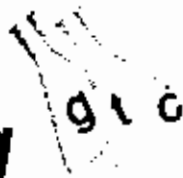


**general
testing
corporation**



water and wastewater testing specialists

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

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

October 23, 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 copies of two reports previously submitted during the course of the above referenced study. The reports cover the analysis of water samples received on 8/22/85 and 6/18/86. The analysis requested were Dissolved Solids, Suspended Solids, Ammonia, TKN, Nitrate, Nitrite, Orth-Phosphate, Total Phosphorus and Total Organic Carbon. In addition, Total Cyanide was requested for the samples received on 6/18/86.

All analyses were performed via standard laboratory protocol. The methodologies employed are referenced in the Federal Register 40 CFR, Part #136, 10/26/84.

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/jmj

general testing corporation

710 Exchange Street
Rochester, NY 14608
(716) 454-3700

85 Tammy Place
Hackensack, NJ 07601
(201) 486-5242

LABORATORY REPORT

Job No. R51587 Date 09/24/85

Client

Mr. Wayne Davis
URS Company Inc.
625 Delaware Avenue
Buffalo, NY 14202

Sample(s) Reference

Pas Environmental Assessment

Date Samples (X) received () collected by General Testing

8/22/85

ANALYTICAL RESULTS

P.O. # _____

(mg/l unless stated otherwise)

Sample Description

URS/DALTON - OSWEGO

Date(s)

	PAS-WNC- DS-4	PAS-WNC- DS-6
Date(s)	8/21/85	8/21/85
Time(s)	3:00 pm	4:30 pm
Solids, Dissolved at 180 oC	750	550
Solids, Suspended	5.8	16
Nitrogen, Ammonia	0.20	0.17
Nitrogen, Kjeldahl	0.76	1.3
Nitrogen, Nitrate	0.28	0.06
Phosphate, Ortho as P	0.12	0.09
Phosphorous, Total as P	0.26	0.33
TOC	8.6	12
Nitrogen, Nitrite	<.05	<.05

Time(s)

Solids, Dissolved at 180 oC

Solids, Suspended

Nitrogen, Ammonia

Nitrogen, Kjeldahl

Nitrogen, Nitrate

Phosphate, Ortho as P

Phosphorous, Total as P

TOC

Nitrogen, Nitrite

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 is available upon request.

[Signature]

Laboratory Director

general testing corporation

710 Exchange Street
 Rochester, NY 14603
 (716) 454-3760

85 Trinity Place
 Hackensack, NJ 07601
 (201) 433-2242

LABORATORY REPORT

Job No. R51587 Date 09/24/85

Client

Mr. Wayne Davis
 URS Company Inc.
 625 Delaware Avenue
 Buffalo, NY 14202

Sample(s) Reference

Pas Environmental Assessment

Date Samples (x) received () collected by General Testing

8/22/85

ANALYTICAL RESULTS

(mg/l unless stated otherwise)

P.O. # _____

Sample Description

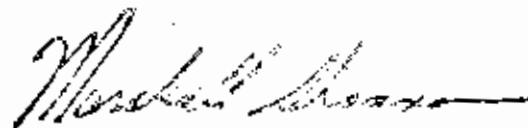
URS/DALTON - OSWEGO

Date(s)

Time(s)

	PAS-US- WC-1A	PAS-US- WC-1	PAS-US- WNC-2A	PAS-US- WNC-2
	8/21/85	8/21/85	8/21/85	8/21/85
	9:15 am	8:00 am	10:30 am	11:30 am
Solids, Dissolved at 180 °C	320	3500	390	470
Solids, Suspended	4.0	14	6.8	6.8
Nitrogen, Ammonia	0.05	35	0.07	0.13
Nitrogen, Kjeldahl	1.7	33	0.70	0.67
Nitrogen, Nitrate	<0.05	0.12	<0.05	0.46
Nitrogen, Nitrite	<0.05	0.06	<0.05	<0.05
Phosphate, Ortho as P	<0.05	<0.05	0.23	0.15
Phosphorous, Total as P	0.14	0.06	1.2	0.40
TOC	9.1	23	8.2	7.0

Analytical procedures in accordance with Standard Methods for the Examination of Water and Wastewater, 15th Edition and Methods for the Determination of Water and Wastes, EPA. (1) and (2) are used for determinable concentration with procedure used. Data on other control performed with above sample(s) is available upon request.



Res: _____

CHAIN OF CUSTODY RECORD

URS Company, Inc.

SAMPLER (Signature) *Wayne S. Davis*

SAMPLE DESCRIPTION	DATE 1985	TIME AM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-US-WC-1A	8/21	9:15	51587-A		✓	None	NO ₂ , OPO ₄
PAS-US-WC-1A	8/21	9:15	51587-A		✓	H ₂ SO ₄	TP, NH ₃ , TKN, NO ₃
PAS-US-WC-1A	8/21	9:15	51587-A		✓	None	Dissolved Solids Suspended Solids
PAS-US-WC-1A	8/21	9:15	51587-A		✓	H ₂ SO ₄	TOC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. Davis</i>	Received by: (Signature) <i>Siobhán P. Murphy</i>	Date/Time 22 Aug. 1985 1045
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)	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.

SAMPLER (Signature) *Wayne S. Davis*

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-US-WC-1	8/21	8:00 AM	51587-B		✓	None	NO ₂ , OPO ₄
PAS-US-WC-1	8/21	8:00	51587-B		✓	H ₂ SO ₄	TP, NH ₃ , TKN, NO ₃
PAS-US-WC-1	8/21	8:00	51587-B		✓	None	Dissolved Solids Suspended Solids
PAS-US-WC-1	8/21	8:00	51587-B		✓	H ₂ SO ₄	TDC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. Davis</i>	Received by: (Signature) <i>Lionel P. Murphy</i>	Date/Time 22 Aug. 1985 1045
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)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

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.

SAMPLER (Signature) *Wayne S. Davis*

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PA5-US-WNC-2A	8/21	10:30 AM	51587-C		✓	None	NO ₂ , OPO ₄
PA5-US-WNC-2A	8/21	10:30	51587-C		✓	H ₂ SO ₄	TP, NH ₃ , TKN, NO ₃
PA5-US-WNC-2A	8/21	10:30	51587-C		✓	None	Dissolved Solids Suspended Solids
PA5-US-WNC-2A	8/21	10:30	51587-C		✓	H ₂ SO ₄	TDC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. Davis</i>	Received by: (Signature) <i>Liaty P. Murphy</i>	Date/Time 22 Aug. 1985 10:45
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)	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.

CHAIN OF CUSTODY RECORD

URS Company, Inc.

SAMPLER (Signature) *Wayne S. Davis*

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-US-WNC-2	8/21	11:30 AM	51587-D		✓	None	NO ₂ , OPD ₄
PAS-US-WNC-2	8/21	11:30	51587-D		✓	H ₂ SO ₄	TP, NH ₃ , TKN, NO ₃
PAS-US-WNC-2	8/21	11:30	51587-D		✓	None	Dissolved Solids Suspended Solids
PAS-US-WNC-2	8/21	11:30	51587-D		✓	H ₂ SO ₄	TOC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. Davis</i>	Received by: (Signature) <i>Janith P. Murphy</i>	Date/Time 22 Aug. 1985 10:45
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)	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.

SAMPLER (Signature) *Wayne S. Davis*

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-WNC-DS-4	8/21	3:00 PM	51587-F		✓	None	NO ₂ , OPD ₄
PAS-WNC-DS-4	8/21	3:00	51587-F		✓	H ₂ SO ₄	TP, NH ₃ , TKN, NO ₃
PAS-WNC-DS-4	8/21	3:00	51587-F		✓	None	Dissolved Solids Suspended Solids
PAS-WNC-DS-4	8/21	3:00	51587-F		✓	H ₂ SO ₄	TOC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. Davis</i>	Received by: (Signature) <i>J. H. P. Murphy</i>	Date/Time 22 Aug. 1985 1045
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)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Name and Location of Laboratory

CHAIN OF CUSTODY RECORD

URS Company, Inc.

SAMPLER (Signature)

Wayne S. Davis

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-WNC-DS-6	8/21/85	4:30 PM	51587-G		✓	None	NO ₂ , OPO ₄
PAS-WNC-DS-6	8/21	4:30	51587-G		✓	H ₂ SO ₄	TP, NH ₃ , TKN, NO ₃
PAS-WNC-DS-6	8/21	4:30	51587-G		✓	None	Dissolved Solids Suspended Solids
PAS-WNC-DS-6	8/21	4:30	51587-G		✓	H ₂ SO ₄	TOC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. Davis</i>	Received by: (Signature) <i>Timothy P. Murphy</i>	Date/Time 22 Aug. 1985 10:45
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)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Name and Location of Laboratory

general
testing
corporation



**general
testing
corporation**



water and wastewater testing specialists

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

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

August 23, 1985

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

Re: PAS Environmental Assessment

Dear Mr. Davis:

Enclosed is a report covering seven water samples received at General Testing on 6/27/85. All samples were analyzed as per methods stated in the E.P.A. Methods for the chemical analysis of water and wastes 3/83.

No problems were encountered during the analysis of these samples. I hope you find all in order. Please call should you have any questions.

Sincerely,

GENERAL TESTING CORPORATION

Michael Perry
Laboratory Director

MP/lj
Enc.

general testing corporation

water and wastewater testing specialists

710 Exchange Street
Rochester, NY 14602
(716) 454-3760

96 Trinity Place
Hackensack, NJ 07601
(201) 285-0247

LABORATORY REPORT

Job No. R51156 Date 08/16/85

Client
Mr. Wayne Davis
URS Dalton & Dalton
3605 Warrensville Center Rd.
Cleveland, Ohio 44122

Sample(s) Reference
PAS Environmental Assessment

Date Samples (X) received () collected by General Testing 6/27/85

ANALYTICAL RESULTS

(mg/l unless stated otherwise)

P.O. #	PAS-US-WC-1A	PAS-US-WC-1	PAS-US-WNC-2A	PAS-US-WNC-2
Sample Description				
URS/DALTON				
Date(s)	6/26/85	6/26/85	6/26/85	6/26/85
Time(s)	8:00 am	12:00 pm	10:00 am	1:15 pm
Solids, Dissolved at 180 oC	260	1900	450	480
Solids, Suspended	5.2	2.6	5.4	5.8
Nitrogen, Ammonia	0.07	17	0.19	0.07
Nitrogen, Kjeldahl	0.39	17	0.73	0.73
Nitrogen, Nitrate	<.05	0.72	<.05	0.47
Nitrogen, Nitrite	<.05	0.18	<.05	<.05
Phosphate, Ortho as P	<.05	<.05	0.21	0.26
Phosphorous, Total as P	<.05	<.05	0.39	0.43
TOC	5.0	15.7	10.7	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.

Michael K. Perry
Laboratory Director

general testing corporation

water and wastewater testing specialists

70 Exchange Street
Rochester, NY 14608
(716) 454-3700

85 Unity Place
Hoboken, NJ 07031
(201) 480-5212

LABORATORY REPORT

Job No. R51156 Date 08/16/85

Client Mr. Wayne Davis
URS Dalton & Dalton
3605 Warrensville Center Rd.
Cleveland, Ohio 44122

Sample(s) Reference
PAS Environmental Assessment

Date Samples (x) received () collected by General Testing 6/27/85

P.O. # _____

ANALYTICAL RESULTS

(mg/l unless stated otherwise)

Sample Description

URS/DALTON

Date(s)

Time(s)

PAS-WC-

OS-3

6/26/85

3:15 pm

PAS-WNC-

DS-4

6/27/85

8:00 am

PAS-WNC-

DS-6

6/27/85

10:00 am

Solids, Dissolved at 180 oC

1500

670

550

Solids, Suspended

5.4

<2.0

6.0

Nitrogen, Ammonia

4.0

0.19

0.09

Nitrogen, Kjeldahl

6.6

0.90

1.0

Nitrogen, Nitrate

2.0

0.92

0.37

Nitrogen, Nitrite

0.31

0.05

<.05

Phosphate, Ortho as P

<.05

0.20

0.08

Phosphorous, Total as P

0.07

0.34

0.28

TOC

12.9

9.8

8.4

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.

Michael K. Perry
Laboratory Director

CHAIN OF CUSTODY RECORD

URS Company, Inc.

SAMPLER (Signature) *Wayne S. Davis*

SAMPLE DESCRIPTION	DATE	TIME AM	SAMPLE IDENT NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
(WATER) PAS-US-WC-1A	6/24/85	8:00	51156A		✓	8 oz. PLASTIC H ₂ SO ₄ To pH 2.0	TP, NH ₃ , NO ₃ . TKN
"	"		"		✓	4 oz. PLASTIC NONE	NO ₂ , OPO ₄
NO "SAMPLE"	"	TAKEN	"		✓	1/2 gal. PLASTIC NaOH To pH 12	CYANIDE
NO "SAMPLE"	"	TAKEN	"		✓	1 pt. GLASS CuSO ₄ + H ₃ PO ₄ To pH 4.0	phenolics
PAS-US-WC-1A	6/24/85	8:00	51156A		✓	1/2 gal. PLASTIC NONE	Solids
"	"		"		✓	4 oz. PLASTIC H ₂ SO ₄ To pH 2.0	TOL

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. Davis</i>	Received by: (Signature) <i>Timothy P. Murphy</i>	Date/Time 6/27/85 2:00 PM
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT: *Hand Delivery*

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)	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.

 SAMPLER (Signature) *Wayne Davis*

SAMPLE DESCRIPTION	DATE	TIME PM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
(WATER) PAS-US-WL-1	6/26/85	12:00	51156 B		✓	8oz. PLASTIC H ₂ SO ₄ To pH 2.0	TP, TKN, NH ₃ , NO ₃
"	"	"	"		✓	4oz. PLASTIC NONE	NO ₂ , OPO ₄
NO " SAMPLE	TAKEN					1/2 GAL. PLASTIC NaOH To pH 12	CYANIDE
NO " SAMPLE	TAKEN					1 PT. GLASS C. USE H ₂ O + H ₂ PO ₄ To pH 4.0	Phenolics
PAS-US-WW-1	6/26/85	12:00	51156 B		✓	1/2 gal. PLASTIC NONE	Solids
"	"	"			✓	4oz. PLASTIC H ₂ SO ₄ To pH 2.0	TOC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC

Relinquished by: (Signature) <i>Wayne Davis</i>	Received by: (Signature) <i>Sumathy P. Murphy</i>	Date/Time 6/27/85 - 2:00 PM
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

DISPATCHED BY: (Signature)

 METHOD OF SHIPMENT: *Hand Delivery*

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Name and Location of Laboratory

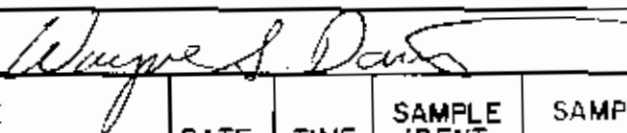
Return Completed Chain Of Custody Record To

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

CHAIN OF CUSTODY RECORD

URS Company, Inc.

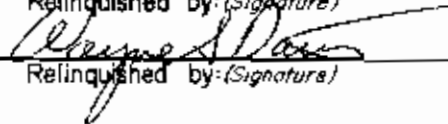
SAMPLER (Signature)



SAMPLE DESCRIPTION	DATE	TIME AM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
(WATER) PAS-US-WWC-2A	6/26/85	10:00	51156 C		✓	8 OZ. PLASTIC H ₂ SO ₄ TO pH 2.0	TP, TKN NH ₃ , NO ₃
"	"	"	"		/	4 OZ. PLASTIC NONE	NO ₂ , OPO ₄
NO SAMPLE TAKEN						1/2 GAL. PLASTIC NaOH TO pH 12	CYANIDE
NO SAMPLE TAKEN						1 PT. GLASS C ₁₂ SO ₄ + H ₂ PO ₄ TO pH 4.0	PHENOLICS
PAS-US-WWC-2A	6/26/85	10:00	51156 C		/	1/2 GAL. PLASTIC NONE	Solids
"	"	"	"		/	4 OZ. PLASTIC H ₂ SO ₄ TO pH 2.0	TOC

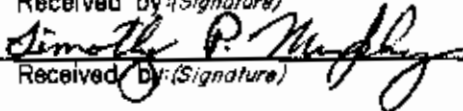
THIS SECTION TO BE COMPLETED BY URS COMPANY INC

Relinquished by: (Signature)



Relinquished by: (Signature)

Received by: (Signature)



Received by: (Signature)

Date/Time

6/27/85 2:00 PM

Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Name and Location of Laboratory

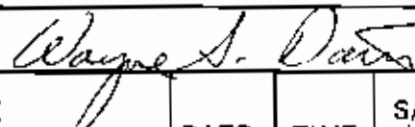
Return Completed Chain Of Custody Record To

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

CHAIN OF CUSTODY RECORD

URS Company, Inc.

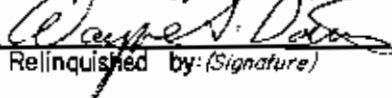
SAMPLER (Signature)



SAMPLE DESCRIPTION	DATE	TIME PM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
(WATER) PAS-US-WWC-2	6/26/85	1:15	51156 D		✓	8oz. PLASTIC H ₂ SO ₄ To pH 2.0	TP, TKN NH ₃ , NO ₃
"					✓	4oz. PLASTIC NONE	NO ₂ , OPE ₄
NO " SAMPLE TAKEN						1/2 gal. PLASTIC NaOH To pH 12	CYANIDE
NO " SAMPLE TAKEN						10T. PLASTIC CuSO ₄ + H ₃ PO ₄ To pH 4.0	Phenolics
PAS-US-WWC-2	6/26/85	1:15	51156 D		✓	1/2 gal. PLASTIC NONE	Solids
"	"	"	"		✓	4oz. PLASTIC H ₂ SO ₄ To pH 2.0	TOC

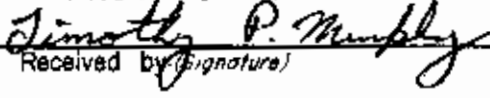
THIS SECTION TO BE COMPLETED BY URS COMPANY INC

Relinquished by: (Signature)



Relinquished by: (Signature)

Received by: (Signature)



Received by: (Signature)

Date/Time

6/27/85 2:00 PM

Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Name and Location of Laboratory

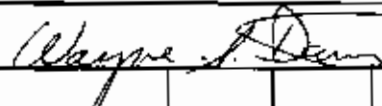
Return Completed Chain Of Custody Record To

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

CHAIN OF CUSTODY RECORD

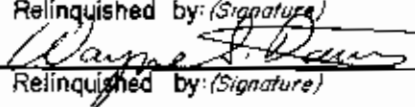
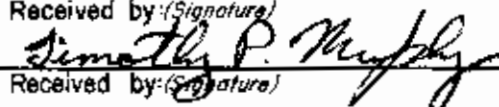
URS Company, Inc.

SAMPLER (Signature)



SAMPLE DESCRIPTION	DATE	TIME PM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
(WATER) PAS-WL-OS-3	6/26/85	3:15	51156 E		✓	8oz. PLASTIC H ₂ SO ₄ To pH 2.0	TP, TKN NH ₃ , NO ₃
"					✓	4oz. PLASTIC NONE	NO ₂ , OPO ₄
" NO SAMPLE TAKEN						1/2 GAL. PLASTIC NaOH To pH 12	CYANIDE
" NO SAMPLE TAKEN						1qt. GLASS Cu SO ₄ + H ₂ PO ₄ To pH 4.0	phenolics
PAS-WL-OS-3	6/26/85	3:15	51156 E		✓	1/2 GAL. PLASTIC NONE	Solids
"	"	"	"		✓	4oz. PLASTIC H ₂ SO ₄ To pH 2.0	TOL

THIS SECTION TO BE COMPLETED BY URS COMPANY INC

Relinquished by: (Signature) 	Received by: (Signature) 	Date/Time 6/27/85 2:00 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)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Name and Location of Laboratory

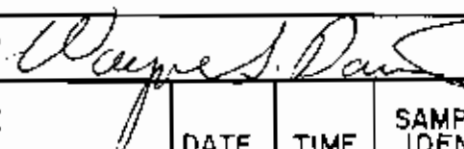
Return Completed Chain Of Custody Record To

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

CHAIN OF CUSTODY RECORD

URS Company, Inc.

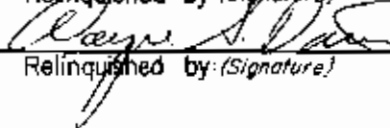
SAMPLER (Signature)



SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
(WATER) PAS-WNC-DS-4	6/27/85	8:00	51156 F		✓	8oz. PLASTIC H ₂ SO ₄ To pH 2.0	TP, NH ₃ TKN, NO ₃
"	"				✓	4oz. PLASTIC NONE	NO ₂ , CPO ₄
NO SAMPLE TAKEN						1/2 gal. PLASTIC NaOH To pH 12	Cyanide
NO SAMPLE TAKEN						1qt. GLASS CuSO ₄ + H ₃ PO ₄ To pH 4.0	Phenolics
PAS-WNC-DS-4	6/27/85	8:00	51156 F		✓	1/2 gal. PLASTIC NONE	Solids
"	"		51156 F		✓	4oz. PLASTIC H ₂ SO ₄ To pH 2.0	TU

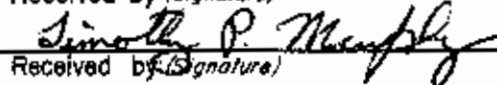
THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature)



Relinquished by: (Signature)

Received by: (Signature)



Received by: (Signature)

Date/Time

6/27/85 2:00 PM

Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)

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.

SAMPLER (Signature) *Wayne S. Davis*

SAMPLE DESCRIPTION	DATE	TIME AM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
(WATER) PAS-WWC-DS-6	6-27-85	10:00	51156 G		✓	8 OZ PLASTIC H ₂ SO ₄ To pH 2.0	TP, TKN NH ₃ , NO ₃
"	"	"	"		✓	4 OZ. PLASTIC NONE	NO ₂ , OPO ₄
No Sample TAKEN						1/2 GAL. PLASTIC NaOH To pH 12	CYANIDE
No Sample TAKEN						1 qt. glass CuSO ₄ + H ₂ PO ₄ To pH 4.0	Phenolics
PAS-WWC ₁ -DS-6	6-27-85	10:00	51156 G		✓	1/2 GAL. PLASTIC NONE	Solids
"	"	"	"		✓	4 OZ. PLASTIC H ₂ SO ₄ To pH 2.0	TOC

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. Davis</i>	Received by: (Signature) <i>Simothy R. Murphy</i>	Date/Time 6/27/85 - 2:00 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)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Name and Location of Laboratory

Mid. Nov. 1985

general
testing
corporation





water and wastewater testing specialists

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

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

June 4, 1986

Mr. Kent Bainbridge
URS
625 Delaware Avenue
Buffalo, NY 14202

RE: P.A.S. Assessment Study, Oswego, NY

Dear Mr. Bainbridge:

Enclosed is our report covering the analysis of seven water samples received at General Testing on 11/15/85 from the above referenced project.


The report is divided into D.E.C. Contract Laboratory inorganics, and the remaining parameters not covered under this protocol. All Quality Control and Documentation inherent in the D.E.C. protocol have been provided for those parameters which it covers. The remaining parameters were analyzed via normal laboratory protocol.

Please refer to the cover pages in sections A, B, and C for comments pertaining to analytical data and Quality Control.

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

Sincerely,

GENERAL TESTING CORPORATION


Marshall Shannon
Assistant Laboratory Director

MS/lj
Enclosures

REPORT INDEX

	<u>PAGE</u>
SECTION A: Non CLP parameter, analytical data and Quality Control, (Routine Laboratory Protocol.)	1
SECTION B: Inorganic CLP parameters, Analytical data.	4
SECTION C: Inorganic CLP parameters, Quality Control data.	12
SECTION D: Inorganic CLP parameters, Raw data copies.	28
SECTION E: Chain of Custody Documentation	154

SECTION A

Non CLP parameter, analytical
data and Quality Control, (Routine
Laboratory Protocol.)

SECTION A

Presented in this section is analytical and Quality Control data associated with the non CLP parameters requested. The analyses performed were Ammonia, TKN, Nitrate, Nitrite, Phenolics, Ortho Phosphate, Total Phosphorous, Dissolved Solids, Suspended Solids, and Total Organic Carbon.

All analyses were performed via approved methodology as found in the EPA Manual for the analysis of Water and Wastes, EPA - 600/4-79-020 revised 3/83.

general testing corporation



water and wastewater testing specialists

710 Exchange Street
Rochester, NY 14608
(716) 454-3750

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

LABORATORY REPORT

Job No. 52318 Date 6/5/86

Client Mr. Kent Bainbridge
URS
625 Delaware Avenue
Buffalo, NY 14202

Sample(s) Reference
P.A.S. Assessment
Oswego, NY

Date Samples (x) received () collected by General Testing 11/15/86

ANALYTICAL RESULTS

(mg/l unless stated otherwise)

P.O. # _____

Sample Description	A	B	C	D
	PAS-US- WC-1A	PAS-US- WC-1	PAS-US- WNC-2A	PAS-US- WNC-2
Date(s)	11/15/85	11/15/85	11/15/85	11/15/85
Time(s)	9:45am	10:30am	9:00am	12:15pm
Nitrogen, Ammonia N	0.06	0.36	0.20	0.21
Nitrogen, Kjeldahl N	0.64	1.1	2.3	2.2
Nitrogen, Nitrate N	1.5	0.52	11	140
Nitrogen, Nitrite N	<0.05	<0.05	<0.05	<0.05
Phenolics	0.005	0.008	0.006	0.006
Phosphate, Ortho as P	0.02	<0.02	0.69	0.69
Solids, Dissolved	240	280	450	480
Solids, Suspended	3.4	<2.0	7.0	8.4
TOC	8.0	9.1	20	20
Total Phosphorous	0.05	0.06	1.3	0.88

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.

Laboratory Director

general testing corporation



water and wastewater testing specialists

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

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

LABORATORY REPORT

Job No. 52318 Date 6/5/86

Client
Mr. Kent Bainbridge
URS
625 Delaware Avenue
Buffalo, NY 14202

Sample(s) Reference
P.A.S. Assessment
Oswego, NY

Date Samples () received () collected by General Testing 11/15/86

ANALYTICAL RESULTS

(mg/l unless stated otherwise)

P.O. # _____

Sample Description	E PAS-WC- OS-3	F PAS-WNC- DS-4	G PAS-WNC- DS-6
Date(s)	11/15/86	11/15/86	11/15/86
Time(s)	11:30am	1:00pm	2:00pm
Nitrogen, Ammonia N	0.26	0.26	0.25
Nitrogen, Kjeldahl N	1.1	1.3	1.2
Nitrogen, Nitrate N	0.89	6.0	2.4
Nitrogen, Nitrite N	<0.05	<0.05	<0.05
Phenolics	0.009	0.006	0.006
Phosphate, Ortho as P	0.02	0.37	0.38
Solids, Dissolved	390	440	470
Solids, Suspended	<2.0	9.6	5.4
TOC	11.0	14.0	14.0
Total Phosphorous	<0.25	<0.25	0.43

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.

Marshall Manna

Laboratory Director

Ass't

JOB SPECIFIC QUALITY CONTROL REPORT

Customer: URS/Dalton Job Number: 52918A Date Received: 11/15/85

Parameter	Sample	Precision		Dilution	Analytical Value #2	Spiked Recovery			EPA Recovery				
		Dilution	Analytical Value #1			Analytical Value	Spike Added	Spiked Value	% Recovery	Known	Recovery	% Recovery	
NO2	A	1	<0.05	1	<0.05	<0.05	0.200	0.198		99%			
OP04	A	1	0.024	1	0.024	0.024	0.100	0.119		95%	0.050	0.046	92%
NH3	A	1	0.058	1	0.072	0.065	0.200	0.261		97%	0.280	0.296	106%
TP	A	1	0.05	1	0.05	0.05	0.200	0.235		93%	1.37	1.22	89%
TKN	A	1	1.77	1	1.67	1.72	0.500	2.10		78%	5.28	5.22	99%
NO3	A	1	1.45	1	1.51	1.47	0.193	1.68		109%	1.43	1.41	99%
TOC	A	-	8.0	-	8.1	8.0	10	18.2		102%	8.2	8.5	104%
spended Solids	A	-	3.4	-	5.0	-	-	-		-	108	100	93%
ssolved Solids	A	-	235	-	249	-	-	-		-	288	272	94%
Phenols	A	Straight	0.005	1	0.005	0.005	0.0193	0.0183		97%	0.015	0.0177	118%

SECTION B

Inorganic CLP parameters,
Analytical data.

SECTION B

Presented in this section is analytical data associated with the inorganic D.E.C. Contract Laboratory Parameters requested. All analyses were performed in accordance with methodologies as stipulated in this protocol.

Four parameters, (Chromium, Lead, Thallium, and Vanadium), required furnace Atomic Absorption to meet CLP required detection limits. The initial runs for Thallium and Vanadium via Flame AA have been presented in Sections C and D.

Standard result qualifiers as stated on Page # have been used in this section.

general testing
corporation

710 Exchange Street

Rochester, NY 14608

Date June 5, 1986

COVER PAGE

INORGANIC ANALYSIS DATA PACKAGE

Lab Name General Testing Corporation

Job No. 52318

PAS Environmental Assessment

Q.C. Report No. 1

SAMPLE NUMBERS

Lab ID No.

Lab ID No.

PAS-US-WC-1A 52318-A
PAS-US-WC-1 52318-B
PAS-US-WNC-2A 52318-C
PAS-US-WNC-2 52318-D
PAS-WC-OS-3 52318-E
PAS-WNC-OS-4 52318-F

PAS-WNC-DS-6 52318-G

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/Flsme 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.

g t C 710 Exchange Street
Rochester, NY 14608

Sample No. PAS-US-WC-1A

Date: June 5, 1986

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 52318

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>250 R</u>	14. <u>Magnesium</u>	<u>9,450</u>
2. <u>Antimony</u>	<u>10 u</u>	15. <u>Manganese</u>	<u>45</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>{1900}</u>
6. <u>Cadmium</u>	<u>5 u</u>	19. <u>Selenium</u>	<u>{2.0}</u>
7. <u>Calcium</u>	<u>32,500</u>	20. <u>Silver</u>	<u>10 u</u>
8. <u>Chromium</u>	<u>10 u F</u>	21. <u>Sodium</u>	<u>11,000</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>10 u</u>
11. <u>Iron</u>	<u>200 R</u>	24. <u>Vanadium</u>	<u>50 u F</u>
12. <u>Lead</u>	<u>7.3 F</u>	25. <u>Zinc</u>	<u>10 u</u>
13. <u>Cyanide</u>	<u><5</u>	26. <u>Percent Solids (%)</u>	

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

COMMENTS: _____

Lab Manager Marshall Moore

710 Exchange Street

Rochester, NY 14608

Sample No. PAS-US-WC-1

Date: June 5, 1986

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 52318

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. <u>Aluminum</u>	<u>100 u R</u>	14. <u>Magnesium</u>	<u>8,720</u>
2. <u>Antimony</u>	<u>5 u</u>	15. <u>Manganese</u>	<u>110</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>{3,500}</u>
6. <u>Cadmium</u>	<u>5 u</u>	19. <u>Selenium</u>	<u>2 u</u>
7. <u>Calcium</u>	<u>28,900</u>	20. <u>Silver</u>	<u>10 u</u>
8. <u>Chromium</u>	<u>10 u F</u>	21. <u>Sodium</u>	<u>26,000</u>
9. <u>Cobalt</u>	<u>50 u</u>	22. <u>Thallium</u>	<u>16 F</u>
10. <u>Copper</u>	<u>20 u</u>	23. <u>Tin</u>	<u>10 u</u>
11. <u>Iron</u>	<u>490 R</u>	24. <u>Vanadium</u>	<u>50 u F</u>
12. <u>Lead</u>	<u>9.3 F</u>	25. <u>Zinc</u>	<u>10 u</u>
13. <u>Cyanide</u>	<u><5</u>	26. <u>Percent Solids (%)</u>	<u> </u>

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

COMMENTS: _____

Lab Manager

Michael Morris

g t
C 710 Exchange Street
Rochester, NY 14608

Sample No. PAS-US-WNC-2A

Date: June 5, 1986

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 52318

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>210 R</u>	14. <u>Magnesium</u>	<u>13,000</u>
2. <u>Antimony</u>	<u>10 u</u>	15. <u>Manganese</u>	<u>150</u>
3. <u>Arsenic</u>	<u>{9.2}</u>	16. <u>Mercury</u>	<u>0.25</u>
4. <u>Barium</u>	<u>{180}</u>	17. <u>Nickel</u>	<u>40 u</u>
5. <u>Beryllium</u>	<u>5 u</u>	18. <u>Potassium</u>	<u>{3600}</u>
6. <u>Cadmium</u>	<u>5 u</u>	19. <u>Selenium</u>	<u>2 u</u>
7. <u>Calcium</u>	<u>63,100</u>	20. <u>Silver</u>	<u>10 u</u>
8. <u>Chromium</u>	<u>10 u F</u>	21. <u>Sodium</u>	<u>14,000</u>
9. <u>Cobalt</u>	<u>50 u</u>	22. <u>Thallium</u>	<u>26 F</u>
10. <u>Copper</u>	<u>20 u</u>	23. <u>Tin</u>	<u>10 u</u>
11. <u>Iron</u>	<u>350 R</u>	24. <u>Vanadium</u>	<u>50 u F</u>
12. <u>Lead</u>	<u>14 F</u>	25. <u>Zinc</u>	<u>10 u</u>
13. <u>Cyanide</u>	<u>200</u>	26. <u>Percent Solids (%)</u>	

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

COMMENTS: _____

Lab Manager Marshall Hanson

710 Exchange Street
Rochester, NY 14608

Sample No. PAS-US-WNC-2

Date: June 6, 1986

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 52318

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	290 R	14. Magnesium	12,100
2. Antimony	10 u	15. Manganese	160
3. Arsenic	{9.2}	16. Mercury	0.51
4. Barium	{140}	17. Nickel	40 u
5. Beryllium	5 u	18. Potassium	{3,800}
6. Cadmium	5 u	19. Selenium	2 u
7. Calcium	62,600	20. Silver	10 u
8. Chromium	10 u F	21. Sodium	18,000
9. Cobalt	50 u	22. Thallium	33 F
10. Copper	20 u	23. Tin	10 u
11. Iron	330 R	24. Vanadium	50 u F
12. Lead	18 F	25. Zinc	10 u
13. Cyanide	<5	26. Percent Solids (%)	

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

COMMENTS: _____

Lab Manager Marshall Hanna

g t C 710 Exchange Street
Rochester, NY 14608

Sample No. PAS-WC-0S-3

Date: June 6, 1986

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 52318

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. <u>Aluminum</u>	<u>360 R</u>	14. <u>Magnesium</u>	<u>10,400</u>
2. <u>Antimony</u>	<u>10 u</u>	15. <u>Manganese</u>	<u>230</u>
3. <u>Arsenic</u>	<u>(2.8)</u>	16. <u>Mercury</u>	<u>0.49</u>
4. <u>Barium</u>	<u>100 u</u>	17. <u>Nickel</u>	<u>49</u>
5. <u>Beryllium</u>	<u>5 u</u>	18. <u>Potassium</u>	<u>5,400</u>
6. <u>Cadmium</u>	<u>5.0</u>	19. <u>Selenium</u>	<u>2 u</u>
7. <u>Calcium</u>	<u>44,300</u>	20. <u>Silver</u>	<u>10 u</u>
8. <u>Chromium</u>	<u>10 u F</u>	21. <u>Sodium</u>	<u>36,000</u>
9. <u>Cobalt</u>	<u>50 u</u>	22. <u>Thallium</u>	<u>36 F</u>
10. <u>Copper</u>	<u>20 u</u>	23. <u>Tin</u>	<u>10 u</u>
11. <u>Iron</u>	<u>250 R</u>	24. <u>Vanadium</u>	<u>50 u F</u>
12. <u>Lead</u>	<u>21 F</u>	25. <u>Zinc</u>	<u>10 u</u>
13. <u>Cyanide</u>	<u><5</u>	26. <u>Percent Solids (%)</u>	<u> </u>

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

COMMENTS:

Lab Manager

Maribel Menzo

710 Exchange Street
Rochester, NY 14608

Sample No. PAS-WNC-DS-4

Date: June 6, 1986

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 52318

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. Aluminum	220 R	14. Magnesium	11,100
2. Antimony	10 u	15. Manganese	150
3. Arsenic	{4.4}	16. Mercury	2.5
4. Barium	{130}	17. Nickel	40 u
5. Beryllium	5 u	18. Potassium	{3,700}
6. Cadmium	5 u	19. Selenium	2 u
7. Calcium	50,500	20. Silver	10 u
8. Chromium	10 u F	21. Sodium	52,000
9. Cobalt	50 u	22. Thallium	10 u F
10. Copper	20 u	23. Tin	10 u
11. Iron	400 R	24. Vanadium	50 u F
12. Lead	13 F	25. Zinc	10 u
13. Cyanide	38	26. Percent Solids (%)	

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

COMMENTS:

Lab Manager Marshall Menno

710 Exchange Street

Rochester, NY 14608

Sample No. PAS-WNC-DS-6

Date: June 5, 1986

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: 52318

LAB SAMPLE ID NUMBER: G

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	{180} R	14. Magnesium	11,000
2. Antimony	10 u	15. Manganese	160
3. Arsenic	{4.0}	16. Mercury	0.3 u
4. Barium	{130}	17. Nickel	40 u
5. Beryllium	5 u	18. Potassium	{3,800}
6. Cadmium	5.0	19. Selenium	2 u
7. Calcium	48,700	20. Silver	10 u
8. Chromium	10 u F	21. Sodium	56,000
9. Cobalt	50 u	22. Thallium	12 F
10. Copper	20 u	23. Tin	10 u
11. Iron	320 R	24. Vanadium	50 u F
12. Lead	14 F	25. Zinc	10 u
13. Cyanide	5	26. Percent Solids (%)	

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

COMMENTS: Six insufficient samples for Mercury to reach 0.2 detection limit.

Lab Manager

Murphy

SECTION C

Included herein is Quality Control data associated with the Inorganic CLP parameters presented in Section B of this report.

Spiked recoveries for two parameters, (Aluminum and Iron), were out of control and have been flagged with the Letter R. The sample values for Magnesium and Sodium were >4x the spiking levels and spiked recoveries cannot be calculated.

SECTION C

Inorganic CLP parameters,
Quality Control Data.

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FORM II

Q.C. Report No. 1

INITIAL AND CONTINUING CALIBRATION VERIFICATION³

Lab Name General Testing Corporation

Job No. 52318

Date June 5, 1986

Units ug/l

Compound	Initial Calib. ¹			Continuing Calib. ²					Method ⁴
	True Value	Found	% R	True Value	Found	% R	Found	% R	
1. Aluminum	730	690	94%	730	800	109%			P
2. Antimony	8.2	9.3	113%	8.2	9.8	120%			Hydride
3. Arsenic	9.2	9.5	103%	9.2	9.2	100%	9.3	101%	Hydride
4. Barium	734	770	105%	734	750	102%			P
5. Beryllium	58	57	98%	235	237	101%			P
6. Cadmium	18	16	89%	39	37	95%			P
7. Calcium	40,600	37,800	93%	40,600	36,800	91%			P
8. Chromium	261	268	103%	261	250	96%			P
9. Cobalt	261	232	89%						P
10. Copper	339	333	98%	339	320	94%			P
11. Iron	796	802	99%	796	747	94%			P
12. Lead	435	432	99%	435	421	97%			P
13. Magnesium	1,800	1,780	98%	8,400	7,950	95%			P
14. Manganese	348	342	98%	348	353	101%			P
15. Mercury	8.8	7.5	85%						Cold Vapor
16. Nickel	207	193	93%	207	186	90%			P
17. Potassium	9800	9310	95%						P
18. Selenium	21.8	20.6	94%	21.8	19.9	91%	21.5	99%	Hydride
19. Silver	52	49	94%	28	30	107%			P
20. Sodium	8200	8040	98%	46,500	44,800	96%			P
21. Thallium	504	470	94%						P
22. Tin	None Available								
23. Vanadium									
24. Zinc	418	406		418	393	94%			P
Other:									
Cy ide	200	198	99%	200	211	106%	204	102%	335.2

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

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FORM II

Q.C. Report No. 1

INITIAL AND CONTINUING CALIBRATION VERIFICATION³

Lab Name General Testing Corporation

Job No. 52318

Date June 5, 1986

Units ug/l

Compound	Initial Calib. ¹			Continuing Calib. ²					
	True Value	Found	% R	True Value	Found	% R	Found	% R	Method ⁴
Metals:									
1. Aluminum									
2. Antimony									
3. Arsenic									
4. Barium									
5. Beryllium									
6. Cadmium									
7. Calcium									
8. Chromium	14	13	83%	261	262	100%			F
9. Cobalt									
10. Copper									
11. Iron									
12. Lead	435	446	102%	17	19	112%			F
13. Magnesium									
14. Manganese									
15. Mercury									
16. Nickel									
17. Potassium									
18. Selenium									
19. Silver									
20. Sodium									
21. Thallium	63	52	82%	252	207	82%			F
22. Tin									
23. Vanadium	260	276	106%	260	263	101%			F
24. Zinc									
Other:									
Cyanide									

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

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FORM III

Q.C. Report No. 1

BLANKS

Lab Name General Testing Corporation

Job No. 52318

Date June 5, 1986

Units ug/l

Matrix Water

Preparaion 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				<2	
4. Barium	<100	<100					<100	
5. Beryllium	<5	<5					<5	
6. Cadmium	<5	<5					<5	
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				<10	
15. Mercury	<0.2	<0.2					<0.2	
16. Nickel	<40	<40					<40	
17. Potassium	<250	<250					<250	
18. Selenium	<2	<2	<2				<2	
19. Silver	<10	<10	<10				<10	
20. Sodium	<100	<100					<100	
21. Thallium	<250	<250					<250	
... Tin	<10	<10					<10	
23. Vanadium								
Other: Zinc	<10	<10					<10	
Cyanide	<5	<5	<5	<5			<5	

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FORM V

Q.C. Report No. 1

SPIKE SAMPLE RECOVERY

Lab Name General Testing Corporation

Job No. 52318

Lab Sample ID No. A

Date June 5, 1986

Units ug/l

Matrix Water

Compound	Control Limit % R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	% R [†]
Metals:					
1. Aluminum	75-125	580	265	500	63 "R"
2. Antimony	"	-	-	-	-
3. Arsenic	"	10.4	<2	10	104
4. Barium	"	550	<100	500	110
5. Beryllium	"	48	<5	50	96
6. Cadmium	"	46	<5	50	92
7. Calcium	"	35,200	32,550	2500	106
8. Chromium	"	-	-	-	-
9. Cobalt	"	240	<50	250	96
10. Copper	"	95	<20	100	95
11. Iron	"	376	195	250	72.4 "R"
12. Lead	"	-	-	-	-
13. Magnesium	"	9,780	9,305	1250	"a"
14. Manganese	"	92	42	50	100
15. Mercury	"	2.3	<0.2	2.0	115
16. Nickel	"	251	<40	250	100
17. Potassium	"	3,170	1900	1250	102
18. Selenium	"	11.6	2.0	10.0	96
19. Silver	"	45	<10	50	90
20. Sodium	"	12,600	11,000	1250	"a"
21. Thallium	"	1,220	<250	1250	98
22. Tin	"	53	<10	50	106
23. Vanadium	"	1,460	<250	1250	117
24. Zinc	"	51	<10	50	102
Other:					
Cyanide	"	47	<5	42	112

[†] %R = [(SSR - SR)/SA] x 100

"R"-Out of control

*"a" = sample value >4x spike level

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FORM V

Q.C. Report No. 1

SPIKE SAMPLE RECOVERY

Lab Name General Testing Corporation

Job No. 52318

Lab Sample ID No. B

Date June 5, 1986

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	"	42.2	<10	50	9.4
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

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FORM V

Q.C. Report No. 1

SPIKE SAMPLE RECOVERY

Lab Name General Testing Corporation

Job No. 52318

Lab Sample ID No. A

Date June 5, 1986

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	"	18.65	<10	20.0	93.3
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"	19.9	8.4	10.0	115
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"				
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"	27.2	4.2	20.0	115
22. Tin	"				
23. Vanadium	"	106	<50	100	106
24. Zinc	"				
Other:					
Cyanide	"				

¹ %R = [(SSR - SR)/SA] x 100

"R"-Out of control

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Flame

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FORM VI

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

DUPLICATES

Lab Name General Testing Corporation

Job No. 52318

Lab Sample ID No. A

Date June 5, 1986

Units ug/l

Matrix Water

Compound	Control Limit ¹	Sample(S)	Duplicate(D)	RPD ²
Metals:				
1. Aluminum	100 ug/l	250	280	30 ug/l
2. Antimony	-	-	-	-
3. Arsenic	2 ug/l	<2	<2	NC
4. Barium	100 ug/l	<100	<100	NC
5. Beryllium	5 ug/l	<5	<5	NC
6. Cadmium	5 ug/l	<5	<5	NC
7. Calcium	20 %	32,500	32,600	0.31%
8. Chromium	-	-	-	-
9. Cobalt	50 ug/l	<50	<50	NC
10. Copper	20 ug/l	<20	<20	NC
11. Iron	50 ug/l	200	190	10 ug/l
12. Lead	-	-	-	-
13. Magnesium	20 %	9,450	9160	3.12%
14. Manganese	20 %	45	38	16.9%
15. Mercury	0.2ug/l	<0.2	<0.2	NC
16. Nickel	40 ug/l	<40	<40	NC
17. Potassium	20 %	1900	1900	0.0%
18. Selenium	2.0 ug/l	2.0	2.0	0.0 ug/l
19. Silver	10 ug/l	<10	<10	NC
20. Sodium	20%	11,000	11,000	0.0%
21. Thallium	250 ug/l	<250	<250	NC
22. Tin	10 ug/l	<10	<10	NC
23. Vanadium	250 ug/l	<250	<250	NC
24. Zinc	10 ug/l	<10	<10	NC
Mer:				
Cyanide	5 ug/l	<5	<5	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

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FORM VI

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

DUPLICATES

Lab Name General Testing Corporation

Job No. 52318

Lab Sample ID No. B

Date June 5, 1986

Units ug/l

Matrix _____

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

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

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FORM VI

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

DUPLICATES

Lab Name General Testing Corporation

Job No. 52318

Lab Sample ID No. A

Date June 5, 1986

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	0.10 ug/l	<10	<10	NC
9. Cobalt				
10. Copper				
11. Iron				
12. Lead	5 ug/l	7.3	9.4	2.1 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				
23. Vanadium	50 ug/l	<50	<50	NC
24. Zinc				
Mer:				
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

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FORM VII

Q.C. Report No. 1

INSTRUMENT DETECTION LIMITS AND
LABORATORY CONTROL SAMPLE

Lab Name General Testing Corporation

Job No. 52318

Date June 5, 1986

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

Compound	Required Detection Limits (RDL) -ug/l	Instrument Detection Limits (IDL) -ug/l		Lab Control Sample		
		ICP/AA	Furnace	True	Found	%R
Metals:						
1. Aluminum	200	100		0.50	0.50	100%
2. Antimony	60	5		40	43.4	109%
3. Arsenic	10	2		10.0	10.0	100%
4. Barium	200	100		500	520	104%
5. Beryllium	5	5		50	52	104%
6. Cadmium	5	5		50	50	100%
7. Calcium	5000	500		2500	2390	96%
8. Chromium	10	50		250	271	108%
9. Cobalt	50	50		250	256	102%
10. Copper	25	20		100	101	101%
11. Iron	100	50		250	220	88%
12. Lead	5	50		250	265	108%
13. Magnesium	5000	250		1250	1360	109%
14. Manganese	15	10		50	52	104%
15. Mercury	0.2	0-2		2.0	2.1	105%
16. Nickel	40	40		250	231	92%
17. Potassium	5000	250		1250	1200	96%
18. Selenium	5	2		10.0	10.2	102%
19. Silver	10	10		50	51	102%
20. Sodium	5000	100		1250	1320	106%
21. Thallium	10	250		1250	1240	99%
22. Tin	40	10		100	107	107%
23. Vanadium	50					
24. Zinc	20	10		50	49	98%
Other:						
Cyanide	10	5		51.6	47	110%

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Furnace_AA

FORM VII

Q.C. Report No. 1

INSTRUMENT DETECTION LIMITS AND
LABORATORY CONTROL SAMPLE

Lab Name General Testing Corporation

Job No. 52318

Date June 5, 1986

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

Compound	Required Detection Limits (CRDL) -ug/l	Instrument Detection Limits (IDL) -ug/l		Lab Control Sample		
		ICP/AA	Furnace	True	Found	%R
Metals:						
1. Aluminum	200					
2. Antimony	60					
3. Arsenic	10					
4. Barium	200					
5. Beryllium	5					
6. Cadmium	5					
7. Calcium	5000					
8. Chromium	10		10	10	10.4	104%
9. Cobalt	50					
10. Copper	25					
11. Iron	100					
12. Lead	5		5	25	25	100%
13. Magnesium	5000					
14. Manganese	15					
15. Mercury	0.2					
16. Nickel	40					
17. Potassium	5000					
18. Selenium	5					
19. Silver	10					
20. Sodium	5000					
21. Thallium	10		10	50	49	98%
22. Tin	40					
23. Vanadium	50		50	50	52	104%
24. Zinc	20					
Other:						
Cyanide	10					

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Form IX (Quarterly)

Instrument Detection Limits

Laboratory Name General Testing Corporation

ICP/Flame AA (Circle One)

Model Number Varian 975

Date June 6, 1986

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	40P	40
5. Beryllium	234.9 B	5P	5	17. Potassium		5000	
6. Cadmium	228.8 B	5P	5	18. Selenium		5	
7. Calcium		5000		19. Silver		10	
8. Chromium	357.9	10P ²	50	20. Sodium		5000	
9. Cobalt		50		21. Thallium		10	
10. Copper	324.7	25P	20	22. Tin		40	
11. Iron	248.3	100P	50	23. Vanadium		50	
12. Lead	217.0 B	5P	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

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Form IX (Quarterly)

Instrument Detection Limits

Laboratory Name General Testing Corporation

ICP/Flame AA (Circle One)

Model Number IL 751 (B)

Date June 6, 1986

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	60*	5	14. Manganese		15	
3. Arsenic	193.7	10*	1	14. Mercury	253.7	0.2**	0.2
4. Barium		200		16. Nickel		40	
5. Beryllium		5		17. Potassium		5000	
6. Cadmium		5		18. Selenium	196.0	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	40*	10
11. Iron		100		23. Vanadium		50	
12. Lead		5		24. Zinc		20	

* Hydride ** Cold Vapor

- 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

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Form IX (Quarterly)

Instrument Detection Limits

Laboratory Name General Testing Corporation

ICP/Flame AA (Circle One)

Model Number Varian 975

Date June 6, 1986

Furnace AA Number CTA 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

710 Exchange Street

QC Report #1

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 June 6, 1986

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	5000P		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

SECTION D

Inorganic CLP parameters,
Raw data copies.

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SECTION D

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* Data not available at this time.

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SECTION D

Subpart D1: Raw Data for Aluminum

METALS ANALYSIS DATA SHEET

REV.

METAL Pb DATE 12/12/85 ANALYST JB REVIEWER MP 12/11/85
 INSTRUMENT (AA) 309.3 nm Voltage 380 V ANALYSIS METHOD Flame Hydride
 Current 8 a Split 1.0 nm Gas 2.0 Acet Acid
 D₂ off Integ. 4 sec Reduc. 11/11/85

INITIAL CALIBRATION -100 ul HCl added to samples/slts

STANDARDS:	#1	#2	#3	#4	#5
Stock	5.00	10.00	2.00	0.50	0.10
12/6/85	0.066	0.132	0.026	0.0066	0.0013
EPA Check	Known	Meap	SD	RSD	% Recovered
WR2842	0.73	0.69	0.05	7.42	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 11/26	<.1							
BS	0.50		100%					
52318-A vrs	0.25			200	200	0.26	0.25	
A(q)	0.28						0.28	
A(q)	0.58		63%				0.58	
B	<.1				176		<.1	
C	0.19				181		0.21	
D	0.26				177		0.29	
E	0.33				184		0.36	
F	0.20				182		0.22	
G	0.16				181		0.18	
BLK 11/27	<.1							
BS	0.53		106%					
*52361-B NH	5.3	1/100	530	50	0.49g			54,100
BLK 12/4	<.1							
BS	0.58		116%					
4685-A	2.4	1/100	240	100	1.01g			24,000
A(q)	2.4	1/100	240		0.99g			24,000
A(q)	2.35	1/100	235		0.98g	split to low		23,500
B	1.6	1/100	160		1.00g			16,000
C	7.9	1/100	79		1.02g			7900
D	1.4	1/100	140		1.01g			14,000
E	8.7	1/100	87		1.03g			8,700
52358-A	<.1			100	100		<.1	
B	<.1						<.1	
C	<.1						<.1	

METALS ANALYSIS DATA SHEET

REV.

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V Flame _____ Hydride _____
 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
2	0.73	0.60	0.09	11.68	109%

ANALYSIS

Sample #	INSTRUMENT ANALYSIS		Final ug/ml	DIGESTION		w or d weight	FINAL CONCENTRATION	
	Conc. ug/ml	D.F.		F.V. ml.	I.V. ml. or gm		Liquid ug/ml	Solids ug/gm
52358-D	<.1			100	100		<.1	
52434-B(sol)	0.32						0.32	
52456-B(sol)	0.25						0.25	
52484-B(sol)	0.39						0.39	
52498-B(sol)	0.62						0.62	
52372-A LL	<.1						<.1	
52429-A LL	<.1						<.1	
BLK 1/2	<.1						<.1	
52432-B x10	5.41	5.14						
" B	0.48	0.47						
52432-P x10	10.87	10.29						
" P	1.09	1.12						
" P (QC)	1.72							
*52361-B ^{off}	<.1							
52375-A New	1.4			100	100		1.4	
BLK 1/2	<.1							
BS	0.49		98%					
52305-A New	1.8			100	100		1.8	
52360-A New	2.2			50	50		2.2	

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SECTION D

Subpart D2: Raw Data for Antimony

METALS ANALYSIS DATA SHEET

REL.

METAL 5b LL DATE 1/15/86 ANALYST NJM REVIEWER MKP 1/16/86
 INSTRUMENT (AA) 2126 nm Voltage 700 V ANALYSIS METHOD Flame Hydride
 Current 4.5 A Split 0.3 nm Gas 1 Acid
 D₂ Integ. 4 sec Reduc.

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	Conc. ug/ml	0.050	0.050	0.050	0.050
	Absorbance		0.437		
EPA Check	Known	Mean	SD	RSD	% Recovered
<u>TM 3</u>	<u>0.0082</u>	<u>0.0098</u>	<u>0.001</u>	<u>10.2%</u>	<u>120%</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	Salics ug/gm
Blk / 7	<0.005			100	50		<.01	
B.S.	0.0213		85%	100	50		0.0213 / 0.85 = 25%	
52613A	<0.005			100	50		<.01	
B	<0.005						<.01	
A.DUP	<0.005						<.01	
B.S.K	0.0211		84%				0.0211 / 0.84 = 25%	
C	<0.005						<.01	
D	<0.005						<.01	
E	<0.005						<.01	
F	<0.005						<.01	
G	<0.005						<.01	
H	<0.005			↓	↓		<.01	
52620								
52630-A	<0.005			100	0.58			<1
A.DUP	<0.005				0.53			<1
A.S.K	0.0195				0.51			3.99/20 = 78%
B	<0.005			↓	0.57			<1
4916A	<0.005			100	0.54g			<1
A.DUP	<0.005			100	0.49			<1
A(0.02)	0.0215			100	0.54g			3.99/20 = 108%
4764-A	<0.005			100	50		<.01	
A.DUP	<0.005						<.01	
A(0.02)	0.0193			↓	↓		0.0193 / 0.97 = 97%	

METALS ANALYSIS DATA SHEET

REV.

LAB SB(LC) DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V Flame _____ Hydride _____
 D₂ _____ 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
<u>1M 3#1</u>	<u>0.0082</u>	<u>0.0093</u>	<u>0.0004</u>	<u>4.05</u>	<u>113%</u>

ANALYSIS

Sample #	INSTRUMENT ANALYSIS		Final ug/ml	DIGESTION		w or d weight	FINAL CONCENTRATION	
	Conc. ug/ml	D.F.		F.V. ml.	I.V. ml. or gm		Liquid ug/ml	Solids ug/gm
<u>Blk 14/6</u>	<u><0.005</u>			<u>100</u>	<u>50</u>		<u><.01</u>	
<u>B.S. (0.02)</u>	<u>0.0217</u>			<u>100</u>	<u>50</u>		<u>0.045/24=1.89%</u>	
<u>52318A</u>	<u><0.005</u>			<u>100</u>	<u>50</u>		<u><.01</u>	
<u>ADP</u>	<u><0.005</u>			<u>100</u>	<u>50</u>		<u><.01</u>	
<u>A (0.02)</u>	<u>0.0207</u>			<u>100</u>	<u>50</u>		<u>0.041/24=1.7%</u>	
<u>B</u>	<u><0.005</u>			<u>50</u>			<u><.005</u>	
<u>C</u>	<u><0.005</u>			<u>50</u>			<u><.005</u>	
<u>D</u>	<u><0.005</u>			<u>50</u>			<u><.005</u>	
<u>E</u>	<u><0.005</u>			<u>50</u>			<u><.005</u>	
<u>F</u>	<u><0.005</u>			<u>50</u>			<u><.005</u>	
<u>G</u>	<u><0.005</u>			<u>50</u>			<u><.005</u>	

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SECTION D

Subpart D3: Raw Data for Arsenic

METALS ANALYSIS DATA SHEET

REV. 12/14/85

METAL As DATE 11/27 ANALYST MM REVIEWER MM
 INSTRUMENT (AA) 193.7 nm Voltage 620 V
 Current 9.5 A Split 1.0 nm
 D₂ OFF Integ. 4 sec
 ANALYSIS METHOD
 Flame _____ Hydride _____
 Gas 1 Acid HSCl/HCl
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1 (20.5)	#2 (29.5)	#3 (9.2)	#4 (6.2)	#5 (2.4)
Stock	Conc. ug/ml <u>0.20</u>	<u>0.30</u>	<u>0.10</u>	<u>0.05</u>	<u>0.02</u>
	Absorbance <u>0.369</u>	<u>0.430</u>	<u>0.196</u>	<u>0.124</u>	<u>0.056</u>
EPA Check	Known <u>9.2</u>	Mean <u>9.6</u>	SD <u>0.5</u>	RSD <u>5.03</u>	% Recovered <u>104%</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
Blk 1/22	<1		20.01	100	50		20.002	
B.S. 1/22	5.0		100%					
4853-D	1.0	1/10	0.01				0.020	
SPK	9.5		85%					
E	<1	1/10	20.01				20.02	
SPK	8.5		85%					
4913	<1	1/10	20.01				20.02	
SPK	9.9		99%					
4940 A	2.1	1/10	20.01				20.02	
SPK	10.4		104%					
B	<1	1/10	20.01				20.02	
SPK	9.8		98%					
52312-E	<1	1/10	20.01				20.02	
SPK	9.2		92%					
F	<1	1/10	20.01				20.02	
SPK	8.9		89%					
G	<1	1/10	20.01				20.02	
SPK	9.2		92%					
H	<1	1/10	20.01				20.02	
SPK	9.6		96%					
52361-A	<1	1/10	20.01				20.02	
SPK	9.9		99%					
B	<1	1/10	20.01				20.02	
SPK	9.9		99%					
52343-D	<1	1/10	20.01				20.02	
SPK	9.6		96%					

ANALYSIS DATA SHEET *REV. 11/15*

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____

WAVELENGTH (nm) _____ Voltage _____ V
 Filter _____ a Solit _____ nm
 D₂ _____ Integ. _____ sec
 ANALYSIS METHOD
 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
1482 %	9.2	9.5	0.1	1.29	103.9%

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
Blank 4/23	<1		<0.001	100	50		<0.002	
B.S.	4.9		98%					
52038-A	1.4		0.004				0.0028	
B	<1		<0.001				<0.002	
C	<1		<0.001				<0.002	
D	4.8		0.0048				0.0096	
0.08P	4.7		0.0047				0.0094	
0.5PK	9.5		94%					
E	<1		<0.001				<0.002	
F	<1		<0.001				<0.002	
G	<1		<0.001				<0.002	
H	4.5		0.0045				0.0090	
I	<1		<0.001				<0.002	
J	2.1		0.0021				0.0042	
52301A	1.7		0.0017				0.0034	
B	<1		<0.001				<0.002	
C	<1		<0.001				<0.002	
D	<1		<0.001				<0.002	
E	1.4		0.0014				0.0028	
F	1.9		0.0019				0.0038	
G	6.2		0.0062				0.0124	
H	5.1		<0.001				<0.002	
I	<1		<0.001				<0.002	
K	5.4		0.0054				0.0108 (0.01)	
L	7.4		0.0074				0.0148	
M	5.0		0.0050	✓	✓		0.0100	

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____

WAVELENGTH (nm) _____

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
WS 1482 1.0	9.2	9.2	0.1	0.99	100%

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
52301-M	5.2		0.0052	100	50		0.0104	
M.M.P.	10.2		100%					
N	<1		<0.001				<0.002	
O	<1		<0.001				<0.002	
52310 B	9.1		0.0091				0.0182	
52362	14.0		0.014				0.028	
52318 A	<1		<0.001				<0.002	
A.D.P.	<1		<0.001				<0.002	
A.P.K.	5.2		100%					
B	<1		<0.001				<0.002	
C	4.6		0.0046				0.0092	
D	4.6		0.0046				0.0092	
E	1.4		0.0014				0.0028	
F	2.2		0.0022				0.0044	
G	2.0		0.0020				0.0040	
Blk 11/22	<1		<0.001				<0.002	
B.S.	4.4		88%					
B.S.	4.4		88%					
52582A	10.1		0.0101				0.0202	
B	11.8		0.0118				0.0236	
C	3.1		0.0031				0.0062	
D	2.6		0.0026				0.0052	
E	12.1		0.0121				0.0242	
F	5.2		0.0052				0.0104	
G	6.7		0.0067				0.0134	
G.D.P.	6.8		0.0068				0.0136	

4/2

METALS ANALYSIS DATA SHEET

REV.

METAL Sb DATE 11/9/85 ANALYST JB REVIEWER KMP/12/10
 INSTRUMENT (AA) 217.6 nm Voltage 530 V ANALYSIS METHOD Flame Hydride
 Current 8 a Split 2.5 nm 12/13/85 Gas Air / Acet Acid
 D₂ OFF Integ. 4 sec Reduc.

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	5.00	10.00	2.00	1.00	0.50
12/9/85	0.085	0.157	0.034	0.014	0.008
EPA Check	Known	Mean	SD	RSD	% Recovered
WPSM TRS 218	0.975	0.94	0.02	2.27	100%

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
BLK u/	-							
BLK SPK	-							
S1970-H	<.5			100	1.00g			<50
-H(00)	<.5			100	1.03g			<50
BLK u/y	-							
BS (matrix 25)	2.48		99%					
S1971-A Low	<.5			100	1.04g			<50
A(00)	<.5				1.03g			<50
A(00)	1.32		50%		1.04g			127
B	<.5				0.96g			<50
C	<.5				0.97g			<50
S2228-A Dilute	0.74			100	1.0 ml		74	-
" B "	2.0			100	1.0 ml		200	-
BLK u/s	<.5							
BS	<.5		0%					
S2168-A	3.1			100	1.05g			300
" B "	4.6			"	1.41g			330
BLK u/s	<.5							
BS	1.74		70%					
S2026-A Low	<.5			100	100		<.5	
B	<.5						<.5	
C	<.5						<.5	
D	<.5						<.5	
D(00)	<.5						<.5	
D(00)	<.5		0%				<.5	
E	<.5						<.5	

Report Redigest

METALS ANALYSIS DATA SHEET

REV.

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V Flame _____ Hydride _____
 D₂ _____ 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
2/10	0.975	1.01	0.02	1.80	103

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
S2028-F Low	<.5			100	100		<.5	
G	<.5			↓	↓		<.5	Repeat digest
H	<.5			↓	↓		<.5	
I	<.5			↓	↓		<.5	
J	<.5			↓	↓		<.5	
BS 11/20	1.89		76%					
S2228-C	1.8			50	0.54g			170
BLK 11/26	<.5							
BS	2.27		91%					
S2318-A Low	3.4			50	50		3.4	-
B	6.9			50	50		6.9	-
S2318-A URS	<.5			50	50		<.5	
A(QD)	<.5			↓	↓		<.5	Repeat by Hydride
A(QR)	<.5		0%	↓	↓		<.5	
B	<.5			↓	↓		<.5	
C	<.5			↓	↓		<.5	
D	<.5			↓	↓		<.5	
E	<.5			↓	↓		<.5	
F	<.5			↓	↓		<.5	
G	<.5			↓	↓		<.5	
BLK 12/4	<.5							
BS	1.83		73%					
4485-A	<.5			50	0.50g		Repeat	<.50
A(QD)	<.5			↓	0.48g		by	<.50
A(QR)	1.08		43%	↓	0.48g		Hydride	112

HEPLS ANALYSIS DATA SHEET

REV.

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD
 Current _____ nm Voltage _____ V Flame _____ Hydride _____
 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
TM 2	10.0				
14.2	0.724	0.97	0.01	1.57	105%

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	Solid ug/g
BLK 11/26	<.1							
BS	0.57		114%					
52318-A VRS	<.1			200	200		<.1	
A(AC)	<.1				200		<.1	
A(SK)	0.55		110%		200		0.55	
B	<.1				176		<.1	
C	0.16				181		0.18	
D	0.12				177		0.14	
E	<.1				184		<.1	
F	0.12				182		0.13	
G	0.12				181		0.13	
BLK 11/27	<.1							
BS	0.52		104%					
52335 Mech	8.3			50	0.70g			590
52362-A MWA	<.1			100	100		<.1	
A(AC)	<.1						<.1	
B	<.1						<.1	
B(SK)	0.56		112%				0.56	
C	<.1						<.1	
D	<.1						<.1	
BLK 11/29	<.1							
BS	0.51		102%					
52398	<.1			50	1.0 ml		<.5	
BLK 12/2	<.1							
BS	0.56		112%					
52301-AWA	0.80			100	100		0.80	

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METALS ANALYSIS DATA SHEET

REV.

METAL Ca DATE 12/4/85 ANALYST JB REVIEWER MSF 12/18/85
 INSTRUMENT (AA) 5235 Voltage 350 V ANALYSIS METHOD Flame Hydride
 Current 4 Slit 1.0 nm 12/18/85 Gas 60/acet Acid
 D₂ off Integ. 7 aec Raduc.

INITIAL CALIBRATION

OK 12/18/85

STANDARDS:	#1	#2	#3	#4	#5
Stock	5.00	10.00	2.00	0.50	0.10
Conc, ug/ml					
Absorbance		0.220			
EPA Check	Known	Mean	SD	RSD	% Recovered
4038 14x2	0.224	0.24	0.03	2.33	101%
4051 4051	10.0	8.74	0.08	0.93	87%

- 100 ul HCl added to samples/standards
- final time

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/bl	Sol ug/gm
4853-D	<1	1/2	<1	50	50		<1	-
0.50	0.49							
4853-E	<1		<1	50	50		<1	-
0.50	0.43							
4913	<1		<1	50	50		<1	-
0.50	0.47							
52343-A	<1		<1	50	50		<1	-
0.50	0.45							
52343-B	<1		<1	50	50		<1	-
0.50	0.44							
52343-C	<1		<1	50	50		<1	-
0.50	0.49							
52343-D	<1		<1	50	50		<1	-
0.50	0.44							
52361-A	<1		<1	50	50		<1	-
0.50	0.43							
52361-B	<1		<1	50	50		<1	-
0.50	0.43							
BLK 11/21	<1							
BS	0.44		88%					
52310-B WMS	1.3			100	100		1.3	-
52362	0.24			100	100		0.24	-
BLK 11/25	-							
BS	-							
4940-A	0.11							
" B	0.12							

EPTX SAMPLES <1 / <1

GTC Report #52318

SECTION D

Subpart D4: Raw Data for Barium

GTC Report #52318

SECTION D

Subpart D5: Raw Data for Beryllium

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

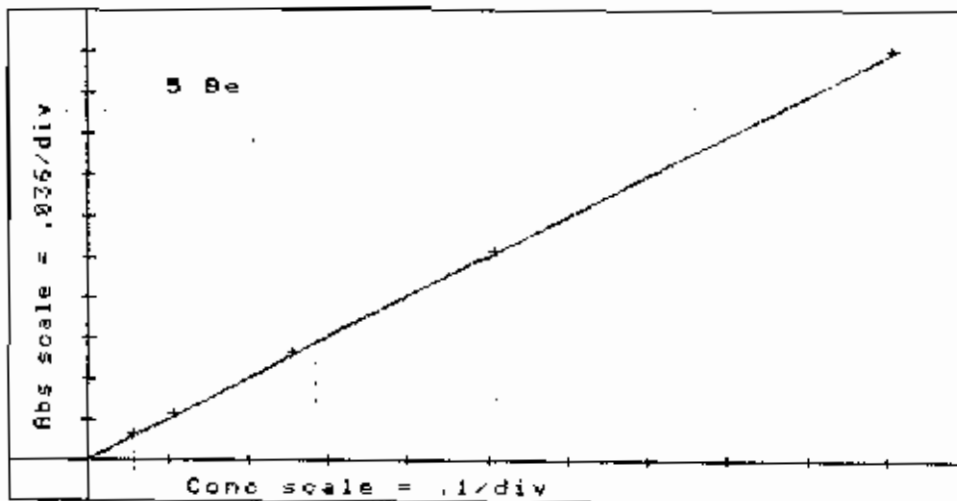
VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 12/2/85
 BATCH:

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

*QC'd 12/12/85
 MKP 12/3*

AUTO-PROGRAM 5 5e

SOLUTION	CONC mg/L	RED	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	5.3%	0.019	0.020	0.019	0.020	1.000
STANDARD 2	0.100	2.8%	0.036	0.036	0.037	0.037	1.000
STANDARD 3	0.250	1.1%	0.091	0.092	0.090	0.091	1.000
STANDARD 4	0.500	0.6%	0.180	0.179	0.181	0.182	1.000
STANDARD 5	1.000	0.6%	0.355	0.357	0.358	0.353	1.000



1*2	0.055	0.0%	0.021	0.021	0.021	0.021	1.000
2	0.217	1.3%	0.079	0.080	0.080	0.078	1.000
BLK 11/1	0.000	0.0%	0.000	0.001	0.001	0.000	1.000
51970 H	0.000	0.0%	0.000	0.001	0.000	0.000	1.000
51970 HSPK	0.000	0.0%	0.000	0.000-0.001	0.000	0.000	1.000
BLK 11/4	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
BLK SPK	0.021	12.5%	0.008	0.009	0.009	0.008	1.000
51971 A	0.007	0.0%	0.003	0.003	0.003	0.004	1.000
51971 ABC	0.010	0.0%	0.004	0.005	0.004	0.004	1.000
51971 ABPK	0.052	5.0%	0.020	0.018	0.021	0.021	1.000
51971 B	0.002	0.0%	0.001	0.001	0.002	0.001	1.000
51971 C	0.002	0.0%	0.001	0.001	0.001	0.001	1.000
52228 A	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
52228 B	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
BLK 11/20	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
BLK SPK	0.042	6.3%	0.016	0.016	0.017	0.017	1.000
52228 C	0.000	0.0%	0.000	0.001	0.001	0.000	1.000
BLK 11/18	0.000	0.0%	0.000	0.000	0.000	0.000	1.000

BLK SPK	0.047	5.8%	0.018	0.019	0.019	0.018	1.000
52028 A	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
BLANK	0.000	0.0%	-0.001	-0.001	-0.001	-0.001	1.000
RESLOPE	0.074	0.0%	0.035	0.025	0.025	0.026	1.041
1*2	0.054	5.0%	0.020	0.021	0.019	0.020	1.041
2	0.226	1.3%	0.079	0.078	0.081	0.078	1.041
52028 B	0.002	100.0%	0.001	0.002	0.001	0.002	1.041
52028 C	0.002	0.0%	0.001	0.001	0.001	0.002	1.041
52028 D	0.005	50.0%	0.002	0.003	0.003	0.002	1.041
52028 DDC	0.008	0.0%	0.002	0.003	0.002	0.002	1.041
52028 DSPK	0.043	4.3%	0.016	0.017	0.017	0.016	1.041
52028 E	0.005	0.0%	0.002	0.002	0.002	0.002	1.041
52028 F	0.002	100.0%	0.001	0.000	0.001	0.003	1.041
52028 G	0.002	100.0%	0.001	0.002	0.001	0.002	1.041
52028 H	0.002	0.0%	0.001	0.001	0.001	0.001	1.041
52028 I	0.013	0.0%	0.005	0.005	0.005	0.005	1.041
52028 J	0.002	100.0%	0.001	0.000	0.002	0.002	1.041
BLK 11/26	0.002	0.0%	0.001	0.001	0.001	0.001	1.041
BLK SPK	0.032	5.3%	0.019	0.019	0.020	0.018	1.041
52313 A	0.019	14.3%	0.007	0.008	0.008	0.007	1.041
52313 B	0.046	5.9%	0.017	0.019	0.017	0.017	1.041
52313 A	0.002	100.0%	0.001	0.001	0.000	0.002	1.041
52313 AQC	0.000	0.0%	0.000	0.000	0.001	0.000	1.041
52313 ASPK 45	0.043	6.3%	0.016	0.017	0.016	0.017	1.041
BLANK	0.000	0.0%	0.000	0.000	0.002	0.000	1.041
RESLOPE	0.087	3.1%	0.022	0.023	0.024	0.021	1.149
1*2	0.057	5.3%	0.019	0.020	0.020	0.019	1.149
2	0.257	1.3%	0.075	0.075	0.077	0.075	1.149
52313 B	0.003	100.0%	0.001	0.001	0.000	0.002	1.149
52313 C	0.000	0.0%	0.000	0.001	0.000	0.000	1.149
52313 D	0.003	100.0%	0.001	0.000	0.002	0.001	1.149
52313 E	0.000	0.0%	0.000	0.000	0.000	0.002	1.149
52313 F	0.003	100.0%	0.001	0.002	0.000	0.001	1.149
52313 G	0.000	0.0%	0.000	0.000	0.001	0.000	1.149
	0.048	6.3%	0.016	0.017	0.017	0.016	1.149

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: D. DUMBLETON

DATE: 12/2/85

BATCH:

MCV 12/3/85

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

SOLUTION	D _w mg/L
1*2	0.055
2	0.217
BLK 11/1	0.000
51970 H	0.000 < 0.01 ✓
51970 HULL	0.000 < 0.01 ✓
BLK 11/4	0.000
BLK SPK	0.021
51971 A	0.007 > 0.02 mg/L ✓
51971 AQC	0.010
51971 ASPK	0.052
51971 B	0.002 < 0.05 mg/L ✓
51971 C	0.002 < 0.05 mg/L ✓
52228 A	0.000 < 0.05 mg/L ✓
52228 B	0.000 < 0.05 mg/L ✓
BLK 11/20	0.000
BLK SPK	0.042
52228 C	0.000 < 0.05 mg/L ✓
BLK 11/18	0.000
BLK SPK	0.047
52028 A	0.000 < 0.01 ✓
1*2	0.054
2	0.226
52028 B	0.002 < 0.01 ✓
52028 C	0.002 < 0.01 ✓
52028 D	0.005 < 0.01 ✓
52028 DDC	0.005 < 0.01 ✓
52028 DSPK	0.043
52028 E	0.003 < 0.01 ✓
52028 F	0.002 < 0.01 ✓
52028 G	0.002 < 0.01 ✓
52028 H	0.002 < 0.01 ✓
52028 I	0.013 < 0.01 ✓
52028 J	0.002 < 0.01 ✓
BLK 11/26	0.002
BLK SPK	0.032
52313 A	0.019 < 0.05 ✓
52313 B	0.046 < 0.05 ✓
52313 A	0.002 < 0.05 ✓
52313 AQC	0.000 < 0.05 ✓
52313 ASPK	0.043 < 0.05 ✓
1*2	0.057
2	0.237
52313 B	0.003 < 0.05 ✓
52313 C	0.000 < 0.05 ✓
52313 D	0.003 < 0.05 ✓
52313 E	0.000 < 0.05 ✓
52313 F	0.003 < 0.05 ✓
52313 G	0.000 < 0.05 ✓
52313 AQC	0.048

GTC Report #52318

SECTION D

Subpart D6: Raw Data for Cadmium

Note: We were unable to recover the
raw data for Cadmium at the time of this report.

GTC Report #52318

SECTION D

Subpart D7: Raw Data for Calcium

METALS ANALYSIS DATA SHEET

REV.

METAL Ca DATE 12/30/85 ANALYST MM REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD GC 12714 1/21/86
 Current 42.7 nm Voltage 380 V 1.5 Flame _____ Hydride _____
5.5 " Split 4.0 nm _____ Gas Air / Air Acid _____
 D₂ OFF Integ. 4 sec 11/7/85 Reduc. _____

INITIAL CALIBRATION

200 µl HAc added to each std
 fuel leaky burner, kept in
 burner head, left of center
 84 85

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	10.00	20.00	5.00	1.00	0.50
	Absorbance		0.767			
EPA Check	Known	Mean	SD	RSD	% Recovered	
WP 384 ml	40.6	37.8	0.01	0.20	93%	

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
52432-KK	20.55		20.6					
LL	7.06	1/10	70.6					
Blk 1/26	<0.5		<0.5	100	100			
B.S.	2.39		96%					
5238A	3.25	1/10	32.5					
ADP	3.26	1/10	32.6					
ASP	3.52	1/10	35.2			352 - 37.8	2.5 =	104%
B	2.89	1/10	28.9					
C	6.31	1/10	63.1					
D	6.26	1/10	62.6					
E	4.43	1/10	44.3					
F	5.05	1/10	50.5					
G	4.87	1/10	48.7					
Blk 1/27	<.5		<0.5					
B.S.	2.32		93%	✓	✓			
52363A	3.00	1/10	30					
ADP	3.08	1/10	31					
B SPK	3.06	1/10	31					
BSPK	3.19	1/10	31.9					
C	2.53	1/10	25.3					
D	2.96	1/10	30					
4685A 1/27	5.61		5.6	100%	1.02	ON 4685		550
A 1/4	13.77		14		1.01	Take all data		1400
1/27 A	7.09		7.1		0.99	From 12/27 digest		720
12/4 A	9.10		9.1	✓	0.99			920

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METALS ANALYSIS DATA SHEET

REV.

DATE

ANALYST

REVIEWER

ELEMENT (AA)

nm

Voltage

V

ANALYSIS METHOD

Flame

Hydride

Current

μ

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

WP 384 Ml

40.6

36.8

0.01

0.21

91%

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
4605A ^{12/23}	4.43	-	4.4	100ml	1.04			420
12/4 A	4.40		4.4		0.98			450
12/27 B	17.01		17		1.00			1700
12/4 B	6.35		6.4		1.00			640
12/27 C	16.88	Y ₁₀	170		1.00			17000
12/4 C	9.04	Y ₁₀	90		1.02			9300
12/27 D	4.45	Y ₁₀₀	450		0.99			45000
12/4 D	3.54	Y ₁₀₀	350		1.01			35000
12/27 E	18.34	Y ₁₀	180		1.09			17000
12/4 E	3.46	Y ₁₀	35	✓	1.03			3400
Blk 12/16	<0.5		<0.5	50	50			
B.S.	2.37		15	↓	↓			
52423	15.28		15	↓	↓			
52428				↓	↓			
Blk 12/18	<0.5		<0.5	100ml	100ml			
B.S.	2.48		99%	↓	↓			
52471	<0.5		<0.5	↓	↓			
52491	6.08		6.1	↓	↓			
52532-A	↑		↑					

GTC Report #52318

SECTION D

Subpart D8: Raw Data for Chromium

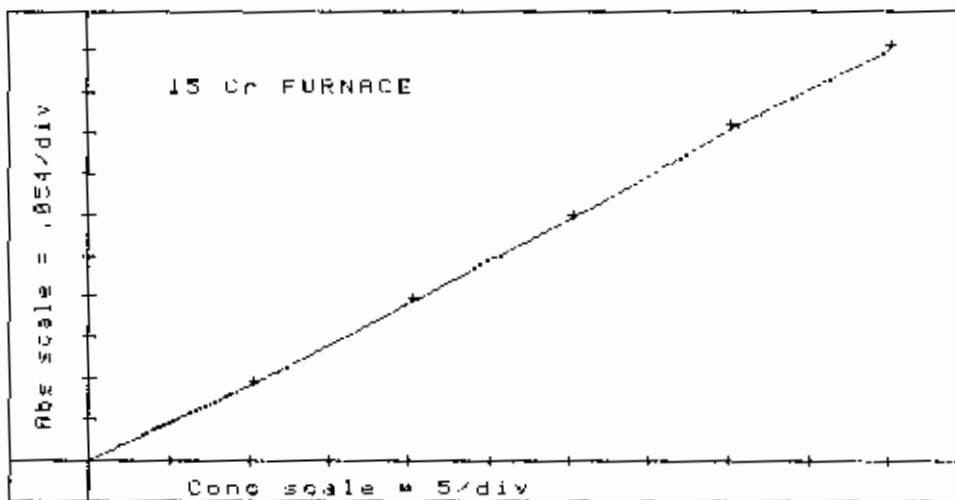
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D.DUMBLETON
 DATE: 01/30/86
 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	400.0%	0.001	-0.002	0.004	1.000
STANDARD 1	10.00	9.4%	0.096	0.090	0.103	1.000
STANDARD 2	20.00	2.0%	0.205	0.208	0.202	1.000
STANDARD 3	30.00	3.5%	0.316	0.308	0.324	1.000
STANDARD 4	40.00	1.6%	0.433	0.428	0.439	1.000
STANDARD 5	50.00	0.2%	0.536	0.536	0.537	1.000



1*2	13.48	6.8%	0.133	0.127	0.140	1.000
Z	* 241.6	4.4%	0.274	0.265	0.283	1.000
BLK 11/26	0.000	12.5%	-0.008	-0.007	-0.009	1.000
BLK SPK	10.38	4.0%	0.100	0.105	0.097	1.000
52318 A	0.000	0.0%	0.000	0.001	0.000	1.000
52318 ABC	1.041	10.0%	0.010	0.011	0.009	1.000
100ul	18.65	1.1%	0.190	0.192	0.189	1.000
52318 B	0.000	33.3%	-0.006	-0.005	-0.008	1.000
100ul	17.67	0.6%	0.179	0.180	0.179	1.000
52318 C	1.250	0.0%	0.012	0.012	0.012	1.000
100ul	18.92	1.6%	0.193	0.191	0.196	1.000
52318 D	0.625	200.0%	0.006	0.015	-0.002	1.000
100ul	19.73	2.0%	0.202	0.199	0.205	1.000
52318 E	0.312	66.7%	0.003	0.005	0.001	1.000
100ul	19.10	5.6%	0.195	0.187	0.203	1.000
BLANK	0.000	0.0%	-0.005	-0.005	-0.005	1.000
RESLOPE	22.13	8.3%	0.229	0.213	0.215	.903
1*2	14.08	0.0%	0.156	0.156	0.156	.903
Z	* 259.2	6.0%	0.302	0.313	0.289	.903
52318 F	0.846	33.3%	0.009	0.012	0.007	.903
100ul	16.20	3.3%	0.182	0.178	0.187	.903
52318 G	0.470	100.0%	0.005	0.009	0.002	.903
100ul	17.25	2.6%	0.195	0.199	0.191	.903
BLK 11/12	0.000	200.0%	-0.001	-0.003	0.000	.903
BLK SPK	10.74	5.2%	0.116	0.112	0.121	.903
52237 D	0.282	66.7%	0.003	0.005	0.001	.903
100ul	16.84	1.1%	0.190	0.188	0.192	.903
52237 E	0.282	33.3%	0.003	0.003	0.004	.903
100ul	17.01	0.5%	0.192	0.193	0.191	.903
52237 F	0.188	50.0%	0.002	0.003	0.001	.903
52237 G	0.188	50.0%	0.002	0.003	0.001	.903

VARIAN AA-975
OPERATOR: D. DUMBLETON
DATE: 01/30/86
BATCH:

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

SOLUTION	Cr ug/l
1*2	13.48
2	* 261.6
BLK 11/25	0.000
BLK SPK	10.38
52318 A	0.000
52318 AQC	1.041 <0.01 ✓
100ul	18.65
52318 B	0.000 <0.01 ✓
100ul	17.67
52318 C	1.250 <0.01 ✓
100ul	18.92
52318 D	0.625 <0.01 ✓
100ul	19.73
52318 E	0.312 <0.01 ✓
100ul	19.10
1*2	14.09
2	* 259.2
52318 F	0.846 <0.01 ✓
100ul	16.20
52319 G	0.470 <0.01 ✓
100ul	17.25
BLK 11/12	0.000
BLK SPK	10.74
52237 D	0.282
100ul	16.84
52237 E	0.282
100ul	17.01
52237 G	0.189
52237 BQC	0.189
100ul	16.36

GTC Report #52318

SECTION D

Subpart D9: Raw Data for Cobalt

METALS ANALYSIS DATA SHEET

REV.

METAL Ca DATE 12/2/85 ANALYST JB REVIEWER 12/11/85
 INSTRUMENT (AA) 240.17 nm Voltage 460 V 12/19/85 ANALYSIS METHOD
 Current 5 a Split 0.3 nm Gas Air / Acet Hydride
 D₂ off Integ. 4 sec Reduc. Acid

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock <u>12/2/85</u>	Conc. ug/ml <u>2.500</u>	<u>5.000</u>	<u>0.250</u>	<u>0.125</u>	<u>0.050</u>
EPA Check WFTM 2	Known <u>0.161</u>	Mean <u>0.232</u>	SD <u>0.018</u>	RSD <u>7.81</u>	% Recovered <u>87%</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 11/2	<.05							
BLK SPK	0.245		98%					
52237-A ^{OE}	<.050			200	200	2	<.05	
B	<.05						<.05	
C	<.05						<.05	
D	<.05						<.05	
E	<.05						<.05	
F	<.05						<.05	
G	<.05						<.05	
G(QD)	<.05						<.05	
G(SPK)	0.268		107%				0.268	
BLK 11/26	<.05							
BLK SPK	0.256		102%					
52318-A URS	<.05			200	200		<.05	
A(QD)	<.05						<.05	
A(SPK)	0.240		96%				0.240	
B	<.05				176		<.05	
C	<.05				181		<.05	
D	<.05				177		<.05	
E	<.05				184		<.05	
F	<.05				182		<.05	
G	<.05				181		<.05	
BS 0.15	0.205		82%					

GTC Report #52318

SECTION D

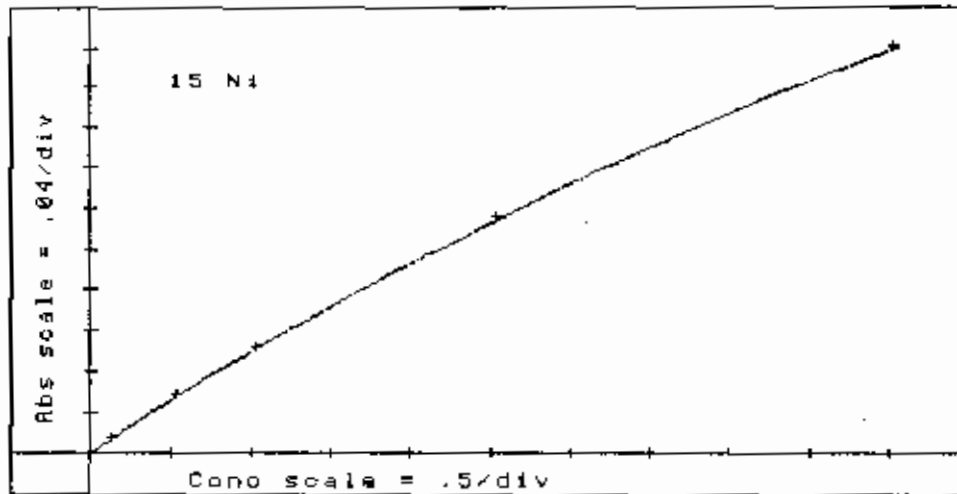
Subpart D10: Raw Data for Copper & Nickel

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 12/12/85
 BATCH:

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

AUTO-PROGRAM 15 Ni

SOLUTION	CONC ng/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	100.0%	0.001	0.001	0.000	0.003	1.000
STANDARD 1	0.100	18.2%	0.011	0.010	0.014	0.010	1.000
STANDARD 2	0.500	5.8%	0.052	0.050	0.056	0.052	1.000
STANDARD 3	1.000	3.0%	0.099	0.104	0.097	0.098	1.000
STANDARD 4	2.500	0.9%	0.225	0.223	0.227	0.225	1.000
STANDARD 5	5.000	0.3%	0.396	0.397	0.397	0.394	1.000

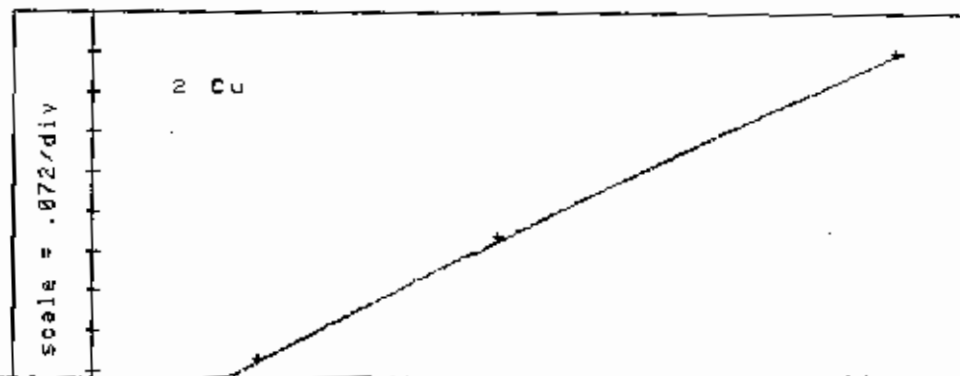


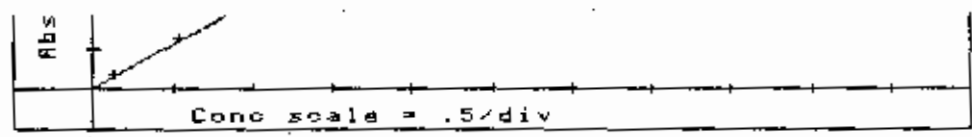
1*2	0.036	50.0%	0.004	0.005	0.001	0.006	1.000
2	0.193	9.5%	0.021	0.024	0.021	0.020	1.000
52432 BLK	0.000	0.0%	0.000	0.002	0.000	0.000	1.000
52432 M	0.572	3.4%	0.059	0.061	0.059	0.057	1.000
52432 N	1.351	3.1%	0.130	0.129	0.136	0.127	1.000
52432 S	0.000	0.0%	0.000	0.003	0.002	0.001	1.000
52432 T	0.000	100.0%	-0.001	0.000	0.002	0.003	1.000
52434 Bsol	1.777	1.2%	0.166	0.164	0.168	0.168	1.000
52456 Bsol	2.723	1.7%	0.242	0.247	0.238	0.241	1.000
52484 Bsol	> 5	0.9%	0.429	0.426	0.428	0.434	1.000
52498 Bsol	1.958	1.1%	0.181	0.180	0.184	0.181	1.000
52244 Bsol	> 8	0.6%	0.644	0.644	0.649	0.641	1.000
52291 Bsol	> 5	0.4%	0.447	0.444	0.449	0.449	1.000
52305 Bsol	1.156	3.5%	0.113	0.112	0.118	0.110	1.000
52326 Bsol	4.240	0.9%	0.348	0.350	0.350	0.344	1.000
52407 Bsol	> 10	1.5%	0.825	0.815	0.839	0.822	1.000
52411 Bsol	> 9	0.5%	0.760	0.765	0.758	0.757	1.000
BLK 11/18	0.009	200.0%	0.001	0.001	0.000	0.004	1.000
BLK SPK	0.231	28.0%	0.025	0.030	0.029	0.017	1.000
52028 J	0.000	0.0%	0.000	-0.001	0.001	0.001	1.000
BLANK	0.000	50.0%	-0.002	-0.001	0.003	0.004	1.000
RESLOPE	0.500	1.9%	0.052	0.053	0.052	0.053	1.000
1*2	0.063	57.1%	0.007	0.012	0.005	0.004	1.000
2	0.174	15.8%	0.019	0.019	0.016	0.023	1.000
BLK 11/26	0.018	150.0%	0.002	0.004	0.002	0.004	1.000
BLK SPK	0.212	21.7%	0.023	0.023	0.029	0.019	1.000
52313 A	1.213	0.0%	0.118	0.118	0.118	0.119	1.000
52313 B	1.259	4.1%	0.122	0.119	0.120	0.129	1.000
52318 A	0.018	150.0%	0.002	0.002	0.000	0.004	1.000
52318 AQC	0.027	66.7%	0.003	0.005	0.005	0.001	1.000
52318 ASPK	0.231	11.1%	0.027	0.024	0.026	0.031	1.000
52318 B	0.009	200.0%	0.001	0.000	0.001	0.004	1.000
52318 C	0.018	50.0%	0.002	0.002	0.002	0.004	1.000
52318 D	0.018	50.0%	0.002	0.001	0.001	0.004	1.000
52318 E	0.045	20.0%	0.008	0.006	0.004	0.007	1.000

52318 F	0.018	150.0%	0.002	0.002	0.006	-0.001	1.000
52318 G	0.000	0.0%	0.000	0.003	0.000	-0.001	1.000
BLK 11/27	0.009	200.0%	0.001	0.004	0.001	0.000	1.000
BLK SPK	0.241	11.5%	0.026	0.030	0.024	0.025	1.000
52325 A	5.016	1.0%	0.397	0.398	0.401	0.393	1.000
52331	0.054	33.3%	0.006	0.006	0.008	0.004	1.000
BLK 11/29	0.027	200.0%	0.003	0.001	-0.002	0.011	1.000
BLANK	0.000	66.7%	0.003	0.003	0.006	0.001	1.000
RESLOPE	0.418	4.5%	0.044	0.046	0.046	0.042	1.196
1*2	0.000	0.0%	0.000	0.003	-0.002	0.000	1.196
2	0.186	23.5%	0.017	0.019	0.021	0.013	1.196
BLK SPK	0.254	13.0%	0.023	0.026	0.025	0.020	1.196
52296	0.076	28.6%	0.007	0.010	0.006	0.005	1.196
52297 A	0.000	0.0%	0.000	-0.001	-0.001	0.000	1.196
52297 B	0.000	100.0%	-0.002	-0.005	-0.003	0.000	1.196
52297 C	0.000	166.7%	-0.003	-0.007	0.003	-0.007	1.196
52299	0.525	4.3%	0.046	0.045	0.045	0.047	1.196
BLK 12/2	0.000	0.0%	0.000	0.001	0.000	0.000	1.196
BLK SPK	0.277	12.0%	0.025	0.028	0.027	0.022	1.196
52303 A	1.796	1.9%	0.157	0.159	0.153	0.159	1.196
52337 A	0.097	33.3%	0.009	0.007	0.013	0.000	1.196
52360	> 5	0.6%	0.462	0.464	0.468	0.459	1.196
52398	0.610	1.9%	0.053	0.052	0.054	0.053	1.196
BLK 12/3	0.000	0.0%	0.000	0.000	-0.002	0.000	1.196
BLK SPK	0.254	21.7%	0.023	0.018	0.023	0.028	1.196
52409	0.076	28.6%	0.007	0.008	0.004	0.009	1.196
52413 A	0.000	0.0%	0.000	-0.002	0.001	0.000	1.196
52413 B	0.152	7.1%	0.014	0.014	0.015	0.013	1.196
52413 BOC	0.173	6.3%	0.016	0.018	0.015	0.016	1.196
BLANK	0.000	0.0%	-0.002	-0.002	-0.002	-0.002	1.196
RESLOPE	0.449	4.3%	0.047	0.048	0.049	0.045	1.113
1*2	0.050	40.0%	0.005	0.004	0.003	0.008	1.113
2	0.215	9.5%	0.021	0.023	0.023	0.018	1.113
52413 BSPK	0.421	5.0%	0.040	0.040	0.039	0.043	1.113
52413 C	0.020	100.0%	0.002	0.004	0.000	0.004	1.113
52430 A	0.050	20.0%	0.005	0.004	0.004	0.007	1.113
52430 AOC	0.050	60.0%	0.005	0.008	0.001	0.006	1.113
52430 C	0.268	0.0%	0.026	0.027	0.026	0.026	1.113

AUTO-PROGRAM 2 Cu

SOLUTION	CONC ng/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
STANDARD 1	0.100	0.0%	0.016	0.016	0.016	0.016	1.000
STANDARD 2	0.500	1.3%	0.079	0.079	0.080	0.080	1.000
STANDARD 3	1.000	0.6%	0.158	0.153	0.156	0.156	1.000
STANDARD 4	2.500	0.5%	0.375	0.375	0.373	0.377	1.000
STANDARD 5	5.000	0.4%	0.710	0.707	0.712	0.713	1.000





1*2	0.025	0.0%	0.004	0.004	0.004	0.004	1.000
2	0.333	0.0%	0.053	0.053	0.053	0.053	1.000
52432 BLK	0.012	0.0%	0.002	0.002	0.002	0.002	1.000
52432 M	0.075	8.3%	0.012	0.013	0.013	0.012	1.000
52432 N	0.162	3.8%	0.024	0.026	0.027	0.027	1.000
52432 S	0.397	0.0%	0.063	0.063	0.063	0.063	1.000
52432 T	0.225	2.8%	0.036	0.037	0.037	0.036	1.000
52434 Bsol	0.352	0.0%	0.056	0.056	0.057	0.056	1.000
52456 Bsol	0.137	0.0%	0.022	0.022	0.022	0.022	1.000
52484 Bsol	0.973	0.7%	0.151	0.150	0.152	0.152	1.000
52498 Bsol	1.295	0.0%	0.199	0.199	0.199	0.200	1.000
52244 Bsol	0.493	0.0%	0.078	0.079	0.078	0.078	1.000
52291 Bsol	0.577	1.1%	0.091	0.091	0.092	0.092	1.000
52309 Bsol	0.276	2.3%	0.044	0.045	0.045	0.044	1.000
52326 Bsol	> 9	11.8%	1.403	1.500	1.500	1.211	1.000
52407 Bsol	0.200	3.1%	0.032	0.033	0.033	0.032	1.000
52411 Bsol	0.106	5.9%	0.017	0.018	0.017	0.018	1.000
BLK 11/18	0.012	0.0%	0.002	0.002	0.002	0.002	1.000
BLK SPK	0.012	50.0%	0.002	0.003	0.003	0.002	1.000
52028 J	0.031	0.0%	0.005	0.005	0.006	0.005	1.000
BLANK	0.000	50.0%	0.002	0.003	0.002	0.003	1.000
RESLOPE	0.493	0.0%	0.078	0.078	0.078	0.078	1.014
1*2	0.012	0.0%	0.002	0.002	0.003	0.002	1.014
2	0.318	2.0%	0.050	0.051	0.050	0.051	1.014
BLK 11/26	0.000	0.0%	0.000	0.000	0.000	0.000	1.014
BLK SPK	0.095	6.7%	0.015	0.016	0.016	0.015	1.014
52313 A	0.559	0.0%	0.087	0.087	0.088	0.087	1.014
52313 B	1.218	0.5%	0.185	0.184	0.187	0.184	1.014
52318 A	0.000	0.0%	0.000	0.001	0.000	0.000	1.014
52318 AQC	0.000	0.0%	0.000	0.000	0.001	0.000	1.014
52318 ASPK	0.095	6.7%	0.015	0.016	0.016	0.015	1.014
52318 B	0.000	0.0%	0.000	0.000	0.000	0.000	1.014
52318 C	0.006	0.0%	0.001	0.001	0.001	0.001	1.014
52318 D	0.000	0.0%	0.000	0.001	0.001	0.000	1.014
52318 E	0.000	0.0%	0.000	0.000	0.000	0.001	1.014
52318 F	0.000	0.0%	0.000	0.001	0.000	0.000	1.014
52318 G	0.006	0.0%	0.001	0.001	0.001	0.001	1.014
BLK 11/27	0.000	0.0%	0.000	0.000	0.000	0.000	1.014
BLK SPK	0.101	0.0%	0.016	0.016	0.016	0.016	1.014
52325 A	> 10	0.0%	1.500	1.500	1.500	1.500	1.014
52331	0.389	0.0%	0.061	0.062	0.061	0.061	1.014
BLK 11/29	0.000	0.0%	0.000	0.000	0.000	0.000	1.014
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.014
RESLOPE	0.500	0.0%	0.079	0.080	0.079	0.079	1.000
1*2	0.018	0.0%	0.003	0.003	0.003	0.003	1.000
2	0.320	0.0%	0.051	0.051	0.051	0.051	1.000
BLK SPK	0.100	0.0%	0.016	0.016	0.016	0.016	1.000
52296	0.339	0.0%	0.054	0.054	0.054	0.055	1.000
52297 A	0.125	0.0%	0.020	0.020	0.020	0.021	1.000
52297 B	0.118	0.0%	0.019	0.019	0.019	0.019	1.000
52297 C	0.106	0.0%	0.017	0.017	0.017	0.017	1.000
52299	0.740	0.9%	0.116	0.116	0.117	0.117	1.000
BLK 12/2	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
BLK SPK	0.106	0.0%	0.017	0.017	0.018	0.017	1.000
52305 A	1.066	0.6%	0.165	0.164	0.166	0.165	1.000
52337 A	0.006	0.0%	0.001	0.001	0.001	0.002	1.000
52360	> 10	0.0%	1.500	1.500	1.500	1.500	1.000
52385	0.812	1.0%	0.142	0.144	0.142	0.142	1.000

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	0.000	1.7%	0.142	0.194	0.142	0.140	1.000
BLK 12/3	0.000	0.0%	0.000	0.001	0.000	0.000	1.000
BLK SPK	0.093	6.7%	0.015	0.016	0.016	0.015	1.000
52409	0.012	0.0%	0.002	0.002	0.002	0.002	1.000
52413 A	0.000	0.0%	0.000	0.001	0.001	0.000	1.000
52413 B	0.012	0.0%	0.002	0.002	0.002	0.002	1.000
52413 BGC	0.006	100.0%	0.001	0.002	0.002	0.001	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
RESLOPE	0.493	1.3%	0.078	0.079	0.079	0.078	1.014
1*2	0.012	0.0%	0.002	0.003	0.002	0.002	1.014
2	0.325	2.0%	0.051	0.052	0.050	0.051	1.014
52413 BSPK	0.107	0.0%	0.017	0.018	0.017	0.017	1.014
52413 C	0.012	0.0%	0.002	0.002	0.002	0.002	1.014
52430 A	0.012	0.0%	0.002	0.002	0.002	0.002	1.014
52430 AOC	0.012	0.0%	0.002	0.002	0.002	0.002	1.014
52430 C	0.107	0.0%	0.017	0.017	0.018	0.017	1.014

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 12/12/89
 BATCH:

1/3/86
 MKP 12/17/85
 12/17/84

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

SOLUTION	Ni mg/L	Cu mg/L	
1*2	0.036	0.025	
2	0.193	0.333	219
52432 BLK	0.000	0.012	STATE TEST
52432 M	-0.572	-0.075	
52432 N	1.351	0.162	
52432 S	0.000	0.397	
52432 T	0.000	0.225	
52434 Bsol	1.777 hL ✓	0.352 0.35 ✓	
52456 Bsol	2.723 hL ✓	0.137 0.14 ✓	
52484 Bsol	>	0.973 0.97 ✓	
52498 Bsol	1.938 hL ✓	1.295 1.3 ✓	
52244 Bsol	>	0.493 0.45 ✓	
52291 Bsol	>	0.577 0.58 ✓	
52305 Bsol	1.156 hL ✓	0.276 0.28 ✓	
52326 Bsol	4.240 hL ✓	>	
52407 Bsol	>	0.200 0.20 ✓	
52411 Bsol	>	0.106 0.11 ✓	
BLK 11/18	0.009	0.012	
BLK SPK	0.231	0.012 0.012 ✓	
52028 J	0.000 0.005	0.031 0.031 ✓	→
1*2	0.063	0.012	
2	0.174	0.318	
BLK 11/26	0.018	0.000	
BLK SPK	0.212	0.095	
52313 A	1.213 hL ✓	0.559 0.56 ✓	→ NOT in Bsol
52313 B	1.259 hL ✓	1.218 hL ✓	
52318 A	0.018 0.018 ✓	0.000 0.000 ✓	

52318 A	0.018	0.000	
52318 ADC	0.027	0.000	
52318 ASPK	0.251	0.095	
52318 B	0.009	0.000	
52318 C	0.018	0.006	
52318 D	0.018	0.000	
52318 E	0.045	0.000	
52318 F	0.018	0.000	
52318 G	0.000	0.006	
BLK 11/27	0.007	0.000	
BLK SPK	0.241	0.101	
52328 A	5.016		
52331	0.054	0.389	0.14 ✓
BLK 11/29	0.027	0.000	
1*2	0.000	0.018	
2	0.186	0.320	
BLK SPK	0.254	0.100	
52296	0.076	0.539	0.1 ✓ ← out of book
52297 A	0.000	0.125	0.11 ✓
52297 B	0.000	0.118	0.11 ✓
52297 C	0.000	0.106	0.11 ✓
52299	0.525	0.740	0.74 ✓
BLK 12/2	0.000	0.000	
BLK SPK	0.277	0.106	
52308 A	1.996	1.066	1.1 ✓
52337 A	0.097	0.006	0.01 ✓
52360			
52395	0.610	0.912	1.1 ✓
BLK 12/3	0.000	0.000	
BLK SPK	0.254	0.093	
52409	0.076	0.012	0.11 ✓
52413 A	0.000	0.000	
52413 B	0.152	0.012	0.11 ✓
52413 BDC	0.175	0.006	0.01 ✓
1*2	0.050	0.012	
2	0.215	0.325	
52413 BSPK	0.421	0.107	
52413 C	0.020	0.012	0.01 ✓
52430 A	0.050	0.012	0.01 ✓
52430 ADC	0.050	0.012	0.01 ✓
52430 SPK	0.268	0.107	

URS-DATED
D.B.C. Book

GTC Report #52318

SECTION D

Subpart D11: Raw Data for Iron

0113

TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

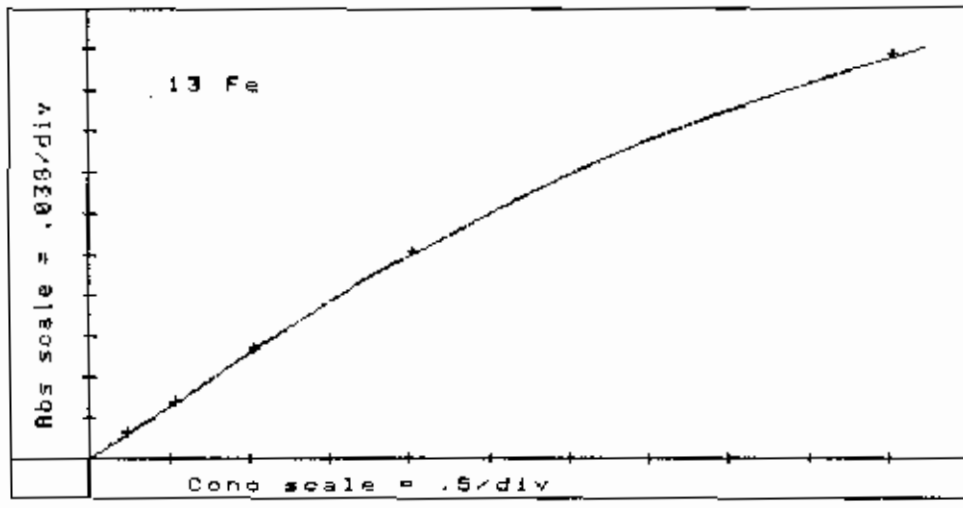
ARIAN AA-975
OPERATOR: D. DUMBLETON
DATE: 12/17/85
BATCH:

MISSP 12/14/85
QC'd
1/16/86

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

AUTO-PROGRAM 13 Fe

SOLUTION	CONC mg/L	RED	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
STANDARD 1	0.200	5.3%	0.019	0.018	0.018	0.021	1.000
STANDARD 2	0.500	4.2%	0.048	0.048	0.051	0.046	1.000
STANDARD 3	1.000	2.0%	0.098	0.098	0.101	0.096	1.000
STANDARD 4	2.000	0.5%	0.188	0.189	0.189	0.186	1.000
STANDARD 5	5.000	0.3%	0.369	0.369	0.368	0.370	1.000

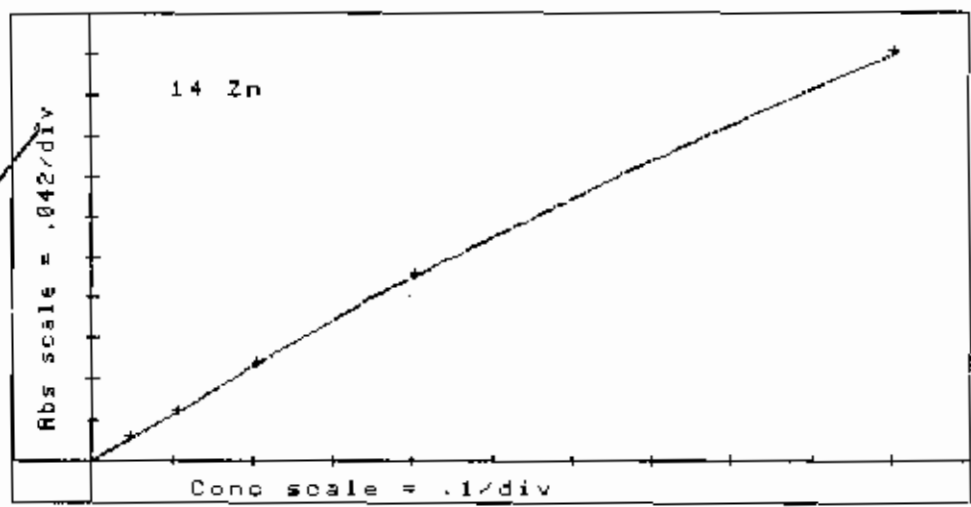


1*2	0.000	0.0%	0.000	-0.002	0.000	0.004	1.000
2	0.802	1.3%	0.078	0.079	0.078	0.077	1.000
BLK 11/26	0.000	100.0%	-0.002	0.000	-0.002	-0.005	1.000
BLK SPK	0.241	8.7%	0.023	0.024	0.021	0.024	1.000
52318 A	0.200	10.5%	0.019	0.020	0.021	0.017	1.000
52318 AGC	0.189	5.6%	0.018	0.019	0.019	0.018	1.000
52318 ASPK	0.376	8.3%	0.036	0.034	0.035	0.040	1.000
52318 B	0.428	2.4%	0.041	0.041	0.040	0.042	1.000
52318 C	0.314	6.7%	0.030	0.032	0.031	0.027	1.000
52318 D	0.293	7.1%	0.028	0.026	0.028	0.030	1.000
52318 E	0.231	9.1%	0.022	0.021	0.020	0.025	1.000
52318 F	0.366	2.9%	0.035	0.034	0.037	0.034	1.000
52318 G	0.293	3.6%	0.028	0.027	0.028	0.029	1.000
BLK 11/27	0.010	100.0%	0.001	0.002	0.001	0.002	1.000
BLK SPK	0.220	4.8%	0.021	0.023	0.020	0.023	1.000
52363 A	0.136	7.7%	0.013	0.012	0.013	0.015	1.000
52363 AGC	0.031	0.0%	0.003	0.003	0.004	0.003	1.000
52363 B	0.052	20.0%	0.005	0.005	0.006	0.006	1.000
52363 BSPK	0.262	4.0%	0.025	0.024	0.024	0.023	1.000

52363 D	0.031	33.3%	0.003	0.004	0.003	0.004	1.000
BLANK	0.000	100.0%	-0.002	0.000	-0.002	-0.005	1.000
RESLOPE	0.530	3.9%	0.051	0.053	0.049	0.051	.943
1*2	0.029	0.0%	0.003	0.003	0.003	0.003	.943
2	0.747	2.6%	0.077	0.079	0.075	0.079	.943
52363 D	0.019	50.0%	0.002	0.004	0.001	0.002	.943
BLK 12/2	0.009	200.0%	0.001	0.004	0.000	0.000	.943
BLK SPK	0.325	6.1%	0.033	0.033	0.031	0.035	.943
52301 A	0.000	0.0%	0.000	0.000	0.002	-0.001	.943
52301 AQC	0.000	0.0%	0.000	0.000	-0.001	0.000	.943
52301 ASPK	0.247	0.0%	0.025	0.025	0.026	0.025	.943
52301 B	0.000	0.0%	0.000	0.000	0.001	0.001	.943
52301 C	0.529	0.0%	0.054	0.054	0.055	0.054	.943
52301 D	0.009	100.0%	0.001	0.001	0.000	0.003	.943
52301 E	0.009	0.0%	0.001	0.001	0.001	0.002	.943
52301 F	0.000	0.0%	0.000	0.000	0.001	0.000	.943
52301 G	0.138	14.3%	0.014	0.012	0.017	0.013	.943
52301 H	0.029	66.7%	0.003	0.002	0.006	0.002	.943
52301 I	0.009	100.0%	0.001	0.000	0.003	0.000	.943
52301 K	0.009	100.0%	0.001	0.000	0.003	0.001	.943
52301 L	0.009	100.0%	0.001	0.001	0.002	0.002	.943
52301 M	> 10	0.3%	0.742	0.745	0.740	0.741	.943
52301 N	0.009	100.0%	0.001	0.003	0.000	0.000	.943
BLANK	0.000	0.0%	0.000	0.001	-0.002	0.000	.943
RESLOPE	0.510	4.1%	0.049	0.047	0.049	0.051	.98
1*2	0.041	0.0%	0.004	0.004	0.004	0.005	.98
2	0.815	1.2%	0.081	0.081	0.080	0.082	.98
52301 Q	0.000	0.0%	0.000	0.002	0.000	-0.001	.98
BLK 12/3	0.103	10.0%	0.010	0.011	0.010	0.011	.98
BLK SPK	0.298	3.4%	0.029	0.031	0.029	0.028	.98
52409	> 14	0.3%	1.106	1.106	1.110	1.104	.98
52430 H	0.815	2.5%	0.081	0.083	0.079	0.081	.98
52430 I	0.051	40.0%	0.005	0.004	0.004	0.008	.98
52430 K	0.449	2.3%	0.044	0.044	0.046	0.044	.98
BLK 12/4	0.409	2.8%	0.040	0.039	0.041	0.042	.98
BLK SPK	0.277	0.0%	0.027	0.027	0.028	0.027	.98
52358 A	0.144	0.0%	0.014	0.014	0.014	0.014	.98
52358 B	0.041	50.0%	0.004	0.005	0.006	0.002	.98
52358 C	0.010	200.0%	0.001	0.000	0.000	0.004	.98
52358 D	0.061	0.0%	0.006	0.006	0.006	0.007	.98
52392 A	0.559	3.6%	0.055	0.053	0.056	0.058	.98
52423	0.061	16.7%	0.006	0.007	0.005	0.007	.98
52424	0.030	33.3%	0.003	0.003	0.005	0.003	.98
52429 A	2.470	0.4%	0.229	0.230	0.228	0.229	.98
52442	0.072	42.9%	0.007	0.011	0.006	0.005	.98
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	.98
RESLOPE	0.530	3.9%	0.051	0.054	0.051	0.050	.943
1*2	0.029	66.7%	0.003	0.005	0.005	0.000	.943
2	0.785	1.2%	0.081	0.080	0.080	0.083	.943
52524	> 16	0.3%	1.185	1.189	1.185	1.182	.943
4685 A	> 18	0.2%	1.345	1.346	1.342	1.348	.943
4685 AQC	> 18	0.2%	1.330	1.327	1.330	1.333	.943
4685 ASPK	> 17	0.2%	1.289	1.291	1.292	1.286	.943
Q	0.019	50.0%	0.002	0.003	0.001	0.002	.943

AUTO-PROGRAM 14 Zn

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.001	0.001	0.001	0.001	1.000
STANDARD 1	0.040	0.0%	0.019	0.020	0.019	0.019	1.000
STANDARD 2	0.100	2.1%	0.047	0.047	0.048	0.048	1.000
STANDARD 3	0.200	1.0%	0.096	0.096	0.098	0.096	1.000
STANDARD 4	0.400	0.5%	0.186	0.187	0.187	0.186	1.000
STANDARD 5	1.000	0.2%	0.416	0.417	0.414	0.417	1.000



1*2	0.004	50.0%	0.002	0.003	0.001	0.002	1.000
2	0.402	0.0%	0.187	0.188	0.187	0.187	1.000
BLK 11/26	0.000	0.0%	-0.010	-0.010	-0.010	-0.010	1.000
BLK SPK	0.031	6.7%	0.015	0.016	0.016	0.015	1.000
52318 A	0.000	0.0%	-0.008	-0.008	-0.008	-0.009	1.000
52318 AOC	0.000	0.0%	-0.008	-0.008	-0.008	-0.008	1.000
52318 ASPK	0.037	5.6%	0.018	0.019	0.018	0.017	1.000
52318 B	0.000	0.0%	-0.005	-0.005	-0.006	-0.005	1.000
52318 C	0.000	25.0%	-0.004	-0.005	-0.004	-0.005	1.000
52318 D	0.000	0.0%	-0.007	-0.008	-0.007	-0.007	1.000
52318 E	0.000	16.7%	-0.006	-0.006	-0.007	-0.007	1.000
52318 F	0.000	0.0%	-0.007	-0.007	-0.008	-0.007	1.000
52318 G	0.000	0.0%	-0.007	-0.007	-0.007	-0.008	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 12/17/85
 BATCH:

11/3/86

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

SOLUTION	Fe ng/L	Zn ng/L
1*2	0.000	0.004
2	0.802	0.402
BLK 11/26	0.000	0.000
BLK SPK	0.241	0.031
52318 A	0.200	0.000
52318 AOC	0.189	0.000
52318 ASPK	0.376	0.037
52318 B	0.428	0.000
52318 C	0.314	0.000
52318 D	0.293	0.000
52318 E	0.231	0.000
52318 F	0.366	0.000
52318 G	0.293	0.000
BLK 11/27	0.010	
BLK SPK	0.220	
52343 A	0.136	

D.S.C. Book

1 of Book

52363 RWL	0.031	0.051
52363 B	0.052	0.052
52363 BSPK	0.262	
52363 C	0.031	0.031
1*2	0.029	
2	0.747	
52363 D	0.019	0.019
BLK 12/2	0.009	
BLK SPK	0.325	
52301 A	0.000	0.000
52301 ACC	0.000	0.000
52301 ASPK	0.247	
52301 B	0.000	0.000
52301 C	0.529	0.53
52301 D	0.009	0.009
52301 E	0.009	0.009
52301 F	0.000	0.000
52301 G	0.138	0.14
52301 H	0.029	0.029
52301 I	0.009	0.009
52301 K	0.009	0.009
52301 L	0.009	0.009
52301 M	>	
52301 N	0.009	0.009
1*2	0.041	
2	0.815	
52301 O	0.000	0.000
BLK 12/3	0.103	0.103
BLK SPK	0.298	
52409	>	
52430 H	0.815	0.81
52430 I	0.081	0.081
52430 K	0.449	0.45
BLK 12/4	0.409	0.409
BLK SPK	0.277	
52358 A	0.144	0.14
52358 B	0.041	0.041
52358 C	0.010	0.010
52358 D	0.061	0.061
52392 A	0.559	0.56
52423	0.061	0.061
52424	0.030	0.030
52429 A	2.470	2.5
52442	0.072	0.072
1*2	0.029	
2	0.785	
52524	>	
4685 A	>	
4685 ACC	>	
4685 ASPK	>	
Q	0.014	

1	
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12/17 F

QUALITY CONTROL

EPA #	TRUE VALUE	MEAN RECOVERY	% RECOVERY
1x2	0.044	0.033	
2	0.796	0.787	75

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

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
B1K SPK	0.241	<0.05	0.241	0.25	96
S2318-A	0.376	0.194	0.182	0.25	73
B1K SPK	0.220	<0.05	0.220	0.25	88
S2367-B	0.262	0.052	0.210	0.25	84
B1K SPK	0.325	<0.05	0.325	0.25	120
S2201-A	0.247	<0.05	0.247	0.25	99
B1K SPK	0.258	<0.05	0.258	0.25	103
B1K SPK	0.277	<0.05	0.277	0.25	111

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

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{ A-B }{(A+B)}$
S2318-A	0.200	0.185	5.6
S2367-A	0.136	<0.05 (0.071)	NC
S2201-A	<0.05	<0.05	NC

GTC Report #52318

SECTION D

Subpart D12: Raw Data for Lead

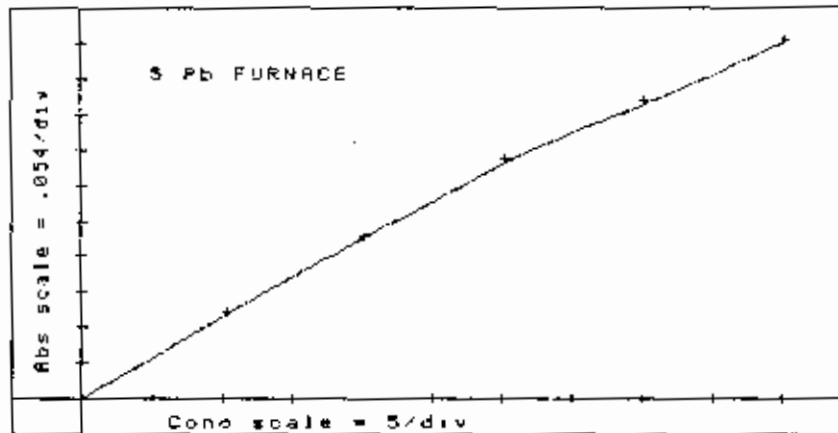
VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 02/4/86
 BATCH:

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

AUTO-PROGRAM 3 Pb FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS		SLOPE FACTOR
BLANK	0.000	6.7%	0.030	0.032	0.028	1.000
STANDARD 1	10.00	4.1%	0.122	0.126	0.118	1.000
STANDARD 2	20.00	0.8%	0.240	0.238	0.242	1.000
STANDARD 3	50.00	0.3%	0.535	0.554	0.556	1.000
STANDARD 4	40.00	0.0%	0.444	0.444	0.444	1.000
STANDARD 5	50.00	0.0%	0.538	0.538	0.538	1.000



WS378 3	19.31	1.7%	0.232	0.235	0.229	1.000
TMI 2	* 446.1	1.4%	0.486	0.491	0.481	1.000
BLK 11/26	0.819	10.0%	0.010	0.011	0.010	1.000
BLK SPK	24.92	2.0%	0.297	0.302	0.293	1.000
52318 A	7.295	1.1%	0.089	0.088	0.090	1.000
52318 ADC	9.426	4.3%	0.115	0.111	0.119	1.000
10ppb	19.91	2.1%	0.239	0.236	0.243	1.000
52318 B	9.344	9.6%	0.114	0.122	0.106	1.000
10ppb	18.62	6.3%	0.224	0.214	0.235	1.000
52318 C	13.86	2.4%	0.168	0.165	0.171	1.000
10ppb	20.60	0.4%	0.247	0.247	0.248	1.000
52318 D	17.51	1.4%	0.211	0.209	0.214	1.000
10ppb	23.36	0.4%	0.279	0.278	0.280	1.000
52318 E	21.03	1.2%	0.252	0.255	0.250	1.000
10ppb	26.32	0.6%	0.313	0.311	0.315	1.000
BLANK	0.000	9.5%	0.126	0.135	0.117	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 02/4/86
 BATCH:

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

SOLUTION	Pb ug/l
WS378 3	19.31
TMI 2	* 446.1
BLK 11/26	0.819
BLK SPK	24.92
52318 A	7.295
52318 ADC	9.426
10ppb	19.91
52318 B	9.344
10ppb	18.62
52318 C	13.86
10ppb	20.60
52318 D	17.51
10ppb	23.36
52318 E	21.03
10ppb	26.32

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
OPERATOR: D. DUMBLETON
DATE: 02/10/86
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	30.8%	0.026	0.032 0.020	1.000

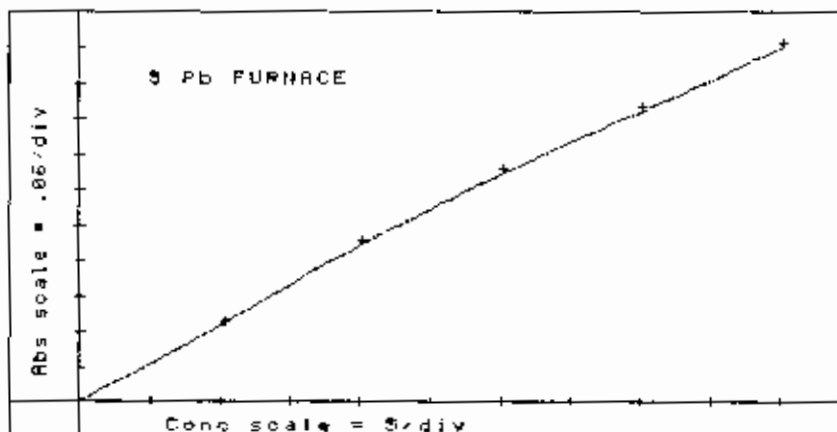
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
OPERATOR: D. DUMBLETON
DATE: 02/10/86
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	40.0%	-0.005	-0.003-0.007	1.000
STANDARD 1	10.00	0.8%	0.171	0.132 0.130	1.000
STANDARD 2	20.00	0.4%	0.265	0.265 0.266	1.000
STANDARD 3	30.00	1.0%	0.385	0.388 0.382	1.000
STANDARD 4	40.00	2.4%	0.490	0.499 0.481	1.000
STANDARD 5	50.00	2.0%	0.596	0.588 0.605	1.000



WS378 3	20.00	1.9%	0.265	0.262 0.269	1.000
WP284 2	* 454.3	0.2%	0.547	0.548 0.546	1.000
BLK 11/26	0.610	0.0%	0.008	0.008 0.008	1.000
BLK SPK	25.29	2.1%	0.331	0.337 0.326	1.000
S2318 F	13.38	0.8%	0.177	0.177 0.178	1.000
10ppb	23.56	0.6%	0.310	0.309 0.312	1.000
S2318 B	14.04	2.7%	0.186	0.190 0.182	1.000
10ppb	24.96	0.0%	0.327	0.327 0.327	1.000
WS378 3	19.53	1.9%	0.259	0.263 0.256	1.000
WP284 2	* 470.3	0.9%	0.564	0.568 0.560	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
OPERATOR: D. DUMBLETON
DATE: 02/10/86
BATCH:

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

SOLUTION	Pb ug/l
WS378 3	20.00
WP284 2	* 454.3
BLK 11/26	0.610
BLK SPK	25.29
S2318 F	13.38
10ppb	23.56
S2318 B	14.04
10ppb	24.96
WS378 3	19.53
WP284 2	* 470.3

GTC Report #52318

SECTION D

Subpart D13: Raw Data for Magnesium

METALS ANALYSIS DATA SHEET

REV.

METAL Mg DATE 1/2/86 ANALYST MJM REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD Std 7171 2/786
 Current 285.2 nm Voltage 380 V Flame Hydride
 D₂ OFF Split 1.0 nm Gas Air / Reduc. Acid
 Integ. 4 sec 117

INITIAL CALIBRATION

10.0ml each added to each sample

STANDARDS:		01	02	03	04	05
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>0.776</u>			
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>WF 384 M-1</u>	<u>9.4</u>	<u>7.95</u>	<u>0.03</u>	<u>0.34</u>	<u>95%</u>	
<u>" " M-2</u>	<u>1.8</u>	<u>1.78</u>	<u>0.01</u>	<u>0.38</u>	<u>99%</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
Blk 4/26	<0.25		<0.25	100	100		
B.S. (1.0)	1.13		113%				
52318A	9.45		9.15				
ADWP	9.16		9.16				
ASPK	9.79		9.79				
B	8.72		8.72				
C	1.30	Y ₁₀	13.0				
D	12.11		12.1				
E	10.39		10.4				
F	11.11		11.1				
G	11.01		11.0				
Blk 12/16	<0.25		<0.25				
B.S.	1.36		109%				
52423	3.95		4.0				
52428	8.78	Y ₁₀	88	50	0.49g		9000
Blk 12/18	<0.25		<0.25	100	100		
B.S.	1.34 (1.34)		107%	100	100		
52471	<0.25		<0.25	100	100		
Blk 12/27	<0.25		<0.25	100	100		
B.S. 12/27	1.23		98%				
4685A	4.96	Y ₁₀	50	100ml	1.02g		4900
ADWP	4.79	Y ₁₀	48		0.99		4800
AGP16	4.86	Y ₁₀	49		1.04		4700
B	4.49	Y ₁₀	45		100		4500
C	6.66	Y ₁₀	67		1.00		6700

GTC Report #52318

SECTION D

Subpart D14: Raw Data for Manganese

METALS ANALYSIS DATA SHEET

REV.

METAL Mn DATE 11/2/85 ANALYST JB REVIEWER msp 12/1/85
 INSTRUMENT (AA) 279.5 nm Voltage 460 V ANALYSIS METHOD
 Current 5 a Split 0.5 nm Flame Hydride
 D₂ off Integ. 4 sec Gase Air 1 Acid Acid
 Reduc.

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock, <u>11.8/85</u>	Conc. ug/ml <u>1.000</u>	<u>2.000</u>	<u>0.400</u>	<u>0.100</u>	<u>0.010</u>
	Absorbance	<u>0.534</u>			
EPA Check <u>W284 2</u>	Known <u>0.348</u>	Mean <u>0.342</u>	SD <u>0.002</u>	RSD <u>0.59</u>	% Recovered <u>98%</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/cm
BLK 11/15	<.01							
BLK SPK	0.053		106%					
4885-A	<.01			100	100		<.01	
" B	<.01			100	100		<.01	
BLK 11/21	<.01							
BLK SPK	0.050		100%					
52310-B WMT	0.64	1/10	6.4	100	100		6.4	
BLK 11/26	<.01							
BLK SPK	0.052		104%					
52158-A WMT	0.016			50	50		0.016	
B	0.067						0.067	
D	0.040						0.040	
E	0.13						0.13	
E(QC)	0.13						0.13	
E(SPK)	0.141						0.141	
F	0.094			↓	↓		0.094	
52318-A URS	0.045			200	200		0.045	
A(QC)	0.038				200		0.038	
A(SPK)	0.092		101%		200		0.092	
B	0.10				176		0.11	
C	0.14				181		0.15	
D	0.14				177		0.16	
E	0.21				184		0.23	
F	0.14				182		0.15	
G	0.15			↓	181		0.16	
BLK 11/26	<.01							

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____

Wavelength _____ nm Voltage _____ V

Current _____ a Split _____ nm

D₂ _____ Integ. _____ sec

ANALYSIS METHOD

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	0.348	0.353	0.003	0.90	101%

ANALYSIS

Sample #	INSTRUMENT ANALYSIS		Final ug/ml	DIGESTION		w or d weight	FINAL CONCENTRATION	
	Conc. ug/ml	D.F.		F.V. ml.	I.V. ml. or gm		Liquid ug/ml	Solids ug/gm
BLK SPK	<.01							
S2211-A	0.038			50	50		0.058	
B	0.22			↓	↓		0.22	
C	0.020			↓	↓		0.020	
BLK #127	<.01							
BLK SPK	0.053		106%					
S2363-A MEWA	0.023			100	100		0.023	
A(GC)	<.01			↓	↓		<.01	
B	<.01			↓	↓		<.01	
B(spk)	0.051		102%	↓	↓		0.051	
C	<.01			↓	↓		<.01	
D	<.01			↓	↓		<.01	
S2158-C	NS							

GTC Report #52318

SECTION D

Subpart D15: Raw Data for Mercury

MERCURY ANALYSIS DATA SHEET

Lamp Voltage 460
 Lamp Current 4.0
 Background VFF

Date 11/20/85
 Analyst MM
 Wave Length 253.7

11/21/85

80

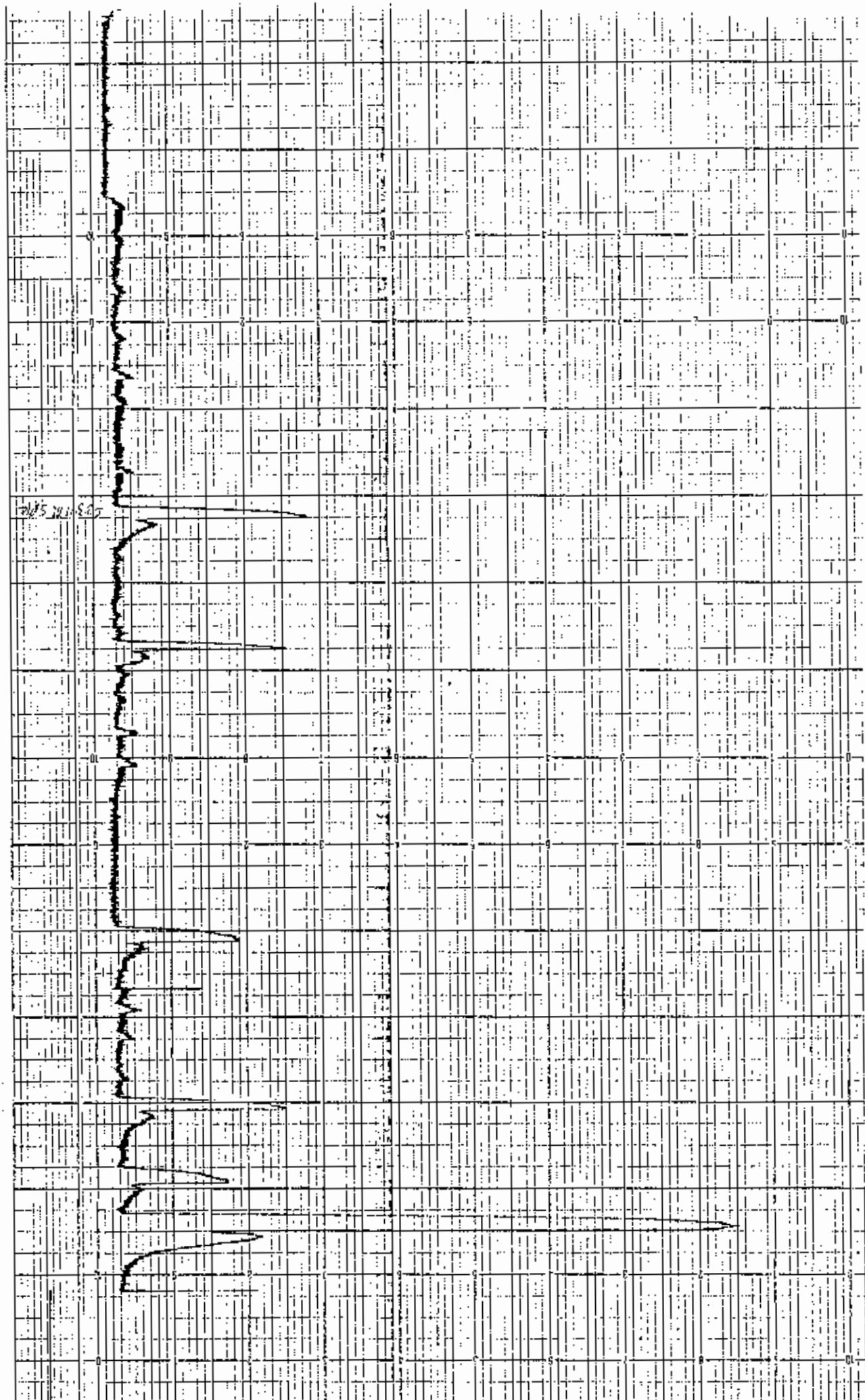
STANDARD CALIBRATION

Std. #	Conc.	Abs.	Actual Conc.	Conc.	Abs.	Actual Conc.	Conc.	Abs.	Actual Conc.
Blank	0.00	0.002			0.00			0.0	
Std. 1	0.02	0.005	0.029	0.02	0.004	0.024	0.02	0.004	0.024
Std. 2	0.05	0.010	0.055	0.05	0.010	0.055	0.05	0.009	0.045
Std. 3	0.10	0.018	0.098	0.10	0.018	0.098	0.10	0.018	0.098
Std. 4	0.20	0.038	0.20	0.20	0.037	0.20	0.20	0.036	0.19
Std. 5	0.50	0.100	0.53	0.50	0.090	0.48	0.50	0.087	0.46
Std. 6	1.0	0.190	1.0	1.0	0.201	1.1	1.0	0.075	0.93
PA WS14X	8.5	0.142	0.75/85%		0.139	0.74/84%			

Correlation Coefficient 0.9973

Y Intercept 0.0023

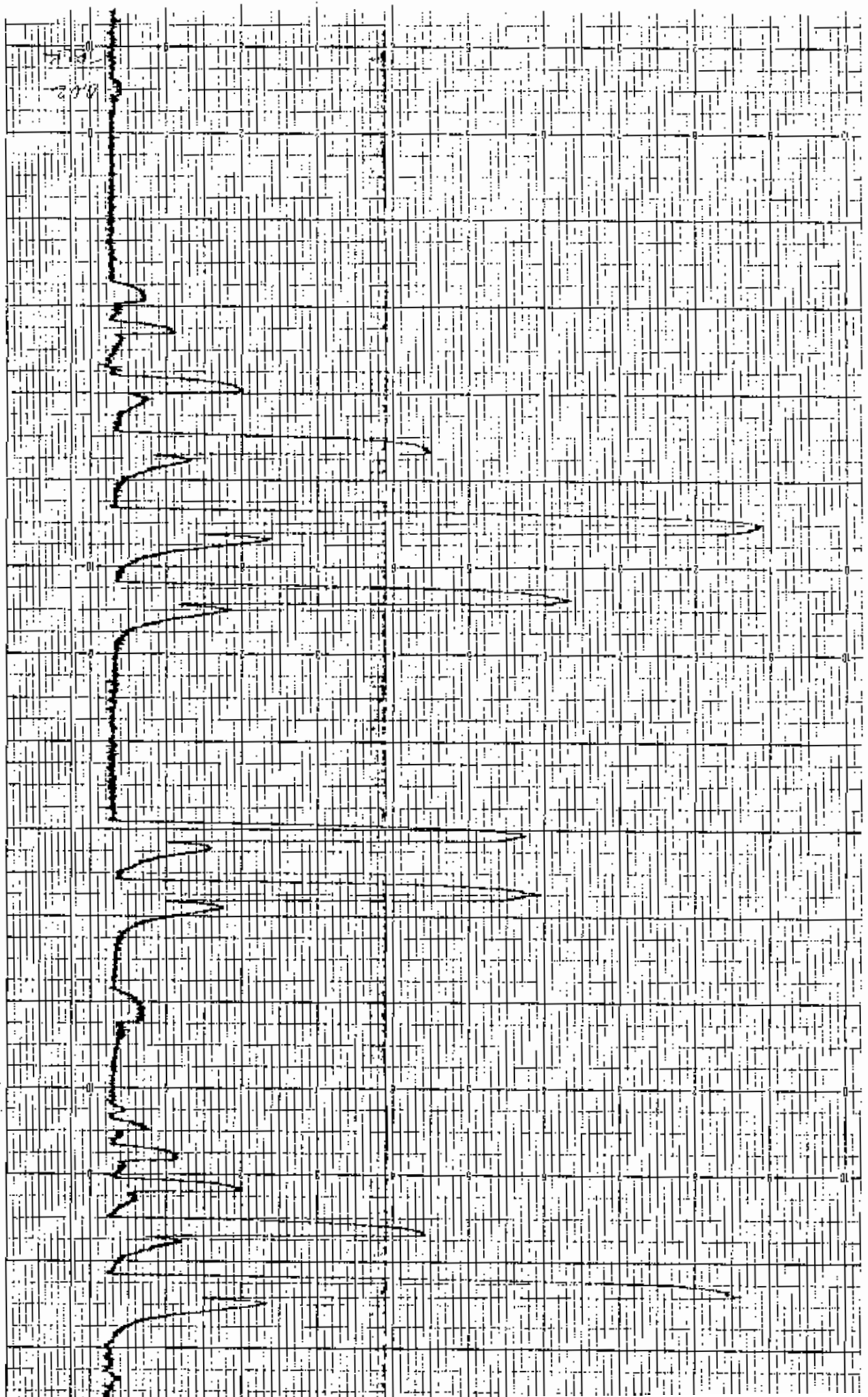
Sample	Vol. or wgt.	Abs.	Conc.	Sample	Vol. or wgt.	Abs.	Conc.
Blk Spk (0.2)	100 ml	0.039	0.21 105%	52301 - H	84 ml	0.003	<0.0005
WMI 52150	10	<0.0	<0.005	I	100	0.003	<0.0005
0.2	10	0.038	0.20 100%	K		0.005	<0.0005
Bestm 5271	10	0.0	<0.005	L		0.003	<0.0005
0.2	10	0.040	0.21 105%	M		0.002	<0.0005
AN 52028A	100	0.011	0.0006	M DUP		0.004	<0.0005
B		0.0	<0.0005	M SPK		0.045	0.24 120
c		0.0	<0.0005	N		0.0	<0.0005
D		0.0	<0.0005	O		0.001	<0.0005
O DUP		0.0	<0.0005	WMI 52310 B		0.0	<0.0005
O SPK		0.040	0.21 105%	URS 52318 A		0.002	<0.0005
E		0.0	<0.0005	A SPK	V	0.044	0.23 115
F		0.0	<0.0005	B	75	0.0	<0.0005
G		0.0	<0.0005	C	73	0.003	0.00025
H		0.029	0.0016	D	70	0.006	0.00051
I		0.028	0.0015	E	73	0.006	0.00049
J		0.0	<0.0005	F	75	0.035	0.025
rs 52237A LL		0.0	<0.0002	G	66	0.0	<0.0003
B LL		0.002	<0.0002	52362	100	0.0	<0.0005
C LL		0.000	<0.0002	4893 A		0.022	0.0012
D LL		0.0	<0.0002	4885 A		0.005	<0.0005
E LL		0.0	<0.0002	A DUP		0.005	<0.0005
F LL		0.0	<0.0002	B		0.002	<0.0005
G LL		0.0	<0.0002	B SPK	V	0.043	0.23 115
G PUP		0.0	<0.0002	52298	1.0 ml	0.0	<0.05
G SPK		0.038	0.20 100%	52335	0.32 g	0.029	0.49
52274		0.095	0.0051	52104 B	0.50 g	0.008	<0.1
2278		0.0	<0.0005	B DUP	0.50 g	0.008	<0.1
2279		0.0	<0.0005	B SPK	0.50 g	0.054	0.54
52301-A		0.0	<0.0005	52047-H	0.53 g	0.054	0.54
B		0.0	<0.0005	I	0.52 g	0.053	0.54
C		0.0	<0.0005	J	0.58 g	0.055	0.51
D		0.0	<0.0005	52054	0.10 g	0.175	0.28
E		0.0	<0.0005	52340 A	0.51 g	0.0	<0.1
F		0.004	<0.0005	B	0.47 g	0.0	<0.1



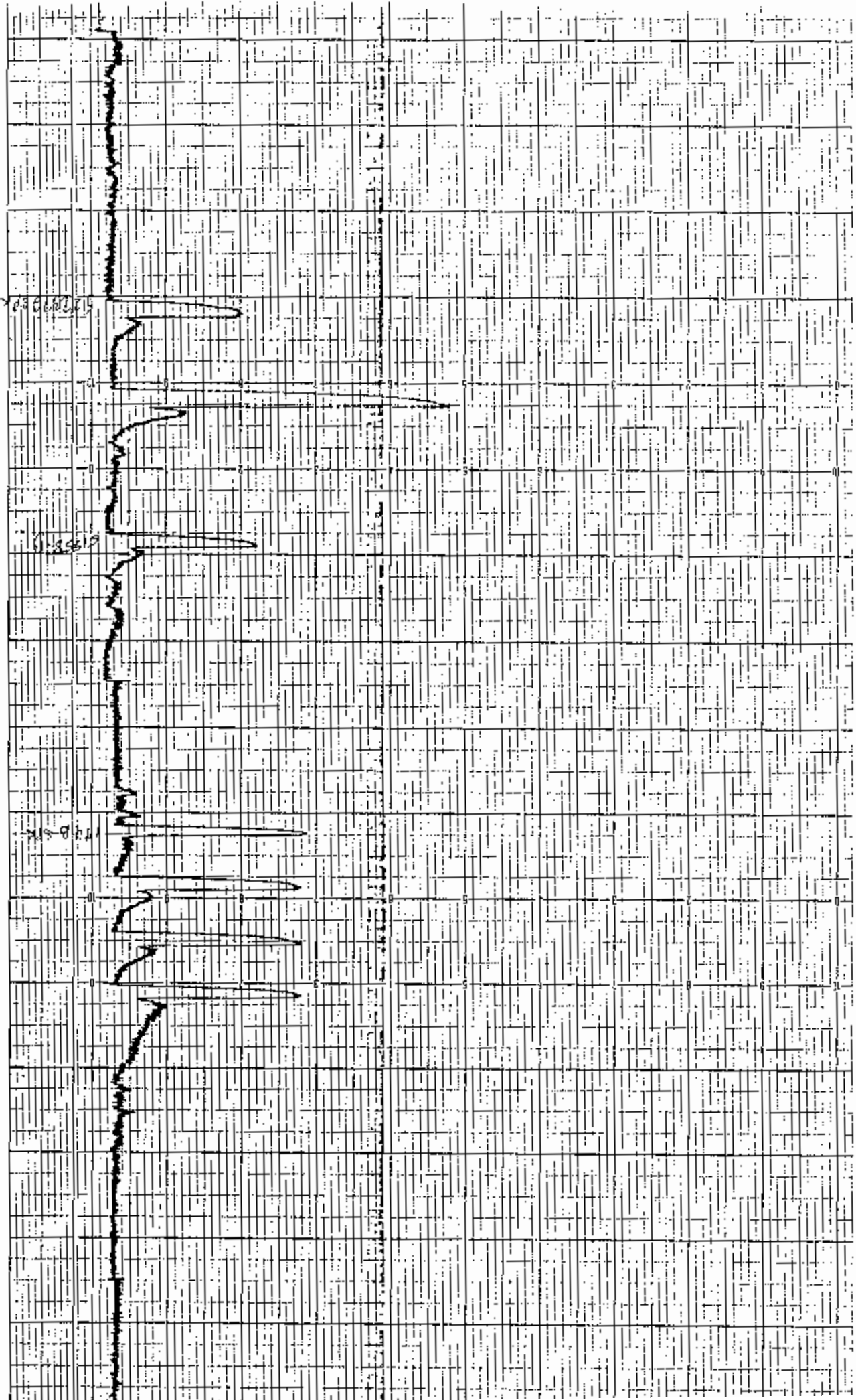
BUCKLE BUREAU

1000 1/2 1/2

BUCKLE BUREAU
UNIVERSITY OF MICHIGAN
RUSSELL W. NEW YORK



Vertical text on the left margin, possibly a scale or time indicator, consisting of a series of vertical lines and dots.



11100101

GTC Report #52318

SECTION D

Subpart D16: Raw Data for Potassium

METALS ANALYSIS DATA SHEET

REV.

METAL K DATE 12/10/85 ANALYST JB REVIEWER 12/16/85
 INSTRUMENT (AA) 766.5 nm Voltage 900 V ANALYSIS METHOD AA 777 116184
 Current 15 a Split 1.0 nm Flame Hydride
 D₂ off Integ. 4 sec 12/13/85 Gas Air / Acid Acid
 Reduc.

INITIAL CALIBRATION - req. photomultiplier

STANDARDS:	#1	#2	#3	#4	#5
Stock	5.00	10.00	2.50	0.50	0.25
<u>4/21/85</u>	Conc, ug/ml	Absorbance	0.365	0.623	0.215
EPA Check	Known	Mean	SD	RSD	% Recovered
<u>M-1 NIST</u>	<u>9.8</u>	<u>9.3</u>	<u>0.16</u>	<u>1.72</u>	<u>95%</u>
<u>M-2</u>	<u>2.1</u>	<u>1.94</u>	<u>0.03</u>	<u>1.67</u>	<u>92%</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 11/26	<.25							
BS	1.20		96%					
52316-A URS	1.9			200	200		1.9	-
A(g)	1.9						1.9	
A(pk)	3.17		102%				3.17	
B	3.1				176		3.5	-
C	3.3				181		3.6	-
D	3.4				177		3.8	-
E	5.0				184		5.4	-
F	3.4				182		3.7	-
G	3.4				181		3.8	-
BLK 12/2	<.25							
BS	1.08		85%					
4716-B	12	1/10	12	50	50		12	-
B(g)	1.1	1/10	11				11	
B(pk)	12.7	1/10	12.7				12.7	96%
BLK 12/2	<.25							
BS	2.17		171% 87% double spike					
52395 Crowley	2.0	1/100	200	100	85		240	-
BLK 12/4	<.25							
BS	2.32		double spike 93% 116%					
4685-A	4.6	1/10	46	100	1.01g			4,530 -
A(g)	4.4	1/10	44		0.99g			4,440 -
A(pk)	2.67	1/10	26.7		0.98g			2,720
B	4.6	1/10	46		1.00g			4,600 -
C	1.3	1/10	13		1.02g			1,270 -

GTC Report #52318

SECTION D

Subpart D17: Raw Data for Selenium

METALS ANALYSIS DATA SHEET

REV.

META Se DATE 11/26/85 ANALYST MIM REVIEWER WRF 1/1/86
 INSTRUMENT (AA) 196 nm Voltage 700 V ANALYSIS METHOD Flame Hydride
 Current 9 a Split 10 nm Gas Acid H₂SO₄/HCl
 O₂ OFF Integ. 4 sec Reduc.

INITIAL CALIBRATION

STANDARDS:		#1 (20.1)	#2 (30.0)	#3 (4.7)	#4 (5.2)	#5 (2.1)
Stock	Conc. <u>ppb</u>	20.0	30.0	10.0	5.0	2.0
	Absorbance	0.301	0.442	0.142	0.148	0.301
EPA Check	Known	Mean	0.4850	0.142	RSD 0.103	% Recovered 0.042
<u>4853</u>	<u>21.8</u>	<u>2.10</u>	<u>0.4</u>	<u>1.7</u>	<u>96%</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
AIR 11-22	< 1.0		< 0.001	100	50			
B5	4.3		86%	100	50			
4853 D	< 1	1/10	< 0.01		50		< 0.02	
SPK	10.6		106%		50			
4853 E	< 1	1/10	< 0.01		50		< 0.02	
SPK	10.4		104%					
4913	< 1	1/10	< 0.01				< 0.02	
SPK	10.9		109%					
4940 A	< 1	1/10	< 0.01				< 0.02	
SPK	11.1		111%					
4940 B	< 1	1/10	< 0.01				< 0.02	
SPK	10.9		109%					
52561 E	< 1	1/10	< 0.01				< 0.02	
SPK	10.8		108%					
F	4.2	1/10	0.042				0.034	
SPK	13.6		94%					
G	< 1	1/10	< 0.01				< 0.02	
SPK	10.9		109%					
H	13.1	1/10	0.131				0.262	
SPK	21.9		88%					
52561 A	< 1	1/10	< 0.01				< 0.02	
SPK	10.5		105%					
B	< 1	1/10	< 0.01				< 0.02	
SPK	10.7		107%	✓	✓			

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____
 Wavelength (AA) _____ nm Voltage _____ V
 Slit _____ nm Split _____ nm
 D₂ _____ Integ. _____ sec
 ANALYSIS METHOD
 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
NP122	21.8	19.0	0.2	1.20	37.2%

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
SA3430	<1	1/10	<0.01	100	50		<0.02	
30K	10.2		102%					
81K 11-22	<1		<0.001				<0.002	
BS	3.7		74%					
SA382A	<1		<0.001				<0.002	
B	<1		<0.001				<0.002	
C	<1		<0.001				<0.002	
D	<1		<0.001				<0.002	
E	<1		<0.001				<0.002	
F	<1		<0.001				<0.002	
G	<1		<0.001				<0.002	
G Dup	<1		<0.001				<0.002	
H 5K	5.2		104%					
H	<1		<0.001				<0.002	
I	<1		<0.001				<0.002	
J	<1		<0.001				<0.002	
K	<1		<0.001				<0.002	
L	<1		<0.001				<0.002	
M	<1		<0.001				<0.002	
N	<1		<0.001				<0.002	
O	<1		<0.001				<0.002	
P	<1		<0.001				<0.002	
Q	<1		<0.001				<0.002	
Q Dup	<1		<0.001				<0.002	
Q 5K	5.1		102%	✓	✓			

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____
 Wavelength (AA) _____ nm Voltage _____ V
 Slit _____ nm Flame _____ Hydride _____
 O₂ _____ 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	
WP 182	21.8	19.2	0.6	2.94	88%	

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
52% R	<1		<0.001	100	50		<0.002	
S	<1		<0.001				<0.002	
S 0.40	<1		<0.001				<0.002	
S 3pk	5.4		108%					
T	<1		<0.001				<0.002	
U	<1		<0.001				<0.002	
V	<1		<0.001				<0.002	
W	<1		<0.001				<0.002	
X	<1		<0.001				<0.002	
Y	<1		<0.001				<0.002	
Z	<1		<0.001				<0.002	
AA	<1		<0.001				<0.002	
AA 0.1p	<1		<0.001				<0.002	
AA 3pk	5.7		114%					
BB	<1		<0.001				<0.002	
CC	<1		<0.001				<0.002	
DD	<1		<0.001				<0.002	
EE	<1		<0.001				<0.002	
FF	<1		<0.001				<0.002	
FF	<1		<0.001				<0.002	
HH	<1		<0.001				<0.002	
II	<1		<0.001				<0.002	
JJ	<1		<0.001				<0.002	
JJ 0.40	<1		<0.001				<0.002	
JJ 3pk	4.4		88%	✓	✓			

METALS ANALYSIS DATA SHEET

REV.

DATE

ANALYST

REVIEWER

1 (AA)

nm

Voltage

V

ANALYSIS METHOD

Flame

Hydride

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

WPKZ

21.8

21.5

0.3

1.44

99.2

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
2282 HK	<1		<0.001	100	50		<0.002	
LL	<1		<0.001				<0.002	
MM	<1		<0.001				<0.002	
NN	<1		<0.001				<0.002	
OO	9.3		0.0093				0.019K	
PP	<1		<0.001				<0.002	
QQ	<1		<0.001				<0.002	
RR	<1		<0.001				<0.002	
SS	<1		<0.001				<0.002	
TT	<1		<0.001				<0.002	
UU	<1		<0.001				<0.002	
VV	<1		<0.001				<0.002	
WW	<1		<0.001				<0.002	
BS 11-22	5.3		106%					
BK 11-23	<1		<0.001				<0.002	
BS	5.2		104%					
52028 A	1.2		0.0012				0.0024	
B	<1		<0.001				<0.002	
C	<1		<0.001				<0.002	
D	2.0		0.0020				0.0040	
0.0.0	2.5		0.0025				0.0050	
Dspl	6.9		92%					
E	1.4		0.0014				0.0028	
F	<1		<0.001				<0.002	
G	<1		<0.001				<0.002	

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METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____

WAVELENGTH (AA) _____ nm

Flame _____ Hydride _____

Gas _____ Acid _____

Reduc. _____

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
WP 1XZ	21.8	19.9	0.4	2.09	91%

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
52028H	1.4		0.0014	100	50		0.0028	
E	<1		<0.001				<0.002	
J	1.0		0.001				0.0020	
52301A	<1		<0.001				<0.002	
B	<1		<0.001				<0.002	
C	<1		<0.001				<0.002	
D	<1		<0.001				<0.002	
F	<1		<0.001				<0.002	
F	<1		<0.001				<0.002	
G	3.1		0.0031				0.0062	
H	<1		<0.001				<0.002	
I	1.3		0.0013				0.0026	
K	<1		<0.001				<0.002	
L	<1		<0.001				<0.002	
M	1.7		0.0017				0.0034	
M DUP	1.3		0.0013				0.0026	
M SPR	5.9		88%					
N	<1		<0.001				<0.002	
O	<1		<0.001				<0.002	
52310B	<1		<0.001				<0.002	
52362	1.0		0.0010				0.0020	
52318A	1.0		0.0010				0.0020	
APP	1.0		0.0010				0.0020	
ASPR	5.8		96%					
B	<1		<0.001				<0.002	

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____

WT (AA) _____ nm Voltage _____ V ANALYSIS METHOD
 Split _____ nm Flame _____ Hydride _____
 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
WP 1X2	21.8	20.6	0.4	1.71	94%

ANALYSIS

Sample #	INSIRUMENT 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
52318 C	<1		<0.001	100	SD		<0.002	
D	<1		<0.001				<0.002	
E	<1		<0.001				<0.002	
F	<1		<0.001				<0.002	
G	<1		<0.001				<0.002	
Blk 11/25	<1		<0.001				<0.002	
B.S.	5.4		108%					
52381	<1	1/10	<0.01				<0.02	
SPK	9.4		94%					
52343A	1.7	1/10	0.017				0.034	
SPK	10.9		92%					
B	<1	1/10	<0.01				<0.02	
SPK	9.3		93%					
52335A	<1	1/10	<0.01				<0.02	
SPK	9.3		93%					
52373A	<1	1/10	<0.01				<0.02	
SPK	9.8		98%					
52343C	<1	1/10	<0.01				<0.02	
SPK	9.2		92%					
52229	<1		<0.001		1.0 ml		<0.1	
52255A	1.7		0.0017		SD		0.0034	
52335B	2.2		0.0022		0.55g			9.0
52363A	1.4		0.0014		SD		0.0028	
B	1.3		0.0013				0.0026	
C	1.8		0.0018				0.0036	

METALS ANALYSIS DATA SHEET

DFV

REV.

DATE

ANALYST

REVIEWER

INSTRUMENT (AA)

Wavelength _____ nm
 Wavelength _____ nm
 D₂ _____

Voltage _____ V
 Split _____ nm
 Integ. _____ sec

ANALYSIS METHOD

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

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
CPA 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
52363 ^{DFV}	2.1		0.0021	100	50ml		0.0042	
D	1.6		0.0016	100	55ml		0.0027	
D SK	6.5		0.0065	100	50ml		-	
52313a	3.8		0.0038		50ml		0.0076	
4916A	2.8		0.0028		0.54g			0.52
A DVP	2.0		0.0020		0.49g			0.41
52313A	1.0		0.0010		50ml		0.0020	
52367A	<1		<0.001		55ml		<0.002	
B	1.0		0.0010		55ml		0.0022	
4832C	4.6		0.0046		0.57g			0.81
D	2.1		0.0021		0.53g			0.40
D SK	6.1		0.0061		0.49g			1.24-0.41 = 0.83
52386A	3.5		0.0035		0.42g			0.83
B	<1		<0.001		0.57g			<0.2

GTC Report #52318

SECTION D

Subpart D18: Raw Data for Silver

METALS ANALYSIS DATA SHEET

REV.

METAL Ag DATE 11/25/85 ANALYST JB REVIEWER WMP/12/7
 INSTRUMENT (AA) 328.1 nm Voltage 360 V 10/25/85
 Current 1.0 A Split 0.5 nm Flame Hydride
 O₂ OFF Integ. ✓ sec Gas Air / Acet Acid Acid
 Reduc. Acid

INITIAL CALIBRATION

QC
11/21/85

STANDARDS:	#1	#2	#3	#4	#5
Stock	0.500	1.00	0.200	0.050	0.010
Conc, ug/ml					
Absorbance		0.158			
EPA Check	Known	Mean	SD	RSD	% Recovered
W5378 1447	0.052	0.052	0.002	3.35	100%
2	0.028	0.033	0.002	5.72	118%

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
4853-D ^{WCC} EPTX	<.01	10	<.1				<.1	
0.050	0.046	11						
4853-E ^{WCC} EPT	<.01		<.1				<.1	
0.050	0.046	12						
4913- ^{WCC} Repex	<.01		<.1				<.1	
0.050	0.052	11						
4940-A ^{EPT} HQ	<.01		<.1	50	50		<.1	
0.050	0.044	11						
4940-B ^{EPT} HQ	<.01		<.1	50	50		<.1	
0.050	0.055	10						
52335 ^{EPT}	<.01		<.1				<.1	
0.050	0.046	12						
52343-A ^{EPT}	<.01		<.1				<.1	
0.050	0.048	11						
52343-B ^{EPT}	<.01		<.1				<.1	
0.050	0.056	12						
52343-C ^{EPT}	<.01		<.1				<.1	
0.050	0.052	10						
52343-D ^{EPT}	<.01		<.1				<.1	
0.050	0.046	12						
52361-A ^{WCC} NH	<.01		<.1				<.1	
0.050	0.047	11						
52373-A ^{EPT}	<.01		<.1				<.1	
0.050	0.052	10						
52391 ^{EPT}	<.01		<.1				<.1	
0.050	0.048	11						

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ nm Voltage _____ V
 Current _____ A Split _____ nm
 D₂ _____ Integ. _____ sec
 ANALYSIS METHOD
 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	
4x2	0.052	0.049	0.002	3.64	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	Solid ug/gm
B5	0.055		110%					
B3	0.051		102%					
4885-A WRTZ	<.01			50	50		<.01	
" B "	<.01			50	50		<.01	
4890- Eagle	0.40						0.40	
52028-A low	<.01						<.01	
B	<.01						<.01	
C	<.01						<.01	
D	<.01						<.01	
E	<.01						<.01	
F	<.01						<.01	
F(qd)	<.01						<.01	
G	<.01						<.01	
H	<.01						<.01	
I	<.01						<.01	
J	<.01						<.01	
52232-A Xiv	0.036						0.036	
B	0.026						0.026	
E	0.094						0.094	
52234- A+B	0.22	1/10	2.2				2.2	
52236-A ETT	<.01						<.01	
B	<.01						<.01	
C	<.01						<.01	
C(qd)	<.01						<.01	
C(sp)	0.051		102%				0.051	
D	<.01						<.01	

METALS ANALYSIS DATA SHEET

REV.

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

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Cone, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
14x2	0.052	0.049	0.001	2.70	94.6

ANALYSIS

Sample #	INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION	
	Cone. 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
5236-E etc	<.01			50	50		<.01	
5237-A URS	<.01						<.01	
B	<.01						<.01	
C	<.01						<.01	
D	<.01						<.01	
E	<.01						<.01	
F	<.01						<.01	
G	<.01						<.01	
G(Q)	<.01						<.01	
G(spik)	0.054		108%				0.054	
5242-A Xer	0.010						0.010	
B	<.01						<.01	
B(Q)	<.01						<.01	
B(spik)	0.056		112%				0.056	
5296-Shunt	<.01						<.01	
5299 B-L	<.01						<.01	
52918-AURS	<.01						<.01	
A(Q)	<.01						<.01	
A(spik)	0.045		90%				0.045	
B	<.01						<.01	
C	<.01						<.01	
D	<.01						<.01	
E	<.01						<.01	
F	<.01						<.01	
G	<.01						<.01	

GTC Report #52318

SECTION D

Subpart D19: Raw Data for Sodium

METALS ANALYSIS DATA SHEET

REV.

METAL Na DATE 12/10/85 ANALYST JB REVIEWER 12/12/85
 INSTRUMENT (AA) 589.0 nm Voltage 380 V ANALYSIS METHOD Flame Hydride
 Current 6 a Split 1.0 nm Gas Air / Act Acid
 D₂ off Integ. v 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>0.50</u>	<u>0.10</u>
<u>11/11/85</u>	Absorbance	<u>0.515</u>	<u>0.854</u>	<u>0.282</u>	<u>0.063</u>	<u>0.017</u>
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>A-1 WP384</u>	<u>46.5</u>	<u>44.9</u>	<u>0.03</u>	<u>0.69</u>	<u>96%</u>	
<u>A-2</u>	<u>8.2</u>	<u>8.04</u>	<u>0.04</u>	<u>0.50</u>	<u>98%</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 11/21	0.10							
BS	1.23		98%					
S2310-B WMT	11	1/10	110	100	100		110	
4918-A HE	1.6			50	51.5		1.6	
B	2.4				51		2.4	
C	1.2	1/10	12		50		12	
C(QC)	1.1	1/10	11		53		10	11
C(SPK)	1.28	1/10	12.8		50		12.8	144%
D	2.5				50		2.5	
BLK 11/26	0.13							
BS	1.32		106%					
S2158-A WMT	1.7	1/100	170	50	50		170	
B	1.5	1/100	150				150	
D	1.8	1/100	180				180	
E	2.1	1/100	210				210	
E(QC)	2.1	1/100	210				210	
F	1.8	1/100	180				180	
F(SPK)	1.8	1/100	180				180	
S2318-A URS	1.1	1/10	11	200	200		11	
A(QC)	1.1	1/10	11				11	
A(SPK)	1.26	1/10	12.6				12.6	128%
B	2.3	1/10	23		176		26	
C	1.3	1/10	13		181		14	
D	1.6	1/10	16		177		18	
E	3.7	1/10	33		184		36	
F	4.7	1/10	47		182		52	

METALS ANALYSIS DATA SHEET

REV.

AL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V Flame _____ Hydride _____
 D₂ _____ 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
M-1	46.5	44.8	0.03	0.62	96%

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
52318-G NRS	5.1	1/10	51	200	181		56	
BS	1.47		118%					
52363-A PCWA	1.2	1/10	12	100	100		12	
A(QQ)	1.2	1/10	12				12	
B	1.2	1/10	12				12	
B(pk)	1.2	1/10	12				12	
C	1.0	1/10	10				10	
D	1.2	1/10	12				12	
BLK 11/29	0.12							
BS	1.25		90%					
4941-F	1.3	1/10	13	50	50		13	
G	2.2	1/10	22	"	"		22	
BLK 12/2	0.44							
BS	1.50		85%					
52158-G	10	1/10	100	50	50		100	
H	1.7	1/100	170				170	
I	8.0	1/10	80				80	
J	11	1/10	110				110	
K	1.8	1/100	180				180	
L	2.0	1/100	200				200	
M	1.3	1/100	130				130	
N	1.6	1/100	160				160	
O	2.5	1/100	250				250	
P	3.4	1/100	340				340	
Q	1.8	1/100	180				180	

GTC Report #52318

SECTION D

Subpart D20: Raw Data for Thallium

METALS ANALYSIS DATA SHEET

REV.

METAL TX DATE 12/9/85 ANALYST JB REVIEWER MAD 12/14/85
 INSTRUMENT (AA) 276.6 nm Voltage 350 V ANALYSIS METHOD
 Current 3 a Split 1.0 nm Flame Hydride
 N₂ OFF Integ. 4 sec Gas Air / Acet Acid
 Reduc.

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock <u>12/9/85</u>	Conc. ug/ml <u>5.00</u>	<u>10.00</u>	<u>2.00</u>	<u>1.00</u>	<u>0.25</u>
	Absorbance <u>0.077</u>	<u>0.154</u>	<u>0.032</u>	<u>0.016</u>	<u>0.004</u>
EPA Check <u>TXS 1x10</u>	Known <u>0.504</u>	Mean <u>0.47</u>	SD <u>0.07</u>	RSD <u>15.03</u>	% Recovered <u>94</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
BLK 11/18	<.25							
BS	1.24		99%					
52028-C low	<.25			100	100		<.25	
BLK SPK 11/20	1.15		92%					
52226-C	<.25			50	0.54g			<.25
BLK 11/26	<.25							
BS	1.24		99%					
52313-A Larson	0.85			50	50		0.85	
" B "	1.5			50	50		1.5	
52318-A DRS	<.25			50	50		<.25	
A(qt)	<.25						<.25	
A(yt)	1.22		98%				1.22	
B	<.25						<.25	
C	<.25						<.25	
D	<.25						<.25	
E	<.25						<.25	
F	<.25						<.25	
G	<.25						<.25	
BLK 12/2	<.25							
BS	1.24		99%					
4832-C	0.76			50	0.48g			79
" D	0.53			50	0.49g			54
4916 WCC	0.76			50	0.47g			81
BLK 12/4	<.25							
BS	1.16		93%					
4685-A	<.25			50	0.50g			<.25 FURNACE

Repeat by furnace

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 02/10/86
 BATCH:

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

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	33.3%	-0.005	-0.003-0.004	1.000
STANDARD 1	20.00	5.3%	0.132	0.127 0.138	1.000

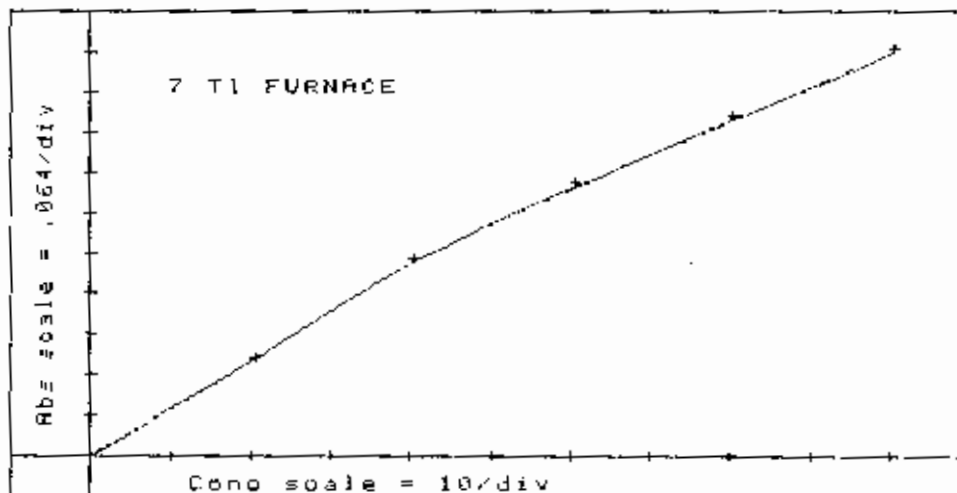
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 02/10/86
 BATCH:

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

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK:	0.000	100.0%	0.002	0.001 0.004	1.000
STANDARD 1	20.00	4.8%	0.146	0.141 0.151	1.000
STANDARD 2	40.00	0.7%	0.301	0.300 0.303	1.000
STANDARD 3	60.00	0.2%	0.420	0.419 0.421	1.000
STANDARD 4	80.00	0.8%	0.528	0.525 0.531	1.000
STANDARD 5	100.0	0.2%	0.636	0.635 0.637	1.000



TMS 1	22.84	0.6%	0.169	0.170	0.169	1.000
TMS 2*10	51.93	0.0%	0.377	0.377	0.377	1.000
BLK 11/26	0.000	0.0%	0.000	0.000	0.000	1.000
BLK SPK	49.37	0.3%	0.362	0.363	0.362	1.000
52318 A	3.835	7.1%	0.028	0.026	0.030	1.000
52318 AGC	9.041	31.8%	0.066	0.051	0.082	1.000
20ppb	29.06	26.0%	0.219	0.179	0.260	1.000
52318 B	13.42	2.0%	0.098	0.097	0.100	1.000
20ppb	38.44	2.4%	0.290	0.288	0.295	1.000
52318 C	33.57	8.3%	0.254	0.239	0.269	1.000
20ppb	45.82	8.5%	0.340	0.319	0.361	1.000
52318 D	37.89	2.4%	0.286	0.281	0.292	1.000
20ppb	53.70	0.3%	0.387	0.388	0.386	1.000
52318 E	38.86	0.7%	0.293	0.295	0.291	1.000
20ppb	52.63	0.3%	0.381	0.382	0.381	1.000
BLANK	0.000	32.4%	0.102	0.079	0.126	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: D. DUMBLETON

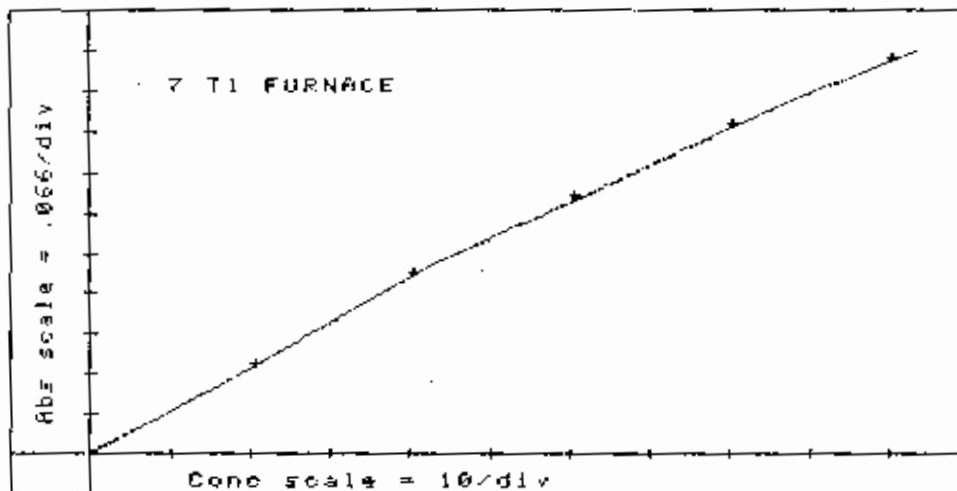
DATE: 02/10/86

BATCH:

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

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RSD	MEAN	ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	0.0%	-0.104	-0.104	-0.104	1.000
STANDARD 1	20.00	0.7%	0.139	0.138	0.140	1.000
STANDARD 2	40.00	0.0%	0.289	0.289	0.289	1.000
STANDARD 3	60.00	0.0%	0.413	0.413	0.413	1.000
STANDARD 4	80.00	0.9%	0.532	0.528	0.536	1.000
STANDARD 5	100.0	0.3%	0.641	0.643	0.640	1.000



TMS 1	22.09	2.6%	0.155	0.152	0.158	1.000
TMS 2*10	54.95	1.3%	0.385	0.382	0.389	1.000
52318 F	6.418*	2.2%	0.046	0.046	0.047	1.000
20ppb	20.65	0.7%	0.144	0.145	0.144	1.000
52318 G	41.450*	1.7%	0.281	0.271	0.290	1.000

20ppb	30.00	0.1%	0.104	0.110	0.114	1.000
52319 B	11.60	17.3%	0.081	0.071	0.092	1.000
20ppb	32.18	11.2%	0.232	0.213	0.251	1.000
BLK 11/12	15.10	6.7%	0.105	0.100	0.111	1.000
BLK SPK	46.33	1.2%	0.332	0.329	0.325	1.000
52237 A	30.06	8.3%	0.216	0.200	0.229	1.000
20ppb	46.49	0.0%	0.333	0.303	0.333	1.000
52237 B	40.00	1.0%	0.289	0.292	0.287	1.000
20ppb	54.09	1.3%	0.380	0.377	0.384	1.000
52237 C	33.38	2.1%	0.241	0.238	0.245	1.000
20ppb	46.79	0.5%	0.375	0.306	0.354	1.000
52237 D	34.07	0.4%	0.259	0.250	0.251	1.000
BLANK	0.000	4.8%	0.104	0.106	0.100	1.000

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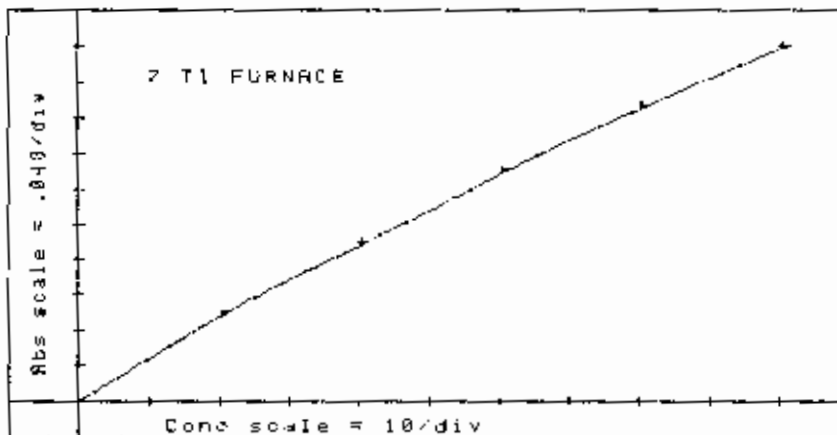
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 02/10/86
 BATCH:

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

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	30.0%	-0.000	-0.005-0.016	1.000
STANDARD 1	20.00	1.8%	0.114	0.116 0.112	1.000
STANDARD 2	40.00	0.5%	0.207	0.208 0.207	1.000
STANDARD 3	60.00	3.4%	0.307	0.315 0.299	1.000
STANDARD 4	80.00	5.6%	0.394	0.404 0.384	1.000
STANDARD 5	100.0	0.8%	0.470	0.470 0.476	1.000



TMS 1	21.57	13.1%	0.122	0.124 0.111	1.000
TMS 2*10	72.47	2.8%	0.260	0.256 0.271	1.000
20ppb	55.76	1.0%	0.286	0.284 0.289	1.000
52237 E	56.56	2.8%	0.290	0.296 0.284	1.000
20ppb	70.84	2.8%	0.306	0.364 0.349	1.000
52237 F	49.94	7.0%	0.257	0.270 0.244	1.000
20ppb	61.06	5.8%	0.310	0.321 0.303	1.000
52237 G	40.00	6.3%	0.207	0.217 0.198	1.000
52237 GOC	37.88	1.5%	0.198	0.201 0.196	1.000
20ppb	52.34	2.2%	0.269	0.274 0.265	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 02/10/86
 BATCH:

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

SOLUTION	T1 ug/l
TMS 1	21.57
TMS 2*10	72.47
20ppb	55.76
52237 E	56.56
20ppb	70.84
52237 F	49.94
20ppb	61.06
52237 G	40.00
52237 GOC	37.88
20ppb	52.34

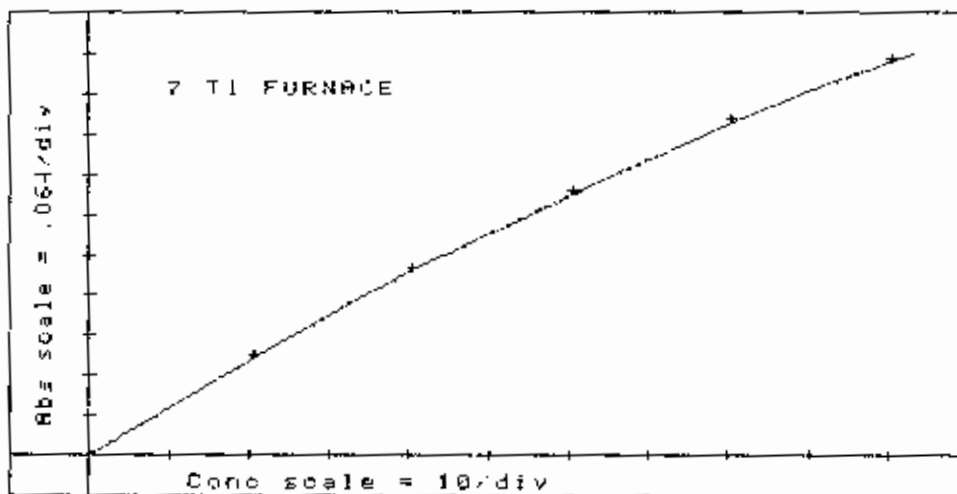
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 01/31/06
 BATCH:

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

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RED	MEAN ABS	ABSORBANCE READINGS		RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	1.000
STANDARD 1	20.00	6.0%	0.150	0.143	0.157	1.000
STANDARD 2	40.00	1.0%	0.290	0.288	0.293	1.000
STANDARD 3	60.00	0.2%	0.412	0.412	0.413	1.000
STANDARD 4	80.00	0.4%	0.527	0.529	0.525	1.000
STANDARD 5	100.0	0.2%	0.625	0.626	0.624	1.000



TMS 1	20.68	2.6%	0.155	0.158	0.152	1.000
TMS 2*10	51.90	0.8%	0.365	0.363	0.368	1.000

BLK 11/26	0.000	0.0%	0.000	0.000-0.001	1.000
BLK SPK	49.26	3.2%	0.349	0.341 0.357	1.000
52318 A	2.666	25.0%	0.020	0.017 0.024	1.000
52318 ADC	5.735	30.2%	0.043	0.034 0.053	1.000
20ppb	27.18	10.9%	0.202	0.186 0.218	1.000
52318 B	16.00	4.0%	0.120	0.116 0.124	1.000
20ppb	33.46	2.0%	0.246	0.241 0.252	1.000
52318 C	25.92	7.3%	0.193	0.185 0.204	1.000
20ppb	44.31	7.5%	0.318	0.310 0.326	1.000
52318 D	33.17	1.6%	0.244	0.241 0.247	1.000
20ppb	49.10	1.1%	0.340	0.351 0.345	1.000
52318 E	36.55	2.6%	0.267	0.272 0.262	1.000
20ppb	50.57	1.7%	0.357	0.362 0.353	1.000
BLANK	0.000	13.3%	0.105	0.095 0.116	1.000

119

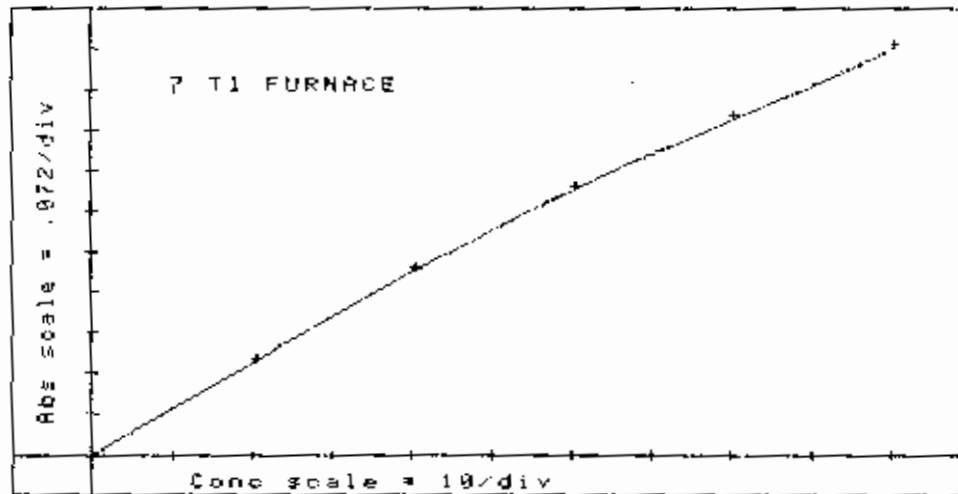
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 GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D.DUMBLETON
 DATE: 02/1/86
 BATCH:

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

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS		RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	1.000
STANDARD 1	20.00	6.8%	0.161	0.153	0.169	1.000
STANDARD 2	40.00	1.2%	0.321	0.324	0.318	1.000
STANDARD 3	60.00	1.9%	0.468	0.462	0.475	1.000
STANDARD 4	80.00	0.2%	0.592	0.592	0.593	1.000
STANDARD 5	100.0	1.4%	0.716	0.709	0.724	1.000



TMC 1	15.52	70.4%	0.125	0.188	0.063	1.000
TMC 2*10	18.38	139.9%	0.148	0.001	0.295	1.000
52318 F	7.577	6.6%	0.061	0.058	0.064	1.000
20ppb	9.192	135.1%	0.074	0.003	0.143	1.000
52318 G	7.080	47.3%	0.057	0.049	0.065	1.000
20ppb	19.00	2.0%	0.153	0.151	0.156	1.000
BLK 11/12	1.242	120.0%	0.010	0.001	0.019	1.000
BLK SPK	37.17	32.0%	0.299	0.230	0.369	1.000
52237 A	15.52	26.4%	0.125	0.101	0.149	1.000
20ppb	40.12	21.7%	0.322	0.272	0.372	1.000
52237 B	20.98	139.6%	0.169	0.002	0.337	1.000
20ppb	21.35	139.5%	0.172	0.002	0.342	1.000
52237 C	16.09	3.1%	0.136	0.131	0.141	1.000
20ppb	0.248	0.0%	0.002	0.002	0.002	1.000
52237 D	0.248	50.0%	0.002	0.003	0.002	1.000
BLANK	0.000	17.0%	0.100	0.113	0.088	1.000

GTC Report #52318

SECTION D

Subpart D21: Raw Data for Tin

METALS ANALYSIS DATA SHEET

REV.

METAL Sn DATE 12/11/85 ANALYST JB REVIEWER MLP 1/12
 INSTRUMENT (AA) 235.5 nm Voltage 460 V 12/11/85
 Current 10 a Split 0.5 nm
 D₂ off Integ. 4 sec
 ANALYSIS METHOD Flame Hydride
 Gas N₂O / Acet Acid
 Reduc.

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	20.0	50.0	10.0	5.0	1.0
<u>12/11/85</u>	Absorbance	0.103	0.248	0.248	0.024	0.001
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>none</u>						

ANALYSIS

Sample #	INSTRUMENT ANALYSIS		Final ug/ml	DIGESTION			FINAL CONCENTRATION	
	Conc. ug/ml	D.F.		F.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
BLK 11/11	<1							
BS	5.2		104%					
52278	<1			50	50		<1	
BLK 11/26	<1							
BS	11.0	10.0	110%					
52318-A URS	<1			50	50		<1	
A(90)	<1						<1	
A(94)	<1		0%				<1	
B	<1						<1	
C	<1						<1	
D	<1						<1	
E	<1						<1	
F	<1						<1	
G	<1						<1	
BLK 12/2	<1							
BS	<1		0%					
52409	<1			100	100		<1	
BLK 12/4	<1							
BS	5.5		110%					
4685-A	<1			100	1.01g		<100	
A(90)	<1				0.99g		<100	
A(94)	5.0		100%		0.98g		500	
B	<1				1.00g		<100	
C	<1				1.02g		<100	
D	<1				1.01g		<100	
E	<1				1.03g		<100	

Repeat
of
Hydride

METALS ANALYSIS DATA SHEET

REV.

METAL Sr LL DATE 1/16/86 ANALYST MM REVIEWER MMV 1/16
 INSTRUMENT (AA) 286.3 nm Voltage 530 V 1.5 ANALYSIS METHOD Flame Hydride
 Current 5 a Split 0.5 nm Gas / Acid HCN
 D₂ RFE Integ. 7 sec 117 Reduc. N₂ Ar

INITIAL CALIBRATION

STANDARDS:		#1 (5.0)	#2 (10.0)	#3 (15.0)	#4 (2.0)	#5 (1.0)
Stock	Conc. ug/ml	0.050	0.100	0.030	0.020	0.010
	Absorbance		0.447			
EPA Check	Known	Mean	SD	RSD	% Recovered	

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
5D60 B	<1	10	10.01	✓				
C	<1		<0.01	✓				
52318A	<1		<0.01	✓				
A 800	<1		<0.01	✓				
A(5)	5.3	0.102	106%	✓				
B	<1		<0.01	✓				
C	<1		<0.01	✓				
D	<1		<0.01	✓				
E	<1		<0.01	✓				
F	<1		<0.01	✓				
G	<1		<0.01	✓				
Blk 1/15	<1		<0.01	✓				
B.S.	10.7	0.102	107%	✓				
60094	<1		<0.01	✓				
Blk 1/7	<1		<0.01	✓				
B.S.(5.0)	5.4		108%	✓				
52613B	<1		<0.01	✓				
B	<1		<0.01	✓				
BVP	<1		<0.01	✓				
B(5.0)	4.7	0.102	94%	✓				
C	<1		<0.01	✓				
D	<1		<0.01	✓				
E	<1		<0.01	✓				
F	<1		<0.01	✓				
G	<1		<0.01	✓				
H	<1		<0.01	✓				

DEC

DEC

GTC Report #52318

SECTION D

Subpart D22: Raw Data for Vanadium

MODEL V DATE 1/9/86 ANALYST JB REV. 1/1/86
 INSTRUMENT (AA) 318.5 nm Voltage 380 V ANALYSIS METHOD IC 77
 Current 5 a Split 0.5 nm Flame Hydride 2/10/86
 D₂ off Integ. 4 sec Gas H₂ / Acet Acid Reduc.

INITIAL CALIBRATION - 200 ul H(NO₃)₃ added to stds/samples

STANDARDS:	#1	#2	#3	#4	#5	
Stock	Conc, ug/ml	5.00	10.00	1.00	0.50	0.25
1/9/86	Absorbance	0.063	0.123	0.023	0.012	0.005
EPA Check	Known	Mean	SD	RSD	% Recovered	
WP 284 2	0.846	0.76	0.02	2.77	90%	
" 1x2	1.260	0.28	0.03	9.79	105%	

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 11/26	<.25							
BS	1.60		128%					
52318-A VRS	<.25			200	200		<.25	
A(QC)	<.25						<.25	
A(spk)	1.46		117%					
B	<.25				176		<.25	
C	<.25				181		<.25	
D	<.25				177		<.25	
E	<.25				184		<.25	
F	<.25				182		<.25	
G	<.25				181		<.25	
BLK 12/4	<.25							
BS	1.40		112%					
4685-A WCC	0.53			50	0.50 g			53
A(QC)	0.50				0.48			58
A(spk)	1.85		110%		0.48			192
B	0.45				0.51			44
C	0.35				0.50			35
D	0.39				0.49			40
E	0.35				0.52			34
BLK 12/27	<.25							
BS	1.29		103%					
4685-A WCC	0.46			50	0.48 g			48
A(QC)	0.50				0.48			52
A(spk)	1.23		60%		0.49			126
B	0.39				0.55			35

Do by Furnace

METALS ANALYSIS DATA SHEET

METAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD
 Current _____ nm Voltage _____ V Flame _____ Hydride _____
 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	
2	0.1%	0.89	0.03	2.90	105%	

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
4685-C wcc	0.41			50	0.53g			39
D	0.38				0.47			40
E	<.25				0.50			<25
BLK 1/2	<.25							
BS	1.17		94%					
S2613-A ETC	<.25			200	200		<.25	
B	<.25						<.25	
B(QC)	<.25						<.25	
B(spik)	1.22		98%				<.25	
C	<.25						<.25	
D	<.25						<.25	
E	<.25						<.25	
F	<.25						<.25	
G	<.25						<.25	
H	<.25						<.25	
S2630-A 1	0.95			50	0.70g			61/56
A(QC)	0.83				0.80g			52
A(spik)	1.89		99%		0.58g			162
B	<.25				0.56			<25
S2432-Q x 10	4.51 4.63		0.45 0.46					
Q	0.52 0.47		0.52 0.47					
R x 10	7.14 7.15		0.71 0.72					
R	0.98 0.93		0.98 0.93					

Do
 13/
 Furnace

NYSOH
 par. Tot

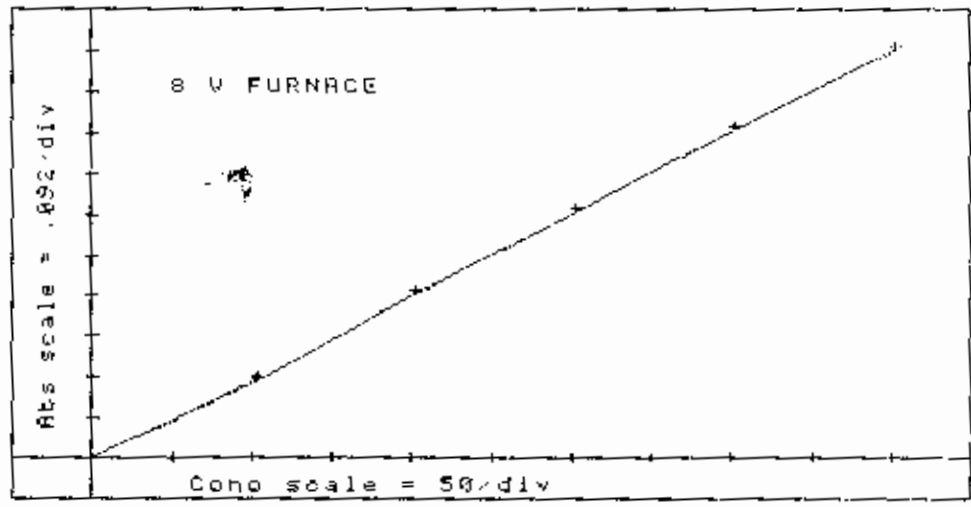
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 01/30/86
 BATCH:

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

AUTO-PROGRAM B V FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	53.8%	-0.013	-0.008-0.019	1.000
STANDARD 1	100.0	1.2%	0.170	0.169 0.172	1.000
STANDARD 2	200.0	1.1%	0.364	0.361 0.367	1.000
STANDARD 3	300.0	0.2%	0.554	0.554 0.555	1.000
STANDARD 4	400.0	0.1%	0.740	0.739 0.741	1.000
STANDARD 5	500.0	0.5%	0.915	0.919 0.912	1.000



1*2	275.9	1.8%	0.510	0.517 0.503	1.000
2	107.4	1.6%	0.184	0.187 0.182	1.000
BLK 11/26	2.941	100.0%	0.005	0.009 0.002	1.000
BLK SPK	51.76	1.1%	0.088	0.089 0.087	1.000
52318 A	2.352	75.0%	0.004	0.007 0.002	1.000
52318 AQC	0.000	200.0%	-0.001	0.000-0.003	1.000
100ul	105.8	1.1%	0.181	0.180 0.183	1.000
52318 B	0.000	0.0%	0.000	0.002-0.002	1.000

100ul	0.588	100.0%	2.0%	0.179	0.175	0.180	1.015
52318 D	0.588	100.0%	2.0%	0.179	0.175	0.180	1.015
100ul	104.2	3.9%	0.178	0.173	0.184	1.015	
52318 E	0.000	100.0%	-0.002	0.000	-0.004	1.015	
100ul	101.6	1.2%	0.170	0.171	0.175	1.015	
BLANK	0.000	57.1%	-0.007	-0.004	-0.010	1.015	
RESLOPE	194.9	1.1%	0.308	0.305	0.361	1.015	
1*2	263.7	0.4%	0.480	0.479	0.482	1.015	
2	104.2	2.3%	0.175	0.178	0.172	1.015	
52318 F	7.164	86.7%	0.012	0.010	0.006	1.015	
100ul	101.6	1.8%	0.170	0.168	0.173	1.015	
52318 G	2.985	60.0%	0.005	0.008	0.000	1.015	
100ul	106.9	1.1%	0.180	0.179	0.182	1.015	
BLK 11/12	0.000	0.0%	0.000	0.002	-0.000	1.015	
BLK SPK	47.76	1.3%	0.080	0.079	0.081	1.015	
52237 D	1.194	150.0%	0.002	0.005	0.000	1.015	
100ul	107.4	2.2%	0.181	0.178	0.184	1.015	
52237 E	1.791	166.7%	0.003	0.007	0.000	1.015	
100ul	105.8	2.8%	0.178	0.175	0.182	1.015	
52237 G	2.985	100.0%	0.005	0.009	0.001	1.015	
52237 GDC	0.000	0.0%	0.000	-0.001	0.000	1.015	
100ul	97.91	3.7%	0.164	0.160	0.167	1.015	
BLANK	0.000	166.7%	-0.003	0.001	-0.007	1.015	
RESLOPE	187.8	1.5%	0.344	0.340	0.348	1.050	
1*2	251.6	0.0%	0.440	0.440	0.440	1.050	
2	*28.2	4.2%	0.166	0.172	0.161	1.050	
52237 A	8.671	35.7%	0.014	0.018	0.011	1.050	
100ul	106.4	0.5%	0.172	0.168	0.177	1.050	
52237 B	4.955	50.0%	0.008	0.011	0.005	1.050	
100ul	96.00	1.3%	0.155	0.154	0.157	1.050	
52237 C	4.335	71.4%	0.007	0.011	0.004	1.050	
100ul	96.62	0.4%	0.156	0.155	0.157	1.050	
52237 F	3.716	83.3%	0.006	0.010	0.003	1.050	
100ul	98.48	2.5%	0.159	0.156	0.162	1.050	

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: D. DUMBLETON

DATE: 01/30/86

BATCH:

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

SOLUTION	U ug/l
1*2	275.9
2	107.4
BLK 11/26	2.941
BLK SPK	51.76
52318 A	2.352
52318 AQC	0.000
100ul	105.8
52318 B	0.000
100ul	101.6
52318 C	0.588
100ul	104.2
52318 D	0.588
100ul	104.2
52318 E	0.000
100ul	101.6
1*2	263.7
2	104.2
52318 F	7.164
100ul	101.6
52318 G	2.985
100ul	106.9
BLK 11/12	0.000
BLK SPK	47.76
52237 D	1.194
100ul	107.4
52237 E	1.791
100ul	105.8
52237 B	2.985
52237 GDC	0.000
100ul	97.91
1*2	251.6
2	*28.2
52237 A	8.671
100ul	106.4
52237 B	4.955
100ul	96.00
52237 C	4.335
100ul	96.62
52237 F	3.716
100ul	98.48

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GTC Report #52318

SECTION D

Subpart D23: Raw Data for Zinc

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

129

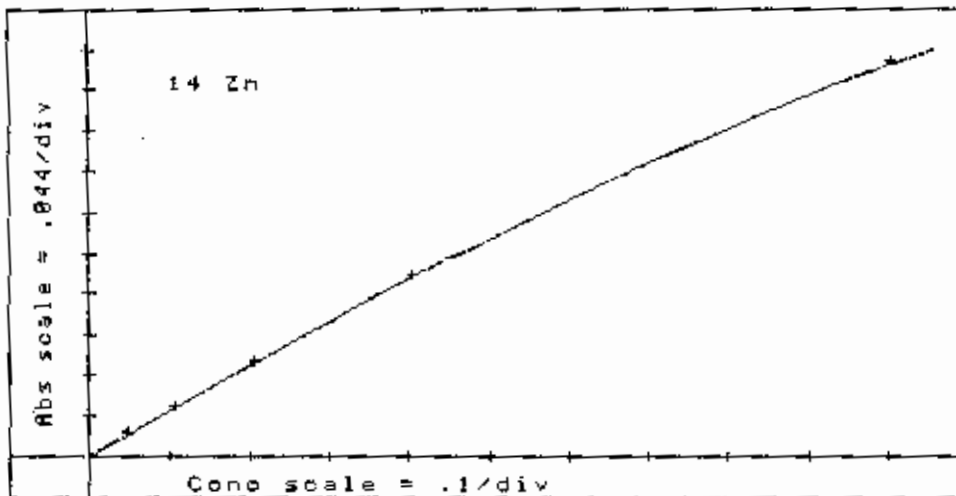
VARIAN AA-975
OPERATOR: D. DUMBLETON
DATE: 12/17/85
BATCH:

note: 1.1/10/85
QC'd 12/18/86

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			RESLOPE FACTOR
BLANK	0.000	0.0%	0.001	0.001	0.001	0.002	1.000
STANDARD 1	0.040	5.3%	0.019	0.020	0.019	0.020	1.000
STANDARD 2	0.100	2.0%	0.049	0.050	0.048	0.049	1.000
STANDARD 3	0.200	0.0%	0.098	0.098	0.099	0.098	1.000
STANDARD 4	0.400	0.5%	0.191	0.191	0.193	0.190	1.000
STANDARD 5	1.000	0.2%	0.420	0.420	0.422	0.420	1.000



1*2	0.012	16.7%	0.006	0.007	0.006	0.007	1.000
2	0.406	1.0%	0.194	0.192	0.196	0.194	1.000
BLK 11/26	0.000	25.0%	-0.004	-0.003	-0.003	-0.004	1.000
BLK 8PK	0.042	5.0%	0.020	0.021	0.021	0.020	1.000

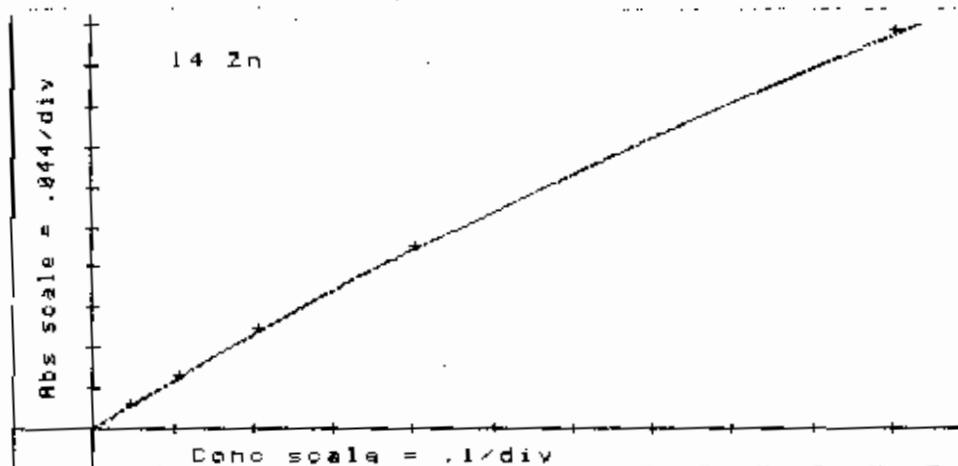
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
OPERATOR: D. DUMBLETON
DATE: 12/17/85
BATCH:

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			RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
STANDARD 1	0.040	4.8%	0.021	0.022	0.022	0.021	1.000
STANDARD 2	0.100	2.0%	0.051	0.051	0.053	0.050	1.000
STANDARD 3	0.200	0.0%	0.101	0.102	0.101	0.101	1.000
STANDARD 4	0.400	0.5%	0.193	0.193	0.195	0.193	1.000
STANDARD 5	1.000	0.2%	0.426	0.425	0.426	0.427	1.000



1*2	0.017	0.0%	0.009	0.009	0.010	0.009	1.000
2	0.406	0.5%	0.196	0.195	0.195	0.198	1.000
BLK 11/26	0.000	100.0%	-0.001	-0.002	-0.002	-0.001	1.000
BLK SPK	0.057	13.3%	0.030	0.026	0.029	0.035	1.000
52318 A	0.000	0.0%	0.000	0.000	0.000	-0.001	1.000
52318 AGC	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
52318 ASPK	0.051	3.7%	0.027	0.029	0.028	0.026	1.000
52318 B	0.005	33.3%	0.003	0.002	0.002	0.003	1.000
52318 C	0.007	25.0%	0.004	0.005	0.005	0.004	1.000
52318 D	0.001	100.0%	0.001	0.002	0.002	0.000	1.000
52318 E	0.005	0.0%	0.003	0.003	0.004	0.003	1.000
52318 F	0.001	0.0%	0.001	0.001	0.001	0.002	1.000
52318 G	0.001	0.0%	0.001	0.001	0.001	0.002	1.000
BLK 11/27	0.000	0.0%	-0.003	-0.004	-0.003	-0.003	1.000
BLK SPK	0.049	0.0%	0.026	0.027	0.026	0.026	1.000
52363 A	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
52363 AGC	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
52363 B	0.001	100.0%	0.001	0.002	0.002	0.001	1.000
52363 BSPK	0.043	4.3%	0.023	0.024	0.022	0.023	1.000
52363 C	0.000	0.0%	0.000	-0.001	-0.001	0.000	1.000
BLANK	0.000	0.0%	0.000	0.000	-0.001	0.000	1.000
RESLOPE	0.105	1.9%	0.054	0.054	0.055	0.053	.952
1*2	0.018	10.0%	0.010	0.011	0.010	0.011	.952
2	0.393	0.5%	0.199	0.199	0.200	0.200	.952
52363 D	0.000	0.0%	0.000	0.000	0.001	0.000	.952
BLK 12/2	0.005	33.3%	0.003	0.003	0.004	0.004	.952
BLK SPK	0.045	0.0%	0.025	0.026	0.025	0.025	.952
52301 A	0.000	0.0%	0.000	0.000	0.000	0.002	.952
52301 AGC	0.003	50.0%	0.002	0.003	0.002	0.001	.952
52301 ASPK	0.049	0.0%	0.027	0.027	0.027	0.028	.952
52301 B	0.001	0.0%	0.001	0.001	0.002	0.001	.952
52301 C	0.000	0.0%	0.000	0.000	0.000	0.000	.952
52301 D	0.005	33.3%	0.003	0.004	0.004	0.003	.952
52301 E	0.000	0.0%	-0.001	-0.001	-0.001	-0.002	.952
52301 F	0.000	0.0%	0.000	-0.001	0.000	-0.001	.952
52301 G	0.000	0.0%	0.000	-0.001	0.000	0.000	.952
52301 H	0.000	0.0%	-0.003	-0.003	-0.003	-0.004	.952
52301 I	0.000	0.0%	0.000	-0.001	0.000	0.000	.952
52301 K	0.000	0.0%	0.000	0.000	-0.001	0.000	.952
52301 L	0.000	0.0%	0.000	-0.001	-0.001	0.000	.952
52301 M	0.038	4.8%	0.021	0.021	0.022	0.022	.952
52301 N	0.000	0.0%	0.000	0.000	0.000	0.000	.952
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	.952

RESLOPE	0.105	1.9%	0.054	0.055	0.055	0.055	.97
1*2	0.016	11.1%	0.009	0.010	0.010	0.009	.97
2	0.399	0.5%	0.198	0.177	0.198	0.199	.97
52301 D	0.000	0.0%	0.000	0.000	0.000	0.000	.97
BLK 12/3	0.005	33.3%	0.003	0.004	0.003	0.004	.97
BLK SPK	0.053	0.0%	0.029	0.029	0.029	0.029	.97
52409	0.494	0.4%	0.240	0.239	0.241	0.240	.97
52430 H	0.009	20.0%	0.005	0.006	0.004	0.005	.97
52430 I	0.001	0.0%	0.001	0.001	0.001	0.002	.97
52430 K	0.005	33.3%	0.003	0.003	0.003	0.005	.97
BLK 12/4	0.000	100.0%	-0.001	-0.001	-0.003	-0.001	.97
BLK SPK	0.040	4.5%	0.022	0.022	0.024	0.022	.97
52358 A	0.000	0.0%	0.000	0.000	0.000	0.000	.97
52358 B	0.029	6.3%	0.016	0.017	0.015	0.016	.97
52358 C	0.000	0.0%	0.000	0.000	0.000	0.000	.97
52358 D	0.018	0.0%	0.010	0.010	0.010	0.010	.97
52392 A	0.029	6.3%	0.016	0.015	0.017	0.017	.97
52423	0.000	100.0%	-0.001	-0.001	-0.002	0.000	.97
52424	0.000	0.0%	0.000	0.000	0.000	0.000	.97
52429 A	0.733	0.3%	0.338	0.338	0.337	0.339	.97
52442	0.000	0.0%	0.000	-0.001	0.000	-0.001	.97
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	.97
RESLOPE	0.105	1.9%	0.054	0.055	0.055	0.054	.952
1*2	0.018	10.0%	0.010	0.011	0.009	0.010	.952
2	0.396	0.5%	0.200	0.201	0.199	0.200	.952
52524	0.664	0.6%	0.316	0.316	0.318	0.314	.952
4685 A	0.935	0.5%	0.420	0.422	0.417	0.421	.952
4685 ADC	0.864	0.3%	0.394	0.395	0.396	0.393	.952
4685 ASPK	0.843	0.5%	0.386	0.384	0.389	0.385	.952
Q	0.000	0.0%	-0.005	-0.005	-0.006	-0.005	.952

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 12/17/85
 BATCH:

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

SOLUTION	Zn ng/L
1*2	0.017
2	0.406 406 9770
BLK 11/26	0.000
BLK SPK	0.057
52318 A	0.000 ^{40.01}
52318 ADC	0.000 ^{40.01}
52318 ASPK	0.051
52318 B	0.005 ^{40.01}
52318 C	0.007 ^{40.01}
52318 D	0.001 ^{40.01}
52318 E	0.005 ^{40.01}
52318 F	0.001 ^{40.01}
52318 G	0.001 ^{40.01}
BLK 11/27	0.000
BLK SPK	0.049
52363 A	0.000 ^{40.01}
52363 ADC	0.000 ^{40.01}
52363 B	0.001 ^{40.01}
52363 B8PK	0.043
52363 C	0.000 ^{40.01}
1*2	0.018
2	0.393 393 4947
52363 D	0.000 ^{40.01}
BLK 12/2	0.005
BLK SPK	0.045

*ULS-DITON
O.E.C. Bank*

*McGraw
Not in Bank*

*153
1/3/85*

52360 D	0.0004 ✓
BLK 12/2	0.005
BLK SPK	0.045
52301 A	0.000 ✓
52301 ABC	0.003 ✓
52301 ASPK	0.049 ✓
52301 B	0.001 ✓
52301 C	0.000 ✓
52301 D	0.005 ✓
52301 E	0.000 ✓
52301 F	0.000 ✓
52301 G	0.000 ✓
52301 H	0.000 ✓
52301 I	0.000 ✓
52301 K	0.000 ✓
52301 L	0.000 ✓
52301 M	0.038 ✓
52301 N	0.000 ✓
1*2	0.016
2	0.399
52301 O	0.000 ✓
BLK 12/3	0.005
BLK SPK	0.055
52409	0.494 ✓
52430 H	0.009 ✓
52430 I	0.001 ✓
52430 K	0.005 ✓
BLK 12/4	0.000
BLK SPK	0.040
52358 A	0.000 ✓
52358 B	0.029 ✓
52358 C	0.000 ✓
52358 D	0.018 ✓
52392 A	0.029 ✓
52423	0.000 ✓
52424	0.000 ✓
52429 A	0.733 ✓
52442	0.000 ✓
1*2	0.018
2	0.396
52523	0.664 ✓
4685 A	0.935
4685 ABC	0.864
4685 ASPK	0.843
Q	0.000

} *D.I.C. Book*
 } *Recalculate*

20 14/17

QUALITY CONTROL

EPA #	TRUE VALUE	MEAN RECOVERY	% RECOVERY
1x2	0.020	0.017	85
2	0.418	0.398	95

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

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	ACT. REC.	AMT. ADDED	% RECO.
Bik SPK	0.057	<0.01	0.057	0.05	104
S2216-A	0.051	<0.01	0.051	0.05	102
Bik SPK	0.045	<0.01	0.045	0.05	90
S2213-D	0.043	<0.01	0.043	0.05	86
Bik SPK	0.045	<0.01	0.045	0.05	90
S2201-A	0.045	<0.01	0.045	0.05	90
Bik SPK	0.052	<0.01	0.052	0.05	104
Bik SPK	0.040	<0.01	0.040	0.05	80

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

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{ A-B \times 200}{(A+B)}$
S2218-D	<0.01	<0.01	NL
S2213-A	<0.01	<0.01	NL
S2201-A	<0.01	<0.01	NL
4683-A	0.935	0.869	7.5

GTC Report #52318

SECTION D

Subpart D24: Raw Data for Cyanide



4996

CYANIDE

R. Bunk
12/10/85

water and wastewater testing specialists

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

65 Trinely Place
Mackensack, NJ 07601
(201) 480-9242

Job Number	Company Name	Peak Mt.	mg/l	Org. Vol.	Final Vol.	Conc. Factor	Total Cn	Fixed Cn	Free Cn
1	IS	43.0							
2	Blank	4.5							
3	101	5.5							
4	102	7.5							
5	103	13.5							
6	10	22.5							
7	20	41.2							
8	50	93.6							
9	Blank	4.5							
10	20	42.1	.198						
11	Blank method	4.5							
12	Blank or mine	13.5	.0516						
13	52027E Law			430	250	.587			
14	52296 Johnson			420					
15	52297A Gleason			455					
16	B			410					
17	C			270					
18	52299 B+L	7.7	.022	500		.50	.012		
19	52318 B VRS Dalton	5.5	.012			.50	2.01		
20	C	82.7	.40				2.01		
21	D	6.6	.0163				2.01		
22	52367 Wm-River	3.2	.010	470	250		2.01		
23	DP (my)	5.2	.010						
24	SPK	10.3	.035						
25	52318A VRS-Dalton	4.5	.006	500	250	.50	2.01		
26	E	5.3	.011			.50	2.01		
27	F	19.0	.076			.50	2.01		
28	G	5.5	.011			.50	2.01		
29	52305 Xenox	99.4	.470	300	250	.833	.34		
30	52326 " "	213	1.45	350	250	.714	.152		
31	Blank	4.2							
32	20	44.4	.211						
33	52318A Dup VRS-DALT	5.3	.013	500	250	.50	2.01		
34	SPK (dist)	22.3	.072						
35	Blank (dist)	4.3	.008						
36	Blank spk	20.5	.074						
37	4920A Acrow	6.0	.015	500	250	.50	2.01		
38	4933B " "	6.0	.015			.50	2.01		
39	4933B WWC Mobay	4.1	.006			.50	2.01		
40	C	4.3	.007	250	250		2.01		

Analyst Name: Colleen Barkin Date Analyzed: 12-5-85
 Stock #: _____ Date Standardized: _____

- 1.) ppm of Distillate; 2.) Volume of Sample; 3.) Volume of Distillate;
 4.) 5/2 5.) All Cn 6.) Cn-After Treatment 7.) 5-6
- * Dalton Rn Protocol

general testing corporation



CYANIDE

water and wastewater testing specialists

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

83 Trinity Place
Hackensack, NJ 07601
(201) 486-5242

Job Number	Company Name	Peak Ht.	mg/l	Org. Vol.	Final Vol.	Conc. Factor	Total Cn	Fixed Cn	Free Cn
41	4938 D	WWC	4.5	.008	500	250	.50	2.01x	✓
2	F		4.0	.006			.50	2.01x	✓
3	H		57.5	.269			.50	.13x	✓
4	J		7.6	.023			.50	.01x	✓
5	L		4.0	.007			.50	2.01x	✓
20	52409	Wm. H.A.	4.0	.006	430	250	.50	2.01x	✓
8	Dp		4.0	.006					
9	SPV		9.3	.032					
49	4938 A	WWC-mabay	4.0	.006	500	250	.50	2.01x	✓
11	E		4.0	.006			.50	2.01x	✓
12	G		5.2	.012			.50	2.01x	✓
34	Blank		4.2						
35	20		43.0	.204					
15	4938 K	WWC-mabay	5.0	.011			.50	2.01x	✓
16	4912	Sabo	4.0	.006			.50	2.01x	✓
17	4920	B Arrow	5.1	.011			.50	2.01x	✓
18	4937	A ↓ ↓	3.2	.021			.50	.01x	✓
19	4950	A ↓ ↓	5.5	.013			.50	2.01x	✓
20	4965	B Sabo	16.0	.309			.50	.15x	✓
21	DPB		66.1	.008					
22	SPK(m)		34.1	.347					
23	5236.0	Xerox	30.7	.378	350	250	.714	.27x	✓
24	52392A	material	16.6	.065	450		110.85	.36x	✓
25	52400A	Xerox	7.2	.021	450		.556	.01x	✓
26	E		4.3	.007			.556	2.01x	✓
27	52407		18.7	.074			.556	.04x	✓
28	52411		34.9	.150			.556	.08x	✓
29	4938 M	WWC-mabay	5.0	.010	500	250	.50	2.01x	✓
30	RAM		4.7	.009					
31	SPCM (dist)		18.7	.073					
32	Blank		12.4	.044					
33	4913	ROPex	4.3	.007	10.1	250		2.25x	✓
34	52297	API	4.5	.008	10.1	250		2.25x	✓
35	Blank		4.5	.008					
36	20		47.0	.223					
37	52028 K	Law Eng.	4.5	.007	2.2	100		2.15x	✓
38	4967	B Sabo	5.6	.012	500	250	.50	2.01x	✓
39	4970	C ATD Center	5.9	.011			.15	2.01x	✓
40	FPA #5		47.2	.217			(1.2)		

Analyst Name: _____ Date Analyzed: 12-5-85
 Stock #: _____ Date Standardized: _____

- 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



CYANIDE

water and wastewater testing specialists

713 Exchange Street
Rochester, NY 14608
(716) 454-3700

85 Tully Place
Hackensack, NJ 07607
(201) 463-6242

Job Number	Company Name	Peak Ht.	mg/l	Drg. Vol.	Final Vol.	Conc. Factor	Total Cn	Fixed Cn	Free Cn
1	49778 Engelhard	11.5	.0415	500	250	2	14	.02	
2	4979 B J Sabo	39.3	.389	↓	↓	↓	15	.19	
3	52445 W. Oise	5.6	.012	400	250	1.6	15	2.01	
4	52455 A + R	5.6	.012	455	250	1.82	15	2.01	TOTAL
5	52473 Hall	2.1	.009	420	250	1.68	15	2.01	
6	SPA - 5 1.2	44.0	was HP						
7	.4	23.1	entered	was HP					
8	Blank	4.5							
9									
10									
11									
12									
13									
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Analyst Name: _____ Date Analyzed: 12-5-85
 Stock #: _____ Date Standardized: _____

- 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

BLANK #4 < .01
 BLANK DIST < .01
 NET CHEM QUALITY CONTROL WORKSHEET

A.) Linear Regression (if applicable)

1. Std's deleted: none
 2. Corr. Coefficient: .9996

B.) Precision (duplicates, one for every ten samples run)

Job #	Analytical Value #1	Analytical Value #2	$\frac{[#1-#2]}{Ave.} \times 100$	Dilution	Within Limits (y or n)
52362	.010	.010	0.0%	2x	y
52318-A	<.01	<.01	0.0%		y
52409	<.01	<.01	0.0%		y
4965	.309	.308	.308 .324%		y
4938	<.010	<.009	0.0%	2x	y

C.) Spiked Recovery (one for every ten samples run)

Job #	Ave. Analytical Value of Sample (B)	Mg spike added	Sample Volume (C)	mg/l of Spike (C)	Analytical Value of Spiked Sample (A)	$\frac{A-B}{C} \times 100$	Within Limit (y or n)
52318-A	<.01	2ml 10ppm	2500	.092	.047	112.9%	Low AA
52409	<.01	5ml 410ppm	10.2	.046	.032	70.6%	Low AA
4965	.308	"	"	.046	.347	84.8%	Low AA
4938	<.01	2ml 10ppm	500ml	.092	.074	81.0%	Low AA
52362	<.01	"	"	.047	.035	74.5%	Low AA
BLANK	<.01	5ml 10ppm	10ml	.047	.056	117%	y AA
				.044	.049	101%	y DIST
				.044	.047	52.4%	Low DIST

D.) EPA Check Sample Recovery

EPA #	True Value	Value Obtained	% Recovery	Within Limits (y or n)
#5	.224	.212	94.6%	y
		.217	96.8%	y

NOTES

- 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 LCN-15X,RAW

DATE 12- 7-85

TIME 9:30

METHOD NAME - LCN
SAMPLE/WASH RATIO - 2.000

SAMPLES/HR. - 20
SAMPLES/REFERENCE - 20

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

*** STANDARDS DATA ***

TRAY PDS.	STD #	LOW	CHANNEL "B"	CHANNEL "C"	CHANNEL "D"
3	1	1.000	.000	.000	.000
4	2	2.800	.000	.000	.000
5	3	9.000	.000	.000	.000
6	4	18.000	.000	.000	.000
7	5	36.700	.000	.000	.000
8	6	78.600	.000	.000	.000
9	7	93.100	.000	.000	.000

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

10	BLANK SMPL.	4.5000	.00000	.00000	.00000
11	CHECK SMPL.	42.100	.00000	.00000	.00000

*** RAW DATA RESULTS ***

TRAY #	SMPL.#	LOW	CHANNEL "B"	CHANNEL "C"	CHANNEL "D"
12	12	4.50	.000	.000	.000
13	13	13.5	.000	.000	.000
14	14	11.5	.000	.000	.000
15	15	79.3	.000	.000	.000
16	16	5.60	.000	.000	.000
17	17	5.60	.000	.000	.000
18	18	5.10	.000	.000	.000
19	19	7.70	.000	.000	.000
20	20	5.50	.000	.000	.000
21	21	82.7	.000	.000	.000
22	22	6.60	.000	.000	.000

23	23	5.20	.000	.000	.000
24	24	5.20	.000	.000	.000
25	25	10.3	.000	.000	.000
26	26	4.50	.000	.000	.000

*** RAW DATA RESULTS ***

TRAY #	SMPL. #	LDW	CHANNEL "B"	CHANNEL "C"	CHANNEL "D"
27	27	5.30	.000	.000	.000
28	28	19.0	.000	.000	.000
29	29	5.50	.000	.000	.000
30	30	98.4	.000	.000	.000
31	31	44.5	.000	.000	.000
32	Blank	4.20	.000	.000	.000
33	Ref Std.	44.4	.000	.000	.000
34	34	5.50	.000	.000	.000
35	35	22.3	.000	.000	.000
36	36	4.50	.000	.000	.000
37	37	20.5	.000	.000	.000
38	38	6.00	.000	.000	.000
39	39	6.00	.000	.000	.000
40	40	4.10	.000	.000	.000
41	41	4.30	.000	.000	.000
42	42	4.50	.000	.000	.000
43	43	4.00	.000	.000	.000
44	44	57.5	.000	.000	.000
45	45	7.60	.000	.000	.000
46	46	4.30	.000	.000	.000
47	47	4.00	.000	.000	.000
48	48	4.00	.000	.000	.000
49	49	9.30	.000	.000	.000
50	50	4.00	.000	.000	.000
51	51	4.00	.000	.000	.000
52	52	4.10	.000	.000	.000
53	53	5.20	.000	.000	.000
54	Blank	4.20	.000	.000	.000
55	Ref Std.	43.0	.000	.000	.000
56	56	5.00	.000	.000	.000
57	57	4.00	.000	.000	.000
58	58	5.10	.000	.000	.000
59	59	7.20	.000	.000	.000
60	60	5.50	.000	.000	.000
61	61	66.0	.000	.000	.000
62	62	66.1	.000	.000	.000
63	63	74.1	.000	.000	.000

140

64	64	80.7	.000	.000	.000
65	65	16.6	.000	.000	.000
66	66	7.20	.000	.000	.000
67	67	4.30	.000	.000	.000
68	68	18.7	.000	.000	.000
69	69	34.9	.000	.000	.000
70	70	5.00	.000	.000	.000
71	71	4.70	.000	.000	.000

*** RAW DATA RESULTS ***

TRAY #	SAMPL.#	LOW	CHANNEL "B"	CHANNEL "C"	CHANNEL "D"
72	72	18.7	.000	.000	.000
73	73	12.4	.000	.000	.000
74	74	4.30	.000	.000	.000
75	75	4.50	.000	.000	.000
76	Blank	4.50	.000	.000	.000
77	Ref Std.	47.0	.000	.000	.000
78	78	4.50	.000	.000	.000
79	79	5.60	.000	.000	.000
80	80	5.50	.000	.000	.000
81	81	47.2	.000	.000	.000
82	Blank	4.50	.000	.000	.000
83	Ref Std.	43.0	.000	.000	.000

14/1

RESULTS FROM REPORT FILE LCN-15X.RPT

DATE 12-7-85

TIME 9:30

METHOD NAME - LCN
SAMPLE/WASH RATIO - 2.000

SAMPLES/HR. - 20
SAMPLES/REFERENCE - 20

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

*** STANDARDS DATA ***

TRAY POS.	STD #	LOW	CHANNEL "B"	CHANNEL "C"	CHANNEL "D"
3	1	.010	-1.000	-1.000	-1.000
4	2	.020	-1.000	-1.000	-1.000
5	3	.050	-1.000	-1.000	-1.000
6	4	.100	-1.000	-1.000	-1.000
7	5	.200	-1.000	-1.000	-1.000
8	6	.400	-1.000	-1.000	-1.000
9	7	.500	-1.000	-1.000	-1.000

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

11 CHECK SMPL .198 .000 .000 .000

*** CALIBRATION CURVES APPLIED ***

LOW Y = .21221E-05 X^2 .50103E-02 X + .66150E-02

CHANNEL "B" Y = .00000 X^2 .00000 X + .00000

CHANNEL "C" Y = .00000 X^2 .00000 X + .00000

CHANNEL "D" Y = .00000 X^2 .00000 X + .00000

*** ANALYTICAL RESULTS ***

TRAY	SAMPL.#	LOW	CHANNEL "B"	CHANNEL "C"	CHANNEL "D"
		X Drift	X Drift	X Drift	X Drift
12	12	.661E-02	.000	.000	.000
13	13	.316E-01	.000	.000	.000
14	14	.415E-01	.000	.000	.000
15	15	.389	.000	.000	.000

16	16	.121E-01	.000	.000	.000
17	17	.120E-01	.000	.000	.000
18	18	.996E-02	.000	.000	.000
19	19	.223E-01	.000	.000	.000
20	20	.115E-01	.000	.000	.000
21	21	.400	.000	.000	.000

*** ANALYTICAL RESULTS ***

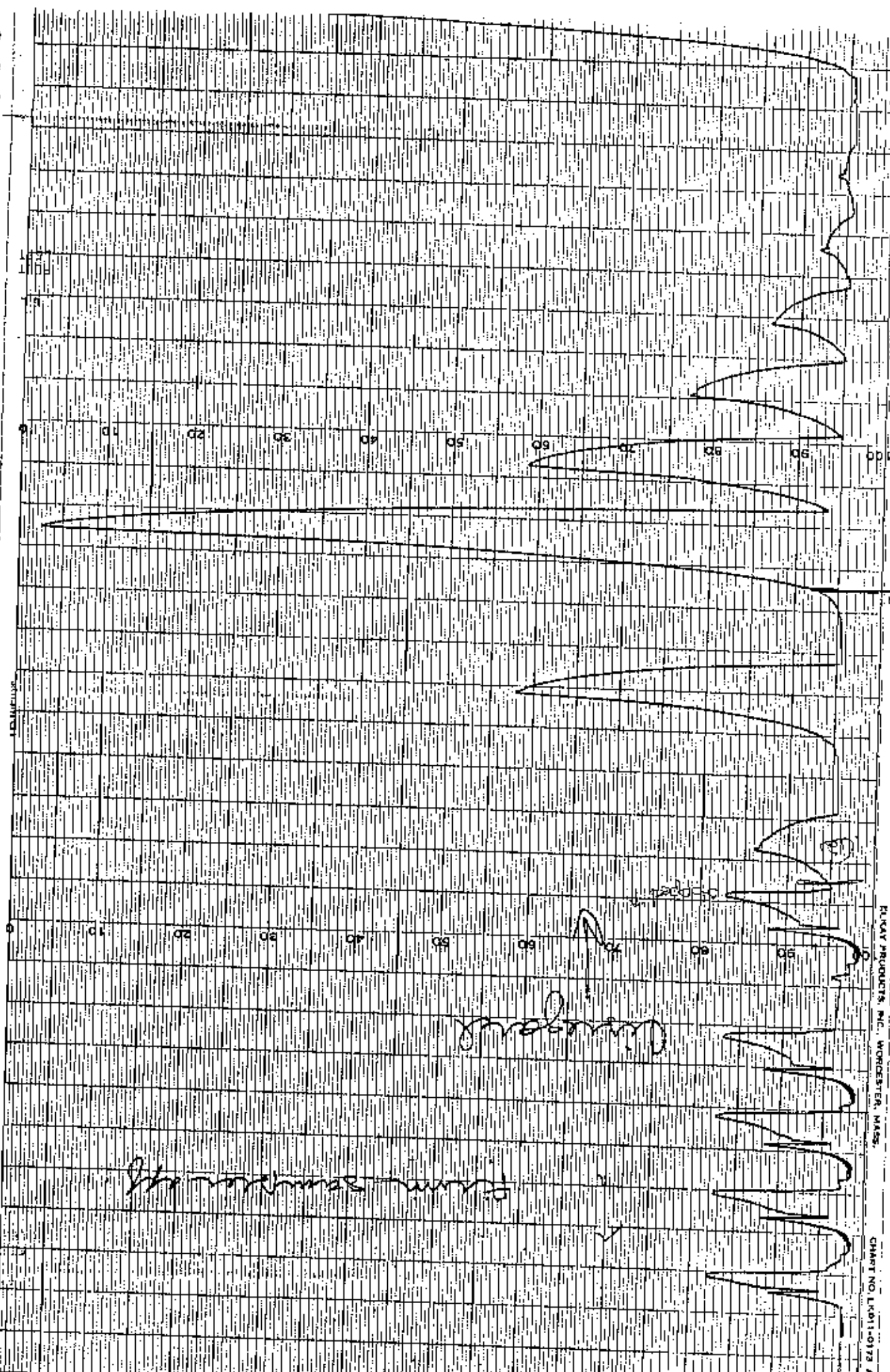
TRAY	SAMPL. #	LGN	% Drift	CHANNEL "B" % Drift	CHANNEL "C" % Drift	CHANNEL "D" % Drift
22	22	.168E-01		.000	.000	.000
23	23	.100E-01		.000	.000	.000
24	24	.100E-01		.000	.000	.000
25	25	.347E-01		.000	.000	.000
26	26	.661E-02		.000	.000	.000
27	27	.105E-01		.000	.000	.000
28	28	.764E-01		.000	.000	.000
29	29	.114E-01		.000	.000	.000
30	30	.470		.000	.000	.000
31	31	.200		.000	.000	.000
33	Ref Std.	.211	5.8	.000	.0	.000
34	34	.128E-01		.000	.000	.000
35	35	.932E-01		.000	.000	.000
36	36	.804E-02		.000	.000	.000
37	37	.848E-01		.000	.000	.000
38	38	.152E-01		.000	.000	.000
39	39	.152E-01		.000	.000	.000
40	40	.614E-02		.000	.000	.000
41	41	.709E-02		.000	.000	.000
42	42	.806E-02		.000	.000	.000
43	43	.565E-02		.000	.000	.000
44	44	.269		.000	.000	.000
45	45	.231E-01		.000	.000	.000
46	46	.710E-02		.000	.000	.000
47	47	.565E-02		.000	.000	.000
48	48	.564E-02		.000	.000	.000
49	49	.318E-01		.000	.000	.000
50	50	.564E-02		.000	.000	.000
51	51	.564E-02		.000	.000	.000
52	52	.613E-02		.000	.000	.000
53	53	.115E-01		.000	.000	.000
55	Ref Std.	.204	2.1	.000	.0	.000
56	56	.105E-01		.000	.000	.000
57	57	.864E-02		.000	.000	.000
58	58	.110E-01		.000	.000	.000
59	59	.211E-01		.000	.000	.000

60	60	.129E-01	.000	.000	.000
61	61	.309	.000	.000	.000
62	62	.308	.000	.000	.000
63	63	.347	.000	.000	.000
<hr/>					
64	64	.378	.000	.000	.000
65	65	.651E-01	.000	.000	.000
66	66	.206E-01	.000	.000	.000
67	67	.708E-02	.000	.000	.000
68	68	.742E-01	.000	.000	.000

*** ANALYTICAL RESULTS ***

TRAY	SAMPL.#	LOW	% Drift	CHANNEL "B" % Drift	CHANNEL "C" % Drift	CHANNEL "D" % Drift	
69	69	.150		.000	.000	.000	
70	70	.103E-01		.000	.000	.000	
71	71	.890E-02		.000	.000	.000	
72	72	.730E-01		.000	.000	.000	
73	73	.439E-01		.000	.000	.000	
<hr/>							
74	74	.707E-02		.000	.000	.000	
75	75	.796E-02		.000	.000	.000	
77	Ref Std.	.223	11.9	.000	.0	.000	.0
78	78	.661E-02		.000	.000	.000	.0
79	79	.117E-01		.000	.000	.000	.0
<hr/>							
80	80	.114E-01		.000	.000	.000	.0
81	81	.217		.000	.000	.000	.0
83	Ref Std.	.203	1.4	.000	.0	.000	.0

174



Design

Exam number 174

7/14

73 A.A.Z. Made in U.S.A.

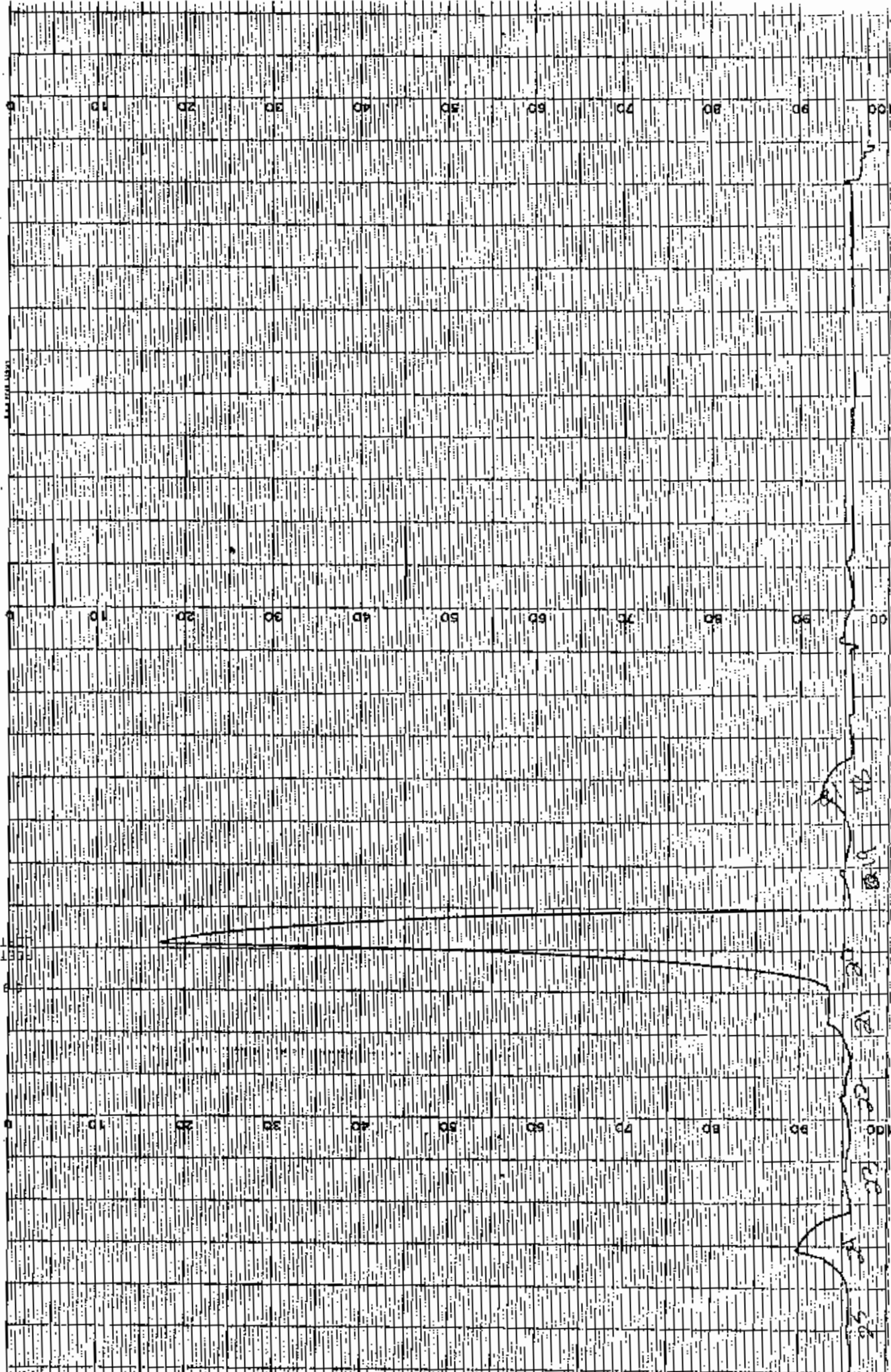
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FLKAY PRODUCTS, INC. WORCESTER, MASS.

CHART NO. LK011-073 A.A.Z.

Made in U.S.A.

5



VERTICAL

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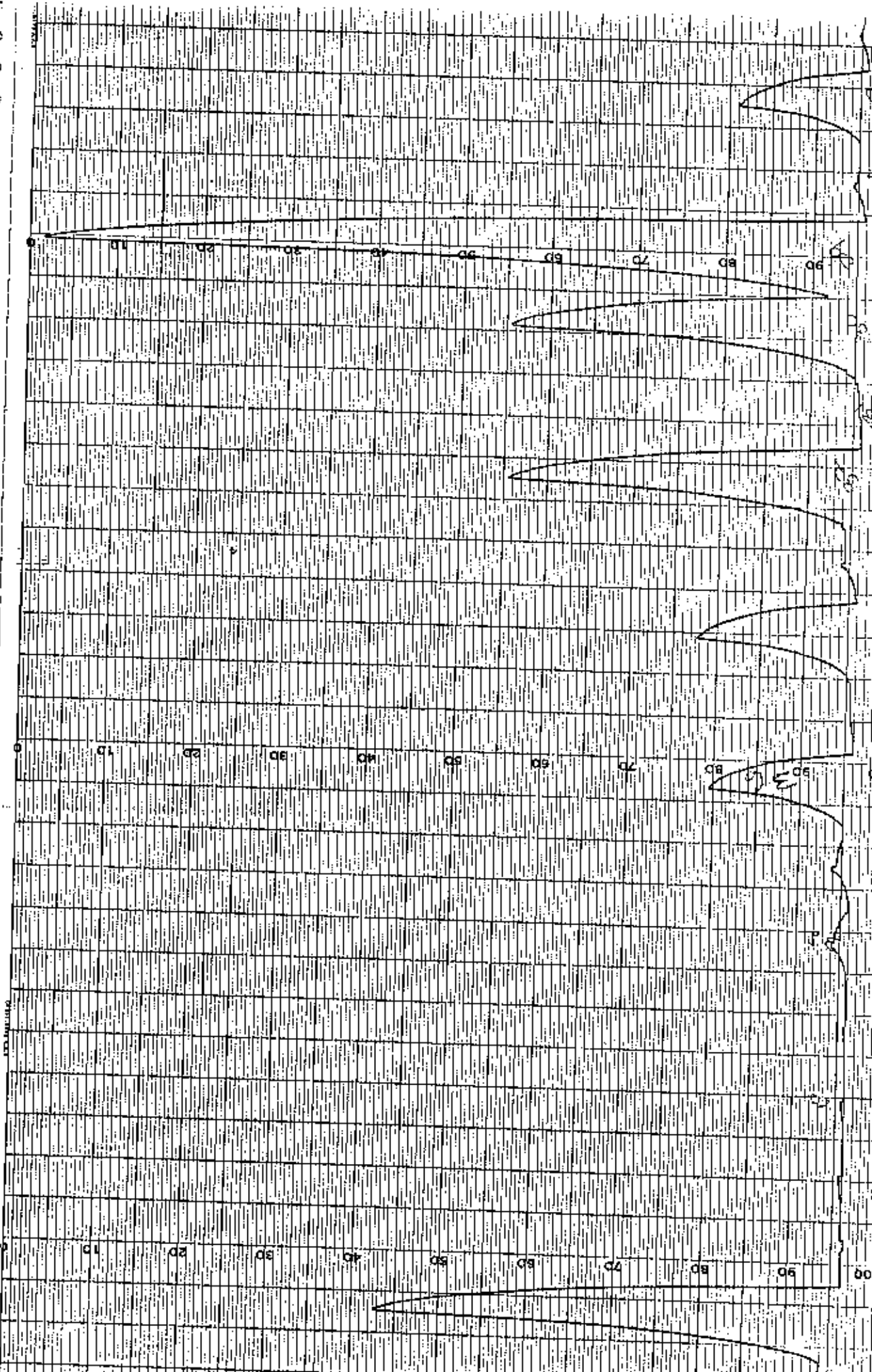
146

ELKAY PRODUCTS, INC. WORCESTER, MASS.

CHART NO. LK011-4173 A.R.2

PROPERTY OF U.S.A.

ELKAY PRODUCTS, INC. WOR

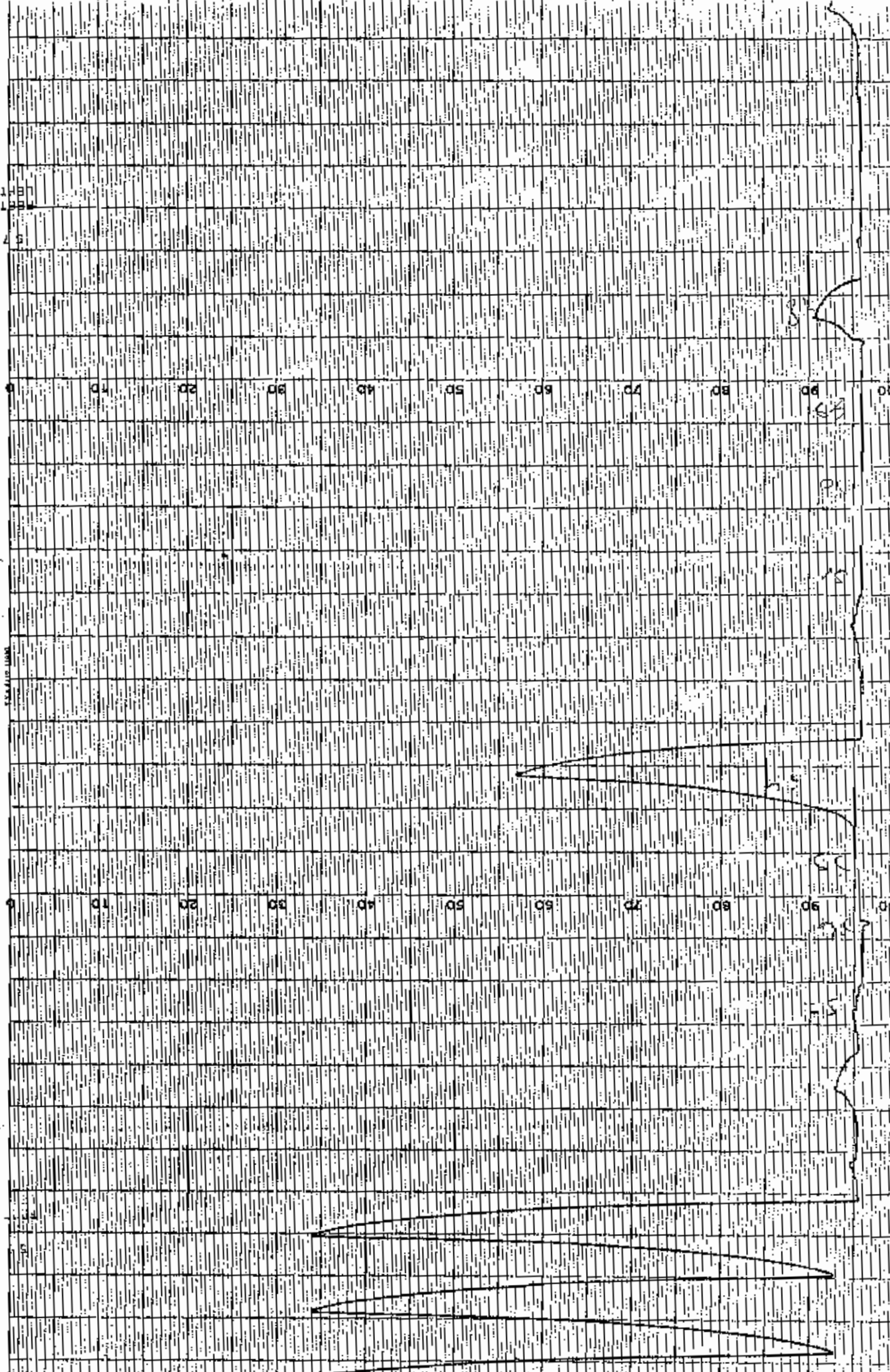


147

31ER, MASS. CHART NO. LK011-073 A.A.Z. MADE IN U.S.A.

ELKAY PRODUCTS, INC., WORCESTER, MASS.

CHART NO. LK011-073 A.A.Z.



0 1 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 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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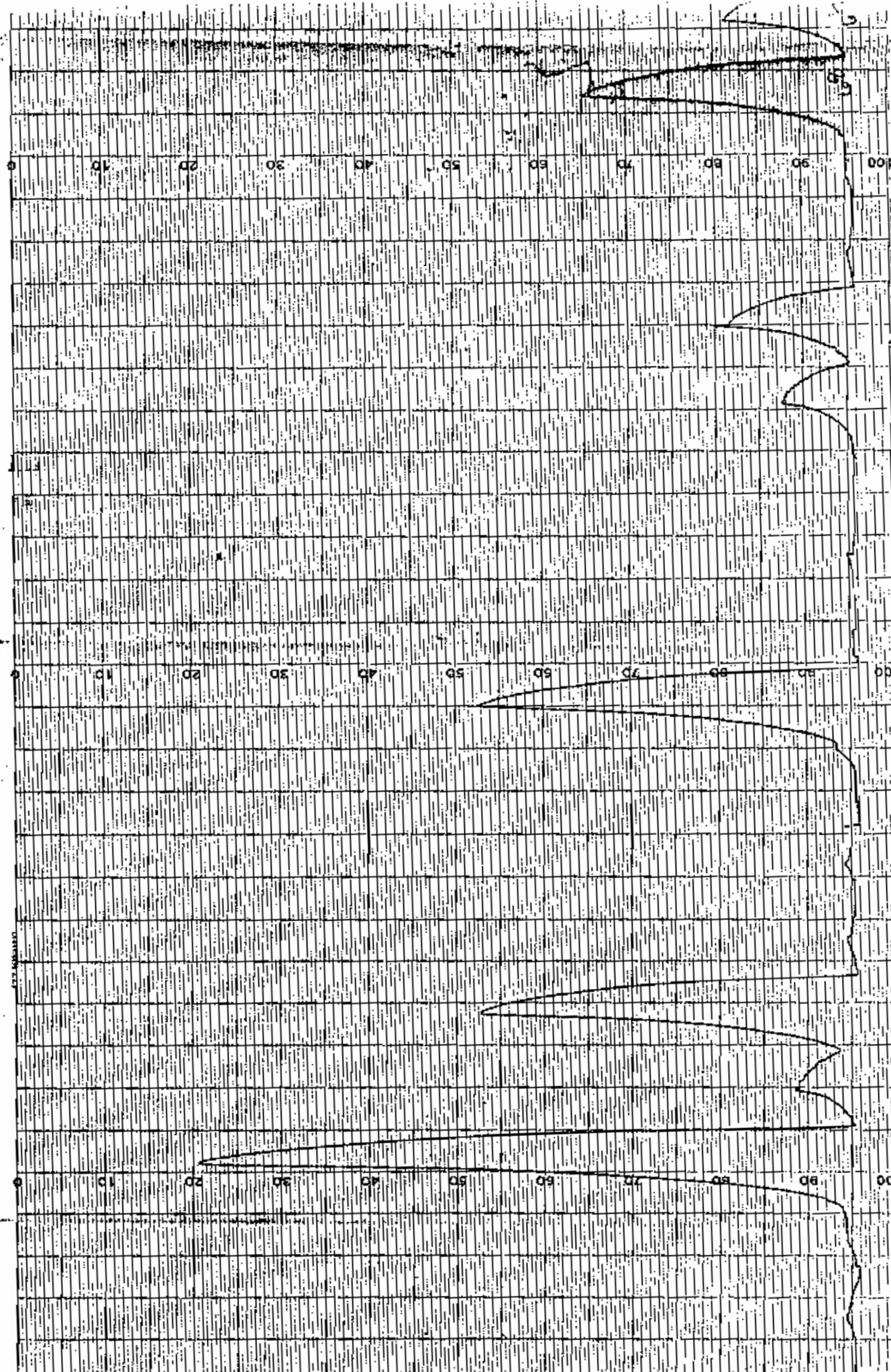
ELKAY PRODUCTS, INC., WORCESTER, MASS.

CHART NO. EK011-0123 A.M.I.E.

TEMPERATURE

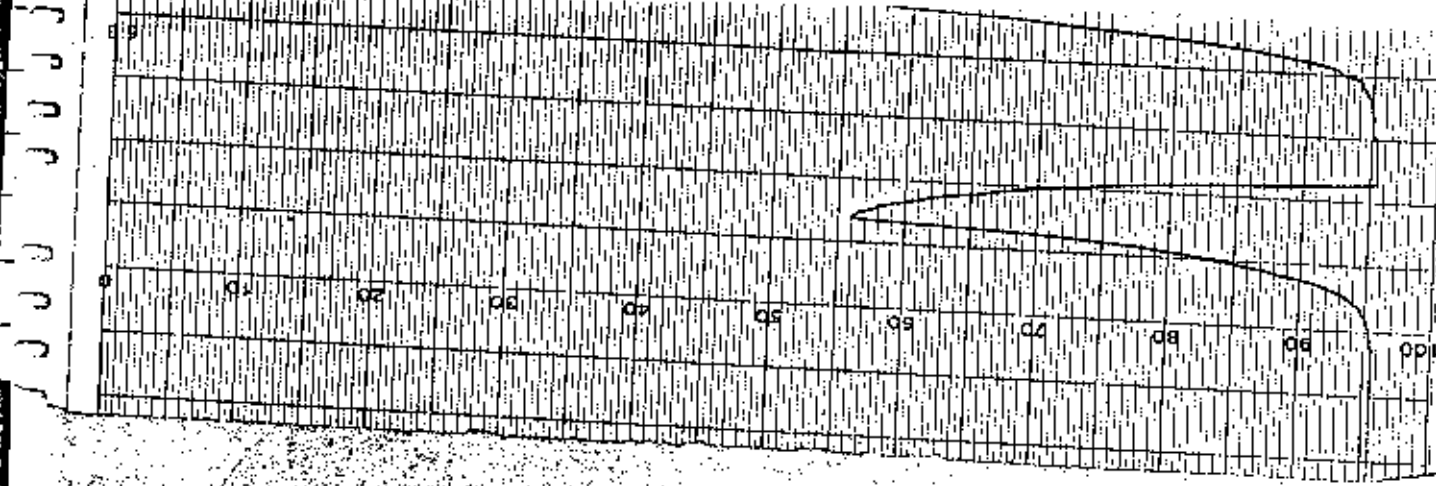
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ELKAY PRODUCTS, INC., WORCESTER, MASS.

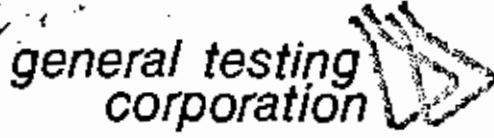


0 10 20 30 40 50 60 70 80 90 100

15



gw



water and wastewater testing specialists

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

85 Trinity Place
 Hackensack, NJ 07601
 (201) 486-8242

CYANIDE DISTILLATION

APPARATUS *	DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACTOR	TCN	FCN
#1	11-25-85	4920 A	Arrow	500	250		✓	
#2		4937 B	↓				✓	
#3		4938 B	WWE-MOBAY				✓	
#4		4938 C			255	Sorry, wrong size	✓	
#5		4938 D					✓	
#6		4938 E					✓	
#7		4938 H					✓	
#8		4938 J					✓	
#9		4938 L	↓	↓			✓	
#10	↓	52409	WWE-HA	430	↓		✓	
#1	11-26-85	4938 A	WWE-Mobay	500	250		✓	
#2		4938 F					✓	
#3		4938 G					✓	
#4		4938 I					✓	
#5		4938 K	↓				✓	
#6		4912	Sabo				✓	
#7		4920 B	Arrow				✓	
#8		4937 A	↓				✓	
#9		4950 B	↓				✓	
#10	↓	4965 B	Sabo	↓	↓		✓	

gw

general testing corporation



water and wastewater testing specialists

710 Exchange Street
Rochester, NY 14608
(716) 454-3700

85 Trinity Place
Hackensack, NJ 07601
(201) 489-6243

CYANIDE DISTILLATION

APPARATUS *	DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACTOR	TCN	FCN
#1	11-21-85	52028F	Law	430	250		/	
#2		52296	Shuron	420			/	
#3		52297A	Gleason	455			/	
#4		52297B	↓	410			/	
#5		52297C	↓	270			/	
#6		52299	R&L	500			/	
#7		52318B	URS/ DALTON				/	
#8		52318C	↓				/	
#9		52318D	↓				/	
#10	↓	52362	WMI- RIVER	470	↓		/	
#1	11-22-85	52318A	URS/ DALTON	500	250		/	
#2		52318E	↓				/	
#3		52318F	↓				/	
#4		52318G	↓				/	
#5		52305	Xerox	300			/	
#6		52326	↓	350			/	
#7		52318A dup	URS/ DALTON	500			/	
#8		52318A ppk	↓	500 + 20ml 1/1000 stock			/	
#9		Blank		500			/	
#10	↓	Blank ppk		480 + 20ml 1/1000 stock	↓		/	

gw

general testing corporation



water and wastewater testing specialists

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

85 Trinity Place
Hightstown, NJ 08521
(201) 486-5242

CYANIDE DISTILLATION

APPARATUS *	DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACTOR	TCN	FCN
#1	11-26-85	52360	Xerox	350	250		✓	
#2		52392A	Motrola	450			✓	
#3		52400A	Xerox				✓	
#4		52400E					✓	
#5		52407					✓	
#6		52411					✓	
#7		4938M	WWC-MDBAY	500			✓	
#8		4938Mdup					✓	
#9		4938Mdk		+20 ml 1000 Stock			✓	
#10		Blank dk		480+20ml 1000 Stock			✓	
#1	12-4-85	4913	Ropey	10.1g	250	252	✓	
#2		52287	BFI	10.1g	250		✓	
#3		52028K	Law Eng	2.2g	100		✓	
#4		4967B	Sabo	500	250		✓	
#5		4970C	ADP Enterprise				✓	
#6		4977B	Engelhard				✓	
#7		4979B	Sabo				✓	
#8		52445	Wolfe	400			✓	
#9		52455	AER	455			✓	
#10		52473	Hall	420			✓	

SECTION E

Chain of Custody Documentation

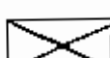
URS**URS Company, Inc.**
CONSULTING ENGINEERS
NEW YORK NEW JERSEY

154

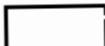
370 Seventh Avenue
New York, New York 10001
(212) 736-4444136 Summit Avenue
Montvale, New Jersey 07645
(201) 573-1100625 Delaware Avenue
Buffalo, New York 14201
(716) 883-5525TO Marshall Shannon
General Testing
Rochester, NY 14608DATE 11/11/85PROJECT PAS
SUBJECT SAMPLING

MESSAGE

Enclosed are Chain-of-Custody Record Sheets
to be used for sampling at PAS to be
conducted by Bill McDowell at SUNY -
Oswego.

SIGNED Kent Reinhardt

NO REPLY NECESSARY



REPLY REQUESTED

BURLINGTON NORTHERN AIR FREIGHT INC

RV# A 82715

SERVICES

- OVERNIGHT EXPRESS PACKAGE (1 TO 70 LBS)
- OVERNIGHT AIR FREIGHT
- SECOND DAY AIR FREIGHT
- OTHER

EXPRESS PACKAGE INFORMATION

- CUSTOMER PACKAGE
- OVERNIGHT ENVELOPE
- OVERNIGHT LETTER

DATE
11/11/85

AIRBILL NUMBER
322103703

SHIPPER'S ACCOUNT NO. 741279230	SHIPPER'S REFERENCE NO.	CONSIGNEE'S ACCOUNT NO.	CONSIGNEE'S REFERENCE NO.	COD
SHIPPER NAME JRS		CONSIGNEE NAME General Texting		
FROM YOUR NAME Kent Malbriga		ATTENTION Marshall Shannon		
STREET ADDRESS 525 DELAWARE AVE		STREET ADDRESS 710 Exchange Street		
ADDITIONAL ADDRESS		ADDITIONAL ADDRESS		
CITY BLIFFALO	STATE NY	ZIP CODE REQUIRED 14202	CITY Rochester	STATE NY
			ZIP CODE REQUIRED 14608	

PIECES	DESCRIPTION OF PIECES AND CONTENTS	WEIGHT	L	X	W	H	SCALE	COMMODITY	EXCESS VALUE
3	Forms								
TOTAL WEIGHTS SUBJECT TO DIMENSIONAL CORRECTION		TOTAL	TOTAL CUBIC INCHES						

PREPAID **COLLECT**

THIRD PARTY (USE SPACE PROVIDED BELOW ONLY)
ON THIRD PARTY BILLING

ACCOUNT NO.

B COMPANY

L ATTENTION

T ADDRESS

O CITY STATE ZIP CODE REQUIRED

SPECIAL INSTRUCTIONS:

- RESTRICTED ARTICLE (DOCUMENTATION REQUIRED)
- SPECIAL DELIVERY
- OTHER
- EXPEDITED SMALL PACKAGE
- SATURDAY DELIVERY
- CANADIAN DUTABLE
- OBL ENTER NO. IN REFERENCE NO. BOX
- HOLD-LIST NAME AND PHONE BELOW
- CANADIAN NON DUTABLE

SHIPPER'S SIGNATURE **X J. Alessi / JRS**

IT IS MUTUALLY AGREED THAT THE SHIPMENT DESCRIBED HEREIN IS ACCEPTED ON THE DATE HEREON BY APPLICANT GOOD ORDER (EXCEPT AS NOTED) FOR CARRIAGE AS SPECIFIED HEREIN SUBJECT TO THE CONDITIONS OF THE CONTRACT ON THE REVERSE SIDE HEREOF.

TOTAL CHARGES IN U.S. \$

AIRBILL NUMBER **322103703**

DECLARED VALUE

DATE RECEIVED

SHIPPER'S COPY CONSIGNEE'S COPY OTHER COPIES

ATL SHIPPER'S COPY CITY TERMINAL AIRPORT TERMINAL

DATE RECEIVED **11/11/85**

URS Company, Inc.

CHAIN OF CUSTODY RECORD

PROJECT NO :		SITE NAME :					NO. OF CON-TAINERS				REMARKS				
SAMPLER(S) SIGNATURE: <i>Mark W Swind</i>		STATION LOCATION					NO. Y. ODOX TR. VHS. TRL ADP. TRL	DIST. SUBS. SLIDES	METALS	PHENOLS		CYANIDES			
STATION NO.	DATE	TIME	COMP.	GRAB											
1A	11/15/89	9:45 AM		X	PAS-US-WC-1A	6					✓		✓	✓	✓
1	11:30 AM			X	PAS-US-WC-1	6	✓	✓	✓	✓	" " " -B				
2A	9:00 AM			X	PAS-US-WNC-2A	6	✓	✓	✓	✓	" " " -C				
2	11:15 PM			X	PAS-US-WDC-2	6	✓	✓	✓	✓	" " " -d				
3	11:50 AM			X	PAS-WC-OS-3	6	✓	✓	✓	✓	" " " -E				
4	1:00 PM			X	PAS-WNC-DS-4	6	✓	✓	✓	✓	" " " -F				
6	2:00 PM			X	PAS-WNC-DS-6	6	✓	✓	✓	✓	" " " -G				

RELINQUISHED BY (SIGNATURE): <i>Mark W Swind</i>	DATE / TIME: 11/15/89	RECEIVED BY (SIGNATURE): <i>11/15/89</i>	DATE / TIME: 11/15/89
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	DATE / TIME:
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:

GENERAL TESTING CORPORATION - SAMPLE RECEIVING LOG

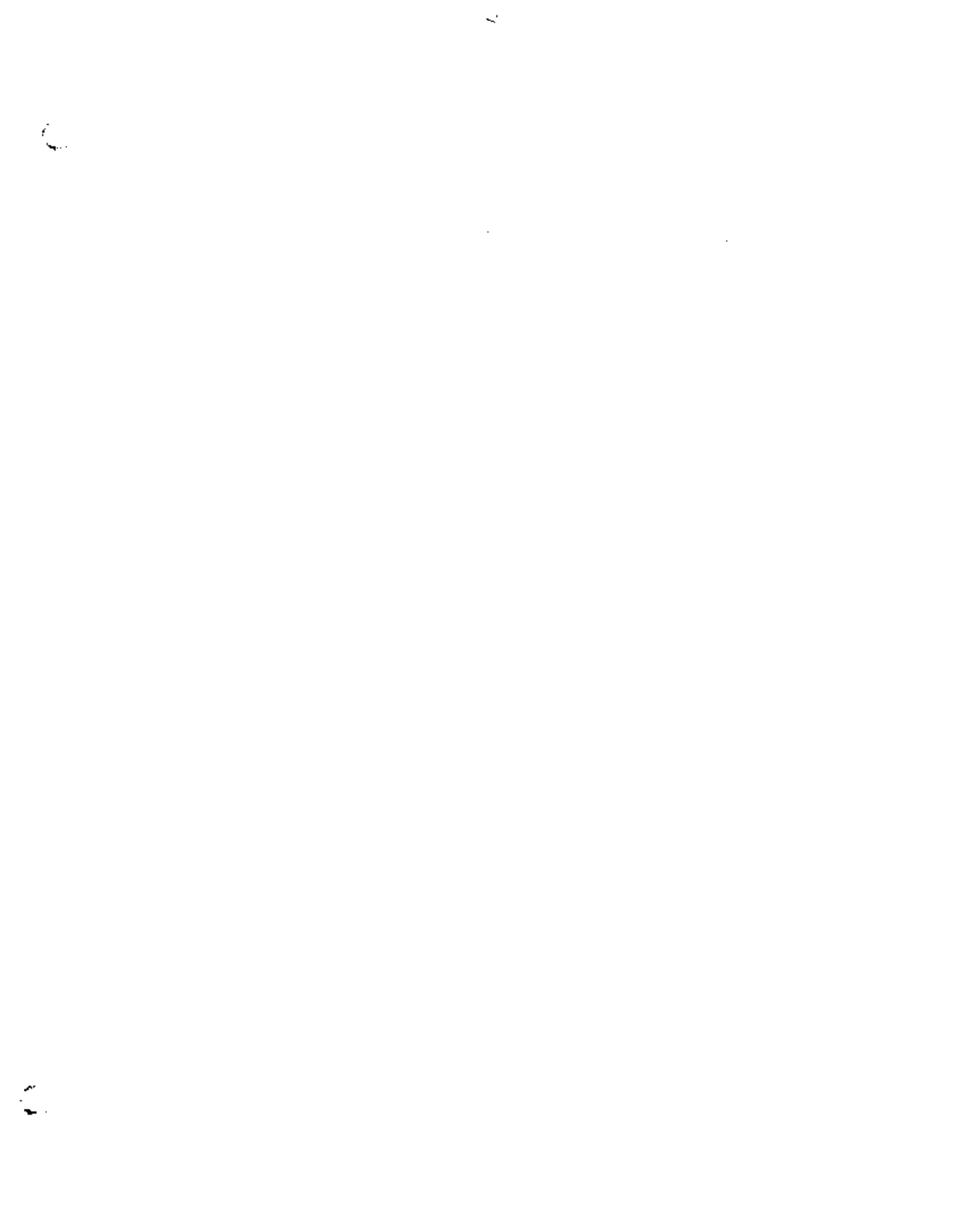
Job Number:	Customer:	Source:	Date Sampled:
52317	XEROX	Chris Spee	
Date & Time Received:	Received By:	Shipper:	Shipping #:
11/11 1500	C.S.	JT	
Breakdown Date:	pH of Aliquots Received:	Date Billed:	
11/12		11/3/86	
Notes: AS/SE TOTAL #ATAZ. WASTE AS/SE EP TOX			

Job Number:	Customer:	Source:	Date Sampled:
52318	URS/DALTON	OSwego	
Date & Time Received:	Received By:	Shipper:	Shipping #:
11-19	CS	URS/Dalton	
Breakdown Date:	pH of Aliquots Received:	Date Billed:	
11-18		13/27	
Notes: Sampled by S.U.D.Y. Oswego			

Job Number:	Customer:	Source:	Date Sampled:
52319	Scott Smith	Wellwater	
Date & Time Received:	Received By:	Shipper:	Shipping #:
11-11 245pm	B/S CS		
Breakdown Date:	pH of Aliquots Received:	Date Billed:	
California			
Notes:			

Job Number:	Customer:	Source:	Date Sampled:
52320	XEROX	STRECHMS	11/11
Date & Time Received:	Received By:	Shipper:	Shipping #:
11/11 3 ³⁰	Chris	Wayne	67C
Breakdown Date:	pH of Aliquots Received:	Date Billed:	
11/12		11/14	
Notes: CI LOS for all locations See source for where			

Job Number:	Customer:	Source:	Date Sampled:
52321	Yonkers Chem		11-20
Date & Time Received:	Received By:	Shipper:	Shipping #:
11-12 9:50	FRANCIS	URS	11K-764
Breakdown Date:	pH of Aliquots Received:	Date Billed:	
Notes:			



general
testing
corporation 

URS/Dalton
PAS Environmental Assessment
Study
GTC Job # 52237

Attn: Wayne Davis

**general
testing
corporation**

water and wastewater testing specialists

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

65 Trinity Place
Hackensack, NJ 07601
(201) 468-5242

April 9, 1986

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

Re: PAS Environmental Assessment Study

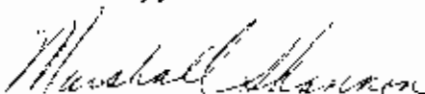
Dear Mr. Davis:

Enclosed is a report covering the analysis of seven water samples received at General Testing on 11/5/85. The analyses requested were ammonia, TKN, nitrate, nitrite, ortho-phosphate, total phosphorous, total organic carbon, phenolics, dissolved solids, suspended solids, cyanides, and the twenty-four metals listed in the NYS DEC Contract Laboratory Protocol. It was requested that the metals and cyanides be analyzed via the contract lab protocol and the remaining parameters via normal laboratory protocol.

All documentation and quality control inherent in the contract laboratory protocol have been provided for your review. Please see the cover pages to sections B and C of this report for specific evaluations of analytical data and quality control data.

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

Sincerely,


Marshall Shannon
Assistant Laboratory Director

MS/bms
c
enc:

REPORT INDEXPages

Section A:	Analytical and Quality Control Data Covering Non-Laboratory Protocol Parameters	1-3
Section B:	Analytical Data Covering Contract Laboratory Protocol Parameters	4-11
Section C:	Quality Control Associated With Contract Laboratory Protocol Parameters	12-25
Section D:	Raw Data For Contract Laboratory Protocol Parameters	26-162
Section E:	Chain of Custody Documentation	163-169

SECTION A

Analytical and Quality Control Data Covering
Non-Laboratory Protocol Parameters

SECTION A

Presented in this section is analytical data and laboratory quality control for non-CLP parameters. The samples were analyzed via normal laboratory protocol, and the data is presented in this manner. All methods used were derived from the EPA manual for the chemical analysis of water and wastes.



LABORATORY REPORT

Job No. R52237 Date 3/9/86

Client URS/Dalton
3605 Warrensville Center Rd.
Cleveland, OH 44122

Sample(s) Reference
PAS Environmental Assessment

Date Samples (x) received () collected by General Testing 11/6/86

ANALYTICAL RESULTS

(mg/l unless stated otherwise)

P.O. # _____

Sample Description

	A	B	C	D
	US-WC-1A	US-WC-1	US-WNC-2A	US-WNC-2
Dates	11/5/85	11/5/85	11/5/85	11/5/85
Time(s)	15:15	14:15	14:40	14:00
Cyanides, Total	See Metals Reporting Sheets			
Nitrogen, Kjeldahl N	.55	2.1	.82	.70
Nitrogen, Ammonia N	.08	1.5	.07	.06
Nitrogen, Nitrate & Nitrite	.39	.29	.68	.52
Nitrogen, Nitrite N	<.05	<.05	<.05	<.05
Nitrate, Total	.39	.29	.68	.52
Phenolics	.015	.014	.011	.012
Phosphate, Ortho as P	.07	<.05	.30	.25
Phosphorous, Total as P	.08	.08	.31	.23
Solids, Dissolved at 180°C	250	420	260	280
Solids, Suspended	7.8	31	14	12
TOC	8.8	9.2	11	10

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.

Michael K. Perry

Laboratory Director

general testing corporation

water and wastewater testing specialists

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

85 Trinity Place
Hackensack, NJ 07601
(201) 483-5242

LABORATORY REPORT

Job No. R52237 Date 4/9/86

Client URS/Dalton
3605 Warrensville Center Rd.
Cleveland, OH 44122

Sample(s) Reference
PAS Environmental Assessment

Date Samples (x) received () collected by General Testing 11/6/85

ANALYTICAL RESULTS

(mg/l unless stated otherwise)

P.O. # _____

Sample Description	E	F	G
	WC-0S-3	WNC-DS-4	WNC-DS-6
Date(s)	11/5/85	11/5/85	11/5/85
Time(s)	13:00	12:00	10:45
Cyanides, Total	See Metals Reporting Sheets		
Nitrogen, Kjeldahl N	4.5	1.8	1.8
Nitrogen, Ammonia N	3.4	.89	.78
Nitrogen, Nitrate N & Nitrite	.85	.73	.80
Nitrogen, Nitrite N	<.05	<.05	<.05
Nitrate (calc.)	.85	.73	0.80
Phenolics	.019	.019	.021
Phosphate, Ortho as P	<.05	.16	.16
Phosphorous, Total as P	.06	.20	.24
Solids, Dissolved at 180°C	790	680	630
Solids, Suspended	12	21	19
TOC	11	10	12

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.

Michael K. Perry
Laboratory Director

JOB SPECIFIC QUALITY CONTROL REPORT

Customer: URS/Dalton Job Number: 52237 Date Received: 11/5/85

Parameter	Sample	Precision		Dilution	Analytical Value #2	Spiked Recovery			Known	EPA Recovery	
		Dilution	Analytical Value #1			Analytical Value	Spike Added	Spiked Value			% Recovery
NH ₃	G	1	.781	1	.783	.782	.200	.991	.280	.270	96.4%
NO ₃ & NO ₂	G	1	.804	1	.809	.806	.200	1.000	1.43	1.34	93.7%
NO ₂	G	1	<.05	1	<.05	<.05	.200	.209	none	available	-----
Phenol	G	-	.0210	-	.0215	.0213	.0193	.0403	none	available	-----
OP ₀₄	G	1	.164	1	.166	.165	.200	.368	.350	.336	96.0%
TP	G	1	.237	1	.237	.237	.200	.401	.100	.102	102%
DS	G	-	.628	-	.646	----	----	----	403	406	101%
SS	G	-	19	-	19	----	----	----	35	33	94.3%
TOC	G	-	12	-	12	12	10	21	8.1	8.3	102%
TKN	G	-	1.67	-	1.67	1.72	0.50	2.10	0.320	0.320	100%

SECTION B

Analytical Data Covering Contract

Laboratory Protocol Parameters

SECTION B

Presented in this section is analytical data covering the analysis of samples for all inorganic CLP parameters. These parameters include the twenty-four metals listed in the CLP and cyanide. Arsenic, selenium, antimony and tin were analyzed via hydride generation atomic absorption techniques. Chromium, lead, thallium and vanadium required repeat analysis via furnace atomic absorption to meet the CLP detection limit requirements. All remaining metals were analyzed via flame atomic absorption methods. Cyanide was analyzed via EPA Method #335.2 for distillation and 335.3 for the actual spectrophotometer measurement. Standard indicator flags have been used when reporting results.

*general testing
corporation*

710 Exchange Street

C Rochester, NY 14608

Date 4/9/86

COVER PAGE

INORGANIC ANALYSIS DATA PACKAGE

Lab Name General Testing Corporation

Job No. R 52237

PAS Environmental Assessment, URS/Dalton

Q.C. Report No. 1

SAMPLE NUMBERS

Lab ID No.

Lab ID No.

PAS-US-WC-1A 52237-A

PAS-WNC-DS-6 52237-G

PAS-US-WC-1 52237-B

PAS-US-WNC-2A 52237-C

PAS-US-WNC-2 52237-D

PAS-WC-OS-3 52237-E

PAS-WNC-DS-4 52237-F

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., 10U).

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. US-WC-1A

Date: 4/9/86

9 t 710 Exchange Street
C Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: R52237

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>610</u>	14. <u>Magnesium</u>	<u>10,000</u>
2. <u>Antimony</u>	<u>10u</u>	15. <u>Manganese</u>	<u>190</u>
3. <u>Arsenic</u>	<u>2u</u>	16. <u>Mercury</u>	<u>0.2u</u>
4. <u>Barium</u>	<u>100u</u>	17. <u>Nickel</u>	<u>40u</u>
5. <u>Beryllium</u>	<u>5u</u>	18. <u>Potassium</u>	<u>[4700]</u>
6. <u>Cadmium</u>	<u>5u</u>	19. <u>Selenium</u>	<u>2u</u>
7. <u>Calcium</u>	<u>46,000</u>	20. <u>Silver</u>	<u>10u</u>
8. <u>Chromium</u>	<u>5u F</u>	21. <u>Sodium</u>	<u>24,000</u>
9. <u>Cobalt</u>	<u>50u</u>	22. <u>Thallium</u>	<u>30.0 F</u>
10. <u>Copper</u>	<u>20u</u>	23. <u>Tin</u>	<u>10u</u>
11. <u>Iron</u>	<u>810</u>	24. <u>Vanadium</u>	<u>50u F</u>
12. <u>Lead</u>	<u>18 F</u>	25. <u>Zinc</u>	<u>10u</u>
13. <u>Cyanide</u>	<u>10</u>	26. <u>Percent Solids (%)</u>	

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

COMMENTS: _____

Lab Manager Michael K. Perry

gt
C 710 Exchange Street
Rochester, NY 14608

Sample No. US-WC-1

Date: 4/9/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: R52237

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. <u>Aluminum</u>	<u>280</u>	14. <u>Magnesium</u>	<u>11,000</u>
2. <u>Antimony</u>	<u>10u</u>	15. <u>Manganese</u>	<u>760</u>
3. <u>Arsenic</u>	<u>2u</u>	16. <u>Mercury</u>	<u>0.2u</u>
4. <u>Barium</u>	<u>[170]</u>	17. <u>Nickel</u>	<u>40u</u>
5. <u>Beryllium</u>	<u>5u</u>	18. <u>Potassium</u>	<u>9200</u>
6. <u>Cadmium</u>	<u>5u</u>	19. <u>Selenium</u>	<u>2u</u>
7. <u>Calcium</u>	<u>51,000</u>	20. <u>Silver</u>	<u>10u</u>
8. <u>Chromium</u>	<u>5u F</u>	21. <u>Sodium</u>	<u>76,000</u>
9. <u>Cobalt</u>	<u>50u</u>	22. <u>Thallium</u>	<u>40.0 F</u>
10. <u>Copper</u>	<u>20u</u>	23. <u>Tin</u>	<u>10u</u>
11. <u>Iron</u>	<u>6,700</u>	24. <u>Vanadium</u>	<u>50u F</u>
12. <u>Lead</u>	<u>26 F</u>	25. <u>Zinc</u>	<u>10u</u>
13. <u>Cyanide</u>	<u>10</u>	26. <u>Percent Solids (%)</u>	

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

COMMENTS: _____

Lab Manager Michael K. Perry

Sample No. US-WNC-2A

Date: 4/9/86

710 Exchange Street

Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: R52237

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>250</u>	14. <u>Magnesium</u>	<u>11,000</u>
2. <u>Antimony</u>	<u>10u</u>	15. <u>Manganese</u>	<u>140</u>
3. <u>Arsenic</u>	<u>[1.8]</u>	16. <u>Mercury</u>	<u>0.2u</u>
4. <u>Barium</u>	<u>[100]</u>	17. <u>Nickel</u>	<u>40u</u>
5. <u>Beryllium</u>	<u>5u</u>	18. <u>Potassium</u>	<u>[4,300]</u>
6. <u>Cadmium</u>	<u>5u</u>	19. <u>Selenium</u>	<u>2u</u>
7. <u>Calcium</u>	<u>57,000</u>	20. <u>Silver</u>	<u>10u</u>
8. <u>Chromium</u>	<u>5u F</u>	21. <u>Sodium</u>	<u>19,000</u>
9. <u>Cobalt</u>	<u>50u</u>	22. <u>Thallium</u>	<u>33.4 F</u>
10. <u>Copper</u>	<u>20u</u>	23. <u>Tin</u>	<u>10u</u>
11. <u>Iron</u>	<u>530</u>	24. <u>Vanadium</u>	<u>50u F</u>
12. <u>Lead</u>	<u>17 F</u>	25. <u>Zinc</u>	<u>10u</u>
13. <u>Cyanide</u>	<u>20</u>	26. <u>Percent Solids (%)</u>	

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

COMMENTS:

Lab Manager

Michael K. Perry

general testing
corporation

Sample No. US-WNC-2

Date: 4/9/86

710 Exchange Street

Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: R52237

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. <u>Aluminum</u>	<u>210</u>	14. <u>Magnesium</u>	<u>11,000</u>
2. <u>Antimony</u>	<u>10u</u>	15. <u>Manganese</u>	<u>210</u>
3. <u>Arsenic</u>	<u>[2.2]</u>	16. <u>Mercury</u>	<u>0.2u</u>
4. <u>Barium</u>	<u>[110]</u>	17. <u>Nickel</u>	<u>40u</u>
5. <u>Beryllium</u>	<u>5u</u>	18. <u>Potassium</u>	<u>[4,900]</u>
6. <u>Cadmium</u>	<u>5u</u>	19. <u>Selenium</u>	<u>2u</u>
7. <u>Calcium</u>	<u>56,000</u>	20. <u>Silver</u>	<u>10u</u>
8. <u>Chromium</u>	<u>5u f</u>	21. <u>Sodium</u>	<u>28,000</u>
9. <u>Cobalt</u>	<u>50u</u>	22. <u>Thallium</u>	<u>34.6 F</u>
10. <u>Copper</u>	<u>20u</u>	23. <u>Tin</u>	<u>10u</u>
11. <u>Iron</u>	<u>490</u>	24. <u>Vanadium</u>	<u>50u F</u>
12. <u>Lead</u>	<u>18 F</u>	25. <u>Zinc</u>	<u>10u</u>
13. <u>Cyanide</u>	<u>10</u>	26. <u>Percent Solids (%)</u>	

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

COMMENTS: _____

Lab Manager

Michael K. Perry

Sample No. WC-05-3

Date: 4/9/86

710 Exchange Street
Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: R52237

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. <u>Aluminum</u>	<u>[170]</u>	14. <u>Magnesium</u>	<u>18,000</u>
2. <u>Antimony</u>	<u>10u</u>	15. <u>Manganese</u>	<u>1,600</u>
3. <u>Arsenic</u>	<u>2u</u>	16. <u>Mercury</u>	<u>0.2u</u>
4. <u>Barium</u>	<u>260</u>	17. <u>Nickel</u>	<u>45</u>
5. <u>Beryllium</u>	<u>5u</u>	18. <u>Potassium</u>	<u>21,000</u>
6. <u>Cadmium</u>	<u>5u</u>	19. <u>Selenium</u>	<u>2u</u>
7. <u>Calcium</u>	<u>71,000</u>	20. <u>Silver</u>	<u>10u</u>
8. <u>Chromium</u>	<u>5u F</u>	21. <u>Sodium</u>	<u>170,000</u>
9. <u>Cobalt</u>	<u>50u</u>	22. <u>Thallium</u>	<u>56.6 F</u>
10. <u>Copper</u>	<u>20u</u>	23. <u>Tin</u>	<u>10u</u>
11. <u>Iron</u>	<u>1100</u>	24. <u>Vanadium</u>	<u>50u F</u>
12. <u>Lead</u>	<u>45 F</u>	25. <u>Zinc</u>	<u>10u</u>
13. <u>Cyanide</u>	<u>20</u>	26. <u>Percent Solids (%)</u>	<u> </u>

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

COMMENTS: _____

Lab Manager Michael K. Perry

general testing
corporation

gt
c 710 Exchange Street
Rochester, NY 14608

Sample No. WNC-DS-4

Date: 4/9/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation JOB NUMBER: R52237
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>400</u>	14. <u>Magnesium</u>	<u>11,000</u>
2. <u>Antimony</u>	<u>10u</u>	15. <u>Manganese</u>	<u>720</u>
3. <u>Arsenic</u>	<u>[2.0]</u>	16. <u>Mercury</u>	<u>0.2u</u>
4. <u>Barium</u>	<u>[120]</u>	17. <u>Nickel</u>	<u>53</u>
5. <u>Beryllium</u>	<u>5u</u>	18. <u>Potassium</u>	<u>8,800</u>
6. <u>Cadmium</u>	<u>5u</u>	19. <u>Selenium</u>	<u>2u</u>
7. <u>Calcium</u>	<u>56,000</u>	20. <u>Silver</u>	<u>10u</u>
8. <u>Chromium</u>	<u>5u F</u>	21. <u>Sodium</u>	<u>180,000</u>
9. <u>Cobalt</u>	<u>50u</u>	22. <u>Thallium</u>	<u>49.9 F</u>
10. <u>Copper</u>	<u>20u</u>	23. <u>Tin</u>	<u>10u</u>
11. <u>Iron</u>	<u>1,000</u>	24. <u>Vanadium</u>	<u>50u F</u>
12. <u>Lead</u>	<u>42 F</u>	25. <u>Zinc</u>	<u>10u</u>
13. <u>Cyanide</u>	<u>20</u>	26. <u>Percent Solids (%)</u>	<u> </u>

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

COMMENTS: _____

Lab Manager Michael K. Perry

Sample No. WNC-DS-6

Date: 4/9/86

g t C 710 Exchange Street
Rochester, NY 14608

INORGANIC ANALYSIS DATA SHEET

LAB NAME: General Testing Corporation

JOB NUMBER: R52237

LAB SAMPLE ID NUMBER: G

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	210	14. Magnesium	14,000
2. Antimony	10u	15. Manganese	1,000
3. Arsenic	[1.8]	16. Mercury	0.2u
4. Barium	[130]	17. Nickel	40u
5. Beryllium	5u	18. Potassium	9,900
6. Cadmium	5u	19. Selenium	2u
7. Calcium	64,000	20. Silver	10u
8. Chromium	5u F	21. Sodium	150,000
9. Cobalt	50u	22. Thallium	39.0 F
10. Copper	20u	23. Tin	10u
11. Iron	950	24. Vanadium	50u F
12. Lead	32 F	25. Zinc	10u
13. Cyanide	10	26. Percent Solids (%)	

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

COMMENTS: _____

Lab Manager Michael K. Perry

SECTION C

Quality Control Associated With Contract

Laboratory Protocol Parameters

SECTION C

Included herein is quality control associated with the analytical data presented in Section B of this report.

1. No EPA samples are available as calibration checks for the analysis of tin.
2. All duplicate analyses were within CLP limits.
3. All spiked recoveries were within CLP limits.
4. The sample values for calcium, manganese, potassium and sodium were $>4x$ the spiking level and no spiked recoveries can be calculated.

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. R52237

Date 4/9/86

Units ug/L

Compound	Initial Calib. ¹			Continuing Calib. ²					Method ⁴
	True Value	Found	% R	True Value	Found	% R	Found	% R	
1. Aluminum	730	780	107	730	760	104			P
2. Antimony	8.2	7.6	92.7	8.2	8.8	107			Hydride
3. Arsenic	4.3	4.2	97.7	4.3	4.3	100	4.1	95.3	Hydride
4. Barium	10,000	8,860	88.6	10,000	9,030	90.3	9260	92.6	P
5. Beryllium	235	223	94.9	235	223	94.9			P
6. Cadmium	39	34	85.0	39	40	97.5	38	95.0	P
7. Calcium	40,600	40,500	99.8	5,300	4,710	88.9			P
8. Chromium	261	230	88.1	261	224	85.8	206	78.9	P
9. Cobalt	261	232	88.9						P
10. Copper	339	334	98.5	339	340	100	332	97.9	P
11. Iron	796	816	103						P
12. Lead	435	422	97.0	435	452	104	484	111	P
13. Magnesium	8,400	8,470	101	1,800	1,750	97.2			P
14. Manganese	348	368	106						P
15. Mercury	8.8	7.5	85.2						Cold Vapor
16. Nickel	207	189	91.3	207	210	101	196	94.7	P
17. Potassium	9,800	9,920	101	2,100	2,170	103			P
18. Selenium	6.0	6.0	100	6.0	6.2	103	6.4	107	Hydride
19. Silver	52	52	100	52	49	94.2	49	94.2	P
20. Sodium	46,500	47,000	101	8,200	8,440	103			P
21. Thallium	252	290	115	504	500	99.2			P
22. Tin									Hydride
23. Vanadium	846	820	96.9	846	850	100	870	103	P
24. Zinc	418	450	108						P
Other:									
C: ride *				200	208	104	219	110	335.2

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

*Mid-range standards used as calibration checks.

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. R52237

Date 4/9/86

Units ug/l

Compound	Initial Calib. ¹			Continuing Calib. ²					
	True Value	Found	% R	True Value	Found	% R	Found	% R	Method ⁴
Metals:									
1. Aluminum									
2. Antimony									
3. Arsenic									
4. Barium									
5. Beryllium									
6. Cadmium									
7. Calcium									
8. Chromium	261	265	102	261	260	99.6	270	103	F
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	25.2	15.5	61.5						F
22. Tin									
23. Vanadium	258	276	107						F
24. Zinc									
Other:									
Code									

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

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

4. Indicate Analytical Method Used: F - 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. R52237

Date 4/9/86

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	<100		<100	
2. Antimony	<5	<5	<5			<5	
3. Arsenic	<2.0	<2.0	<2.0			<2.0	
4. Barium	<100	<100	<100			<100	
5. Beryllium	<5					5	
6. Cadmium	<5	<5	<5	<5		<5	
7. Calcium	<500					<500	
8. Chromium	<50	<50				<50	
9. Cobalt	<50	<50				<50	
10. Copper	<20	<20	<20	<20		<20	
11. Iron	<50	<50	<50			<50	
12. Lead	<50	<50	<50	<50		<50	
13. Magnesium	<250	<250				<250	
14. Manganese	<10	<10				<10	
15. Mercury	<0.2	<0.2				<0.2	
16. Nickel	<40	<40	<40	<40	<40	<40	
17. Potassium	<250					<250	
18. Selenium	<2.0	<2.0	14			<2.0	
19. Silver	<10						
20. Sodium	<100					<100	
21. Thallium	<250	<250	<250	<250	<250	<250	
22. Tin	<10	<10	<10			<10	
23. Vanadium	<250	<250	<250	<250		<250	
Other: Zinc	<10	<10				<10	
Cyanide	<10	<10	<10	<10		<10	

**general testing
corporation**

FURNACE AA

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710 Exchange Street
Rochester, NY 14608

FORM III

Q.C. Report No. 1

BLANKS

Lab Name General Testing Corporation

Job No. R52237

Date 4/9/86

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							
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium	<5	<5	<5			<5	
9. Cobalt							
10. Copper							
11. Iron							
12. Lead	<5						
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium	<10	<10					
22. Tin							
23. Vanadium	<50	<50	<50			<50	
Other:							
Cyanide							

**general testing
corporation**

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710 Exchange Street
Rochester, NY 14608

FORM V

Q.C. Report No. 1

SPIKE SAMPLE RECOVERY

Lab Name General Testing Corporation

Job No. R52237

Lab Sample ID No. G

Date 4/9/86

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	750	205	500	109
2. Antimony	"	19.8	<5	25	79.2
3. Arsenic	"	9.8	1.8	10.0	80.0
4. Barium	"	650	130	500	104
5. Beryllium	"	55	<5	50	110
6. Cadmium	"	52	<5	50	104
7. Calcium	"	65,000	64,000	2,500	"A"
8. Chromium	"	244	<50	250	97.6
9. Cobalt	"	268	<50	250	107
10. Copper	"	119	<20	100	119
11. Iron	"	1,210	940	250	108
12. Lead	"	307	<5	250	123
13. Magnesium	"	16,000	14,500	1,250	120
14. Manganese	"	1,080	1,000	50	"A"
15. Mercury	"	2.0	<0.2	2.0	100
16. Nickel	"	276	57	250	87.6
17. Potassium	"	11,800	9,950	1,250	"A"
18. Selenium	"	10.2	<2.0	10.0	102
19. Silver	"	54	<10	50	108
20. Sodium	"	150,000	150,000	1,250	"A"
21. Thallium	"	1,280	<250	1,250	102
22. Tin	"	49	<10	50	98.0
23. Vanadium	"	1,330	<250	1,250	106
Zinc	"	49	<10	50	98.0
Other:					
Cyanide	"	116	18.3	86	113

¹ %R = [(SSR - SR) / SA] x 100

"R"-Out of control

"A"-Sample Not within limit

710 Exchange Street
Rochester, NY 14608

FORM V

Q.C. Report No. 1

SPIKE SAMPLE RECOVERY *

Lab Name General Testing Corporation

Job No. R52237

Lab Sample ID No. G

Date 4/9/86

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	"	20.3	3.1	20.0	86.0
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	"	52.3	38.9	20.0	67.0 "R"
22. Tin	"				
23. Vanadium	"	97.9	<50	100	97.9
Zinc	"				
Other:					
Cyanide	"				

¹ %R = [(SSR - SR) / SA] x 100

"R"-Out of control

general testing
corporation

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710 Exchange Street

FORM VI

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

DUPLICATES

Lab Name General Testing Corporation

Job No. R52237

Lab Sample ID No. G

Date 4/9/86

Units ug/l

Matrix Water

Compound	Control Limit ¹	Sample (S)	Duplicate (D)	RPD ²
Metals:				
1. Aluminum	+ 100ug/l	210	200	10ug/l
2. Antimony	+ 5ug/l	<5	<5	NC
3. Arsenic	+ 2.0ug/l	1.8	1.8	0.0ug/l
4. Barium	+ 100ug/l	130	130	0.00ug/l
5. Beryllium	+ 5ug/l	<5	<5	NC
6. Cadmium	+ 5ug/l	<5	<5	NC
7. Calcium	20%	64,000	64,000	0.00%
8. Chromium	+ 50ug/l	<50	<50	NC
9. Cobalt	+ 50ug/l	<50	<50	NC
10. Copper	+ 20ug/l	<20	<20	NC
11. Iron	20%	950	930	1.06%
12. Lead	+ 50ug/l	<50	<50	NC
13. Magnesium	20%	14,000	15,000	6.90%
14. Manganese	20%	1,000	1,000	0.0%
15. Mercury	+ 0.2ug/l	<0.2	<0.2	NC
16. Nickel	+ 40ug/l	<40	91	NC
17. Potassium	20%	9,900	10,000	1.01%
18. Selenium	+ 2.0ug/l	<2.0	<2.0	NC
19. Silver	+ 10ug/l	<10	<10	NC
20. Sodium	20%	150,000	150,000	0.0%
21. Thallium	+ 250ug/l	<250	<250	NC
22. Tin	+ 10ug/l	<10	<10	NC
23. Vanadium	+ 250ug/l	<250	<250	NC
24. Zinc	+ 10ug/l	<10	<10	NC
Other:				
Cyanide	+ 10ug/l	18.0	18.5	0.5ug/l

* 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 AA

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

FORM VI

DUPLICATES

Lab Name General Testing Corporation Job No. R52237
 Lab Sample ID No. 6
 Date 4/9/86 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				
9. Cobalt				
10. Copper				
11. Iron				
12. Lead	20%	31.8	33.0	3.70%
13. Magnesium				
14. Manganese				
15. Mercury				
16. Nickel				
17. Potassium				
18. Selenium				
19. Silver				
20. Sodium				
21. Thallium	+ 10ug/L	37.9	40.0	2.1ug/L
22. Tin				
23. Vanadium	+ 50ug/L	<50	<50	NC
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

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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. R52237

Date 4/9/86

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	460	92.0
2. Antimony	60	5 (Hydride)		25.0	24.8	99.2
3. Arsenic	10	2.0 (Hydride)				
4. Barium	200	100		500	540	108
5. Beryllium	5	5		250	237	94.8
6. Cadmium	5	5		250	281	112
7. Calcium	5000	500		2,500	2,320	92.8
8. Chromium	10	50		250	225	90.0
9. Cobalt	50	50		250	245	98.0
10. Copper	25	20		100	106	106
11. Iron	100	50		250	272	109
12. Lead	5	50		250	274	110
13. Magnesium	5000	250		1,250	1,230	98.4
14. Manganese	15	10		50	50	100
15. Mercury	0.2	0.2		2.0	2.1	105
16. Nickel	40	40		250	211	84.4
17. Potassium	5000	250		1,250	1,490	119
18. Selenium	5	2.0 (Hydride)		10.0	10.0	100
19. Silver	10	10		50	51	102
20. Sodium	5000	100		1,250	1,340	101
21. Thallium	10	250		1,250	1,180	94.4
22. Tin	40	10 (Hydride)		50	54.4	109
23. Vanadium	50	250		1,250	1,300	104
24. Zinc	20	10		50	46	92.0
Other:						
Cyanide	10	10		86	101	117

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. R52237

Date 4/9/86

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					
2. Antimony	60					
3. Arsenic	10					
4. Barium	200					
5. Beryllium	5					
6. Cadmium	5					
7. Calcium	5000					
8. Chromium	10		5	50.0	45.8	91.6
9. Cobalt	50					
10. Copper	25					
11. Iron	100					
12. Lead	5		5			
13. Magnesium	5000					
14. Manganese	15					
15. Mercury	0.2					
16. Nickel	40					
17. Potassium	5000					
18. Selenium	5					
19. Silver	10					
20. Sodium	5000					
21. Thallium	10		10			
22. Tin	40					
23. Vanadium	50		50	50	47.8	95.6
24. Zinc	20					
Other:						
Cyanide	10					

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 4/9/86

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	5p	5	17. Potassium		5000	
6. Cadmium	228.8 B	5p	5	18. Selenium		5	
7. Calcium		5000		19. Silver		10	
8. Chromium	357.9	10p	50	20. Sodium		5000	
9. Cobalt		50		21. Thallium		10	
10. Copper	324.7	25p	20	22. Tin		40	
11. Iron	248.3	100p	50	23. Vanadium		50	
12. Lead	217.0 B	5p	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 K. Perry
Lab Manager

general testing corporation

GTC Report #52237

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 4/9/86

Hydride Generator Model Number 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	60	Hydride 5	14. Manganese		15	
3. Arsenic	193.7	10	Hydride 1	14. Mercury	253.7	Colg vapor	0.2
4. Barium		200		16. Nickel		40	
5. Beryllium		5		17. Potassium		5000	
6. Cadmium		5		18. Selenium	196.0	Hydride	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	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: _____

Michael K. Perry
 Lab Manager

**general testing
corporation**

GTC Report #52237

QC Report #1

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 4/9/86

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: _____

Michael K. Perry
Lab Manager

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 4/9/86

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 K. Pewy

Lab Manager

SECTION D

Raw Data for Contract Laboratory

Protocol Parameters

SECTION D

	<u>Pages</u>
Subpart 1D: Raw data for aluminum	26-29
Subpart 2D: Raw data for antimony	30-33
Subpart 3D: Raw data for arsenic	34-45
Subpart 4D: Raw data for barium	46-51
Subpart 5D: Raw data for beryllium	52-53
Subpart 6D: Raw data for cadmium & lead	54-60
Subpart 7D: Raw data for calcium	61-62
Subpart 8D: Raw data for chromium	63-73
Subpart 9D: Raw data for cobalt	74-75
Subpart 10D: Raw data for copper	76-78
Subpart 11D: Raw data for iron & zinc	79-82
Subpart 12D: Raw data for magnesium	83-84
Subpart 13D: Raw data for manganese	85-86
Subpart 14D: Raw data for mercury	87-93
Subpart 15D: Raw data for nickel	94-98
Subpart 16D: Raw data for potassium	99-100
Subpart 17D: Raw data for selenium	101-111
Subpart 18D: Raw data for silver	112-116
Subpart 19D: Raw data for sodium	117-118
Subpart 20D: Raw data for thallium	119-127
Subpart 21D: Raw data for tin	128-131
Subpart 22D: Raw data for vanadium	132-139
Subpart 23D: Raw data for cyanide	140-162

Subpart 1 D: Raw Data for Aluminum

METALS ANALYSIS DATA SHEET

REV. 20

METAL As DATE 11/14/85 ANALYST JR REVIEWER Jan 11/16/85
 INSTRUMENT (AA) 3700 nm Voltage 350 V
 Current 4 a Split 1.6 nm
 D₂ 0 Integ. 1 sec
 ANALYSIS METHOD
 Flame _____ Hydride _____
 Gas 1 / 1.5 Acid _____
 Reduc. _____

INITIAL CALIBRATION

100.00 ml added to sample / stds

STANDARDS:	#1	#2	#3	#4	#5
Stock	<u>5.00</u>	<u>10.00</u>	<u>1.00</u>	<u>1.50</u>	<u>0.15</u>
Conc, ug/ml					
Absorbance		<u>0.128</u>			
EPA Check	Known	Mean	SD	RSD	% Recovered
<u>WP 284 2</u>	<u>0.730</u>	<u>0.78</u>	<u>0.04</u>	<u>5.32</u>	<u>107%</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	Solid ug/gm
BLK 11/4	<.1							
BS	0.50		100%					
52180-A	2.4			100	100		2.4	
52187-A	0.90			100	100		0.90	
52229 Lewis	0.40			100	1.0 ml		40	
BLK 11/25	0.44		88%					
BS	<.1							
52232-A Ver	2.1			100	100		2.1	
B	0.22			100	100		0.22	
C	0.13			50	50		0.13	
E	0.14			100	100		0.14	
F	0.74			50	50		0.74	
G	1.2			100	50		2.4	
BLK 11/11	<.1							
BS	0.46		92%					
52233-A	0.39			100	100		0.39	
52242-P	0.49			100	100		0.49	
B	0.22						0.22	0.23
B(GC)	0.24						0.24	
B(SPK)	0.70		94%				0.70	
D	0.16			50	50		0.16	
F	0.23						0.23	
G	0.69						0.69	
BLK 11/2	<.1							
BS	0.46		92%					
52242-A P.	1.1							

METALS ANALYSIS DATA SHEET

REV. 21

DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____ ANALYSIS METHOD _____

Current _____ na 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
2	0.73	0.76	0.03	3.86	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	Solid ug/gm
2297-A Dcc	0.61			200	200		0.61	✓
B	0.28						0.28	✓
C	0.25						0.25	✓
D	0.21						0.21	✓
E	0.17						0.17	✓
F	0.40						0.40	✓
G	0.21						0.21	✓
G(6A) ↓	0.20						0.20	
G(spk) ↓	0.75		109%				0.75	
52223-F	1.0			50	50		1.0	
4765-G	<.1			200	200		<.1	✓

Subpart 2D: Raw Data for Antimony

METALS ANALYSIS DATA SHEET

REV.

TITLE Sb LL DATE 11/22/85 ANALYST MMH REVIEWED MMH 11/22/85
 INSTRUMENT (AA) 2176 ANALYSIS METHOD
 Current 2176 nm Voltage _____ V Flame _____ Hydride _____
 Split 0.3 nm Gas _____ Acid 4.5%/10%
 Integ. 4 sec Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc. ug/ml	<u>0.030</u>	<u>0.050</u>	<u>0.020</u>	<u>0.010</u>	<u>0.005</u>
Absorbance					<u>0.10</u>
EPA Check	Known	Mean	SD	RSD	% Recovered
<u>TM3-1</u>	<u>8.2</u>	<u>7.6</u>	<u>0.3</u>	<u>3.66</u>	<u>93%</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	Solid ug/L
Blk 10/11	<5.0		<0.005	2.5	2.5			
B.S. (10.0)	9.7		97%	2.5	2.5			
4752 J	6.0		0.0060		0.26g			0.58
K	7.2		0.0072		0.25			0.72
L	14.2		0.0142		0.28			1.27
M	12.8		0.0128		0.27			1.19
N	<5.0		<0.005		0.23			<0.5
O	7.5		0.0075		0.27			0.69
OD.P	7.8		0.0078		0.25			0.78
(30.0) OSPK	33.6		86%	✓	0.25			
4764 I	<5.0		<0.005	100	0.50			<1
J	<5.0		<0.005		0.50			<1
JWP	<5.0		<0.005		0.50			<1
(10.0) JSPK	9.4		99%		0.50			
4765 J	<5.0		<0.005		0.55			<1
JWP	<5.0		<0.005		0.55			<1
JSPK	10.8		108%		0.49			
K	<5.0		<0.005		0.52			<1
L	<5.0		<0.005		0.52			<1
Blk 10/21	<5.0		<0.005		50ml			
B.S. (10.0)	9.5		95%		50ml			
4814 A	<5.0		<0.005		0.55g			<1
B	<5.0		<0.005		0.49			<1
BWP	<5.0		<0.005		0.51			<1
(10.0) B SPK	10.8		108%		0.52			
C	<5.0		<0.005	✓	0.52			<1

From As Subjects

METALS ANALYSIS DATA SHEET

REV.

SAMPLE SD 40 DATE 11/22 ANALYST MDJ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V Flame _____ Hydride _____
 Split _____ nm Gas _____ Acid _____
 Inteq. _____ sec Reduce _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc. ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
<u>7743-1</u>	<u>6.2</u>	<u>8.8</u>	<u>1.1</u>	<u>12.95</u>	<u>107%</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	Solid ug/gm
Blk 11/17	<5.0		<0.005	100	50			
B.S. (25.0)	24.8	1/100	99%		50			
P.S. (12.5)	11.9	1/100	95%		50			
52237A	<5.0		<0.005				<0.01	✓
B	<5.0		<0.005				<0.01	✓
C	<5.0		<0.005				<0.01	✓
D	<5.0		<0.005				<0.01	✓
E	<5.0		<0.005				<0.01	✓
F	<5.0		<0.005				<0.01	✓
G	<5.0		<0.005				<0.01	✓
6 DUP	<5.0		<0.005				<0.01	✓
12.5 GSPK	9.9		79%	✓	✓			

Subpart 3D: Raw Data for Arsenic

METALS ANALYSIS DATA SHEET

REV.

METAL As DATE 11/16/85 ANALYST HJM REVIEWED WCH/11/20/85
 INSTRUMENT (AA) 193.7 nm Voltage 620 V 11/16/85 ANALYSIS METHOD
 Current 6.5 a Split 1.0 nm Hydride
 D₂ off Integ. 4 sec Gas Ar/H₂ Acid HCl Reduc. M.B.Hg

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5	
Stock	Conc. ug/ml	<u>0.020</u>	<u>0.050</u>	<u>0.010</u>	<u>0.005</u>	<u>0.002</u>
	Absorbance	<u>0.332</u>	<u>0.454</u>	<u>0.185</u>	<u>0.098</u>	<u>0.049</u>
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>MS 13 1/2</u>	<u>4.3</u>	<u>4.2</u>	<u>0.1</u>	<u>2.32</u>	<u>93%</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
Blk <u>11/13</u>	<u><1.0</u>		<u><0.001</u>	<u>100 ml</u>	<u>50 ml</u>		<u><0.002</u>	
B.S.	<u>5.2</u>		<u>104%</u>					
52260A	<u>18.9</u>		<u>0.0189</u>				<u>0.0378</u>	✓
B	<u>0.9</u>		<u>0.0009</u>				<u>0.0018</u>	✓
C	<u>0.9</u>		<u>0.0009</u>				<u>0.0018</u>	✓
D	<u>1.3</u>		<u>0.0013</u>				<u>0.0026</u>	✓
E	<u>1.6</u>		<u>0.0016</u>				<u>0.0032</u>	✓
F	<u><1.0</u>		<u><0.001</u>				<u><0.002</u>	✓
G	<u>2.1</u>		<u>0.0021</u>				<u>0.0042</u>	✓
H	<u>4.0</u>		<u>0.0040</u>				<u>0.0080</u>	✓
I	<u>2.0</u>		<u>0.0020</u>				<u>0.0040</u>	✓
J	<u>1.9</u>		<u>0.0019</u>				<u>0.0038</u>	✓
K	<u>8.9</u>		<u>0.0089</u>				<u>0.0178</u>	✓
L	<u>1.7</u>		<u>0.0017</u>				<u>0.0034</u>	✓
M	<u><1.0</u>		<u><0.001</u>				<u><0.002</u>	✓
N	<u>1.7</u>		<u>0.0017</u>				<u>0.0034</u>	✓
O	<u>0.9</u>		<u>0.0009</u>				<u>0.0018</u>	✓
P	<u><1.0</u>		<u><0.001</u>				<u><0.002</u>	✓
Q	<u>1.5</u>		<u>0.0015</u>				<u>0.0030</u>	✓
R	<u><1.0</u>		<u><0.001</u>				<u><0.002</u>	✓
S	<u><1.0</u>		<u><0.001</u>				<u><0.002</u>	✓
SOP	<u><1.0</u>		<u><0.001</u>				<u><0.002</u>	
SOPK	<u>5.3</u>		<u>106%</u>					
T	<u>2.5</u>		<u>0.0025</u>				<u>0.0050</u>	✓
U	<u>1.1</u>		<u>0.0011</u>				<u>0.0022</u>	✓

Residual metals

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____

ELEMENT (AA) _____ ANALYSIS METHOD _____

Current _____ nm Voltage _____ V Flame _____ Hydride _____

O₂ _____ 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
No 13 Y10	4.3	4.3	0.1	6.45	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
5220 V	2.1		0.0021	100ml	50ml		0.0042 ✓	
W	1.7		0.0017				0.0034 ✓	
Y	6.0		0.0060				0.0120 ✓	
Y	<1.0		<0.001				<0.002 ✓	
Z	3.0		0.003				0.006 ✓	
AA	1.5		0.0015				0.0030 ✓	
BB	9.2		0.0092				0.0184 ✓	
BB DUP	9.2		0.0092				0.0184 ✓	
BB SPK	14.1		98%					
CC	<1.0		<0.001				<0.002 ✓	
DD	2.5		0.0025				0.0050 ✓	
HH	6.2		0.0062				0.0124 ✓	
II	26.5		0.0265				0.0530 ✓	
JT	7.4		0.0074				0.0148 ✓	
JT DUP	6.7		0.0067				0.0134 ✓	
JT SPK	12.1		102%					
KK	4.5		0.0045				0.0090 ✓	
Blk 11-13	<1.0		<0.001				<0.002 ✓	
LS	4.8		96%					
5222A	9.2		0.0092				0.0184 ✓	
B	1.8		0.0018				0.0036 ✓	
B DUP	1.6		0.0016				0.0032 ✓	
B SPK	6.5		96%					
C	2.6		0.0026				0.0052 ✓	
D	<1.0		<0.001	✓	✓		<0.002 ✓	

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____
 ELEMENT (AA) _____ ANALYSIS METHOD _____
 Wavelength _____ nm Voltage _____ V Flame _____ Hydride _____
 Slit _____ 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
WS 13.1%	4.3	4.1	0.1	2.85	95%

ANALYSIS

Sample #	INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION	
	Conc. ug/ml	D.F.	Final ug/ml	I.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solids ug/gm
5292E	10.2	10	0.102	100ml	50ml		0.204 ✓	
F	2.3		0.0023				0.0046 ✓	
G	32.0		0.0320				0.0640 ✓	
H	1.6		0.0016				0.0032 ✓	
I	10.1		0.0101				0.0202 ✓	
J	<1.0		<0.001				<0.002 ✓	
K	20.5		0.0205				0.0405 ✓	
L	1.4		0.0014				0.0028 ✓	
LOUP	1.4		0.0014				0.0028	
LSPK	6.7		106%					
M	<1.0		<0.001				<0.002 ✓	
N	7.6		0.0076				0.0152 ✓	
O	6.0		0.0060				0.0120 ✓	
P	3.5		0.0035				0.0070 ✓	
Q	6.8		0.0068				0.0136 ✓	
R	11.9		0.0119				0.0238 ✓	
RUPK	12.1		0.0121				0.0242	
ESPK	10.0		80%					
S	1.2		0.0012				0.0024 ✓	
T	12.4		0.0124				0.0248 ✓	
U	<1.0		<0.001				<0.002 ✓	
V	<1.0		<0.001				<0.002 ✓	
W	2.6		0.0026				0.0052 ✓	
X	11		0.0011				0.0022 ✓	
Y	0.8		0.0008	✓	✓		0.0016 ✓	

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____

ELEMENT (AA) _____
 Wavelength _____ nm Voltage _____ V
 Slit _____ nm Flame _____ Hydride _____
 D₂ _____ Integ. _____ sec Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc. ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
NS 13/60	4.3	4.4	0.1	3.02	102.7%

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
52292Z	1.2		0.0012	100ml	50ml		0.0024 ✓	
AA	4.0		0.0040				0.0080 ✓	
BB	1.3		0.0013				0.0026 ✓	
CC	6.6		0.0066				0.0132 ✓	
Blk 1/14	<1.0		<0.001				<0.002	
BS	3.0		60%					
BS	3.2		64%					
52182	19.3	1/1000	193		0.45g			42,900 ✓
52232A	1.5		0.0015		50ml		0.0030 ✓	
B	0.9		0.0009				0.0018 ✓	
C	<1.0		<0.001				<0.002 ✓	
CWP	<1.0		<0.001				<0.002	
CSPK	5.5		110%					
E	<1.0		<0.001				<0.002 ✓	
G	1.0		0.001				0.002 ✓	
52242A	0.8		0.0008				0.0016 ✓	
B	<1.0		<0.001				<0.002 ✓	
BAF	<1.0		<0.001				<0.002	
ESPK	5.8		116%					
C	<1.0		<0.001				<0.002 ✓	
G	<1.0		<0.001				<0.002 ✓	
51971A	2.0		0.002		0.62g	wf		0.32 ✓
B	1.1		0.0011		0.46g			0.24 ✓
C	1.3		0.0013		0.46g			0.28 ✓
52123	<1.0		<0.001		50ml		<0.002 ✓	

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____

ELEMENT (AA)	nm	Voltage	V	ANALYSIS METHOD
cont	a	Split	nm	Flame / Hydride
D ₂		Integ.	sec	Gas / Acid
				Reduc.

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
CPA Check	Known	Mean	SD	RSD	% Recovered
NS 13 %	4.3	4.5	0.1	2.07	105%

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
5214A	6.1	1/10	0.061	100 ml	0.49g	D		12.4 ✓
B	6.5	1/10	0.065		0.50g			13.0 ✓
C	6.1	1/10	0.061		0.44g			13.9 ✓
52107-A	20.3		0.0203		0.50g	✓		3.9 ✓
52124B	2.5		0.0025		10 ml		0.25	✓
52228A	1.3		0.0013		10 ml		0.13	✓
B	3.1		0.0031		10 ml		0.31	✓
C	26.9		0.0269		10 ml		2.69	✓
52197	<1.0	1/10	<0.01		50 ml		<0.02	✓
DPL	10.1		102%					
52271	<1.0	1/10	<0.01				<0.02	✓
SPK	9.6		96%					
5227A	<1.0		<0.001				<0.002	✓
52236A	<1.0		<0.001				<0.002	✓
A DPL	<1.0		<0.001				<0.002	
A SPK	5.6		112%					
B	<1.0		<0.001				<0.002	✓
C	<1.0		<0.001				<0.002	✓
D	1.4		0.0014				0.0014	✓
E	<1.0		<0.001				<0.002	✓
52237-A	<1.0		<0.001				<0.002	✓
B	<1.0		<0.001				<0.002	✓
C	0.9		900%				0.0018	✓
D	1.1		0.0011				0.0011	✓
E	<1.0		<0.001				<0.002	✓

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____
 Wavelength _____ nm Voltage _____ V
 Slit _____ nm
 D₂ _____ Integ. _____ sec
 ANALYSIS METHOD
 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
#5 12410	4.3	4.5	0.1	3.27	105%

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
52237F	1.0		0.001	100ml	50ml		0.002	✓
G	0.9		0.0009				0.0018	✓
G DUP	0.9		0.0009				0.0018	
GSPK	4.9		100%					
4825-B	<1.0		<0.001				<0.002	✓
4885A	<1.0		<0.001				<0.002	✓
B	<1.0		<0.001				<0.002	✓
4864	<1.0		<0.001				<0.002	✓
52168A	1.2		0.0012		1.52g			0.0794
52168B	1.4		0.0014		1.20g			0.120

Subpart 4D: Raw Data for Barium

METALS ANALYSIS DATA SHEET

REV. 16

METAL Pb DATE 11/14/85 ANALYST JB REVIEWER MLD/11/85
 INSTRUMENT (AA) 552.5 nm Voltage 380 V ANALYSIS METHOD Flame Hydride
 Current D₂ OFF Split 1.0 nm Gas N₂O / Acet Acid
 Integ. 4 sec Reduc. 11/20/85

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	<u>5.00</u>	<u>10.00</u>	<u>1.00</u>	<u>0.50</u>	<u>0.10</u>
<u>10/31/85</u>	Conc, ug/ml	Absorbance			
		<u>0.274</u>			
EPA Check	Known	Mean	SD	RSD	% Recovered
<u>VF 531 TMR 2</u>	<u>10.0</u>	<u>8.86</u>	<u>0.13</u>	<u>1.46</u>	<u>89</u>
<u>WS 378 2</u>	<u>0.197</u>	<u>0.19</u>	<u>0.01</u>	<u>4.15</u>	<u>100%</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	Solid ug/gr
<u>52271</u> ^{SPT}	<u><.1</u>	<u>1/10</u>	<u><.1</u>	<u>50</u>	<u>50</u>		<u><.1</u>	
<u>0.50</u>	<u>0.52</u>	<u>104%</u>						
<u>BLK 11/5</u>	<u><.1</u>							
<u>BS</u>	<u>0.52</u>		<u>104%</u>					
<u>52168-A</u>	<u><.1</u>			<u>100</u>	<u>1.05g</u>			<u><10</u>
<u>" B</u>	<u><.1</u>			<u>100</u>	<u>1.41</u>			<u><10</u>
<u>BLK 11/7</u>	<u><.1</u>							
<u>BS</u>	<u>0.57</u>		<u>114%</u>					
<u>52236-A</u>	<u><.1</u>			<u>50</u>	<u>50</u>		<u><.1</u>	
<u>A(GC)</u>	<u><.1</u>			↓	↓		<u><.1</u>	
<u>B</u>	<u>0.20</u>			↓	↓		<u>0.20</u>	
<u>B(SPK)</u>	<u>0.76</u>		<u>112%</u>	↓	↓		<u>0.76</u>	
<u>C</u>	<u><.1</u>			↓	↓		<u><.1</u>	
<u>BLK 11/11</u>	<u><.1</u>							
<u>BS</u>	<u>0.57</u>		<u>114%</u>					
<u>52236-D</u>	<u><.1</u>			<u>50</u>	<u>50</u>		<u><.1</u>	
<u>D(GC)</u>	<u><.1</u>			↓	↓		<u><.1</u>	
<u>D(SPK)</u>	<u>0.58</u>		<u>116%</u>	↓	↓		<u>0.58</u>	
<u>E</u>	<u><.1</u>			↓	↓		<u><.1</u>	
<u>4766-R</u>	<u>0.20</u>			<u>200</u>	<u>2.06</u>			<u>19</u>
<u>BLK 11/12</u>	<u><.1</u>							
<u>BS</u>	<u>0.57</u>		<u>108%</u>					
<u>52237A Dec</u>	<u><.1</u>			<u>50</u>	<u>50</u>		<u><.1</u>	
<u>B</u>	<u>0.17</u>			↓	↓		<u>0.17</u>	
<u>C</u>	<u>0.10</u>			↓	↓		<u>0.10</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
 TIME 10.0 9.03 0.06 0.69 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
52237-E D ₂	0.26			50	50		0.26	-
F	0.12						0.12	-
G	0.13						0.13	-
G(QC)	0.13						0.13	-
G(SPK)	0.65		104%	↓	↓		0.65	-
52253-A	<.1	1/10	<1	50	50		<1	-
-B	<.1			"	"		<.1	-
52084-A	<.1	1/10	<1	50	50		<1	-
B	<.1	1/10	<1				<1	-
C	<.1						<.1	-
D	<.1	1/10	<1				<1	-
E	<.1	1/10	<1				<1	-
F	<.1	1/10	<1				<1	-
G	0.16						0.16	-
H	<.1						<.1	-
I	10	1/100	1000				1000	-
J	0.89						0.89	-
K	<.1	1/10	<1				<1	-
L	<.1	1/10	<1				<1	-
M	0.12						0.12	-
N	0.13						0.13	-
O	0.23	1/10	2.3				2.3	-
P	<.1	1/10	<1				<1	-
Q	<.1						<.1	-
RI(QC)	<.1						<.1	-

Subpart 5D: Raw Data for Beryllium

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIATION 00 - 9225
OPERATOR: D. DUMBLETON
DATE: 02/27/86
BATCH:

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

AUTO-PROGRAM 5 Be

SOLUTION CONC mg/L RSD MEAN ABS ABSORBANCE READINGS RESLOPE FACTOR

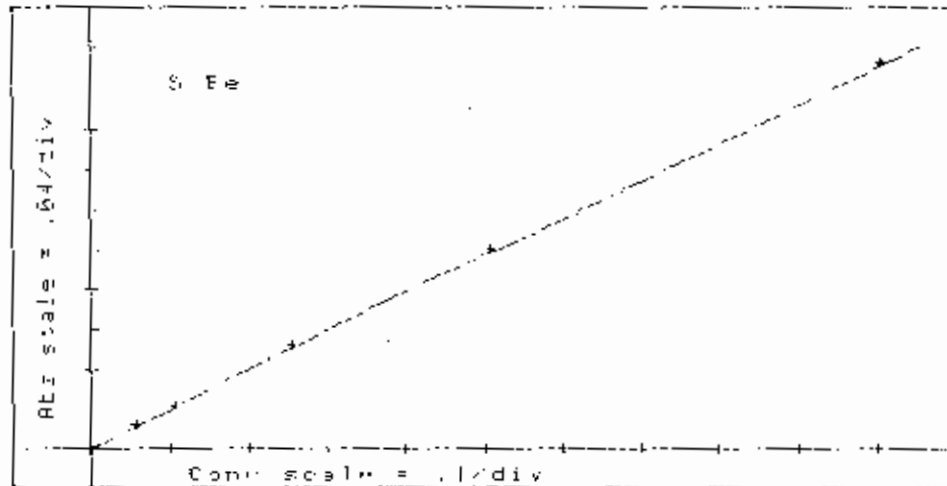
Press "00FIT" to INHOLD
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIATION 00 - 9225
OPERATOR: D. DUMBLETON
DATE: 02/27/86
BATCH:

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

AUTO-PROGRAM 5 Be

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	0.0%	0.112	0.112 0.113 0.112	1.000
STANDARD 1	0.050	3.3%	0.019	0.020 0.019 0.020	1.000
STANDARD 2	0.100	0.0%	0.039	0.039 0.039 0.040	1.000
STANDARD 3	0.250	1.0%	0.099	0.099 0.099 0.101	1.000
STANDARD 4	0.500	2.1%	0.194	0.189 0.195 0.198	1.000
STANDARD 5	1.000	0.0%	0.380	0.377 0.382 0.383	1.000



1*2	0.060	4.2%	0.074	0.025 0.023 0.024	1.000
0	0.223	1.1%	0.089	0.089 0.091 0.089	1.000
BLK 11/12	0.005	50.0%	0.002	0.000 0.002 0.001	1.000
BLK SPK	0.247	1.0%	0.096	0.095 0.096 0.097	1.000
52237 A	0.005	50.0%	0.002	0.003 0.002 0.003	1.000
52237 B	0.005	0.0%	0.002	0.002 0.002 0.002	1.000
52237 C	0.005	50.0%	0.002	0.003 0.001 0.002	1.000
52237 D	0.005	0.0%	0.002	0.002 0.002 0.002	1.000
52237 E	0.002	0.0%	0.001	0.001 0.001 0.002	1.000
52237 F	0.005	0.0%	0.002	0.003 0.002 0.002	1.000
52237 G	0.002	0.0%	0.001	0.001 0.001 0.001	1.000
52237 H	0.002	0.0%	0.001	0.001 0.001 0.001	1.000
52237 I	0.002	0.0%	0.001	0.001 0.000 0.001	1.000
52237 J	0.002	0.0%	0.001	0.001 0.001 0.001	1.000
52237 K	0.002	0.0%	0.001	0.001 0.002 0.001	1.000
1*2	0.057	4.8%	0.022	0.022 0.023 0.020	1.000
0	0.223	1.1%	0.089	0.088 0.090 0.090	1.000
BLK SPK	0.052	0.0%	0.020	0.020 0.021 0.020	1.000

Subpart 6D: Raw Data for Cadmium & Lead

VARIAN AA-975
 OPERATOR: D. DUNBLETON
 DATE: 11/21/85
 BATCH:

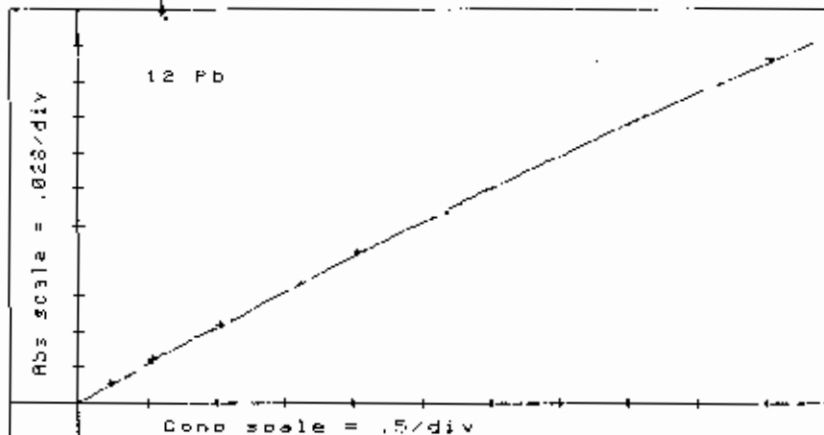
QC APPROVED
 11/21/85

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

MRP 11/21/85 ✓ JJ 11/21/85

AUTO-PROGRAM 12 Pb

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	0.200	9.1%	0.011	0.013	0.012	0.010	1.000
STANDARD 2	0.500	3.7%	0.030	0.029	0.020	0.031	1.000
STANDARD 3	1.000	3.4%	0.058	0.036	0.059	0.060	1.000
STANDARD 4	2.000	0.9%	0.114	0.116	0.114	0.113	1.000
STANDARD 5	5.000	0.4%	0.264	0.263	0.266	0.264	1.000

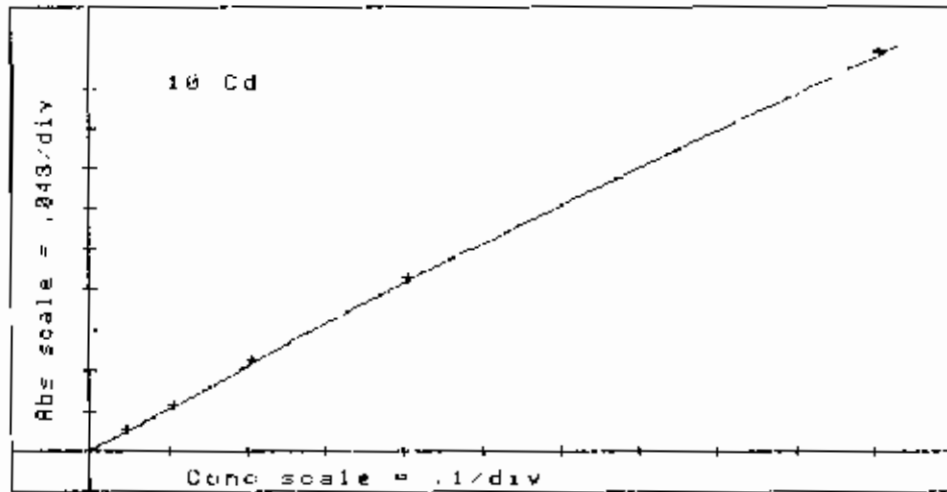


1*2	0.072	25.0%	0.004	0.005	0.003	0.004	1.000
2	0.422	4.0%	0.025	0.026	0.026	0.025	1.000
BLK 11/5	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
52228 C	0.018	100.0%	0.001	0.000	0.005	0.000	1.000
52220 DDC	0.018	100.0%	0.001	0.000	0.002	0.001	1.000
52220 DSPK	0.297	0.0%	0.017	0.017	0.017	0.018	1.000
BLK 11/11	0.000	0.0%	0.000	0.001	0.001	0.001	1.000
BLK SPK	0.265	0.0%	0.015	0.015	0.016	0.015	1.000
52271 *	0.360	0.0%	0.002	0.002	0.002	0.002	1.000
1000I	0.500	0.0%	0.030	0.030	0.030	0.031	1.000
52233 A	0.036	50.0%	0.007	0.003	0.002	0.001	1.000
52236 D	0.036	100.0%	0.002	0.002	0.001	0.005	1.000
52236 DDC	0.018	0.0%	0.001	0.001	0.001	0.002	1.000
52236 DSPK	0.297	0.0%	0.017	0.017	0.018	0.017	1.000
52236 E	0.001	0.0%	0.000	0.000	0.000	0.000	1.000
52241 A	0.000	0.0%	0.000	0.001	0.000	0.001	1.000
52242 A	0.018	0.0%	0.001	0.001	0.002	0.001	1.000
52242 B	0.018	100.0%	0.001	0.000	0.001	0.002	1.000
52242 BUC	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
52242 BSPK	0.281	6.3%	0.016	0.016	0.017	0.017	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.002	1.000
RESLOPE	0.484	6.9%	0.029	0.029	0.027	0.032	1.000
1*2	0.093	20.0%	0.005	0.006	0.006	0.004	1.033
2	0.452	3.8%	0.026	0.026	0.025	0.027	1.033
52278	0.075	25.0%	0.004	0.003	0.005	0.005	1.033
52279	0.000	0.0%	0.000	0.001	0.001	0.000	1.033
BLK 11/12	0.018	100.0%	0.001	0.000	0.002	0.001	1.033
BLK SPK	0.274	6.7%	0.015	0.016	0.014	0.015	1.033
52237 A	0.018	200.0%	0.001	0.004	0.000	0.000	1.033
52237 B	0.018	100.0%	0.001	0.000	0.003	0.002	1.033
52237 C	0.000	0.0%	0.000	0.000	0.000	0.002	1.033
52237 D	0.018	100.0%	0.001	0.001	0.005	0.001	1.033
52237 E	0.018	100.0%	0.001	0.000	0.002	0.001	1.033
52237 F	0.018	0.0%	0.001	0.001	0.001	0.002	1.033
52237 G	0.018	100.0%	0.001	0.000	0.003	0.001	1.033
52237 GUC	0.037	50.0%	0.002	0.003	0.003	0.002	1.033
52237 BSPK	0.307	11.8%	0.017	0.020	0.017	0.015	1.033
52244 A	0.037	0.0%	0.000	0.002	0.002	0.003	1.033
4890 A	0.257	14.3%	0.014	0.015	0.016	0.012	1.033
BLK 11/18	0.018	100.0%	0.001	0.001	0.001	0.003	1.033
BLK SPK	0.307	5.9%	0.017	0.017	0.017	0.019	1.033
52020 A	0.093	20.0%	0.005	0.006	0.005	0.004	1.033
BLANK	0.000	0.0%	0.001	0.001	0.001	0.001	1.033
RESLOPE	0.468	3.6%	0.028	0.027	0.030	0.028	1.068
1*2	0.116	0.0%	0.006	0.006	0.006	0.006	1.068
2	0.484	3.7%	0.027	0.028	0.028	0.027	1.068
52028 B	0.019	0.0%	0.001	0.002	0.001	0.001	1.068
52028 C	0.019	100.0%	0.001	0.000	0.002	0.002	1.068
52028 D	0.116	16.7%	0.006	0.008	0.005	0.007	1.068
52028 DDC	0.027	0.0%	0.005	0.005	0.005	0.006	1.068

5202B F	0.058	37.3%	0.003	0.004	0.003	0.002	1.068
5202B G	0.956	1.9%	0.053	0.053	0.054	0.054	1.068
5202B H	0.213	9.1%	0.011	0.013	0.011	0.011	1.068
5202B I	0.077	25.0%	0.004	0.004	0.003	0.005	1.068
52256 A	0.000	0.0%	0.000	0.000	0.002	0.000	1.068
4885 A	0.000	0.0%	0.000	0.000	0.000	0.000	1.068
4885 B	0.000	0.0%	0.000	0.000	0.000	0.000	1.068
BLK 11/20	0.019	100.0%	0.001	0.001	0.000	0.002	1.068
BLK SPK	0.155	12.5%	0.008	0.008	0.007	0.009	1.060
52228 C	0.038	50.0%	0.002	0.003	0.002	0.003	1.068

AUTO-PROGRAM 10 Cd

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	25.0%	-0.004	-0.005-0.006-0.003	1.000
STANDARD 1	0.040	0.0%	0.020	0.021 0.020 0.020	1.000
STANDARD 2	0.100	2.0%	0.049	0.050 0.048 0.049	1.000
STANDARD 3	0.200	1.0%	0.101	0.100 0.103 0.101	1.000
STANDARD 4	0.400	0.5%	0.198	0.198 0.197 0.200	1.000
STANDARD 5	1.000	0.9%	0.467	0.472 0.467 0.464	1.000



1*2	0.010	20.0%	0.005	0.006	0.007	0.004	1.000
2	0.004	5.9%	0.017	0.019	0.017	0.017	1.000
BLK 11/5	0.000	100.0%	-0.001	-0.002	0.000-0.001	1.000	
52228 C	0.000	100.0%	-0.001	0.000-0.003-0.001	1.000		
52228 DDC	0.004	50.0%	0.002	0.004	0.002	0.001	1.000
52228 DSPK	0.046	4.3%	0.023	0.025	0.023	0.023	1.000
BLK 11/11	0.000	50.0%	-0.002	-0.002-0.003-0.003	1.000		
BLK SPK	0.046	4.3%	0.023	0.022	0.024	0.025	1.000
52271	* 1.540	2.6%	0.077	0.078	0.079	0.075	1.000
100u1	0.252	1.6%	0.128	0.126	0.128	0.170	1.000
52233 A	0.000	100.0%	-0.002	-0.004	0.000-0.003	1.000	
52236 B	0.000	100.0%	-0.001	-0.002-0.001-0.002	1.000		
52236 DDC	0.000	100.0%	-0.002	-0.004-0.002	0.000	1.000	
52236 DSPK	0.044	0.0%	0.022	0.022	0.023	0.022	1.000
52236 E	0.000	33.3%	-0.003	-0.004-0.004-0.003	1.000		
52241 A	0.036	5.6%	0.018	0.019	0.018	0.017	1.000
52242 A	0.000	33.3%	-0.003	-0.003-0.004-0.002	1.000		
52242 B	0.000	25.0%	-0.004	-0.003-0.004-0.005	1.000		
52242 BDC	0.000	33.3%	-0.003	-0.002-0.003-0.004	1.000		

52242 BSPK	0.042	4.8%	0.021	0.021	0.020	0.023	1.000
BLANK	0.000	25.0%	-0.004	-0.005	-0.004	-0.005	1.000
RESLOPE	0.100	2.0%	0.049	0.048	0.048	0.051	1.000
1*2	0.018	11.1%	0.009	0.008	0.009	0.011	1.000
2	0.040	5.0%	0.020	0.021	0.019	0.020	1.000
52278	0.004	0.0%	0.003	0.004	0.003	0.003	1.000
52279	0.002	100.0%	0.001	0.000	0.002	0.002	1.000
BLK 11/12	0.000	0.0%	0.000	0.002	0.001	-0.001	1.000
BLK SPK	0.052	3.8%	0.026	0.026	0.028	0.026	1.000
52237 A	0.002	100.0%	0.001	0.000	0.003	0.000	1.000
52237 B	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
52237 C	0.002	100.0%	0.001	0.000	0.003	0.000	1.000
52237 D	0.000	0.0%	0.000	0.001	-0.001	0.000	1.000
52237 E	0.000	0.0%	0.000	0.000	0.002	0.000	1.000
52237 F	0.002	100.0%	0.001	0.002	0.001	0.000	1.000
52237 B	0.004	0.0%	0.002	0.003	0.002	0.002	1.000
52237 BGC	0.000	0.0%	0.000	0.002	-0.001	-0.001	1.000
52237 BSPK	0.052	7.7%	0.026	0.026	0.024	0.028	1.000
52244 A	0.002	100.0%	0.001	0.002	0.001	0.002	1.000
4890 A	0.014	28.6%	0.007	0.009	0.009	0.004	1.000
BLK 11/18	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
BLK SPK	0.052	3.8%	0.026	0.026	0.025	0.027	1.000
52028 A	0.000	0.0%	0.000	0.000	0.000	0.002	1.000
BLANK	0.000	0.0%	0.000	0.001	0.000	0.000	1.000
RESLOPE	0.105	3.9%	0.052	0.050	0.055	0.051	.952
1*2	0.017	10.0%	0.010	0.011	0.010	0.009	.952
2	0.038	5.0%	0.020	0.021	0.020	0.019	.952
52028 B	0.000	0.0%	0.000	0.000	-0.002	0.000	.952
52028 C	0.001	100.0%	0.001	0.003	0.001	0.000	.952
52028 D	0.000	0.0%	0.000	0.000	0.002	0.000	.952
52028 DGC	0.000	0.0%	0.000	0.001	-0.001	0.000	.952
52028 DSPK	0.045	4.2%	0.024	0.025	0.023	0.025	.952
52028 E	0.001	0.0%	0.001	0.001	0.001	0.002	.952
52028 F	0.000	0.0%	0.000	0.001	0.001	-0.001	.952
52028 G	0.001	100.0%	0.001	0.002	0.002	0.000	.952
52028 H	0.000	0.0%	0.000	-0.001	0.000	0.000	.952
52028 I	0.001	200.0%	0.001	0.004	0.000	0.000	.952
52256 A	0.026	7.1%	0.014	0.016	0.014	0.014	.952
4885 A	0.001	100.0%	0.001	0.000	0.002	0.003	.952
4885 B	0.000	0.0%	0.000	-0.001	-0.001	0.002	.952
BLK 11/20	0.001	100.0%	0.001	0.002	0.000	0.001	.952
BLK SPK	0.020	18.2%	0.011	0.009	0.011	0.014	.952
52228 C	0.001	0.0%	0.001	0.001	0.001	0.002	.952

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 11/21/85
 BATCH:

mwp 11/21/85

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

SOLUTION	Pb mg/L	Cd mg/L
1*2	0.072	0.010
2	0.422	0.034
BLK 11/5	0.000	0.000
52228 C	0.018	0.000
52228 CQC	0.018	0.004
52228 CSPK	0.297	0.046
BLK 11/11	0.000	0.000
BLK SPK	0.263	0.046
52271	* 0.360 < 0.5	1.540 < 1.5
100uI	0.500	0.252
52233 A	0.036 < 0.5	0.000 < 0.005

*Stack colw is
 Suppm Pb
 10 ppm Cd*

52236 D	0.1136	0.000
52236 DDC	0.010	0.000
52236 DSPK	0.277	0.044
52236 E	0.000	0.000
52241 A	0.000	0.036
52242 A	0.018	0.000
52242 B	0.018	0.000
52242 BDC	0.000	0.000
52242 BSPK	0.281	0.042
1*2	0.093	0.018
2	0.452	0.040
52278	0.075	0.006
52279	0.000	0.002
BLK 11/12	0.018	0.000
BLK SPK	0.274	0.052
52237 A	0.018	0.002
52237 B	0.018	0.000
52237 C	0.000	0.002
52237 D	0.018	0.000
52237 E	0.018	0.000
52237 F	0.018	0.002
52237 G	0.018	0.004
52237 BDC	0.037	0.000
52237 BSPK	0.307	0.052
52244 A	0.037	0.002
4890 A	0.257	0.014
BLK 11/18	0.018	0.000
BLK SPK	0.307	0.052
52028 A	0.093	0.000
1*2	0.116	0.019
2	0.484	0.038
52028 B	0.019	0.000
52028 C	0.019	0.001
52028 D	0.116	0.000
52028 DDC	0.097	0.000
52028 DSPK	0.351	0.045
52028 E	0.058	0.001
52028 F	0.058	0.000
52028 G	0.956	0.001
52028 H	0.213	0.000
52028 I	0.077	0.001
52256 A	0.000	0.026
4885 A	0.000	0.001
4885 B	0.000	0.000
BLK 11/20	0.019	0.001
BLK SPK	0.155	0.020
52220 C	0.018	0.001

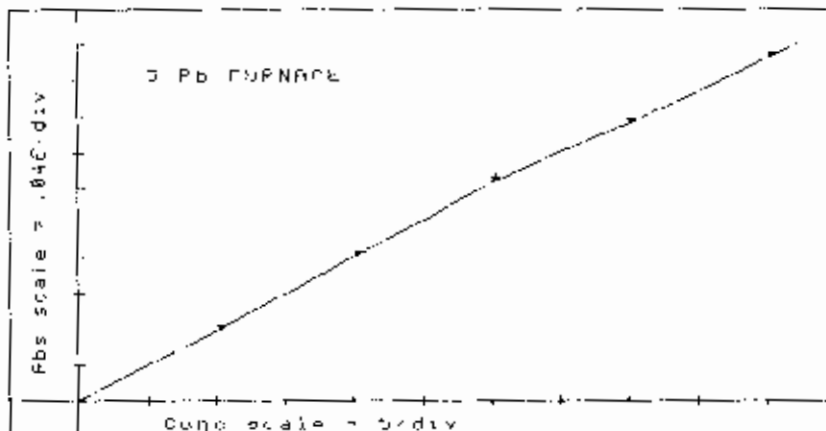
OPERATOR: D. DUMBLETON
 DATE: 01/27/86
 BATCH:

60

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	25.5%	0.031	0.075	0.039	1.000
STANDARD 1	10.00	1.1%	0.070	0.091	0.090	1.000
STANDARD 2	20.00	1.1%	0.185	0.194	0.187	1.000
STANDARD 3	30.00	1.4%	0.281	0.278	0.284	1.000
STANDARD 4	40.00	5.9%	0.737	0.572	0.742	1.000
STANDARD 5	50.00	1.1%	0.441	0.445	0.427	1.000



52237 A	17.60	0.6%	0.162	0.163	0.161	1.000
10ppb	77.27	3.5%	0.225	0.249	0.262	1.000
52237 B	26.44	0.8%	0.247	0.246	0.249	1.000
10ppb	33.75	1.0%	0.312	0.315	0.310	1.000
52237 C	17.39	6.3%	0.160	0.153	0.168	1.000
10ppb	21.76	3.0%	0.202	0.198	0.207	1.000
52237 D	18.33	0.4%	0.169	0.169	0.170	1.000
10ppb	23.32	7.7%	0.217	0.223	0.211	1.000
52237 E	45.32	1.2%	0.400	0.398	0.406	1.000
10ppb	52.17	1.1%	0.459	0.463	0.455	1.000
52237 F	42.00	1.1%	0.374	0.377	0.371	1.000
WS778 3	15.61	0.7%	0.143	0.144	0.143	1.000
10ppb	48.07	2.1%	0.425	0.432	0.418	1.000
52237 G	31.77	0.7%	0.296	0.298	0.295	1.000
52237 BGC	32.99	0.7%	0.306	0.304	0.308	1.000
BLANK	0.000	66.7%	0.003	0.005	0.002	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN 60-970
 OPERATOR: D. DUMBLETON
 DATE: 01/27/86
 BATCH:

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

SOLUTION	Pb ug/l
52237 A	17.60
10ppb	77.27
52237 B	26.44
10ppb	33.75
52237 C	17.39
10ppb	21.76
52237 D	18.33
10ppb	23.32
52237 E	45.32
10ppb	52.17
52237 F	42.00
WS778 3	15.61
10ppb	48.07
52237 G	31.77
52237 BGC	32.99

Subpart 7D: Raw Data for Calcium

METALS ANALYSIS DATA SHEET

REV.

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METAL As DATE 11/21/85 ANALYST JB REVIEWER msf 11/21/85
 INSTRUMENT (AA) 422.7 nm Voltage 350 V ANALYSIS METHOD
 slit 2 a Split 1.0 nm Flame Hydride
 D₂ off Integ. 4 sec Gas Air / Acet Acid
 Reduc. _____

INITIAL CALIBRATION

- 200 ul LaCl added to samples/standards
 - fuel lean; burner ht ~ 2
 - burner head left of center

STANDARDS:	#1	#2	#3	#4	#5
Stock	<u>10.00</u>	<u>20.00</u>	<u>5.00</u>	<u>1.00</u>	<u>0.50</u>
Conc, ug/ml					
Absorbance		<u>5.781</u>			

EPA Check	Known	Mean	SD	RSD	% Recovered
UP384 M1	<u>40.6</u>	<u>40.5</u>	<u>0.01</u>	<u>0.34</u>	<u>100%</u>
" M2	<u>5.3</u>	<u>4.71</u>	<u>0.01</u>	<u>0.25</u>	<u>89%</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 11/12	<u>6.5</u>							
BS	<u>2.32</u>		<u>93%</u>					
S2237-A	<u>4.6</u>	<u>1/10</u>	<u>46</u>	<u>200</u>	<u>200</u>		<u>46</u>	<u>✓</u>
B	<u>5.1</u>	<u>1/10</u>	<u>51</u>				<u>51</u>	<u>✓</u>
C	<u>5.7</u>	<u>1/10</u>	<u>57</u>				<u>57</u>	<u>✓</u>
D	<u>5.6</u>	<u>1/10</u>	<u>56</u>				<u>56</u>	<u>✓</u>
E	<u>7.1</u>	<u>1/10</u>	<u>71</u>				<u>71</u>	<u>✓</u>
F	<u>5.6</u>	<u>1/10</u>	<u>56</u>				<u>56</u>	<u>✓</u>
G	<u>6.4</u>	<u>1/10</u>	<u>64</u>				<u>64</u>	<u>✓</u>
G(2)	<u>6.4</u>	<u>1/10</u>	<u>64</u>				<u>64</u>	
G(4)	<u>6.5</u>	<u>1/10</u>	<u>65</u>	<u>↓</u>	<u>✓</u>		<u>65</u>	

Subpart 8D: Raw Data for Chromium

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

11/21/85

VARIAN AA-975

OPERATOR: JOHN BRUNETTE

DATE: 11/18/85

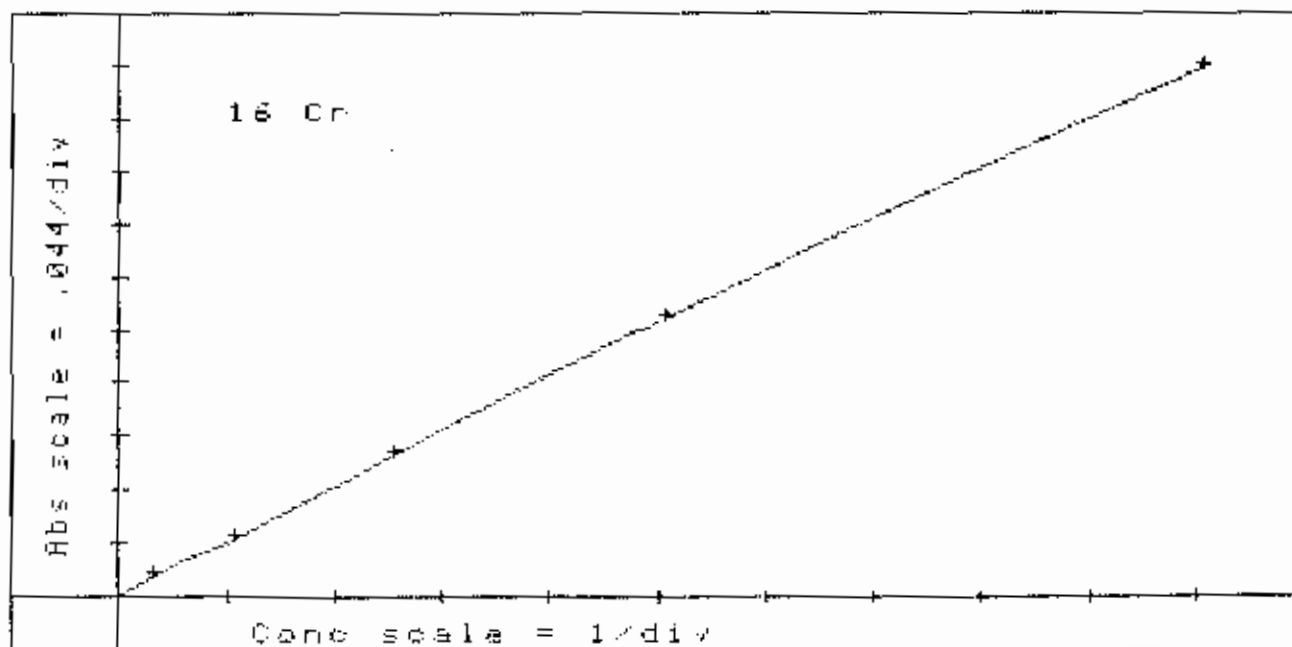
BATCH: Cr; 11/5 - 11 and EPTX

mkr 11/21/85

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	0.000	0.000	1.000
STANDARD 1	0.250	15.4%	0.013	0.013	0.015	0.011	1.000
STANDARD 2	1.000	2.3%	0.044	0.045	0.045	0.043	1.000
STANDARD 3	2.500	1.8%	0.113	0.113	0.111	0.115	1.000
STANDARD 4	5.000	0.4%	0.226	0.226	0.225	0.228	1.000
STANDARD 5	10.00	2.5%	0.435	0.427	0.449	0.431	1.000



14x2(.092)	0.096	20.0%	0.005	0.004	0.005	0.006	1.000
------------	-------	-------	-------	-------	-------	-------	-------

	0.270	77.1%	0.014	0.012	0.012	0.013	1.000
BLK 11/5	0.019	100.0%	0.001	0.000	0.000	0.003	1.000
52228-C	0.076	75.0%	0.004	0.001	0.005	0.007	1.000
" -C(QC)	0.096	0.0%	0.005	0.005	0.005	0.005	1.000
" -C(SPK)	0.096	0.0%	0.005	0.006	0.005	0.005	1.000
BLK 11/7	0.096	20.0%	0.005	0.006	0.004	0.006	1.000
BLK SPK	0.096	0.0%	0.005	0.005	0.006	0.005	1.000
52221	0.057	33.3%	0.003	0.002	0.004	0.004	1.000
52232-A	0.153	37.5%	0.008	0.012	0.009	0.005	1.000
" -B	0.173	33.3%	0.009	0.011	0.012	0.006	1.000
" -D	0.000	0.0%	0.000	0.000	0.001	0.001	1.000
" -E	0.019	100.0%	0.001	0.000	0.002	0.002	1.000
" -F	0.019	0.0%	0.001	0.002	0.001	0.001	1.000
" -G	0.019	0.0%	0.001	0.001	0.001	0.001	1.000
52236-A	0.000	0.0%	0.000	0.001	0.000	0.000	1.000
A(QC)	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
BLANK	0.000	100.0%	0.001	0.003	0.002	0.000	1.000
RESLOPE	0.943	4.8%	0.042	0.040	0.044	0.043	1.06
14x2(.092)	0.081	33.3%	0.004	0.004	0.004	0.005	1.06
2(.261)	0.224	0.0%	0.011	0.011	0.011	0.012	1.06
52236A(.25)	0.203	20.0%	0.010	0.013	0.008	0.011	1.06
" B	0.000	0.0%	0.000	0.000	0.000	0.000	1.06
" B(SPK)	0.244	8.3%	0.012	0.011	0.012	0.013	1.06
" C	0.000	0.0%	0.000	0.001	0.000	0.000	1.06
BLK 11/11	0.000	0.0%	0.000	0.000	0.000	0.001	1.06
BLK SPK	0.223	10.0%	0.010	0.011	0.010	0.011	1.06
52233-A	0.667	3.3%	0.030	0.030	0.029	0.031	1.06
52236-D	0.000	0.0%	0.000	0.000	0.000	0.000	1.06
" D(QC)	0.000	0.0%	0.000	0.000	0.000	0.001	1.06
" D(SPK)	0.244	8.3%	0.012	0.013	0.010	0.013	1.06
" E	0.000	0.0%	0.000	0.000	0.000	0.001	1.06
52242-A	0.101	20.0%	0.005	0.006	0.006	0.005	1.06
" -B	0.101	20.0%	0.005	0.004	0.006	0.006	1.06
" -B(QC)	0.122	16.7%	0.006	0.005	0.008	0.005	1.06
" -B(.25)	0.353	5.9%	0.017	0.017	0.016	0.018	1.06
" -B(SPK)	0.353	0.0%	0.017	0.017	0.018	0.017	1.06
" -D	0.000	0.0%	0.000	-0.001	0.000	0.001	1.06
" -G	0.000	0.0%	0.000	0.000	0.000	0.000	1.06
BLANK	0.000	0.0%	0.000	0.000	0.001	0.000	1.06
RESLOPE	1.022	2.2%	0.045	0.045	0.044	0.047	.978
14x2(.092)	0.075	25.0%	0.004	0.006	0.004	0.004	.978
2(.261)	0.206	0.0%	0.011	0.012	0.011	0.011	.978
BLK 11/12	0.000	0.0%	0.000	0.001	0.001	0.000	.978
BLK SPK	0.206	9.1%	0.011	0.011	0.012	0.012	.978
4854-A	0.018	100.0%	0.001	0.000	0.002	0.001	.978
4890-A	0.018	100.0%	0.001	0.002	0.000	0.001	.978
52237-A	0.018	100.0%	0.001	0.001	0.002	0.002	.978
" -B	0.018	100.0%	0.001	0.000	0.001	0.002	.978
" -C	0.018	0.0%	0.001	0.001	0.001	0.001	.978
" -D	0.018	200.0%	0.001	0.001	0.004	0.000	.978
" -E	0.018	100.0%	0.001	0.001	0.000	0.002	.978
" -F	0.000	0.0%	0.000	0.000	0.000	0.000	.978
" -G	0.037	0.0%	0.002	0.003	0.002	0.002	.978
" G(QC)	0.000	0.0%	0.000	0.000	0.001	0.001	.978
" G(SPK)	0.244	0.0%	0.013	0.014	0.013	0.013	.978
52244-A	0.868	2.5%	0.040	0.041	0.041	0.040	.978
52253-A 1/10 > 34		0.0%	1.500	1.500	1.500	1.500	.978
" -B 1/10 > 34		0.0%	1.500	1.500	1.500	1.500	.978
52278	0.037	0.0%	0.002	0.002	0.003	0.002	.978
52279	0.056	33.3%	0.003	0.003	0.003	0.005	.978
BLANK	0.000	100.0%	0.002	0.004	0.000	0.002	.978
RESLOPE	0.943	2.4%	0.042	0.044	0.041	0.043	1.06
14x2(.092)	0.061	0.0%	0.003	0.003	0.004	0.003	1.06

	0.244	8.3%	0.012	0.013	0.013	0.010	1.06
> 34		0.0%	1.500	1.500	1.500	1.500	1.06
F	5.127	0.9%	0.219	0.222	0.219	0.218	1.06

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GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VIRIAN AA-975

OPERATOR: JOHN BRUNETTE

DATE: 11/18/85

BATCH: Cr; 11/5 - 11 and EPTX

MKP 11/21/85

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

SOLUTION	Cr mg/L	
14x2 (.092)	0.096	104%
2 (.261)	0.230	88%
52271 EPTX	0.038	
" (.25)	0.270	<.5 ✓
muF BLK 11/5	0.019	<.05
52228-C	0.076	7.2 ug/g
" -C (QC)	0.096	8.1
" -C (SPK)	0.096	
BLK 11/7	0.096	—
BLK SPK	0.096	—
52208-A	0.057	0.057 ✓
52221	0.057	0.057 ✓
52232-A	0.153	0.15 ✓
" -B	0.173	0.17 ✓
" -D	0.000	<.05 ✓
" -E	0.019	<.05 ✓
" -F	0.019	<.05 ✓
" -S	0.019	<.05 ✓
52236-A	0.000	<.05 ✓
A (QC)	0.000	<.05
14x2 (.092)	0.081	88%
2 (.261)	0.224	86%
52236A (.25)	0.203	81%
" B	0.000	<.05 ✓
" B (SPK)	0.244	98%
" C	0.000	<.05 ✓
BLK 11/11	0.000	<.05
BLK SPK	0.283	88%
52233-A	0.667	0.67 ✓
52236-D	0.000	<.05 ✓
" D (QC)	0.000	<.05
" D (SPK)	0.244	78%
" E	0.000	<.05 ✓
52242-A	0.101	0.10 ✓
" -B	0.101	0.10 ✓
" -B (QC)	0.122	0.12
" -B (.25)	0.353	96%
" -B (SPK)	0.353	76%
" -D	0.000	<.05 ✓
" -S	0.000	<.05 ✓
14x2 (.092)	0.075	82%
2 (.261)	0.206	79%
BLK 11/12	0.000	<.05
BLK SPK	0.226	90%
4854-A	0.018	<.05 ✓
4890-A	0.018	<.05 ✓
52237-A	0.018	<.05 ✓

repeated below sample # 62-65

repeat blk 11/7
blk spk

.241/.250

" -D	0.018	
" -E	0.018	<.05 ✓
" -F	0.000	<.05 ✓
" -G	0.037	<.05 ✓
" G(DC)	0.000	<.05
" G(SPK)	0.244	98%
" 44-A	0.868	0.37 ✓
52253-A 1/10	> sample # 6	
" -B 1/10	> 67	
52278	0.037	<.05 ✓
52279	0.056	0.056 ✓
14x2(.092)	0.061	66%
52278-C	0.000	<5 ug/g ✓
" C(DC)	0.020	<5 "
" C(TS)	0.265	96% 24.1 ug/g
" C(SPK)	0.244	86% 21.6 "
52253-A /100	> next run	
" /100	5.127	repeated below

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

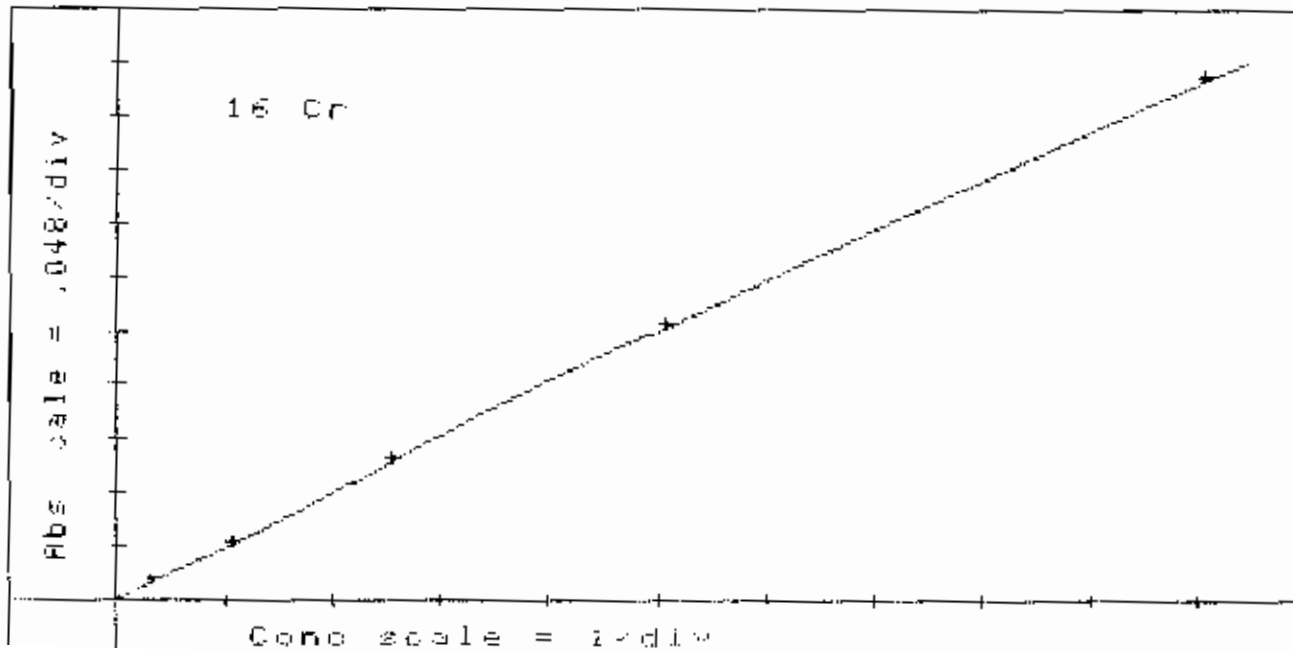
VARIAN AA-975

OPERATOR: JOHN BRUNETTE
 DATE: 11/18/85
 BATCH: Cr; 11/5 - 11 and EPTX

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	100.0%	0.001	0.001	0.001	0.003	1.000
STANDARD 1	0.250	16.7%	0.012	0.015	0.012	0.011	1.000
STANDARD 2	1.000	2.2%	0.046	0.047	0.047	0.044	1.000
STANDARD 3	2.500	0.8%	0.121	0.121	0.122	0.120	1.000
STANDARD 4	5.000	0.4%	0.239	0.239	0.240	0.240	1.000
STANDARD 5	10.00	0.2%	0.460	0.460	0.459	0.461	1.000



14x2(.092)	0.083	25.0%	0.004	0.004	0.005	0.003	1.000
2(.261)	0.229	18.2%	0.011	0.010	0.010	0.014	1.000
52253A1/1000	6.440	0.7%	0.305	0.305	0.307	0.303	1.000
" B 1/100	4.627	1.3%	0.223	0.227	0.222	0.220	1.000
IDL B1 Cr	0.229	9.1%	0.011	0.012	0.012	0.011	1.000
" B2 "	0.250	0.0%	0.012	0.012	0.012	0.013	1.000
" B3	0.208	0.0%	0.010	0.011	0.010	0.010	1.000
" B4	0.250	8.3%	0.012	0.011	0.012	0.013	1.000
" B5	0.208	0.0%	0.010	0.010	0.010	0.011	1.000
" B6	0.208	10.0%	0.010	0.011	0.009	0.012	1.000
" B7	0.229	9.1%	0.011	0.010	0.012	0.012	1.000
	6.684	0.3%	0.316	0.318	0.316	0.316	1.000
	5.000	0.8%	0.239	0.238	0.242	0.239	1.000
	6.773	0.0%	0.320	0.321	0.320	0.320	1.000
	1.062	2.0%	0.049	0.049	0.050	0.050	1.000
	0.573	3.7%	0.027	0.027	0.026	0.028	1.000

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GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE
 DATE: 11/18/85
 BATCH: Cr; 11/5 - 11 and EPTX

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

SOLUTION	Cr mg/L	
14x2(.092)	0.083	90%
2(.261)	0.229	88%
52253A1/1000 ^{IDL}	6.440	6,440 ✓
" B 1/100 ^{IDL}	4.627	460 ✓
IDL B1 Cr	0.229	
" B2 "	0.250	$\bar{x} = 0.226$
" B3	0.208	
" B4	0.250	SD = .0189
" B5	0.208	
" B6	0.208	RSD = 8.36
" B7	0.229	
52253A(.50) ^Y	6.684	49%
" B(.50) ^Y	5.000	75%
52153-A (.50) ^Y	6.773	67%
" A(.50) ^Y	1.062	
" A(^Y	0.573	97%

} EPTX spikes

Cr

QUALITY CONTROL

EPA #	TRUE VALUE	MEAN RECOVERY	% RECOVER
14 x 2	0.097	0.096 / 0.081 / 0.075	104 / 88 / 82
2	0.261	0.230 / 0.224 / 0.256	88 / 86 / 79

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

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
52236-B (spk)	0.244	<.05	0.244	0.25	98
BS 11/11	0.223	<.05	0.223	"	86
52236-B (spk)	0.244	<.05	0.244	"	98
52242-B (spk)	0.353	0.112	0.241	"	96
BS 11/12	0.225	<.05	0.225	"	96
52237-G (spk)	0.244	<.05	0.244	"	98
52228-C (spk)	21.6 ug/g	<5	21.6	25	86

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

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{1A-B1 \times 200}{(A+B)}$
52236-A	<.05	<.05	NC
" D	<.05	<.05	NC
52242-B	0.10	0.12	18
52237-G	<.05	<.05	NC
52228-C	<5 ug/g	<5	NC

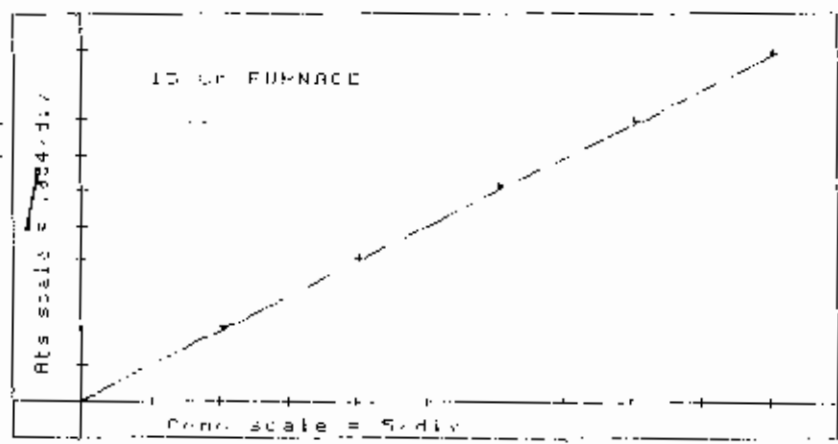
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN A0-225
 OPERATOR: D. DUMBLETON
 DATE: 01/20/86
 BATCH:

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

AUTO-PROGRAM 15 Cr FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	9.1%	0.001	0.001 0.010	1.000
STANDARD 1	10.00	0.9%	0.106	0.106 0.107	1.000
STANDARD 2	20.00	0.7%	0.213	0.212 0.209	1.000
STANDARD 3	30.00	3.7%	0.320	0.311 0.331	1.000
STANDARD 4	40.00	0.2%	0.427	0.423 0.421	1.000
STANDARD 5	50.00	1.3%	0.526	0.522 0.521	1.000

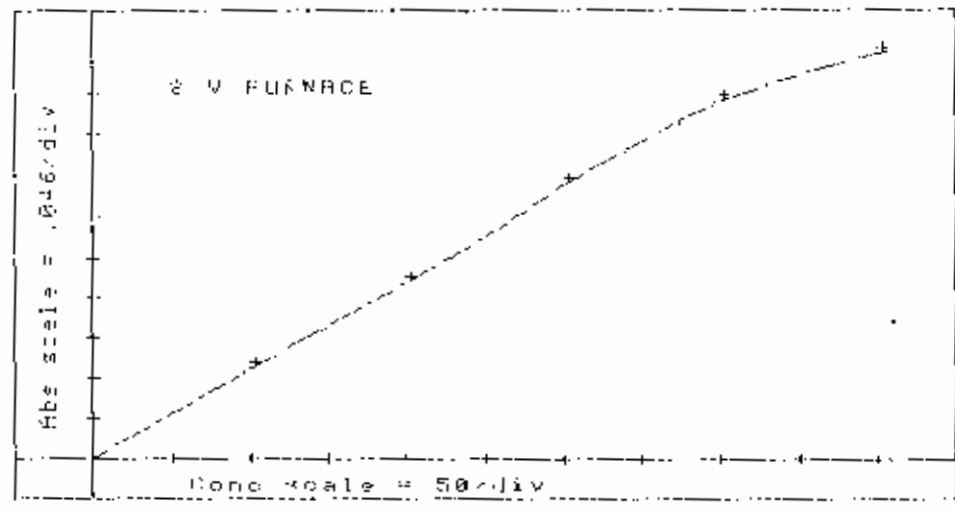


1#2	13.47	4.7%	0.143	0.178 0.147	1.000
2	* 265.4	3.0%	0.284	0.277 0.292	1.000
52358 A	0.000	37.7%	-0.002	-0.004 -0.000	1.000
52358 B	0.000	20.0%	-0.005	-0.006 -0.004	1.000
52358 D	0.000	200.0%	-0.001	-0.002 0.001	1.000
52358 D	0.000	66.7%	-0.003	-0.001 -0.005	1.000
BLK 1/7	1.981	14.3%	0.021	0.024 0.019	1.000
BLK 5PK	50.19	0.0%	0.528	0.508 0.528	1.000
52613 A	7.924	1.2%	0.094	0.095 0.094	1.000
100ul	24.89	7.1%	0.266	0.253 0.280	1.000
52613 B	2.350	24.0%	0.023	0.021 0.020	1.000
52613 BCD	1.086	5.0%	0.020	0.020 0.021	1.000
100ul	19.53	1.7%	0.208	0.211 0.205	1.000
52613 C	8.967	1.1%	0.095	0.094 0.096	1.000
100ul	24.15	0.4%	0.258	0.257 0.259	1.000
BLANK	0.000	42.9%	-0.007	-0.010 -0.005	1.000
RESLOPE	70.55	0.5%	0.717	0.720 0.717	.972
1#2	14.09	0.6%	0.154	0.155 0.154	.972
2	* 259.7	0.7%	0.706	0.703 0.709	.972
52613 D	5.043	5.5%	0.055	0.058 0.052	.972
100ul	26.41	1.4%	0.291	0.294 0.288	.972
52613 E	21.06	3.3%	0.240	0.246 0.234	.972
100ul	38.05	10.1%	0.414	0.444 0.384	.972
52613 F	2.750	6.7%	0.070	0.032 0.079	.972
100ul	19.98	4.4%	0.219	0.227 0.212	.972
52613 G	0.117	2.9%	0.004	0.035 0.024	.972
100ul	70.34	0.9%	0.723	0.722 0.722	.972
52613 H	2.934	3.1%	0.032	0.033 0.031	.972
100ul	17.09	1.1%	0.187	0.187 0.186	.972
BLK 11/10	0.091	100.0%	0.001	0.000 0.002	.972
BLK 5PK	45.79	1.0%	0.496	0.492 0.500	.972
52737 A	1.100	65.3%	0.012	0.007 0.017	.972
BLANK	0.000	50.0%	0.000	0.002 0.001	.972
RESLOPE	17.49	0.0%	0.106	0.106 0.106	1.143
1#2	12.00	2.5%	0.117	0.122 0.117	1.143
2	* 269.7	0.0%	0.250	0.251 0.251	1.143
100ul	16.25	2.4%	0.151	0.140 0.154	1.143
52737 B	0.000	0.0%	0.000	0.001 0.001	1.143
100ul	17.00	1.7%	0.158	0.160 0.156	1.143
52737 C	0.431	75.0%	0.004	0.002 0.007	1.143
100ul	12.18	0.0%	0.113	0.121 0.106	1.143
52737 D	0.000	100.0%	-0.001	0.000 0.000	1.143
100ul	4.852	11.1%	0.045	0.049 0.042	1.143
52737 E	0.000	66.7%	-0.003	-0.002 0.001	1.143
100ul	5.477	45.1%	0.051	0.033 0.068	1.143
52737 F	0.107	200.0%	0.001	0.003 0.000	1.143
100ul	11.10	14.6%	0.103	0.092 0.114	1.143

52257 A	0.323	56.7%	0.003	0.005	0.001	1.143
100u1	9.057	3.6%	0.004	0.002	0.007	1.143

AUTO-PROGRAM B V FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	4.5%	-0.022	-0.023 -0.022	1.000
STANDARD 1	100.0	6.8%	0.103	0.098 0.108	1.000
STANDARD 2	200.0	1.5%	0.200	0.198 0.203	1.000
STANDARD 3	300.0	0.3%	0.311	0.310 0.312	1.000
STANDARD 4	400.0	1.2%	0.404	0.400 0.400	1.000
STANDARD 5	500.0	4.2%	0.457	0.443 0.471	1.000



1*2	291.0	4.3%	0.301	0.311 0.292	1.000
?	*10.0	16.3%	0.104	0.117 0.092	1.000
52358 A	24.07	20.0%	0.025	0.029 0.021	1.000
52358 B	14.56	6.7%	0.015	0.016 0.014	1.000
52358 C	13.57	7.1%	0.014	0.015 0.014	1.000
52358 D	15.53	0.0%	0.016	0.016 0.016	1.000
BLK 1/7	16.50	11.0%	0.017	0.016 0.017	1.000
BLK 5/7	192.5	3.6%	0.193	0.188 0.199	1.000
52613 A	46.60	18.0%	0.046	0.055 0.042	1.000
100u1	77.56	1.3%	0.080	0.081 0.079	1.000
52613 B	42.71	2.3%	0.044	0.045 0.044	1.000
52613 BLK	46.60	8.3%	0.048	0.045 0.051	1.000
100u1	99.02	18.6%	0.100	0.089 0.114	1.000
52613 C	70.87	1.4%	0.073	0.074 0.073	1.000
100u1	93.20	5.2%	0.096	0.093 0.100	1.000
BLANK	0.000	2.4%	0.085	0.084 0.087	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN OA-975
OPERATOR: D. DUMFRIES
DATE: 01/22/86
BATCH:

Handwritten: 1/24/86

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

SOLUTION	Cr ug/l	V ug/l
1*2	17.47	291.2
2	* 265.4	* 10.0
52250 A	0.000	< 5
52250 B	0.000	14.56
52250 C	0.000	13.59
52250 D	0.000	15.83
BLK 1/7	1.901	16.50
BLK 5FK	50.19	97.5
52613 A	7.924	16.60
100ul	24.09	77.66
52613 B	7.358	42.71
52613 BOC	1.886	46.60
100ul	19.53	99.02
52613 C	8.962	70.87
100ul	24.15	74.96
1*2	14.09	10.76
2	* 259.7	100.70
52613 D	5.047	5.0
100ul	26.41	10.76
52613 E	21.86	21.9
100ul	38.05	91.90
52613 F	2.750	< 5
100ul	19.93	10.070
52613 G	3.117	< 5
100ul	20.34	10.270
52613 H	2.954	< 5
100ul	17.09	85.9
BLK 11/12	0.091	< 5
BLK 5FK	45.79	92.1
52237 A	1.100	< 5
1*2	12.82	9.076
2	* 269.7	16.770
100ul	16.25	8.176
52237 B	0.000	< 5
100ul	17.00	85.96
52237 C	0.431	< 5
100ul	17.10	60.70
52237 D	0.000	< 5
100ul	4.852	2.170
52237 E	0.000	< 5
100ul	5.459	2.970
52237 F	0.107	< 5
100ul	11.10	55.20
52237 B	0.323	< 5
100ul	9.057	46.96

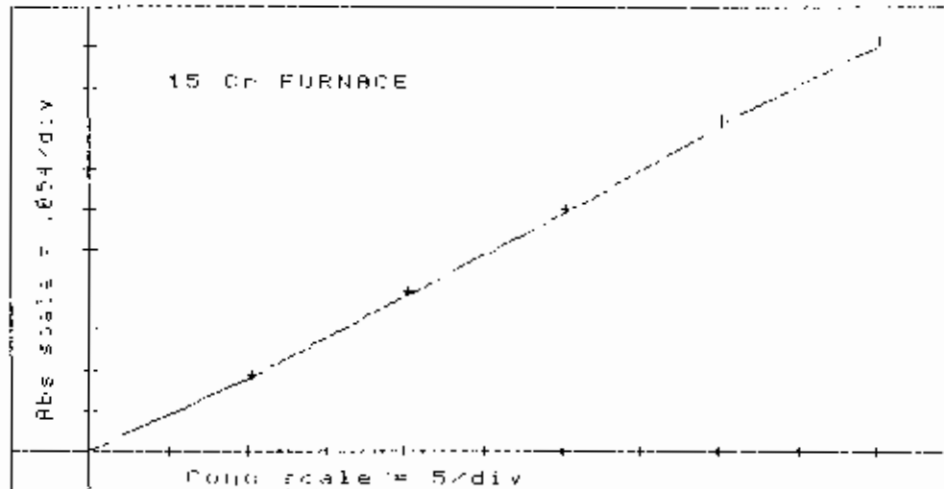
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-9707
 OPERATOR: C. DUMELION
 DATE: 01/30/86
 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	400.0%	0.001	-0.007 0.004	1.000
STANDARD 1	10.00	9.4%	0.076	0.070 0.103	1.000
STANDARD 2	20.00	2.0%	0.208	0.208 0.200	1.000
STANDARD 3	30.00	3.5%	0.316	0.308 0.324	1.000
STANDARD 4	40.00	1.6%	0.433	0.428 0.439	1.000
STANDARD 5	50.00	0.2%	0.536	0.536 0.507	1.000



1*2	13.48	6.8%	0.133	0.127 0.140	1.000
2	26.76	4.4%	0.274	0.265 0.283	1.000
BLK [1/2]	0.000	12.5%	-0.008	-0.007 -0.009	1.000
BLK SPK	10.00	4.0%	0.100	0.103 0.097	1.000
52318 A	0.000	0.0%	0.000	0.001 0.000	1.000
52318 AGC	1.041	10.0%	0.010	0.011 0.009	1.000
100ul	18.65	1.1%	0.190	0.192 0.189	1.000
52318 B	0.000	113.7%	-0.008	0.005 -0.000	1.000
100ul	17.67	0.6%	0.179	0.180 0.179	1.000
52318 C	1.250	0.0%	0.012	0.012 0.012	1.000
100ul	18.92	1.6%	0.193	0.191 0.196	1.000
52318 D	0.000	200.0%	0.000	0.015 -0.002	1.000
100ul	19.73	2.0%	0.202	0.199 0.205	1.000
52318 E	0.312	66.7%	0.003	0.005 0.001	1.000
100ul	19.10	5.6%	0.195	0.187 0.203	1.000
BLANK	0.000	0.0%	-0.005	-0.005 -0.005	1.000
RESLOPE	22.13	8.3%	0.229	0.243 0.210	.903
1*2	14.00	0.0%	0.156	0.156 0.156	.903
2	28.2	6.6%	0.302	0.315 0.289	.903
52318 F	0.846	11.7%	0.009	0.017 0.007	.903
100ul	16.20	7.3%	0.182	0.178 0.187	.903
52318 G	0.470	100.0%	0.005	0.009 0.000	.903
100ul	17.25	2.6%	0.190	0.199 0.191	.903
BLK [1/2]	0.000	200.0%	-0.001	-0.003 0.000	.903
BLK SPK	10.74	5.2%	0.116	0.117 0.111	.903
52237 D	0.282	66.7%	0.003	0.005 0.001	.903
100ul	16.84	1.1%	0.190	0.188 0.192	.903
52237 E	0.282	11.7%	0.003	0.007 0.000	.903
100ul	17.01	0.5%	0.192	0.193 0.191	.903
52237 B	0.198	50.0%	0.002	0.003 0.001	.903

VARIAN 66-9755
 OPERATOR: D. DUMBLETON
 DATE: 01/30/06
 BATCH:

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

SOLUTION	Dr ug/l
1#2	17.48
2	* 261.6
BLK 11/26	0.000
BLK 9PK	10.58
52318 A	0.000
52318 ABC	1.041
100ul	18.65
52318 B	0.000
100ul	17.67
52318 C	1.250
100ul	18.92
52318 D	0.625
100ul	19.73
52318 E	0.312
100ul	19.10
1#2	14.08
2	* 259.2
52318 F	0.156
100ul	16.20
52318 G	0.470
100ul	17.25
BLK 11/12	0.000
BLK 9PK	10.74
52237 D	0.282
100ul	16.84
52237 E	0.282
100ul	17.01
52237 G	0.188
52237 GNC	0.188
100ul	16.36

Subpart 9D: Raw Data for Cobalt

METALS ANALYSIS DATA SHEET

REV.

METAL Co DATE 12/2/85 ANALYST JB REVIEWER 2/12/85
 INSTRUMENT (AA) 240.1 nm Voltage 460 V Flame ANALYSIS METHOD
 Current 5 a Split 0.3 nm 12/5/85 Gas Air / Acet Hydride
N₂ Integ. 4 sec 12/5/85 Reduc. Acid

INITIAL CALIBRATION *See attached 7/12/85*

STANDARDS:	#1	#2	#3	#4	#5
Stock <u>12/2/85</u>	Conc. ug/ml <u>2.500</u>	<u>5.000</u>	<u>0.250</u>	<u>0.125</u>	<u>0.050</u>
EPA Check wl 284 2	Known <u>0.261</u>	Mean <u>0.232</u>	SD <u>0.018</u>	RSD <u>7.01</u>	% Recovered <u>89%</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 11/12	<.05							
BLK SPK	0.245		98%					
52237-A <i>DE</i>	0.268			200	200	?	<.05	
B	<.05						<.05	
C	<.05						<.05	
D	<.05						<.05	
E	<.05						<.05	
F	<.05						<.05	
G	<.05						<.05	
G(L)	<.05						<.05	
G(SPK)	0.268		107%				0.268	
BLK 11/26	<.05							
BLK SPK	0.256		102%					
52318-A URS	<.05			200	200		<.05	
A(QQ)	<.05						<.05	
A(SPK)	0.240		96%				0.240	
B	<.05				176		<.05	
C	<.05				181		<.05	
D	<.05				177		<.05	
E	<.05				184		<.05	
F	<.05				182		<.05	
G	<.05				181		<.05	
BS 0.25	0.205		82%					

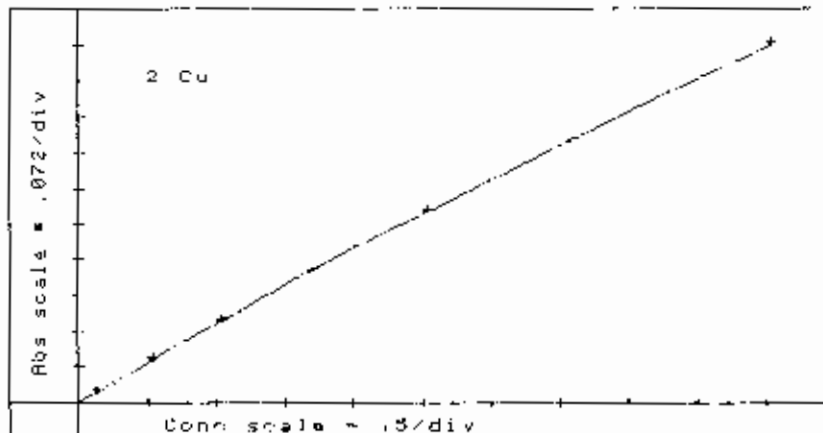
Subpart 10D: Raw Data for Copper

VARIAN A0-975
 OPERATOR: D. DUMBLETON
 DATE: 11/25/85
 BATCH:

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			SLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 1	0.100	6.7%	0.015	0.015	0.016	0.016	1.000
STANDARD 2	0.500	1.3%	0.079	0.079	0.080	0.080	1.000
STANDARD 3	1.000	0.0%	0.158	0.158	0.158	0.158	1.000
STANDARD 4	2.500	0.3%	0.380	0.380	0.382	0.380	1.000
STANDARD 5	5.000	0.4%	0.716	0.713	0.719	0.716	1.000



1*2	0.017	50.0%	0.002	0.002	0.003	0.003	1.000
2	0.334	0.0%	0.052	0.052	0.052	0.053	1.000
BLK 11/11	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
BLK SPK	0.113	0.0%	0.017	0.017	0.017	0.017	1.000
52067 A	0.530	0.0%	0.084	0.084	0.084	0.084	1.000
52067 B	0.075	7.1%	0.014	0.014	0.015	0.015	1.000
52067 C	0.171	0.0%	0.026	0.026	0.026	0.027	1.000
52067 D	0.040	16.7%	0.006	0.006	0.005	0.007	1.000
52067 BDC	0.040	0.0%	0.006	0.007	0.006	0.006	1.000
52067 DSPK	0.145	0.0%	0.022	0.022	0.022	0.022	1.000
52067 E	0.040	0.0%	0.006	0.006	0.006	0.006	1.000
52067 F	0.033	0.0%	0.005	0.006	0.005	0.005	1.000
52067 B	0.020	33.3%	0.003	0.004	0.004	0.002	1.000
52241 A	0.033	0.0%	0.005	0.006	0.005	0.005	1.000
52278	0.053	12.5%	0.008	0.009	0.009	0.008	1.000
BLK 11/12	0.000	0.0%	0.000	0.001	0.000	0.000	1.000
BLK SPK	0.106	0.0%	0.016	0.017	0.016	0.016	1.000
52237 A	0.000	0.0%	0.000	0.001	0.001	0.000	1.000
52237 B	0.006	0.0%	0.001	0.001	0.001	0.001	1.000
52237 C	0.006	0.0%	0.001	0.001	0.001	0.001	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
RESLOPE	0.500	1.3%	0.079	0.080	0.079	0.078	1.000
1*2	0.020	33.3%	0.002	0.003	0.004	0.004	1.000
2	0.340	0.0%	0.053	0.054	0.053	0.053	1.000
52237 D	0.006	0.0%	0.001	0.002	0.001	0.001	1.000
52237 E	0.006	0.0%	0.001	0.001	0.002	0.001	1.000
52237 F	0.006	100.0%	0.001	0.002	0.002	0.001	1.000
52237 B	0.013	0.0%	0.002	0.002	0.002	0.002	1.000
52237 BDC	0.006	0.0%	0.001	0.001	0.001	0.002	1.000
52237 BSPK	0.119	0.0%	0.018	0.018	0.019	0.018	1.000
4907 C	0.066	0.0%	0.010	0.010	0.010	0.010	1.000
4907 D	0.033	20.0%	0.005	0.006	0.004	0.005	1.000
4907 E	0.040	0.0%	0.006	0.006	0.006	0.006	1.000
4907 F	0.033	20.0%	0.005	0.006	0.005	0.004	1.000
BLK 11/18	0.013	0.0%	0.002	0.002	0.002	0.002	1.000
BLK SPK	0.113	0.0%	0.017	0.018	0.017	0.017	1.000
52255 A	0.026	0.0%	0.004	0.004	0.004	0.004	1.000
52256 A	0.020	33.3%	0.003	0.003	0.004	0.004	1.000
4085 A	0.013	0.0%	0.002	0.002	0.002	0.002	1.000
4085 B	0.013	50.0%	0.002	0.003	0.003	0.002	1.000
BLK 11/14	0.013	0.0%	0.002	0.002	0.002	0.002	1.000
BLK SPK	0.119	0.0%	0.018	0.018	0.018	0.019	1.000
DLANK	0.000	0.0%	0.002	0.002	0.002	0.002	1.000
RESLOPE	0.493	1.3%	0.078	0.077	0.079	0.078	1.014
1*2	0.013	50.0%	0.002	0.002	0.003	0.003	1.014
2	0.332	0.0%	0.051	0.051	0.051	0.051	1.014
52260 A	0.013	50.0%	0.002	0.003	0.003	0.002	1.014
52260 B	0.006	100.0%	0.001	0.003	0.002	0.000	1.014
52260 C	0.006	100.0%	0.001	0.002	0.001	0.002	1.014
52260 D	0.000	0.0%	0.000	0.000	0.001	0.001	1.014

52260 B	0.013	0.0%	0.002	0.002	0.002	0.003	1.014
52260 H	0.000	0.0%	0.000	0.000	0.000	0.000	1.014
52260 I	0.000	0.0%	0.000	0.000	0.000	0.000	1.014
52260 J	0.006	100.0%	0.001	0.002	0.002	0.001	1.014
52260 K	0.006	0.0%	0.001	0.001	0.001	0.001	1.014
52260 L	0.000	0.0%	0.000	0.000	0.001	0.001	1.014
52260 M	0.000	0.0%	0.000	0.000	-0.001	0.000	1.014
52260 N	0.000	0.0%	0.000	0.000	0.000	0.000	1.014
52260 O	0.000	0.0%	0.000	0.000	0.000	0.000	1.014
52260 P	0.006	0.0%	0.001	0.001	0.002	0.001	1.014
52260 Q	0.027	0.0%	0.004	0.004	0.004	0.005	1.014
52260 R	0.244	2.7%	0.037	0.037	0.036	0.038	1.014
BLANK	0.000	0.0%	0.000	-0.001	0.000	0.000	1.014
KESLOPE	0.473	0.0%	0.078	0.078	0.078	0.079	1.014
1*2	0.017	50.0%	0.002	0.003	0.002	0.003	1.014
2	0.339	0.0%	0.052	0.052	0.052	0.052	1.014
52260 S	0.060	11.1%	0.009	0.010	0.010	0.009	1.014
52260 SSC	0.060	0.0%	0.009	0.010	0.009	0.009	1.014
52260 SSPK	0.173	0.0%	0.026	0.026	0.026	0.026	1.014
52260 T	0.000	0.0%	0.000	0.001	0.000	0.001	1.014
52260 U	0.013	0.0%	0.002	0.003	0.002	0.002	1.014

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 11/25/85
 BATCH:

JD 11/27/85
QC CONTROL
11/28/85

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

SOLUTION	Cu mg/L	
1*2	0.013	
2 (0.314)	0.334	-100%
BLK 11/11	0.000	
BLK SPK	0.113	
52067 A	0.530	0.5 ✓
52067 B	0.093	0.093 ✓
52067 C	0.171	0.17 ✓
52067 D	0.090	0.090 ✓
52067 DDC	0.040	0.040 ✓
52067 DSPK	0.145	105% ✓
52067 E	0.040	0.040 ✓
52067 F	0.053	0.053 ✓
52067 G	0.020	0.020 ✓
52241 A	0.033	0.033 ✓
52278	0.053	0.053 ✓
BLK 11/12	0.000	
BLK SPK	0.106	106% ✓
52237 A	0.000	0.000 ✓
52237 B	0.006	0.006 ✓
52237 C	0.006	0.006 ✓
1*2	0.020	
2	0.340	
52237 D	0.006	0.006 ✓
52237 E	0.006	0.006 ✓
52237 F	0.006	0.006 ✓
52237 G	0.013	0.013 ✓
52237 DDC	0.006	0.006 ✓
52237 DSPK	0.119	0.119 ✓
4907 C	0.066	0.066 ✓
4907 D	0.033	0.033 ✓
4907 E	0.040	0.040 ✓
4907 F	0.033	0.033 ✓
BLK 11/18	0.013	
BLK SPK	0.117	
52255 A	0.026	0.026 ✓
52256 A	0.020	0.020 ✓
4885 A	0.013	0.013 ✓
4885 B	0.013	0.013 ✓
BLK 11/19	0.013	
BLK SPK	0.119	
1*2	0.013	
2	0.332	
52260 A	0.013	0.013 ✓
52260 B	0.006	0.006 ✓
52260 C	0.006	0.006 ✓
52260 D	0.000	0.000 ✓
52260 E	0.006	0.006 ✓
52260 F	0.000	0.000 ✓
52260 G	0.013	0.013 ✓
52260 H	0.000	0.000 ✓
52260 I	0.000	0.000 ✓
52260 J	0.006	0.006 ✓
52260 K	0.006	0.006 ✓
52260 L	0.000	0.000 ✓
52260 M	0.000	0.000 ✓
52260 N	0.000	0.000 ✓
52260 O	0.000	0.000 ✓
52260 P	0.006	0.006 ✓
52260 Q	0.027	0.027 ✓
52260 R	0.244	0.244 ✓
1*2	0.013	
2	0.339	
52260 S	0.060	0.060 ✓

C_w 11/25
QUALITY CONTROL

EPA #	TRUE VALUE	MEAN RECOVERY	% RECOVERY
122	0.220 0.018	0.215	28.83
2	0.221	0.232	19

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

SAMPLE & NUMBER	TOTAL REC.	AMT. IN SAMPLE	NET REC.	AMT. ADDED	% REC.
BK SPK	0.113	<0.02	0.113	0.10	113
S7267-D	0.145	0.040	0.103	0.10	105
BK SPK	0.106	<0.02	0.106	0.10	106
S7277-G	0.115	<0.02	0.115	0.10	115
BK SPK	0.105	<0.02	0.105	0.10	105
S7260-S	0.122	0.060	0.162	0.14	115

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

SAMPLE & NUMBER	ORIGINAL VALUE (A)	DUPLICATE VALUE (B)	% RELATIVE ERROR $\frac{ A-B \times 100}{(A+B)}$
S7267-D	0.040	0.040	0
S7277-G	<0.02	<0.02	N/A
S7260-S	0.060	0.060	0

Subpart 11D: Raw Data for Iron & Zinc

QC *checked*
12/19

METALS ANALYSIS DATA SHEET

DATE 12/3/85
ANALYST JB

"A" Channel	<i>metals were not run simultaneously</i> "B" Channel
Metal <u>Fe</u>	<i>12/15/85</i> Metal <u>Zn</u>
Flame Type <u>Air/Acet</u> Wave Length <u>248.3</u>	Flame Type <u>Air/Acet</u> Wave Length <u>213.9</u>
Lamp Current <u>7</u> D ₂ Background <u>off</u>	Lamp Current <u>3</u> D ₂ Background <u>on</u>
Voltage <u>460</u> Slit Width <u>0.3</u>	Voltage <u>620</u> Slit Width <u>0.0</u>

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion	Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
STD #1		1.000			STD #1		0.200		
STD #2	0.300	2.000			STD #2	0.266	1.000		
STD #3		0.500			STD #3		0.100		
STD #4		0.200			STD #4		0.040		
STD #5		0.050			STD #5		0.010		
Samples					Samples				
#1	BLK 11/20	<.05			#1		<.01		
#2	B3	0.272		109%	#2		0.046		92%
#3	S2310-A WM	0.62			#3				
#4	B	<.05			#4				
#5	C	<.05			#5				
#6	G(AC)	<.05			#6				
#7	B(2pk)	0.277		110%	#7				
#8	D	2.05			#8				
#9	E	0.058			#9				
#10	F	0.16			#10				
#11	G	<.05			#11				
#12	H	0.058			#12				
#13	I	<.05			#13				
#14	J	0.080			#14				
#15	K	0.13			#15				
#16	S211-A	0.060			#16				
#17	B	0.82	1/10	8.2	#17				
#18	C	0.81			#18				
#19	S2337-A	0.81			#19		<.01		
#20	B	0.67	1/10	6.7	#20		<.01		
#21	C	0.53			#21		<.01		
#22	D	0.49			#22		<.01		
#23	E	1.1			#23		<.01		
#24	F	1.0			#24		<.01		
#25	G	0.95			#25		<.01		
#26	G(AC)	0.93			#26		<.01		
#27	G(2pk)	1.211		108%	#27		0.077		95%
#28	S2362-	2.2	1/10	22	#28				
#29	S2310-B	0.87	1/100	87	#29				
#30	BLK 11/27	<.05			#30		<.01		
#31	B3	0.282		113%	#31		0.044		83%
#32	S1931-K	0.0	1/10	5.00	#32		0.70		35
#33	L	0.78		1.6	#33		0.027		0.054
#34	L(AC)	0.78		1.6	#34		0.030		0.060

All Results in mg/l unless specified otherwise.
If space is empty, the sample is the same as under the "A" Channel.

METALS ANALYSIS DATA SHEET

DATE _____
ANALYST _____

"A" Channel					"B" Channel				
Metal <u>Fe</u>					Metal <u>Zn</u>				
Flame Type _____		Wave Length _____			Flame Type _____		Wave Length _____		
Lamp Current _____		D ₂ Background _____			Lamp Current _____		D ₂ Background _____		
Voltage _____		Slit Width _____			Voltage _____		Slit Width _____		
Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion	Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
STD #1					STD #1				
STD #2					STD #2				
STD #3					STD #3				
STD #4					STD #4				
STD #5					STD #5				
Samples					Samples				
#1	51731-L(sph)	1.021	100%	96%	#1	0.082			107%
#2	W	0.10		0.20	#2	<.01			<.01
#3	R	0.90	1/10	22	#3	0.099			0.25
#4	KK	1.0		2.0	#4	0.015			0.030
#5	KK(AI)	0.89		1.6	#5	<.01			<.01
#6	KK(sph)	1.667			#6	0.052			104%
#7	51931 Z ₂₀				#7	0.049			0.068
#8	52255-B	0.96		1.9	#8				
#9	C	0.36		0.72	#9				
#10	52263	0.24		0.48	#10				
#11	52278	0.94	1/10	9.4	#11				
#12	52279	3.4	1/10	34	#12				
#13	BLK 11/4				#13				
#14	BS				#14				
#15	51921-A Low				#15	0.14	1/10		130 ug/470
#16	A(GC)				#16	0.11	1/10		110 "
#17	A(sph)				#17	0.17	1/10		140 "
#18	B				#18	0.56			58 "
#19	C				#19	0.48			49 "
#20	BLK 11/16	<.05			#20				
#21	BS	0.290		116%	#21				
#22	52304-A Precision	0.16		0.20	#22				
#23	B	0.39		0.40	#23				
#24	C	0.15		0.24	#24				
#25	D	0.23		0.34	#25				
#26	E	0.056		0.096	#26				
#27	F	<.05		<.25	#27				
#28	F(AI)	<.05		<.25	#28				
#29	F(sph)	0.270		108%	#29				
#30	4885 B WRITE				#30	<.01			<.01
#31	"				#31				
#32	"				#32				
#33					#33				
#34					#34				

All Results in mg/l unless specified otherwise.
If space is empty, the sample is the same as under the "A" Channel.

"A" Channel

12/3/85

A. Precision Data

Fe Varian

Sample and Number	Amount in Sample (A)	QC (B)	% RE $(A-B)/(A+B) \times 100$
(1) S2210-C	<.05	<.05	N/C
(2) S2237-G	0.95	0.93	2.1
(3)			
(4)			

B. Recovery Data (Includes Digest, Blank, and Matrix Spike)

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
(1) BS 11/26	0.272	<.05	0.25	0.272	109
(2) S2210-C (spike)	0.272	"	"	0.272	116
(3) S2237-G (spike)	1.21	0.94	"	0.271	105
(4) BS 11/27	0.272	<.05	"	0.272	115

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD* SD/0.07
(1) WP 284 2	0.796	0.816	102%	0.84
(2)				
(3)				
(4)				

Statistics From AAS Program 42

"B" Channel

Zn

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE $(A-B)/(A+B) \times 100$
(1) S2237-G	<.01	<.01	N/C
(2)			
(3)			
(4)			

B. Recovery Data (Includes Digest, Blank, and Matrix Spike)

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
(1) BS 11/26	0.046	<.01	0.050	0.046	92
(2) S2237-G (spike)	0.049	<.01	"	0.049	98
(3) BS 11/27	0.044	<.01	"	0.044	88
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD* SD
(1) WP 284 2	0.415	0.45	107%	1.54 0.21
(2)				
(3)				
(4)				

Statistics From AAS Program 42

**Enter these results in QC Notebook.

"A" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE	$\frac{A-B}{(A+B)} \times 100$
(1) 51931-L(80)	1.6	1.6	0	
(2) 52304-F(40)	4.25	4.25	100	
(3)				
(4)				

B. Recovery Data (Includes Digest, Blank, and Matrix Spike)

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
(1) 185 51931-AK	1.07	0.84	0.25	0.23	92
(2) L(spik)	2.07	1.66	0.50	0.483	96
(3) 52304-F(spik)	0.270	4.25	0.25	0.270	108
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*	SD
(1) 2	0.776	0.868	109%	7.71	0.023
(2)					
(3)					
(4)					

Statistics from AAS Program 42

"B" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE	$\frac{A-B}{(A+B)} \times 100$
(1)				
(2)				
(3)				
(4)				

B. Recovery Data (Includes Digest, Blank, and Matrix Spike)

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
(1) 51971-A(10) %	0.163	0.11	0.050	0.053	106
(2) 51931-L(spik)	0.164	0.057	0.11	0.107	107
(3)					
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1)				
(2)				
(3)				
(4)				

Statistics from AAS Program 42

**Enter these results in QC Notebook.

Subpart 120: Raw Data for Magnesium

METALS ANALYSIS DATA SHEET

REV. 83

METAL Pb DATE 1/21/85 ANALYST JC REVIEWER JC

INSTRUMENT (AA) 245.2 nm Voltage 350 V
 Current 5 a Split 1.0 nm
 D₂ off Integ. 4 sec
 ANALYSIS METHOD
 Flame Hydride
 Gas Air / Acet Acid
 Reduc.

INITIAL CALIBRATION

- total vol added to stds/samples

STANDARDS:		#1	#2	#3	#4	#5
Stock	Cone, ug/ml	<u>5.00</u>	<u>10.00</u>	<u>2.50</u>	<u>0.50</u>	<u>0.25</u>
<u>11/18/85</u>	Absorbance	<u> </u>	<u>0.763</u>	<u> </u>	<u> </u>	<u> </u>
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>WP 384 M-1</u>	<u>8.4</u>	<u>8.47</u>	<u>1.62</u>	<u>1.62</u>	<u>101%</u>	
<u>" M-2</u>	<u>1.8</u>	<u>1.75</u>	<u>0.02</u>	<u>0.87</u>	<u>97%</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	Solid ug/g
BLK 11/12	<u><.25</u>							
BS	<u>1.23</u>		<u>98%</u>					
52237-A Dec	<u>10</u>			<u>200</u>	<u>2.00</u>		<u>10</u>	<u>✓</u>
B	<u>11</u>						<u>11</u>	<u>✓</u>
C	<u>11</u>						<u>11</u>	<u>✓</u>
D	<u>11</u>						<u>11</u>	<u>✓</u>
E	<u>1.8</u>	<u>1/10</u>	<u>18</u>				<u>18</u>	<u>✓</u>
F	<u>11</u>						<u>11</u>	<u>✓</u>
G	<u>1.4</u>	<u>1/10</u>	<u>14</u>				<u>14</u>	<u>✓</u>
G(GC)	<u>1.5</u>	<u>1/10</u>	<u>15</u>				<u>15</u>	
G(SPK)	<u>1.6</u>	<u>1/10</u>	<u>16</u>	<u>✓</u>	<u>3</u>		<u>16</u>	
BLK 11/18	<u><.25</u>							
BS	<u>1.25</u>		<u>100%</u>					
52255-A	<u>1.7</u>	<u>1/10</u>	<u>17</u>	<u>190</u>	<u>100</u>		<u>17</u>	<u>✓</u>

Subpart 13D: Raw Data for Manganese

METALS ANALYSIS DATA SHEET

REV. 85

METAL Mn DATE 11/15/85 ANALYST JE REVIEWER 10/24/85
 INSTRUMENT (AA) 299.5 nm Voltage 466 V
 Current 4 a Split 0.3 nm
D₂ off Integ. 4 sec
 ANALYSIS METHOD
 Flame Hydride
 Gas Air / Acet Acid
 Reduc.

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	1.000	2.000	0.400	0.100	0.010
<u>10/31/85</u>		0.344			
EPA Check	Known	Mean	SD	RSD	% Recovered
<u>WP 284 2</u>	<u>0.348</u>	<u>0.368</u>	<u>0.012</u>	<u>3.22</u>	<u>106%</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	Solid ug/gm
BLK 11/11	<.01							
BS	<.01							
52211-A	0.041			50	50		0.041	
B	0.17						0.17	
B(gc)	0.18						0.18	
B(spK)	0.047						0.047	
C	0.021						0.021	
52278	1.6	1/10	16	100	100		16	
BLK 11/12	<.01							
BS	0.050		100%					
52237-A DEC	0.19			200	200		0.19	
B	0.76						0.76	
C	0.14						0.14	
D	0.21						0.21	
E	1.6						1.6	
F	0.72						0.72	
G	1.0						1.0	
G(gc)	1.0						1.0	
G(spK)	1.083						1.0	
52279 WNO	0.26	1/10	2.6	100	100		2.6	
BLK spK (0.10)	0.096		96%					
(0.050)	0.045		92%					

Subpart 1-D: Raw Data for Mercury

MERCURY ANALYSIS DATA SHEET

11/20/85 87

Lamp Voltage 460
 Lamp Current 4.0
 Background OFF

Date 11/20/85
 Analyst MM
 Wave Length 253.7

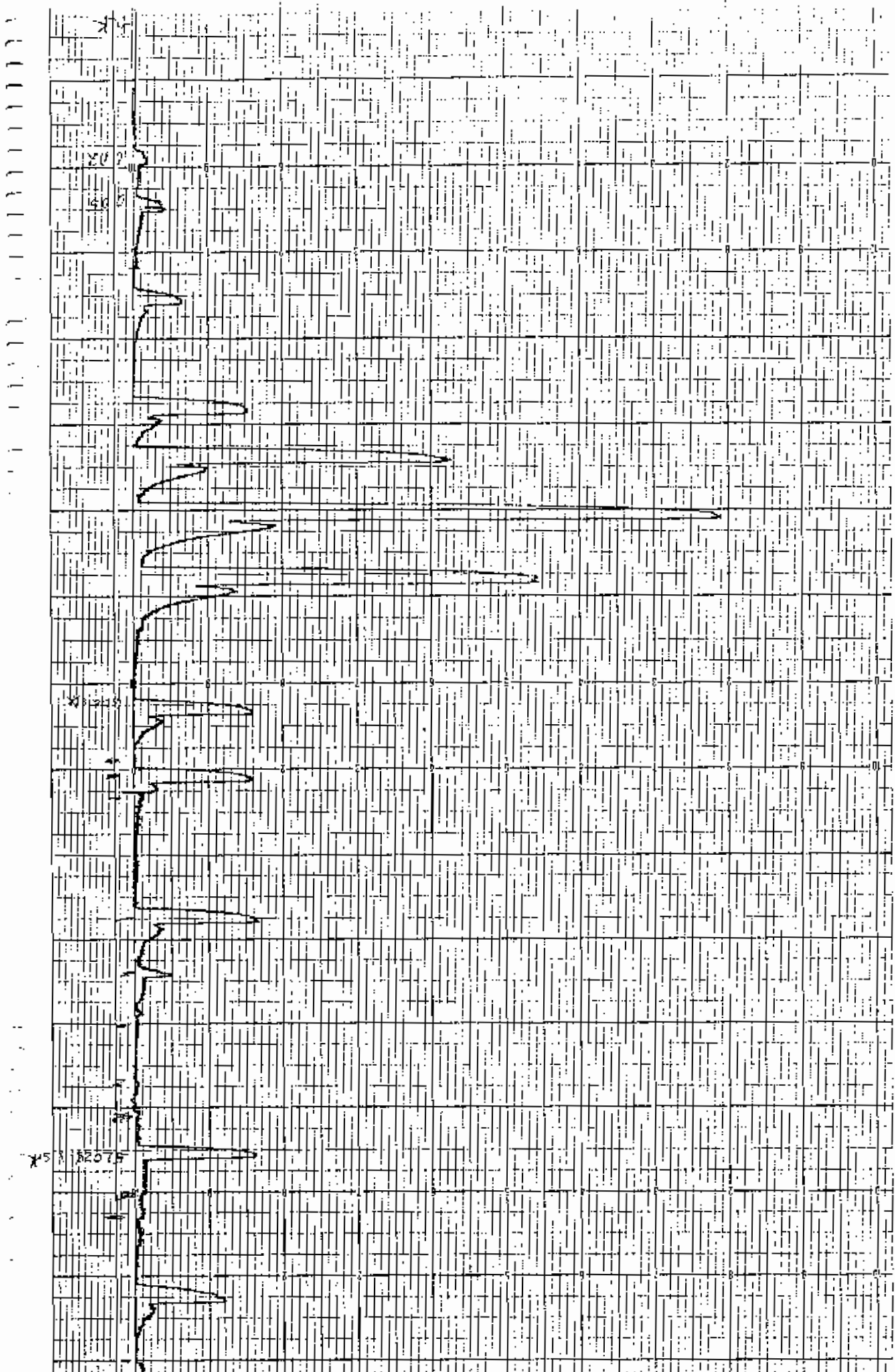
STANDARD CALIBRATION

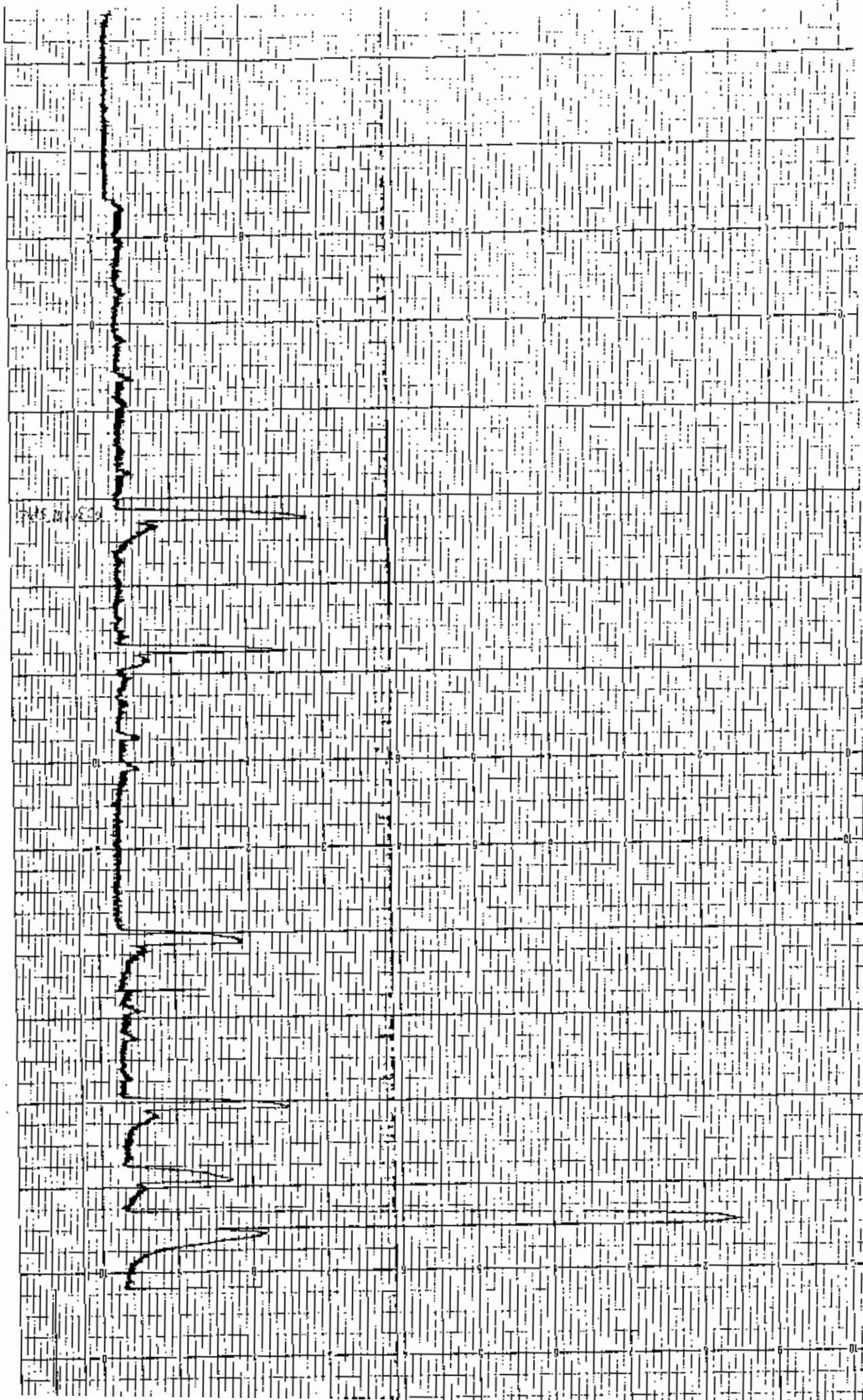
Std. #	Conc.	Abs.	Actual Conc.	Conc.	Abs.	Actual Conc.	Conc.	Abs.	Actual Conc.
Blank	0.00	0.002			0.00			0.0	
Std. 1	0.02	0.005	0.029	0.02	0.004	0.024	0.02	0.004	0.024
Std. 2	0.05	0.010	0.055	0.05	0.010	0.055	0.05	0.009	0.045
Std. 3	0.10	0.018	0.098	0.10	0.018	0.098	0.10	0.018	0.098
Std. 4	0.20	0.038	0.20	0.20	0.037	0.20	0.20	0.036	0.19
Std. 5	0.50	0.100	0.53	0.50	0.090	0.48	0.50	0.087	0.46
Std. 6	1.0	0.190	1.0	1.0	0.201	1.1	1.0	0.175	0.93
PAWS 142	8.8	0.142	0.75/85%		0.139	0.74/84%			

Correlation Coefficient 0.9973

Y Intercept 0.0023

Sample	Vol. or wgt.	Abs.	Conc.	Sample	Vol. or wgt.	Abs.	Conc.
Blk Spk (0.2)	100 ml	0.039	0.21 105%	52301 - H	84 ml	0.003	20.0005
WMI 52150	10	<0.0	<0.005	I	100	0.003	<0.0005
0.2	10	0.038	0.20 100%	K		0.005	<0.0005
Hostm 52271	10	0.0	<0.005	L		0.003	<0.0005
0.2	10	0.040	0.21 105%	M		0.002	<0.0005
AN 52028A	100	0.011	0.0006	MSP		0.004	<0.0005
B		0.0	<0.0005	MSPK		0.045	0.24 120%
a		0.0	<0.0005	N		0.0	<0.0005
D		0.0	<0.0005	O		0.001	<0.0005
D DWP		0.0	<0.0005	WMI 52310 B		0.0	<0.0005
D SPK		0.040	0.21 105%	URS 52318 A		0.002	<0.0005
E		0.0	<0.0005	A SPK	V	0.044	0.23 115%
F		0.0	<0.0005	B	75	0.0	<0.0007
G		0.0	<0.0005	C	73	0.003	<0.0007
H		0.024	0.0016	D	70	0.006	<0.0007
I		0.028	0.0015	E	73	0.006	<0.0007
J		0.0	<0.0005	F	75	0.035	0.0025
URS 52237A LL		0.0	<0.0002	G	66	0.0	<0.0007
B LL		0.002	<0.0002	52362	100	0.0	<0.0005
C LL		0.000	<0.0002	4893 A		0.022	0.0012
D LL		0.0	<0.0002	4895 A		0.005	<0.0005
E LL		0.0	<0.0002	A DWP		0.005	<0.0005
F LL		0.0	<0.0002	B		0.002	<0.0005
G LL		0.0	<0.0002	B SPK	V	0.043	0.23 115%
G DWP		0.0	<0.0002	52298	100 ml	0.0	<0.05
G SPK		0.038	0.20 100%	52335	0.32g	0.029	0.49
52274		0.095	0.0051	52144 B	0.50g	0.009	<0.1
52278		0.0	<0.0005	B DWP	0.50g	0.008	<0.1
52279		0.0	<0.0005	B SPK	0.50g	0.054	0.54
2301-A		0.0	<0.0005	52047-H	0.53g	0.054	0.54
B		0.0	<0.0005	I	0.52g	0.053	0.54
C		0.0	<0.0005	J	0.53g	0.055	0.51
D		0.0	<0.0005	52054	0.10g	0.175	928
E		0.0	<0.0005	52340 A	0.51g	0.0	<0.1
F		0.004	<0.0005	B	0.47g	0.0	<0.1





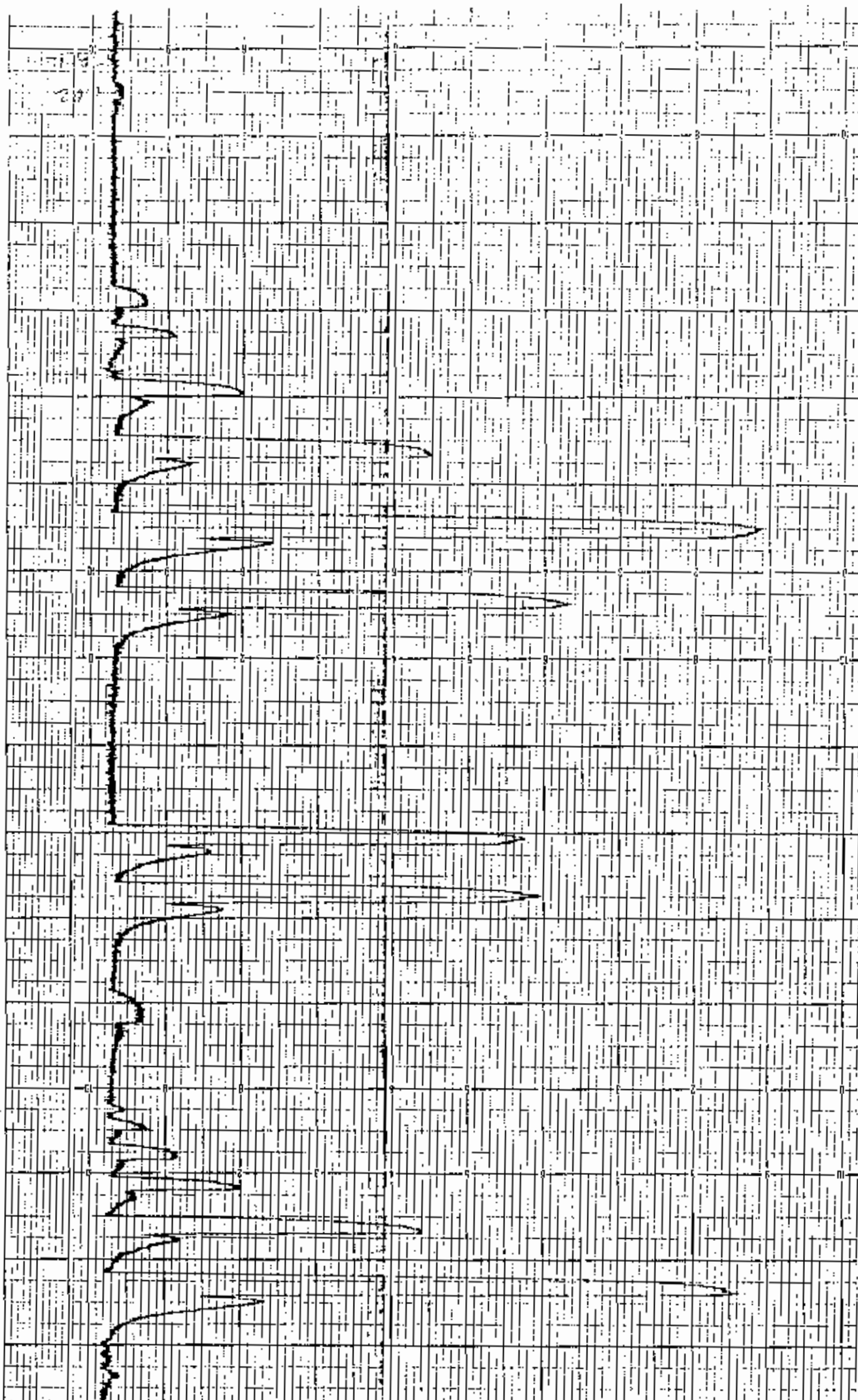
DR. ALBERT J. JONES, M.D.

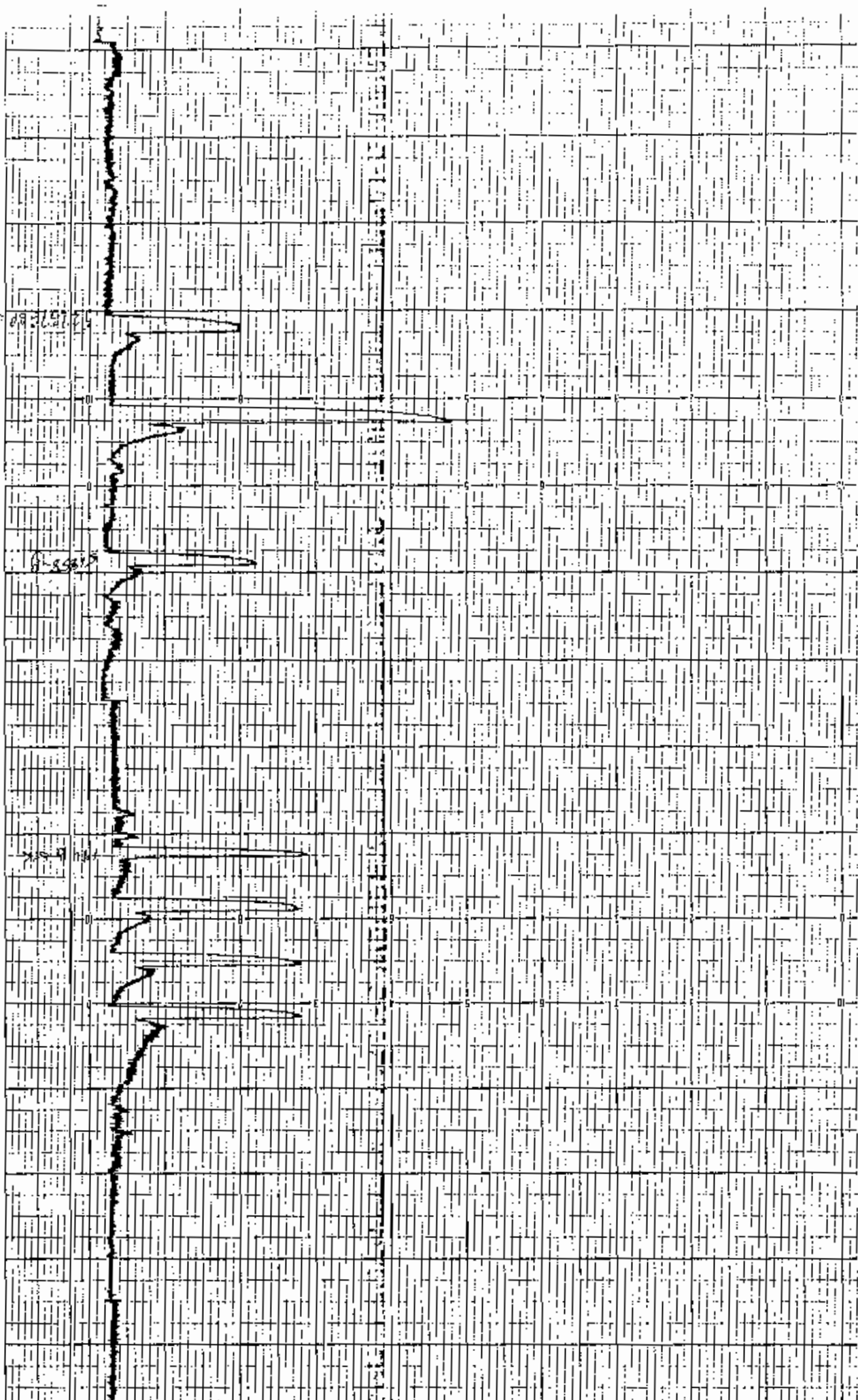
ALBANY, N.Y.

WILSON JONES, M.D. GRAPHIC EQUIPMENT CORPORATION BUFFALO, N.Y.

IN CASE OF EMERGENCY

RECORDED BY: [REDACTED] REPRODUCED BY: [REDACTED]





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Subpart 15D: Raw Data for Nickel

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

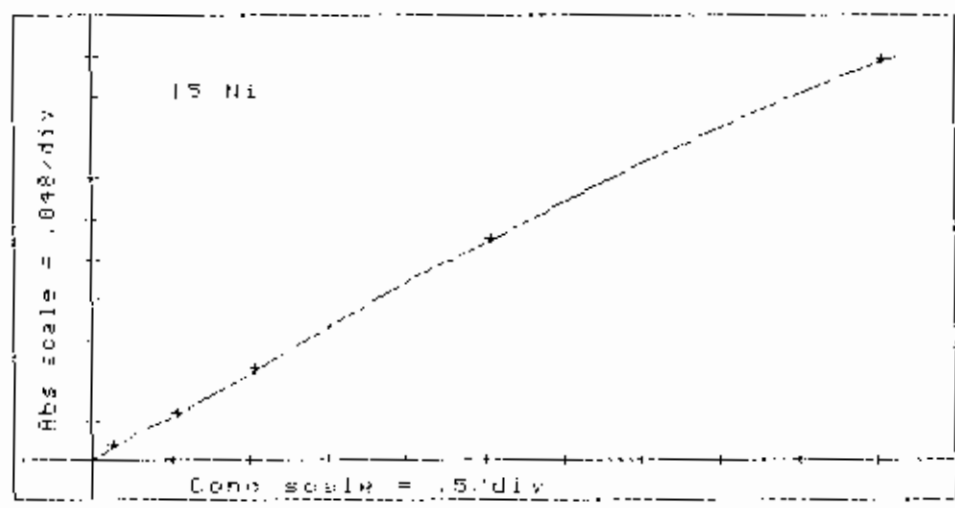
*1/2 3/17/86
MTP 3/6/86*

VARIAN AA-97G
OPERATOR: JOHN BRUNETTE
DATE: 3/5/86
BATCH: Cu and Ni: 2/26-3/3 and solubles

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

AUTO-PROGRAM 15 Ni

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESIDUE FACTOR
BLANK	0.000	209.0%	-0.002	0.000-0.000 0.000	1.000
STANDARD 1	0.100	53.3%	0.012	0.009 0.017 0.011	1.000
STANDARD 2	0.500	8.0%	0.059	0.054 0.045 0.052	1.000
STANDARD 3	1.000	2.9%	0.104	0.109 0.105 0.101	1.000
STANDARD 4	2.500	1.2%	0.259	0.258 0.263 0.258	1.000
STANDARD 5	5.000	1.9%	0.471	0.472 0.462 0.481	1.000



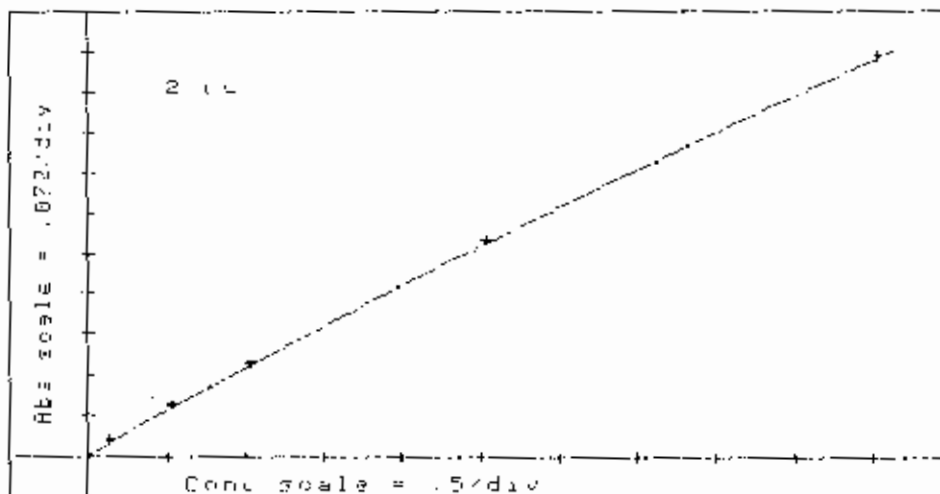
W117B 1#2	0.000	0.0%	0.000	0.000 0.003-0.007	1.000
W2B4 2	0.169	26.3%	0.019	0.022 0.023 0.014	1.000
BLK 3/5	0.000	150.0%	-0.002	-0.006-0.001 0.001	1.000
BR	0.211	4.3%	0.024	0.024 0.023 0.025	1.000
60295	0.135	6.3%	0.016	0.018 0.015 0.017	1.000
60295 (DC)	0.091	9.1%	0.011	0.012 0.012 0.010	1.000
60295 (SPK)	0.368	5.1%	0.039	0.037 0.041 0.041	1.000
602BSE/1000	0.625	11.1%	0.067	0.057 0.072 0.061	1.000
6032B-U/100	4.198	0.0%	0.411	0.411 0.411 0.412	1.000
6032B-F/100	1.136	3.4%	0.119	0.124 0.120 0.115	1.000
6033? F/100	1.548	1.2%	0.164	0.162 0.167 0.163	1.000
6035?H/1000	0.050	33.3%	0.006	0.008 0.005 0.008	1.000
6035?Dsol/10	0.605	6.6%	0.061	0.059 0.059 0.066	1.000
6359sol/100	0.220	8.0%	0.025	0.025 0.023 0.028	1.000
BLK 11/12	0.000	150.0%	-0.002	-0.005-0.003 0.001	1.000
BS	0.211	0.3%	0.024	0.023 0.024 0.027	1.000
52237-A	0.008	200.0%	0.001	-0.002 0.003 0.003	1.000

52237-B	0.000	0.0%	0.000	0.000	0.000	0.002	1.000
52237-C	0.000	150.0%	-0.002	-0.003	0.005	0.002	1.000
52237-D	0.000	33.7%	-0.003	-0.007	0.004	0.005	1.000
DI ANK	0.000	75.0%	-0.004	-0.005	0.007	0.001	1.000
RESLOPE	0.547	5.5%	0.055	0.038	0.052	0.055	.914
WP284 2	0.210	3.8%	0.076	0.026	0.027	0.027	.914
52237-E	0.045	83.3%	0.006	0.013	0.005	0.002	.914
52237-F	0.053	29.6%	0.007	0.009	0.005	0.009	.914
52237-G	0.022	137.7%	0.003	0.001	0.000	0.009	.914
52237-B (SD)	0.091	25.0%	0.012	0.011	0.016	0.011	.914
52237-G (SFC)	0.276	9.1%	0.033	0.032	0.037	0.031	.914
BLK 2/21	0.000	0.0%	0.000	0.002	0.001	0.000	.914
BS	0.248	3.3%	0.030	0.032	0.029	0.030	.914
60318-A	B	0.5%	0.812	0.808	0.814	0.816	.914
60332-A	0.509	0.9%	0.056	0.058	0.050	0.061	.914
60332-B	0.184	8.7%	0.023	0.025	0.024	0.020	.914
60332-C	0.045	66.7%	0.004	0.012	0.004	0.003	.914
60332-D	0.000	300.0%	0.001	0.000	0.001	0.006	.914
60332-D (SD)	0.030	25.0%	0.004	0.005	0.005	0.003	.914
60332-D (SPK)	0.220	18.5%	0.027	0.021	0.032	0.028	.914
60332-E	0.000	0.0%	0.000	0.003	0.000	0.001	.914
60332-F	0.175	4.5%	0.022	0.022	0.024	0.022	.914
60332-B	> 7	0.8%	0.663	0.658	0.669	0.664	.914
BLK 2/25	0.015	150.0%	0.002	-0.002	0.004	0.004	.914
BS	0.201	4.0%	0.025	0.027	0.024	0.025	.914
BLANK	0.000	100.0%	-0.001	-0.003	0.001	0.001	.914
RESLOPE	0.538	5.6%	0.054	0.057	0.051	0.055	.929
WP284 2	0.205	4.0%	0.025	0.026	0.023	0.026	.929
60305-A	0.820	2.2%	0.091	0.091	0.094	0.089	.929
60305-C	0.458	0.6%	0.072	0.077	0.072	0.072	.929
60302-A	> 11	0.5%	1.106	1.100	1.107	1.112	.929
60302-C	> 7	0.7%	0.669	0.665	0.667	0.675	.929
60313-A	> 13	2.4%	1.230	1.224	1.203	1.263	.929
60327-A/100	> 11	0.6%	1.074	1.074	1.080	1.068	.929
60327A/100 "	> 11	1.2%	1.062	1.078	1.054	1.054	.929
60327-B	> 12	1.4%	1.196	1.213	1.178	1.199	.929
60327-B (SPK)	> 12	1.1%	1.024	1.217	1.214	1.241	.929
60328A/100	> 10	0.2%	0.974	0.975	0.976	0.972	.929
60328B/100	> 11	0.7%	1.102	1.105	1.093	1.109	.929
BLK 5/7	0.030	100.0%	0.004	0.007	0.007	0.000	.929
BS	0.261	6.5%	0.031	0.037	0.029	0.034	.929
60400-B	0.109	21.4%	0.014	0.014	0.011	0.018	.929
60359-D	> 10	1.1%	1.011	1.006	1.003	1.021	.929
60359-E	> 12	1.2%	1.200	1.238	1.207	1.207	.929
60359-F	> 11	0.6%	1.082	1.085	1.075	1.087	.929
60285-B sol	1.165	0.8%	0.132	0.133	0.114	0.131	.929
60310-D	1.156	2.3%	0.131	0.129	0.130	0.135	.929
BLANK	0.000	33.3%	0.005	0.004	0.007	0.005	.929
RESLOPE	0.538	3.7%	0.054	0.057	0.053	0.054	.929
WP284 2	0.196	12.5%	0.074	0.023	0.029	0.022	.929
60302-B sol	0.752	2.6%	0.083	0.086	0.080	0.081	.929
60302-D sol	1.009	4.9%	0.123	0.130	0.117	0.125	.929
60317-D sol	> 13	1.5%	1.208	1.246	1.209	1.231	.929
60327-C sol	> 10	0.8%	0.992	0.992	1.001	0.994	.929
60327-G (DC) "	> 10	1.0%	1.210	1.199	1.207	1.224	.929
60328-D sol	> 7	1.5%	0.703	0.750	0.766	0.743	.929

AUTO-PROGRAM 2 Du

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	0.100	0.0%	0.017	0.017	0.017	0.018	1.000
STANDARD 2	0.500	1.3%	0.079	0.080	0.078	0.079	1.000
STANDARD 3	1.000	0.6%	0.154	0.153	0.154	0.156	1.000

STANDARD 4	7.500	0.1%	0.375	0.372	0.271	0.276	1.000
STANDARD 5	5.000	1.1%	0.703	0.712	0.695	0.709	1.000



WP117B 1x2	0.041	0.0%	0.007	0.007	0.007	0.007	1.000
WP2B4 2	0.344	0.0%	0.056	0.056	0.056	0.056	1.000
BLK 3/5	0.041	0.0%	0.007	0.008	0.007	0.007	1.000
BS	0.124	0.0%	0.021	0.022	0.021	0.021	1.000
60295	0.075	16.7%	0.006	0.006	0.007	0.007	1.000
60295 (GC)	0.035	16.7%	0.006	0.007	0.006	0.007	1.000
60295 (SI*)	0.130	0.0%	0.022	0.022	0.022	0.022	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHAN BRUNETTE

DATE: 3/5/86

BATCH: Cu and Ni; 2/24-3/3 and solubles

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

SOLUTION	Ni mg/L	Cu mg/L
WP117B 1x2	0.000	0.041
WP2B4 2	0.189 91%	0.344 100%
BLK 3/5	0.000 <.05	0.041
BS	0.211 84%	0.124 83%
60295	0.105 0.105	0.035 ✓
60295 (GC)	0.091 0.105	0.035
60295 (SI*)	0.268 102%	0.130 95%
60355E/1000	0.623	623 -
60378-D/100	4.198	420 -
60328-F/100	1.136	114 -
60357-F/100	1.548	155 -
60359H/1000	0.600	50.0
60359Dsol/10	0.605	60.5 -
6359sol/100Q	0.220	22.0 -
BLK 11/12	0.000	<.05
BS	0.211	84%
52237-A	0.008	<.04 ✓
52237-B	0.000	<.04 ✓
52237-C	0.000	<.04 ✓

52237-D	0.000	<.04
WF2B4 2	0.210	101%
52237-E	0.045	-
52237-F	0.053	-
52237-G	0.022	-
52237-G(QC)	0.091	<.04
52237-G(SPK)	0.276	107%
BLK 2/21	0.000	<.05
BS	0.248	99%
60318-A	>	-
60332-A	0.509	-
60332-B	0.104	-
60332-C	0.045	-
60332-D	0.000	<.05
60332-D(QC)	0.030	<.05
60332-D(SPK)	0.270	88%
60332-E	0.000	<.05
60332-F	0.175	-
60332-G	>	-
BLK 2/25	0.015	<.05
BS	0.201	80%
WF2B4 2	0.205	82%
60285-A	0.020	-
60285-C	0.658	-
60302-A	>	-
60302-C	>	-
60313-A	>	-
60327-A/100	>	-
60327AOC "	>	-
60327-B	>	-
60327-B(SPK)	>	-
60328A/100	>	-
60328B/100	>	-
BLK 3/3	0.030	<.05
BS	0.261	104%
60400-B	0.109	-
60359-D	>	-
60359-E	>	-
60359-I	>	-
60285-B sol	1.165	1.16
60285-D sol	1.156	1.16
WF2B4 2	0.176	85%
60302-B sol	0.753	-
60302-D sol	1.089	1.09
60313-D sol	>	-
60327-C sol	>	-
60327-D(QC) "	>	-
60328-D sol	>	-

Subpart 16D: Raw Data for Potassium

METALS ANALYSIS DATA SHEET

REV.

99

METAL K DATE 11/20/85 ANALYST JB REVIEWER MRP 11/21/85
 INSTRUMENT (AA) 766.5 nm Voltage 800 V 11/21/85 ANALYSIS METHOD Flame Hydride
 C. ent 9.5 a Split 1.0 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>0.50</u>	<u>0.25</u>
<u>11/8/85</u>	Absorbance		<u>0.405</u>			
EPA Check	Known	Mean	SD	RSD	% Recovered	
<u>M-1 WP384</u>	<u>9.8</u>	<u>9.92</u>	<u>0.14</u>	<u>1.39</u>	<u>101%</u>	
<u>M-2</u>	<u>2.1</u>	<u>2.17</u>	<u>0.03</u>	<u>1.46</u>	<u>103%</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>BLK 11/12</u>	<u><.25</u>							
<u>BS</u>	<u>1.49</u>		<u>119%</u>					
<u>S2237-A</u>	<u>4.7</u>			<u>200</u>	<u>200</u>		<u>4.7</u>	<u>✓</u>
<u>B</u>	<u>8.2</u>						<u>9.2</u>	<u>✓</u>
<u>C</u>	<u>4.3</u>						<u>4.3</u>	<u>✓</u>
<u>D</u>	<u>4.9</u>						<u>4.9</u>	<u>✓</u>
<u>E</u>	<u>2.1</u>	<u>1/10</u>	<u>21</u>				<u>21</u>	<u>✓</u>
<u>F</u>	<u>8.8</u>						<u>8.8</u>	<u>✓</u>
<u>G</u>	<u>9.9</u>						<u>9.9</u>	<u>✓</u>
<u>G(a)</u>	<u>10</u>						<u>10</u>	
<u>✓ G(b)</u>	<u>11.8</u>		<u>150%</u>	<u>✓</u>	<u>✓</u>		<u>11.8</u>	

Subpart 17D: Raw Data for Selenium

METALS ANALYSIS DATA SHEET

2nd PAPER REV. 10/85

METAL Selenium DATE 11-15-85 ANALYST F. Lawrence REVIEWER Emr. 11/15/85
 INSTRUMENT (AA) 196 nm Voltage 620 V 11/20/85 ANALYSIS METHOD
 Current 11 A Split 10 nm Flame Hydride
 D₂ Integ. 4 sec Gas Hydrogen / Acid Hydrochloric
 Reduc. Ala Bly

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
Stock	Cone, ug/ml	10.0	30.0	10.0	5.0	1.0
1000 ppm	Absorbance	0.287	0.412	0.116	0.073	0.023
EPA Check	Known	Mean	SD	RSD	% Recovered	
157	6.0	6.0	0.2	2.75	100	

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/gr
BK 11-13	0.0			100	50		<.002	
B5	4.9						.0098	
B5	5.2						.0104	
S2197	<1.0	1/10					<.002	✓
PK	10.0		100					
S2271	<1.0	1/10					<.002	✓
PK	9.8		98					
S2292A	1.0						.002	✓
B	1.7						.0034	✓
B Dup	1.3						.0026	
B PK	6.5						.013	
C	0.1						<.002	✓
D	0.0						<.002	✓
E	0.0						<.002	✓
F	4.9						.0098	✓
G	0.0						<.002	✓
H	3.1						.0062	✓
I	0.0						<.002	✓
J	<.0.0						<.002	✓
K	0.0						<.002	✓
L	<1.0						<.002	✓
L Dup	5.0						<.002	
L SPK	5.0						.01	
M O	<1.0						<.002	✓
N	0.12			V	V		<.002	✓

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____
 REAGENT (AA) _____ ANALYSIS METHOD _____
 nm Voltage _____ V Flame _____ Hydride _____
 current _____ a Split _____ nm Gas _____ / _____ Acid _____
 D₂ _____ Integ. _____ sec Reduce. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc, ug/ml					
Absorbance					
EPA Check	Known	Mean	SD	RSD	% Recovered
W52	6.0	6.2	0.2	3.86	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
S22920	<1.0			100	50		<1.002	✓
P	<1.0						<1.002	✓
Q	<1.0						<1.002	✓
R	<1.0						<1.002	✓
R Dup	4.0						<1.002	✓
R SPE	5.1						<1.002	✓
S	4.0						<1.002	✓
T	4.0						<1.002	✓
U	4.0						<1.002	✓
V	4.0						<1.002	✓
W	4.0						<1.002	✓
X	4.0						<1.002	✓
Y	4.0						<1.002	✓
Z	4.0						<1.002	✓
AA	4.0						<1.002	✓
BB	4.0						<1.002	✓
CC	4.0						<1.002	✓
BK 1113	4.0						<1.002	✓
BS	5.0						0.1	
S2260A	<1.0						<1.002	✓
B	<1.0						<1.002	✓
C	<1.0						<1.002	✓
D	<1.0						<1.002	✓
E	4.0						<1.002	✓
F	4.0			✓	✓		<1.002	✓

HEAVY METALS ANALYSIS DATA SHEET

REV. REV.

DATE _____ ANALYST _____ REVIEWER _____

RUMENI (AA) _____

Current _____ nm Voltage _____ V

O₂ _____ a Split _____ nm

Integ. _____ sec

ANALYSIS METHOD

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
222	6.0	6.9	0.2	2.76	107

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
52260 G	<1.0			100	50		1.002 ✓	
H	4.3						.0086 ✓	
I	<1.0						1.002 ✓	
J	<1.0							✓
K	<1.0							✓
L	<1.0							✓
M	<1.0							✓
N	<1.0							✓
O	<1.0							✓
P	<1.0							✓
Q	<1.0							✓
R	<1.0							✓
S	<1.0							✓
SDup	<1.0						✓	✓
Sample	4.6						.0092	
T	<1.0						1.002 ✓	
U	<1.0							✓
V	<1.0							✓
W	<1.0							✓
X	<1.0							✓
Y	<1.0							✓
Z	<1.0							✓
AA	<1.0							✓
BB	<1.0							✓
BB Dup	<1.0							✓

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____

ELEMENT (AA) _____ ANALYSIS METHOD _____

Current _____ nm Voltage _____ V Flame _____ Hydride _____

O₂ _____ 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
W22	6.0	5.4	0.2	3.61	90

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
S2260 Blank	4.5			100	50		.009	
CC	4.0						4.002 ✓	
DD	4.0							✓
HH	4.0							✓
II	4.0							✓
JJ	4.0							✓
KK	4.0							✓
JJ Dup	4.0							
JJ spk	5.0						.01	
BK 11-14	15.0						.03	
BS	8.7						.017	
S2182	2.9	1/2 gpm	2400	100	0.45g	as received		644,000 ✓
S2232 A	20.3				50		.0406 ✓	
B	25.5						.051 ✓	
C	4.7				25		.019 ✓	
C Dup	4.0				25		.016	
spk C spk	14.5				25		.058	
E	13.2				50		.0264 ✓	
G	8.9						.0138 ✓	
S2242 A	9.5						.014 ✓	
B	1.0						.002 ✓	
m Dup	0.7						.004	
B spk	6.1						.0122	
C	4.0						4.002 ✓	
G	12.9						.0258 ✓	

METALS ANALYSIS DATA SHEET

GATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____

Wavelength _____ nm
 Voltage _____ V
 Split _____ nm
 Integ. _____ sec

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

INITIAL CALIBRATION

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

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
51971A	3.1			100	0.62g	as		0.50 ✓
B	3.0				0.46g	reconst		0.652 ✓
C	8.0				0.46g	↓		1.739 ✓
52122	1.7				50		0.034 ✓	
52144A	4.5				0.49 g	D		0.918 ✓
B	3.1				0.50 g	↓		0.62 ✓
C	1.2				0.44 g	↓		0.273 ✓
52107A	1.2				0.52 g	↓		0.231 ✓
52124B	26.3				1.0 ml		2.63	
52228A	2.5				3.0 ml		0.25	
B	1.5				1.0		0.15	
C	<1.0				1.0		2.002 ✓	
52279	<1.0				50		2.002 ✓	
52236A	<1.0						2.002 ✓	
A Dup 2PK	5.3						0.106	
A 2PK	5.4						0.108	
B	<1.0						2.002 ✓	
C	2.2						0.044 ✓	
D	<1.0						2.002 ✓	
E	<1.0						2.002 ✓	
52277A	<1.0						2.002 ✓	
B	<1.0							
C	<1.0							
D	<1.0							
E	<1.0							

ANALYSIS DATA SHEET

REV.

METALS ANALYSIS DATA SHEET

REV.

REV.

DATE ANALYST REVIEWER

INSTRUMENT (AA)

Current Voltage Split Integ. nm V nm sec

ANALYSIS METHOD

Flame Hydride Gas Acid Reduc.

INITIAL CALIBRATION

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

ANALYSIS

Main analysis table with columns: INSTRUMENT ANALYSIS (Sample #, Conc. ug/ml, D.F., Final ug/ml), DIGESTION (F.V. ml, I.V. ml. or gm, W or d weight), FINAL CONCENTRATION (Liquid ug/ml, Solids ug/gm). Includes handwritten entries for samples 52237 F, 6, 6.040, 6.50K, 4825 B, 4885 A, 6, 4864, 52168 A, B, and 65 11-14.

Subpart 18D: Raw Data for Silver

METALS ANALYSIS DATA SHEET

REV.

METAL Ag DATE 11/25/85 ANALYST JB REVIEWER MLP/2/2
 INSTRUMENT (AA) 5281 nm Voltage 380 V 10/25/85 ANALYSIS METHOD
 Current 10 0 Split 0.5 nm Flame Hydride
D₂ Integ. 4 sec Gas Air / Acet Acid
 Reduc. Acid

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock <u>u/25/85</u>	Conc. ug/ml <u>0.500</u>	<u>1.00</u>	<u>0.200</u>	<u>0.050</u>	<u>0.010</u>
	Absorbance <u>0.188</u>				
EPA Check <u>WS878 14-2</u>	Known <u>0.052</u>	Mean <u>0.052</u>	SD <u>0.002</u>	RSD <u>3.85</u>	% Recovered <u>100%</u>
<u>2</u>	<u>0.028</u>	<u>0.033</u>	<u>0.002</u>	<u>5.72</u>	<u>118%</u>

ANALYSIS

Sample #	INSTRUMENT ANALYSIS			DIGESTION			FINAL CONCENTRATION	
	Conc. ug/ml	D.F.	Final ug/ml	I.V. ml.	I.V. ml. or gm	w or d weight	Liquid ug/ml	Solid ug/gm
4853-D ^{WCC} EPTX	<.01	10	<.1				<.1	
0.050	0.046	10						
4853-E ^{EPT} WCC	<.01		<.1				<.1	
0.050	0.046	10						
4913-R ²⁰ ROPEN	<.01		<.1				<.1	
0.050	0.052	10						
4940-A ^{EPT} HQ	<.01		<.1	50	50		<.1	
0.050	0.044	10						
4940-B ^{EPT} HQ	<.01		<.1	50	50		<.1	
0.050	0.055	10						
52335 ^{EPT}	<.01		<.1				<.1	
0.050	0.046	10						
52343-A ^{EPT}	<.01		<.1				<.1	
0.050	0.048	10						
52343-B ^{EPT}	<.01		<.1				<.1	
0.050	0.056	10						
52343-C ^{EPT}	<.01		<.1				<.1	
0.050	0.052	10						
52343-D ^{EPT}	<.01		<.1				<.1	
0.050	0.046	10						
52361 A ^{HA}	<.01		<.1				<.1	
0.050	0.047	10						
52373-A ²⁰	<.01		<.1				<.1	
0.050	0.052	10						
52381 ^{EPT}	<.01		<.1				<.1	
0.050	0.048	10						

METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Current _____ nm Voltage _____ V
 Split _____ nm Flame _____ Hydroxide _____
 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
412	0.057	0.079	0.002	2.64	94%

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	Soln ug/g
BS	0.055		110%					
B3	0.057		102%					
4885-A WRITE	<.01			50	50		<.01	
" B "	<.01			50	50		<.01	
4890- Eagle	0.40						0.40	
52028-A low	<.01						<.01	
B	<.01						<.01	
C	<.01						<.01	
D	<.01						<.01	
E	<.01						<.01	
F	<.01						<.01	
F(Q)	<.01						<.01	
G	<.01						<.01	
H	<.01						<.01	
I	<.01						<.01	
J	<.01						<.01	
52232-A X	0.036						0.036	
B	0.026						0.026	
E	0.094						0.094	
52234-A R	0.22	1/10	2.2				2.2	
52236-A ETC	<.01						<.01	
B	<.01						<.01	
C	<.01						<.01	
C(Q)	<.01						<.01	
Check	0.057		102%				0.057	
D	<.01						<.01	

METALS ANALYSIS DATA SHEET

REV.

ML _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____
 Current _____ nm Voltage _____ V
 _____ a Split _____ gm
 D₂ _____ Integ. _____ sec
 ANALYSIS METHOD
 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	0.052	0.044	0.001	2.70	74%

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
52236-E RTG	<.01			50	50		<.01	
52237-A VRS	<.01						<.01	
B	<.01						<.01	
C	<.01						<.01	
D	<.01						<.01	
E	<.01						<.01	
F	<.01						<.01	
G	<.01						<.01	
G(GC)	<.01						<.01	
G(spk)	0.054		108%				0.054	
52242-A 3L	0.010						0.010	
B	<.01						<.01	
B(GC)	<.01						<.01	
B(spk)	0.056		112%				0.056	
52296-Shiner	<.01						<.01	
52297 B+L	<.01						<.01	
52298 VRS	<.01						<.01	
A(GC)	<.01						<.01	
A(spk)	0.045		90%				0.045	
B	<.01						<.01	
C	<.01						<.01	
D	<.01						<.01	
E	<.01						<.01	
F	<.01						<.01	
G	<.01			✓	✓		<.01	

Subpart 19D: Raw Data for Sodium

METALS ANALYSIS DATA SHEET

REV.

117

METAL Na DATE 11/20/85 ANALYST JB REVIEWER WP 11/21/85
 INSTRUMENT (AA) 589.0 nm Voltage 460 V 11/21/85
 Element 7.5 a Split 0.5 nm
 D₂ off Integ. 4 sec
 ANALYSIS METHOD
 Flame Hydride
 Gas Air / Acet Acid
 Reduc. Acid

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	5.00	10.00	2.50	0.50	0.10
Conc, ug/ml					
Absorbance		0.819			
EPA Check	Known	Mean	SD	RSD	% Recovered
M-1 WP384	46.5	47.0	0.05	0.97	101%
M-2 "	8.2	8.44	0.64	1.63	103%

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
BK 11/2	<.1							
BS	1.34		107%					
52237-A	2.4	1/10	24	200	200		24	✓
B	7.6	1/10	76	1	1		76	✓
C	1.9	1/10	19				19	✓
D	2.8	1/10	28				28	✓
E	1.7	1/100	170				170	✓
F	1.8	1/100	180				180	✓
G	1.5	1/100	150				150	✓
G(QC)	1.5	1/100	150				150	
G(sp)	1.5	1/100	150	✓	✓		150	

Subpart 200: Raw Data for Thallium

METALS ANALYSIS DATA SHEET

REV.

METAL TR DATE 11/20/85 ANALYST JB REVIEWER m+p/11/21/85
 INSTRUMENT (AA) 276.8 nm Voltage 380 V 11/21/85 ANALYSIS METHOD Flame Hydride
 Current 2 a Split 1.0 nm Gas Air / Acet Acid
 D₂ off Integ. 4 sec Reduc.

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock	<u>5.00</u>	<u>10.00</u>	<u>2.00</u>	<u>0.50</u>	<u>0.25</u>
<u>11/19/85</u>		<u>0.162</u>			
EPA Check	Known	Mean	SD	RSD	% Recovered
<u>TM3 1x10</u>	<u>0.252</u>	<u>0.29</u>	<u>0.03</u>	<u>8.68</u>	<u>116%</u>
<u>1A20</u>	<u>0.504</u>	<u>0.50</u>	<u>0.01</u>	<u>2.95</u>	<u>100%</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 11/1	<.25							
BS (1.50)	1.41		94%					
S1970-H	<.25			100	1.00 g			<25 ✓
H(spk)	<.25			100	1.00 g			<25
BLK 11/4	<.25							
BS	1.17		94%					
S1971-A low	<.25			100	1.04 g			<25 ✓
A(90)	<.25				1.03 g			<25
A(spk)	1.30		100%		1.04 g			125
B	<.25				0.96 g			<25 ✓
C	<.25				0.97 g			<25 ✓
BLK 11/4	<.25							
BS	0.64							
S2225-A ^{UP}	<.25			100	1.00 ml		<25 ✓	
B	0.27				1.00 ml		27 ✓	
BLK 11/2	<.25							
BS	1.18		94%					
S2237-A ^H	<.25			50	50		<.25 ✓	
B	<.25						<.25 ✓	
C	<.25						<.25 ✓	
D	<.25						<.25 ✓	
E	<.25						<.25 ✓	
F	<.25						<.25 ✓	
G	<.25						<.25 ✓	

METALS ANALYSIS DATA SHEET

REV.

120

ANAL _____ DATE _____ ANALYST _____ REVIEWER _____
 INSTRUMENT (AA) _____ ANALYSIS METHOD _____
 Wavelength _____ nm Voltage _____ V Flame _____ Hydride _____
 Slit _____ 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	0.252	0.25	0.01	5.14	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
BLK 11/18	<.25							
BS	1.27		102%					
52028-A ^{low}	<.25			100	100		<.25	✓
B	<.25						<.25	✓
D	<.25						<.25	✓
D(QC)	<.25						<.25	
D(spk)	1.33		106%				1.33	
E	<.25						<.25	✓
F	<.25						<.25	✓
G	<.25						<.25	✓
H	<.25						<.25	✓
I	<.25						<.25	✓
J	<.25						<.25	✓

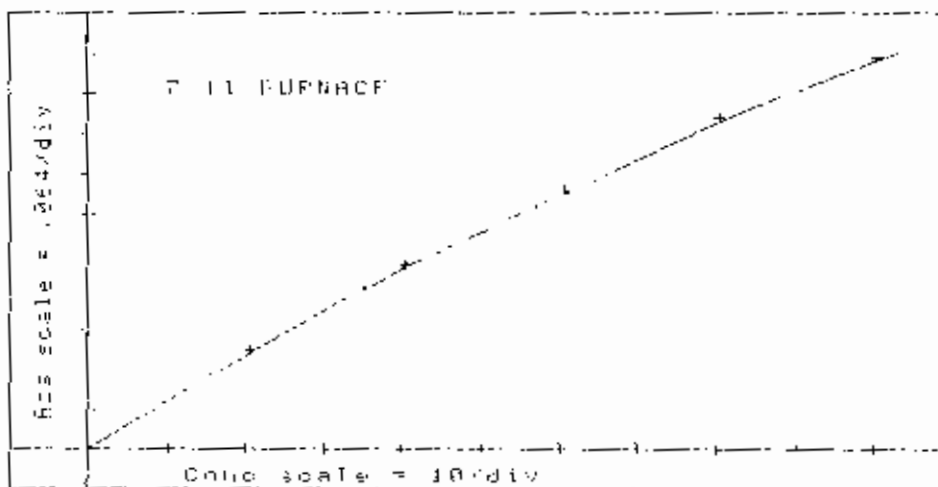
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. GUMBLETON
 DATE: 01/31/86
 BATCH:

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

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RSD	MEAN	ABS	ABSORBANCE READINGS	SLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	1.000
STANDARD 1	20.00	6.0%	0.150	0.143	0.157	1.000
STANDARD 2	40.00	1.0%	0.290	0.290	0.293	1.000
STANDARD 3	60.00	0.2%	0.413	0.410	0.413	1.000
STANDARD 4	80.00	0.4%	0.527	0.529	0.525	1.000
STANDARD 5	100.0	0.2%	0.625	0.626	0.624	1.000



TMS 1 (2.5.2)	20.66	2.6%	0.155	0.158	0.152	1.000
TMS 2*10(63)	51.20	0.8%	0.365	0.363	0.363	1.000

BLK SPK	49.27	3.7%	0.347	0.741	0.357	1.000
52318 A	21.666	25.0%	0.070	0.017	0.024	1.000
52318 ABC	5.733	70.2%	0.047	0.074	0.053	1.000
20ppb	27.11	10.7%	0.212	0.186	0.212	1.000
52318 B	16.00	4.0%	0.120	0.116	0.124	1.000
20ppb	32.46	5.8%	0.246	0.241	0.252	1.000
52318 C	25.92	7.5%	0.197	0.183	0.204	1.000
20ppb	44.31	3.5%	0.319	0.310	0.326	1.000
52318 D	73.17	1.8%	0.244	0.241	0.247	1.000
20ppb	49.10	1.1%	0.240	0.351	0.345	1.000
52318 E	36.85	2.6%	0.267	0.272	0.262	1.000
20ppb	50.57	1.7%	0.357	0.362	0.353	1.000
BLANK	0.000	17.3%	0.105	0.097	0.116	1.000

Press *CONT* to UNLOCK

HP-84 error ? on line 3485

Press *CONT* to UNLOCK

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: D. DUMPLETON

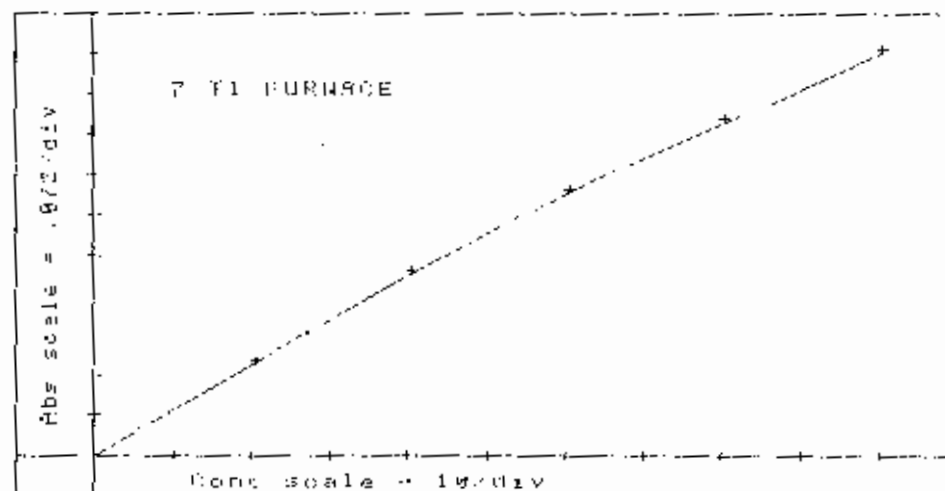
DATE: 02/1/86

BATCH:

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

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RSR	MEAN ABS	ABSORBANCE READINGS		SLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	1.000
STANDARD 1	20.00	6.8%	0.161	0.153	0.169	1.000
STANDARD 2	40.00	1.2%	0.321	0.324	0.310	1.000
STANDARD 3	60.00	1.9%	0.468	0.467	0.475	1.000
STANDARD 4	80.00	0.2%	0.592	0.597	0.593	1.000
STANDARD 5	100.0	1.4%	0.716	0.709	0.724	1.000



TM3 1	15.52	70.4%	0.125	0.188	0.063	1.000
TM3 2*10	18.38	159.9%	0.148	0.001	0.295	1.000
52318 F	7.577	6.4%	0.061	0.058	0.064	1.000
20ppb	9.192	135.1%	0.074	0.005	0.145	1.000
52318 G	7.080	47.3%	0.057	0.049	0.065	1.000
20ppb	19.00	2.0%	0.155	0.151	0.156	1.000
BLK 11/12	1.242	120.0%	0.010	0.001	0.019	1.000
BLK SPK	37.17	32.8%	0.299	0.250	0.369	1.000
52237 A	15.52	46.4%	0.125	0.101	0.149	1.000
20ppb	40.12	21.7%	0.327	0.272	0.372	1.000
52237 B	20.98	159.6%	0.169	0.002	0.337	1.000
20ppb	21.35	139.5%	0.177	0.002	0.342	1.000
52237 C	16.89	5.1%	0.134	0.131	0.141	1.000
20ppb	0.248	0.0%	0.002	0.007	0.002	1.000
52237 D	0.248	50.0%	0.002	0.003	0.002	1.000
BLANK	0.000	17.0%	0.100	0.113	0.088	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
OPERATOR: D. DUMBLETON
DATE: 02/10/86
BATCH:

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

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	33.3%	-0.003	-0.003-0.004	1.000
STANDARD 1	20.00	5.3%	0.132	0.127 0.138	1.000

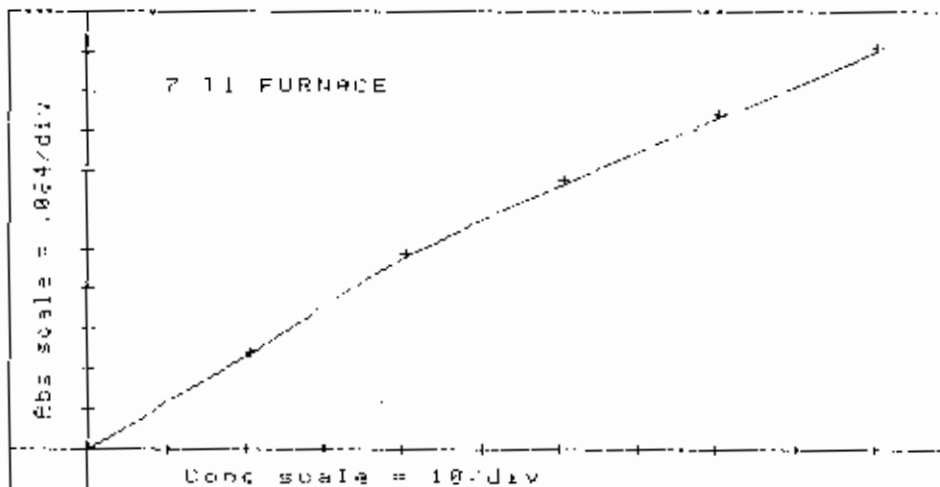
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
OPERATOR: D. DUMBLETON
DATE: 02/10/86
BATCH:

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

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	100.0%	0.002	0.001 0.004	1.000
STANDARD 1	20.00	4.8%	0.146	0.141 0.151	1.000
STANDARD 2	40.00	0.7%	0.303	0.300 0.307	1.000
STANDARD 3	60.00	0.2%	0.420	0.419 0.421	1.000
STANDARD 4	80.00	0.8%	0.528	0.525 0.531	1.000
STANDARD 5	100.0	0.2%	0.636	0.635 0.637	1.000



TMS 1	22.84	0.6%	0.169	0.170	0.169	1.000
TMS 2*10	51.93	0.0%	0.377	0.377	0.377	1.000
BLK 11/26	0.000	0.0%	0.000	0.000	0.000	1.000
BLK SPK	49.77	0.3%	0.362	0.363	0.362	1.000
52318 A	3.1635	7.1%	0.028	0.026	0.030	1.000
52318 A/C	9.041	21.0%	0.066	0.051	0.082	1.000
20ppb	29.06	26.0%	0.219	0.179	0.260	1.000
52318 B	13.42	7.0%	0.098	0.097	0.100	1.000
20ppb	38.44	2.4%	0.290	0.285	0.295	1.000
52318 C	33.57	0.3%	0.254	0.239	0.269	1.000
20ppb	43.82	8.5%	0.340	0.319	0.361	1.000
52318 D	77.89	2.4%	0.296	0.281	0.292	1.000
20ppb	53.70	0.3%	0.387	0.388	0.386	1.000
52318 E	38.86	0.7%	0.293	0.295	0.291	1.000
20ppb	52.63	0.3%	0.381	0.382	0.381	1.000
BLANK	0.000	32.4%	0.102	0.079	0.126	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: D. DUMELION

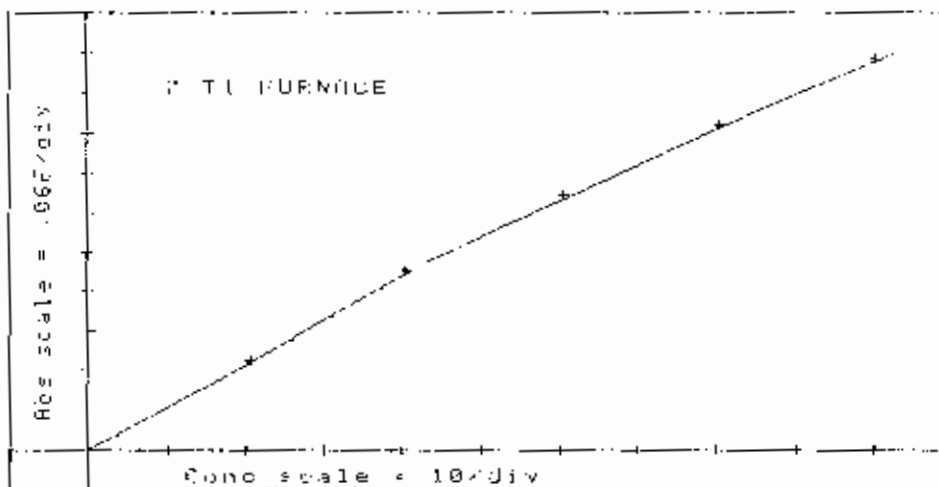
DATE: 02/10/86

BATCH:

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

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RSD	MEAN	ABS	ABSORBANCE READINGS	RESIDUE FACTOR
BLANK	0.000	0.0%	-0.104	-0.104	-0.104	1.000
STANDARD 1	20.00	0.7%	0.179	0.130	0.140	1.000
STANDARD 2	40.00	0.0%	0.289	0.289	0.289	1.000
STANDARD 3	60.00	0.0%	0.413	0.413	0.413	1.000
STANDARD 4	80.00	0.9%	0.532	0.520	0.536	1.000
STANDARD 5	100.0	0.7%	0.641	0.643	0.640	1.000



TMS 1	23.09	2.6%	0.155	0.152	0.158	1.000
TMS 7*10	54.93	1.3%	0.385	0.382	0.389	1.000
52318 F	6.618**	2.2%	0.046	0.046	0.047	1.000
20ppb	20.65	0.7%	0.149	0.145	0.144	1.000
52318 G	11.450**	1.7%	0.081	0.071	0.089	1.000

20ppb	11.45	1.1%	0.114	0.114	0.114	1.000
20ppb B	11.45	1.1%	0.114	0.114	0.114	1.000
20ppb	32.18	1.2%	0.212	0.213	0.251	1.000
BLK 11/12	15.10	1.4%	0.158	0.160	0.111	1.000
BLK 5PK	45.00	1.3%	0.312	0.329	0.315	1.000
52237 A	56.66	0.4%	0.216	0.203	0.229	1.000
20ppb	43.79	0.0%	0.373	0.373	0.373	1.000
52237 B	40.00	1.0%	0.289	0.292	0.227	1.000
20ppb	54.09	1.1%	0.390	0.377	0.384	1.000
52237 C	75.70	0.1%	0.491	0.290	0.265	1.000
20ppb	48.79	0.1%	0.335	0.376	0.371	1.000
52237 D	39.19	0.8%	0.290	0.290	0.251	1.000
R ONLY	0.000	0.5%	0.104	0.100	0.100	1.000

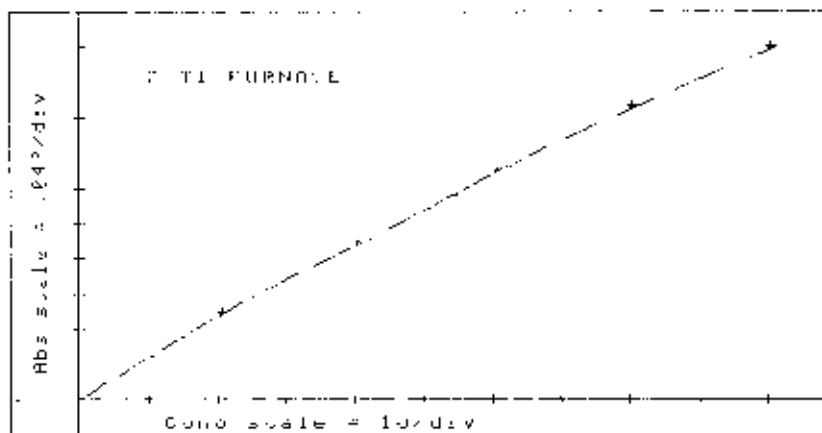
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 02/10/86
 BATCH:

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

AUTO-PROGRAM 2 T1 FURNACE

SOLUTION	CONC ug/l	RSD	MEAN	ABS	ABSORBANCE READINGS	REFL OFF FACTOR
BLANK	0.000	30.0%	-0.000	-0.025	-0.016	1.000
STANDARD 1	20.00	1.8%	0.114	0.114	0.112	1.000
STANDARD 2	40.00	0.5%	0.207	0.208	0.207	1.000
STANDARD 3	60.00	3.5%	0.307	0.315	0.297	1.000
STANDARD 4	80.00	1.4%	0.394	0.404	0.384	1.000
STANDARD 5	100.0	0.8%	0.477	0.470	0.476	1.000



TMS 1	21.57	13.1%	0.122	0.124	0.111	1.000
TMS 2x10	72.47	2.0%	0.360	0.356	0.371	1.000
20ppb	55.76	1.0%	0.284	0.284	0.205	1.000
52237 E	56.56	2.0%	0.290	0.294	0.204	1.000
20ppb	70.04	2.4%	0.306	0.364	0.349	1.000
52237 F	47.94	7.0%	0.227	0.270	0.344	1.000
20ppb	61.05	0.8%	0.312	0.321	0.303	1.000
52237 G	40.00	6.3%	0.297	0.217	0.198	1.000
52237 GOL	37.88	1.5%	0.190	0.201	0.196	1.000
20ppb	52.31	7.2%	0.269	0.274	0.265	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: D. DUMBLETON
 DATE: 02/10/86
 BATCH:

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

SOLUTION	T1 ug/l
TMS 1	21.57
TMS 2x10	72.47
20ppb	55.76
52237 E	56.56
20ppb	70.04
52237 F	47.94
20ppb	61.06
52237 G	40.00
52237 GOL	37.88
20ppb	52.31

Support 210: Raw Data for Tin

METALS ANALYSIS DATA SHEET

REV.

METAL Sn LL DATE 11/12/85 ANALYST MM REVIEWER MM 11/2/85
 INSTRUMENT (AA) 286.3 Voltage 5.00 V ANALYSIS METHOD
 Current 5.5 a Split 0.5 nm Flame Hydride
 P₂ OFF Integ. 4 sec Gas / Acid H₂SO₄/HCl
 Reduc.

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	0.050	0.100	0.030	0.020	0.010
	Absorbance	0.226	0.455	0.110	0.090	0.052
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	Sol ug/:
Blk. 10/7	<10		<0.010	200	200			
(20) BS.	47.7		95.4%		200			
4752J	19.0		0.0190		2.01g			1.89 ✓
K	11.4		0.0114		2.00			1.14 ✓
L	<10		<0.01		2.09			<1 ✓
M	<10		<0.01		2.05			<1 ✓
N	<10		<0.01		2.09			<1 ✓
O	24.0		0.0240		1.91			2.51 ✓
0.00P	19.8		0.0198		1.92			2.06 ✓
(30) BS	52.2		90%		2.02			
Blk. 10/24	<10.0		<0.01		2.00			
BS (50)	53.5		107%		300			
4768-J	<10		<0.01		2.15			<1
J	<10		<0.01		2.07			<1
JAP	<10		<0.01		2.08			<1
(20) JSK	45.9		92%		2.02			
4766J	<10		<0.01		2.07			<1
JAP	<10		<0.01		2.08			<1
JSK	46.2		92%		2.12			
K	<10		<0.01		2.06			<1
L	<10		<0.01		2.07			<1
Blk. 10/1	<10		<0.01		200			
BS.	54.4		109%		200			
4814-A	<10		<0.01		1.99			<1 ✓
B	<10		<0.01	✓	2.15			<1 ✓

250.0
 230.0
 210.0
 190.0
 170.0
 150.0
 130.0
 110.0
 90.0
 70.0
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 STD 99
 STD 100

HEAVY METALS ANALYSIS DATA SHEET

REV.

DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA)

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

ANALYSIS METHOD

Flame _____ Hydride
 Gas _____ / _____ Acid
 Reduc. _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
Stock					
Conc. ug/ml					
Absorbance					
CPA 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	Solid ug/g
4814 BWA	<10		<0.01	200ml	1.92			<1
BWA	47.8		96%		2.04			
C	<10		<0.01		1.87			<1
52237A	<10		<0.01		200ml		<0.01	✓
B	<10		<0.01				<0.01	✓
C	<10		<0.01				<0.01	✓
D	<10		<0.01				<0.01	✓
E	<10		<0.01				<0.01	✓
F	<10		<0.01				<0.01	✓
G	<10		<0.01				<0.01	✓
GWA	<10		<0.01				<0.01	
GWA	49.0		96%	✓	✓			

Subpart 22D: Raw Data for Vanadium

METALS ANALYSIS DATA SHEET

REV. 132

METAL V DATE 11/19/85 ANALYST JB REVIEWER mm
 INSTRUMENT (AA) 3181S nm Voltage 380 V ANALYSIS METHOD Flame Hydride
 Current 6.5 a Split 0.5 nm Gas N₂O / Acet Acid
 D₂ off Integ. 4 sec Reduc. 11/21/85

INITIAL CALIBRATION

200 µl Al(NO₃)₃ added to stds / sample

STANDARDS:	#1	#2	#3	#4	#5
Stock	-5.00	10.00	0.00	0.50	0.25
Conc, ug/ml					
Absorbance		0.116			
EPA Check	Known	Mean	SD	RSD	% Recovered
WP 284 1x2	0.260	0.21	0.03	15.06	81%
WP 284 2	0.846	0.82	0.04	4.93	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
BLK 10/29	<.25							
BS	1.20		96%					
4764-A Doc	<.25			200	200		<.25	
B	<.25						<.25	
B(QC)	<.25						<.25	
B(spk)	1.27		102%				1.27	
C	<.25						<.25	
D	<.25						<.25	
E	<.25						<.25	
F	<.25						<.25	
G	<.25						<.25	
I	<.25				2.15g			<25 ✓
J	<.25				2.07g			<25 ✓
J(QC)	<.25				2.08g			<25
J(spk)	1.23		95%		2.02g			118
4766-A Doc	<.25			200	200		<.25	
B	<.25						<.25	
B(QC)	<.25						<.25	
B(spk)	1.27		102%				1.27	
C	0.43						0.43	
D	<.25						<.25	
E	<.25						<.25	
F	<.25						<.25	
H	<.25						<.25	
	<.25				2.02g			<25
	<.25				2.05g			<25

DATE _____ ANALYST _____ REVIEWER _____

INSTRUMENT (AA) _____ nm
 Wavelength _____ a
 D₂ _____

Voltage _____ V
 Split _____ nm
 Integ. _____ sec

ANALYSIS METHOD
 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	0.846	0.85	0.02	2.28	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
1766-J (soil) Dec	0.81		61%	200	2.12 g			76
K	<.25			↓	2.06 g			<25
L	<.25			↓	2.07 g			<25
BLK 10/31	<.25							
BS	1.18		94%					
4765-A Dec	<.25			200	200		<.25	
A	<.25						<.25	
C	<.25						<.25	
G(G)	<.25						<.25	
D	0.25						0.25	
D (soil)	1.47		98%				1.47	
E	<.25						<.25	
G	<.25			✓	✓		<.25	
3760 EPA	<.25	.09						
BLK 11.2	<.25							
BS	1.30		104%					
52237-A Dec	<.25			200	200		<.25	
B	<.25						<.25	
C	<.25						<.25	
D	<.25						<.25	
E	<.25						<.25	
F	<.25						<.25	
G	<.25						<.25	
G(G)	<.25						<.25	
G(SOIL)	1.33		106%	✓	✓			

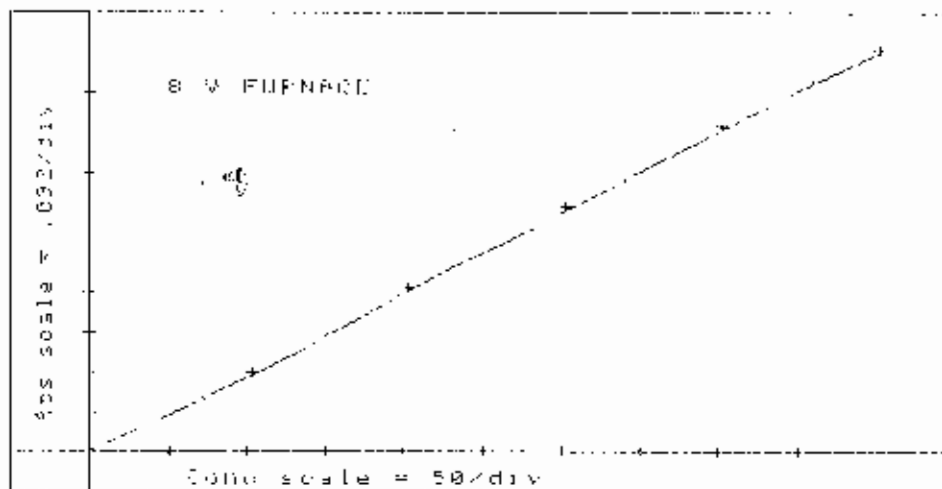
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
OPERATOR: D. DUMBLETON
DATE: 01/30/86
BATCH:

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

AUTO-PROGRAM B V FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	53.0%	0.013	-0.008-0.019	1.000
STANDARD 1	100.0	1.7%	0.170	0.167 0.172	1.000
STANDARD 2	200.0	1.1%	0.364	0.361 0.367	1.000
STANDARD 3	300.0	0.7%	0.554	0.554 0.555	1.000
STANDARD 4	400.0	0.1%	0.741	0.739 0.741	1.000
STANDARD 5	500.0	0.0%	0.919	0.919 0.912	1.000



100	275.9	1.8%	0.510	0.517 0.500	1.000
2	107.4	1.6%	0.194	0.187 0.187	1.000
REL 11/26	2.941	100.0%	0.005	0.009 0.000	1.000
BLK SPK	51.76	1.1%	0.088	0.089 0.087	1.000
52318 A	2.357	75.0%	0.004	0.007 0.002	1.000
52318 ADC	0.000	200.0%	-0.001	0.000-0.003	1.000
10001	105.8	1.1%	0.181	0.180 0.180	1.000
52318 B	0.000	0.0%	0.000	0.002-0.002	1.000

Sample ID	Concentration	% Error	Concentration	% Error	Concentration	% Error
100ul	104.2	2.3%	0.172	0.175	0.187	1.000
52310 D	0.508	200.0%	0.001	0.005	0.005	1.000
100ul	104.2	0.5%	0.170	0.173	0.184	1.000
52312 E	0.000	100.0%	0.007	0.000	0.004	1.000
100ul	101.2	1.2%	0.173	0.171	0.175	1.000
B.K.SPI	0.000	57.1%	0.007	-0.004	0.010	1.000
B.K.HPL	176.9	1.1%	0.150	0.155	0.161	1.015
1*2	283.7	0.4%	0.480	0.477	0.482	1.015
Z	104.2	2.7%	0.175	0.170	0.172	1.015
52318 F	7.164	56.7%	0.017	0.018	0.006	1.015
100ul	101.5	1.0%	0.170	0.168	0.172	1.015
52318 D	0.920	60.0%	0.005	0.005	0.007	1.015
100ul	106.7	1.1%	0.150	0.179	0.182	1.015
RLI 11/12	0.000	0.0%	0.000	0.002	0.002	1.015
B.K.SPI	47.76	1.3%	0.000	0.079	0.001	1.015
52317 D	1.194	150.0%	0.007	0.000	0.000	1.015
100ul	107.4	2.5%	0.181	0.178	0.184	1.015
52317 E	1.791	166.7%	0.003	0.007	0.000	1.015
100ul	105.8	2.0%	0.179	0.175	0.182	1.015
52317 B	2.985	100.0%	0.005	0.007	0.001	1.015
52317 BCU	0.000	0.0%	0.000	-0.001	0.000	1.015
100ul	97.91	0.7%	0.184	0.160	0.169	1.015
FLAN	0.000	166.7%	0.007	0.001	0.007	1.015
REGLUPE	109.0	1.0%	0.344	0.340	0.348	1.050
1*2	251.6	0.0%	0.440	0.440	0.440	1.050
Z	*30.2	4.2%	0.166	0.172	0.161	1.050
52317 A	0.671	35.7%	0.014	0.012	0.011	1.057
100ul	106.4	3.5%	0.172	0.168	0.177	1.057
52317 D	4.950	50.0%	0.000	0.011	0.000	1.057
100ul	96.00	1.3%	0.185	0.184	0.187	1.057
52317 E	4.335	71.4%	0.007	0.011	0.009	1.057
100ul	96.62	0.6%	0.156	0.155	0.157	1.057
52317 F	3.715	80.0%	0.004	0.010	0.003	1.057
100ul	98.40	2.5%	0.159	0.156	0.162	1.057

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-1075
 OPERATOR: D. DUMBLITON
 DATE: 01/30/86
 BATCH:

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

SOLUTION	V	ug/l
1*2	0258	275.9
Z		107.4
RLI 11/12		2.941
B.K.SPI		51.76
52318 A		2.352
52318 BCU		0.000 <***>
100ul		105.0
52318 E		0.000 <***>
100ul		101.6
52318 D		0.500 <***>
100ul		104.2
52318 D		0.000 <***>
100ul		104.2
52318 E		0.000 <***>
100ul		101.6
1*2		283.7
Z		104.2
52318 F		7.164 <***>
100ul		101.5
52310 B		2.985 <***>
100ul		102.9
B.K. 11/12		0.000
RLI SPI		47.76
52317 D		1.194 <***>
100ul		107.4
52317 E		1.791 <***>
100ul		105.8
52317 D		2.985 <***>
52317 BCU		0.000 <***>
100ul		97.91
1*2		251.6
Z	*	*30.2
52317 A		0.671 <***>
100ul		106.4
52317 B		4.950 <***>
100ul		96.00
52317 C		4.335 <***>
100ul		96.62
52317 F		3.715 <***>
100ul		98.40

Subpart 23D: Raw Data for Cyanide

general testing corporation



K. Bankin

11/14/85 CYANIDE

140
11/14/85

water and wastewater testing specialists

66 Exchange St.

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

85 Trinity Place
Hackensack, NJ 07601
(201) 483-5242

Job Number	Company Name	Peak Ht.	mg/l	Org. Vol.	Final Vol.	Conc. Factor	Total Cn	Fixed Cn	Free Cn
1	.5	95.0							
2	Blank	5.0							
3	.01	5.8							
4	.02	6.5							
5	.05	10.4							
6	.10	17.3							
7	.20	43.4							
8	.40	83.1							
9	.50	100.0							
10	Blank	4.5							
11	.20								
12	Blank method	4.5					.037		
13	Blank spk	10.7					.046		
14	4856A Killam	10.7	.046	10g	250		x 1.1 ug/g ✓		
15	B	8.4	.0345	10g	↓		x .8 ug/g ✓		
16	C	8.1	.033	10g	↓		x .53 ug/g ✓		
17	Dpc (mv 6.5ml)	8.2	.0249	10g	↓		x .113 ✓		
18	SPK - 50 ml of 10ppm	26.3	.138				x .113 ✓		
19	52237E URS Dalton	9.5	.040	475		.53	x .02	104%	
20	F	9.3	.039	470		.53	x .02		
21	52028A Law Eng.	5.6	.0205	475			x .016 ✓		
22	B	5.5	.020	445		.56	x .01 ✓		
23	C	5.7	.021	455		.55	x .01 ✓		
24	E	6.0	.022	475		.53	x .01 ✓		
25	G	6.0	.022	490		.51	x .01 ✓		
26	52234 A+R	6.0	.022	450		.56	x .01 ✓		
27	4856D Killam	6.0	.0225	10g	↓		x .26 ug/g ✓		
28	EPA # 5	6.1		5000	250		x .45 ug/g ✓		
29	4814A WWC	6.0	.022	12.3			x .80 ug/g ✓		
30	B WWC	8.0	.033	10.3			x .11 ug/g ✓		
31	C	11.3	.049	11.2			x .14 ug/g ✓		
32	Blank	3.7	.011				x .093 ug/g ✓		
33	.20	43.2	.208				x .11 ug/g ✓		
34	Blank distill.	5.8	.021				x .27 ug/g ✓		
35	Blank spk - dist	31.2	.149				x .11 ug/g ✓		
36	EPA # 8	57.7	.281				x .46 ug/g ✓		
37	4814 B Dup. WWC	9.2	.0385	16.4			x .42 ug/g ✓		
38	B spk	36.2	.174	10.4					
39	4764I WWC - FM	6.2	.023	12.4	↓				
40	4764J	5.6	.0205	12.3					

Analyst Name: Carleen Bankin

Date Analyzed: 11-14-85

Stock N: 1029

Date Standardized: _____

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

4.) 3/2 5.) All Cn 6.) Cn-After Treatment 7.) 5-6 995

general testing corporation



CYANTER

water and wastewater testing specialists

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

85 Tannity Place
Hackensack, NJ 07601
(201) 489-5242

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Job Number	Company Name	Peak Ht.	mg/1	Org. Vol.	Final Vol.	Conc. Factor	Total Cn	Fixed Cn	Free Cn
1	4764 I-Dup.	6.1	.023	12.3	1250		x.47	us/g	✓
2	4764 I SPK	9.9	.087				x.11		
3	Blank	6.0	.023				x		
4	2	45.4	.319				x		
5	Blank SPK	35.4	.1109				x		
6	EPA # 8	over					x		
7	4766 WCC	6.2	.024	10.1	250		x.6	us/g	✓
8	I DP	6.2	.024				x.11		
9	I SPK	9.6	.0405	10.4			x.11		
10	L	6.3	.024	10.5			x.58	us/g	✓
11	Blank	40.4	.194				x		
12	Blank SPK	35.1	.168	480	250	.52	x.11		
13	EPA # 5 (112)	66.7	.326				x.17		
14	52028 Hawfms	6.0	.023	300	250	.833	x.02		✓
15	Blank	5.0					x		
16	20	44.9	.21				x		
17	52028 Dup.	6.5	.025				x.11		
18	D SPK	25.8	.136				x.12		
19	52028 H	9.0	.037	475	250	.53	x.02		✓
20	I	5.2	.0185	465	250	.54	x<.01		✓
21	Blank	5.9					x		
22	Blank SPK dest	32.2	.137				x.11		
23	52116 Y MAX	38.0	.183	275	250	.91	x.17		✓
24	52180	18.8	.0865	200	100	.5	x.043		✓
25	52187 A	26.2	.124	325	250		x.095		✓
26	20	47.6	.230				x		
27	52239 C WMT	6.3	.024	500	250	.5	x.01		✓
28	D	6.2	.024				x.01		✓
29	E	5.4	.0195				x<.01		✓
30	F	6.0	.023				x.01		✓
31	G	6.1	.023				x.01		✓
32	Dp6 my*	6.1	.023				x.01		✓
33	SPK6	56.9	.277				x.200		✓
34	H	5.8	.021				x.01		✓
35	52241 A Motorola	100.0	.492				x.25		✓
36	52237 A URS-DAL	6.5	.025	465	250	.54	x.01		✓
37	(41. BI)	6.2	.023	465	250	.54	x.01		✓
38	4853 C WCC-CLETA	6.2	.024	10.4	250		x.58	us/g	✓
39	4866 WCC	9.1	.038	10.2			x.193	us/g	✓
40	D.C. prot. EPA # 5	55.9					x.25	103%	

Analyst Name: _____ Date Analyzed: _____
 Stock N: _____ Date Standardized: _____

- 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

WET CHEM QUALITY CONTROL WORKSHEET

1.) Linear Regression (if applicable)

. Std's deleted: none

2. Corr. Coefficient: .998

2.) Precision (duplicates, one for every ten samples run) Comb. QC 2 runs

Job #	Analytical Value #1	Analytical Value #2	[#1-#2] x 100 Ave.	Dilution	Within Limits (y or n)
4856 C	.033	.0248	100% .0289 29%		
4814 D	.033	.038	100% .036 13.8%		
4766 J	.020	.022	100% .022 10%		
4766 J	.024	.024	0%		
52239 G	.023	.023	0%		

3.) Spiked Recovery (one for every ten samples run)

Job #	(B) Ave. Analytical Value of Sample	Mg spike added	(C) Sample Volume	(A) mg/l of Spike	Analytical Value of Spiked Sample	A-B x 100 C	Within Limit (y or n)
Blank spike my		50ml/10ppm		.0465	.046	99%	y
4856	.0289 (mg)	50ml/10ppm		.0465	.0755	100%	y
Blank spike dist				.086	.14	162%	y
4814 B dist	.035	20mlst	250	.086	.174	160%	
4766 J	.021	20mlst	250	.087	.087	77%	
Blank spike dist		" "	" "	.086	.1169	196%	
4766	.024			.086	.0405	19%	
Blank spike dist				.086	.1168	196%	
" "					.137	160%	
52239 G	.023	50ml 10ppm	10ml	.0193	.221 (8ml)	104%	y

4.) EPA Check Sample Recovery

EPA #	True Value	Value Obtained	% Recovery	Within Limits (y or n)
EPA # 8	.561	.562	100.1%	y
	.561	.518	92.3%	y
#5	.22	.17	77%	

TES

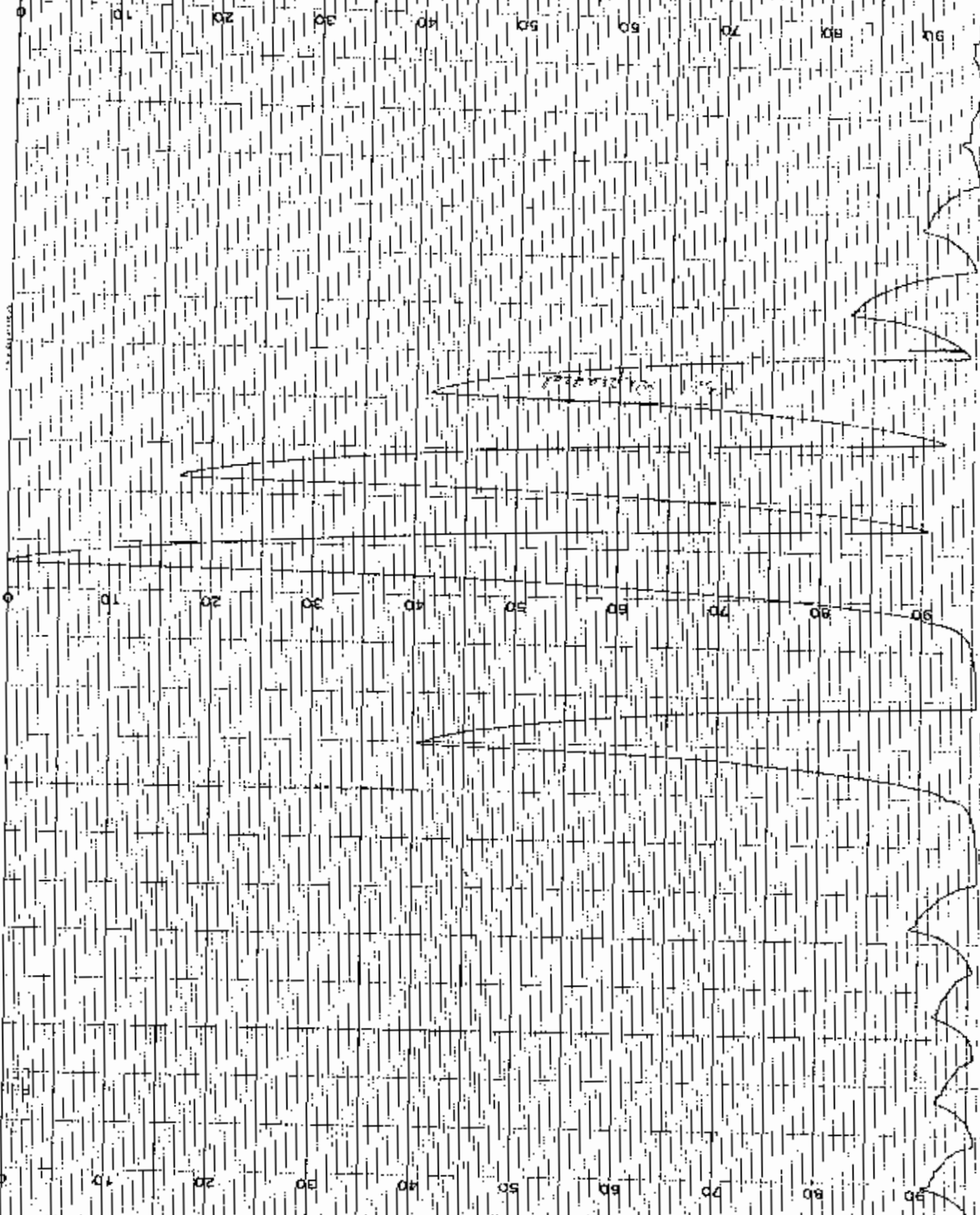
All QC Calculations to 3 sig. fig.
 Duplicates out of limits (on Ave.) disqualify run
 Spiked blanks out of limits (on Ave.) disqualify run
 EPA Rec. out of limits (on Ave.) disqualify run.
 Spiked samples out of limits - repeat sample and all others similar.

FLKAY PRODUCTS, INC. WORCESTER, MASS.

FLKAY PRODUCTS, INC. WORCESTER, MASS.

CHART NO. LK011-0173 A-A2

100 90 80 70 60 50 40 30 20 10 0



145

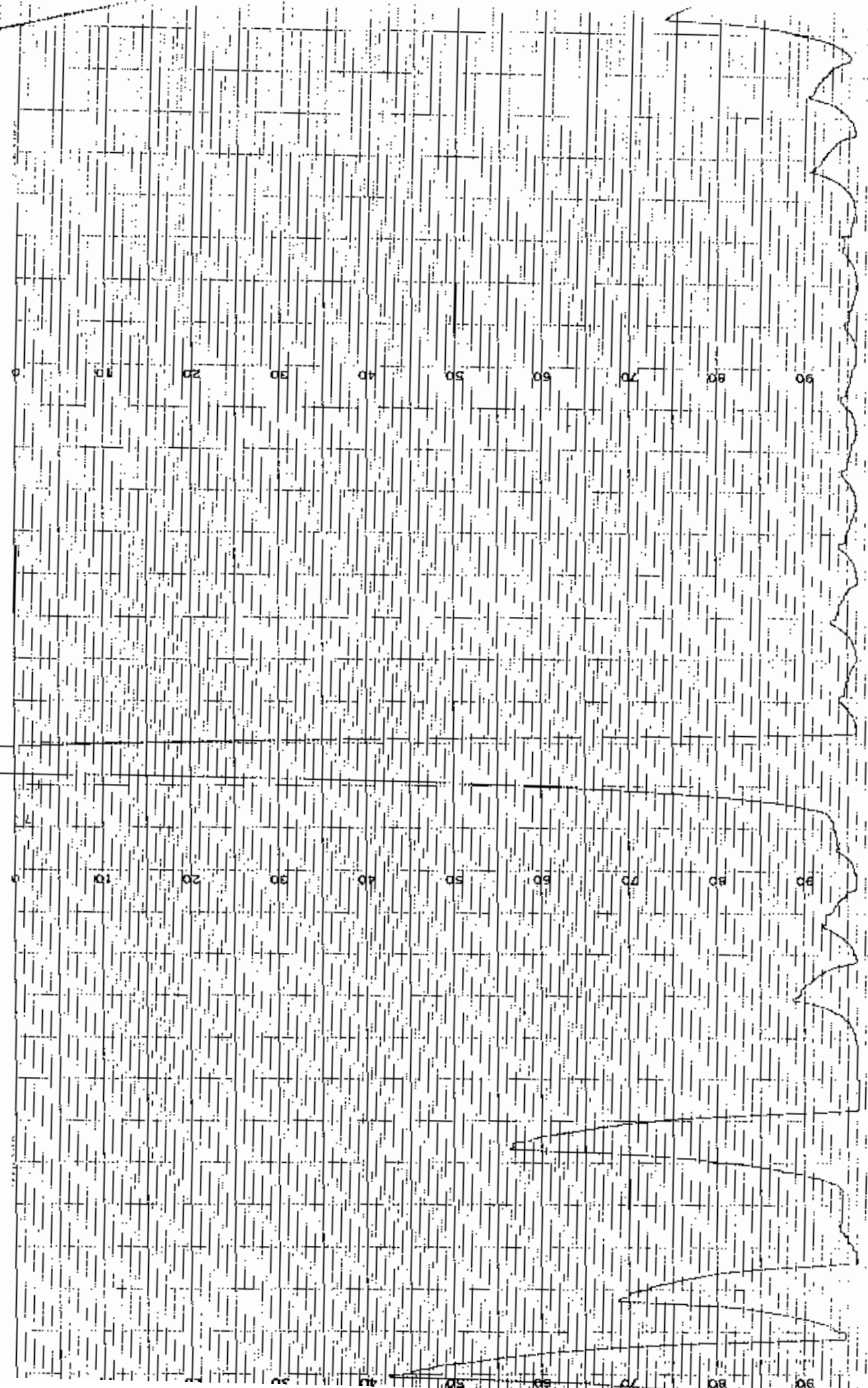
EKKAY PRODUCTS, INC., WORCESTER, MASS.

CHART NO. LR011-0179 A.A.2

MANUFACTURED

3

EKKAY PR100



146

ELKAY PRODUCTS, INC., WORCESTER, MASS.

CHART NO. LR011-0173 A.A.2

AUGUST 1953

5

ELKAY PRODUCTS, INC., WORCESTER, MASS.

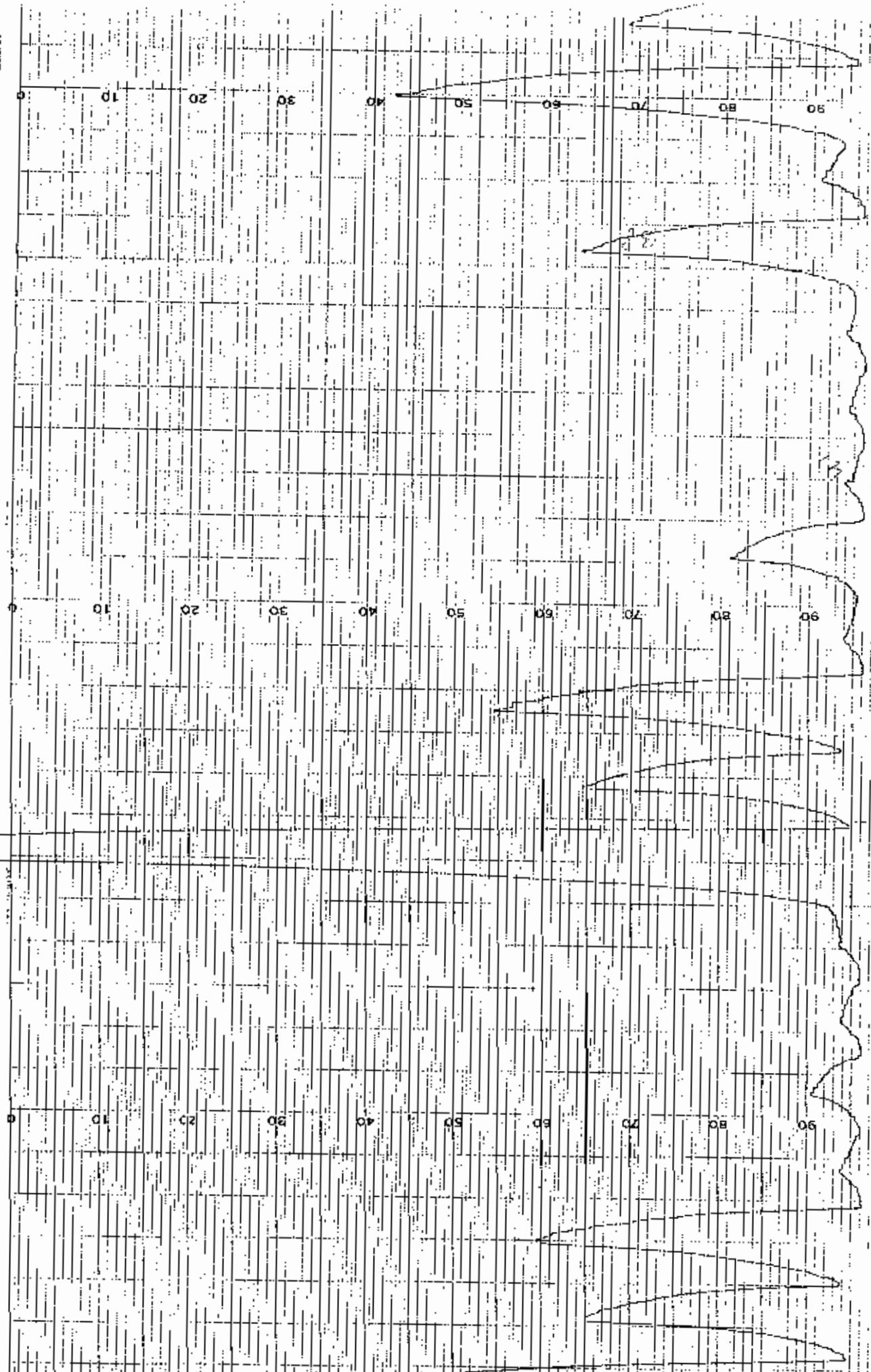


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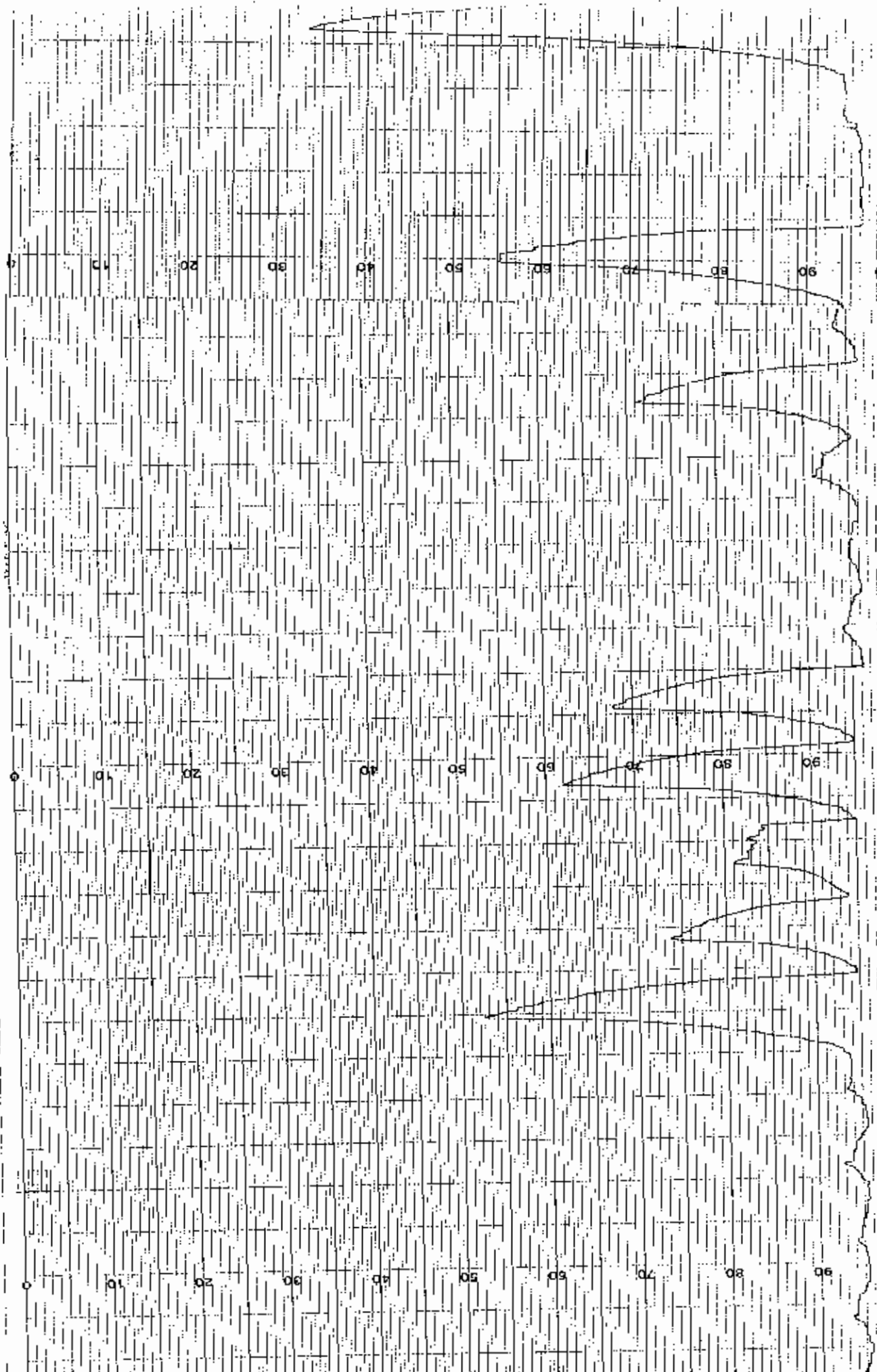
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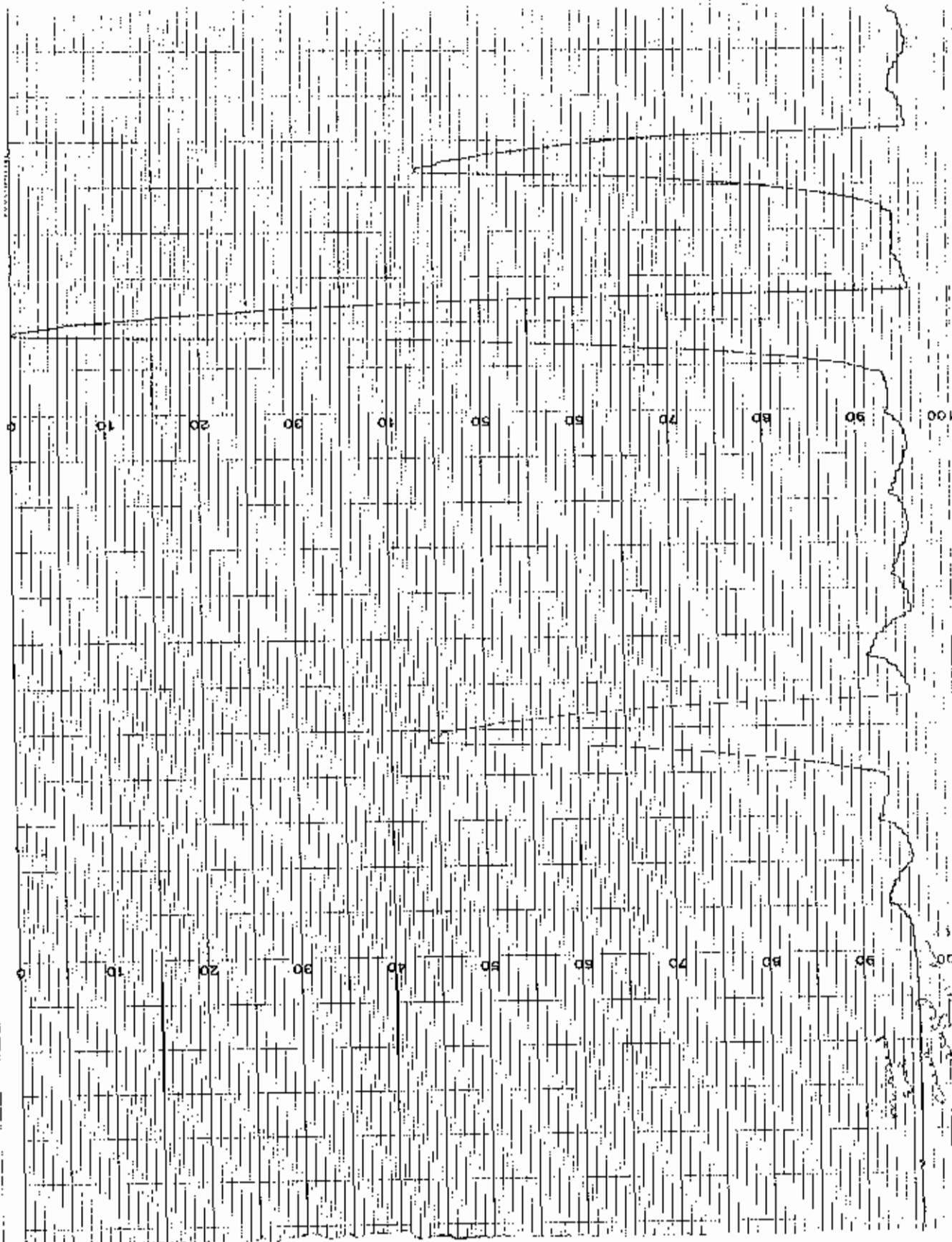
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CHART NO. LK001-0173 A-A-2

PRINTED IN U.S.A.



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ELKAY PRODUCTS, INC., WORCESTER, MASS.

CHART NO. LK011-0173 A.A.2

MAY 1952

149
 J. Baird
 11/21/85

CYANTIDE

water and wastewater testing specialists

Corporation

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

85 Trinity Place
 Hackensack, NJ 07607
 (201) 488-5242

Job Number	Company Name	Peak Ht.	mg/l	Org. Vol.	Final Vol.	Conc. Factor	Total Cn	Fixed Cn	Free Cn
1	.5	9.4							
2	Blank	2.5							
3	.01	3.5							
4	.02	4.9							
5	.05	9.4							
6	.10	22.0							
7	.20	33.6							
8	.40	29.9							
9	.50	12.0							
10	Blank	2.5							
11	.20	40.9	.2005						
12	Blank method	2.5							
13	Blank spk my	9.5	.0446						
14	EPA #5 112	45.4	.225						
15	#5 112	45.4	.225						
16	Blank dist	2.7	.010						
17	Blank spk dist	20.7	.101						
18	4764 J	2.5	.009	12.4	250	<.20	<.20		
19	Dup J	2.5	.009						
20	spk J	9.2	.043			(.87)			
21	Blank spk	23.0	.1125	500	250	.5			
22	4814 B	5.6	.025	10.4					
23	Dup B	5.5	.0245						
24	spk B	25.4	.1246						
25	EPA #8	49.2	.2443	11.2					
26	Blank	2.5	.0094						
27	Blank spk	21.6	.1055	500	250				
28	S2221 GWLISK	2.5	.009	275		.909		<.01	.01
29	S2232 A Xerox	12.1	.0577	390		.64		.04	.01
30	B " "	7.5	.0346	430		.58		.02	.03
31	S2233 Xerox	53.2	.2641	455		.55		.15	<.01
32	Blank	2.0	.0069						
33	.20	41.9	.207						
34	S2242 A Xerox	11.6	.055	460		.54		.03	<.01
35	4890 B Engelhard	4.3	.0155	330		.71		.01	✓
36	B Dup. mens	4.6	.020						
37	spk	24.2	.118			1.0			
38	S2028 Thaw Eng	2.5	.0094	470		.53	<.01		✓
39	S2279 WMI Mathewz	3.0	.012	445		.56	<.01		✓
40	Dup 4897.2m	3.0	.012						

Analyst Name: Colleen Baird Date Analyzed: 11-20-85
 Stock #: _____ Date Standardized: _____

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

Merid testing corporation

CYANIDE

Water and wastewater testing specialists

710 Exchange Street
Rochester, NY 14608
1716) 454-3760

85 Trinity Place
Hackensack, NJ 07601
(201) 486-5242

Job Number	Company Name	Peak Ht.	mg/l	Org. Vol.	Final Vol.	Conc. Factor	Total Cn	Fixed Cn	Free Cn
1	52279 SPIC	13.9	.0869	(.0497)				✓	
2	52285 Recm steel	21.2	.1035	440	250	.57	106	✓	
3	52291 Vmax	40.2	.199	425		.59	12	✓	
4	48512 Pipe - PVSC over			500		.5		✓	
5	52237 GURS-DALTON	4.2	.0180	300		.83	.01	✓	
6	60p	4.3	.0185	50				✓	
7	60p Dust	23.7	.1160	"				✓	
8	Blank	2.5	.009					✓	
9	Blank spk dist + 220		.107			.5	.05	✓	
10	51971A Lawens	3.0	.012	10.1			.30	✓	
11	B	3.0	.012	10.7			.25	✓	
12	C	2.5	.0094	10.0			1.25	✓	
13	4766 V WCC	4.0	.017	10.1	250		.42	✓	
14	Blank	2.2	.0079					✓	
15	2	42.6	.211					✓	
16	52271 Bestway	2.0	.0069	5.1	100		1.19	✓	
17	52168 A	2.5	.0094	2.1	100		1.48	✓	
18	B	2.0	.0069	2.0	100		1.35	✓	
19	52283 A W W Babcock	3.2	.013	468	250		1.01	✓	
20	DPA	3.5	.0145					✓	
21	SPVA		low					✓	
22	B	2.6	.0094	420	250		1.01	✓	
23	52278 WMI-Mohawk	4.2	.018	450	250		1.01	✓	
24	4854 B Pipe PVSC	1.10	.1103	500	250			✓	
25	Blank	2.5	.009				1.37	✓	
26	2	43.0	.213					✓	

Analyst Name: _____ Date Analyzed: _____
 Block #: _____ Date Standardized: _____

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

WET CHEM QUALITY CONTROL WORKSHEET

A.) Linear Regression (if applicable)

- 1. Std's deleted: _____
- 2. Corr. Coefficient: _____

B.) Precision (duplicates, one for every ten samples run)

Job #	Analytical Value #1	Analytical Value #2	$\frac{[#1-#2]}{\text{Ave.}} \times 100$	Dilution	Within Limits (y or n)
4764 J	.20	.20	—	—	y
4890 B	.0185	.020	$\frac{.0015}{.0192} = 7.8\%$		y
52239	.012	.012	—	—	y
52239 G	.0180	.0185	$\frac{.0005}{.0183} = 2.7\%$		y
52283	.0145	.0130	$\frac{.0015}{.0138} = 10.8\%$		y

C.) 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 Limit (y or n)
Blank spk dist			250	.086	.101	117%	y
4764 J	.20				.87		
Blank spk dist			250	.086	.102	117%	y
4890	.0192			.086	.118	114%	
52239	.012			.086	.0869	88%	
52239 G	.0183			.086	.112	113%	
Blank spk				.086	.107	124%	
" " AA	.1			.445	.446		

D.) EPA Check Sample Recovery

EPA #	True Value	Value Obtained	% Recovery	Within Limits (y or n)
# 5	.22	.22	102%	
		.22	107%	
# 8	.516	.224 x 2	90%	

NOTES

- 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.

CLL
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general testing corporation

water and wastewater testing specialists

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

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

CYANIDE DISTILLATION

APPARATUS *	DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACTOR	TCN	FCN
#3	11/6/85	4814A	WWC	12.3			✓	
#4		4814B	↓	10.3			✓	
#5		4814C	↓	11.2			✓	
#6		Blank		500			✓	
#7		Blk spk					✓	
#8		EPA #8 WP1182					✓	
#9		4814B dup WWC		10.4			✓	
#10	✓	4814B spk ↓		10.4			✓	
#2	11/7/85	4764I	WCC-FM	12.4			✓	
#3		4764J		12.3				
#4		4764J dup						
#5		4764J spk						
#6		Blank						
#7		Blk spk						
#8	✓	EPA #8 WP1182						
#9	✓							
#10	✓							

765
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general testing corporation

water and wastewater testing specialists

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

85 Trinity Place
Hackensack, NJ 07601
(201) 488-6242

CYANIDE DISTILLATION

APPARATUS *	DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACTOR	TCN	FCN
#1	11/7/85	52239C	WMI/MC	500			✓	
#2		52239D					✓	
#3		52239E					✓	
#4		52239F					✓	
#5		52239G					✓	
#6		52239H	↓				✓	
#7		522A1A	Motorola	↓			✓	
#8		52237A	URS/DALT	460			✓	
#9		52237B	↓	465			✓	
#10	↓	4853 C	WCC-CLFTN	10.4			✓	
#1	11/7/85	4866	WCC	10.2			✓	
#2-#8	↓	DEC. protocol + QC					✓	
#9	52237	52237C	URS/DALT	470			✓	
#10	↓	52237D	↓	475			✓	

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154

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

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

CYANIDE DISTILLATION

APPARATUS *	DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACTOR	TCN	FCN
#1	11-19-85	Blank		500	250		✓	
#2		Blank spk		480+20ml 1/1000 stock			✓	
#3		52221	GWLISK	275				✓
#4		52232A	Xerox	390				✓
#5		52232B	↓	430				✓
#6		52233	↓	455				✓
#7		52242A	↓	460				✓
#8		HO 4890 52233 B	Engelhard	350			✓	
#9		4890B dup	↓				✓	
#10	↓	4890B spk	↓	+20 ml of 1/1000 stock	↓		✓	
#1	11-19-85	52028J	Law Eng	470	250			✓
#2		52279	WMI- Mohauba	445			✓	
#3		52288	Roch Steel	440			✓	
#4		52291	Xerox	425			✓	
#5		4854 B	POPE- PVSC	500			✓	
#6		52237G	URS- DALTON	300			✓	
#7		52237G dup	↓				✓	
#8		52237G spk	↓				✓	
#9		Blank	↓	500			✓	
#10	↓	Blk spk	↓	480+20ml 1/1000 stock	↓		✓	

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general testing corporation

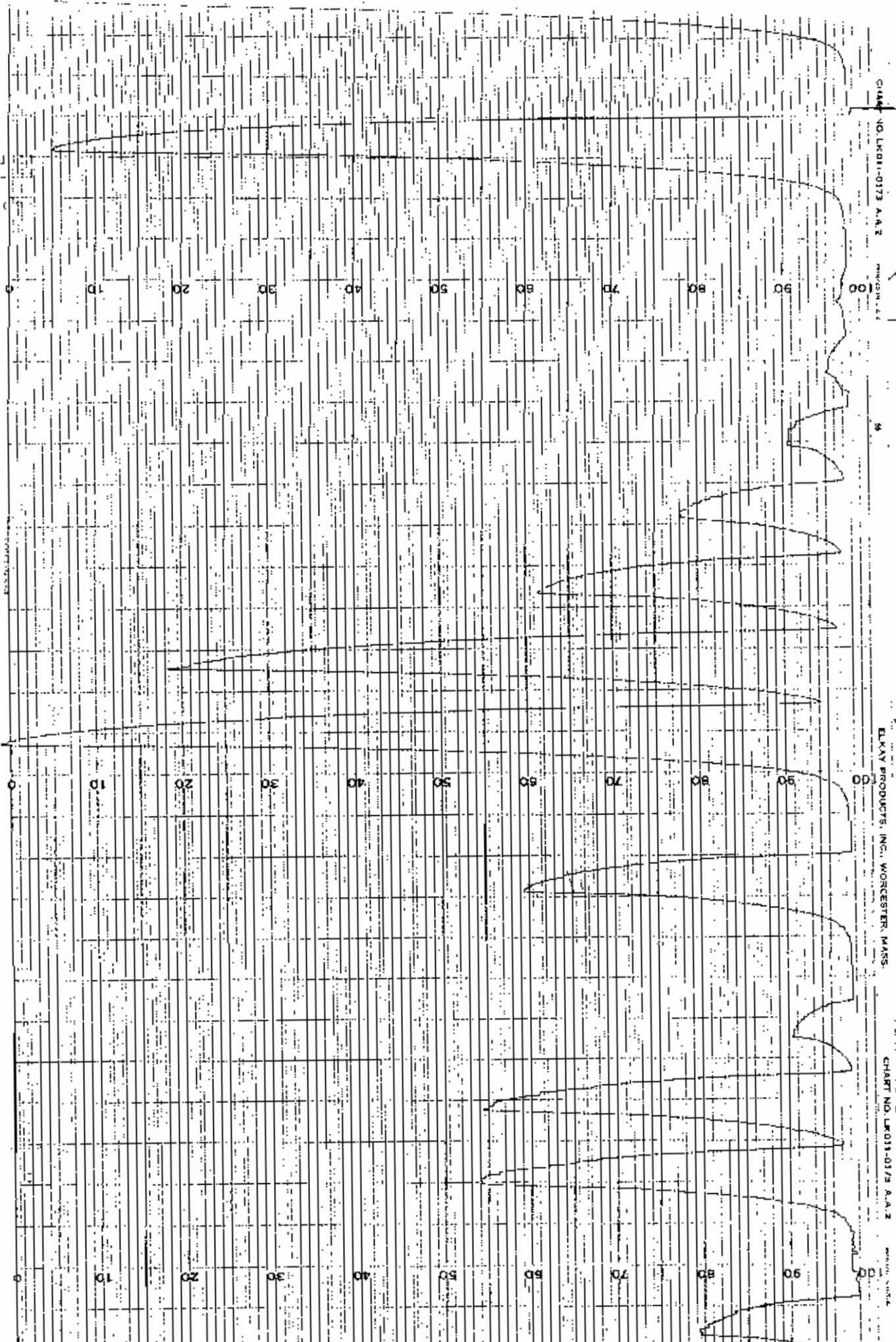
water and wastewater testing specialists

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

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

CYANIDE DISTILLATION

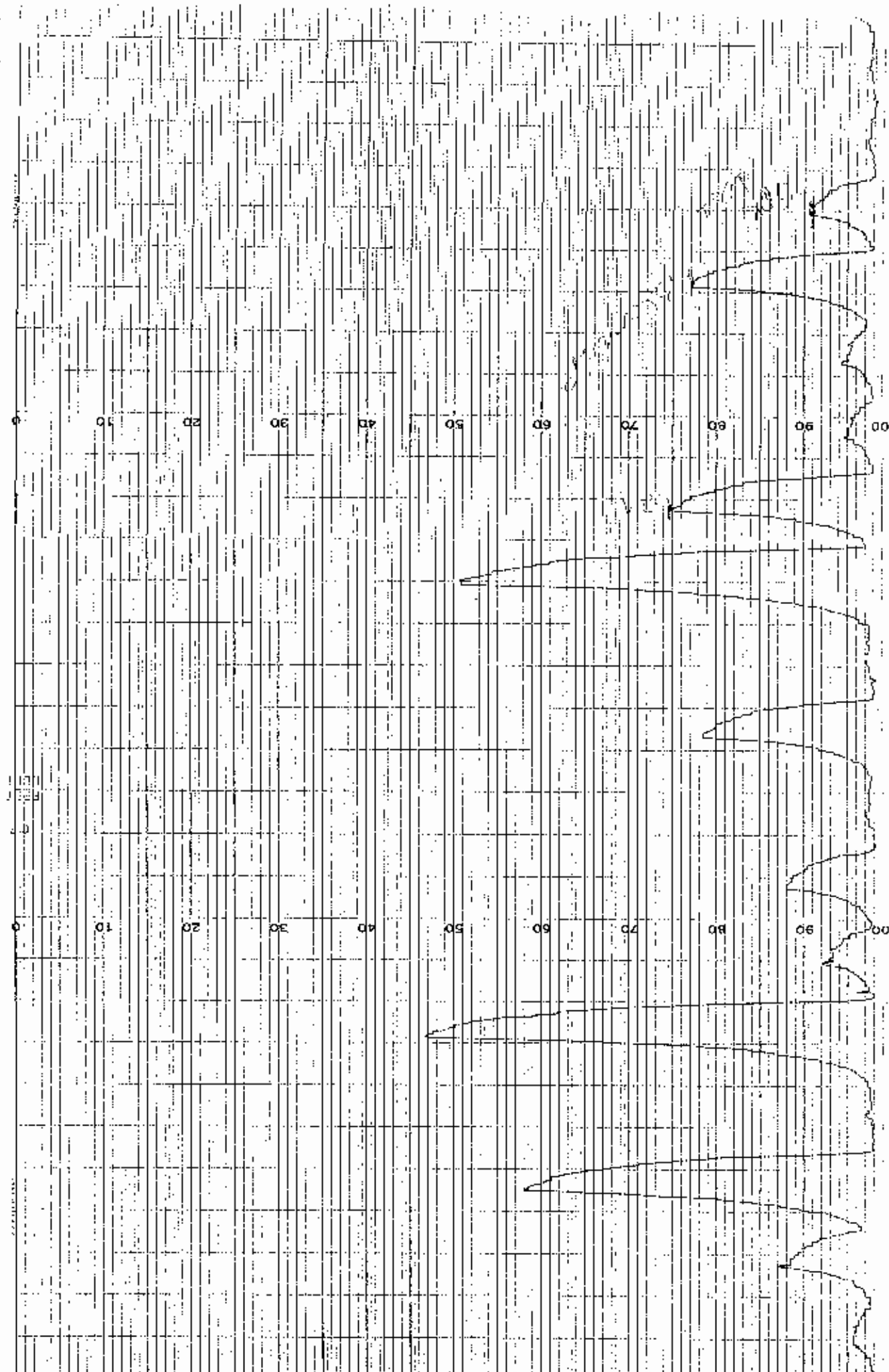
APPARATUS *	DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACTOR	TCN	PCN
#1	11/12/85	52028D	Law Eng	300	250		✓	
#2		52028D dup					✓	
#3		52028D spk		+20ml ↓ 1/1000 stock			✓	
#4		52028H		475			✓	
#5		52028I		465			✓	
#6		Blank		500			✓	
#7		Blank opt		480 + 20ml 1/1000 stock			✓	
#8		52116	Xerox	275				✓
#9		52180		200	100			✓
#10		52187A		325	250			✓
#1	11/14/85	51971A	Law Eng	10.1g	250 ml		✓	
#2		51971B		10.7g	250 ml		✓	
#3		51971C		10.0g	250 ml		✓	
#4		4766 K	WCC-OC	10.1g	250 ml		✓	
#5		52271	Bestway	5.1g	100 ml		✓	
#6		52168A		2.1g	100 ml		✓	
#7		52168B		2.0g	100 ml		✓	
#8		52283A	WV Babcock	465	250 ml		✓	
#9		52283B		420	250 ml		✓	
#10		52278	WMI Mohawk	450	250 ml		✓	



RAY PRODUCTS, INC., WORCESTER, MASS.

CHART NO. LR011-0173 A.A.2

REVISIONS





161

NO. LR011-0172 A.2-2

MINIMUM DATA

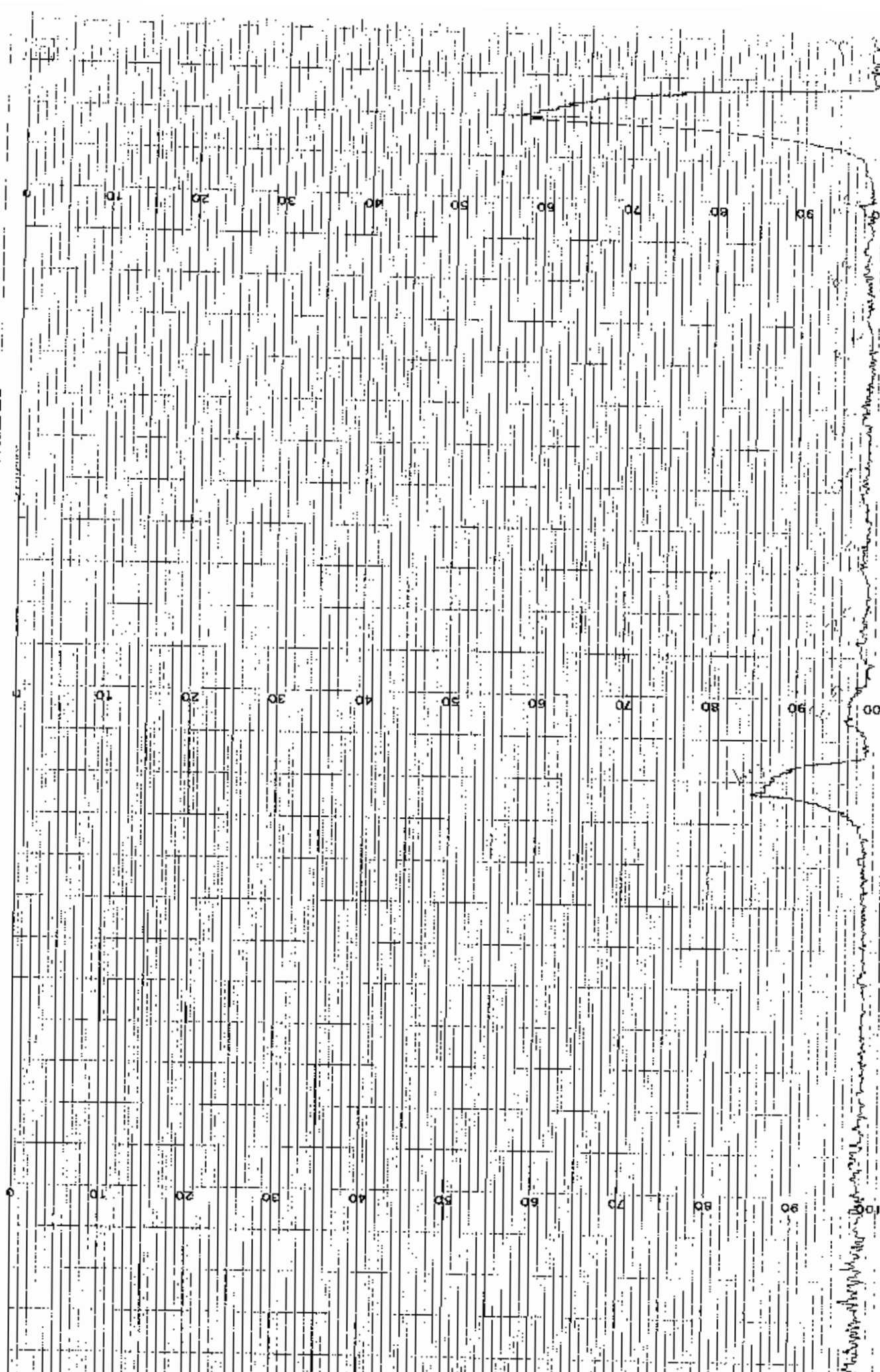
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ELKAY PRODUCTS, INC. WORCESTER, MASS.

CHART NO. LR011-0173 A.2-2

MINIMUM DATA

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162

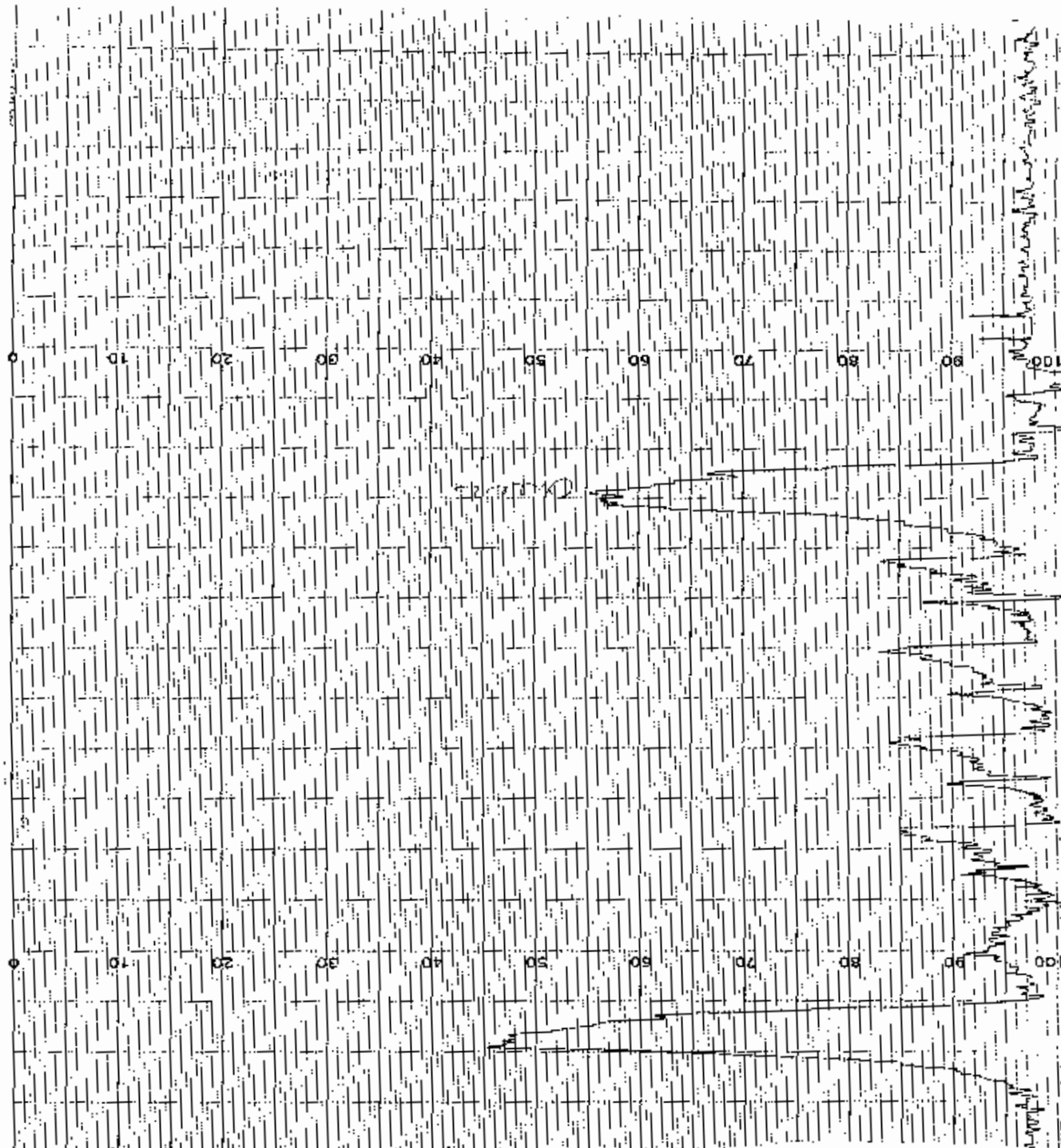
WATER TEMPERATURE

EMERY PRODUCTS, INC., WORCESTER, MASS.

CHART NO. LK011-0173 A-A-2

IN WATER

5



SECTION E

Chain of Custody Documentation

CHAIN OF CUSTODY RECORD

URS Company, Inc.

SAMPLER (Signature) *Wayne S. Das*

SAMPLE DESCRIPTION	DATE 1985	TIME PM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-US-WC-1A	11/5	3:15	52237-A		✓	Cool 4°C	NO ₂ , OPO ₄
PAS-US-WC-1A	11/5	3:15	52237-A		✓	H ₂ SO ₄	TP, NH ₃ , TRN, NO ₃ , TOC
PAS-US-WC-1A	11/5	3:15	52237-A		/	Cool 4°C	Dissolved Solids Suspended Solids
PAS-US-WC-1A	11/5	3:15	52237-A		/	HNO ₃	Metals
<i>PAS-US-WC-1A</i>	<i>11/5</i>	<i>3:15</i>	<i>52237-A</i>		/	<i>H₃PO₄ + CuSO₄</i>	<i>Phosphorus</i>
<i>PAS-US-WC-1A</i>	<i>11/5</i>	<i>3:15</i>	<i>52237-A</i>		/	<i>NaOH</i>	<i>Cyanides</i>

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. Das</i>	Received by: (Signature) <i>Sue Toscano</i>	Date/Time 11/5/85 4:00
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>Sue Toscano</i>	Received by: (Signature) <i>Carol Sommer</i>	Date/Time 11-6-85 8:00 AM
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.

SAMPLER (Signature) *Wayne S. Das*

SAMPLE DESCRIPTION	DATE 1985	TIME PM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-US-WC-1	11/5	2:15	52237-B		✓	COOL 4°C	NO ₂ , NH ₃
PAS-US-WC-1	11/5	2:15	52237-B		✓	H ₂ SO ₄	TP, H ₂ , TRN NO ₂ , TOC
PAS-US-WC-1	11/5	2:15	52237-B		✓	COOL 4°C	DISSOLVED SOLIDS SUSPENDED SOLIDS
PAS-US-WC-1	11/5	2:15	52237-B		✓	HNO ₃	METALS
PAS-US-WC-1	11/5	2:15	52237-B		✓	H ₃ PO ₄ & CuSO ₄	Phenolics
PAS-US-WC-1	11/5	2:15	52237-B		✓	NaOH	Cyanides

THIS SECTION TO BE COMPLETED BY URS COMPANY, INC.

Relinquished by: (Signature) <i>Wayne S. Das</i>	Received by: (Signature) <i>Sue Toscano</i>	Date/Time 11/5/85 4:00
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>Sue Toscano</i>	Received by: (Signature) <i>Carol Donner</i>	Date/Time 11-6-85 8:00 AM
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.

SAMPLER (Signature) *Wayne S. Don*

SAMPLE DESCRIPTION	DATE 1985	TIME PM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-US-WNC-2A	11/5	2:40	52237-C		✓	Asst. #12	NO ₂ , CO ₂
PAS-US-WNC-2A	11/5	2:40	52237-C		✓	H ₂ SO ₄	TP, NH ₃ , TRN NO ₃ , TCC
PAS-US-WNC-2A	11/5	2:40	52237-C		✓	Asst. #12	DISSOLVED SOLIDS SUSPENDED SOLIDS
PAS-US-WNC-2A	11/5	2:40	52237-C		✓	HNO ₃	METALS
PAS-US-WNC-2A	11/5	2:40	52237-C		✓	H ₃ PO ₄ & CuSO ₄	Phenolics
PAS-US-WNC-2A	11/5	2:40	52237-C		✓	NaOH	Cyanides

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. Don</i>	Received by: (Signature) <i>Sue Toscano</i>	Date/Time 11/5/85 4:00
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>Sue Toscano</i>	Received by: (Signature) <i>Carol Janner</i>	Date/Time 11-6-85 8:00 am
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 RECORDURS Company, Inc.

SAMPLER (Signature)

Wayne S. Davis

SAMPLE DESCRIPTION	DATE 1985	TIME PM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
TAS-US-WWC-2	11/5	2:00	52237-D		✓	Cool APC	NO ₂ , O ₃
TAS-US-WWC-2	11/5	2:00	52237-D		✓	H ₂ SO ₄	Pb, Ni, Zn, THN, NO ₃ , TSS
TAS-US-WWC-2	11/5	2:00	52237-D		✓	Cool APC	DISPERSED SOLIDS SUSPENDED SOLIDS
TAS-US-WWC-2	11/5	2:00	52237-D		✓	HNO ₃	Metals
TAS-US-WWC-2	11/5	2:00	52237-D		✓	H ₃ PO ₄ + CuSO ₄	Phenolics
TAS-US-WWC-2	11/5	2:00	52237-D		✓	NaOH	Cyanides

THIS SECTION TO BE COMPLETED BY URS COMPANY, INC.

Relinquished by: (Signature)

Wayne S. Davis

Relinquished by: (Signature)

Received by: (Signature)

Sue Toscano

Received by: (Signature)

Date/Time

11/5/85 4:00

Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)

Sue Toscano

Relinquished by: (Signature)

Received by: (Signature)

Carol Jenner

Received by: (Signature)

Date/Time

11-6-85 8:00 AM

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 RECORDURS Company, Inc.

SAMPLER (Signature)

Wayne S. Davis

SAMPLE DESCRIPTION	DATE 1985	TIME PM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-WC-05-3	11/5	1:00	52231-E		✓	CeCl ₄ 4°C	NO ₂ , CPO, 41
PAS-WC-05-3	11/5	1:00	52231-E		✓	H ₂ O ₂ 4	TP, NH ₃ , TAN, NO ₃ , TOC
PAS-WC-05-3	11/5	1:00	52231-E		✓	CeCl ₄ 4°C	DISCHARGED SOLIDS SUSPENDED SOLIDS
PAS-WC-05-3	11/5	1:00	52231-E		✓	HNO ₃	METALS
PAS-WC-05-3	11/5	1:00	52231-E		✓	H ₃ PO ₄ + CuSO ₄	Phenolics
PAS-WC-05-3	11/5	1:00	52231-E		✓	NaOH	Cyanides

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature)

Wayne S. Davis

Relinquished by: (Signature)

Received by: (Signature)

Alan Gillett

Received by: (Signature)

Date/Time

11/5/85 4:00

Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)

Joe Toscano

Relinquished by: (Signature)

Received by: (Signature)

Carol Somers

Received by: (Signature)

Date/Time

11-6-85 8:00 AM

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.

SAMPLER (Signature) <i>Wayne S. De...</i>							
SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-WINE-DS-4	11/5	12:00 PM	52237-F		✓	Cool 4°C	NO ₂ , CO ₂
PAS-WINE-DS-4	11/5	12:00	52237-F		✓	H ₂ SO ₄	Pb, Ni, Zn, Cu, NO ₂ , Fe
PAS-WINE-DS-4	11/5	12:00	52237-F		✓	Cool 4°C	DISSOLVED SOLIDS, SUSPENDED SOLIDS
PAS-WINE-DS-4	11/5	12:00	52237-F		✓	HNO ₃	METALS
PAS-WAC-DS-4	11/5	12:00	52237-F		✓	H ₃ PO ₄ + CuSO ₄	Phosphates
PAS-WAC-DS-4	11/5	12:00	52237-F		✓	NaOH	Cyanides

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. De...</i>	Received by: (Signature) <i>Gene Pallett</i>	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	11/5/85 4:00
		Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature) <i>Sue Iascano</i>	Received by: (Signature) <i>Carol Sonner</i>	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	11-6-85 8:00 AM
		Date/Time

Name and Location of Laboratory

CHAIN OF CUSTODY RECORD

URS Company, Inc.

SAMPLER (Signature) *Wayne S. Davis*

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-WANC-DS-6	11/5	10:45	52237-G		✓	Acid 4°C	NO ₂ , CPO ₄
PAS-WANC-DS-6	11/5	10:45	52237-G		✓	H ₂ SO ₄	TP, NH ₃ , TRN NO ₃ , TFC
PAS-WANC-DS-6	11/5	10:45	52237-G		✓	Acid 4°C	DISSOLVED SOLIDS SUSPENDED SOLIDS
PAS-WANC-DS-6	11/5	10:45	52237-G		✓	HNO ₃	METALS
PAS-WANC-DS-6	11/5	10:45	52237-G		✓	H ₃ PO ₄ + CuSO ₄	Phenolics
PAS-WANC-DS-6	11/5	10:45	52237-G		✓	NaOH	Cyanides

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. Davis</i>	Received by: (Signature) <i>Gene Bell</i>	Date/Time 11/5/85 4:00
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>Dave Toscano</i>	Received by: (Signature) <i>Carol Souner</i>	Date/Time 11-6-85 8:00 AM
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Name and Location of Laboratory

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