.080	0.079	0.085	1.014
	0.633	2.3%	0.086	0.089	0.085	0.084	1.014

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 05/28/86
 BATCH:

6/5/86

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Fe mg/L
WP2B4 1*2	0.039
WP2B4 2	0.768
5648 Asol	* *00.0
BLK 5/19	0.000
BLK SPK	0.285
61025 A	* *00.0
61025 ABC	* *00.0
61025 B	* *00.0
61025 C	* *00.0
61025 D	* *00.0
61025 E	* *00.0
61025 F	* *00.0
61025 G	* *00.0
61025 H	* *00.0
61104	* 34.81 34.7 ✓
BLK 5/20	0.000
BLK SPK	0.271
120	* *00.0
1020 QC	* *00.0
61068 A	0.132 ✓
1*2	0.062
?	0.752
IDL 0.25 1	0.281
2 covered	0.274
?	0.260

7 0.260
 61060 C 0.288 ✓
 61068 D 0.045 ✓
 61068 E * 33.45 ✓
 61068 EQC * 33.59 ✓
 61123 * *00.0
 23 QC * *00.0
 5/21 0.150
 BLK SPK 0.142
 61067 A 0.225 ✓ 0.263
 61067 AQD 0.301 ✓
 61067 ASPK 0.441
 1*2 0.061
 2 0.781
 61067 B 0.054 ✓
 61067 C 4.510 ✓
 61067 D 0.054 ✓
 61108 0.077
 61108 QC 0.038 > 0.058 ✓
 61108 SPK 0.282
 5648-Azol Y₀ 0.392 3.92 ✓
 61025-A Y₀ 0.834
 61025-AAC Y₀ 1.107 > 860 n/s ✓
 61025-B Y₀ 1.011 940 n/s ✓
 61025-C Y₀ 3.065 3000 n
 61025-D Y₀ 3.674 3400 n
 61025-E Y₀ 0.439 430 n
 61025-F Y₀ 2.691 2600 n
 61025-G Y₀ 1.156 1100 n
 61025-H Y₀ 0.773 760 n
 61070 Y₀ 1.951
 61070 AC Y₀ 2.018 > 19.8 ✓
 12 0.031
 2 0.794
 >-----
 >-----
 61123 Y₀ 0.597
 61123 AC Y₀ 0.633 > 615 ✓

ROUND 20 0'000

CPH #	True Value	- Recovery	% Recovery
0284 1x2	---		
0284 2	5.796	0.768 0.782 0.78 0.754	91 84 80

14, July

RL 6-23

✓ >> 7/1/86

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JB

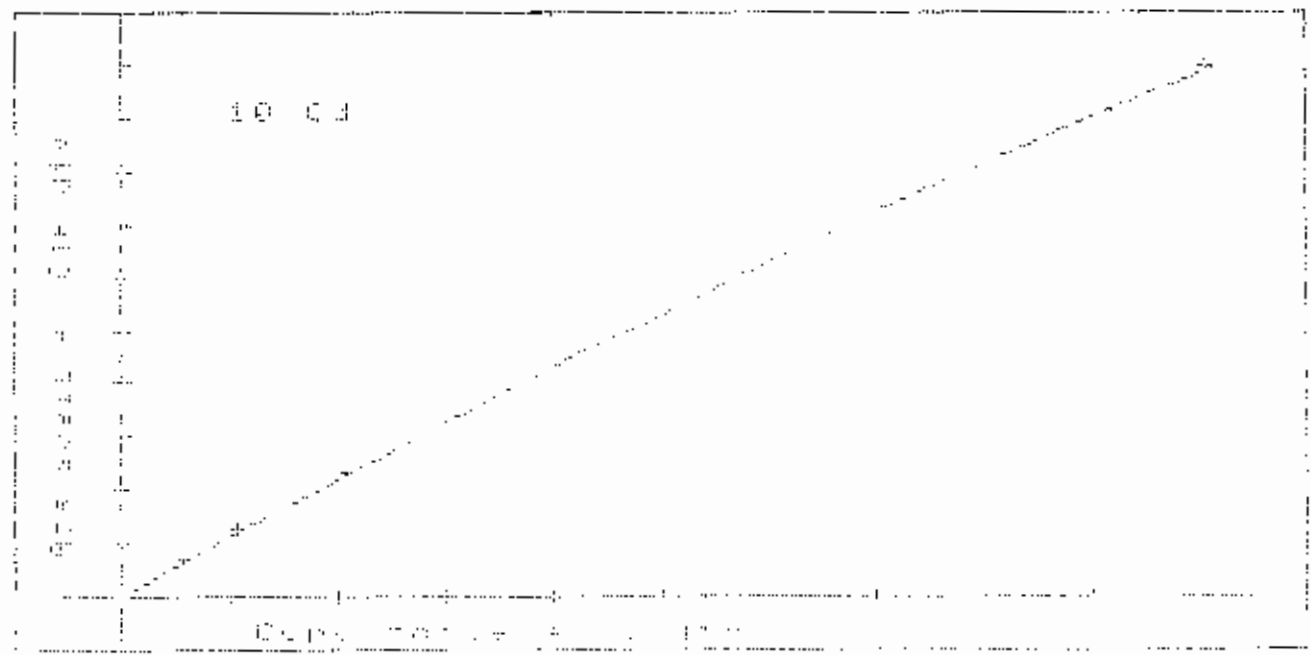
DATE: 6/15/86

BATCH: Pb and Cd

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 10 Cd

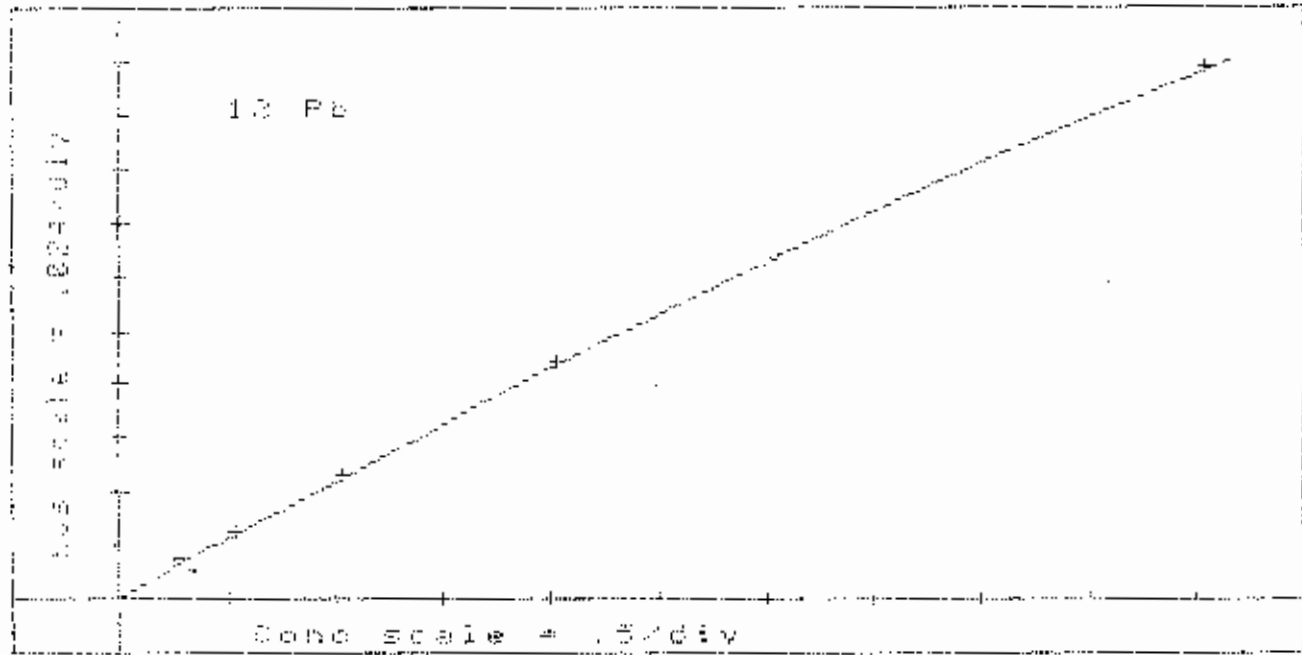
SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			SLOPE FACTOR
BLK	0.000	100.0%	0.002	0.004	0.002	0.000	1.000
STANDARD 1	0.050	7.7%	0.026	0.024	0.027	0.028	1.000
STANDARD 2	0.100	2.3%	0.051	0.051	0.053	0.057	1.000
STANDARD 3	0.200	1.0%	0.099	0.101	0.100	0.099	1.000
STANDARD 4	0.400	1.0%	0.197	0.197	0.200	0.195	1.000
STANDARD 5	1.000	0.7%	0.453	0.452	0.455	0.451	1.000



11107	0.000	33.2%	0.000	0.000	0.000	0.000	1.000
11108	0.000	7.1%	0.000	0.000	0.000	0.000	1.000
11109	0.000	10.9%	0.000	0.000	0.000	0.000	1.000

AUTO-PROGRAM 12 Fb

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	2.2%	0.043	0.042	0.045	0.044	1.000
STANDARD 1	0.250	7.1%	0.011	0.010	0.013	0.012	1.000
STANDARD 2	0.500	3.7%	0.027	0.026	0.029	0.027	1.000
STANDARD 3	1.000	1.9%	0.052	0.051	0.054	0.052	1.000
STANDARD 4	2.000	3.9%	0.103	0.103	0.104	0.099	1.000
STANDARD 5	5.000	0.4%	0.254	0.250	0.256	0.255	1.000



WESBA 142	0.160	11.1%	0.009	0.010	0.009	0.010	1.000
WESBA 2	0.539	6.9%	0.029	0.027	0.028	0.032	1.000
WESBA 3PTX	0.050	33.1%	0.003	0.004	0.003	0.002	1.000
" (0.1%)	0.035	100.0%	0.002	0.005	0.001	0.001	1.000
WESBA 4PTX	0.017	100.0%	0.001	0.000	0.003	0.001	1.000
" (0.1%)	0.071	25.3%	0.004	0.005	0.003	0.004	1.000
WESBA 5PTX	0.017	0.0%	0.001	0.001	0.001	0.002	1.000
" (0.1%)	0.053	75.1%	0.003	0.002	0.004	0.004	1.000
WESBA 6PTX	0.071	50.1%	0.004	0.004	0.005	0.007	1.000
" (0.1%)	0.242	50.1%	0.015	0.020	0.020	0.005	1.000
WESBA 7PTX	0.013	50.1%	0.003	0.003	0.004	0.002	1.000
" (0.1%)	0.011	41.7%	0.002	0.010	0.017	0.006	1.000
WESBA 8PTX	0.099	41.0%	0.005	0.004	0.009	0.005	1.000
" (0.1%)	0.250	35.7%	0.014	0.018	0.017	0.003	1.000
WESBA 9PTX	0.079	20.1%	0.005	0.004	0.009	0.004	1.000
" (0.1%)	0.232	21.5%	0.013	0.021	0.016	0.002	1.000
WESBA 10PTX	0.055	100.0%	0.003	0.004	0.005	0.000	1.000

THE TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

12 Fb
 11/10/82
 11/10/82
 11/10/82

153

SOLUTION	mg/L	REMARKS
WP204 1:2	0.017	94%
WP201 2	0.034	87%
57492 EPTX	0.000	<.1
(SPK)	0.048	<.1
57490 EPTX	0.000	<.1
(SPK)	0.044	<.1
57490 EPTX	0.000	<.1
(SPK)	0.045	<.1
57492 EPTX	0.017	0.17
(SPK)	0.063	<.1
57502 EPTX	0.000	<.1
(SPK)	0.041	<.1
57500 EPTX	0.000	<.1
(SPK)	0.050	<.1
61216 EPTX	0.000	<.1
(SPK)	0.040	<.1
61359 EPTX	0.011	0.11
(SPK)	0.055	<.1
ELK 6/9	0.000	<.01
EE	0.046	92%
WP284 1:2	0.016	58%
WP284 2	0.037	95%
5699-B	0.341	34 ug/g
5699-B(DD)	7.426	40 "
5699-B(SPK)	0.430	42.6 "
5699-B	0.007	<1 ug/g
61326	0.001	<.01
ELK 6/10	0.001	<.01
EE	0.047	94%
61343	0.003	<.05
61347	0.000	<.05
61348	0.001	<.01
61348(DD)	0.000	<.01
61348(SPK)	0.047	94%
61353-A	0.001	<.01
61353	0.001	<.01
61353(DD)	0.001	<.01
61353(SPK)	0.049	98%
61358-D	0.000	<.01
61358-D(DD)	0.000	<.01
WP204 1:1	0.013	100%
WP204 2	0.030	102%
61318-0(SPK)	0.052	104%
ELK 6/15	0.000	<.01
EE	0.054	108%
61300-A	0.011	<.01
61300-A(DD)	0.002	<.01
61300-A(SPK)	0.051	104%
61301-A	0.002	<.01
61301-B	0.000	<.01
61301-C	0.000	<.01
61301-D	0.002	<.01
61301-E	0.000	<.01
61301-F(DD)	0.000	<.01
61301-F(SPK)	0.052	104%
61301-G	0.010	<.01
61301-H	0.014	<.01
61301-I	0.012	<.01
61301-J	0.002	<.01
61301-K	0.002	<.01
61301-L	0.002	<.01

0.018 0.039

37 ug/g ✓ $\frac{42.6 - 37}{4.95} = 113\%$

61075-A	0.003	< 1 ug/lg		
61075-A(DD)	0.005			5.1
61075-A(SFK)	0.051	5.1 ug/lg	102%	5.0
6109-C				

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JS
 DATE: 6/19/80
 BATCH: Pb and Cd

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 12 Pb

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	SLOPE FACTOR
BLANK	0.000	0.1%	0.000	0.000 0.000 0.000	1.000
STANDARD 1	0.100	7.7%	0.013	0.013 0.014 0.011	1.000
STANDARD 2	0.200	11.2%	0.027	0.026 0.028 0.025	1.000
STANDARD 3	1.000	0.8%	0.137	0.135 0.137 0.131	1.000
STANDARD 4	2.000	1.1%	0.273	0.273 0.269 0.271	1.000
STANDARD 5	5.000	0.1%	0.683	0.677 0.688 0.677	1.000



6-19

Cd

QUALITY CONTROL

PA #	True Value	Recovery					% Recovery
HP284 1x2	0.018	0.017	0.016	0.018	- 0.017		94
" 2	0.039	0.034	0.037	0.040	0.037	- 0.037	95

ACCURACY:

SPIKED RECOVERY ANALYSIS

Control Limit: _____

Warning Limit: _____

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
BS 6/9	0.046	<.01	0.046	0.050	92
BS 6/10	0.047	<.01	0.047	"	94
61348	0.047	<.01	0.047	"	94
61336	0.049	<.01	0.049	"	98
61208-C	0.052	<.01	0.052	"	104
BS 6/16	0.054	<.01	0.054	"	108
61331-E	0.052	<.01	0.052	"	104
61334	0.049	<.01	0.049	"	98
61025-A ^{49/5}	5.1	<1	5.1	5.0	102
5699-B "	42.6	37	5.6	4.95	113

PRECISION:

DUPLICATE ANALYSIS

Control Limit: _____

Warning Limit: _____

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{1A-B1 \times 200}{(A+B)}$
61348	<.01	<.01	NC
61336	<.01	<.01	NC
61208-C	<.01	<.01	NC
61331-E	<.01	<.01	NC
61334	<.01	<.01	NC
61025-A ^{45/5}	<1	<1	NC
5699-B "	34	40	16

Subpart G7: Calcium

METALS ANALYSIS DATA SHEET

REV. 157

METAL Ca DATE 5/19/82 ANALYST MJM REVIEWER _____
 INSTRUMENT (AA) 422.7 nm Voltage 380 V ANALYSIS METHOD Perkin Elmer 5720/6
 Current 5 a Split 1.0 nm Flame Hydride
 P₂ OFF Integ. 1 sec Geo Air/Acet Acid Acid
 Reduc. _____

INITIAL CALIBRATION

100 µl Lact to stds / samples

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	5.00	10.00	2.00	1.00	0.50
	Absorbance		0.714			0.034
EPA Check WP 384 M-2	Known	Mean	SD	RSD	% Recovered	
	5.3	5.45	0.11	1.94	103%	

ANALYSIS

Recal. 5.09 to 5.00

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or g	w or d weight	Liquid ug/ml	Solid ug/gm.
608796	3.70	1/10	37.0					
DUP	3.59	1/10	35.9					
5584 I	0.86	1/10	8.6					
6 32	3.80	1/10	38.0	38.6				
DUP	3.91	1/10	39.1					
Blk 5/14	<0.5							
B.S.	2.09							
B.S.	2.14							
5528A	2.38	1/10	23.8	23.1				
A.D.P.	2.24	1/10	22.4					
B	6.31	1/10	63.1					
B.S.K	7.02	1/10						
C	3.45	1/10	34.5					
D	1.74	1/100	17.4					
F	3.96	1/10	39.6					
Recalibrate	5.05 to	5.00						
60980-E	7.94							
E	7.93							
F	3.60	1/10	36.0					
F	3.39	1/10	33.9					
5 36A	6.37	1/10	63.7	61.8				
A.D.P.	5.99	1/10	59.9					
B	1.81	1/10	18.1					
B.S.K	2.65	1/10	26.5	27.5 = 67%				
C	2.07	1/10	20.7					

(2)
 METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Wavelength _____ nm Voltage _____ V
 Slit _____ nm Flame _____ Hydride _____
 D₂ _____ Integ. _____ sec Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	_____	_____	_____	_____	_____
Conc, ug/ml	_____	_____	_____	_____	_____
Absorbance	_____	_____	_____	_____	_____
EPA Check	Known	Mean	SD	RSD	% Recovered
W/P 354M-2	5.3	5.31	0.02	0.36	100%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
5536 D	4.63	1/10	46.3	✓				
E	2.51	1/10	25.1	✓				
F	1.12	1/10	11.2	✓				
G	2.83	1/10	28.3	✓				
H	6.51	1/10	65.1	✓				
I	3.97	1/10	39.7	✓				
J	4.76	1/10	47.6	✓				
K	6.45	1/10	64.5	✓				
Recalibrate	4.78 to 5.00							
61072 A	1.45	1/100	14.5	✓				
B	1.89	1/10	18.9	✓				
C	4.43	1/10	44.3	✓				
E	1.63	1/100	16.3	✓				
EDDP	1.55	1/100	15.5	✓				
F	2.67	1/10	26.7	✓				
FSPK	3.85	1/10	38.5	✓				
G	<0.5			✓				
BK 5/15	4.25							
B.S.	4.28							
61024-A	5.05	1/10	50.5	✓				
AQ	5.10	1/10	51.0	✓				
ASPL	5.79	1/10	57.9	✓				spiked too low
B	3.45	1/10	34.5	✓				
C	4.77	1/10	47.7	✓				
D	5.46	1/10	54.6	✓				

③
 METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Wavelength _____ nm Voltage _____ V
 Current _____ a Split _____ nm
 D₂ _____ Integ. _____ sec
 Flame _____ Hydride _____
 Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	_____	_____	_____	_____	_____
Conc, ug/ml	_____	_____	_____	_____	_____
Absorbance	_____	_____	_____	_____	_____
EPA Check	Known	Mean	SD	RSD	% Recovered
WP 584-M-2	5.3	5.30	0.02	0.33	100%

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61024 E	5.11	Y ₁₀	51.1	✓				
F	5.15	Y ₁₀	51.5	✓				
G	5.29	Y ₁₀	52.9	✓				
Recalibrate	5.03 to	5.00						
5612 A	2.31	Y ₁₀	23.1	✓				
B	1.54	Y ₁₀	15.4	✓	13.8			
B DUP	1.22	Y ₁₀	12.2					
B SPK	1.77	Y ₁₀	17.7					
Blk 5/13	<0.5							
B.S. ₂	2.17							
B.S. ₃	2.14							
61073 B	7.77	Y ₁₀	77.7	✓				
C	8.28	Y ₁₀	82.8	✓				
D	4.79	Y ₁₀	47.9	✓				
E	10.54	Y ₁₀	105	✓				
E DUP	10.56	Y ₁₀	106	✓				
E SPK	11.99	Y ₁₀	120	✓				
F	8.92	Y ₁₀	89.2	✓				
H	1.23	Y ₁₀₀	123	✓				
I	4.29	Y ₁₀	42.9	✓				
K	4.64	Y ₁₀	46.4	✓				
L	6.16	Y ₁₀	61.6	✓				
Recalibrate	5.17 to	5.00						
M	<0.5							
M DUP	<0.5							
M-SPK	1.24	Y ₁₀	12.4	✓				

STD 1
 CGN 05.00
 SIG 0.400
 0.410
 0.409

MEAN 0.409

STD 2
 CGN 18.00
 SIG 0.710
 0.716
 0.715

MEAN 0.714

STD 3
 CGN 02.00
 SIG 0.137
 0.139
 0.136

MEAN 0.137

STD 4
 CGN 01.00
 SIG 0.101
 0.102
 0.101

MEAN 0.101

STD 5
 CGN 00.50
 SIG 0.035
 0.035
 0.034

MEAN 0.034

APP CGN

STD 1 05.04

STD 2 09.99

STD 3 31.77

STD 4 01.36

STD 5

STATISTICS

CGN 01 05.41
 02 05.34
 03 05.21
 04 05.48
 05 05.52
 06 05.51
 07 05.51
 08 05.53
 09 05.52
 10 05.43

MEAN 05.45

SD 00.11

RSD 01.94
 AUTO CAL

STD 1

ACT CGN 05.00

ORG CGN 05.09

NEW CGN 05.00
 AUTO CAL

STD 1

ACT CGN 05.00

ORG CGN 05.05

NEW CGN 05.00
 AUTO CAL

STD 1

ACT CGN 05.00

ORG CGN 04.78

NEW CGN 05.00

STATISTICS

CGN 01 05.30
 02 05.33
 03 05.30
 04 05.31
 05 05.32
 06 05.29
 07 05.29
 08 05.31
 09 05.35
 10 05.32

MEAN 05.31

SD 00.02

RSD 00.36
 AUTO CAL

STD 1

ACT CGN 05.00

ORG CGN 05.03

NEW CGN 05.00

STATISTICS

CGN 01 05.29
 02 05.31
 03 05.30
 04 05.31
 05 05.28
 06 05.31
 07 05.31
 08 05.29
 09 05.28
 10 05.34

MEAN 05.30

SD 00.02

RSD 00.33
 AUTO CAL

STD 1

ACT CGN 05.00

ORG CGN 05.17

NEW CGN 05.00

METAL Ca DATE 6/3/80 ANALYST MJM REVIEWER QCIE-AM 6/4/80
 INSTRUMENT (AA) 422.7 nm Voltage 400 V
 slit 3 a Split 1.0 nm
 D₂ OFF Integ. 1 sec 0.5/5%
 ANALYSIS METHOD
 Flame Hydride
 Gas Air / Acet Acid
 Reduc.

INITIAL CALIBRATION

- CaCl to stds / sample

STANDARDS:	#1	#2	#3	#4	#5
Stock	5.00	10.00	2.00	1.00	0.50
Conc, ug/ml					
Absorbance		0.546			0.032
EPA Check	Known	Mean	SD	RSD	% Recovered
WP 334-M-1	40.6	43.0	0.07	1.71	107%

ANALYSIS

Recalibrate 5.46 to 5.00

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
60980-E ₁	7.98							
-F ₂	3.25	1/10	32.5					
61034	8.29	1/10	82.9				82.9	
61057	6.50	1/10	65.0				65.0	
BOL 5/19	<0.5						<0.5	
B.S.	2.13		85%				2.13	
61025A	1.89	1/10	18.9	200	2.16			1800 ug/g
ADUP	1.68	1/10	16.8		2.18		1700	1500 "
ASPL	3.04	1/10	30.4		2.01		3000-1700-1350	3,000 "
B	4.84	1/10	48.4		2.19		1300/1200 = 104%	4,400 "
C	6.79	1/10	67.9		2.07			6,600 "
D	1.62	1/100	162		2.02			16,000 "
E	1.59	1/10	15.9		2.07			1,500 "
F	2.39	1/10	23.9		2.10			2,300 "
G	2.60	1/10	26.0		2.00			2,600 "
H	2.79	1/10	27.9	✓	2.03			2,700 "
5641A	4.86	1/100	486				486	
B	4.72	1/100	472				472	
C	1.14	1/1000	1140				1140	
D	5.86	1/100	586				586	
E	2.68	1/100	268				268	290
ERP	3.11	1/100	311				311	
F	1.05	1/100	105				105	
FRK - Spiked too low								
G	1.15	1/100	115				115	

Subpart G8: Chromium
Vanadium

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: S. DUMBLETON

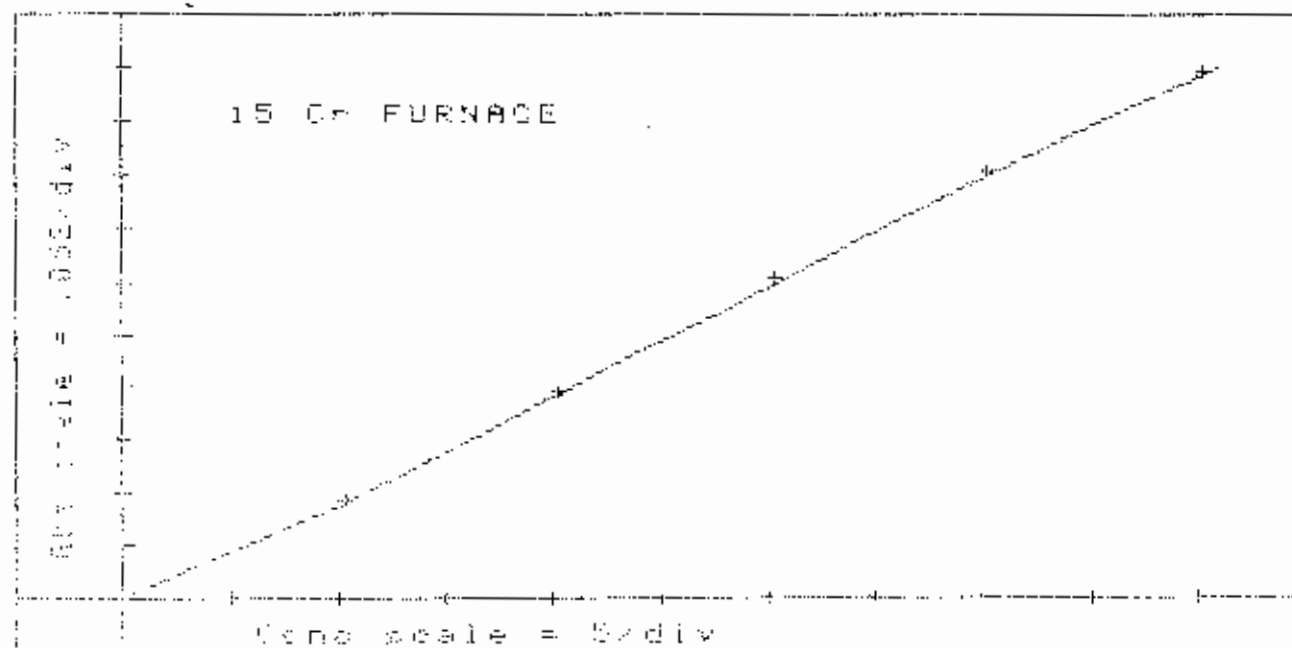
DATE: 07/7/86

BATCH:

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 15 Cr FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS		RESLOPE FACTOR
BLANK	0.000	36.4%	0.011	0.014	0.028	1.000
STANDARD 1	10.00	3.3%	0.090	0.088	0.093	1.000
STANDARD 2	20.00	2.0%	0.197	0.194	0.200	1.000
STANDARD 3	30.00	0.7%	0.307	0.309	0.306	1.000
STANDARD 4	40.00	2.2%	0.413	0.420	0.406	1.000
STANDARD 5	50.00	1.8%	0.510	0.504	0.517	1.000



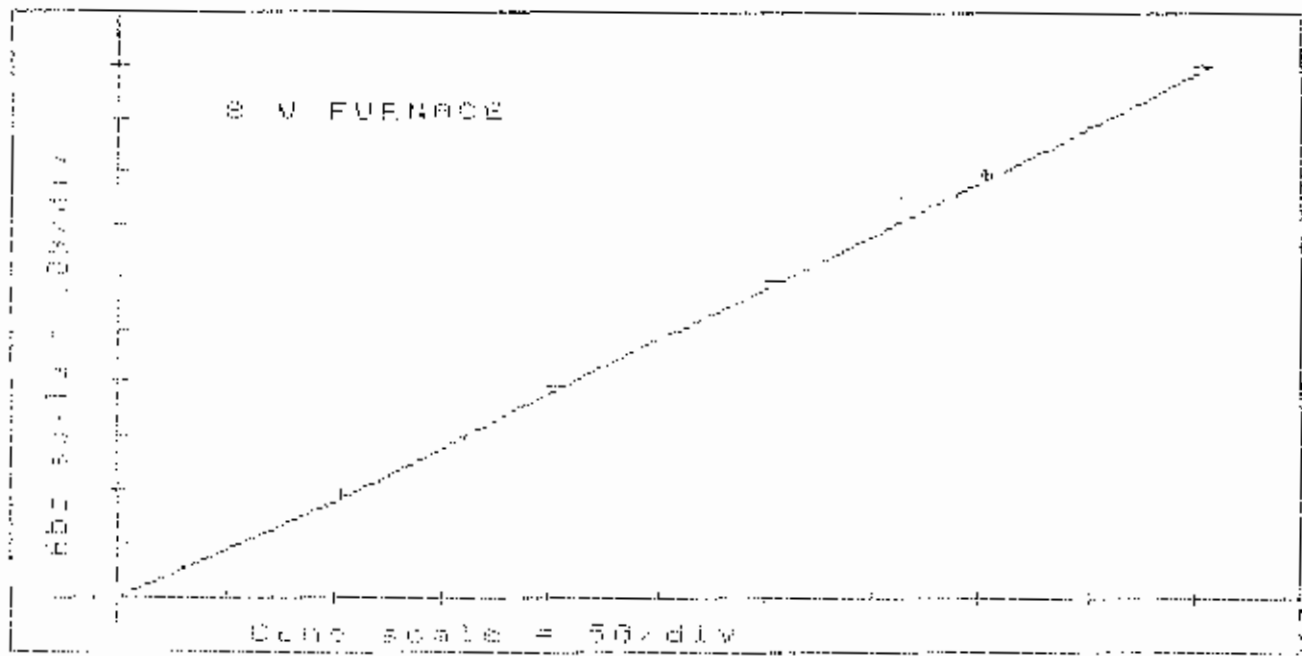
204.137	*	10.11	10.0%	0.310	0.310	0.311	1.000
208.17	*	20.17	1.4%	0.268	0.260	0.275	1.000
15.17	*	15.17	1.4%	0.317	0.317	0.317	1.000

2	25.21	3.5%	0.285	0.243	0.242	1.000
3	25.75	0.4%	0.271	0.267	0.261	1.000
4	25.57	0.4%	0.259	0.264	0.258	1.000
5	25.66	0.4%	0.250	0.261	0.257	1.000
6	25.93	0.4%	0.240	0.247	0.242	1.000
7	26.30	0.7%	0.267	0.266	0.269	1.000
1 M 5/15	1.333	16.7%	0.012	0.014	0.011	1.000
1 K SPK	23.58	0.4%	0.237	0.236	0.238	1.000
61024 A	2.888	0.0%	0.026	0.028	0.026	1.000
61024 ACC	2.888	7.7%	0.026	0.035	0.028	1.000
SPK	21.16	2.4%	0.210	0.214	0.208	1.000
61024 B	6.444 ^{<0.001}	0.3%	0.058	0.095	0.019	1.000
BLANK	0.000	0.0%	0.000	0.000	-0.001	1.000
RESLOPE	21.16	4.8%	0.210	0.218	0.207	.944
1*2	* 15.73	13.3%	0.015	0.015	0.017	.944
2	* 276.1	1.7%	0.299	0.303	0.295	.944
61024 6SPK	18.20	2.6%	0.189	0.186	0.193	.944
61024 C	2.727	3.8%	0.026	0.028	0.027	.944
SPK	19.38	1.0%	0.203	0.202	0.205	.944
61024 D	2.697	5.0%	0.020	0.019	0.021	.944
SPK	19.21	3.5%	0.201	0.206	0.196	.944
61024 E	3.041	10.3%	0.029	0.032	0.027	.944
SPK	19.81	1.4%	0.208	0.211	0.206	.944
61024 F	2.727	0.0%	0.026	0.026	0.026	.944
SPK	19.04	1.5%	0.199	0.197	0.202	.944
61024 G	5.832	3.7%	0.027	0.028	0.026	.944
SPK	19.38	1.0%	0.203	0.205	0.201	.944

Dump on tube
false value

AUTO-PROGRAM B V FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	25.0%	-0.004	-0.003 -0.005	1.000
STANDARD 1	100.0	1.3%	0.158	0.157 0.160	1.000
STANDARD 2	200.0	0.6%	0.339	0.341 0.338	1.000
STANDARD 3	300.0	1.7%	0.519	0.515 0.524	1.000
STANDARD 4	400.0	1.1%	0.700	0.694 0.706	1.000
STANDARD 5	500.0	0.9%	0.885	0.879 0.891	1.000



SPK	19.04	1.5%	0.199	0.197	0.202	.944
-----	-------	------	-------	-------	-------	------

1	200.0	0.3%	0.378	0.378	0.377	1.000
2	200.0	0.3%	0.378	0.378	0.376	1.000
3	200.0	1.3%	0.308	0.308	0.390	1.000
4	200.0	0.3%	0.378	0.380	0.382	1.000
5	200.0	0.3%	0.378	0.378	0.376	1.000
6	200.0	0.3%	0.378	0.378	0.377	1.000
7	201.1	0.5%	0.378	0.377	0.380	1.000
1 5/13	15.02	28.0%	0.025	0.030	0.020	1.000
SLK SPK	121.1	1.0%	0.195	0.194	0.197	1.000
61024 A	17.72	17.9%	0.028	0.032	0.024	1.000
61024 ADD	11.39	0.0%	0.019	0.018	0.018	1.000
SPK	121.6	2.6%	0.192	0.190	0.200	1.000
61024 B	12.65	25.0%	0.020	0.024	0.016	1.000
BLANK	0.000	11.1%	0.009	0.008	0.010	1.000
PEBLOPE	193.5	2.8%	0.327	0.321	0.334	1.033
1*2	* 339.9	5.8%	0.052	0.055	0.050	1.033
2	* 60.3	1.3%	0.153	0.155	0.152	1.033
61024 BSPK	122.7	0.5%	0.191	0.190	0.192	1.033
61024 C	7.845	56.3%	0.012	0.017	0.007	1.033
SPK	116.3	1.1%	0.180	0.178	0.182	1.033
61024 D	8.499	15.4%	0.013	0.015	0.011	1.033
SPK	119.2	3.8%	0.185	0.180	0.190	1.033
61024 E	5.884	33.3%	0.009	0.012	0.007	1.033
SPK	116.9	1.1%	0.181	0.180	0.183	1.033
61024 F	6.537	40.0%	0.010	0.013	0.007	1.033
SPK	113.3	0.6%	0.175	0.174	0.176	1.033
61024 G	4.576	42.9%	0.007	0.010	0.005	1.033
SPK	113.7	1.1%	0.179	0.177	0.181	1.033

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 07/7/86
 BATCH:

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Cr ug/l	V ug/l
WP284 1*2	* 11.11	518.9
WP284 2	* 263.9	1150 1150
IDL 1	25.93	220.6
2	25.21	217.5
3	25.78	224.2
4	25.67	222.7
5	25.66	220.6
6	25.93	220.2
7	26.30	221.1
SLK SPK	1.333	15.32
61024 A	0.880	17.72
61024 ADD	2.898	11.39
SPK	21.11 (0.6)	121.6 (0.7)
61024 B	6.444 (<0.005)	12.65 (<0.005)
1*2	* 15.70	339.9
2	* 276.1	60.3 (0.0)
61024 BSPK	18.20 (0.7)	122.7 (0.7)
61024 C	0.72 (<0.005)	7.845 (<0.005)
SPK	19.87 (0.7)	116.3 (0.7)
61024 D	0.19 (<0.005)	8.499 (<0.005)
SPK	18.21 (0.6)	119.2 (0.5)
61024 E	0.19 (<0.005)	5.884 (<0.005)
SPK	18.21 (0.6)	116.9 (0.5)
61024 F	0.19 (<0.005)	6.537 (<0.005)
SPK	113.3 (0.7)	113.3 (0.7)
61024 G	0.19 (<0.005)	4.576 (<0.005)
SPK	113.7 (0.7)	113.7 (0.7)

61024 A	1.237	1.237	1.237	1.237	1.237
SPK	1.237	1.237	1.237	1.237	1.237
61024 B	1.237	1.237	1.237	1.237	1.237
SPK	1.237	1.237	1.237	1.237	1.237
61024 C	1.237	1.237	1.237	1.237	1.237
SPK	1.237	1.237	1.237	1.237	1.237

170

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIATION AQ-975
 OPERATOR: D. DUMBLETON
 DATE: 07/7/85
 BATCH:

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Cr ug/l	V ug/l
WF204 1*2	* 11.11	518.9
WF204 2	* 263.9	1150 0.1150
IDL 1	25.93	220.1
2	25.21	217.8
3	25.75	222.5
4	25.57	222.7
5	25.66	220.6
6	25.93	220.0
7	26.30	221.1
BLK 5/15	1.353	15.92
BLK SPK	23.58	121.1
61024 A	2.888	17.72
61024 ADC	2.888	11.39
SPK	21.16 (0.6%)	121.6 98%
61024 D	6.444 (<0.005)	12.65 (<0.05)
1*2	* 18.73	337.9
2	* 276.1	*00.3 100.0
61024 BSPK	18.20 (9%)	122.7 98%
61024 C	2.727 (<0.005)	7.845 (<0.05)
SPK	19.38 (9%)	116.3 95%
61024 D	2.097 (<0.005)	8.499 (<0.05)
SPK	19.21 (9%)	119.2 95%
61024 E	3.041 (<0.005)	5.884 (<0.05)
SPK	19.81 (9%)	116.9 94%
61024 F	2.727 (<0.005)	6.537 (<0.05)
SPK	19.04 (9%)	113.3 90%
61024 G	2.832 (<0.005)	4.576 (<0.05)
SPK	19.33 (9%)	115.7 97%

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

QC 12 774
6/5/86

VARIAN AA-975

OPERATOR: JB

DATE: 6/4/86

BATCH: Cr total: 5/19-31 and solubles

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 16 Cr

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.002 0.000 0.000	1.000
STANDARD 1	0.250	9.1%	0.011	0.010 0.011 0.013	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JB

DATE: 6/4/86

BATCH: Cr total: 5/19-31 and solubles

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 16 Cr

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.001 0.001-0.002	1.000
STANDARD 1	0.250	18.7%	0.012	0.012 0.011 0.013	1.000
STANDARD 2	0.500	3.2%	0.022	0.020 0.021 0.023	1.000
STANDARD 3	0.750	0.0%	0.031	0.030 0.030 0.031	1.000
STANDARD 4	1.000	0.4%	0.044	0.043 0.043 0.044	1.000
STANDARD 5	10.00	0.1%	0.200	0.199 0.200 0.199	1.000



5570-A (SPK)	0.172	12.5%	0.002	0.002	0.002	0.002	1.037
5570-BE	0.000	50.0%	-0.002	-0.002	-0.002	-0.002	1.037
5076-A	0.000	-0.0%	-0.003	-0.004	-0.003	-0.003	1.037
5076-B	0.000	50.0%	-0.002	-0.003	-0.001	-0.003	1.037
61098	0.000	200.0%	-0.001	0.001	-0.004	-0.001	1.037
61110	0.000	25.0%	-0.004	-0.003	-0.003	-0.006	1.037
61110 (QC)	0.000	50.0%	-0.002	-0.002	-0.003	-0.003	1.037
61110 (SPK)	0.172	0.0%	0.008	0.008	0.009	0.008	1.037
61121-A	0.064	0.0%	0.003	0.003	0.003	0.004	1.037
61121-A (QC)	0.108	20.0%	0.005	0.006	0.006	0.005	1.037
61121-A (SPK)	0.362	5.9%	0.017	0.017	0.017	0.019	1.037
BLANK	0.000	0.0%	-0.005	-0.005	-0.005	-0.005	1.037
RESLOPE	0.964	2.0%	0.050	0.051	0.049	0.051	1.037
WP284 2	0.321	6.7%	0.015	0.014	0.016	0.015	1.037
61142	3.958	1.0%	0.201	0.203	0.203	0.199	1.037
BLK 5/29	0.021	100.0%	0.001	0.001	0.001	0.003	1.037
BS	0.321	0.0%	0.015	0.015	0.016	0.015	1.037
61140-E	0.043	0.0%	0.002	0.002	0.003	0.002	1.037
61140-E (QC)	0.000	0.0%	0.000	0.001	0.000	0.000	1.037
61140-E (SPK)	0.280	7.7%	0.013	0.013	0.014	0.014	1.037

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JB
 DATE: 6/4/86
 BATCH: Cr total: 5/19-31 and solubles

✓ 6/6/86

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Cr mg/L	
WS378 14x2	0.062	68%
WP284 2	0.270	103%
BLK 5/19	0.000	<.05
BS	0.250	100%
61025-A	0.187	18 ug/g
61025-A (QC)	0.208	17 "
61025-A (SPK)	0.427	42.3 " 100%
61025-B	0.166	15 ug/g
61025-C	0.125	12 "
61025-D	0.229	21 "
61025-E	0.041	< 5 "
61025-F	0.208	20 "
61025-G	0.145	14 "
61025-H	0.104	10 "
61025	0.125	12 ug/g
61023 (QC)	0.104	10 "
61023 (SPK)	0.329	32.9 " 88%
5595-C	0.145	
5595-C (QC)	0.145	
5595-C (SPK)	0.408	105%
WS378 14x2	0.063	90%
WP284 2	0.250	96%
61103 (QC)	0.104	
61116-A	0.329	
61116-B sol	0.125	
61076-B sol	0.000	<.05
61010-B sol	0.003	
61026-B sol	0.166	
60980-K x10	0.270	
60980-L x10	0.408	
BLK 5/15	0.001	<.05
BS	0.321	116%

$$\frac{42.3 - 17.5}{24.8} = 100\%$$

$$\frac{32.9 - 11}{25} = 88\%$$

> 11 ug/g

5612-B(QC)	0.125	> 0.115 ✓
5612-B(SPK)	0.408	117%
5648-A* ^{NOT TO BE}	0.166	—
5648-B* ^{DIGITIZED} (2)	0.041	<.05 —
BLK 5/20	0.062	
ES	0.309	124%
WS378 14x2	0.108	117%
WP284 2	0.280	107%
61123	0.259	> 0.270 ✓
61123(QC)	0.280	
61123(SPK)	0.620	140%
BLK 5/21	0.043	<.05
ES	0.151	61%
5670-A	0.000	<.05 —
5670-A(QC)	0.000	
5670-A(SPK)	0.172	69%
5670-B	0.000	<.05 —
5076-A	0.000	<.05 —
5076-B	0.000	<.05 —
61098	0.000	<.05 —
61110	0.000	<.05 —
61110(QC)	0.000	
61110(SPK)	0.172	69%
61121-A	0.064	> 0.086 ✓
61121-A(QC)	0.108	
61121-A(SPK)	0.362	110%
WP284 2	0.321	122%
61142	3.958	3.96
BLK 5/29	0.021	<.05
ES	0.321	122%
61140-E	0.015	<.05 —
61140-E(QC)	0.000	
61140-E(SPK)	0.280	112%

~~Fedigest?~~

QUALITY CONTROL

Cv

PA #	True Value	Recovery				% Recovery
WS 378 14x2	0.092	0.062	0.083	0.108	- 0.084	91
WP 284 2	0.261	0.270	0.250	0.280	0.321	107
					-0.280	

ACCURACY:

SPIKED RECOVERY ANALYSIS

Control Limit: _____

Warning Limit: _____

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
BS 5/19	0.250	<.05	0.250	0.250	100
61025-A 49/9	42.3	17.5	24.8	24.8	100
61023 "	32.9	11	21.9	25	88
5595-C	0.408	0.145	0.263	0.250	105
BS 5/15	0.290	<.05	0.290	"	116
5612-B	0.408	0.115	0.273	"	117
BS 5/20	0.309	<.05	0.309	"	124
BS 5/21	0.151	<.05	0.151	"	61 WT.
5670-A	0.172	<.05	0.172	"	69 WT.
61121-A	0.362	0.086	0.276	"	110
61140-E	0.280	<.05	0.280	"	112

PRECISTON:

DUPLICATE ANALYSIS

Control Limit: _____

Warning Limit: _____

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{1A-B1}{(A+B)} \times 200$
61025-A 49/9	18	17	5.7
61023	12	10	18
5595-C	0.145	0.145	0
5612-B	0.104	0.125	18
61123	0.259	0.280	B
5670-A	<.05	<.05	NC
61110	<.05	<.05	NC
61121-A	0.064	0.108	51 WT.
61140-E	<.05	<.05	NC

METAL V DATE 7/8/86 ANALYST MM REVIEWER RL 7/8
 INSTRUMENT (AA) 3185 nm Voltage 460 V ANALYSIS METHOD
 Current a Split 0.5 nm Flame Hydride
 D₂ OFF Integ. 4 sec Gas N₂O/Asst Acid
 Reduc.

INITIAL CALIBRATION

-200 ml Al(NO₃)₃ 9H₂O + 100 sample

STANDARDS:	#1	#2	#3	#4	#5
Stock	5.00	10.00	2.00	1.00	0.25
Conc, ug/ml					
Absorbance		0.108			0.004
EPA Check	Known	Mean	SD	RSD	% Recovered
NP 2812	0.846	0.89	0.03	3.72	104%
NP 284 1x2	0.258	0.27	0.03	9.6	105%

ANALYSIS

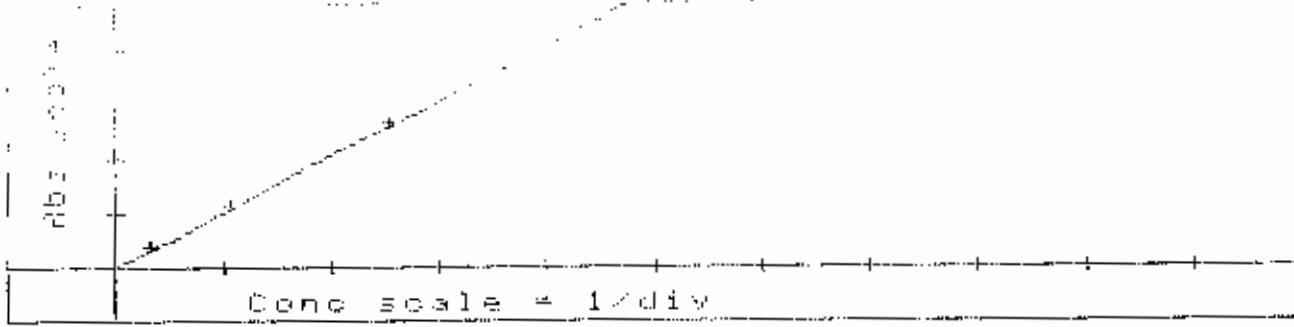
Recal 498 to 500

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Blk 5/19	<0.25			200	200		<0.25	
BS, 5/19	1.26		101%	200	200		1.26	
61025 A	0.26				2.16		0.23	24
Al (oc)	0.24				2.18			22
A SPK	1.38				2.01			137.23:114/24=92
B	0.26				2.19			24
C	0.29				2.07			28
D	0.30				2.02			30
E	<0.25				2.07			<25
F	0.31				2.10			30
G	0.35				2.00			35
H	<0.25			✓	2.03			<25



WS378 14x2	0.062	33.3%	0.003	0.003	0.005	0.003	1.000
WP284 2	0.270	0.0%	0.013	0.013	0.013	0.013	1.000
BLK 5/19	0.000	0.0%	0.000	0.000	0.001	0.001	1.000
BS	0.250	8.3%	0.012	0.013	0.013	0.012	1.000
61025-A	0.187	11.1%	0.009	0.010	0.010	0.009	1.000
61025-A(QC)	0.208	10.0%	0.010	0.008	0.011	0.011	1.000
61025-A(SPK)	0.427	0.0%	0.021	0.021	0.022	0.021	1.000
61025-B	0.166	25.0%	0.008	0.010	0.005	0.009	1.000
61025-C	0.125	16.7%	0.006	0.005	0.007	0.007	1.000
61025-D	0.229	18.2%	0.011	0.012	0.014	0.009	1.000
61025-E	0.041	50.0%	0.002	0.004	0.003	0.001	1.000
61025-F	0.208	0.0%	0.010	0.010	0.010	0.010	1.000
61025-G	0.145	14.3%	0.007	0.009	0.008	0.006	1.000
61025-H	0.104	0.0%	0.005	0.005	0.006	0.005	1.000
61023	0.125	16.7%	0.006	0.007	0.005	0.007	1.000
61023(QC)	0.104	20.0%	0.005	0.005	0.006	0.004	1.000
61023(SPK)	0.329	12.5%	0.016	0.016	0.018	0.014	1.000
5595-C	0.145	14.3%	0.007	0.008	0.006	0.008	1.000
5595-C(QC)	0.145	0.0%	0.007	0.007	0.007	0.007	1.000
5595-C(SPK)	0.408	0.0%	0.020	0.020	0.021	0.020	1.000
BLANK	0.000	33.3%	-0.003	-0.004	-0.002	-0.003	1.000
RESLOPE	1.000	1.9%	0.052	0.053	0.052	0.053	1.000
WS378 14x2	0.083	25.0%	0.004	0.005	0.005	0.003	1.000
WP284 2	0.250	0.0%	0.012	0.013	0.012	0.012	1.000
61103	0.104	20.0%	0.005	0.006	0.004	0.005	1.000
61116-A	0.329	6.3%	0.016	0.016	0.017	0.015	1.000
61116-B sol	0.125	33.3%	0.006	0.005	0.006	0.009	1.000
61196-B sol	0.020	100.0%	0.001	0.003	0.001	0.001	1.000
61010-B sol	0.083	25.0%	0.004	0.005	0.002	0.005	1.000
61026-B sol	0.166	0.0%	0.008	0.009	0.008	0.008	1.000
60980-K x10	0.270	15.4%	0.013	0.015	0.013	0.011	1.000
60980-L x10	0.408	5.0%	0.020	0.020	0.021	0.021	1.000
BLK 5/15	0.041	100.0%	0.002	0.004	0.000	0.003	1.000
BS	0.290	7.1%	0.014	0.014	0.013	0.016	1.000
5612-A	0.041	50.0%	0.002	0.001	0.001	0.004	1.000
5612-B	0.104	0.0%	0.005	0.005	0.005	0.006	1.000
5612-B(QC)	0.125	16.7%	0.006	0.006	0.007	0.007	1.000
5612-B(SPK)	0.408	0.0%	0.020	0.020	0.020	0.020	1.000
564B-A*	0.166	25.0%	0.008	0.010	0.006	0.010	1.000
564B-B*	0.041	0.0%	0.002	0.002	0.002	0.002	1.000
BLK 5/20	0.062	33.3%	0.003	0.004	0.004	0.002	1.000
BS	0.309	6.7%	0.015	0.016	0.016	0.015	1.000
BLANK	0.000	0.0%	0.003	0.003	0.003	0.003	1.000
RESLOPE	0.964	2.0%	0.050	0.050	0.052	0.050	1.037
578 14x2	0.108	20.0%	0.005	0.006	0.005	0.004	1.037
WP284 2	0.280	7.7%	0.013	0.013	0.015	0.013	1.037
61123	0.259	8.3%	0.012	0.012	0.013	0.013	1.037
61123(QC)	0.280	7.7%	0.013	0.013	0.014	0.014	1.037
61123(SPK)	0.620	3.3%	0.030	0.030	0.030	0.032	1.037
BLK 5/21	0.043	200.0%	0.002	0.007	0.000	0.000	1.037
BS	0.151	0.0%	0.007	0.007	0.008	0.007	1.037

CON 01 00.89
 02 00.84
 03 00.83
 04 00.92
 05 00.93
 06 00.86
 07 00.88
 08 00.90
 09 00.87
 10 00.96

MEAN 00.88

SD 00.03

RSD 03.72

CON 01 00.43
 02 00.37
 03 00.37

STATISTICS

CON 01 00.30
 02 00.28
 03 00.28
 04 00.31
 05 00.29
 06 00.33
 07 00.35
 08 00.31
 09 00.11
 10 00.29

MEAN 00.28

SD 00.07

RSD 23.60

CON 01 00.27
 02 00.28
 03 00.26
 04 00.25
 05 00.25
 06 00.32
 07 00.30
 08 00.26
 09 00.24
 10 00.30

MEAN 00.27

SD 00.03

RSD 09.16

STD 1 05.00

STD 2 10.00

STD 3 01.99

STD 4 01.00

STD 5 00.31

AUTO CAL

STD 1

ACT CON 05.00

ORG CON 04.98

NEW CON 05.00

STD 1

CON 05.00

SIG 0.056
 0.056
 0.056

MEAN 0.056

STD 2

CON 10.00

SIG 0.106
 0.109
 0.109
 0.100

MEAN 0.100

STD 3

CON 02.00

SIG 0.024
 0.023
 0.023
 0.023

MEAN 0.023

STD 4

CON 01.00

SIG 0.012
 0.012
 0.012

MEAN 0.012

STD 5

CON 00.25

SIG 0.004
 0.004
 0.003

MEAN 0.004

APP CON

Subpart G9: Cobalt

METALS ANALYSIS DATA SHEET

REV. 181

METAL Co DATE 5/20/86 ANALYST MJM REVIEWER WCL-7/25/86
 INSTRUMENT (AA) 240.7 nm ANALYSIS METHOD Flame Hydride
 Wavelength 240.7 nm Voltage 530 V Gas Air/Acet Acid Acid
 Current 8 a Split 0.3 nm Reduc. Flame
 D₂ OFF Integ. 4 sec

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	2.500	5.000	0.250	0.125	0.050
Conc, ug/ml					
Absorbance		0.304			0.004
EPA Check	Known	Mean	SD	RSD	% Recovered
WP 284 2	0.261	0.236	0.029	12.33	90%

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Blk 5/14	<0.05							
B.S.	0.225		90%					
5528A	0.179							
ADIP	0.152	0.16%						
B	<0.05							
BSPIC	0.283		113%					
C	0.083							
D	<0.05							
F	<0.05							
Blk 5/15	<0.05							
B.S.	0.235		94%					
61024-A	<0.05							
APUP	<0.05							
ASPIC	0.222		89%					
B	<0.05							
C	<0.05							
D	<0.05							
E	<0.05							
F	<0.05							
G	<0.05							

STD 1

CON 2.500

SIG 0.177

0.158

0.173

MEAN 0.169

STD 2

CON 5.000

SIG 0.303

0.301

0.308

MEAN 0.304

STD 3

CON 0.250

SIG 0.015

0.026

0.021

MEAN 0.021

STD 4

CON 0.125

SIG 0.004

0.004

-0.002

MEAN 0.002

STD 4

CON 0.125

SIG 0.007

0.006

0.003

MEAN 0.006

STD 5

CON 0.050

SIG 0.004

0.004

MEAN 0.004

APP CON

STD 1

2.500

STD 2

5.000

STD 3

0.275

STD 4

0.079

STD 5

0.051

STATISTICS

CON 01 0.436

02 0.430

03 0.446

MEAN 0.437

SD 0.008

RSD 01.75

STATISTICS

CON 01 0.234

02 0.235

03 0.231

04 0.234

05 0.282

06 0.249

07 0.256

08 0.169

09 0.248

10 0.244

MEAN 0.236

SD 0.029

RSD 12.33

METAL Co DATE 6/23 ANALYST MM REVIEWER RL624
 INSTRUMENT (AA) 240.7 nm Voltage 5.30 V ANALYSIS METHOD
 Wavelength 10 nm Split 0.3 nm Flame Hydride
 D₂ OFF Integ. 4 sec Gas Air / Red Acid
 Reduc.

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5	
Stock	Conc, ug/ml	<u>2.500</u>	<u>5.000</u>	<u>0.250</u>	<u>0.125</u>	<u>0.050</u>
<u>6/23</u>	Absorbance		<u>0.246</u>			<u>0.006</u>
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>WP 284 2</u>	<u>0.261</u>	<u>0.266</u>	<u>0.018</u>	<u>6.5%</u>	<u>102%</u>	

ANALYSIS

Recal. 2.434 to 2.500

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Blk 5/19	<0.05						<0.05	
B.S.	0.237		95%				0.237	
61025A	0.098			50	0.53			9.2 y 9.1
AGC	0.090				0.50			9.0
A SPL	0.325				0.53 0.53			31-9.1 = 21.9 / 23.6 9.1
B	<0.05				0.57			<5-
C	0.103 0.103		<0.05		0.55			<5-
D	0.103				0.50			10-
E	<0.05				0.57			<5-
F	0.104				0.56			9.3-
G	<0.05				0.54			<5-
H	<0.05			✓	0.51			<5-
Blk 6/4	<0.05						<0.05	
B.S.	0.247		99%				0.247	
5689	<0.05						<0.05	

STD 1
 CON 2.500
 SIG 0.147
 0.146
 0.148

MEAN 0.147
 STD 2

CON 5.000
 SIG 0.244
 0.246
 0.246

MEAN 0.245

STD 3
 CON 0.250
 SIG 0.014
 0.016
 0.017

MEAN 0.016
 26 -0.001
 27 -0.000

STD 4
 CON 0.125
 SIG 0.005
 0.008
 0.008
 0.006
 0.008

MEAN 0.007

STD 5
 CON 0.030
 3 0.007
 0.006
 0.004

MEAN 0.005

STD 1
 2.501
 STD 2
 5.000
 STD 3
 0.249
 STD 4
 0.111
 STD 5
 0.008
 ANALYSIS

STATISTICS

CON 01 0.263
 02 0.277
 03 0.263
 04 0.245
 05 0.272
 06 0.301
 07 0.255
 08 0.265
 09 0.251
 10 0.246

MEAN 0.266
 SD -0.010
 RSD 06.58

Subpart G10: Copper
Nickel

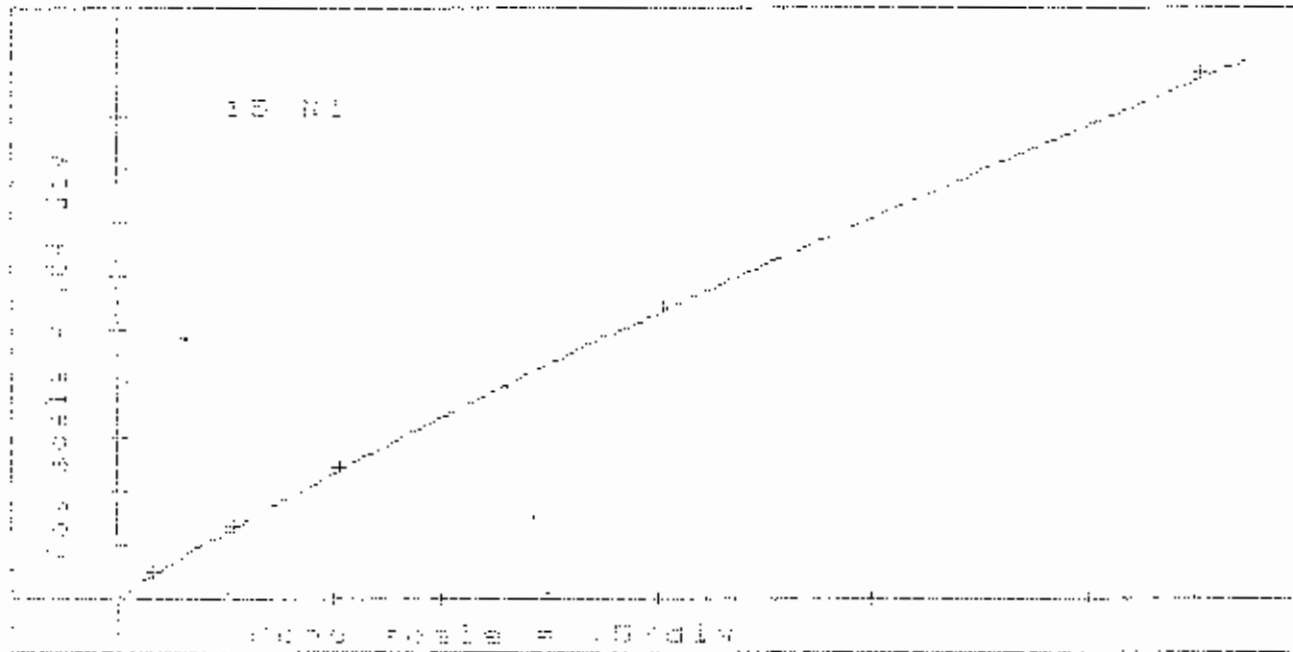
GENERAL METHOD FOR WORKING TO KEEP THE ENVIRONMENT CLEAN

LABORATORY # 1000 - EPCOR
 OPERATOR # 1000000000
 DATE 1/22/88
 ANALYSTS Zn and Pb

WATER AND/OR SOLUTION CONCENTRATION ARE ONLY VALID ON RESULTS OBTAINED WITH *

AUTO-PROGRAM 15 Ni

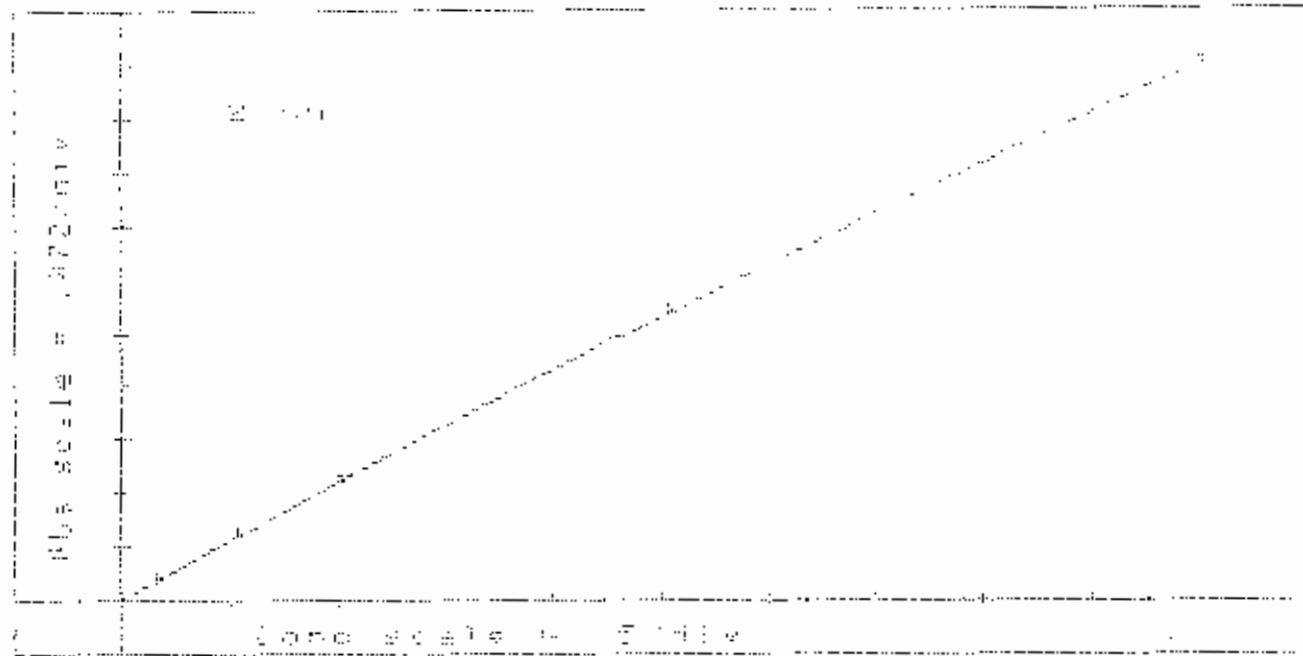
SOLUTION	CONC ng/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	5.0%	0.000	0.000	1.000	0.001	1.000
STANDARD 1	0.125	7.1%	0.013	0.013	0.013	0.013	1.000
STANDARD 2	0.250	2.0%	0.027	0.028	0.029	0.027	1.000
STANDARD 3	1.000	1.1%	0.093	0.094	0.092	0.093	1.000
STANDARD 4	2.500	1.4%	0.212	0.212	0.209	0.213	1.000
STANDARD 5	5.000	1.9%	0.385	0.382	0.384	0.381	1.000



0.125	0.125	7.1%	0.013	0.013	0.013	0.013	1.000
0.250	0.250	2.0%	0.027	0.028	0.027	0.028	1.000
0.500	0.500	1.1%	0.093	0.094	0.092	0.093	1.000
1.000	1.000	1.4%	0.212	0.212	0.209	0.213	1.000
2.500	2.500	1.9%	0.385	0.382	0.384	0.381	1.000
5.000	5.000	1.9%	0.385	0.382	0.384	0.381	1.000
10.000	10.000	1.9%	0.385	0.382	0.384	0.381	1.000
15.000	15.000	1.9%	0.385	0.382	0.384	0.381	1.000
20.000	20.000	1.9%	0.385	0.382	0.384	0.381	1.000
25.000	25.000	1.9%	0.385	0.382	0.384	0.381	1.000
30.000	30.000	1.9%	0.385	0.382	0.384	0.381	1.000
35.000	35.000	1.9%	0.385	0.382	0.384	0.381	1.000
40.000	40.000	1.9%	0.385	0.382	0.384	0.381	1.000
45.000	45.000	1.9%	0.385	0.382	0.384	0.381	1.000
50.000	50.000	1.9%	0.385	0.382	0.384	0.381	1.000
55.000	55.000	1.9%	0.385	0.382	0.384	0.381	1.000
60.000	60.000	1.9%	0.385	0.382	0.384	0.381	1.000
65.000	65.000	1.9%	0.385	0.382	0.384	0.381	1.000
70.000	70.000	1.9%	0.385	0.382	0.384	0.381	1.000
75.000	75.000	1.9%	0.385	0.382	0.384	0.381	1.000
80.000	80.000	1.9%	0.385	0.382	0.384	0.381	1.000
85.000	85.000	1.9%	0.385	0.382	0.384	0.381	1.000
90.000	90.000	1.9%	0.385	0.382	0.384	0.381	1.000
95.000	95.000	1.9%	0.385	0.382	0.384	0.381	1.000
100.000	100.000	1.9%	0.385	0.382	0.384	0.381	1.000

AUTO-PROGRAM 5 DL

SOLUTION	COND mg/L	TOC	MEQ/L	ASD	ABSORBANCE	REACTANCE	RECOVERY FACTOR
WATER	1.000	0.000	0.000	0.000	0.000	0.000	1.000
STANDARD 1	0.170	0.000	0.000	0.000	0.000	0.000	1.000
STANDARD 2	0.500	0.000	0.000	0.000	0.000	0.000	1.000
STANDARD 3	1.000	0.000	0.000	0.000	0.000	0.000	1.000
STANDARD 4	2.500	0.000	0.000	0.000	0.000	0.000	1.000
STANDARD 5	5.000	0.000	0.000	0.000	0.000	0.000	1.000



WATER 1x2	0.010	0.0%	0.000	0.000	0.000	0.000	1.000
WATER 2	0.314	0.0%	0.000	0.000	0.000	0.000	1.000
SLR 5/19	1.100	0.0%	0.000	0.000	0.000	0.000	1.000
ES	0.000	0.0%	0.010	0.010	0.010	0.010	1.000
61024-A	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
61024-A (00)	0.000	100.0%	0.001	0.000	0.001	0.000	1.000
61024-A (3PM)	0.100	0.0%	0.010	0.000	0.010	0.010	1.000
61024-B	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
61024-C	0.010	100.0%	0.001	0.001	0.000	0.000	1.000
61024-D	0.000	0.0%	0.001	0.001	0.000	0.000	1.000
61024-E	0.000	100.0%	0.001	0.000	0.000	0.000	1.000
61024-F	0.100	0.0%	0.000	0.000	0.000	0.000	1.000
61024-G	0.000	0.0%	0.001	0.000	0.001	0.000	1.000
WATER 1x2	0.010	0.0%	0.000	0.000	0.000	0.000	1.000
WATER 3	0.010	0.0%	0.000	0.000	0.000	0.000	1.000
0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.000

GENERAL TESTING DONE AGAIN TO KEEP OUR ENVIRONMENT CLEAN

WATER 1 AND 2 100% 0.000
 WATER 3 AND 4 100% 0.000
 WATER 5 100% 0.000
 WATER 6 100% 0.000

ADJUSTMENT FOR SOLUTION CORRECTION HAS BEEN APPLIED TO REPORT WITH +

SOLUTION	Wt mg/L	Cu mg/L
----------	------------	------------

WF284 1x1	0.152	—	0.012	—
WF281 2	0.212	102%	0.314	93%
FLN 5/19	0.026	<.05	0.000	<.02
35	0.272	89%	0.093	93%
61024-A	0.026	<.04	0.000	<.02
61024-B (GC)	0.026	<.04	0.000	<.02
61024-B (20%)	0.312	85%	0.100	100%
61024-C	0.026	<.04	0.000	<.02
61024-D	0.017	<.04	0.000	<.02
61024-E	0.000	<.04	0.000	<.02
61024-F	0.017	<.04	0.000	<.02
61024-G	0.053	—	0.000	<.02
61024-H	0.026	<.04	0.000	<.02
WF284 1x2	0.061	—	0.012	—
WF284 2	0.182	88%	0.314	93%
BLK 17/11E	0.009	—	—	—
BS 17	0.222	—	—	—
61784 PC	0.346	—	—	—
8BLK 18	0.017	—	—	—
8BLK 20	0.232	—	—	—

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

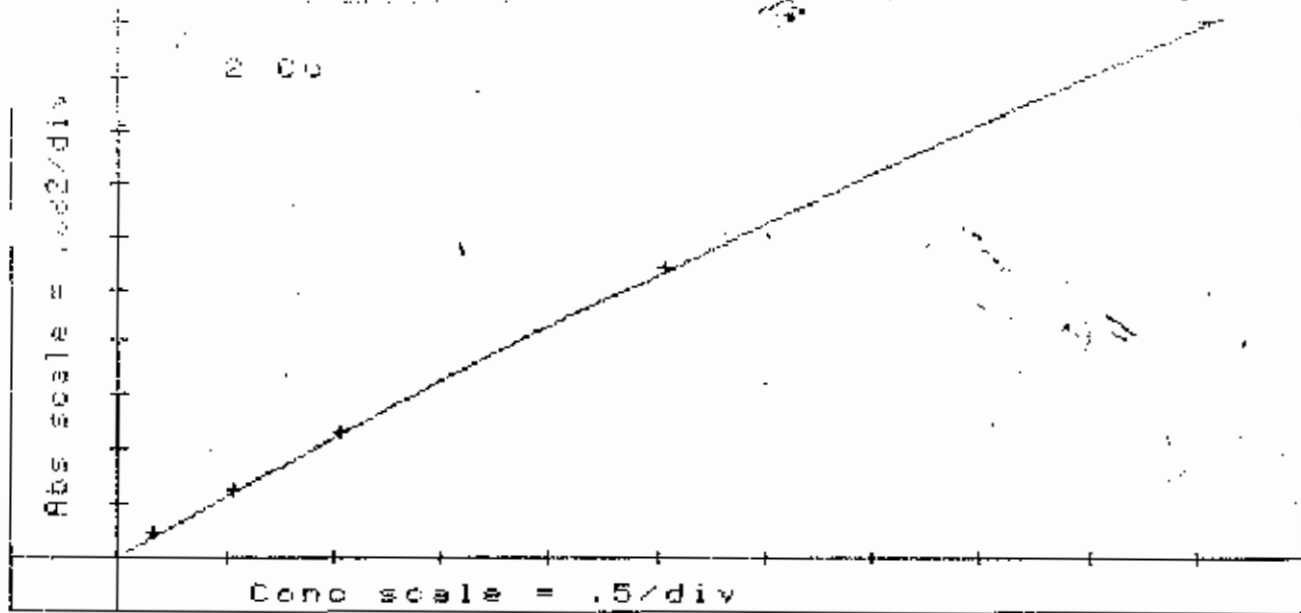
VARIAN AA-775
 OPERATOR: S. DUMBLETON
 DATE: 05/30/86
 BATCH:

Acid AM 6/4/86

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 2 Cu

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 1	0.125	0.0%	0.023	0.023	0.023	0.024	1.000
STANDARD 2	0.500	0.0%	0.091	0.091	0.092	0.091	1.000
STANDARD 3	1.000	0.6%	0.179	0.179	0.180	0.180	1.000
STANDARD 4	2.500	0.7%	0.430	0.427	0.434	0.429	1.000
STANDARD 5	5.000	0.0%	0.803	0.803	0.803	0.803	1.000



WP284 1*2	0.021	0.0%	0.004	0.004	0.004	0.004	1.000
WP284 2	0.322	1.7%	0.059	0.060	0.060	0.059	1.000
61010 sol	0.668	0.0%	0.121	0.121	0.122	0.121	1.000
61026 sol	0.333	0.0%	0.061	0.061	0.061	0.062	1.000
61121 Bsol	0.394	0.0%	0.072	0.072	0.072	0.072	1.000
61196 Bsol	0.146	0.0%	0.027	0.027	0.028	0.027	1.000
BLK 5/16	0.005	0.0%	0.001	0.001	0.001	0.001	1.000
BLK SPK	0.097	5.6%	0.018	0.019	0.019	0.018	1.000
5623 H	0.059	0.0%	0.011	0.011	0.011	0.011	1.000
5623 I	0.027	0.0%	0.005	0.005	0.005	0.005	1.000
BLK 5/19	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
BLK SPK	0.097	0.0%	0.018	0.019	0.018	0.018	1.000
61025 A	0.179	0.0%	0.033	0.033	0.034	0.033	1.000
61025 AGC	0.190	0.0%	0.035	0.035	0.035	0.035	1.000
61025 ASPK	0.185	0.0%	0.034	0.034	0.034	0.034	1.000
61025 B	0.146	0.0%	0.027	0.027	0.027	0.027	1.000
61025 C	0.119	0.0%	0.022	0.022	0.023	0.022	1.000
61025 D	0.267	0.0%	0.049	0.049	0.049	0.049	1.000
61025 E	0.054	0.0%	0.010	0.010	0.010	0.010	1.000
61025 F	0.168	3.2%	0.031	0.030	0.032	0.031	1.000
BLANK	0.000	0.0%	0.000	0.000	0.001	0.001	1.000
RESLOPE	0.494	1.1%	0.090	0.091	0.091	0.090	1.012
1*2	0.015	0.0%	0.003	0.003	0.003	0.003	1.012
2	0.320	1.7%	0.058	0.059	0.058	0.059	1.012
61025 G	0.220	0.0%	0.040	0.040	0.040	0.040	1.012
61025 H	0.489	1.1%	0.085	0.088	0.089	0.089	1.012
61103	0.325	1.7%	0.059	0.058	0.060	0.060	1.012
61116 A	0.556	1.0%	0.100	0.101	0.100	0.101	1.012
5595 C	0.466	0.0%	0.084	0.084	0.084	0.084	1.012
5595 CGC	0.472	1.2%	0.085	0.086	0.085	0.084	1.012
5595 CFPK	0.579	1.0%	0.104	0.104	0.103	0.105	1.012
BLK 5/20	0.000	0.0%	0.000	0.000	0.000	0.000	1.012
BLK SPK	0.104	0.0%	0.019	0.019	0.019	0.019	1.012
61020	0.027	0.0%	0.005	0.005	0.005	0.005	1.012
61020 QC	0.027	0.0%	0.005	0.005	0.006	0.005	1.012
61020 SPK	0.126	4.3%	0.023	0.023	0.024	0.024	1.012
61123	0.089	0.0%	0.018	0.018	0.018	0.019	1.012
61123 DT	0.089	0.0%	0.018	0.018	0.018	0.018	1.012
61123 EPK	0.203	0.0%	0.037	0.037	0.037	0.037	1.012
61068 A	0.072	0.0%	0.004	0.004	0.005	0.004	1.012
61068 C	0.003	100.0%	0.001	0.001	0.003	0.001	1.012
61068 D	0.000	0.0%	0.000	0.001	0.001	0.000	1.012

61048	0.016	0.0%	0.003	0.003	0.003	0.003	1.000
61048	0.322	0.0%	0.059	0.059	0.060	0.059	1.000
61048 F*	0.910	53.0%	0.002	0.003	0.003	0.002	1.000
61048 ABC	0.910	50.0%	0.002	0.003	0.003	0.002	1.000
61048 ASPK	0.119	0.0%	0.022	0.022	0.022	0.022	1.000
BLK 5/21	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
SPK	0.092	0.0%	0.017	0.017	0.017	0.017	1.000
61067 A	0.000	0.0%	0.000	0.001	0.000	0.001	1.000
61067 AQC	0.000	0.0%	0.000	0.001	0.000	0.001	1.000
61067 ASPK	0.103	0.0%	0.019	0.019	0.019	0.019	1.000
61067 B	0.000	0.0%	0.000	0.001	0.000	0.001	1.000
61067 C	0.000	0.0%	0.000	0.000	0.001	0.001	1.000
61067 D	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
61069 A	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
61069 AQC	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
61069 ASPK	0.097	5.6%	0.018	0.018	0.019	0.019	1.000
61098	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
61121 A	0.433	0.0%	0.079	0.079	0.079	0.080	1.000
61121 ABC	0.460	1.2%	0.084	0.085	0.085	0.084	1.000
61121 ASPK	0.539	0.0%	0.098	0.098	0.098	0.099	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
RESLOPE	0.494	1.1%	0.090	0.091	0.091	0.090	1.012
1*2	0.016	0.0%	0.003	0.003	0.003	0.004	1.012
2	0.170	90.3%	0.031	0.059	0.032	0.002	1.012
6112B	0.143	3.8%	0.026	0.026	0.027	0.027	1.012
5670 A	0.033	0.0%	0.006	0.006	0.006	0.006	1.012
5670 AQC	0.033	0.0%	0.006	0.006	0.006	0.006	1.012
5670 ASPK	0.132	0.0%	0.024	0.024	0.024	0.024	1.012
5670 B	0.044	0.0%	0.008	0.008	0.008	0.009	1.012

sample out

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D.DUMBLETON
 DATE: 05/30/86
 BATCH:

5/30/86

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Cu mg/L
WP284 1*2	0.021
WP284 2	0.322
61010 sol	0.668 ✓
61026 sol	0.333 ✓
61121 Bsol	0.394 ✓
61196 Bsol	0.146 ✓
BLK 5/16	0.005
BLK SPK	0.097
5623 H	0.059 ✓
5623 I	0.027 ✓
BLK 5/19	0.000
BLK SPK	0.097
61025 A	0.179
61025 AQC	0.190 >17 n/s
61025 ASPK	0.185 no spike
61025 B	0.146 14 n/s
61025 C	0.119 12 "
61025 D	0.267 15 "
61025 E	0.054 5.3 "
61025 F	0.168 16 "
1*2	0.016
2	0.320
61025 G	0.220 22 n/s

61103	0.028 ✓
61116 A	0.556 ✓
5595 C	0.466
5595 DOC	0.472 > 0.469 ✓
5595 DSPK	0.579
BLK 5/20	0.000
BLK SPK	0.104
61070	0.027 ✓
61070 GC	0.027 > 0.027 ✓
61070 SPK	0.126
61123	0.099
61123 GC	0.099 > 0.095 ✓
61123 SPK	0.203
61068 A	0.022 ✓
61068 C	0.005 < 0.02 ✓
61068 D	0.000 < 0.02 ✓
1*2	0.016
2	0.322 / 0.177 = 95%
61068 E	0.010
61068 EOC	0.010 > 0.02 ✓
61068 ESPK	0.119
BLK 5/21	0.000
BLK SPK	0.092 92%
61067 A	0.000 < 0.02 ✓
61067 ADC	0.000 < 0.02 ✓
61067 ASPK	0.103 103%
61067 B	0.000 < 0.02 ✓
61067 C	0.000 < 0.02 ✓
61067 D	0.000 < 0.02 ✓
61069 A	0.000
61069 ADC	0.000 > 0.02 ✓
61069 ASPK	0.097
61098	0.000 < 0.02 ✓
61121 A	0.435
61121 ADC	0.450 > 0.441 ✓
61121 ASPK	0.539
1*2	0.016
2	0.322
61128	0.142 ✓
5670 A	0.035
5670 ADC	0.033 > 0.037 ✓
5670 ASPK	0.132
5670 B	0.044 ✓

Cu
QUALITY CONTROL

EPA #	True Value	Recovery	% Recovery
WP284 1x2	0.018	0.021 0.016 0.016 0.016	117 89 89 89
WP284 2	0.339	0.322 0.320 0.322 0.322	95 94 95 95

ACCURACY:

SPIKED RECOVERY ANALYSIS

Control Limit: _____

Warning Limit: _____

5/30

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
BIK SPK	0.097	<0.02	0.097	0.10	97
BIK SPK	0.097	<0.02	0.097	0.10	97
5595-C	0.579	0.469	0.110	0.10	110
BIK SPK	0.104	<0.02	0.104	0.10	104
61020	0.126	0.027	0.099	0.10	99
61123	0.203	0.099	0.104	0.10	104
61068-E	0.119	<0.02	0.119	0.10	119
61069-A	0.097	<0.02	0.097	0.10	97
61121-A	0.539	0.446	0.093	0.10	93
5670-A	0.172	0.077	0.095	0.10	95

PRECISION:

DUPLICATE ANALYSIS

Control Limit: _____

Warning Limit: _____

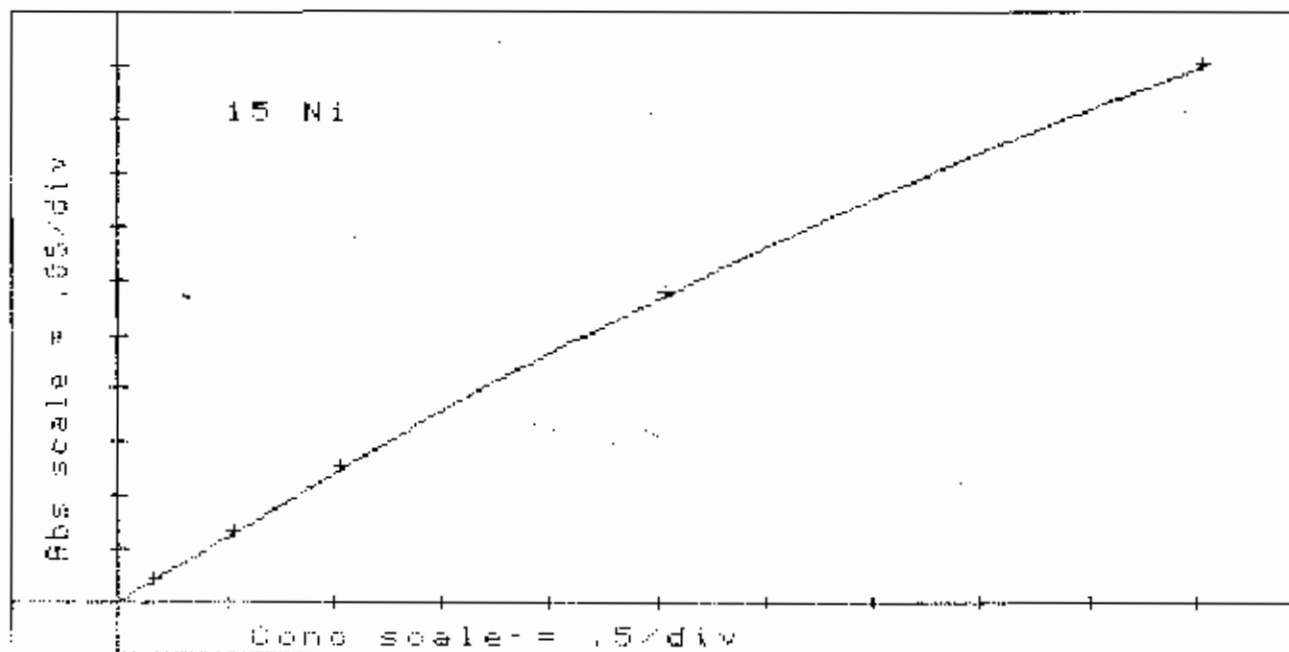
SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{1A-B1 \times 200}{(A+B)}$
61025-A	17.4 $\mu\text{g/g}$	15.7 $\mu\text{g/g}$	10
5595-C	0.466	0.472	1.3
61020	0.027	0.027	0
61123	0.099	0.099	0
61068-E	<0.02	<0.02	NC
61069-A	<0.02	<0.02	NC
61121-A	0.477	0.460	6.6
5670-A	0.077	0.077	0

AUTO-PROGRAM 15 Ni

5/30

GR12 774 6/4/86

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	2.9%	0.034	0.036	0.034	0.034	1.000
STANDARD 1	0.125	6.3%	0.016	0.017	0.017	0.014	1.000
STANDARD 2	0.500	1.7%	0.060	0.061	0.061	0.059	1.000
STANDARD 3	1.000	2.5%	0.120	0.117	0.124	0.121	1.000
STANDARD 4	2.500	0.4%	0.282	0.285	0.283	0.281	1.000
STANDARD 5	5.000	0.6%	0.496	0.493	0.497	0.499	1.000

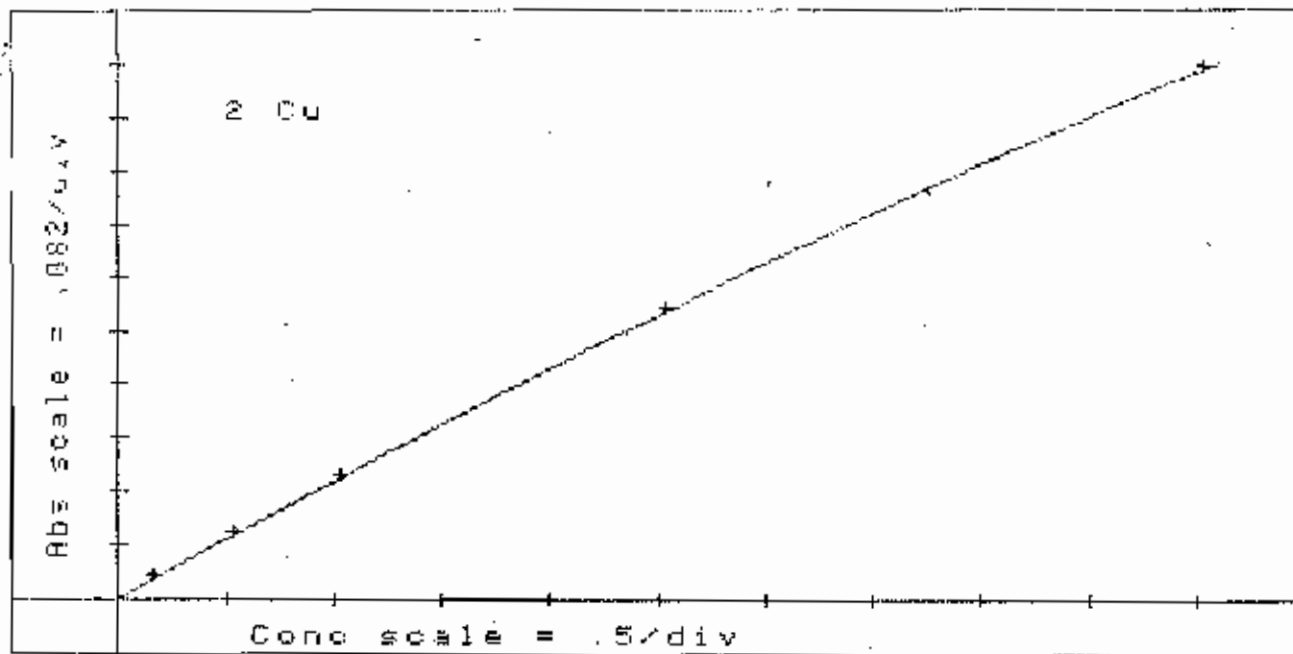


WP294 1+2	0.039	40.0%	0.005	0.004	0.005	0.003	1.000
WP294 2	0.239	3.3%	0.030	0.031	0.031	0.029	1.000
61010 sol	1.946	0.5%	0.216	0.216	0.218	0.215	1.000
61026 sol	1.359	0.6%	0.162	0.161	0.163	0.163	1.000
61121 Bsol	1.771	0.5%	0.203	0.209	0.209	0.208	1.000
61196 Bsol	0.481	3.4%	0.058	0.057	0.061	0.058	1.000
BLK 5/16	0.015	50.0%	0.002	0.001	0.004	0.002	1.000
BLK SPK	0.272	2.9%	0.034	0.035	0.033	0.034	1.000
6113 H	0.031	25.0%	0.004	0.003	0.006	0.005	1.000
6113 I	0.046	16.7%	0.006	0.005	0.005	0.008	1.000
BLK 5/19	0.031	75.0%	0.004	0.004	0.007	0.001	1.000
BLK SPK	0.264	3.0%	0.033	0.035	0.032	0.032	1.000
61003 A	0.093	16.7%	0.015	0.019	0.014	0.012	1.000
61025 BCC	0.107	6.7%	0.013	0.014	0.017	0.015	1.000
61025 B571	0.078	20.3%	0.010	0.012	0.012	0.009	1.000
61025 B	0.093	20.3%	0.010	0.013	0.012	0.010	1.000
61025 B	0.093	20.3%	0.010	0.013	0.012	0.010	1.000

61025 B	0.043	14.7%	0.004	0.008	0.007	0.005	1.000
61025 C	0.117	20.0%	0.015	0.013	0.017	0.015	1.000
BLANK	0.000	0.0%	0.000	0.002	0.002	0.002	1.000
RESLOPE	0.481	0.0%	0.05E	0.058	0.059	0.05E	1.059
1*2	0.032	25.0%	0.004	0.004	0.005	0.003	1.039
2	0.197	4.2%	0.024	0.024	0.026	0.024	1.039
61025 B	0.138	5.9%	0.017	0.017	0.017	0.016	1.039
61025 H	0.032	25.0%	0.004	0.005	0.004	0.005	1.039
61103	0.139	11.8%	0.017	0.016	0.020	0.015	1.039
61114 A	2.628	0.4%	0.285	0.286	0.284	0.286	1.039
5595 C	0.171	0.0%	0.021	0.021	0.021	0.021	1.039
5595 CQC	0.180	4.5%	0.022	0.023	0.022	0.021	1.039
5595 CSPK	0.444	1.9%	0.052	0.051	0.052	0.053	1.039
BLK 5/20	0.000	0.0%	0.000	0.002	-0.001	0.000	1.039
BLK SPK	0.251	7.1%	0.028	0.028	0.027	0.031	1.039
61020	0.171	14.3%	0.021	0.024	0.021	0.018	1.039
61020 QC	0.180	9.1%	0.022	0.023	0.020	0.024	1.039
61020 SPK	0.444	1.9%	0.052	0.052	0.054	0.051	1.039
61123	1.065	1.6%	0.123	0.121	0.125	0.124	1.039
61123 QC	1.056	0.8%	0.122	0.123	0.121	0.122	1.039
61123 SPK	1.322	2.0%	0.152	0.149	0.155	0.152	1.039
61068 A	0.032	50.0%	0.004	0.002	0.005	0.006	1.039
61068 C	0.008	100.0%	0.001	0.002	0.002	0.001	1.039
61068 D	0.000	0.0%	0.000	0.000	0.002	0.000	1.039
BLANK	0.000	100.0%	0.001	0.000	0.001	0.003	1.039
RESLOPE	0.472	1.8%	0.057	0.059	0.056	0.058	1.059
1*2	0.041	40.0%	0.005	0.008	0.005	0.003	1.059
2	0.200	8.3%	0.024	0.022	0.025	0.026	1.059
61068 E	0.008	200.0%	0.001	-0.001	0.004	0.001	1.059
61068 EQC	0.016	0.0%	0.002	0.002	0.002	0.003	1.059
61068 ESPK	0.218	11.5%	0.026	0.030	0.027	0.023	1.059
BLK 5/21	0.000	0.0%	0.000	0.001	-0.001	0.000	1.059
BLK SPK	0.218	3.8%	0.026	0.025	0.026	0.028	1.059
61067 A	0.397	4.3%	0.046	0.048	0.046	0.044	1.059
61067 ABC	0.385	2.2%	0.045	0.044	0.047	0.044	1.059
61067 ASPK	0.644	1.4%	0.073	0.074	0.072	0.073	1.059
61067 B	0.000	0.0%	0.000	-0.001	0.001	0.000	1.059
61067 C	0.000	200.0%	-0.001	-0.004	0.000	-0.001	1.059
61067 D	0.000	0.0%	0.000	0.001	-0.001	0.001	1.059
61069 A	0.008	100.0%	0.001	0.001	0.002	0.002	1.059
61069 ABC	0.008	300.0%	0.001	0.005	0.000	-0.001	1.059
61069 ASPK	0.235	7.1%	0.028	0.031	0.026	0.027	1.059
61098	0.016	50.0%	0.002	0.001	0.003	0.002	1.059
61121 A	1.915	1.4%	0.212	0.209	0.215	0.212	1.059
61121 ABC	2.031	0.4%	0.224	0.223	0.226	0.225	1.059
61121 ASPK	2.156	0.4%	0.236	0.236	0.230	0.236	1.059
BLANK	0.000	0.0%	0.000	-0.001	0.000	0.000	1.059
RESLOPE	0.472	1.8%	0.057	0.056	0.059	0.058	1.059
1*2	0.033	25.3%	0.004	0.005	0.002	0.005	1.059
2	0.209	8.0%	0.025	0.023	0.023	0.027	1.059
61128	0.082	10.0%	0.010	0.011	0.011	0.010	1.059
5670 A	0.008	100.0%	0.001	0.003	0.000	0.001	1.059
5670 ABC	0.000	0.0%	0.000	0.000	0.002	0.000	1.059
5670 ASPK	0.244	6.9%	0.029	0.028	0.027	0.032	1.059
5670 B	0.000	0.0%	0.000	0.000	0.000	0.000	1.059

AUTO-PROGRAM 2 Cu

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	-0.001	0.000	0.000	1.000
STANDARD 1	0.100	0.0%	0.025	0.023	0.023	0.023	1.000
STANDARD 2	0.200	0.0%	0.040	0.039	0.039	0.039	1.000
STANDARD 3	0.300	0.0%	0.050	0.047	0.047	0.047	1.000



WP284 1*2	0.010	50.0%	0.002	0.002	0.003	0.003	1.000
WP284 2	0.324	1.7%	0.059	0.059	0.060	0.060	1.000
61010 sol	0.682	0.8%	0.122	0.123	0.123	0.122	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: D.DUMBLETON

DATE: 05/30/86

BATCH:

*153
6/5/86*

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Ni mg/L	Cu mg/L
WP284 1*2	0.039	0.010
WP284 2	0.239	0.324
61010 sol	1.846 <i>1.85</i>	0.682
61026 sol	1.359 <i>1.36</i>	
61121 Esol	1.771 <i>1.77</i>	
61196 Esol	0.481	
BLK 5/16	0.015	
BLK SPK	0.272	
5623 H	0.031 <i>< 0.05</i>	
5623 I	0.046 <i>0.050</i>	
BLK 5/19	0.031	
BLK SPK	0.264	
61025 A	0.093	
61025 ADD	0.117 <i>> 9.4 mg/l</i>	
61025 ASPK	0.078 <i>no spike</i>	
61025 B	0.078 <i>7.2 mg/l</i>	
61025 C	0.078 <i>7.7 "</i>	
61025 D	0.189 <i>18 "</i>	
61025 E	0.046 <i>4.6 "</i>	
61025 F	0.117 <i>11.7 "</i>	
1*2	0.032	
2	0.197	
61025 G	0.123 <i>14 mg/l</i>	
61025 H	0.078 <i>6.3 mg/l</i>	

61116 A	2.628	✓
5595 C	0.171	✓
5595 CQC	0.180	> 0.171 ✓
5595 CSPK	0.444	
BLK 5/20	0.000	
BLK SPK	0.231	
70	0.171	
61070 CC	0.180	> 0.176 ✓
61070 SPK	0.444	
61123	1.065	
61123 QC	1.056	> 1.06 ✓
61123 SPK	1.322	
61068 A	0.032	< 0.05 ✓
61068 C	0.008	< 0.05 ✓
61068 D	0.000	< 0.05 ✓
1*2	0.041	
2	0.200	/ 0.227 = 97% ✓
61068 E	0.008	
61068 EDC	0.016	> < 0.05 ✓
61068 ESPK	0.218	
BLK 5/21	0.000	
BLK SPK	0.218	✓
61067 A	0.397	✓ Ave: 0.392
61067 AQC	0.388	
61067 ASPK	0.644	- 0.442 / 0.220 = 101% ✓
61067 B	0.000	< 0.05 ✓
61067 C	0.000	< 0.05 ✓
61067 D	0.000	< 0.05 ✓
61067 A	0.008	
61069 AQC	0.008	> < 0.05 ✓
61069 ASPK	0.235	
61098	0.016	< 0.05 ✓
61121 A	1.915	
61121 AQC	2.034	> 1.98 ✓
61121 ASPK	2.156	STL
1*2	0.033	
2	0.209	
61128	0.082	✓
5670 A	0.008	
5670 AQC	0.000	> < 0.05 ✓
5670 ASPK	0.244	
5670 B	0.000	< 0.05 ✓

N;
QUALITY CONTROL

EPA #	True Value	Recovery	% Recovery
NP284 12Z	0.207		
NP284 2	0.207	0.239 0.197 0.200 0.205	115 95 97 101

ACCURACY: SPIKED RECOVERY ANALYSIS

5/30

Control Limit: _____
Warning Limit: _____

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
BIK SPK	0.272	<0.05	0.272	0.25	109
5595-C	0.444	0.176	0.268	0.25	107
BIK SPK	0.231	<0.05	0.231	0.25	92
61020	0.444	0.176	0.268	0.25	107
61123	1.322	1.060	0.262	0.25	105
61068-E	0.218	<0.05	0.218	0.25	87
BIK SPK	0.218	<0.05	0.218	0.25	87
61067-A	0.644	0.397	0.252	0.25	101
61069-A	0.735	<0.05	0.235	0.25	94
5670-A	0.244	<0.05	0.244	0.25	98

PRECISION:

DUPLICATE ANALYSIS

Control Limit: _____
Warning Limit: _____

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{1A-B1 \times 200}{(A+B)}$
61025-A	9.03 <i>ug/g</i>	9.67 <i>ug/g</i>	6.8
5595-C	0.171	0.180	5.1
61020	0.171	0.180	5.1
61123	1.065	1.056	1.6
61068-E	<0.05	<0.05	NL
61067-A	0.397	0.388	2.3
61069-A	<0.05	<0.05	NL
61121-A	1.92	2.03	5.6
5670-A	<0.05	<0.05	NL

RL 6-24

1/1/86

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JB

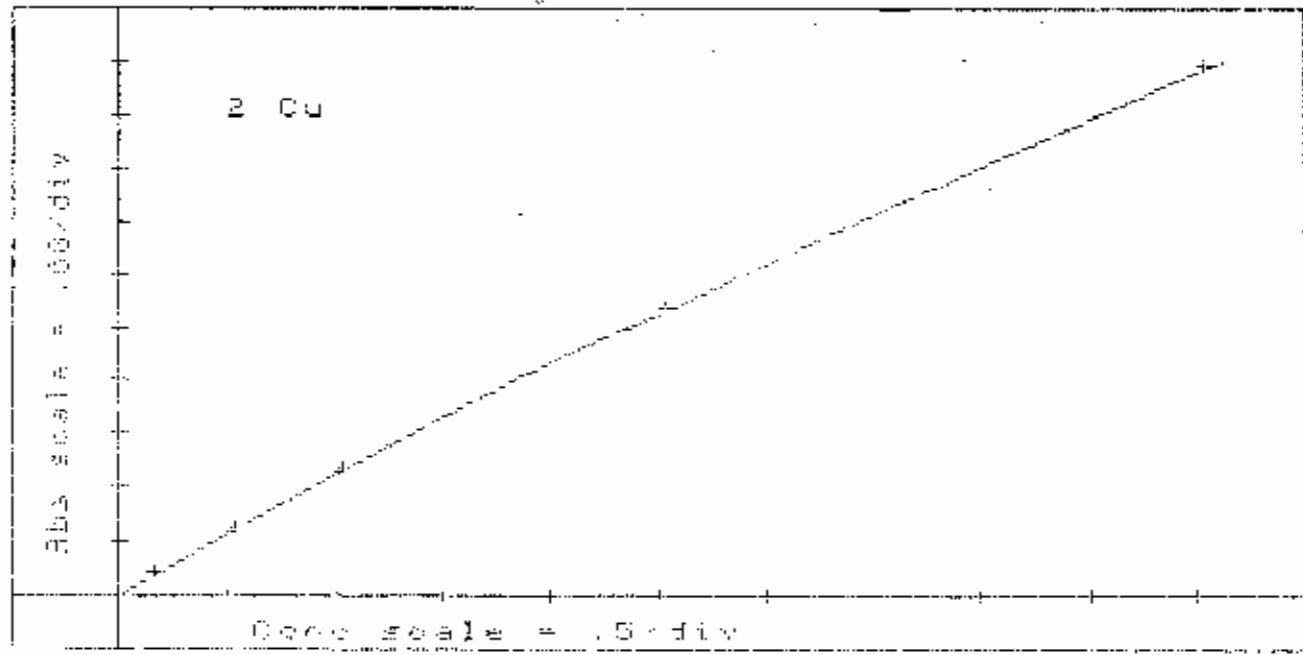
DATE: 6/21/86

BATCH: Cu and Ni

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 2 Cu

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 1	0.125	0.0%	0.023	0.023	0.023	0.023	1.000
STANDARD 2	0.500	0.0%	0.089	0.089	0.089	0.089	1.000
STANDARD 3	1.000	0.6%	0.177	0.177	0.178	0.176	1.000
STANDARD 4	2.500	0.7%	0.420	0.417	0.421	0.424	1.000
STANDARD 5	5.000	0.4%	0.784	0.788	0.782	0.783	1.000



SP204 1.0	0.001	0.0%	0.004	0.004	0.004	0.004	1.000
SP204 2	0.002	0.0%	0.007	0.007	0.007*	0.007	1.000
SP204 3	0.003	0.0%	0.012	0.012	0.012	0.012	1.000

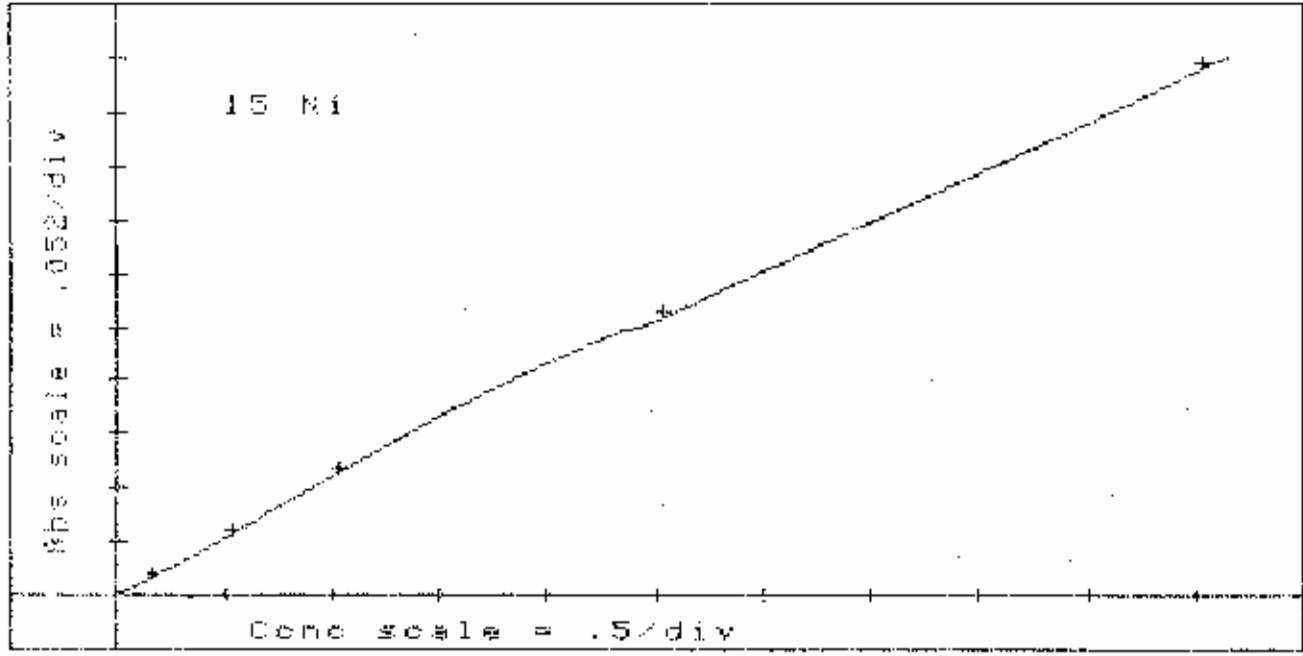
6099-A	> 6	0.1%	1.000	1.000	1.000	1.000	1.000
6099-B	> 6	0.4%	1.000	1.000	1.000	1.000	1.000
6099-B	> 6	0.3%	1.000	1.000	1.000	1.000	1.000
6099-B (DC)	> 7	0.5%	1.000	1.000	1.000	1.000	1.000
6099-B (SPK)	> 7	1.0%	1.000	1.000	1.000	1.000	1.000
6109-C	> 6	0.4%	1.000	1.000	1.000	1.000	1.000
61025-A		0.0%	0.030	0.030	0.030	0.030	1.000
61025-A (DC)		3.0%	0.033	0.033	0.034	0.034	1.000
61025-A (SPK)		1.9%	0.053	0.053	0.054	0.054	1.000
BLK 6/10		0.0%	0.002	0.002	0.002	0.002	1.000
BS		0.0%	0.018	0.018	0.018	0.018	1.000
61208-C		33.3%	0.003	0.004	0.003	0.004	1.000
61208-C (DC)		33.3%	0.003	0.004	0.004	0.003	1.000
61208-C (SPK)		0.0%	0.020	0.020	0.020	0.021	1.000
61353-A		0.0%	0.004	0.004	0.004	0.004	1.000
BLK 6/11		0.0%	0.001	0.001	0.001	0.001	1.000
BLANK		0.0%	0.001	0.001	0.001	0.001	1.000
RESLOPE		1.2%	0.083	0.082	0.083	0.084	1.077
WP284 1x2		50.0%	0.002	0.003	0.002	0.003	1.077
WP284 2		1.9%	0.054	0.054	0.055	0.055	1.077
61336 6/10		25.0%	0.004	0.005	0.005	0.004	1.077
61336 (DC)		0.0%	0.005	0.005	0.005	0.005	1.077
61336 (SPK)		0.0%	0.022	0.022	0.022	0.022	1.077
BS 6/11		5.9%	0.017	0.017	0.018	0.018	1.077
61335		0.0%	0.000	0.000	0.001	0.000	1.077
61355-A		0.0%	0.003	0.003	0.003	0.003	1.077
BLK 6/12		100.0%	0.001	0.002	0.002	0.001	1.077
BS		5.9%	0.017	0.018	0.017	0.018	1.077
5746-A		3.6%	0.028	0.028	0.029	0.029	1.077
5750-A		0.0%	0.011	0.011	0.011	0.011	1.077
5770-A		0.5%	0.381	0.381	0.379	0.383	1.077
5770-B		0.0%	0.026	0.026	0.026	0.026	1.077
61306-G	> 6	0.6%	0.941	0.935	0.943	0.947	1.077
61306-G (DC)	> 6	0.7%	0.992	0.984	0.997	0.997	1.077
61306-G (SPK)	> 5	0.6%	0.896	0.890	0.899	0.901	1.077
61393-B sc1		0.0%	0.033	0.033	0.033	0.033	1.077
61407-B sc1		0.0%	0.031	0.031	0.031	0.031	1.077
61432-B sc1		2.7%	0.037	0.037	0.038	0.038	1.077
BLANK		0.0%	0.000	0.000	0.000	0.000	1.077
RESLOPE		1.2%	0.083	0.082	0.084	0.083	1.077
WP284 1x2		0.0%	0.002	0.002	0.002	0.003	1.077
WP284 2		0.0%	0.055	0.055	0.056	0.055	1.077
61432-B sc1		3.6%	0.028	0.028	0.029	0.029	1.077
61286-A 6/12		0.0%	0.058	0.058	0.059	0.058	1.077
BLK 6/19		0.0%	0.000	0.000	0.000	0.000	1.077
BS		0.0%	0.017	0.017	0.017	0.017	1.077
61337-A		0.0%	0.003	0.003	0.003	0.003	1.077
61337-B		0.0%	0.001	0.001	0.002	0.001	1.077
61337-C		0.0%	0.001	0.002	0.001	0.001	1.077
61337-C (DC)		0.0%	0.001	0.001	0.001	0.001	1.077
61337-C (SPK)		0.0%	0.018	0.018	0.018	0.018	1.077
61337-D		0.0%	0.000	0.001	0.001	0.000	1.077
61337-E		0.0%	0.000	0.001	0.000	0.001	1.077
61338-A		4.2%	0.024	0.024	0.025	0.025	1.077
61338-A (DC)		0.0%	0.014	0.014	0.014	0.014	1.077
61338-A (SPK)		0.0%	0.029	0.029	0.029	0.029	1.077
61402		0.0%	0.010	0.010	0.010	0.010	1.077
61393-A Cu		1.5%	0.065	0.065	0.065	0.065	1.077
61393-B Cu		0.0%	0.001	0.001	0.001	0.001	1.077
3793-A Cu		33.3%	0.001	0.004	0.007	0.004	1.077
BLANK		0.0%	0.000	0.000	0.000	0.000	1.077
RESLOPE		1.2%	0.083	0.082	0.084	0.083	1.077
WP284 1		1.8%	0.054	0.054	0.055	0.055	1.077
3773-A		0.0%	0.000	0.000	0.000	0.000	1.077
BS		0.0%	0.017	0.017	0.017	0.017	1.077

SOLUTION	CONC	RSD	MEAN ABS	ABSOR	READINGS	RESLOPE
61134 (QC)	0.000	0.0%	0.000	0.000	0.000	1.000
61024 (SPK)	0.103	0.0%	0.019	0.019	0.019	1.000

204

AUTO-PROGRAM 15 Ni

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSOR	READINGS	RESLOPE FACTOR
BLANK	0.000	2.6%	0.039	0.039	0.038 0.040	1.000
STANDARD 1	0.125	0.0%	0.015	0.015	0.013 0.014	1.000
STANDARD 2	0.500	3.6%	0.053	0.053	0.056 0.052	1.000
STANDARD 3	1.000	1.8%	0.114	0.112	0.115 0.116	1.000
STANDARD 4	2.500	1.1%	0.266	0.269	0.263 0.267	1.000
STANDARD 5	5.000	0.4%	0.506	0.506	0.504 0.508	1.000



WP284 1x2	0.019	100.0%	0.002	0.004	0.002 0.000	1.000
WP284 2	0.190	5.0%	0.020	0.022	0.020 0.020	1.000
61142 1/10	0.048	60.0%	0.005	0.002	0.009 0.004	1.000
SLK 6/9	0.000	0.0%	0.000	-0.002	0.002 0.000	1.000
ES	0.226	4.2%	0.024	0.024	0.026 0.024	1.000
5698-B	0.171	16.7%	0.013	0.020	0.015 0.021	1.000
5489-B	1.395	0.6%	0.160	0.159	0.162 0.160	1.000
5697-B (QC)	1.637	0.5%	0.185	0.185	0.183 0.185	1.000
5699-B (SPK)	1.694	0.5%	0.192	0.192	0.193 0.190	1.000
61109-C	4.395	0.2%	0.447	0.449	0.446 0.446	1.000
61025-A	0.076	37.5%	0.008	0.010	0.007 0.008	1.000
61025-A (QC)	0.057	16.7%	0.006	0.000	0.007 0.005	1.000
61025-A (SPK)	0.316	5.9%	0.034	0.034	0.032 0.036	1.000
SLK 6/10	0.000	200.0%	-0.001	-0.003	-0.002 0.001	1.000
ES	0.233	20.0%	0.025	0.024	0.021 0.031	1.000
61208-C	0.000	0.0%	0.000	0.001	-0.002 0.003	1.000
61208-C (QC)	0.007	100.0%	0.001	0.000	0.003 0.001	1.000
61208-C (SPK)	0.267	7.1%	0.028	0.030	0.026 0.030	1.000
61103-A	0.009	300.0%	0.001	-0.002	0.004 0.003	1.000
SLK 6/11	0.000	50.0%	-0.002	-0.002	-0.001 -0.003	1.000
BLANK	0.000	0.0%	-0.002	-0.002	-0.003 -0.002	1.000
RESLOPE	0.517	1.5%	0.007	0.028	0.008 0.007	0.767
WP284 1x2	0.046	20.0%	0.005	0.006	0.007 0.001	0.567
61109-C	0.008	0.0%	0.005	0.027	0.020 0.007	0.767
61103-A	0.008	0.0%	0.005	0.027	0.020 0.007	0.767
61134 (QC)	0.000	0.0%	0.000	0.000	0.000 0.000	0.767

61355-A	0.033	9.7%	0.001	0.033	0.034	0.033	.967
BLK 6/12	0.018	100.0%	0.002	0.009	0.008	0.010	.967
BS	0.271	3.3%	0.030	0.028	0.031	0.031	.967
5746-A	0.174	5.3%	0.019	0.020	0.020	0.019	.967
61355-A	0.083	11.1%	0.009	0.010	0.009	0.010	.967
5770-A	2.437	1.1%	0.268	0.265	0.267	0.272	.967
5770-B	0.148	6.3%	0.016	0.015	0.018	0.015	.967
61306-B	0.332	2.7%	0.037	0.037	0.036	0.039	.967
61306-B (QC)	0.523	5.6%	0.036	0.038	0.038	0.034	.967
61306-B (SPK)	0.533	1.6%	0.061	0.060	0.063	0.062	.967
61393-B sol	0.192	4.8%	0.021	0.020	0.021	0.022	.967
61407-B sol	0.433	4.1%	0.049	0.052	0.049	0.047	.967
61432-B sol	0.466	3.8%	0.053	0.055	0.054	0.051	.967
BLANK	0.000	100.0%	0.003	0.000	0.003	0.007	.967
RESLOPE	0.500	0.0%	0.055	0.056	0.055	0.055	1.000
WP284 1:2	0.009	200.0%	0.001	-0.001	0.003	0.001	1.000
WP284 2	0.190	15.0%	0.020	0.019	0.024	0.018	1.000
61432-B sol	0.290	9.7%	0.031	0.028	0.034	0.033	1.000
61288-A 6/18	0.226	4.2%	0.024	0.025	0.024	0.025	1.000
BLK 6/19	0.000	0.0%	0.000	-0.002	0.001	-0.001	1.000
BS	0.235	4.0%	0.025	0.026	0.025	0.026	1.000
61337-A	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
61337-B	0.000	100.0%	-0.001	-0.002	-0.001	-0.002	1.000
61337-C	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
61337-C (QC)	0.000	100.0%	-0.001	-0.002	0.000	-0.002	1.000
61337-C (SPK)	0.235	0.0%	0.025	0.025	0.025	0.026	1.000
61337-D	0.000	0.0%	0.000	0.000	-0.002	0.000	1.000
61337-E	0.000	0.0%	0.000	-0.001	0.000	0.002	1.000
61338-A	0.153	6.3%	0.016	0.015	0.016	0.018	1.000
61338-A (QC)	0.171	5.6%	0.018	0.017	0.018	0.019	1.000
61338-A (SPK)	0.387	4.8%	0.042	0.042	0.045	0.041	1.000
61402	0.000	0.0%	0.000	0.004	-0.003	0.000	1.000
61398-A Cu	0.057	16.7%	0.006	0.007	0.005	0.006	1.000
61398-B Cu	0.000	50.0%	-0.002	-0.003	-0.003	-0.002	1.000
5793-A Cu	0.009	100.0%	0.001	0.000	0.003	0.002	1.000
BLANK	0.000	0.0%	0.000	-0.002	0.000	0.000	1.000
RESLOPE	0.482	1.9%	0.053	0.053	0.053	0.055	1.037
WP284 2	0.225	8.7%	0.023	0.025	0.024	0.021	1.037
5793-B Cu	0.000	0.0%	0.000	0.000	-0.001	0.002	1.037
BLK 6/16	0.000	0.0%	0.000	0.001	-0.002	0.001	1.037
BS	0.254	7.7%	0.026	0.024	0.026	0.029	1.037
61334	0.009	100.0%	0.001	0.002	0.002	0.000	1.037
61334 (QC)	0.000	0.0%	0.000	0.002	0.000	-0.002	1.037
61334 (SPK)	0.263	3.7%	0.027	0.028	0.027	0.026	1.037

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JB

DATE: 6/21/86

BATCH: Cu and Ni

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Cu mg/L	Ni mg/L
WP284 1:2	0.001 <i>11%</i>	0.019
WP284 2	0.315 <i>93%</i>	0.170 <i>92%</i>
61407 1/10	1.150 <i>115</i>	0.048 <i>0.050 0.50</i>
BLK 6/7	0.083 <i>contrast ratio</i>	0.000 <i><.05</i>
BS	0.147 <i>ratio</i>	0.224 <i>90%</i>
5793	0.412 <i>39 ug/L</i>	0.171 <i>16 ug/L</i>

205

61208-C	0.094	0.094	100%
61208-C (QC)	0.095	0.095	100%
61208-C (SPK)	0.123 16 ug/g	0.078	75 ug/g
61208-C (SPK)	0.181 18"	0.157	5.9 ug/g
61208-C (SPK)	0.099 28.6"	0.316	31.0 ug/g
61208-C (SPK)	0.010 <.01	0.000	<.05
61208-C (SPK)	0.097 97%	0.235	94%
61208-C (SPK)	0.016 <.02	0.000	<.05
61208-C (QC)	0.016	0.009	
61208-C (SPK)	0.108 108%	0.263	105%
61353-A	0.021	0.009	<.05
ELK 6/11	0.005 <.02	0.000	<.05
WP284 1x2	0.016 89%	0.046	
WP284 2	0.320 94%	0.238	110%
61336 6/10	0.023 >0.026	0.228	>0.250
61336 (QC)	0.029	0.271	
61336 (SPK)	0.128 102%	0.466	86%
BS 6/11	0.099 99%	0.280	112%
61335	0.000 <.02	0.009	<.05
61335-A	0.017 <.02	0.003	
BLK 6/12	0.005 <.02	0.018	<.05
BS	0.099 99%	0.271	108%
5736-A	0.164 16 ug/g	0.174	17 ug/g
5750-A	0.064 6.4"	0.083	8.3"
5770-A	2.412 240"	2.437	240"
5770-B	0.152 15"	0.148	14"
61306-B	>	0.332	31"
61306-B (QC)	>	0.323	32"
61306-B (SPK)	>	0.533	52.2" 86%
61393-B sol	0.194	0.192	
61407-B sol	0.182	0.433	
61432-B sol	0.218	0.466	
WP284 1x2	0.011	0.009	
WP284 2	0.327 96%	0.190	92%
61432-B sol	0.164	0.290	
61288-A 6/18	0.345	0.226	
BLK 6/19	0.000 <.02	0.000	<.05
BS	0.099 99%	0.235	94%
61337-A	0.017 <.02	0.000	<.05
61337-B	0.005 <.02	0.000	<.05
61337-C	0.005 <.02	0.000	<.05
61337-C (QC)	0.005 <.02	0.000	<.05
61337-C (SPK)	0.105 105%	0.235	94%
61337-D	0.000 <.02	0.000	<.05
61337-E	0.000 <.02	0.000	<.05
61338-A	0.140	0.153	>0.162 90%
61338-A (QC)	0.081	0.171	
61338-A (SPK)	0.170	0.387	
61402	0.058	0.000	<.05
61398-A Cu	0.388	0.057	
61398-B Cu	0.005 <.02	0.000	<.05
5793-A Cu	0.017 <.02	0.009	
WP284 2	0.322 95%	0.225	109%
5793-B Cu	0.017 <.02	0.000	
BLK 6/16	0.000 <.02	0.000	<.05
BS	0.098 98%	0.254	102%
61334	0.000 <.02	0.009	<.05
61334 (QC)	0.000	0.000	
61334 (SPK)	0.103 103%	0.263	105%

Cu
 $\frac{28.6 - 17}{9.80} = 118\%$

Ni
 $\frac{24.6 - 24.5}{24.5} = 100\%$
 206

Ni
 $\frac{52.2 - 31}{24.5} = 86\%$

Ni
 $\frac{0.387 - 0.162}{0.250} = 90\%$

6-21
Ni

QUALITY CONTROL

LPA #	True Value	Recovery				% Recovery
WP 284 2	0.207	0.190	0.228	0.190	0.225	100

ACCURACY: SPIKED RECOVERY ANALYSIS Control Limit: _____
Warning Limit: _____

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
BS 6/9	0.226	<.05	0.226	0.250	90
61025-A ug/g	31	6.6	24.4	24.5	100
BS 6/10	0.235	<.05	0.235	0.250	94
61336	0.466	0.250	0.216	0.250	86
BS 6/11	0.280	<.05	0.280	"	112
BS 6/12	0.271	<.05	0.271	"	108
61306-G ug/g	52.2	31	21.2	24.5	86
BS 6/19	0.235	<.05	0.235	0.250	94
61337-C	0.235	<.05	0.235	"	94
61338-A	0.387	0.162	0.225	"	90

PRECISION: 61334- 0.263 DUPLICATE ANALYSIS 0.263 Control Limit: 105
Warning Limit: _____

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{1A-B1 \times 200}{(A+B)}$
61025-A ug/g	7.5	5.7	27
61308-C	<.05	<.05	NC
61336	0.228	0.271	17
61306	31	32	3.2
61337	<.05	<.05	NC
61338-A	0.153	0.171	11
61334-	<.05	<.05	NC

Subpart G11: Magnesium

METALS ANALYSIS DATA SHEET

REV.

209

METAL Mg DATE 5/20/86 ANALYST MM REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD Gravimetric
 Wavelength 285.2 nm Voltage 530 V Flame Hydride
 Current 5 A Split 1.0 nm Gas Acid
 D₂ OFF Integ. 4 sec Reduc.

INITIAL CALIBRATION

100% all to STD/samples

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	5.00	10.00	2.50	0.50	0.25
	Absorbance		0.905			0.021 (0.02)
EPA Check	Known	Mean	SD	RSD	% Recovered	
WSP 384 M-1	8.4	8.99	0.07	0.83	107%	
M-2	1.8	1.70	0.10	0.10	94%	

ANALYSIS

0.8 5.00 to 5.00

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Blk 5/14	0.25							
B.S.	1.24							
5536A	2.00	1/10	20.0					
ADVP	2.00	1/10	20.0					
B	2.45	1/10	24.5					
BSPK	3.10	1/10	31.0					
C	1.06	1/10	10.6					
D	1.79	1/10	17.9					
E	2.82	1/10	28.2					
F	7.59		75.9					
G	2.83	1/10	28.3					
H	2.44	1/10	24.4					
I	9.82		98.2					
J	1.70	1/10	17.0					
K	3.40	1/10	34.0					
Recalibrated	5.44 to 5.00							
G1073A	4.52	1/10	45.2					
B	3.90							
C	1.12	1/10	11.2					
E	5.62	1/10	56.2					
EQVP	5.41	1/10	54.1					
F	5.63							
FSPK	1.10	1/10	11.0					
G	0.25							

DATE _____

ANALYST _____

REVIEWER _____

INSTRUMENT (AA) _____

ANALYSIS METHOD _____

Wavelength _____ nm
 Wavelength _____ nm
 Wavelength _____ nm
 Wavelength _____ nm

Voltage _____ V
 Split _____ nm
 Integ. _____ sec

Flame _____ Hydride _____
 Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:

#1 #2 #3 #4 #5

Stock _____ Conc, ug/ml _____
 Absorbance _____

EPA Check	Known	Mean	SD	RSD	% Recovered
M-1	8.4	8.52	0.03	0.36	101%
M-2	1.8	1.70	0.01	0.77	94%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Blk 5/15	1.70		X					
B.S.	2.15		X					
61024A	1.44	1/10	14.4	14.8				
A DUP	1.53	1/10	15.3					
ASPK	2.02	1/10	20.2					
B	9.92		9.92					
C	1.66	1/10	16.6					
D	1.53	1/10	15.3					
E	1.66	1/10	16.6					
F	1.61	1/10	16.1					
G	1.57	1/10	15.7					
Recalibrate	4.85 to	5.00						
5612A	7.62							
B	9.64		9.48					
B DUP	9.33							
b SPK	1.56	1/10	15.6					
Blk 5/16	<0.25							
B.S.	1.20							
61075A	9.41	1/10	94.1					
A DUP	9.41	1/10	94.1					
ASPK	9.59	1/10	spiked too low					
61076A	4.68	1/10	46.8					
A DUP	4.64	1/10	46.4					
ASPK	5.61	1/10	spiked too low					

APP CON

STD 1
 CON 05.00
 SIG 0.750
 0.753
 0.751
 MEAN 0.751
 STD 2 10.00
 SIG 0.906
 0.907
 0.903
 MEAN 0.905
 STD 3
 CON 02.50
 SIG 0.533
 0.545
 0.538
 MEAN 0.538
 STD 4
 CON 00.50
 SIG 0.157
 0.154
 0.156
 MEAN 0.156
 STD 5
 CON 00.25
 SIG 0.083
 0.081
 0.080
 0.080
 MEAN 0.081

STD 1 05.09
 STD 2 10.00
 STD 3 02.46
 STD 4 00.54

STD 5 00.27
 AUTO CAL

STD 1
 ACT CON 05.00
 ORG CON 05.20
 NEW CON 05.00

STATISTICS

CON 01 08.50
 02 09.01
 03 09.00
 04 08.97
 05 09.00
 06 09.95
 07 09.03
 08 09.04
 09 09.00
 10 08.99

MEAN 08.99

SD 00.07

RSD 00.83

CON 01 01.78
 02 01.84
 03 01.77
 04 01.66
 05 01.75
 06 01.61
 07 01.58
 08 01.52
 09 01.73
 10 01.77

MEAN 01.70

SD 00.10

STD 1
 ACT CON 05.00
 ORG CON 05.44
 NEW CON 05.00

STATISTICS

CON 01 08.47
 02 08.50
 03 08.50
 04 08.53
 05 08.53
 06 08.56
 07 08.57
 08 08.50
 09 08.52
 10 08.55

MEAN 08.52

SD 00.03

RSD 00.36

CON 01 01.71
 02 01.69
 03 01.70
 04 01.70
 05 01.69
 06 01.70
 07 01.72
 08 01.68
 09 01.70
 10 01.68

MEAN 01.70

SD 00.01

RSD 00.77

AUTO CAL

STD 1
 ACT CON 05.00
 ORG CON 04.85
 NEW CON 05.00

METALS ANALYSIS DATA SHEET

REV. 214

METAL: Mg DATE: 5/6/86 ANALYST: MM REVIEWER: 6/16/86 MM 4/6/86
 INSTRUMENT (AA): 285.2 nm Voltage: 530 V ANALYSIS METHOD: Flame Hydride
 Current: 2.5 a Split: 1.0 nm Gas: Air/Ac Acid:
 D₂: OFF Integ.: 4 sec Reduc.:

INITIAL CALIBRATION

- had Cl to stds/sample

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	<u>5.00</u>	<u>10.00</u>	<u>2.50</u>	<u>0.50</u>	<u>0.25</u>
	Absorbance		<u>1.272</u>			<u>0.055</u>
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>WP 384 M-1</u>	<u>8.4</u>	<u>7.96</u>	<u>0.04</u>	<u>0.46</u>	<u>95%</u>	
<u>M-2</u>	<u>1.8</u>	<u>1.68</u>	<u>0.02</u>	<u>1.05</u>	<u>93%</u>	

Recal 4.89 to 5.00

ANALYSIS

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
<u>BK 5/19</u>	<u><0.25</u>							
<u>B.S.</u>	<u>1.27</u>		<u>102%</u>					
<u>61025A</u>	<u>3.42</u>	<u>Y₁₀</u>	<u>34.2</u>	<u>200</u>	<u>2.16</u>		<u>3000</u>	<u>3200 ug/g</u>
<u>AM</u>	<u>3.07</u>	<u>Y₁₀</u>	<u>30.7</u>		<u>2.18</u>			<u>2800 "</u>
<u>A SPK</u>	<u>3.23</u>	<u>Y₁₀</u>	<u>32.3</u>		<u>2.01</u>	<u>spiked too low</u>		<u> </u>
<u>B</u>	<u>2.41</u>	<u>Y₁₀</u>	<u>24.1</u>		<u>2.19</u>			<u>2200 "</u>
<u>C</u>	<u>2.03</u>	<u>Y₁₀</u>	<u>20.3</u>		<u>2.07</u>			<u>2000 "</u>
<u>D</u>	<u>7.14</u>	<u>Y₁₀</u>	<u>71.4</u>		<u>2.02</u>			<u>7100 "</u>
<u>E</u>	<u>1.25</u>	<u>Y₁₀</u>	<u>12.5</u>		<u>2.07</u>			<u>1200 "</u>
<u>F</u>	<u>3.19</u>	<u>Y₁₀</u>	<u>31.9</u>		<u>2.10</u>			<u>3000 "</u>
<u>G</u>	<u>2.34</u>	<u>Y₁₀</u>	<u>23.4</u>		<u>2.00</u>			<u>2300 "</u>
<u>H</u>	<u>1.01</u>	<u>Y₁₀</u>	<u>10.1</u>		<u>2.03</u>			<u>1000 "</u>
<u>5641A</u>	<u>2.73</u>	<u>Y₁₀</u>	<u>27.3</u>					
<u>B</u>	<u>2.67</u>	<u>Y₁₀</u>	<u>26.7</u>					
<u>C</u>	<u>3.76</u>	<u>Y₁₀</u>	<u>37.6</u>					
<u>D</u>	<u>1.44</u>	<u>Y₁₀</u>	<u>14.4</u>					
<u>E</u>	<u>2.77</u>	<u>Y₁₀</u>	<u>27.7</u>					
<u>EDUP</u>	<u>2.77</u>	<u>Y₁₀</u>	<u>27.7</u>					
<u>F</u>	<u>2.49</u>	<u>Y₁₀</u>	<u>24.9</u>					
<u>FSPK</u>	<u>3.18</u>	<u>Y₁₀</u>	<u>31.8</u>					
<u>G</u>	<u>2.91</u>	<u>Y₁₀</u>	<u>29.1</u>					
<u>H</u>	<u>1.11</u>	<u>Y₁₀</u>	<u>11.1</u>					
<u>I</u>	<u>5.29</u>	<u>Y₁₀</u>	<u>52.9</u>					
<u>J</u>	<u>2.99</u>	<u>Y₁₀</u>	<u>29.9</u>					
<u>BK 5/29</u>	<u><0.25</u>							
<u>B.S.</u>	<u>1.41</u>		<u>102%</u>					

STATISTICS

STD 1
 CON 05.00
 SIG 0.866
 0.876
 0.878
 0.876
 MEAN 0.874

STD 2
 CON 10.00
 SIG 1.266
 1.259
 1.274
 1.280
 MEAN 1.272

STD 3
 CON 02.50
 SIG 0.582
 0.581
 0.499
 MEAN 0.500

STD 4
 CON 00.50
 SIG 0.110
 0.112
 0.111
 MEAN 0.111

STD 5
 CON 00.25
 SIG 0.055
 0.055
 0.054
 MEAN 0.055
 APP CON

STD 1 05.00
 STD 2 10.00

MEAN 05.00
 SD 03.82
 RSD 75.25

STATISTICS

CON 01 07.91
 02 07.92
 03 08.00
 04 07.92
 05 07.99
 06 08.02
 07 07.96
 08 07.99
 09 07.95
 10 07.98
 MEAN 07.96
 SD 00.04
 RSD 00.46

CON 01 01.69
 02 01.71
 03 01.68
 04 01.67
 05 01.69
 06 01.68
 07 01.68
 08 01.67
 09 01.67
 10 01.64
 MEAN 01.68
 SD 00.02
 RSD 01.05
 AUTO CAL

STD 1
 ACT CON 05.00
 ORG CON 04.89
 NEW CON 05.00

~~CON 01 00.05~~
 02 08.22
 03 08.25
 04 08.32
 05 08.38
 06 08.27
 07 08.28
 08 08.26
 09 08.29
 10 08.18

MEAN 08.25
 SD 00.89
 RSD 01.07

CON 01 00.72
 02 01.73
 03 01.77

MEAN 01.41
 SD 00.60
 RSD 42.33

CON 01 01.76
 02 01.79
 03 01.80
 04 01.76
 05 01.77
 06 01.78
 07 01.79
 08 01.78
 09 01.77
 10 01.80

MEAN 01.78
 SD 00.01
 RSD 00.79
 AUTO CAL

STD 1
 ACT CON 05.00
 ORG CON 05.12
 NEW CON 05.00
 CON 01 00.31
 02 00.89

STATISTICS

CON	01	85.17
	02	88.42

MEAN		86.88
------	--	-------

SD		82.29
----	--	-------

RSD		33.76
-----	--	-------

CON	01	88.48
	02	88.45
	03	88.41
	04	88.36
	05	88.58
	06	88.49
	07	88.54
	08	88.53
	09	88.53
	10	88.49

MEAN		88.48
------	--	-------

SD		89.87
----	--	-------

RSD		88.86
-----	--	-------

CON	01	81.84
	02	81.81
	03	81.88
	04	81.79
	05	81.88
	06	81.82
	07	81.82
	08	81.83
	09	81.88
	10	81.88

MEAN		81.81
------	--	-------

SD		88.81
----	--	-------

RSD		88.88
-----	--	-------

AUTO CAL

STD 1

ACT CON 85.88

ORG CON 85.23

NEW CON 85.88

Subpart G12: Manganese

METALS ANALYSIS DATA SHEET

218

METAL Mn DATE 6/3/86 ANALYST MM REVIEWER acid 7/14/86
 INSTRUMENT (AA) 279.5 nm Voltage 530 V
 Current 5 a Split 0.3 nm Integ. 4 sec
 D₂ OFF ANALYSIS METHOD Flame Hydride
 Gas Air/Acid Acid Reduc.

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5	
Stock	Conc, ug/ml	0.400	2.000	0.200	0.100	0.020
	Absorbance	0.073	0.315	0.035	0.021	0.005
EPA Check	Known	Mean	SD	RSD	% Recovered	
MF 1174 1x2	0.026	0.025	1.004	1520	96%	
MF 284 2	0.348	0.329	0.105	1.58	95%	

ANALYSIS

Recalibrate 0.387 to 0.400

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Blk 5/30	<0.01						<0.01	
B.S.	0.045		90%				0.045	
61123	1.458	1/10					14.6	14.8
D.P.	1.501	1/10					15.0	
SPK	1.498	1/10	spiked too low					
61063A	0.033						0.033	
C	0.028						0.028	
D	<0.01						<0.01	
E	0.040						0.040	
E.D.P.	0.050						0.050	
E.SPK	0.090		90%				0.090	
61070 ^{no dil}	0.395	1/10					3.95	
P.P.	0.404	1/10					4.04	
SPK	0.418	1/10	spiked too low					
Blk 5/21	<0.01						<0.01	
B.S.	0.049		98%				0.049	
61067A	0.021						0.021	
A.D.P.	0.019						0.019	
A.SPK	0.021		not spiked?					
B	0.012						0.012	
C	0.010						0.010	
D	0.012						0.012	
61072	0.017						0.017	
61069A	0.905						0.905	
A.D.P.	0.937						0.937	
A.SPK	0.942							

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Wavelength _____ nm Voltage _____ V Flame _____ Hydride _____
 Current _____ a Split _____ nm Gas _____ / _____ Acid _____
 D₂ _____ Integ. _____ sec Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
112	0.026	0.028	0.002	8.21	108%
2	0.348	0.349	0.007	1.91	100%

ANALYSIS

Recalibrate 0.401 to 0.400

Sample #	INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION	
	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
6110S	0.899						0.899	0.916 ✓
DUP	0.932						0.932	
SPK	0.998		Spiked too low					
B ¹¹ 5/23	<0.01						<0.01	
B.S.	0.056		112%				0.056	
6114A	0.014						0.014	✓
B	0.011						0.011	✓
C	0.039						0.039	
C DUP	0.040						0.040	✓
C SPK	0.089		98%				0.089	
D	<0.01						<0.01	✓
DUP E	<0.01						<0.01	✓
E DUP	<0.01						<0.01	
C SPK	0.048		96%				0.048	
6114A	0.545						0.545	
A DUP	0.546						0.546	✓
A SPK	0.590		Spiked too low				0.590	
PK 5/15	<0.01						<0.01	
B.S.	0.054		108%				0.054	
5612A	1.658						1.66	✓
3	1.270	1/10					12.7	
B DUP	1.259	1/10					12.6	✓
B SPK	1.231	1/10	Spiked too low					
B ¹¹ 1-	<0.01						<0.01	
2-	0.054		8%				0.054	

METALS ANALYSIS DATA SHEET

REV. 222

METAL _____ DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____ ANALYSIS METHOD _____

Current _____ nm Voltage _____ V
 Split _____ nm Flame _____ Hydride _____
 D₂ _____ Integ. _____ sec Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
2	0.348	0.354	0.006	1.70	102%

ANALYSIS

Real 0.406 to 0.400

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
5617A	<0.01						<0.01	
ADUP	<0.01						<0.01	
B	<0.01						<0.01	
B.SPK	0.053		106%				0.053	
5618A sec?	0.319	Y ₁₀	0.3				3.19	
B sec?	0.113		"				0.113	
60980-I	0.026						0.026	
J	0.061						0.061	
Bik 5/31	<0.01						<0.01	
B.S.	0.054		108%				0.054	
61209A	0.238						0.238	0.228
ADUP	0.217						0.217	
ASPK	0.287						0.287	
B	0.046						0.046	
C	0.043						0.043	
5615/15	<0.01						<0.01	
B.S.	0.055		110%				0.055	
6124-A	0.145						0.145	0.147
ADUP	0.149						0.149	
ASPK	0.190						0.190	
B	0.086						0.086	
C	0.826						0.826	
D	0.098						0.098	
E	0.379						0.379	
F	0.527						527	

METALS ANALYSIS DATA SHEET

REV.

227

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Wavelength _____ nm Voltage _____ V
 Current _____ a Split _____ nm
 D₂ _____ Integ. _____ sec
 Flame _____ Hydride _____
 Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
<u>2</u>	<u>0.348</u>				

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Blk 5/19	<0.01						<0.01	
B.S.	0.063		126%				0.063	
61025A	0.258	1/10	2.58	200	2.16			240 ug/g
ADVP	0.204	1/10	2.04		2.18			190 "
ASPK	- spiked too low				2.01			-
B	1.539		1.54		2.19			140 "
C	2.191	1/10	21.9		2.07			2,100 "
D	0.715	1/10	7.15		2.02			710 "
E	0.789				2.07			76 "
F	0.517	1/10	5.17		2.10			490 "
G	0.684	1/10	6.84	✓	2.00			680 "
H	0.699	1/10	6.99	✓	2.03			690 "

APP CON

STD 3
 CON 00.40
 SIG 0.073
 MEAN 0.073
 STD 4
 CON 02.00
 SIG 0.314
 0.314
 0.317
 MEAN 0.315
 STD 5
 CON 00.20
 SIG 0.034
 0.036
 0.034
 MEAN 0.035
 STD 1
 CON .1000
 SIG 0.022
 0.021
 0.021
 MEAN 0.021
 STD 2
 CON .0200
 SIG 0.005
 0.005
 0.006
 MEAN 0.005

STD 1 0.403
 STD 2 2.000
 STD 3 0.100
 STD 4 0.112
 STD 5 0.427

STATISTICS

CON 01 0.034
 02 0.032
 03 0.037
 04 0.034
 05 0.035
 06 0.014
 07 0.009
 MEAN 0.028
 SD 0.011
 RSD 41.12

STATISTICS

CON 01 0.019
 02 0.026
 03 0.025
 04 0.025
 05 0.025
 06 0.025
 07 0.035
 08 0.026
 09 0.025
 10 0.025
 MEAN 0.025
 SD 0.004
 RSD 15.25

CON 01 0.321
 02 0.327
 03 0.325
 04 0.328
 05 0.334
 06 0.323
 07 0.333
 08 0.328
 09 0.335
 10 0.336

MEAN 0.329
 SD 0.005
 RSD 01.58
 AUTO CAL

STD 1

ACT CON 0.400
 ORG CON 0.387

NEW CON 0.400
 0.20 0.354
 0.21 0.025
 0.22 0.009

STATISTICS

CON 01 0.025
 02 0.029
 03 0.024
 04 0.027
 05 0.029
 06 0.030
 07 0.027
 08 0.026
 09 0.032
 10 0.025

MEAN 0.028
 SD 0.002
 RSD 88.21

CON 01 0.375
 02 0.352
 03 0.349
 04 0.358
 05 0.357
 06 0.353
 07 0.339
 * 08 0.351
 09 0.353
 * 10 0.351

MEAN 0.349

SD 0.007

RSD 01.91
AUTO CAL

STD 1

ACT CON 0.400

ORG CON 0.401

NEW CON 0.400

STATISTICS

CON 01 0.356
 02 0.359
 03 0.365
 04 0.346
 05 0.348
 06 0.353
 07 0.351
 08 0.359
 09 0.354
 10 0.348

MEAN 0.354

SD 0.006

RSD 01.70
AUTO CAL

STD 1

ACT CON 0.400

ORG CON 0.406

NEW CON 0.400

Subpart G13: Mercury

①

MERCURY ANALYSIS DATA SHEET

208

Wave Length 253.7Lamp Voltage 460Lamp Current 8.5Date: 5/13/86Analyst: MMReviewer: DCM MM 5/15/86

STANDARD CALIBRATION

155
5/27/86

SET #1

SET #2

SET #3

Standard	Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml
Blank		0.001		0.001			
Std. #1	0.0002	0.004	0.00012	0.007	0.00025	0.005	0.00017
Std. #2	0.0005	0.010	0.00043	0.010	0.00043	0.011	0.00049
Std. #3	0.0010	0.020	0.00096	0.021	0.0010	0.023	0.0011
Std. #4	0.0020	0.037	0.0019	0.040	0.0020	0.040	0.0020
Std. #5	0.0050	0.100	0.0052	0.101	0.0052	0.104	0.0054
	0.0100	0.187	0.0097	0.200	0.0104	0.182	0.0095
EPA # 37814	0.0044	0.063	0.0032	0.073	0.0031	84%	
EPA # 1442	0.0038	0.135	0.0070	0.151	0.0076	89%	

Correlation Coefficient 0.9983 y Intercept -0.0091

Sample	Absor.	Init. Vol. ml	Final Conc. ug/ml	Init. Wgt. gm	Final Conc. ug/g	Comments
11K Sph	0.040	100%	0.0020 100%			
2919A	0.0	10	<0.005			
SPK	0.036		0.0014 90%			
R	0.0		<0.005			
S ₁	0.040		0.0020 100%			
C	0.002		<0.005			
SPK	0.032		0.0016 80%			
60930	0.0		<0.005			
SPK	0.039		0.0020 100%			
60955	0.006		<0.005			
SPK	0.042		0.0021 105%			
60012C	0.0		<0.005			
SPK	0.040		0.0020 100%			
B	0.0		<0.005			
SPK	0.037		0.0019 95%			
E	0.002		<0.005			
SPK	0.039		0.0020 100%			
61029A	0.001		<0.005			
SPK	0.040		0.0020 100%			
B	0.001		<0.005			
S ^c	0.040	✓	0.0020 100%			
60857A	0.006			0.50	<0.1	✓
B	0.009			0.49	<0.1	✓
C	0.003			0.51g	<0.1	✓
D	0.021			0.48	0.21	+
F	0.054			0.51	0.54	+

(2)

MERCURY ANALYSIS DATA SHEET

229

Wave Length _____ Lamp Voltage _____ Lamp Current _____
Date: _____ Analyst: _____ Reviewer: _____

STANDARD CALIBRATION

SET #1

SET #2

SET #3

Standard	Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml
Blank							
Std. #1							
Std. #2							
Std. #3							
Std. #4							
Std. #5							
EPA							
EPA							

Correlation Coefficient r^2 _____ y Intercept _____

Sample	Absor.	Init. Vol. ml	Final Conc. ug/ml	Init. Wgt. gm	Final Conc. ug/g	Comments
5502F	0.128			0.45g	1.5	
I	0.0	100ml	<0.0005			
5527B	0.0		<0.0005			
F	0.0		<0.0005			
5612A	0.0		<0.0005			
B	0.0	✓	<0.0005			
5614A	0.008	50	0.00066			
B	0.003	50	<0.0005			
5623B	0.0	100ml	<0.0005			
5632	0.015		0.00070			
0852A	0.001		<0.0005			
B	0.002		<0.0005			
J	0.003		<0.0005			
N	0.0		<0.0005			
P	0.001		<0.0005			
R	0.001		<0.0005			
S	0.0		<0.0005			
U	0.001		<0.0005			
V	0.003	✓	<0.0005			
H-	0.005	80ml	<0.0006			
REGC	0.001	80ml	<0.0006			
PE54	0.041	✓	0.0021	105%		
AF	0.001	100	<0.0005			
4G	0.001	100	<0.0005			

3

MERCURY ANALYSIS DATA SHEET

231

Wave Length _____ Lamp Voltage _____ Lamp Current _____

Date: _____ Analyst: _____ Reviewer: _____

STANDARD CALIBRATION

SET #1

SET #2

SET #3

Standard	Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml
Blank							
Std. #1							
Std. #2							
Std. #3							
Std. #4							
Std. #5							
EPA							
EPA							

Correlation Coefficient _____

y Intercept _____

Sample	Absor.	Init. Vol. ml	Final Conc. ug/ml	Init. Wgt. gm	Final Conc. ug/g	Comments
0252AH	0.003	100 ml	<0.0005			
AI	0.001		<0.0005			
AJ	0.003		<0.0005			
AL	0.004	↓	<0.0005			
I	0.001	60	<0.0008			
AMAP	0.0	60	<0.0008			
AMSA	0.035	60	0.0017 85%			
AN	0.0	100	<0.0005			
AP	0.0		<0.0005			
0253B	0.002		<0.0005			
C	0.002	↓	<0.0005			
D	0.002	60	<0.0008			
DAF	0.001	↓	<0.0008			
DSE	0.040	↓	0.0020 100%			
E	0.003	100	<0.0005			
F	0.002		<0.0005			
G	0.003		<0.0005			
0499A	0.030		0.0015			
B	0.123		0.0063			
61005	0.003		<0.0005			
61073B	0.001		<0.0005			
	0.001	10	<0.0005			
CDF	0.003	↓	<0.0005			
CSE	0.040	99 ml	0.0020 100%			
D	0.002	100 ml	<0.0005			
E	0.002	100	<0.0005			

4

MERCURY ANALYSIS DATA SHEET

233

Wave Length _____ Lamp Voltage _____ Lamp Current _____
 Date: _____ Analyst: _____ Reviewer: _____

STANDARD CALIBRATION

Standard	SET #1		SET #2		SET #3		
	Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml
Blank							
Std. #1							
Std. #2							
Std. #3							
Std. #4							
Std. #5							
EPA							
EPA							

Correlation Coefficient _____ y Intercept _____

Sample	Absor.	Init. Vol. ml	Final Conc. ug/ml	Init. Wgt. gm	Final Conc. ug/g	Comments
61073F	0.005	100	<0.0005			
H	0.0		<0.0005			
I	0.003		<0.0005			
JAP	0.003		<0.0005			
K	0.036		0.0018 90%			
K	0.002		<0.0005			
L	0.002		<0.0005			
M	0.003		<0.0005			
61074	0.0		<0.0005			
1024G	0.001		<0.0002			100%
ADP	0.001		<0.0002			
ASPE	0.0039		0.0070 100%			
B	0.001		<0.0002			
C	0.0		<0.0002			
D	0.003		<0.0002			
E	0.001		<0.0002			
F	0.0		<0.0002			
G	0.0	V	<0.0002			
1025A	0.007			0.46	0.060	not used
ADP	0.005			0.46	0.037	
ADP	0.052			0.74	0.356-0.049:307/0.27	
	0.007			0.64	0.043	
C	0.008			0.88	<0.04	
D	0.004			0.47	<0.04	
E	0.002			0.52	<0.04	
F	0.010			0.73	0.059	

MERCURY ANALYSIS DATA SHEET

235

Wave Length _____ Lamp Voltage _____ Lamp Current _____
 Date: _____ Analyst: _____ Reviewer: _____

STANDARD CALIBRATION

SET #1

SET #2

SET #3

Standard	Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml
Blank							
Std. #1							
Std. #2							
Std. #3							
Std. #4							
Std. #5							
EPA							
EPA							

Correlation Coefficient _____ y Intercept _____

Sample	Absor.	Init. Vol. ml	Final Conc. ug/ml	Init. Wgt. gm	Final Conc. ug/g	Comments
610256	0.010			0.55	0.079	100 wet wt.
H ₁	0.001			0.62	<0.04	↓
55816	0.017	100 ml	0.00080			state tests
G	0.018		0.00085			
	0.031		0.0042			
H	0.077		0.0039			
60874H	0.020		0.00096			
H	0.021		0.0010			
I	0.065		0.0033			
I	0.075		0.0038			
60980K	0.006		0.0005 (0.00022)			
K	0.007		0.0005 (0.00028)			
L	0.019		0.00091			
L	0.016		0.00075			
61070P	0.0		<0.0005			
61072B	0.0		<0.0005			
BSP	0.0		<0.0005			
BSP	0.042		0.0031 125%			
C	0.0		<0.0005			
E	0.001		<0.0005			
F	0.0		<0.0005			
G	0.0		<0.0005			
6079A	0.001		<0.0005			
B	0.0		<0.0005			
C	0.0		<0.0005			
D	0.0		<0.0005			

MERCURY ANALYSIS DATA SHEET

237

Wave Length _____ Lamp Voltage _____ Lamp Current _____
 Date: _____ Analyst: _____ Reviewer: _____

STANDARD CALIBRATION

Standard	SET #1			SET #2		SET #3	
	Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml	Absor.	Actual Conc. ug/ml
Blank							
Std. #1							
Std. #2							
Std. #3							
Std. #4							
Std. #5							
EPA							
EPA							

Correlation Coefficient _____ y Intercept _____

Sample	Absor.	Init. Vol. ml	Final Conc. ug/ml	Init. Wgt. gm	Final Conc. ug/g	Comments
0941 E	0.0	100ml	<0.0005			
F	0.0		<0.0005			
G	0.0		<0.0005			
H	0.0		<0.0005			
I	0.0		<0.0005			
J	0.0		<0.0005			
K	0.003		<0.0005			
L	0.004		<0.0005			
M	0.0		<0.0005			
N	0.0		<0.0005			
O	0.0	√	<0.0005			
P	0.002	70ml	<0.0007			
PMP	0.002		<0.0007			
P-R	0.045	√	0.0023 115%			
Q	0.001	100ml	<0.0005			
S	0.002		<0.0005			
T	0.0		<0.0005			
U	0.004		<0.0005			
V	0.003		<0.0005			
W	0.003		<0.0005			
X	0.0		<0.0005			
Y	0.0		<0.0005			
Z	0.0		<0.0005			
AA	0.0		<0.0005			
AB	0.0		<0.0005			
AC	0.0	√	<0.0005			

Subpart G14: Potassium

METALS ANALYSIS DATA SHEET

REV. 241

METAL K DATE 5/19/86 ANALYST MM REVIEWER _____
 INSTRUMENT (AA) 766.5 nm ANALYSIS METHOD Hydride
 Current 3 Voltage 900 V Flame Hydride
 Split 1.0 nm Gas Air/Ac Acid
 Integ. 1 sec Reduc.

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	5.00	10.00	2.50	1.00	0.25
Conc, ug/ml					
Absorbance		0.926			0.020
EPA Check	Known	Mean	SD	RSD	% Recovered
WP 384-M-1	9.8	9.96	0.81	8.09	102%
" " M-2	2.1	2.32	0.02	2.84	110%

ANALYSIS

Recalibrate 5.29 to 5.00

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Blk 5/14	<0.25							
B.S.	1.22							
5528A	3.85	1/10	38.5					
ADUP	3.59	1/10	35.9					
B	3.59							
BSPIC	9.58							
C	3.49							
D	1.62	1/100	162					
F	2.36	1/10	23.6					
5536A	3.99	1/10	39.9					
ADUP	4.32	1/10	43.2					
B	4.96	1/10	49.6					
BSPIC	6.09	1/10	60.9					
C	4.55	1/10	45.5					
D	6.42	1/10	64.2					
E	6.50	1/10	65.0					
F	4.37	1/10	43.7					
G	6.23	1/10	62.3					
H	6.35	1/10	63.5					
I	4.37	1/10	43.7					
J	5.88	1/10	58.8					
K	6.95	1/10	69.5					
Recalibrate	5.14 to 5.00							
61072A	2.99							
B	0.35							
C	0.98							

②
 METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V
 Split _____ nm
 D₂ _____ Integ. _____ sec
 Flame _____ Hydride _____
 Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
M-1	9.8	8.60	0.67	7.83	88%
M-2	2.1	1.98	0.07	3.42	94%

ANALYSIS

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml		Final ug/ml	F.V. ml.	I.V. ml. or gm		w or d weight	Liquid ug/ml	Solids ug/gm
	D.F.								
61072 E	4.95	✓							
EDP	4.84	✓							
F	0.90	✓							
FSPK	6.98	✓							
G	<0.25	✓							
Bik 5/15	<0.25								
B.S.	1.32								
61024 A	3.60	✓							
ADP	3.55	2,580							
ASPK	9.79								
B	0.89								
C	10.05								
D	4.67								
E	8.55								
F	1.37	Y ₁₀	13.7						
G	8.55								
Perchlorate	4.99 to	5.00							
5612 A	3.16	✓							
B	3.86	3.94							
ADP	4.02								
BSPK	10.34								
P. 5/13	<0.25								
B.S.	1.25								
61073 B	2.56	✓							
C	1.22	✓							

STD 1

ACT CON 21.30
ORG CON 05.29
NEW CON 05.00
AUTO CAL

STD 1
ACT CON 05.00
ORG CON 05.14
NEW CON 05.00
AUTO CAL

STD 1
ACT CON 05.00
ORG CON 04.99
NEW CON 05.00

STATISTICS

CON 01 01.08
02 01.97
03 01.97
04 02.10
05 01.94
06 01.91
07 02.02
08 01.91
09 02.02
10 02.04

MEAN 01.98

SD 00.07

RSD 03.42

CON 01 00.08
02 09.10
03 08.12
04 09.50
05 07.42
06 09.29
07 07.89
08 08.64
09 08.86
10 08.23

MEAN 08.60

SD 00.67

RSD 07.83

STD 1 04.99

STD 2 10.00

STD 3 02.53

STD 4 00.96

STD 5 00.24

STATISTICS

CON 01 00.93
02 00.91
03 00.92
04 00.87

STATISTICS

CON 01 09.55
02 10.22
03 09.03
04 10.64
05 10.63
06 00.99
07 10.95
08 08.93
09 10.06
10 09.81

MEAN 09.96

SD 00.81

RSD 08.09

CON 01 02.46
02 02.35
03 02.25
04 02.24
05 02.34
06 02.33
07 02.29
08 02.27
09 02.37
10 02.31

MEAN 02.32

SD 00.07

RSD 02.04

STD 1
CON 05.00

SIG 0.529
0.542
0.534

MEAN 0.535

STD 2

CON 10.00

SIG 0.928
0.884
0.966

MEAN 0.926

STD 3

CON 02.50

SIG 0.254
0.251
0.240

MEAN 0.251

STD 4

CON 01.00

SIG 0.088
0.086
0.081

MEAN 0.085

STD 5

CON 00.25

SIG 0.022
0.019
0.020

MEAN 0.020

APP CON

AUTO CAL

STD 1

ACT CON 95.00

ORG CON 04.66

NEW CON 85.00

STATISTICS

CON	01	01.96
	02	02.14
	03	02.04
	04	02.09
	05	02.15
	06	02.17
	07	02.09
	08	02.02
	09	02.10
	10	02.09

MEAN 02.08

SD 00.07

RSD 03.35

CON	01	08.18
	02	09.65
	03	09.35
	04	08.73
	05	08.56
	06	09.70
	07	10.21
	08	08.70
	09	09.15
	10	08.71

MEAN 09.18

SD 00.63

RSD 06.92

METAL: K DATE: 6/6/86 ANALYST: MM REVIEWER: MM
 INSTRUMENT (AA): 766.5 nm Voltage: 1000 V ANALYSIS METHOD: Acid-Ascid 6/9/86
 Current: 10 a Split: 1.0 nm Flame: Hydride
 D₂: OFF Integ.: 4 sec Gas: Asid/Asid Acid Reduc.:

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	Conc. ug/ml <u>5.00</u>	<u>10.00</u>	<u>2.50</u>	<u>0.50</u>	<u>0.25</u>
	Absorbance	<u>0.982</u>			<u>0.045</u>
EPA Check	Known	Mean	SD	RSD	% Recovered
WP 384 M-1	<u>9.8</u>	<u>10.43</u>	<u>1.02</u>	<u>9.76</u>	<u>106%</u>
M-2	<u>2.1</u>	<u>2.27</u>	<u>0.09</u>	<u>3.80</u>	<u>108%</u>

ANALYSIS

Recal 5.40 to 5.00

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Blk 5/19	<0.25							
B.S.	1.34		107%					
61025A	10.42		10.4	200	2.16 g		925	960 ug/g
ADUP	9.74				2.18			890 "
ASPK	17.2	1/10	17.2		2.01		1700-925=775 775/6.22=125%	1700 "
B	8.16				2.19			750 "
C	7.44				2.07			720 "
D	9.92				2.02			980 "
E	6.10				2.07			590 "
F	10.55		10.6		2.10			1000 "
G	10.97		11.0		2.00			1100 "
H	6.36			✓	2.03			630 "
5641-A	6.86	1/10	68.6	✓				
B	7.42	1/10	74.2	✓				
C	7.39	1/10	73.9	✓				
D	3.74	1/10	37.4	✓				
E	6.17	1/10	61.7	✓				
E _{WP}	5.88	1/10	58.8	✓				
F	5.99	1/10	59.9	✓				
FSPK	6.66	1/10	66.6	✓				
G	5.75	1/10	57.5	✓				
H	4.52	1/10	45.2	✓				
I	7.34	1/10	73.4	✓				
J	5.18	1/10	51.8	✓				
Blk 5/24	<0.25							

00.39 STD 5
 00.55 STD 4
 02.44 STD 3
 09.99 STD 2
 05.02 STD 1
 APR. CON
 MEAN 0.045
 0.049
 0.042
 0.043 STD
 00.25 CON
 STD 5
 MEAN 0.064
 0.062
 0.058
 0.066 STD
 00.50 CON
 STD 4
 MEAN 0.252
 0.291
 0.297
 0.288 STD
 02.50 CON
 STD 2
 MEAN 0.902
 0.967
 0.960
 0.948
 0.948 STD
 1.826
 10.00 CON
 STD 2
 MEAN 0.599
 0.599
 0.599
 0.599 STD

CON 01 01.01
 02 01.90
 03 01.76
 04 01.66
 05 01.82
 06 01.81
 07 01.91
 08 01.75
 09 01.72
 10 01.84

MEAN 01.81
 SD 00.09
 RSD 05.06

AUTO CAL
 STD 1
 ACT. CON 05.00
 ORG CON 05.11
 NEW CON 05.00

STATISTICS

CON 01 07.02
 02 07.51
 03 08.00
 04 08.03
 05 07.85
 06 08.90
 07 07.20
 08 08.85

AUTO CAL
 STD 1
 ACT CON 05.00
 ORG CON 05.03
 NEW CON 05.00

STATISTICS

CON 01 11.39
 02 10.89
 03 10.30
 04 10.39
 05 09.90
 06 12.55
 07 09.37
 08 09.21
 09 09.55
 10 10.60

MEAN 10.43
 SD 01.02
 RSD 09.76

CON 01 02.26
 02 02.40
 03 02.15
 04 02.19
 05 02.23
 06 02.41
 07 02.35
 08 02.24
 09 02.30
 10 02.22

MEAN 02.27
 SD 00.09
 RSD 03.80
 AUTO CAL

STD 1
 ACT CON 05.00
 ORG CON 05.40
 NEW CON 05.00
 09 04.66

STATISTICS

CON 01 07.11
 02 10.57
 03 09.06
 04 09.55
 05 11.02
 06 09.66
 07 08.41
 08 10.15
 09 07.64
 10 07.00

MEAN 09.19
 SD 01.33
 RSD 14.60

STATISTICS

CON 01	01.98
02	01.82
03	01.91
04	01.74
05	02.23
06	01.87
07	01.74
08	01.88
09	01.83
10	01.70

MEAN 01.87

SD 00.15

RSD 05.18

00

Subpart G15: Selenium

METAL Se

DATE 5/29-31/86

ANALYST JB/RR

REVIEWER W. J. M. 6/5/86

INSTRUMENT (AA)

ANALYSIS METHOD

Wavelength 196.0 nm
 Current 21 a
 D₂ OFF

Voltage 530 V
 Split 1.0 nm
 Integ. 1 sec

Flame
 Gas Air / Acet Hydride
 Acid HCl
 Reduc. N₂H₄

INITIAL CALIBRATION

STANDARDS:

	#1	#2	#3	#4	#5
Stock	<u>0.020</u>	<u>0.030</u>	<u>0.010</u>	<u>0.005</u>	<u>0.002</u>
Conc, ug/ml					
Absorbance	<u>0.393</u>	<u>0.549</u>	<u>0.201</u>	<u>0.099</u>	<u>0.029</u>

EPA Check	Known	Mean	SD	RSD	% Recovered
<u>WS 398 3</u>	<u>0.004</u>	<u>0.0048</u>	<u>0.12</u>	<u>2.58</u>	<u>120.9%</u>
<u>WS 398 14x2</u>	<u>0.016</u>	<u>0.016</u>	<u>0.08</u>	<u>5.09</u>	<u>100.0%</u>

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION				FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
BLK, 5/22	0.91		<					
BLK, spk	4.41		88%					
5623D	<2		<.02	100	50		<0.004	
Mo 5620 ^{spk}	<2	1/10	<.02				<0.04	✓
spk	5.5	↓	110%					
61076	<2		<.0				<0.004	✓
61095 EPT	<2	1/10	<.02				<0.04	✓
spk	5.75		103%					
60956 EPT	<2		<.02				<0.04	✓
spk	5.25	↓	105%					
61072 E	<2		<0.004					✓
61072 F	<2		<0.004					✓
61067C	<2		<0.004					✓
std ck								
61067A	<2		<0.004					✓
61067B	<2		<0.004					✓
D	<2		<0.004					✓
D sp	<2		<0.004					
D spk	4.91		9.82	100.0				=98.7%
BLK 2	<2		<0.004					
B' spk	5.11		10.2	100.0				=102.9%
61068A	<2		<0.004					
61068C	<2		<0.004					
C sp	<2							
C spk	4.85							

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD
 Wavelength _____ nm Voltage _____ V Flame _____ Hydride _____
 Current _____ a Split _____ nm Gas _____ / _____ Acid _____
 D₂ _____ Integ. _____ sec Reduc. _____

INITIAL CALIBRATION

STANDARDS: #1 #2 #3 #4 #5
 Stock _____ Conc, ug/ml _____
 Absorbance _____

EPA Check	Known	Mean ^{5.0}	SD	RSD	% Recovered
WS 378 74x2	0.016	0.015	.09	1.80	94%
WS 378 #3	0.0048	0.005	.08	7.66	104%

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
G1068 D	<2		10.004 ✓					
E	<2		10.004 ✓					
STOCK								
G1072 A	<2		10.004 ✓					
B	<2		10.004 ✓					
G	<2		10.004 ✓					
Gdp	<2		10.004					
STK	4.5		0.0090 = 90%					
G1069	<2		10.004 ✓					
RIK 3	<2							
RIK 3 spk	4.99							
RIK 1 #23	<2							
B-K1 spk	5.05							
H05618 A	<2						10.004 ✓	
B	<2						10.004 ✓	
Bdp	<2						10.004	
STOCK								
Bsp	4.00			80%				
H05618 C	<2						10.004 ✓	
D	<2						10.004 ✓	
E	<2						10.004 ✓	
F	<2						10.004 ✓	
G	<2						10.004 ✓	
H	<2						10.004 ✓	
I	<2						10.004 ✓	

METALS ANALYSIS DATA SHEET

REV. 257

METAL Sr DATE 6/15/76 ANALYST MIM REVIEWER _____
 INSTRUMENT (AA) AA ANALYSIS METHOD Flame Hydride
 Wavelength 191.0 nm Voltage _____ V
 Slit _____ nm Gas 1 Acid HCl
 D₂ off Integ. _____ sec Reduc. Fin B/H

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	(0.020)	(0.024)	(0.0097)	(0.0052)	(0.0021)
	Absorbance	0.020	0.030	0.010	0.005	0.002
		0.039	0.439	0.172	0.090	0.033
		0.346				
EPA Check	Known	Mean	SD	RSD	% Recovered	
W 378-3	0.0040	0.0039	0.0001	3.42	98%	
W 284 2	0.002 (1/2)	0.0048	0.0001	2.75	96%	

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
BK 718	<0.001			100	50		<0.002	
B.S.	0.0052		104%				0.0104	
5875B EPT	<0.001	1/2	<0.01				<0.02	
K	0.0054		108%					
5874 E	<0.001	1/2	<0.01				<0.02	
SPK	0.0052		104%					
K	<0.001	1/2	<0.01				<0.02	
SPK	0.0049		98%					
5454	<0.001	1/2	<0.01				<0.02	
SPK ✓	0.0054		108%					
5454	<0.001				0.50g			<0.2
GC	<0.001				0.50			<0.2
SPK	0.0053		106%		0.50			1.06/10 = 10%
5454 EPT	<0.001	1/2	<0.01		50		<0.02	
SPK	0.0053		106%					
51702	<0.001	1/2	<0.01				<0.02	
SPK	0.0046		92%					
61704	<0.001	1/2	<0.01				<0.02	
SPK ✓	0.0053		106%					
BK 723	<0.001		<0.01				<0.002	
S.	0.0056		112%				0.0112	
5454 EPT	<0.001	1/2	<0.01				<0.02	
SPK	0.0057		114%					
h	<0.001	1/2	<0.01				<0.02	
SPK	0.0057		114%					

METALS ANALYSIS DATA SHEET

REV.

259

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Wavelength _____ nm Voltage _____ V
 Current _____ a Split _____ nm
 D₂ _____ Integ. _____ sec
 Flame _____ Hydride _____
 Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
WS 3	0.0040	0.0044	0.0001	2.49	110%
WD 2	0.0502 (1/2)	0.054	0.0002	3.48	108%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
6173C EP1	<0.001	1/10	<0.01	100	50		<0.02	
SPK	0.0053		106%					
D	<0.001	1/10	<0.01				<0.02	
SPK	0.0052		104%					
E	<0.001	1/10	<0.01				<0.02	
SPK	0.0055		110%					
F	<0.001	1/10	<0.01				<0.02	
SPK	0.0053		106%					
G	<0.001	1/10	<0.01				<0.02	
SPK	0.0049		98%					
H	0.0017	1/10	0.017				0.034	
SPK	0.0068		102%					
I	<0.001	1/10	<0.01				<0.02	
SPK	0.0054		108%					
J	<0.001	1/10	<0.01				<0.02	
SPK	0.0055		110%					
K	<0.001	1/10	<0.01				<0.02	
SPK	0.0054		108%					
L	<0.001	1/10	<0.01				<0.02	
SPK	0.0053		106%					
633	<0.001	1/10	<0.01				<0.02	
SPK V	0.0052		104%					
633 SPK	0.0245	1/10			0.30			12.83-37/25
SPK	0.0297				0.26			8.0-33
SPK	0.0215				0.25			8.5

METALS ANALYSIS DATA SHEET

REV.

260

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Wavelength _____ nm Voltage _____ V
 Current _____ a Split _____ nm
 D₂ _____ Integ. _____ sec
 Flame _____ Hydride _____
 Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
3	0.0040	0.0040	0.0001	3.61	100%
2	0.0502 (V ₁₀)	0.048	0.0002	4.52	96%

ANALYSIS

Recal 0.0194 to 0.0200

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61765 EPT	<0.001	1/0	<0.01	100	50		<0.02	
LPL	0.0052		104%					
P1/2 7/24	<0.001						<0.002	
	0.0056		112%		↓		0.0112	
61025A	0.0020				0.51			0.391, 0.7
AQC	0.0019				0.49			0.391
A SPL	0.0065				0.52			1.25 * 0.39 = 0.4875
B	<0.001				0.49			<0.2
C	<0.001				0.53			<0.2
D	<0.001				0.50			<0.2
E	<0.001				0.52			<0.2
F	<0.001				0.55			<0.2
G	0.0017				0.50			0.34
H	<0.001				0.53			<0.2
B1/2 7/25	<0.001				50		<0.002	
B.S	0.0055		110%				0.0110	
61525E	0.0072	1/100	0.72				1.44	* 1.42
F.GC	0.0070	1/100	0.70				1.40	
ESPL	split out too low							
61403A	0.0090						0.019	
B	0.0059						0.012	
C EPT	<0.001	1/0	<0.01				<0.02	
SPL	0.0056		112%					
D EPT	<0.001	1/0	<0.01				<0.02	
SPL	0.0055		112%					

Subpart G16: Silver

0.012-H EPTX	0.004	0.0%	0.001	0.002	0.001	0.001	1.000
0.012-I EPTX	0.078	0.0%	0.017	0.017	0.013	0.017	1.000
0.012-J EPTX	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
0.012-K EPTX	0.030	0.0%	0.011	0.011	0.011	0.011	1.000

26

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE

DATE: 5/16/86

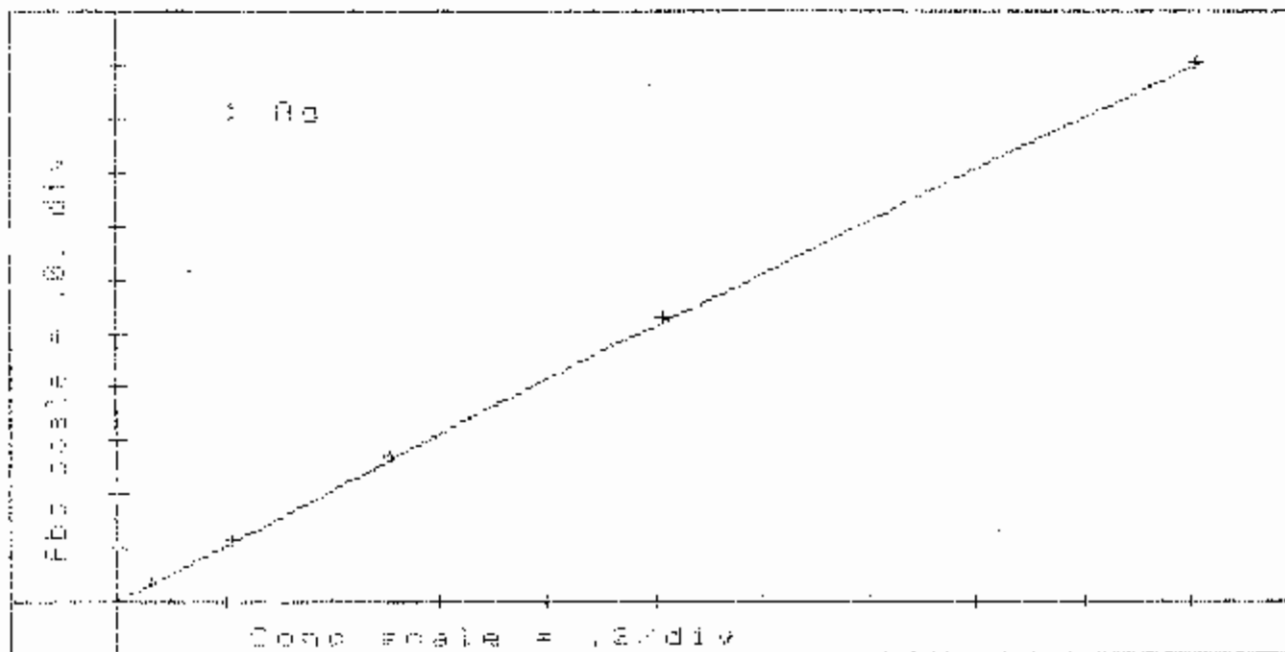
BATCH: Ag: EPTX and waters

Handwritten notes:
 1.5135/86
 Qcld 7/7/86
 5/20/86

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 1 Ag

SOLUTION	CONC ppm	RSD	MEAN ABS	ABSORBANCE READINGS			RESLDFE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
STANDARD 1	0.050	7.7%	0.013	0.015	0.014	0.012	1.000
STANDARD 2	0.200	0.0%	0.051	0.051	0.052	0.051	1.000
STANDARD 3	0.500	1.6%	0.129	0.129	0.127	0.132	1.000
STANDARD 4	1.000	0.0%	0.256	0.256	0.256	0.256	1.000
STANDARD 5	2.000	0.2%	0.496	0.497	0.495	0.496	1.000



MS778 3	0.034	0.0%	0.009	0.009	0.009	0.009	1.000
MS778 1443	0.050	0.0%	0.013	0.013	0.013	0.013	1.000
61010-H EPTX	0.003	100.0%	0.001	0.001	0.002	0.002	1.000
0.012-K EPTX	0.053	7.1%	0.014	0.014	0.016	0.013	1.000
61013-H EPTX	0.003	0.0%	0.000	0.010	0.000	0.000	1.000
0.012-K EPTX	0.042	9.1%	0.011	0.010	0.011	0.013	1.000
61012-H EPTX	0.003	0.0%	0.000	0.000	0.001	0.000	1.000
0.012-K EPTX	0.045	0.0%	0.012	0.012	0.013	0.013	1.000
0.012-H EPTX	1.000	0.0%	0.000	0.000	0.000	0.000	1.000
0.012-K EPTX	0.046	8.3%	0.012	0.017	0.013	0.017	1.000
70012-H EPTX	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
0.012-K EPTX	0.045	9.1%	0.011	0.012	0.012	0.011	1.000
0.012-H EPTX	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
0.012-K EPTX	0.042	9.1%	0.011	0.011	0.011	0.011	1.000
0.012-K EPTX	0.000	0.0%	0.000	0.000	0.000	0.000	1.000

60923-PTV	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
60923-PTX	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
60923-PTV	0.015	18.7%	0.012	0.017	0.012	0.011	1.000
60923-PTV	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
60923-PTV	0.042	9.1%	0.011	0.010	0.012	0.012	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
60923-PTV	0.193	2.0%	0.050	0.051	0.050	0.051	1.023
60923-PTV	0.035	3.0%	0.009	0.009	0.010	0.009	1.025
60923-PTV	0.051	0.0%	0.013	0.013	0.013	0.014	1.025
60923-PTV	0.000	0.0%	0.000	0.000	0.001	0.001	1.025
60923-PTV	0.047	8.3%	0.013	0.012	0.013	0.013	1.025
BLK matrix	0.000	0.0%	0.000	0.000	0.000	0.000	1.025
BS matrix	0.051	0.0%	0.013	0.013	0.013	0.013	1.025
60923-PTV	0.000	0.0%	0.000	0.000	0.000	0.000	1.025
60923-PTV	0.000	0.0%	0.000	0.000	0.001	0.000	1.025
60923-PTV	0.000	0.0%	0.000	0.001	0.000	0.001	1.025
60923-PTV	0.007	50.0%	0.002	0.007	0.003	0.002	1.025
60923-PTV	0.003	0.0%	0.001	0.002	0.001	0.001	1.025
60923-PTV	0.000	0.0%	0.000	0.000	0.000	0.000	1.025
60923-PTV	0.000	0.0%	0.000	0.000	0.001	0.001	1.025
60923-PTV	0.000	0.0%	0.000	0.001	0.000	0.001	1.025
60923-PTV	0.000	0.0%	0.000	0.000	0.000	0.001	1.025
60923-PTV	0.000	0.0%	0.000	0.000	0.001	0.000	1.025
60941-A (OC)	0.000	0.0%	0.000	0.000	0.001	0.000	1.025
60941-A (OC)	0.047	0.0%	0.012	0.012	0.012	0.013	1.025
60961	0.493	0.0%	0.124	0.124	0.124	0.125	1.025
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.025
RESLOPE	0.200	0.0%	0.051	0.051	0.052	0.051	1.000
60978-2	0.034	0.0%	0.009	0.005	0.009	0.009	1.000
60978-14x2	0.050	0.0%	0.013	0.013	0.013	0.014	1.000
60986	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
60987-8	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
60988-A	0.003	100.0%	0.001	0.003	0.001	0.001	1.000
60988-B	0.026	0.0%	0.007	0.007	0.007	0.007	1.000
60988-J	0.030	0.0%	0.008	0.008	0.008	0.008	1.000
60988-N	0.003	0.0%	0.001	0.001	0.001	0.001	1.000
60988-F	0.003	100.0%	0.001	0.001	0.002	0.002	1.000
60988-R	0.026	0.0%	0.007	0.007	0.007	0.007	1.000
60988-S	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
60988-S (OC)	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
60988-S (OC)	0.050	0.0%	0.012	0.014	0.013	0.013	1.000
60988-U	0.003	0.0%	0.001	0.001	0.001	0.001	1.000
60988-V	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
60988-W	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
60988-X	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
60988-Y (OC)	0.000	0.0%	0.000	0.001	0.000	0.000	1.000
60988-Z (OC)	0.053	7.1%	0.014	0.013	0.015	0.014	1.000
60988-AB	0.003	0.0%	0.001	0.001	0.001	0.001	1.000
BLANK	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
RESLOPE	0.200	0.0%	0.051	0.051	0.051	0.051	1.000
60988-AC	0.053	0.0%	0.014	0.014	0.014	0.014	1.000
60988-AD	0.013	25.3%	0.004	0.005	0.003	0.003	1.000
60988-AE	0.011	0.0%	0.003	0.004	0.003	0.003	1.000
60988-AF	0.015	0.0%	0.004	0.004	0.004	0.004	1.000
60988-AJ (OC)	0.015	33.3%	0.003	0.004	0.004	0.003	1.000
60988-AK (OC)	0.041	6.3%	0.012	0.017	0.012	0.017	1.000
60988-AL	0.000	0.0%	0.000	0.000	0.000	0.000	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

1000 E. 12th St., Suite 100, Denver, CO 80202
 (303) 733-1111
 www.gtc.com

SOLUTION	Ag ppm	
WS378 2	0.034	121%
WS378 14:2	0.050	96%
61012-D EPTX	0.003	<.1 ✓
(SPK)	1/10 0.053	
61012-D EPTX	0.000	<.1 -
" (SPK)	1/10 0.042	
61012-E EPTX	0.000	<.1 -
" (SPK)	1/10 0.046	
60919-A EPTX	0.000	<.1 -
" (SPK)	1/10 0.046	
60919-B EPTX	0.000	<.1 -
" (SPK)	1/10 0.042	
60919-C EPTX	0.000	<.1 -
" (SPK)	1/10 0.042	
61029-A EPTX	0.000	<.1 -
" (SPK)	1/10 0.046	
60950 EPTX	0.000	<.1 -
" (SPK)	1/10 0.046	
60955 EPTX	0.000	<.1 -
" (SPK)	1/10 0.042	
WS378 2	0.035	125%
WS378 14:2	0.051	98%
61029-B EPTX	0.000	<.1 ✓
" (SPK)	1/10 0.047	
BLK matrix	0.000	<.01
BB matrix	0.051	102%
61005	0.000	<.01 -
5508-F	0.000	<.01 ✓
5508-I	0.000	<.01 ✓
5527-B	0.007	<.01 ✓
5527-F	0.003	<.01 ✓
5612-A	0.000	<.01 ✓
5612-B	0.000	<.01 ✓
5621-B	0.000	<.01 ✓
5623-D	0.000	<.01 ✓
5623-E	0.000	<.01 ✓
60941-A	0.000	<.01
60941-A (10)	0.000	
60941-A (.05)	0.047	94%
60981	0.453	
WS378 2	0.034	121%
WS378 14:2	0.050	96%
60984	0.000	<.01 -
60852-B	0.000	<.01 -
60852-A	0.003	<.01 ✓
60852-B	0.026	✓
60852-C	0.030	✓
60852-D	0.003	<.01 ✓
60852-E	0.003	<.01 ✓
60852-F	0.026	✓
60852-G	0.000	<.01 ✓
60852-G (10)	0.000	
60852-G (.05)	0.050	100%
52-B	0.005	<.01 ✓
60852-H	0.000	<.01 ✓
60852-AE	0.000	<.01 ✓
60852-IF	0.000	<.01 ✓
60852-AT (10)	0.000	<.01 ✓
60852-AT (.05)	0.050	100%
60852-AT (.01)	0.000	<.01 ✓
60852-AT (.001)	0.000	<.01 ✓

60857-AD 0.011 ✓
 60852-AD 0.018 ✓
 60852-AD (00) 0.015 > 0.015 ✓
 60857-AD (05) 0.061 92% ✓
 60852-AM 0.000 < 0.01 ✓

265

FEDERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

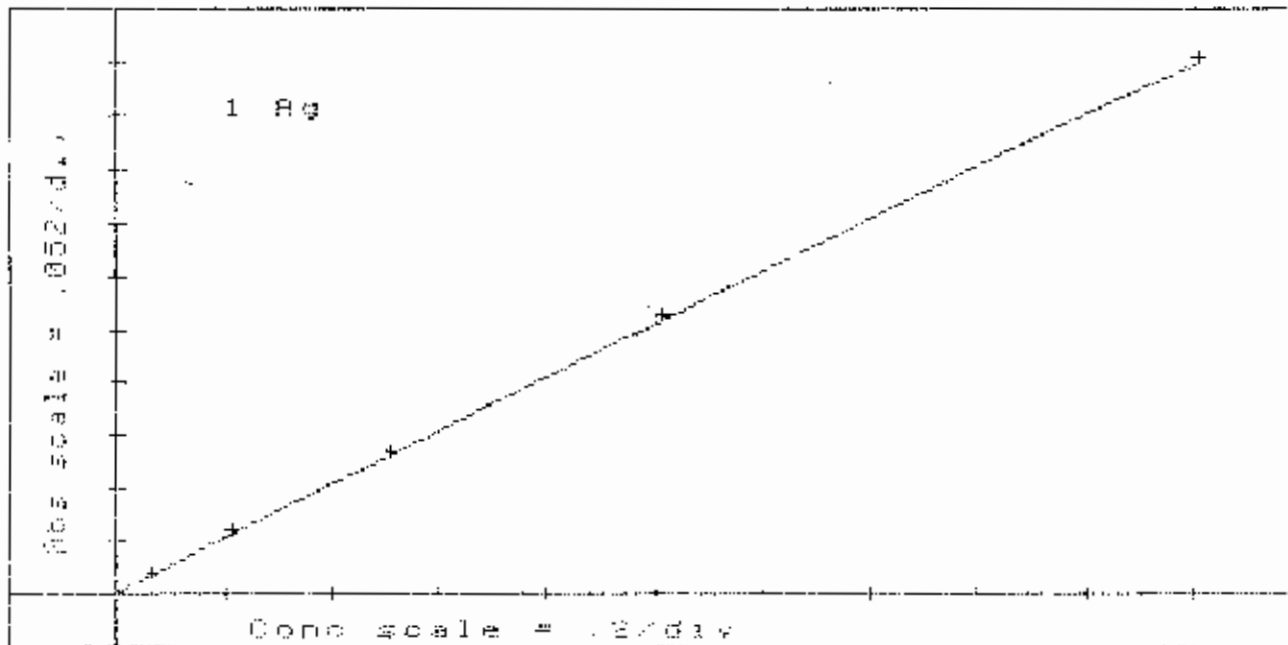
VARIAN AA-975

OPERATOR: JOHN BRUNETTE
 DATE: 5/16/86
 BATCH: Ag: EPFX and waters

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 1 Ag

SOLUTION	CONC ppm	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 1	0.050	0.0%	0.014	0.014	0.015	0.014	1.000
STANDARD 2	0.200	0.0%	0.055	0.055	0.056	0.055	1.000
STANDARD 3	0.500	1.5%	0.133	0.135	0.134	0.131	1.000
STANDARD 4	1.000	0.4%	0.266	0.268	0.266	0.265	1.000
STANDARD 5	2.000	1.4%	0.516	0.515	0.510	0.525	1.000



WS378 2	0.039	0.0%	0.011	0.011	0.011	0.012	1.000
WS378 14x2	0.053	0.0%	0.015	0.015	0.015	0.015	1.000
SLK matrix	0.000	0.0%	0.000	0.002	0.000	0.000	1.000
BS	0.050	7.1%	0.014	0.014	0.014	0.016	1.000
60852-AL	0.003	0.0%	0.001	0.001	0.001	0.001	1.000
60852-AM	0.007	0.0%	0.002	0.002	0.002	0.002	1.000
60852-AP	0.007	0.0%	0.002	0.002	0.002	0.002	1.000
60853-A	0.003	0.0%	0.001	0.001	0.002	0.001	1.000
60853-B	0.003	0.0%	0.001	0.001	0.001	0.002	1.000
60853-B (00)	0.003	0.0%	0.001	0.001	0.001	0.002	1.000
60853-B (05)	0.050	7.1%	0.014	0.015	0.015	0.014	1.000
60853-C	0.005	0.0%	0.001	0.001	0.001	0.001	1.000
60853-D	0.003	0.0%	0.001	0.001	0.001	0.001	1.000

60824-F	0.003	0.0%	0.001	0.002	0.001	0.001	1.000
60824-G	0.003	100.0%	0.003	0.003	0.003	0.003	1.000
61024-A	0.003	100.0%	0.001	0.002	0.000	0.001	1.000
61024-A (QC)	0.003	0.0%	0.001	0.002	0.001	0.001	1.000
61024-A (05)	0.050	7.1%	0.014	0.015	0.014	0.015	1.000
61024-B	0.003	0.0%	0.001	0.002	0.001	0.001	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
SLOPE	0.192	1.9%	0.053	0.054	0.053	0.054	1.041
WS378 2	0.037	0.0%	0.010	0.011	0.010	0.010	1.041
WS378 14x2	0.053	0.0%	0.015	0.015	0.015	0.015	1.041
61024-C	0.003	0.0%	0.001	0.002	0.001	0.001	1.041
61024-D	0.003	100.0%	0.001	0.002	0.001	0.002	1.041
61024-E	0.003	0.0%	0.001	0.001	0.002	0.001	1.041
61024-F	0.003	100.0%	0.001	0.001	0.002	0.000	1.041
61024-G	0.003	0.0%	0.001	0.002	0.001	0.001	1.041
61076	0.000	0.0%	0.000	0.001	0.001	0.000	1.041
61088-A	0.495	0.8%	0.127	0.127	0.126	0.128	1.041
61088-B	0.085	4.3%	0.023	0.024	0.024	0.023	1.041
61088-C	0.131	0.0%	0.035	0.035	0.036	0.035	1.041
61091	0.282	1.4%	0.074	0.073	0.075	0.074	1.041
BLK	0.003	100.0%	0.001	0.002	0.001	0.002	1.041
5584-G	0.014	25.0%	0.004	0.004	0.004	0.006	1.041
5584-H	0.033	11.1%	0.009	0.008	0.010	0.010	1.041
60879-H	0.018	0.0%	0.005	0.005	0.005	0.005	1.041
60879-I	0.037	10.0%	0.010	0.010	0.011	0.011	1.041
60880-I	0.033	0.0%	0.009	0.009	0.010	0.009	1.041
60880-J	0.018	20.0%	0.005	0.005	0.004	0.006	1.041
61072-A	0.003	100.0%	0.001	0.002	0.001	0.002	1.041
BLANK	0.000	0.0%	0.000	0.001	0.000	0.001	1.041
SLOPE	0.192	0.0%	0.053	0.054	0.053	0.053	1.041
WS378 2	0.037	0.0%	0.010	0.010	0.010	0.010	1.041
WS378 14x2	0.053	0.0%	0.015	0.015	0.015	0.015	1.041
172-B	0.000	0.0%	0.000	0.000	0.000	0.000	1.041
61072-C	0.000	0.0%	0.000	0.000	0.000	0.000	1.041
61072-D	0.000	0.0%	0.000	0.001	0.000	0.000	1.041
61072-E	0.000	0.0%	0.000	0.000	0.000	0.001	1.041
61072-F	0.000	0.0%	0.000	0.001	0.000	0.000	1.041
61072-G	0.000	0.0%	0.000	0.000	0.000	0.000	1.041
61073-B	0.000	0.0%	0.000	0.000	0.000	0.000	1.041
61073-C	0.000	0.0%	0.000	0.000	0.000	0.000	1.041
61073-E	0.000	0.0%	0.000	0.001	0.001	0.000	1.041
61073-F	0.003	100.0%	0.001	0.001	0.000	0.002	1.041
61073-H	0.000	0.0%	0.000	0.001	0.001	0.000	1.041
61073-I	0.000	0.0%	0.000	0.001	0.000	0.000	1.041
61073-K	0.000	0.0%	0.000	0.001	0.000	0.000	1.041
61073-L	0.000	0.0%	0.000	0.000	0.000	0.000	1.041
61073-N	0.000	0.0%	0.000	0.000	0.000	0.000	1.041
61074-A	0.000	0.0%	0.000	0.000	0.000	0.001	1.041
BLK 5714	0.000	0.0%	0.000	0.001	0.001	0.000	1.041
ES	0.048	0.0%	0.013	0.013	0.012	0.014	1.041
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.041
SLOPE	0.192	1.9%	0.053	0.053	0.054	0.054	1.041
WS378 2	0.037	0.0%	0.015	0.015	0.016	0.015	1.041
60864-A	0.007	0.0%	0.002	0.002	0.002	0.002	1.041
60864-B	0.000	0.0%	0.000	0.000	0.001	0.001	1.041
60864-C	0.000	0.0%	0.000	0.000	0.001	0.001	1.041
60864-D	0.007	0.0%	0.002	0.002	0.002	0.002	1.041
64-D (QC)	0.003	0.0%	0.001	0.001	0.001	0.001	1.041
60864-E (SPK)	0.040	9.1%	0.011	0.010	0.012	0.012	1.041

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIATION: AA 975
 OPERATIONS: JOHN BRUNETT
 DATE: 07/16/88
 LOCATION: 300 EPHRAIM ROAD

METAL Ag DATE 5/29/86 ANALYST VB REVIEWER _____
 INSTRUMENT (AA) 328.1 nm Voltage 380 V ANALYSIS METHOD Acid 2-7071 5/30/86
 Current 9 a Split 1.0 nm Flame Hydride
 D₂ OFF Integ. 4 sec Gas Air / Acet Acid
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	<u>0.500</u>	<u>1.000</u>	<u>0.200</u>	<u>0.050</u>	<u>0.010</u>
<u>5/29/86</u>	Absorbance	<u>0.123</u>	<u>0.238</u>	<u>0.048</u>	<u>0.012</u>	<u>0.002</u>
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>WS 378 14x2</u>	<u>0.052</u>	<u>0.056</u>	<u>0.002</u>	<u>3.45</u>	<u>108%</u>	
" <u>3</u>	<u>0.028</u>	<u>0.035</u>	<u>0.002</u>	<u>4.59</u>	<u>125%</u>	

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
<u>5620-A</u> EPT	<u><.01</u>	<u>1/10</u>	<u><.1</u>				<u><.1</u>	
<u>0.05</u>	<u>0.048</u>							
<u>50956-EH</u> EPT	<u><.01</u>		<u><.1</u>				<u><.1</u>	
<u>0.050</u>	<u>0.048</u>							
<u>610... DN</u> EPT	<u><.01</u>		<u><.1</u>				<u><.1</u>	
<u>0.050</u>	<u>0.050</u>							
<u>BLK 5/19</u>	<u><.01</u>							
<u>BS</u>	<u>0.054</u>		<u>108%</u>					
<u>5478-A Barri</u>	<u><.01</u>			<u>50</u>	<u>0.54 g</u>			<u><.1</u>
<u>A(QC)</u>	<u><.01</u>				<u>0.50</u>			<u><.1</u>
<u>A(Spk)</u>	<u><.01</u>	<u>NOT SPIKED</u>			<u>0.50</u>			
<u>B</u>	<u><.01</u>				<u>0.55</u>			<u><.1</u>
<u>10870-A E-A</u>	<u>0.023</u>			<u>30ml</u>	<u>0.50 g</u>			<u>2.3</u>
<u>B</u>	<u>0.014</u>				<u>0.50</u>			<u>1.4</u>
<u>C</u>	<u>0.009</u>				<u>0.51</u>			<u>0.90</u>
<u>C(QC)</u>	<u>0.014</u>				<u>0.50</u>			<u>1.00</u>
<u>C(Spk)</u>	<u>0.060</u>		<u>97%</u>		<u>0.50</u>	<u>6.00 - 145</u>		<u>97%</u>
<u>61025-A URS</u>	<u><.01</u>			<u>50</u>	<u>0.50 g</u>			<u><.1</u>
<u>A(QC)</u>	<u><.01</u>				<u>0.54</u>			
<u>A(Spk)</u>	<u>0.052</u>		<u>5.1/45</u>		<u>0.51</u>			<u>5.10</u>
<u>B</u>	<u><.01</u>				<u>0.50</u>			<u><.1</u>
<u>C</u>	<u><.01</u>				<u>0.50</u>			<u><.1</u>
<u>D</u>	<u><.01</u>				<u>0.52</u>			<u><.1</u>
<u>E</u>	<u><.01</u>				<u>0.53</u>			<u><.1</u>
<u>F</u>	<u><.01</u>				<u>0.52</u>			
<u>G</u>	<u><.01</u>				<u>0.50</u>			

STATISTICS

CON 01 0.050
 02 0.050
 03 0.049
 04 0.048
 05 0.050
 06 0.050
 07 0.052
 08 0.048
 09 0.050
 10 0.049

MEAN 0.050

SD 0.001

RSD 02.66

55 0.491

56 0.490

57 0.436

STATISTICS

CON 01 0.054
 02 0.050
 03 0.058
 04 0.055
 05 0.056
 06 0.050
 07 0.054
 08 0.049
 09 0.051
 10 0.060

MEAN 0.055

SD 0.003

RSD 06.09

STD 1 0.000

STD 2 1.000

STD 3 0.200

STD 4 0.051

STD 5 0.009

STATISTICS

CON 01 0.057
 02 0.050
 03 0.055
 04 0.055
 05 0.054
 06 0.057
 07 0.056
 08 0.055
 09 0.055
 10 0.053

MEAN 0.056

SD 0.002

RSD 03.45

STATISTICS

CON 01 0.034
 02 0.033
 03 0.037
 04 0.036
 05 0.033
 06 0.036
 07 0.035
 08 0.035
 09 0.034
 10 0.030

MEAN 0.035

SD 0.002

RSD 04.09

STD 1

CON 0.500

SIG 0.123

0.123

0.123

MEAN 0.123

STD 2

CON 1.000

SIG 0.238

0.237

0.238

MEAN 0.238

STD 3

CON 0.200

SIG 0.040

0.049

0.048

MEAN 0.048

STD 4

CON 0.050

SIG 0.012

0.012

0.012

MEAN 0.012

STD 5

CON 0.010

SIG 0.003

0.002

0.002

MEAN 0.002

STATISTICS

276

CON 01	0.936
02	0.936
03	0.933
04	0.932
05	0.933
06	0.930
07	0.925
08	0.938
09	0.927
10	0.927

MEAN	0.931
------	-------

SD	0.004
----	-------

RSD	13.08
-----	-------

06	0.503
----	-------

07	0.494
----	-------

STATISTICS

CON 01	0.859
02	0.855
03	0.855
04	0.850
05	0.848
06	0.853
07	0.860
08	0.850
09	0.852
10	0.853

MEAN	0.854
------	-------

SD	0.004
----	-------

RSD	06.69
-----	-------

STATISTICS

CON 01	0.829
02	0.848
03	0.833
04	0.830
05	0.834
06	0.830
07	0.826
08	0.832
09	0.833
10	0.833

MEAN	0.832
------	-------

SD	0.004
----	-------

Subpart G17: Sodium

METAL Na DATE 5/19/86 ANALYST MM REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD GC/MS 5/22/86
 Wavelength 589.0 nm Voltage 380 V Flame _____ Hydride _____
 Slit 5 nm Split 10 nm Gas Air / Acet Acid _____
 D₂ OFF Integ. 4 sec Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5	
Stock	Conc, ug/ml	<u>5.00</u>	<u>10.00</u>	<u>2.50</u>	<u>0.00</u>	<u>0.10</u>
	Absorbance		<u>0.773</u>			<u>0.015</u>
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>WP 394 M</u>	<u>46.5</u>	<u>41.8</u>	<u>0.09</u>	<u>2.15</u>	<u>90%</u>	
<u>" " # 2</u>	<u>8.2</u>	<u>7.93</u>	<u>0.11</u>	<u>1.34</u>	<u>97%</u>	

ANALYSIS

Sample #	INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION	
	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
<u>60980-K</u>	<u>1.05</u>							
<u>K</u>	<u>1.06</u>							
<u>L</u>	<u>2.61</u>							
<u>L</u>	<u>2.61</u>							
<u>6019-G</u>	<u>1.69</u>	<u>1/10</u>	<u>16.9</u>					
<u>G</u>	<u>1.65</u>	<u>1/10</u>	<u>16.5</u>					
<u>5584 I</u>	<u>1.62</u>	<u>1/10</u>	<u>16.2</u>					
<u>Blk 5/14</u>	<u><0.10</u>							
<u>B.S.</u>	<u>0.57</u>		<u>114%</u>					
<u>5528A</u>	<u>6.49</u>	<u>1/1000</u>	<u>6490</u>					
<u>A.DUP</u>	<u>6.16</u>	<u>1/1000</u>	<u>6160</u>					
<u>B</u>	<u>1.35</u>	<u>1/1000</u>	<u>1350</u>					
<u>BSPK</u>	<u>1.36</u>	<u>1/1000</u>	<u>1360</u>					
<u>C</u>	<u>1.60</u>	<u>1/1000</u>	<u>1600</u>					
<u>D</u>	<u>3.56</u>	<u>1/100</u>	<u>356</u>					
<u>F</u>	<u>3.99</u>	<u>1/100</u>	<u>399</u>					
<u>Recalibrate</u>	<u>5.22 to</u>	<u>5.00</u>						
<u>5536A</u>	<u>2.10</u>	<u>1/1000</u>	<u>2100</u>					
<u>A.DUP</u>	<u>2.06</u>	<u>1/1000</u>	<u>2060</u>					
<u>B</u>	<u>3.91</u>	<u>1/1000</u>	<u>3910</u>					
<u>BSPK</u>	<u>4.36</u>	<u>1/1000</u>	<u>4360</u>					
<u>C</u>	<u>3.12</u>	<u>1/1000</u>	<u>3120</u>					
<u>D</u>	<u>2.16</u>	<u>1/1000</u>	<u>2160</u>					
<u>E</u>	<u>4.02</u>	<u>1/1000</u>	<u>4020</u>					
<u>F</u>	<u>4.47</u>	<u>1/1000</u>	<u>4470</u>					
<u>G</u>	<u>3.90</u>	<u>1/1000</u>	<u>3900</u>					

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V
 Split _____ nm
 Integ. _____ sec
 Flame _____ Hydride _____
 Gas _____ / _____ Acid _____
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
M-1	46.5	40.9	0.04	1.05	88%
M-2	8.2	7.94	0.11	1.33	97%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
5536 H	4.01	1/1000	4010	✓				
I	4.99	1/1000	4490	✓				
J	1.45	1/1000	1450	✓				
K	3.30	1/1000	3300	✓				
6173A	7.01	1/10	7011	✓				
B	2.00	✓						
C	3.95	✓						
E	1.09	1/100	109	✓				
ENP	1.01	1/100	101					
F	2.52	✓						
ESPK	5.10							
G	0.62	✓						
Recalibrate	5.31 to 5.00							
Blk 5/5	5.29							
B.S.	3.60							
61024-A	2.78	1/10	27.8	✓				
Aur	2.69	1/10	26.9					
Aspk	2.62	1/10						
B	1.67	1/10	16.7	✓				
C	1.16	1/100	116	✓				
D	3.69	1/10	36.9	✓				
E	7.35	1/10	73.5	✓				
F	1.13	1/100	113	✓				
G	7.15	1/10	71.5	✓				

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V Flame _____ Hydride _____
 Split _____ nm Gas _____ / _____ Acid _____
 D₂ _____ Integ. _____ sec Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	_____	_____	_____	_____	_____
Conc, ug/ml	_____	_____	_____	_____	_____
Absorbance	_____	_____	_____	_____	_____
EPA Check	Known	Mean	SD	RSD	% Recovered
M-1	46.5	42.4	0.05	1.13	91.5%
M-2	8.2	8.17	0.11	1.32	100%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION			FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Recalibrate	4.75 to 5.00							
5612 A	2.41	1/10	24.1 ✓					
B	4.39	1/10	43.9 ✓					
B POP	4.03	1/10	40.3 ✓					
B SPK	4.00	1/10	checked for low					
Btk 5/13	<0.1							
B.S.	0.58		116%					
61073 B	4.59	1/10	45.9 ✓					
C	2.13		✓					
D	9.83		✓					
E	8.94		✓					
EDUP	8.86		✓					
ESPLC	1.17	1/10	11.7 ✓					
F	7.09		✓					
H	4.08		✓					
I	3.83		✓					
K	5.17		✓					
L	1.21	1/10	12.1 ✓					
M	<0.1		✓					
M POP	<0.1		✓					
M SPK	2.65		✓					
61074 A	1.78	1/10	17.8 ✓					

STD 1
 CON 05.00
 SIG 0.468
 MEAN 0.469

STD 2
 CON 10.00
 SIG 0.766
 0.776
 0.777
 MEAN 0.773

STD 3
 CON 02.50
 SIG 0.255
 0.258
 0.258
 MEAN 0.257

STD 4
 CON 01.00
 SIG 0.106
 0.107
 0.108
 MEAN 0.107

STD 5
 CON 00.10
 SIG 0.010
 0.014
 0.013
 MEAN 0.015
 APP CON

STD 1
 05.00

STD 2
 10.00

STD 3
 02.51

STD 4
 00.99

STD 5
 00.14

STATISTICS

CON 01 03.95
 02 04.13
 03 04.24
 04 04.24
 05 04.20
 06 04.26
 07 04.24
 08 04.20
 09 04.15
 10 04.20

MEAN 04.18

SD 00.09

RSD 02.15

CON 01 08.17
 02 08.02
 03 07.91
 04 07.64
 05 07.85
 06 07.87
 07 08.02
 08 07.88
 09 07.88
 10 07.87

MEAN 07.93

SD 00.11

RSD 01.34
 AUTO CAL

STD 1

ACT CON 05.00

ORG CON 05.22

NEW CON 05.00
 AUTO CAL

STD 1

ACT CON 05.00

ORG CON 05.31

NEW CON 05.00

STATISTICS

CON 01 08.17
 02 07.93
 03 07.63
 04 07.91
 05 07.79
 06 07.93
 07 07.95
 08 07.89
 09 08.00
 10 08.00

MEAN 07.94

SD 00.11

RSD 01.33

CON 01 04.04
 02 04.09
 03 04.08
 04 04.10
 05 04.06
 06 04.02
 07 04.16
 08 04.14
 09 04.12
 10 04.10

MEAN 04.09

SD 00.04

RSD 01.05
 AUTO CAL

STD 1

ACT CON 05.00

ORG CON 04.75

NEW CON 05.00

STATISTICS

CON	01	08.34
	02	08.19
	03	08.22
	04	08.22
	05	08.12
	06	07.94
	07	08.25
	08	08.15
	09	08.07
	10	08.19

MEAN 08.17

SD 00.11

RSD 01.32

CON	01	04.16
	02	04.28
	03	04.24
	04	04.27
	05	04.19
	06	04.21
	07	04.23
	08	04.31
	09	04.25
	10	04.30

MEAN 04.24

SD 00.05

RSD 01.13

METALS ANALYSIS DATA SHEET

REV. 285

METAL Na DATE 6/4/86 ANALYST MM REVIEWER OC 12/11/86
 INSTRUMENT (AA) 589 nm Voltage 380 V 6/6/86 ANALYSIS METHOD Flame Hydride
 Wavelength 10 nm Split 1.0 nm Gas Air/Ascl Acid
 D₂ OFF Integ. 4 sec Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	5.00	10.00	2.50	0.50	0.10
Conc, ug/ml					
Absorbance		0.652			
EPA Check	Known	Mean	SD	RSD	% Recovered
WP 381 M-2	8.2	8.05	0.11	1.38	98.9%
WP 581 M-2	1.50	1.67	0.03	2.02	111.9%

Recal 4.72 to 5.00 ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
60980-K	1.14							
L	2.66							
Blk 5/20	<0.1						<0.1	
B.S.	0.56		112%				0.56	
61068A	2.88	1/10	28.8					
C	1.72	1/10	17.2					
D	0.35		0.35					
E	5.32	1/10	53.2	53.2				
EDR	5.31	1/10	53.1					
ASPK	synthesized from low							
61057	9.61						9.61	
61085G	0.26						0.26	
Blk 5/19	<0.1						<0.1	
B.S.	0.50		100%				0.50	
61025A	0.94			200ml	2.16g			81
ADUP	0.8				2.19			87 ug/g
ASPK	3.51				2.01			74 ug/g
B	1.47				2.19			349 ug/g
C	4.26				2.07			130 "
D	1.40				2.02			410 "
E	1.75				2.07			140 "
F	2.45				2.10			170 "
G	1.50				2.00			230 "
H	1.76				2.03			150 "

STD 1
 CON 05.00
 SIG 0.388
 0.391
 0.391
 MEAN 0.390

STD 2
 CON 10.00
 SIG 0.653
 0.647
 0.656
 MEAN 0.652

STD 3
 CON 02.50
 SIG 0.215
 0.213
 0.214
 MEAN 0.214

STD 4
 CON 08.50
 SIG 0.046
 0.045
 0.047
 MEAN 0.046

STD 5
 CON 00.10
 SIG 0.015
 0.014
 0.014
 MEAN 0.014

STD 1 05.00
 STD 2 10.00

STD 3 02.50
 STD 4 08.50
 STD 5 00.15

CON 01 08.15
 02 07.98
 03 07.90
 04 07.80
 05 08.10
 06 08.13
 07 08.02
 08 08.17
 09 08.10
 10 07.97

MEAN 08.05
 SD 00.11
 RSD 01.38

CON 01 01.62
 02 01.64
 03 01.69
 04 01.72
 05 01.67
 06 01.64
 07 01.72
 08 01.66
 09 01.64
 10 01.67

MEAN 01.67
 SD 00.03
 RSD 02.02

Subpart G18: Thallium

METAL TI DATE 6/5/86 ANALYST MM REVIEWER _____
 INSTRUMENT (AA) 200B nm Voltage 380 V ANALYSIS METHOD Flame Hydride
 Wavelength 200.8 nm Split 1.0 nm Gas Air/Aet Acid _____
 D₂ OFF Integ. 4 sec Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	5.00	10.00	2.00	1.00	0.25
Conc, ug/ml					
Absorbance		0.179			0.006
EPA Check	Known	Mean	SD	RSD	% Recovered
TIME 1x20	0.500	0.51	0.02	4.68	102%
NP1183					

ANALYSIS

Recal 5.07 to 5.00

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
5648A (6)	0.55 ✓							
B	<0.25 ✓							
Blk 5/15	<0.25							
B.S.	1.24		99%					
61024A	<0.25							
B	<0.25							
C	<0.25							
CPUP	<0.25							
CSPK	1.30		104%					
D	<0.25							
E	<0.25							
F	<0.25							
G	<0.25							
5612A	<0.25 ✓							
ADP	<0.25							
ASR	1.31		105%					
B	<0.25 ✓							
Blk 5/19	<0.25							
B.S.	1.21		97%					
61025A	<0.25			50	0.53	wet		<25 ug/g
A.D.P	<0.25				0.53			<25 "
ASPK	1.32		106%		0.53		12% ¹¹⁸ 106%	125 "
B	<0.25				0.57			<25 "
C	<0.25				0.53			<25 "
D	<0.25			✓	0.52	✓		<25 "

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Flame _____ Hydride _____
 Gas / _____ Acid _____
 Reduc. _____
 nm Voltage _____ V
 Split _____ nm
 Integ. _____ sec

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
1120	0.500	0.53	0.01	2.26	106%

Final 5.06 to 5.00

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION				FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
61025E	<0.25			50	0.57	wet		<25 ug/g
F	<0.25			↓	0.56	↓		<25 "
G	<0.25			↓	0.54	↓		<25 "
5670A	<0.25 ✓							
AAP	<0.25							
APK	1.25		100%					
B	<0.25 ✓							
BLE5/22	<0.25							
B.S.	1.26		101%					
5618A	<0.25 ✓							
B	<0.25 ✓							
BVP	<0.25							
BSPK	1.29		103%					
C	<0.25 ✓							
D	<0.25 ✓							
E	<0.25 ✓							
F	<0.25 ✓							
G	<0.25 ✓							
H	<0.25 ✓							
I	<0.25 ✓							
SH	<0.25			50	0.51	wet		<25 ug/g

STD 1
 CON 95.00
 SIG 0.293
 0.292
 0.293
 MEAN 0.093

STD 2
 CON 10.00
 SIG 0.069
 0.167
 MEAN 0.118
 STD 2
 CON 10.00
 SIG 0.178
 0.179
 0.178
 MEAN 0.179

STD 3
 CON 02.00
 SIG 0.030
 0.039
 0.039
 MEAN 0.039

STD 4
 CON 01.00
 SIG 0.019
 0.019
 0.020
 MEAN 0.020

STD 5
 CON 00.25
 SIG 0.006
 0.006
 0.006
 MEAN 0.006

APP CON
 STD 1 05.00
 STD 2 10.00
 STD 3 02.00
 STD 4 00.99
 STD 5

CON 01 00.48
 02 00.48
 03 00.48
 04 00.52
 05 00.50
 06 00.53
 07 00.54
 08 00.50
 09 00.53
 10 00.54
 MEAN 00.51
 SD 00.02
 RSD 04.68

AUTO CAL
 STD 1
 ACT CON 05.00
 ORG CON 05.07
 NEW CON 05.00

STATISTICS
 CON 01 00.54
 02 00.53
 03 00.56
 04 00.51
 05 00.52
 06 00.53
 07 00.53
 08 00.55
 09 00.52
 10 00.54
 MEAN 00.53
 SD 00.01

RSD 02.26
 AUTO CAL
 STD 1
 ACT CON 05.00
 ORG CON 05.06
 NEW CON 05.00



GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: J. DUMBLETON

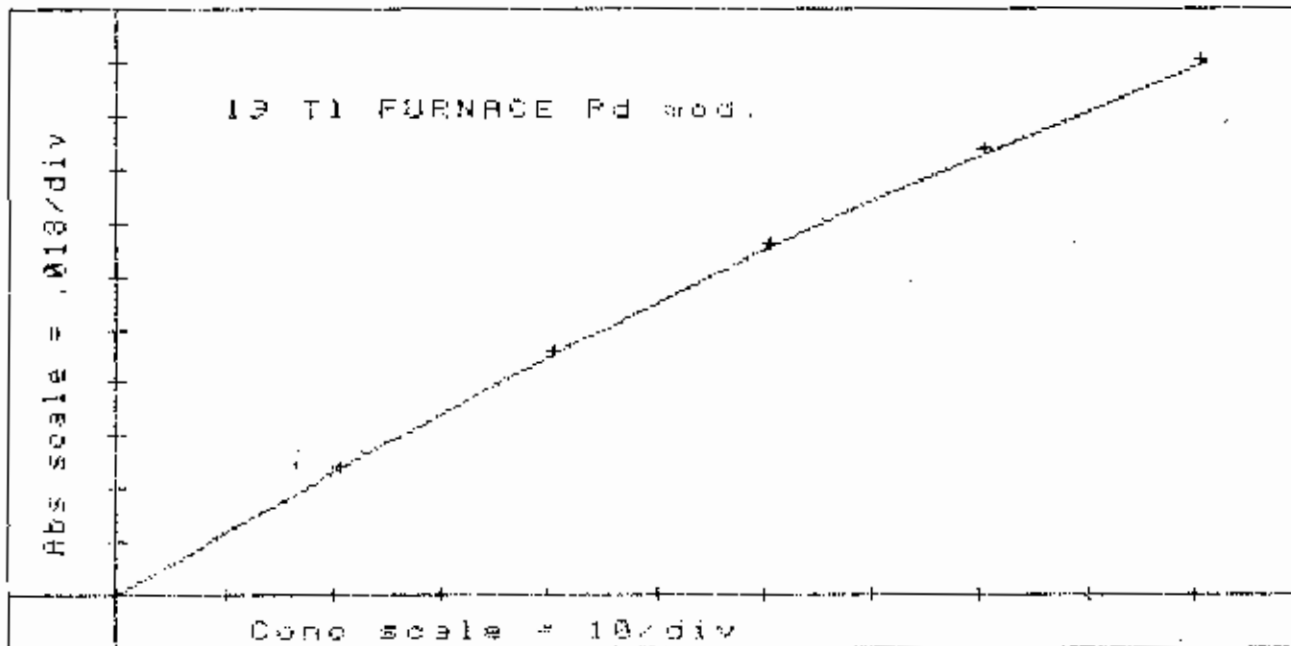
DATE: 07/29/86

BATCH:

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 19 T1 FURNACE Pd mod.

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	SLOPE FACTOR
BLANK	0.000	0.0%	-0.004	-0.004-0.004	1.000
STANDARD 1	20.00	2.4%	0.041	0.042 0.040	1.000
STANDARD 2	40.00	1.3%	0.080	0.080 0.081	1.000
STANDARD 3	60.00	0.9%	0.117	0.116 0.118	1.000
STANDARD 4	80.00	0.0%	0.148	0.148 0.148	1.000
STANDARD 5	100.0	1.1%	0.178	0.180 0.177	1.000



WP581 1	26.55	3.7%	0.054	0.056 0.053	1.000
WP501 2x10	44.18	0.3%	0.124	0.124 0.124	1.000

IDL 1	51.21	3.0%	0.101	0.102	0.100	1.000
"	49.59	3.1%	0.098	0.101	0.096	1.000
"	49.59	3.1%	0.098	0.102	0.095	1.000
4	52.30	4.9%	0.103	0.100	0.107	1.000
5	46.90	2.2%	0.093	0.095	0.092	1.000
6	48.51	2.1%	0.096	0.098	0.095	1.000
7	51.76	2.9%	0.102	0.105	0.100	1.000
BLK	0.000	0.0%	0.000	0.000	0.001	1.000
BS	19.51	12.5%	0.040	0.044	0.037	1.000
61024-A	4.878	10.0%	0.010	0.009	0.011	1.000
61024-A(OC)	5.365	9.1%	0.011	0.010	0.012	1.000
SPK	21.00	4.7%	0.043	0.045	0.041	1.000
BS	20.50	4.8%	0.042	0.041	0.044	1.000
BLANK	0.000	0.0%	-0.001	-0.001	-0.001	1.000
RESLOME	36.33	1.4%	0.073	0.073	0.074	1.1
WPSB1 1	28.64	1.9%	0.053	0.052	0.054	1.1
WPSB1 2*10	69.93	3.3%	0.123	0.126	0.120	1.1
61024 B	4.829	11.1%	0.009	0.010	0.008	1.1
SPK	22.55	11.9%	0.042	0.046	0.039	1.1
61024 C	5.902	18.2%	0.011	0.013	0.009	1.1
SPK	19.85	0.0%	0.037	0.037	0.037	1.1
61024 D	3.756	71.4%	0.007	0.011	0.003	1.1
SPK	20.92	2.6%	0.039	0.039	0.040	1.1
61024 E	5.902	36.4%	0.011	0.008	0.014	1.1
SPK	22.00	2.4%	0.041	0.042	0.040	1.1
61024 F	3.756	14.3%	0.007	0.008	0.007	1.1
SPK	19.85	5.4%	0.037	0.039	0.035	1.1
61024 G	4.292	0.0%	0.008	0.008	0.008	1.1
SPK	22.00	4.9%	0.041	0.040	0.043	1.1

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D.DUMBLETON
 DATE: 07/29/86
 BATCH:

WEIGHT AND/OR DILLUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	TI ug/l
WPSB1 1	26.55
WPSB1 2*10	64.13
IDL 1	51.21
2	49.59
3	49.59
4	52.30
5	46.90
6	48.51
7	51.76
BLK	0.000
BS	19.51 (11%)
61024-A	4.878 > <0.01
61024-A(OC)	5.365
SPK	21.00 (05%)
BS	20.50 (02%)
WPSB1 1	28.64
WPSB1 2*10	69.93
61024 B	4.829 <0.01

5	46.90
6	48.51
7	51.76
BLK	0.000
26	19.51 98%
61024-A	4.878 > <0.01
61024-A(DC)	5.365
SPK	21.00 105%
BS	20.50 102%
WF581 1	28.64
WF581 2*10	69.93
61024 B	4.829 <0.01
SPK	22.55 112%
61024 C	5.902 <0.01
SPK	19.85 99%
61024 D	3.756 <0.01
K	20.92 104%
61024 E	5.902 <0.01
SPK	22.00 110%
61024 F	3.756 <0.01
SPK	19.85 99%
61024 G	4.292 <0.01
SPK	22.00 110%

[Faint, illegible text at the bottom of the page, possibly bleed-through or a very light scan of another page.]

QUALITY CONTROL

PA #	True Value	Recovery	% Recovery
WP 581 1	0.0252	0.0266 0.0286	106 113
WP 581 2	0.063	0.0642 0.0659	102 111

ACCURACY: SPIKED RECOVERY ANALYSIS Control Limit: _____
 Warning Limit: _____

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
BLK SPK	0.0195	<0.010	0.0195	0.020	98
BLK SPK	0.0205	<0.010	0.0205	0.020	102
61024-A	0.0210	<0.010	0.0210	0.020	105

PRECISION: DUPLICATE ANALYSIS Control Limit: _____
 Warning Limit: _____

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{1A-B1}{(A+B)} \times 200$
61024-A	<0.01	<0.01	NC

Subpart G19: Tin

METAL Sr(cc) DATE 5/20/86 ANALYST MH REVIEWER W. H. H. 5/22/86
 INSTRUMENT (AA) 286.3 nm Voltage 530 V
 Current 5 a Split 0.5 nm Integ. 4 sec
 ANALYSIS METHOD
 Flame Hydride
 Gas 1 Acid HCl
 Reduc. NaBH₄

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	0.050	0.100	0.030	0.020	0.010
<u>5/20</u>	Absorbance	0.157	0.463	0.061	0.045	0.017
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>NONE</u>						

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION				FINAL CONCENTRATION	
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
Blk 5/5	<0.01							
B.S.	0.052		104%					0.23
60971A	0.022	1/10					0.227	
AQP	0.023	1/10					0.231	
ASPK	0.026	1/10	spiked too low					
Blk 5/15	<0.01							
B.S.	0.050		100%					
61024A	0.024	0.024						
AQP	0.023							
ASPK	0.071							
B	0.028	✓						
C	0.030	✓						
D	0.022	✓						
E	0.024	✓						
F	0.019	✓						
G	0.022	✓						
Blk 5/20	<0.01							
B.S.	0.044							
61070	0.023	1/10	0.23					
DQP	0.023	1/10	0.23					
SPK	0.037	1/10	0.37					? spiked too low?
G 3	0.043	1/10	0.43					
DQP	0.047	1/10	0.47					
SPK			spiked too low					

DETAILS ANALYSIS DATA SHEET

REV. 299

METAL Sn DATE 6/20/86 ANALYST MM REVIEWER RL 623

INSTRUMENT (AA)

ANALYSIS METHOD

Wavelength 286.3 nm Voltage 620 V
 Current 6 A Split 0.5 nm
 D₂ OFF Integ. 1 sec
 Flame Hydride
 Gas 1 Acid HCl
 Reduc. NaBH₄

INITIAL CALIBRATION

STANDARDS:

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	0.050	0.100	0.030	0.020	0.010
<u>610</u>	Absorbance	0.164	0.286	0.0110	0.055	0.035
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>NONE</u>						

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION		
Sample #	Conc. ug/ml	D.F.	Final ug/ml	F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
<u>Blk 5/19</u>	<u><0.01</u>						<u><0.01</u>	
<u>B.S. (0.05)</u>	<u>0.053</u>		<u>106%</u>				<u>0.053</u>	
<u>61025A</u>	<u><0.01</u>			<u>200</u>	<u>2.16</u>			<u><1 ug/g</u>
<u>AQC</u>	<u><0.01</u>				<u>2.18</u>			<u><1 ug/g</u>
<u>A(0.50)</u>	<u>0.057</u>		<u>114%</u>		<u>2.01</u>			<u>5.67/4.98 = 114%</u>
<u>B</u>	<u><0.01</u>				<u>2.19</u>			<u><1 ug/g</u>
<u>C</u>	<u><0.01</u>				<u>2.07</u>			<u><1 ug/g</u>
<u>D</u>	<u><0.01</u>				<u>2.02</u>			<u><1 ug/g</u>
<u>E</u>	<u><0.01</u>				<u>2.07</u>			<u><1 ug/g</u>
<u>F</u>	<u><0.01</u>				<u>2.10</u>			<u><1 ug/g</u>
<u>G</u>	<u><0.01</u>				<u>2.00</u>			<u><1 ug/g</u>
<u>H</u>	<u><0.01</u>			<u>✓</u>	<u>2.03</u>			<u><1 ug/g</u>
<u>Blk 6/10</u>	<u><0.01</u>						<u><0.01</u>	
<u>B.S.</u>	<u>0.048</u>		<u>96%</u>				<u>0.048</u>	
<u>61336</u>	<u><0.01</u>						<u><0.01</u>	<u>✓</u>
<u>QC</u>	<u><0.01</u>						<u><0.01</u>	<u>✓</u>
<u>SPK</u>	<u>0.046</u>		<u>92%</u>				<u>0.046</u>	

Subpart G20: Zinc

GENERAL TESTING CORP WORKING TO KEEP OUR ENVIRONMENT CLEAN

LABORATORY # 30
 DATE # 7/21/86
 ANALYSIS # Zn and Pb

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 14 Zn

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	SLOPE FACTOR
----------	--------------	-----	----------	---------------------	-----------------

CONC 44-975 ERROR

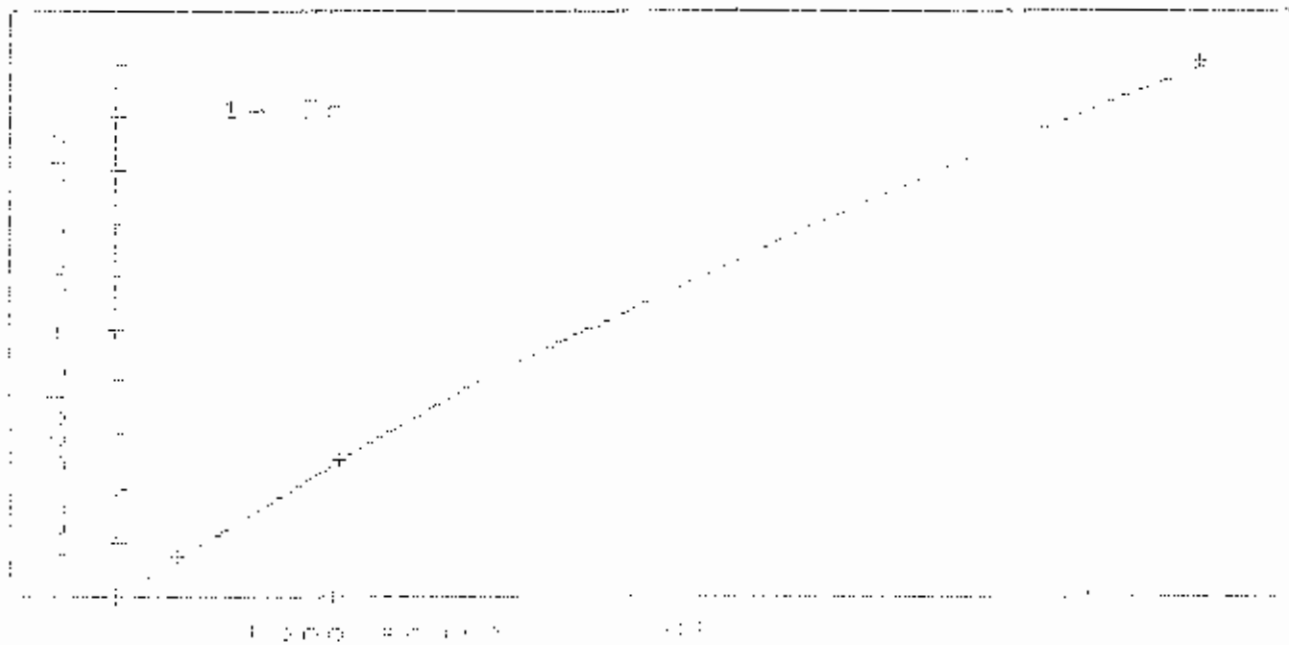
GENERAL TESTING CORP WORKING TO KEEP OUR ENVIRONMENT CLEAN

LABORATORY # 37
 DATE # 7/21/86
 ANALYSIS # Zn and Pb

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 14 Zn

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	SLOPE FACTOR
BLANK	0.000	0.0%	0.004	0.004 0.004 0.004	1.000
STANDARD 1	0.050	0.0%	0.020	0.020 0.020 0.020	1.000
STANDARD 2	0.100	2.6%	0.039	0.040 0.040 0.038	1.000
STANDARD 3	0.200	1.0%	0.078	0.077 0.079 0.077	1.000
STANDARD 4	0.400	0.7%	0.147	0.148 0.147 0.146	1.000
STANDARD 5	1.000	0.3%	0.318	0.318 0.317 0.317	1.000



SOLUTION	COND	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	0.00%	0.007	0.049 0.050 0.042	1.000
STANDARD 1	0.100	15.7%	0.006	0.005 0.007 0.007	1.000
STANDARD 2	0.200	15.7%	0.012	0.014 0.014 0.017	1.000
STANDARD 3	0.400	15.7%	0.024	0.024 0.024 0.027	1.000
STANDARD 4	0.800	15.7%	0.048	0.048 0.048 0.051	1.000
STANDARD 5	1.600	15.7%	0.096	0.096 0.096 0.101	1.000
STANDARD 6	3.200	15.7%	0.192	0.192 0.192 0.201	1.000
STANDARD 7	6.400	15.7%	0.384	0.384 0.384 0.401	1.000
STANDARD 8	12.800	15.7%	0.768	0.768 0.768 0.801	1.000
STANDARD 9	25.600	15.7%	1.536	1.536 1.536 1.601	1.000
STANDARD 10	51.200	15.7%	3.072	3.072 3.072 3.201	1.000
STANDARD 11	102.400	15.7%	6.144	6.144 6.144 6.401	1.000
STANDARD 12	204.800	15.7%	12.288	12.288 12.288 12.801	1.000
STANDARD 13	409.600	15.7%	24.576	24.576 24.576 25.601	1.000
STANDARD 14	819.200	15.7%	49.152	49.152 49.152 51.201	1.000
STANDARD 15	1638.400	15.7%	98.304	98.304 98.304 102.401	1.000
STANDARD 16	3276.800	15.7%	196.608	196.608 196.608 204.801	1.000
STANDARD 17	6553.600	15.7%	393.216	393.216 393.216 409.601	1.000
STANDARD 18	13107.200	15.7%	786.432	786.432 786.432 819.201	1.000
STANDARD 19	26214.400	15.7%	1572.864	1572.864 1572.864 1638.401	1.000
STANDARD 20	52428.800	15.7%	3145.728	3145.728 3145.728 3276.801	1.000

AUTO-PROGRAM 15 Ni

SOLUTION	COND	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	0.00%	0.007	0.049 0.050 0.042	1.000
STANDARD 1	0.100	15.7%	0.006	0.005 0.007 0.007	1.000

GENERAL TESTING CORP WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-775
 OPERATOR: JS
 DATE: 7/21/85
 ATCH: Zn and Cd

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH X

SOLUTION	Zn mg/L	Ni mg/L	REMARKS
WP284 1x1	0.015	75%	
WP284 0	0.400	96%	
BLK 5/19	0.002	<.01	
BS	0.487	97%	
61024-A	0.750		
61024-A(100)	0.920		> 0.843 spike too low
61024-A(500)	0.559		
61024-B	0.507		
61024-C	0.857		
61024-D	0.649		
61024-E	0.919		
61024-F	0.784		
61024-G	0.555		
WP284 1x2	0.007		
WP284 0	0.400	96%	
BLK 7/11	0.000	<.04	
BS	0.037	74%	
WP284 1x2	0.012		
SAMPLE 19	0.007		
SAMPLE 20	0.040	84%	

GENERAL TESTING CORP WORKING TO KEEP OUR ENVIRONMENT CLEAN

GENERAL TESTING CORP
 1000 W. 10th St.
 Des Moines, IA 50319

QUALITY CONTROL

Zn

EPA #	True Value	Recovery	% Recovery
WP284 1x2	0.020	0.015	75%
WP284 2	0.418	0.403 0.400	96% 96%

ACCURACY:

SPIKED RECOVERY ANALYSIS

Control Limit: _____

Warning Limit: _____

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
BS 5/19	0.487	<.01	0.487	0.500	97
BS 5/20	0.042	<.01	0.042	0.050	84

PRECISION:

DUPLICATE ANALYSIS

Control Limit: _____

Warning Limit: _____

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{ A-B \times 200}{A+B}$
61024-A	0.763	0.923	19

$\frac{160}{1686}$

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

MARIANA AA-975
 OPERATOR: MM
 DATE: 6/16/86
 BATCH:

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS WITH *

SOLUTION	Zn ppm
WP 117B 1x2	0.717
WP 204 2	0.400/0.418 96%
61376	0.823 > 0.827 ✓
QC	0.831
SPK	0.928 spiked too low
61384-A	0.078
A QC	0.084 > 0.081 ✓
A SPK	0.122 - 0.081 = 0.041 82%
61335	0.017 ✓
61335-A	0.081 ✓
61184 1/10	0.786 7.86 ✓
BLM 6/12	0.010
ES	0.056 - 0.010 = 0.046 92%
61208-C	0.053
C QC	0.050 > 0.052 ✓
C SPK	0.092 - 0.052 = 0.041 82%
5720-A	0.614 59 ug/g ✓
5720-B	> see below
B	0.526 5.1 ug/g ✓
1x2	0.018/0.020 90% ✓
2	0.170
61306-G	>
G QC	>
G SPK	>
BLM 6/9	0.003 < 0.01
ED	0.059 116%
5299-B	>
B QC	>
B SPK	>
5498-B	>
51028 2	0.151 59 ug/g > 60
2 QC	0.164 60 ug/g
2 SPK	0.160 spiked too low
61170-1	>
61306-G 1/2	1.016 980 ug/g > 990 ✓
6QC 1/2	1.036 1000 "
6SPK 1/2	0.982 spiked too low
5720A 1/10	0.310 300 ug/g ✓

ITB

WP 1172 1*2	0.014	28.0%	0.004	0.005	0.004	0.003	1.000
WP 284 2	0.400	0.9%	0.108	0.108	0.108	0.110	1.000
61336	0.822	1.0%	0.207	0.207	0.210	0.206	1.000
BC	0.831	0.5%	0.209	0.210	0.208	0.209	1.000
SPK	0.928	0.0%	0.230	0.230	0.230	0.230	1.000
61324-A	0.072	4.3%	0.023	0.024	0.024	0.023	1.000
A BC	0.024	4.0%	0.025	0.026	0.025	0.026	1.000
A SPK	0.122	0.0%	0.037	0.037	0.038	0.037	1.000
61335	0.017	0.0%	0.005	0.005	0.005	0.005	1.000
61350-A	0.061	8.3%	0.024	0.023	0.027	0.024	1.000
61184 1/10	0.706	1.0%	0.199	0.201	0.200	0.196	1.000
BLK 6/12	0.010	0.0%	0.003	0.003	0.004	0.003	1.000
BS	0.056	6.3%	0.016	0.016	0.017	0.017	1.000
61208-C	0.032	0.0%	0.015	0.015	0.016	0.015	1.000
C BC	0.050	7.1%	0.014	0.014	0.014	0.016	1.000
C SPK	0.092	0.0%	0.028	0.028	0.028	0.028	1.000
5746-2	0.614	0.8%	0.160	0.151	0.161	0.157	1.000
5750-6	0.218	1.6%	0.061	0.061	0.062	0.062	1.000
5770-A	> 2	0.8%	0.520	0.520	0.516	0.524	1.000
2	0.526	2.2%	0.137	0.136	0.142	0.140	1.000
BLANK	0.000	0.0%	-0.001	-0.001	-0.001	-0.002	1.000
RESLIFE	0.096	0.0%	0.029	0.030	0.029	0.029	1.041
1*2	0.018	20.0%	0.005	0.007	0.006	0.004	1.041
2	0.170	114.6%	0.043	0.000	0.035	0.109	1.041
61706-B	> 3	0.3%	0.744	0.747	0.744	0.743	1.041
B BC	> 3	0.1%	0.750	0.751	0.752	0.749	1.041
B SPK	> 3	0.3%	0.741	0.741	0.739	0.743	1.041
BLK 6/9	0.003	100.0%	0.001	0.003	0.001	0.001	1.041
BS	0.058	6.3%	0.016	0.016	0.017	0.017	1.041
5699-B	> 3	0.1%	0.810	0.810	0.809	0.811	1.041
B BC	> 3	0.1%	0.831	0.830	0.832	0.832	1.041
B SPK	> 3	0.4%	0.822	0.822	0.819	0.825	1.041
5698-B	> 1	0.7%	0.790	0.288	0.791	0.292	1.041
61025-A	0.591	0.7%	0.149	0.149	0.150	0.150	1.041
A BC	0.604	0.7%	0.152	0.122	0.151	0.154	1.041
A SPK	0.560	0.7%	0.142	0.140	0.143	0.143	1.041
61025-C	> 3	0.1%	0.879	0.879	0.881	0.879	1.041
3	1.026	0.5%	0.244	0.247	0.243	0.244	1.041
3	1.034	0.5%	0.244	0.242	0.243	0.247	1.041
3	0.961	7.1%	0.233	0.228	0.233	0.235	1.041
3	0.310	1.0%	0.080	0.082	0.083	0.081	1.041
3	> 1	0.8%	0.370	0.364	0.372	0.373	1.041
BLANK	0.000	0.0%	0.001	0.001	0.002	0.001	1.041

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

✓ 5/23/86

VARIAN AA-975
OPERATOR: NH
DATE: 6/16/86
BATCH:

MM 6/19/86

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 14 Zn

SOLUTION	CONC ppm	RSD	MEAN ABS	ABSORBANCE READINGS	REGSLOPE FACTOR
----------	-------------	-----	----------	---------------------	--------------------

CORRECT AA-975 ERROR

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

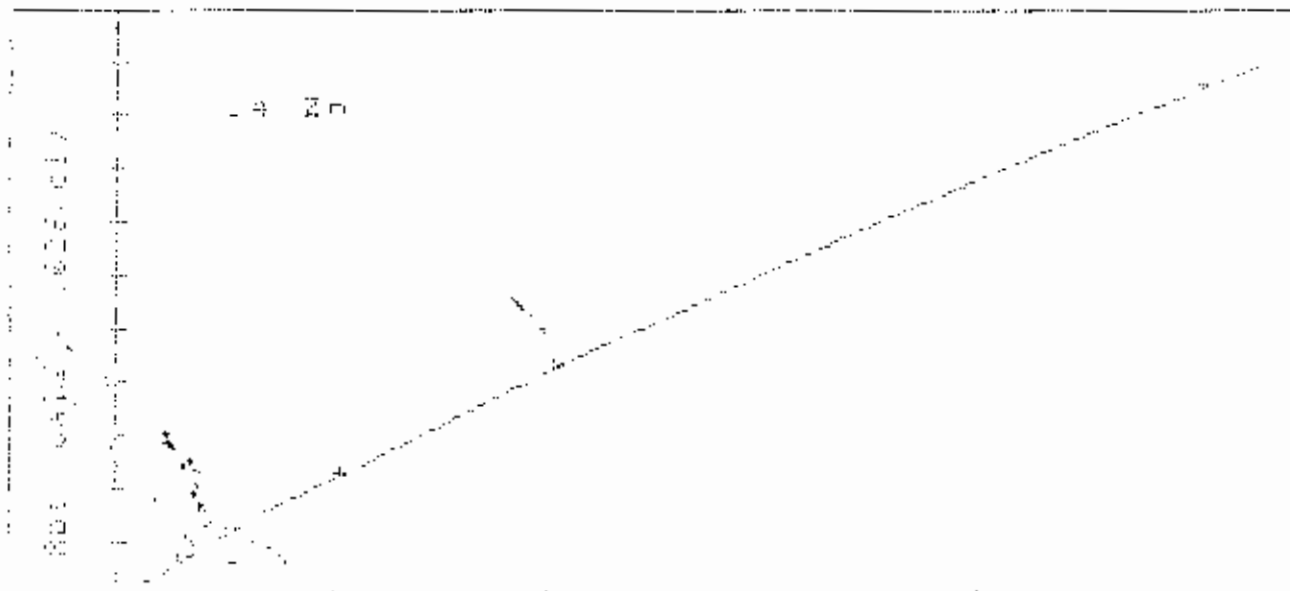
VARIAN AA-975
OPERATOR: MM
DATE: 6/16/86
BATCH:

WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 14 Zn

SOLUTION	CONC ppm	RSD	MEAN ABS	ABSORBANCE READINGS	REGSLOPE FACTOR
----------	-------------	-----	----------	---------------------	--------------------

BLANK	0.000	33.3%	0.003	0.005 0.003 0.003	1.000
STANDARD 1	0.050	7.1%	0.014	0.013 0.015 0.015	1.000
STANDARD 2	0.100	3.3%	0.030	0.029 0.031 0.031	1.000
STANDARD 3	0.200	3.6%	0.056	0.054 0.058 0.056	1.000
STANDARD 4	0.400	0.9%	0.108	0.107 0.108 0.109	1.000
STANDARD 5	1.000	0.4%	0.265	0.244 0.247 0.245	1.000



REGRESSION EQUATION =

Zn

307

QUALITY CONTROL

PA #	True Value	Recovery	% Recovery
WP 282 Z	0.418	0.400	96%
WP 1178 IXZ	0.020	0.018	90%

ACCURACY:

SPIKED RECOVERY ANALYSIS

Control Limit: _____

Warning Limit: _____

6/16

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
61354-A SPK	0.122	0.081	0.041	0.05	82%
B.S. 6/12	0.056	0.010	0.046	0.05	92%
61208-C SPK	0.093	0.052	0.041	0.05	82%
B.S. 6/9	0.058	<0.01	0.058	0.05	116%

PRECISION:

DUPLICATE ANALYSIS

Control Limit: _____

Warning Limit: _____

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{1A-B1}{(A+B)} \times 200$
61336	0.822	0.831	1.1%
61354-A	0.078	0.084	7.4%
61208-C	0.053	0.050	5.8%
61025-A	59 ug/g	60 ug/g	1.7%

Subpart G21: Digestion Records
(Metals)

METALS DIGESTION RECORD

308

Analyst: Mark H

Digestion Procedure: Routines

Date: 5/15/86

Start Time: 7:45

Finish Time: ~~7:00~~ 9:30 5/16

Sample Name & Number	pH	Wgt. or Vol.	Final Vol.	Dry or Wet	Metals to be Analyzed	Amount of Spike And Spiking Solution Number	Comments
Blk no.		200	200		Al, As, Ca, Co, Cr, Fe, Mg, Mn, Ni, Pb, Se, Zn		
B.S. no.		200	200			20ml #3, 10ml #8 2.0ml #1, 2, 5	
URS/O 61024 A	<2	200	200				IFB protocol
A Dup		200	200				
A spt		200	200			10.0ml #3, 4.0ml #8 2.0ml #1, 2, 5	
B	↓	200	200				
C	2	200	200				
D	<2	200	200				
E		200	200				
F	↓	200	200				
G	2	200	200				
WCC-OB 5412 A	↑	200	200		Ba, Ca, Cr, Mg, Na Cd, Co, Cu, Fe, Mn, Ni, Pb, Zn		
B		200	200				
B Dup		200	200				
B spt	↓	200	200			10.0ml #3 2.0ml #1, 2, 5	
Blk no.		50	50		Be, Sb, Tl, As		
B.S. no.		50	50			500 ul #4.5	
URS/O 61024 A	<2	50	50				IFB protocol
B	<2	50	50				
C	2	50	50				
C Dup		50	50				
C spt	↓	50	50			500 ul #4.5	
D	<2	50	50				
E		50	50				
F	↓	50	50				
G	2	50	50				

METALS DIGESTION RECORD

AKL
5/19/86
pg 1 of 3
309

Analyst: Julie Digestion Procedure: Routine
Date: 5/19/86 Start Time: 10:15 AM Finish Time: _____

Sample Name & Number	pH	Wgt. of Vol.	Final Vol.	Dry or Wet	Metals to be Analyzed	Amount of Spike And Spiking Solution Number	Comments
BLK ₁		200	200	wet	Al, Ba, Ca, K, Co, Mg, Mn, Na, V, Sn		
BLKspk ₁		200	200				
^{100%} 1061025 A		2.16g	200	wet	Al, Ba, Ca, K, Co, Mg, Mn, Na, V, Sn		
Adp		2.18	200	wet			
Aspk		2.01	200	wet			
B		2.19	200	wet			
C		2.07	200	wet			
D		2.02	200	wet			
E		2.07	200	wet			
F		2.10	200	wet			
G		2.00	200	wet			
H		2.03	200	wet			
BLK ₂		100	100		Ca, Cr, Cu, Fe, Ni, Pb, Zn		
BLKspk ₂		100	100				
^{100%} 1061025 A		1.03	100	wet	Ca, Cr, Cu, Fe, Ni, Pb, Zn		
Adp		1.21	100	wet			
Aspk		1.01	100	wet			
B		1.08	100	wet			
C		1.01	100	wet			
D		1.07	100	wet			
E		1.01	100	wet			
F		1.02	100	wet			
G		1.01	100	wet			
H		1.02	100	wet			

METALS DIGESTION RECORD

pg 2 of 3
310

Analyst: John Digestion Procedure: _____

Date: 5/19/84 Start Time: _____ Finish Time: _____

Dry or Wet final vol.

Sample Name & Number	pH	Wgt. or Vol.	Final Vol.	Dry or Wet	Metals to be Analyzed	Amount of Spike And Spiking Solution Number	Comments
BLK ₁₀₀		50	50		Be, Ti		
BLK _{100pk}		50	50		↓		
^{rs} /D 61025A		0.53	wet	50	Be, Ti		
VADP		0.53	wet	50			redo 5/20
Asp		0.53	wet	50			
B		0.57	wet	50			
C		0.55	wet	50			
D		0.52	wet				
E		0.57	wet	50			redo 5/20
F		0.56	wet	50			
G		0.54	wet	50			
H		0.51	wet	50			
BLK ₃		50			Ag		
BLK _{3pk}		50		50	↓		
^{rs} /D 61025A		0.50	wet	50	Ag		
Adp		0.54	wet	50			
Asp		0.51	wet	50			
B		0.50	wet	50			
C		0.50	wet	50			
D		0.52	wet	50			
E		0.53	wet	50			
F		0.52	wet	50			
G		0.50	wet	50			
H		0.53	wet	50	↓		

Subpart G22: Cyanide

general testing corporation



CYANIDE

water and wastewater testing specialists

710 Exchange Street
Rochester, NY 14606
(716) 454-3760

85 Trinity Place
Hackensack, NJ 07601
(201) 488-5242

311

Job Number	Company Name	Peak Ht.	mg/l	Org. Vol.	Final Vol.	Conc. Factor	Total Cn	Fixed Cn	Free Cn
1									
2	Blank	5.0							
3	.02	7.0							
4	.05	11.5							
5	1	17.9							
6	2	33.3							
7	4	66.2							
8	7	96.1							
9	Blank	5.0							
10	2	33.8							
11	Blank Spk Auto Analyzer 10ml 50% fcpp	11.5	0.052	500	250	2.0	0.050		
12	685610E4A U.S.	18.0	0.040	300	250	1.2	1.03	33.4	
13	Dist. Dup A	5.4	0.040	300	250	1.2	1.02	<10	
14	Dist. Spk A	11.4	0.049	300	250	1.2			
15	B	5.2	0.020	500	250	2.0	<0.02	<10	
16	C	5.6	0.020	500	250	2.0	<0.02	<10	
17	D	5.6	0.020	500	250	2.0	<0.02	<10	
18	E	6.2	0.020	500	250	2.0	<0.02	<10	
19	F	7.9	0.026	500	250	2.0	<0.02	13.4	
20	G	7.2	0.022	500	250	2.0	<0.02	11.5	
21	Blank	4.7							
22	7	34.2	0.200						
23	Dist. Blank Spk	16.7	0.087	500	250	2.0			
24	61p 25 A	5.5	0.020	920	250	3.68	<0.54		
25	Dist. Dup A	4.8	0.020	920	250	3.68	<0.54		
26	Dist. Spk A	14.5	0.087	920	250	3.68	1.57		
27	A	5.0	<0.02	10.4g	250		<0.48		
28	Dup B	4.6	<0.02						
29	Spk B	20.2	0.11						
30	C	5.3	<0.02	10.4g	250		<0.45		
31	D	4.7	<0.02	10.4g	250		<0.48		
32	E	4.7	<0.02	10.4g	250		<0.48		
33	Blank	4.6							
34	2	34.5	0.211						
35	F	5.9	<0.02	10.4g	250		<0.48		
36	G	5.4	<0.02	10.4g	250		<0.50		
37	H	5.5	<0.02	10.4g	250		<0.48		
38	Blank	4.6							
39	2	34.4	0.210						
40									

Analyst Name: J.A.

Date Analyzed: 5/21/86

Stock #: 1027

Date Standardized: 5/8/86

1.) ppm of Distillate; 2.) Volume of Sample; 3.) Volume of Distillate;

4.) 3/2 5.) All Cn 6.) Cn-After Treatment 7.) 5-6

general testing
corporation

water and wastewater testing specialists

710 Exchange Street
Rochester, NY 14608
(716) 454-3780

85 Trinity Place
Hackensack, NJ 07601
(201) 488-5242

CYANIDE DISTILLATION

APPARATUS *	DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACTOR	TCN	FCN
1 12	5-19	61024 A	URS	300	250		✓	
2			Aspk	300			✓	
3			Aspk	300			✓	
4 12			B	500			✓	
5 12			C	500			✓	
6 12			D	500			✓	
7 12			E	500			✓	
8 12			F	500			✓	
9 12			G	500			✓	
10	↓	BLANK	SPIKE	500	↓		✓	
1	5-20	61025 A	URS	9.2g	250		✓	
2			Aspk	9.4g			✓	
3			Aspk	9.0g			✓	
4			B	10.4g			✓	
5			C	11.0g			✓	
6			D	10.4g			✓	
7			E	10.9g			✓	
8			F	10.4g			✓	
9			G	10.0g			✓	
10			H	10.4g	↓		✓	

RESULTS FROM RAW DATA FILE CN-42XX.RAW

DATE 6-24-86

TIME 13:41

METHOD NAME -- CYANIDE
SAMPLE/WASH RATIO - 2.000SAMPLES/HR. -- 20
SAMPLES/REFERENCE - 20REF STANDARD CONC. - "A" .000 "B" .000 "C" .200 "D" .000
CHECK SAMPLE CONC. - "A" .000 "B" .000 "C" .200 "D" .000

*** STANDARDS DATA ***

TRAY POS.	STD #	CHANNEL "A"	CHANNEL "B"	CYANIDE	CHANNEL "D"
3	STD-1	.000	.000	2.000	.000
4	STD-2	.000	.000	6.500	.000
5	STD-3	.000	.000	12.900	.000
6	STD-4	.000	.000	28.300	.000
7	STD-5	.000	.000	55.200	.000
8	STD-6	.000	.000	91.100	.000

*** CHECK SAMPLE RAW RESULTS ***
CHECK SAMPLE I.D. NUMBER ---- .2

9	BLANK SHPL	.00000	.00000	5.0000	.00000
10	CHECK SHPL	.00000	.00000	33.800	.00000

*** RAW DATA RESULTS ***

TRAY #	SHPL.#	CHANNEL "A"	CHANNEL "B"	CYANIDE	CHANNEL "D"
11	11	.000	.000	11.5	.000
12	12	.000	.000	10.0	.000
13	13	.000	.000	5.40	.000
14	14	.000	.000	11.4	.000
15	15	.000	.000	5.20	.000

16	16	.000	.000	5.60	.000
17	17	.000	.000	5.60	.000
18	18	.000	.000	6.20	.000
19	19	.000	.000	7.90	.000
20	20	.000	.000	4.70	.000

21	21	.000	.000	34.2	.000
22	22	.000	.000	16.7	.000

24	24	.000	.000	5.50	.000
25	25	.000	.000	4.20	.000

315

*** RAW DATA RESULTS ***

TRAY #	SAMPL. #	CHANNEL "A"	CHANNEL "B"	CYANIDE	CHANNEL "D"
26	26	.000	.000	14.5	.000
27	27	.000	.000	5.00	.000
28	28	.000	.000	4.60	.000
29	29	.000	.000	20.2	.000
30	30	.000	.000	5.30	.000
31	Blank	.000	.000	4.60	.000
32	Ref Std.	.000	.000	34.5	.000

RESULTS FROM REPORT FILE DN-42XX.RPT

DATE 6-24-86

TIME 15:41

METHOD NAME - CYANIDE
 SAMPLE/WASH RATIO - 2.000

SAMPLES/HR. - 20
 SAMPLES/REFERENCE - 20

REF STANDARD CONC. - "A" .000 "B" .000 "C" .200 "D" .000
 CHECK SAMPLE CONC. - "A" .000 "B" .000 "C" .200 "D" .000

*** STANDARDS DATA ***

TRAY POS.	STD #	CHANNEL "A"	CHANNEL "B"	CYANIDE	CHANNEL "D"
3	STD-1	-1.000	-1.000	.020	-1.000
4	STD-2	-1.000	-1.000	.050	-1.000
5	STD-3	-1.000	-1.000	.100	-1.000
6	STD-4	-1.000	-1.000	.200	-1.000
7	STD-5	-1.000	-1.000	.400	-1.000
8	STD-6	-1.000	-1.000	.700	-1.000

*** CHECK SAMPLE RESULTS ***
 CHECK SAMPLE I.D. NUMBER ---- .2

10 CHECK SMPL .000 .000 .203 .000

*** CALIBRATION CURVES APPLIED ***

CHANNEL "A" Y = .00000 X^2 .00000 X + .00000
 CHANNEL "B" Y = .00000 X^2 .00000 X + .00000
 CYANIDE Y = .13248E-04 X^2 .63905E-02 X + .76735E-02
 CHANNEL "D" Y = .00000 X^2 .00000 X + .00000

*** ANALYTICAL RESULTS ***

TRAY	SMPL.#	CHANNEL "A" % Drift	CHANNEL "B" % Drift	CYANIDE % Drift	CHANNEL "D" % Drift
11	11	.000	.000	.497E-01	.000
12	12	.000	.000	.398E-01	.000
13	13	.000	.000	.102E-01	.000
14	14	.000	.000	.487E-01	.000
15	15	.000	.000	.804E-02	.000

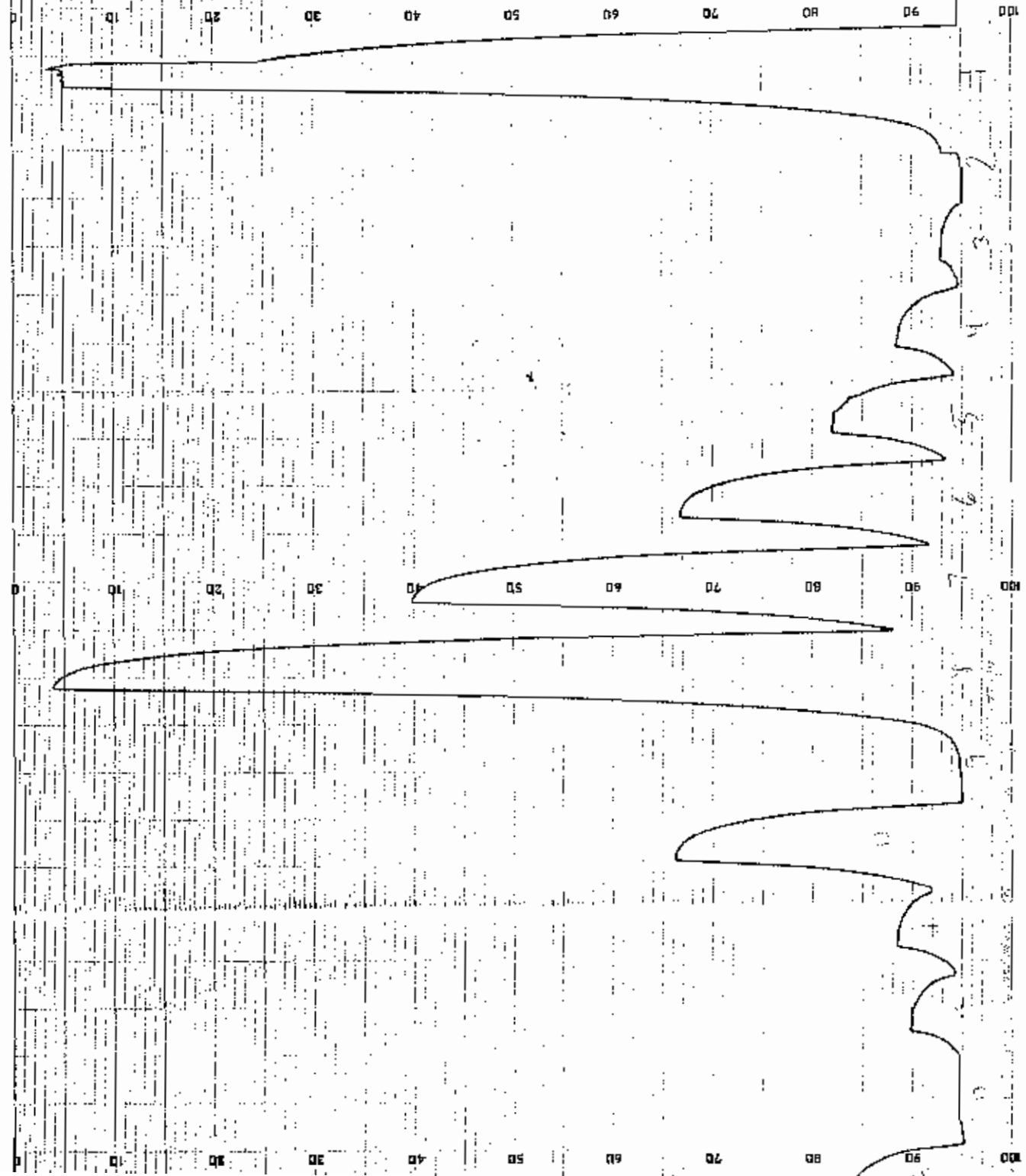
16	16	.000	.000	.115E-01	.000
17	17	.000	.000	.114E-01	.000
18	18	.000	.000	.152E-01	.000
19	19	.000	.000	.259E-01	.000
20	20	.000	.000	.500E-02	.000

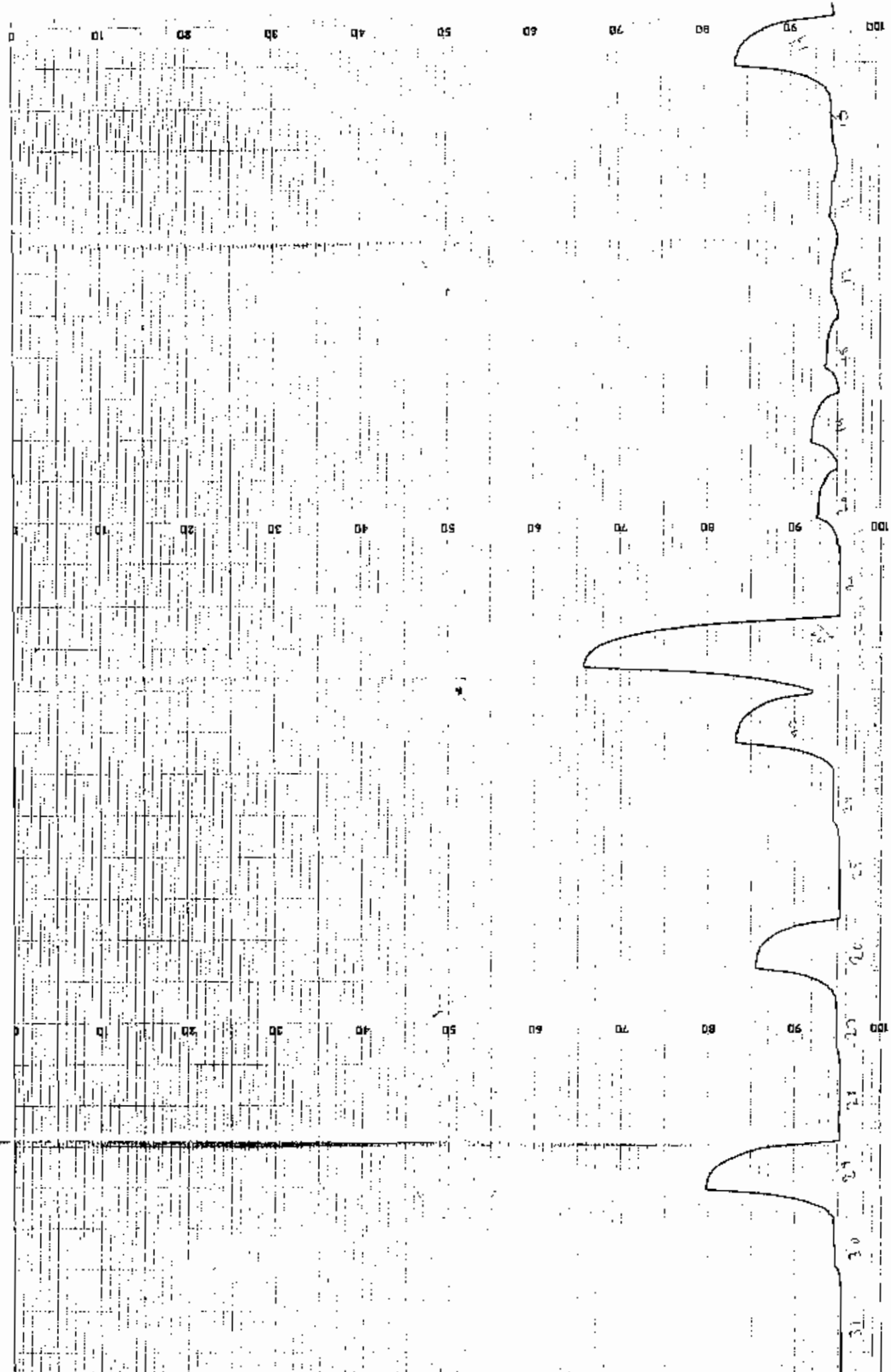
*** ANALYTICAL RESULTS ***

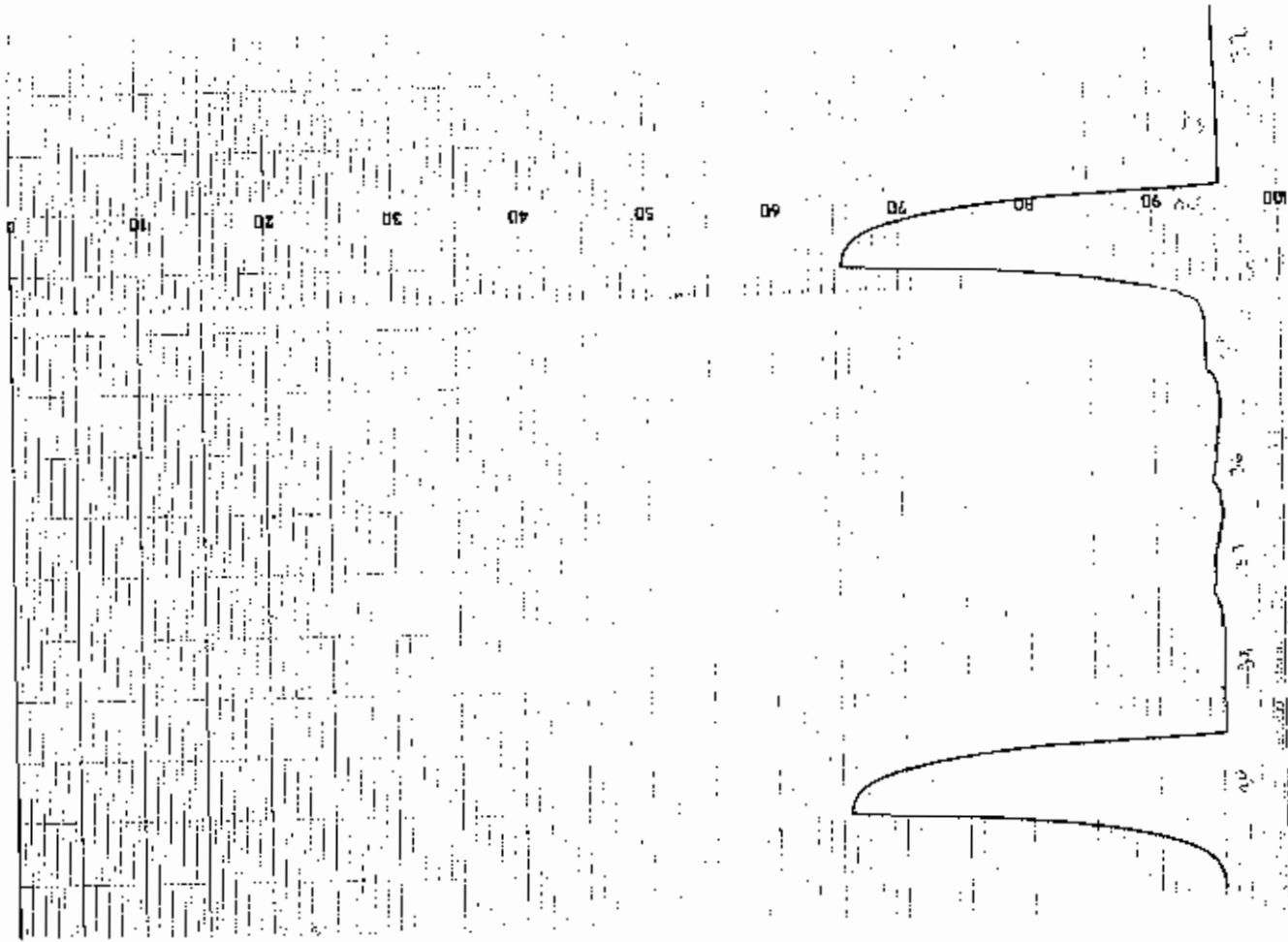
TRAY	SAMPL.#	CHANNEL "A" % Drift	CHANNEL "B" % Drift	CYANIDE % Drift	CHANNEL "D" % Drift				
21	21	.000	.000	.200	.000				
22	22	.000	.000	.820E-01	.000				
23	23	.000	.000	.818E-01	.000				
24	24	.000	.000	.108E-01	.000				
25	25	.000	.000	.644E-02	.000				
26	26	.000	.000	.672E-01	.000				
27	27	.000	.000	.767E-02	.000				
28	28	.000	.000	.523E-02	.000				
29	29	.000	.000	.103	.000				
30	30	.000	.000	.950E-02	.000				
32	Ref Std.	.000	.0	.000	.0	.211	5.2	.000	.0

1111

CN
5/21/86
J.A.







Subpart G23: Phenolics

general testing corporation

910

AUTO ANALYZER ANALYSIS: Phenol
 water and wastewater testing specialists
 Inlet Boat

H. Bush
 5/12/86

321

710 Exchange Street
 Rochester, NY 14608
 (716) 454-3760

85 Trinity Place
 Hackensack, NJ 07601
 (201) 488-5242

NO.	COMPANY	JOB#	STA.	SAMPLE VOL.	PEAK HT.	CORR. PK. HT.	mg.	DIL. FACTOR	N mg/l
1	.15								
2	Blank				0				
3	.005				3.0				
4	.01				6.2				
5	.02				11.6				
6	.05				29.7				
7	.07				41.2				
8	.1				59.4				
9	.15				86.7				
10	Blank				0				
11	EPA#1				59.0		.010		
12	Blank Spk	10ml 50ul at 10ppm			28.2		.041		
13	URS	61024	A	1	1.3		<.005	1	<.005 ✓
14			Dup A	1	1.4		<.005	1	<.005 ✓
15	10ml 50ul at 10ppm		Spk A	1	28.9		.049	1	.049 ✓
16			B	1	0.7		<.005	1	<.005 ✓
17			C	1	1.9		<.005	1	<.005 ✓
18			D	1	1.3		<.005	1	<.005 ✓
19			E	1	1.7		<.005	1	<.005 ✓
20			F	1	2.7		<.005	1	<.005 ✓
21			G	1	2.0		<.005	1	<.005 ✓
22	Blank				0		-	-	-
23	07				41.0		-	-	-
24	Dist URS	61625 *	A	1	1.0	.0015	.063	1	1.18 ug/L ✓
25	Dist		Dup A	1	.6	.0011	.027	1	1.12 ug/L ✓
26	Dist	Dist Spk	Spk A	1	46.2		2.35	1	2.35 ug/L ✓
27	Dist		B	1	1.8		.036	1	1.06 ug/L ✓
28	Dist		C	1	1.3		.023	1	1.05 ug/L ✓
29	Dist		D	1	.7		.012	1	1.04 ug/L ✓
30	Dist		E	1	1.6		.029	1	1.05 ug/L ✓
31	Dist		F	1	9.0		.16	1	1.16 ug/L ✓
32			Dup F	1	9.0		.16	1	1.16 ug/L ✓
33	10ml 50ul at 10ppm		Spk F	1	37.0		.643	1	1.64 ug/L ✓
34	Blank				0		-	-	-
35	.07				40.1		-	-	-
36	Dist		G	1	5.2		.12	1	1.12 ug/L ✓
37	Dist		H	1	3.6		.06	1	1.06 ug/L ✓
38	Blank				0		-	-	-
39	EPA#1				6.9		.012		
40	Blank				0		-	-	-

6/3/86

-1-

J.A.

* Entered as nit

general testing corporation

g t c

AUTO ANALYZER ANALYSIS: Phenol
water and wastewater testing specialists

710 Exchange Street
Rochester, NY 14608
(716) 454-3760

85 Trinity Place
Hackensack, NJ 07601
(201) 488-5242

NO.	COMPANY	JOB#	STA.	SAMPLE VOL.	PEAK HT.	CORR. PK. HT.	mg.	DIL. FACTOR	N mg/l
1	.07				40.3	-	-	-	-
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

-2- J.A.
6/3/86

general testing corporation

water and wastewater testing specialists

710 Exchange Street
Rochester, NY 14608
(716) 454-3780

85 Trinity Place
Hackensack, NJ 07601
(201) 488-5242

PHENOLICS DISTILLATION

DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACT
3/14/86	61015 S U Dup U Spk U V	ETC 2ml of 10 ppm + 18ml DI	20gr + 250ml 10gr + 250ml 10gr + 250ml 10gr + 250ml 20gr + 250ml	200ml 200ml 200ml 200ml 200ml	
1/16/86	61051 A B C D	ETC	5gr + 250ml 5gr + 250ml 14gr + 250ml 5.8gr + 250ml	200ml 200ml 200ml 200ml	
5/22/86	URS/Daton A Dup A Spk A	2ml 10 ppm + 18ml DI	568gr + 250ml DI 85gr + 250ml DI 6.76gr + 250ml DI	200ml 200ml 200ml	
5/27/86	URS B C D		17.61 + 250ml DI 20.87 + 250ml DI 21.74gr + 250ml DI	200ml 200ml 200ml	
5/28/86	E F G		14.62gr + 250ml DI 25.02gr + 250ml DI 14.68gr + 250ml DI	200ml 200ml 200ml	
5/12/86	H 5699 B 5699 B 5699 B		20.71gr + 250ml DI 20gr + 250ml DI 20gr + 250ml DI	200ml 200ml 200ml	

WET CHEM QUALITY CONTROL WORKSHEET

1.) Linear Regression (if applicable)

1. Std's deleted: None
 2. Corr. Coefficient: .9999

3.) Precision (duplicates, one for every ten samples run)

Job #	Analytical Value #1	Analytical Value #2	$\frac{[A1-A2] \times 100}{Ave.}$	Dilution	Within Limits (y or n)
1024A	<.005	<.005	-	-	-
1025A Det	<.18	<.12	-	-	-
1025F	.16	.16	0/16 0%	1	Y

4.) Spiked Recovery (one for every ten samples run)

Job #	(B) Ave. Analytical Value of Sample	Mg spike added	(C) Sample Volume	mg/l of Spike	(A) Analytical Value of Spiked Sample	$\frac{A-B}{C} \times 100$	Within Limits (y or n)
1024A	<.005	5ul of 10ppm	10ml	.050	.049	$\frac{.049}{.05} 98\%$	Y
1025A Det	<.15	2ml of 10ppm	19ml	.100	.079	$\frac{.079}{.10} 79\%$	N
1025F	.16	5ul of 10ppm	10ml	.500	.643	$\frac{.643}{.50} 128.6\%$	Y
Blk	<.005	5ul of 10ppm	10ml	.050	.048	$\frac{.048}{.05} 96\%$	Y

5.) EPA Check Sample Recovery

EPA #	True Value	Value Obtained	% Recovery	Within Limits(y or n)
EPA#1	.012	.010	83.3%	N
		.012	100%	Y

- 6.)
- All QC Calculations to 3 sig. fig.
 - Duplicates out of limits (on Ave.) disqualify run
 - Spiked blanks out of limits (on Ave.) disqualify run
 - EPA Rec. out of limits (on Ave.) disqualify run.
 - Spiked samples out of limits - repeat sample and all others similar.

RESULTS FROM RAW DATA FILE ONE-226.RAW

DATE 11-1-84

TIME 15: 9

METHOD NAME - PHENOL
SAMPLE/WASH RATIO - 1.000SAMPLES/IR - 10
SAMPLES/REFERENCE - 10REF STANDARD COND. "A" .000 "B" .000 "C" .070 "D" .000
CHECK SAMPLE COND. - "A" .000 "B" .000 "C" .000 "D" .000

*** STANDARDS DATA ***

TRAY #05.	STD #	CHANNEL "A"	CHANNEL "B"	PHENOL	CHANNEL "D"
3	STD-1	.000	.000	3.000	.000
4	STD-2	.000	.000	6.200	.000
5	STD-3	.000	.000	11.600	.000
6	STD-4	.000	.000	29.700	.000
7	STD-5	.000	.000	41.200	.000
8	STD-6	.000	.000	58.900	.000
9	STD-7	.000	.000	86.700	.000

*** CHECK SAMPLE RAW RESULTS ***
CHECK SAMPLE I.D. NUMBER ---- .012

10	BLANK SMPL	.00000	.00000	.00000	.00000
11	CHECK SMPL	.00000	.00000	6.0000	.00000

*** RAW DATA RESULTS ***

TRAY #	SMPL.#	CHANNEL "A"	CHANNEL "B"	PHENOL	CHANNEL "D"
12	12	.000	.000	28.2	.000
13	13	.000	.000	1.30	.000
14	14	.000	.000	1.40	.000
15	15	.000	.000	28.7	.000
16	16	.000	.000	.700	.000

17	17	.000	.000	1.90	.000
18	18	.000	.000	1.30	.000
19	19	.000	.000	1.70	.000
20	20	.000	.000	2.70	.000
21	21	.000	.000	2.00	.000

22	Blank	.000	.000	.000	.000
23	Ref. Std.	.000	.000	41.0	.000
24	24	.000	.000	1.00	.000
25	25	.000	.000	.600	.000
26	26	.000	.000	46.2	.000

*** RAW DATA RESULTS ***

TRAC	SAMPL #	CHANNEL "A"	CHANNEL "B"	PHENDL	CHANNEL "D"
27	27	.000	.000	1.80	.000
28	28	.000	.000	1.30	.000
29	29	.000	.000	.700	.000
30	30	.000	.000	1.60	.000
31	31	.000	.000	9.00	.000

32	32	.000	.000	9.00	.000
33	33	.000	.000	37.6	.000
34	Blank	.000	.000	.000	.000
35	Ref Std.	.000	.000	40.1	.000
36	36	.000	.000	5.20	.000

37	37	.000	.000	3.60	.000
38	38	.000	.000	.000	.000
39	39	.000	.000	6.70	.000
40	Blank	.000	.000	.000	.000
41	Ref Std.	.000	.000	40.3	.000

RESULTS FROM REPORT FILE PHE-226.RPT

DATE 6- 9-86

TIME 15: 9

METHOD NAME - PHENOL

SAMPLES/HR. = 10

SAMPLE/WASH RATIO = 1.000

SAMPLES/REFERENCE = 10

REF STANDARD CONC. - "A" .000 "B" .000 "C" .070 "D" .000
 CHECK SAMPLE CONC. - "A" .000 "B" .000 "C" .000 "D" .000

*** STANDARDS DATA ***

TRAY POS.	STD #	CHANNEL "A"	CHANNEL "B"	PHENOL	CHANNEL "D"
3	STD-1	-1.000	-1.000	.005	-1.000
4	STD-2	-1.000	-1.000	.010	-1.000
5	STD-3	-1.000	-1.000	.020	-1.000
6	STD-4	-1.000	-1.000	.050	-1.000
7	STD-5	-1.000	-1.000	.070	-1.000
8	STD-6	-1.000	-1.000	.100	-1.000
9	STD-7	-1.000	-1.000	.150	-1.000

*** CHECK SAMPLE RESULTS ***

CHECK SAMPLE I.D. NUMBER ---- .012

11	CHECK SMPL	.000	.000	.010	.000
----	------------	------	------	------	------

*** CALIBRATION CURVES APPLIED ***

CHANNEL "A"	Y =	.00000	X ²	.00000	X +	.00000
CHANNEL "B"	Y =	.00000	X ²	.00000	X +	.00000
PHENOL	Y =	.63260E-06	X ²	.16547E-02	X +	.12643E-03
CHANNEL "D"	Y =	.00000	X ²	.00000	X +	.00000

*** ANALYTICAL RESULTS ***

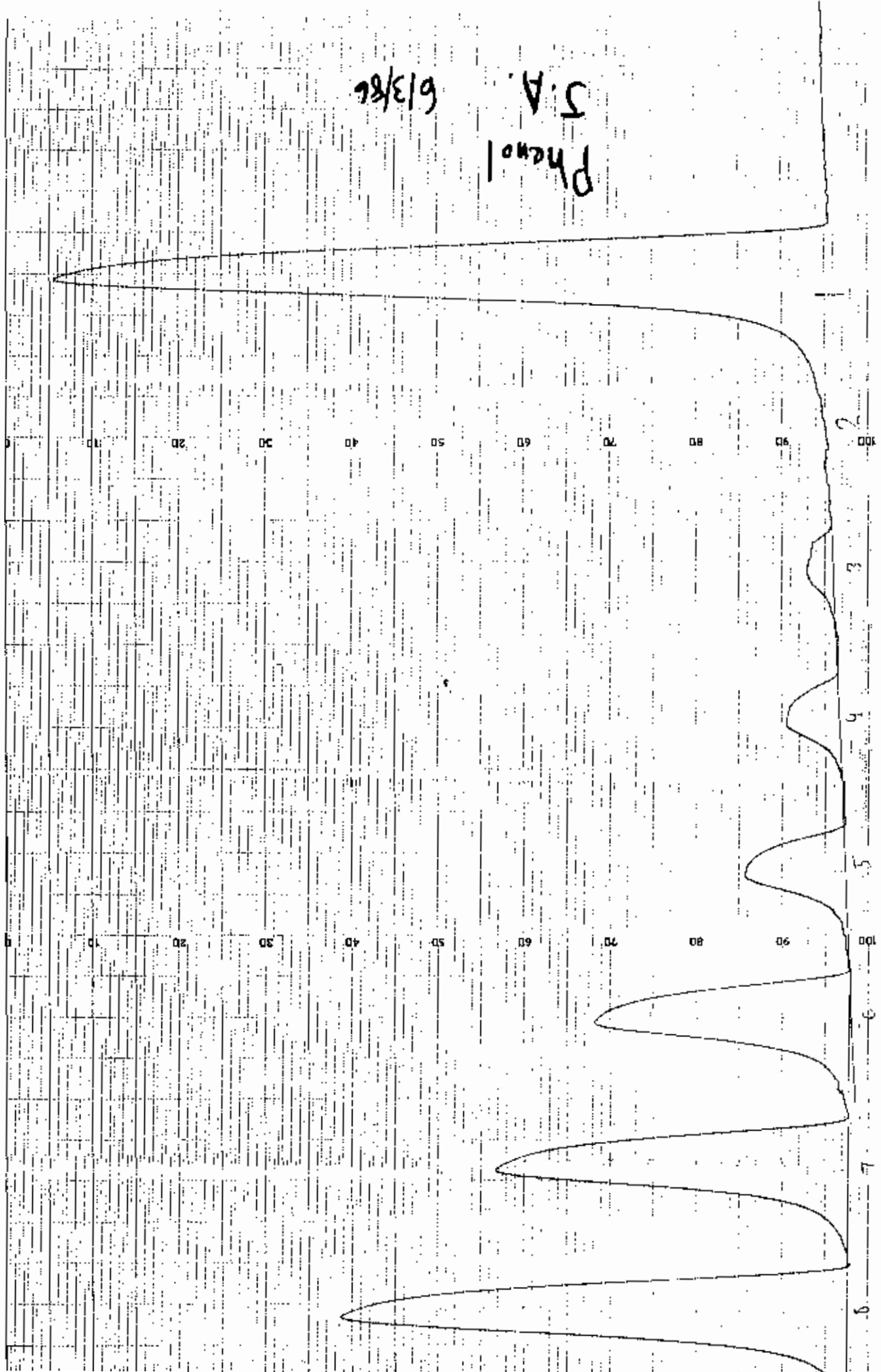
TRAY	SAMPL.#	CHANNEL "A" % Drift	CHANNEL "B" % Drift	PHENOL % Drift	CHANNEL "D" % Drift
12	12	.000	.000	.475E-01	.000
13	13	.000	.000	.228E-02	.000
14	14	.000	.000	.245E-02	.000
15	15	.000	.000	.488E-01	.000
16	16	.000	.000	.129E-02	.000
17	17	.000	.000	.329E-02	.000
18	18	.000	.000	.229E-02	.000
19	19	.000	.000	.296E-02	.000

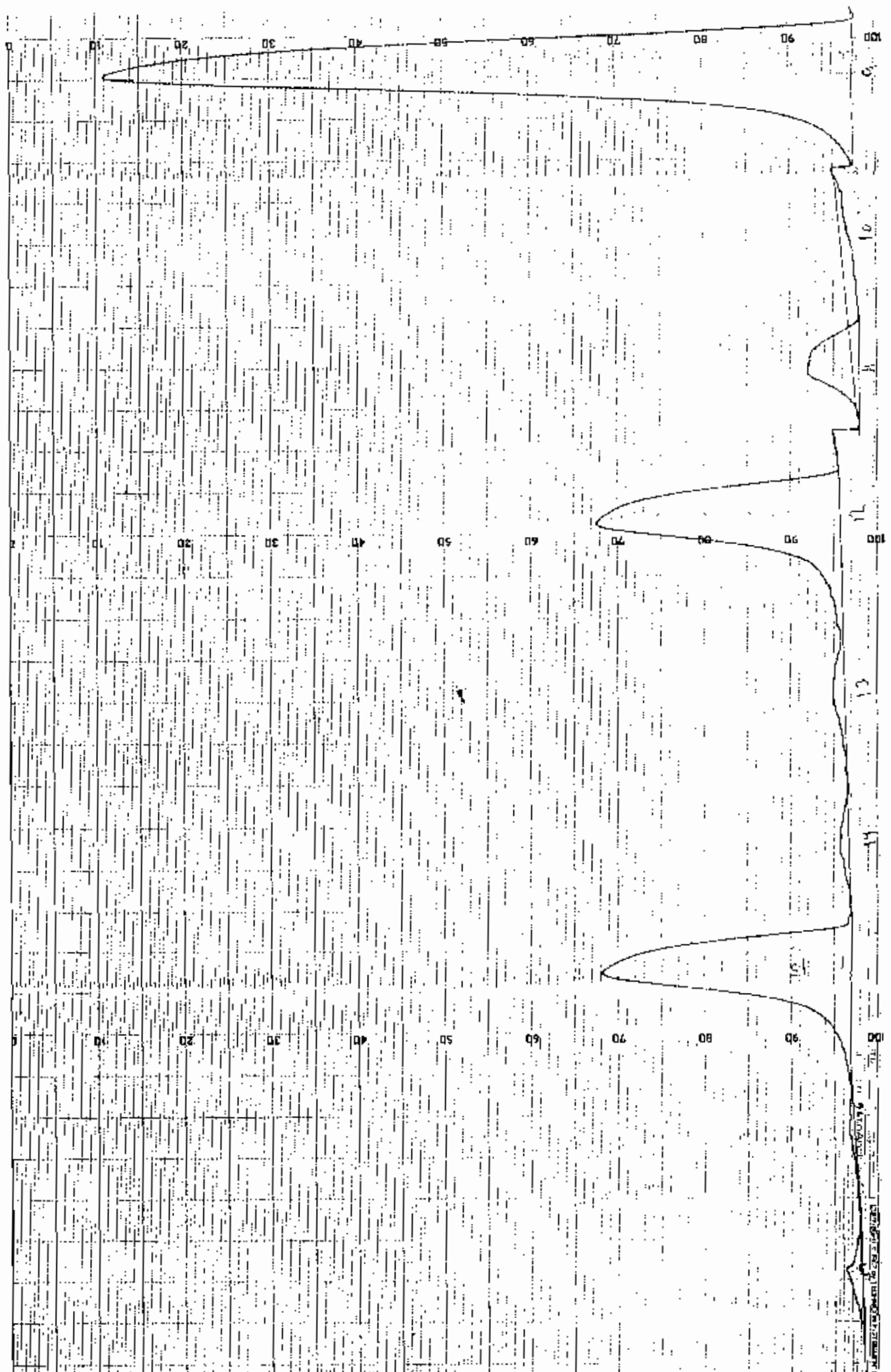
*** ANALYTICAL RESULTS ***

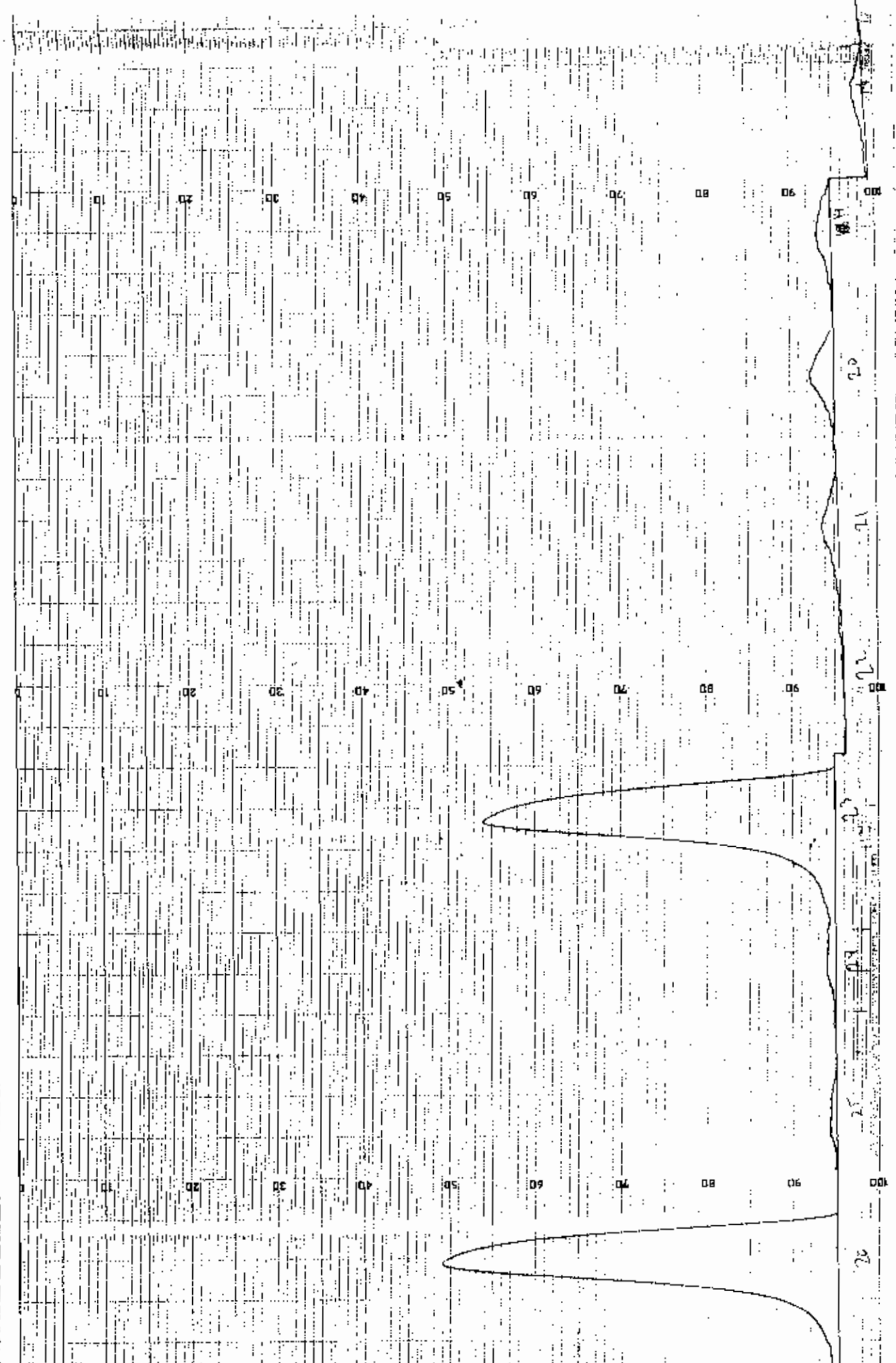
TRAY	SAMPL.#	CHANNEL "A" % Drift	CHANNEL "B" % Drift	PHENOL % Drift	CHANNEL "C" % Drift
23	Ref Std.	.000	.0	.000	.0
24	24	.000	.000	.694E-01	-1.9
25	25	.000	.000	.634E-01	.000
26	26	.000	.000	.266E-01	.000
27	27	.000	.000	2.35	.000
27	27	.000	.000	.359E-01	.000
28	28	.000	.000	.231E-01	.000
29	29	.000	.000	.120E-01	.000
30	30	.000	.000	.289E-01	.000
31	31	.000	.000	.155	.000
32	32	.000	.000	.155	.000
33	33	.000	.000	.643	.000
35	Ref Std.	.000	.0	.000	.0
36	36	.000	.000	.678E-01	-3.1
37	37	.000	.000	.123	.000
38	38	.000	.000	.505E-01	.000
38	38	.000	.000	.126E-03	.000
39	39	.000	.000	.319E-01	.000
41	Ref Std.	.000	.0	.000	.0
41	41	.000	.000	.622E-01	-2.6
41	41	.000	.000	.000	.000

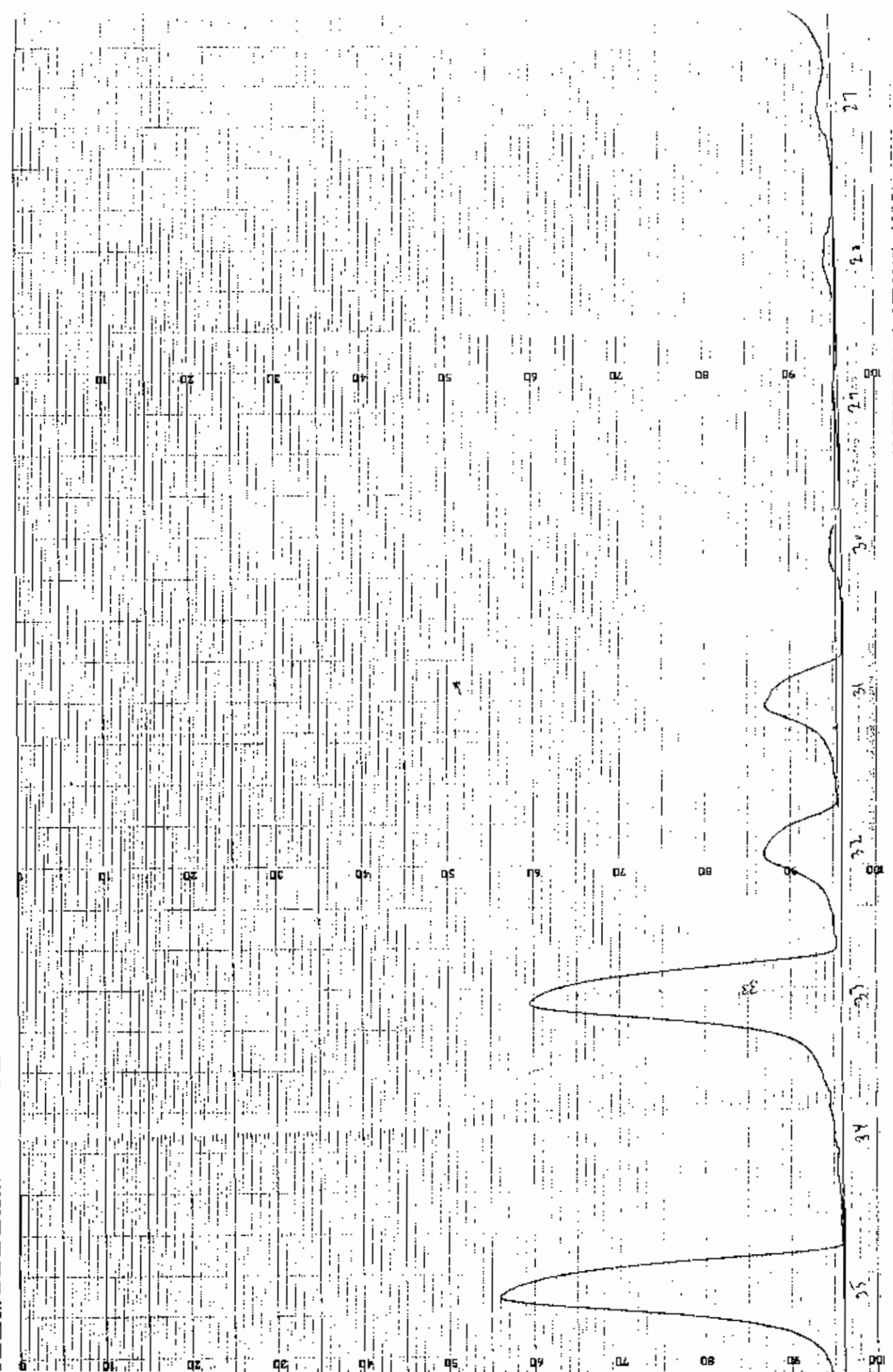
Phenol
J.A.

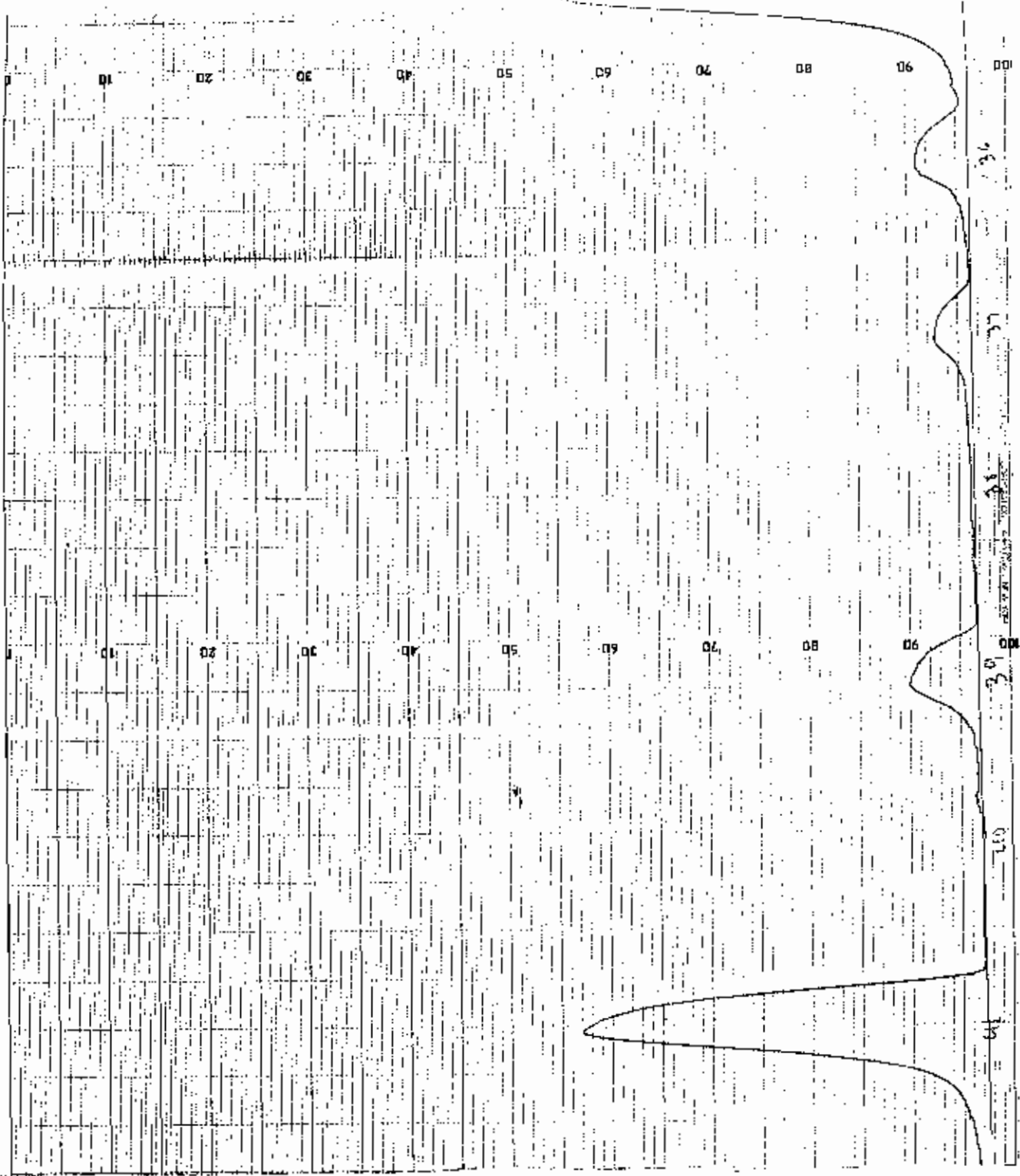
6/3/86











SECTION II

Chain of Custody Documentation

URS Company, Inc.

CHAIN OF CUSTODY RECORD

PROJECT NO. 60-244	SITE NAME PAS		STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	COY TKN, INC.				DECADALS		WJ, ORY, TOL		REMARKS (WATER)
	TP	TC								LN	TP	TC	LN	TP	TC	LN	TP	
A	5/7	9:00		✓				PAS-US-WNC-2A	6									
B	5/7	9:30		✓				PAS-US-WNC-1A	5									
C	5/7	10:15		✓				PAS-US-WNC-1	5									
D	5/7	10:45		✓				PAS-US-WNC-2	5									
E	5/7	11:30		✓				PAS-DS-WNC-4	5									
F	5/7	2:00		✓				PAS-DS-WNC-3	5									
G	5/7	3:00		✓				PAS-DS-WNC-6	5									
										RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	DATE/TIME:					
										RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	DATE/TIME:					
										RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE/TIME:					

The information contained on this report is preliminary and subject to change without notice.

URS Company, Inc.

CHAIN OF CUSTODY RECORD

PROJECT NO 60125A	SITE NAME C61025 PAS		STATION NO	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	GRAIN SIZE Dec Meq/L	TKN Basis	OC	REMARKS (SEDIMENTS)			
	RELINQUISHED BY (SIGNATURE)	DATE / TIME												RECEIVED BY (SIGNATURE)	DATE / TIME	
A	5/17	9:00				✓		PAS-US-WNC-2A	23	X						
B	5/17	9:40				✓		PAS-US-WC-1A	2	X						
C	5/17	10:15				✓		PAS-US-WC-1	2	X						
D	5/17	10:40				✓		PAS-US-WNC-2	2	X						
E	5/17	11:30				✓		PAS-DS-WNC-4	2	X						
F	5/17	2:00				✓		PAS-OS-WC-3	2	X						
G	5/17	3:00				✓		PAS-DS-WNC-6	2	X						
H	5/17	4:00				✓		PAS-MP-7	2	X						
RELINQUISHED BY (SIGNATURE)													RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME
S. Tesoro													Wingard S. D...	5/17 5:15	Wingard S. D...	5/17 5:15
RELINQUISHED BY (SIGNATURE)													RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME
S. Tesoro													Wingard S. D...	5/17 5:15	Wingard S. D...	5/17 5:15
RELINQUISHED BY (SIGNATURE)													RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME
S. Tesoro													Wingard S. D...	5/17 5:15	Wingard S. D...	5/17 5:15

U.S. Environmental Protection Agency, EPA 823-R-01-001, Rev. 11/99

5/13

Requested Name: SUE Toscano Phone Number () _____

By: Company: General Testing PO# _____

Address: 710 Exchange St Job # 61025 A-H

Rochester, NY 14608 Job Reference _____

URS/Dutton

Bill Name: Sue March Reports To: Marshall Shannon

To: Company: " " " "

Address: " " " "

" " " "

Sample Description:

Date
Sampled

Time
Sampled

#1 61025 A-H duplicated analysis

~~#2~~ requested on A

#3 _____

#4 _____

#5 _____

Analysis Required:

#1 GRAIN SIZE

#2 _____

#3 _____

#4 _____

#5 _____

Additional Notes:

Delivered By: _____

Accepted By: _____ Date: _____ Time: _____

If solid wastes determined to be hazardous will be returned to the customer at no charge to General Testing.

710 Exchange Street
Rochester, NY 14608

85 Trinity Place
Hackensack, NJ 07601

GENERAL TESTING CORPORATION

QUOTATION # _____

SUMMARY, COST SCHEDULE

PAGE 1 of 2

I

CLIENT _____ LABORATORY # _____
JOB SITE _____ DATE QUOTED _____
CLIENT PROJECT # _____ GT MANAGER _____
CLIENT CONTACT _____ CLIENT P.O. # _____

II

SAMPLING INFORMATION

SAMPLING DATE(S) _____ LOCATION _____
SAMPLING FREQUENCY: ONCE _____ WEEKLY _____ MONTHLY _____ QUARTERLY _____
OTHER _____
TYPE OF SAMPLING _____ OTHER (DESCRIBE COMPLETELY _____

SAMPLING PERSONNEL CLIENT _____ GT _____
GT PERSONNEL _____
RATE/DAY _____

III

MATERIAL REQUIREMENTS, BILLABLE

<u>EQUIPMENT</u>	<u># UNITS</u>	<u>UNIT COST</u>	<u>TOTAL COST</u>
BOTTLES (ATTACH LIST)	_____	\$ _____	\$ _____
SHIPPING COOLERS	_____	\$ _____	\$ _____
OTHER (SPECIFY)	_____	\$ _____	\$ _____
_____	_____	\$ _____	\$ _____
_____	_____	\$ _____	\$ _____
_____	_____	\$ _____	\$ _____
_____	_____	\$ _____	\$ _____
TOTAL MATERIALS COST			\$ _____

IV

PROJECT COST SUMMARIES

TOTAL ANALYTICAL(DIRECT) (FROM ATTACHED SCHEDULE) \$ _____
ANALYTICAL SURCHARGE(SPECIFY) _____
_____ \$ _____
MATERIALS(FROM ABOVE SCHEDULE) \$ _____
SHIPPING, GC/MS,(SPECIFY) _____ \$ _____
SHIPPING, OTHER,(SPECIFY) _____ \$ _____
MANHOUR: ATTACH TIME SHEET SUMMARIES \$ _____
OTHER,(SPECIFY),ATTACH EXPENSE REPORT \$ _____