

Vol. 2

Copy 1
WAYNE S. DAVIS

SECTION IV

INORGANIC ANALYSIS ON WATER SAMPLES 50705 A-G.

- Subpart A: Evaluation of Analytical Data
- Subpart B: Analytical Data
- Subpart C: Quality Control
- Subpart D: Raw Data

SECTION IV, Subpart A

EVALUATION OF ANALYTICAL DATA FOR WATER SAMPLES 50705 A-G.

Each sample was analyzed for 24 metals as required by Contract Laboratory Protocol]. Each sample was also analyzed for Cyanide.

- 1.) Calcium, Iron, Lead, Magnesium, Potassium, and Sodium were detected in all seven samples.
- 2.) Silver was detected in all samples but Sample F (PAS-WNC-US-2A).
- 3.) Arsenic was detected at the detection limit of 2.0 ppb on Samples E (PAS-WNC-US-2A), and G (PAS-WNC-DS-6).
- 4.) Barium was detected on Samples B (PAS-WC-US-1), and F (PAS-WNC-DS-4).
- 5.) Zinc was detected on Samples A (PAS-WC-DS-3), C (PAS-WNC-US-2), D (PAS-WC-US-1A).
- 6.) Cyanide was detected at or near the detection limit for Samples F (PAS-WNC-DS-6), and G (PAS-WNC-DS-6).

DATA SUMMARY FOR WATER SAMPLES 50705 A-G

	A	B	C	D	E	F	G
Aluminum	ND	ND	ND	ND	ND	ND	ND
Antimony	ND	ND	ND	ND	ND	ND	ND
Arsenic	ND	ND	ND	ND	2.0	ND	2.0
Barium	ND	130	ND	ND	ND	100	ND
Beryllium	ND	ND	ND	ND	ND	ND	ND
Cadmium	ND	ND	ND	ND	ND	ND	ND
Calcium	68000	65000	74000	44000	66000	7200	7200
Chromium	ND	ND	ND	ND	ND	ND	ND
Cobalt	ND	ND	ND	ND	ND	ND	ND
Copper	ND	ND	ND	ND	ND	ND	ND
Iron	1100	2200	240	190	190	590	460
Lead	26	27	11	7.4	9.7	18	20
Magnesium	5000	16000	15000	9400	14000	15000	15000
Manganese	800	950	130	53	94	310	220
Mercury	ND	ND	ND	ND	ND	ND	ND
Nickel	ND	ND	ND	ND	ND	ND	ND
Potassium	16000	16700	3000	850	1800	7000	6000
Selenium	ND	ND	ND	ND	ND	ND	ND
Silver	27	29	46	13	ND	27	23
Sodium	108000	91000	30100	12000	17100	62500	60700
Thallium	ND	ND	ND	ND	ND	ND	ND
Tin	ND	ND	ND	ND	ND	ND	ND
Vanadium	ND	ND	ND	ND	ND	ND	ND
Zinc	10	ND	15	13	ND	ND	ND
Cyanides	ND	ND	ND	ND	ND	12	10

Note: All values reported in ug/l.

SECTION IV, Subpart B

ANALYTICAL DATA FOR WATER SAMPLES 50705 A-C.

Date June 28, 1985

COVER PAGE

INORGANIC ANALYSIS DATA PACKAGE

Lab Name General Testing

Job No. 50705

PAS Environmental Assessment

Q.C. Report No. 50705-3

SAMPLE NUMBERS

Lab ID No.

Lab ID No.

50705-A (PAS-WC-OS-3)

50705-G (PAS-WNC-DS-6)

50705-B (PAS-WC-US-1)

50705-C (PAS-WNC-US-2)

50705-D (PAS-WC-US-1A)

50705-E (PAS-WNC-US-2A)

50705-F (PAS-WNC-DS-4)

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 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.
 PAS-WC-05-3

Date 6/28/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing Corp. JOB NO. 50705

LAB SAMPLE ID. NO. 50705-A QC REPORT NO. 50705-3

Elements Identified and Measured

Concentration: Low x Medium _____

Matrix: Water x Soil _____ Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	100 u	13. Magnesium	15000
2. Antimony	5 u	14. Manganese	800
3. Arsenic	2 u	15. Mercury	0.2 u
4. Barium	150 u	16. Nickel	40 u
5. Beryllium	5 u	17. Potassium	16000
6. Cadmium	5 u	18. Selenium	2 u
7. Calcium	68000	19. Silver	27
8. Chromium	10 u	20. Sodium	108000
9. Cobalt	50 u	21. Thallium	10 u
10. Copper	20 u	22. Tin	40 u
11. Iron	1100	23. Vanadium	250 u
12. Lead	26	24. Zinc	10
Cyanide	10 u	Percent Solids (%)	

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

Comments: _____

Lab Manager Michael K. Perry

Sample No.
 PAS-WC-US-1

Date 6/28/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing Corp. JOB NO. 50705

LAB SAMPLE ID. NO. 50705B QC REPORT NO. 50705-3

Elements Identified and Measured

Concentration: Low x Medium _____
 Matrix: Water x Soil _____ Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1. <u>Aluminum</u>	<u>100 u</u>	13. <u>Magnesium</u>	<u>16000</u>
2. <u>Antimony</u>	<u>5 u</u>	14. <u>Manganese</u>	<u>950</u>
3. <u>Arsenic</u>	<u>2 u</u>	15. <u>Mercury</u>	<u>0.2 u</u>
4. <u>Barium</u>	<u>130</u>	16. <u>Nickel</u>	<u>40 u</u>
5. <u>Beryllium</u>	<u>5 u</u>	17. <u>Potassium</u>	<u>16700</u>
6. <u>Cadmium</u>	<u>5 u</u>	18. <u>Selenium</u>	<u>2 u</u>
7. <u>Calcium</u>	<u>65000</u>	19. <u>Silver</u>	<u>29</u>
8. <u>Chromium</u>	<u>10 u</u>	20. <u>Sodium</u>	<u>91000</u>
9. <u>Cobalt</u>	<u>50 u</u>	21. <u>Thallium</u>	<u>10 u</u>
10. <u>Copper</u>	<u>20 u</u>	22. <u>Tin</u>	<u>40 u</u>
11. <u>Iron</u>	<u>2200</u>	23. <u>Vanadium</u>	<u>250 u</u>
12. <u>Lead</u>	<u>27</u>	24. <u>Zinc</u>	<u>10 u</u>
Cyanide	<u>10 u</u>	Percent Solids (%)	_____

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

Comments: _____

Lab Manager Michael A. Perry

Sample No.
 PAS-WNC-US-2

Date 6/20/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing Corp. JOB NO. 50705

LAB SAMPLE ID. NO. 50705C QC REPORT NO. 50705-3

Elements Identified and Measured

Concentration: Low X Medium
 Matrix: Water X Soil _____ Sludge _____ Other _____

(ug/L or mg/kg dry weight (Circle One))

1. <u>Aluminum</u>	<u>100</u> u	13. <u>Magnesium</u>	<u>15000</u>
2. <u>Antimony</u>	<u>5</u> u	14. <u>Manganese</u>	<u>130</u>
3. <u>Arsenic</u>	<u>2</u> u	15. <u>Mercury</u>	<u>0.2</u> u
4. <u>Barium</u>	<u>100</u> u	16. <u>Nickel</u>	<u>40</u> u
5. <u>Beryllium</u>	<u>5</u> u	17. <u>Potassium</u>	<u>3000</u>
6. <u>Cadmium</u>	<u>5</u> u	18. <u>Selenium</u>	<u>2</u> u
7. <u>Calcium</u>	<u>74000</u>	19. <u>Silver</u>	<u>46</u>
8. <u>Chromium</u>	<u>10</u> u	20. <u>Sodium</u>	<u>30100</u>
9. <u>Cobalt</u>	<u>50</u> u	21. <u>Thallium</u>	<u>10</u> u
10. <u>Copper</u>	<u>20</u> u	22. <u>Tin</u>	<u>40</u> u
11. <u>Iron</u>	<u>240</u>	23. <u>Vanadium</u>	<u>250</u> u
12. <u>Lead</u>	<u>11</u>	24. <u>Zinc</u>	<u>15</u>
<u>Cyanide</u>	<u>10</u> u	<u>Percent Solids (%)</u>	

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

Comments: _____

Lab Manager Michael K. Perry

Sample No.
 PAS-WC-US-1A

Date 6/20/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing JOB NO. 50705

LAB SAMPLE ID. NO. 50705D QC REPORT NO. 50705-3

Elements Identified and Measured

Concentration: Low x Medium _____
 Matrix: Water x Soil _____ Sludge _____ Other _____

(ug/L or mg/kg dry weight) (Circle One)

1. <u>Aluminum</u>	<u>100</u> u	13. <u>Magnesium</u>	<u>9400</u>
2. <u>Antimony</u>	<u>5</u> u	14. <u>Manganese</u>	<u>53</u>
3. <u>Arsenic</u>	<u>2</u> u	15. <u>Mercury</u>	<u>0.2</u> u
4. <u>Barium</u>	<u>100</u> u	16. <u>Nickel</u>	<u>40</u> u
5. <u>Beryllium</u>	<u>5</u> u	17. <u>Potassium</u>	<u>850</u>
6. <u>Cadmium</u>	<u>5</u> u	18. <u>Selenium</u>	<u>2</u> u
7. <u>Calcium</u>	<u>44000</u>	19. <u>Silver</u>	<u>13</u>
8. <u>Chromium</u>	<u>10</u> u	20. <u>Sodium</u>	<u>12000</u>
9. <u>Cobalt</u>	<u>50</u> u	21. <u>Thallium</u>	<u>10</u> u
10. <u>Copper</u>	<u>20</u> u	22. <u>Tin</u>	<u>40</u> u
11. <u>Iron</u>	<u>190</u>	23. <u>Vanadium</u>	<u>250</u> u
12. <u>Lead</u>	<u>7.4</u>	24. <u>Zinc</u>	<u>13</u>
Cyanide	<u>10</u> u	Percent Solids (%)	_____

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

Comments: _____

Lab Manager Mohd. K. Khan

Sample No.
 PAS-WNC-US-2A

Date 6/28/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing

JOB NO. 50705

LAB SAMPLE ID. NO. 50705F

QC REPORT NO. 50705-3

Elements Identified and Measured

Concentration: Low X Medium _____

Matrix: Water X Soil _____ Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1. <u>Aluminum</u>	100	u	13. <u>Magnesium</u>	14000
2. <u>Antimony</u>	5	u	14. <u>Manganese</u>	94
3. <u>Arsenic</u>	2.0		15. <u>Mercury</u>	0.2 u
4. <u>Barium</u>	100	u	16. <u>Nickel</u>	40 u
5. <u>Beryllium</u>	5	u	17. <u>Potassium</u>	1800
6. <u>Cadmium</u>	5	u	18. <u>Selenium</u>	2 u
7. <u>Calcium</u>	66000		19. <u>Silver</u>	10 u
8. <u>Chromium</u>	10	u	20. <u>Sodium</u>	17100
9. <u>Cobalt</u>	50	u	21. <u>Thallium</u>	10 u
10. <u>Copper</u>	20	u	22. <u>Tin</u>	40 u
11. <u>Iron</u>	190		23. <u>Vanadium</u>	250 u
12. <u>Lead</u>	9.7		24. <u>Zinc</u>	10 u
Cyanide	10	u	Percent Solids (%)	

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

Comments: _____

Lab Manager Michael K. Perry

Sample No.
 PAS-WNC-DS-4

Date 6/28/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing JOB NO. 50705

LAB SAMPLE ID. NO. 50705F QC REPORT NO. 50705-3

Elements Identified and Measured

Concentration: Low X Medium _____

Matrix: Water X Soil _____ Sludge _____ Other _____

ug/L or ng/kg dry weight (Circle One)

1. <u>Aluminum</u>	<u>100</u> u	13. <u>Magnesium</u>	<u>15000</u>
2. <u>Antimony</u>	<u>5</u> u	14. <u>Manganese</u>	<u>310</u>
3. <u>Arsenic</u>	<u>2</u> u	15. <u>Mercury</u>	<u>0,2</u> u
4. <u>Barium</u>	<u>100</u>	16. <u>Nickel</u>	<u>40</u> u
5. <u>Beryllium</u>	<u>5</u> u	17. <u>Potassium</u>	<u>7000</u>
6. <u>Cadmium</u>	<u>5</u> u	18. <u>Selenium</u>	<u>2</u> u
7. <u>Calcium</u>	<u>7200</u>	19. <u>Silver</u>	<u>27</u>
8. <u>Chromium</u>	<u>10</u> u	20. <u>Sodium</u>	<u>62500</u>
9. <u>Cobalt</u>	<u>50</u> u	21. <u>Thallium</u>	<u>10</u> u
10. <u>Copper</u>	<u>20</u> u	22. <u>Tin</u>	<u>40</u> u
11. <u>Iron</u>	<u>590</u>	23. <u>Vanadium</u>	<u>250</u> u
12. <u>Lead</u>	<u>18</u>	24. <u>Zinc</u>	<u>10</u> u
Cyanide	<u>12</u>	Percent Solids (%)	_____

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

Comments: _____

Lab Manager Michael K. Perry

Sample No.
 PAS-WNC-D5-6

Date 6/28/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing JOB NO. 50705

LAB SAMPLE ID. NO. 50705G QC REPORT NO. 50705-3

Elements Identified and Measured

Concentration: Low X Medium _____

Matrix: Water X Soil _____ Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1. <u>Aluminum</u>	<u>100</u>	<u>u</u>	13. <u>Magnesium</u>	<u>15000</u>
2. <u>Antimony</u>	<u>5</u>	<u>u</u>	14. <u>Manganese</u>	<u>220</u>
3. <u>Arsenic</u>	<u>2.0</u>		15. <u>Mercury</u>	<u>0.2</u> <u>u</u>
4. <u>Barium</u>	<u>100</u>	<u>u</u>	16. <u>Nickel</u>	<u>40</u> <u>u</u>
5. <u>Beryllium</u>	<u>5</u>	<u>u</u>	17. <u>Potassium</u>	<u>6000</u>
6. <u>Cadmium</u>	<u>5</u>	<u>u</u>	18. <u>Selenium</u>	<u>2</u> <u>u</u>
7. <u>Calcium</u>	<u>7200</u>		19. <u>Silver</u>	<u>23</u>
8. <u>Chromium</u>	<u>10</u>	<u>u</u>	20. <u>Sodium</u>	<u>60700</u>
9. <u>Cobalt</u>	<u>50</u>	<u>u</u>	21. <u>Thallium</u>	<u>10</u> <u>u</u>
10. <u>Copper</u>	<u>20</u>	<u>u</u>	22. <u>Tin</u>	<u>40</u> <u>u</u>
11. <u>Iron</u>	<u>460</u>		23. <u>Vanadium</u>	<u>250</u> <u>u</u>
12. <u>Lead</u>	<u>20</u>		24. <u>Zinc</u>	<u>10</u> <u>u</u>
	<u>10</u>			
Cyanide _____			Percent Solids (%) _____	

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

Comments: _____

Lab Manager Michael K. Perry

SECTION IV, Subpart C

QUALITY CONTROL (INORGANICS) FOR WATER SAMPLES 50705 A-G.

Quality Control is presented in this subpart for the inorganic parameters called for under Contract Laboratory Protocol. Quality Control Data is presented covering:

- 1.) Form II: Initial and continuing calibration verification; Initial calibration verification is performed immediately following the analysis of calibration standards by analyzing an EPA Check Sample, the value of which is known. The value obtained must fall within $\pm 10\%$ of the known value for analysis to proceed. During the course of the analytical run the check sample is reanalyzed after every ten samples as a continuing calibration verification.
- 2.) Form III: Blank Analysis; A calibration blank (deionized water containing all reagents used for sample analysis) is analyzed immediately following the analysis of calibration standards. The value of this blank must be less than the CRDL in order for sample analysis to proceed. The calibration blank is reanalyzed after every ten samples with the same requirement. A preparation blank is analyzed which has been subjected to any digestions or distillations used in preparation of the samples for analysis.
- 3.) Form V: Spiked Sample Recovery; For each batch of samples analyzed, (up to 20 samples within a given matrix and concentration level), a known amount of analyte is added to one sample. The value obtained should equal the sum of the sample value and the amount of analyte added. By subtracting the sample value from the combined "spiked" value, a spike recovered value is obtained. The obtained value divided by the amount added multiplied by 100 equals the % recovery. The spiked % recovery must fall within the limits stated in the contract laboratory protocol.
- 4.) Form VI: Duplicate Analysis; For each batch of samples analyzed, (up to 20 samples within a given matrix and concentration level), one sample is reanalyzed as a duplicate. The relative % difference for the duplicates is calculated by subtracting the first value from the second, dividing the difference by the average, and multiplying by 100. The RPD Limit is $\pm 20\%$ for values $>5X$ the CRDL, and \pm the CRDL for values $<5X$ the CRDL.

- 5.) Forms VII & IX: Instrument Detection Limits:
IDL's are reported as determined under
Contract Laboratory Protocol, and
reported on Forms VII & IX.
- 6.) Form VII: Laboratory Control Sample: A Laboratory
Control Sample (EPA Check Sample) recovery
has been reported on form VII.

Q. C. Report No. 50705-3

INITIAL AND CONTINUING CALIBRATION VERIFICATION³

LAB NAME General Testing

JOB NO. 50705

DATE June 28, 1985

UNITS mg/l

Compound	Initial Calib. ¹			Continuing Calibration ²					Method ⁴
	True Value	Found	%R	True Value	Found	%R	Found	%R	
Metals:									
1. Aluminum	1460	1440	99	1460	1440	99			P
2. Antimony	9.7	9.1	94%	8.2	7.3	89%	6.7	82%	Hydride
3. Arsenic	43	45.9	107	27	28.2	104	29.0	107	Hydride
4. Barium	1200	1190	99	1200	1190	99	1180	98	P
5. Beryllium	235	238	101	58	61	105	59	102	P
6. Cadmium	39	36	92%	39	39	100%	43	110%	P
7. Calcium	5300	5200	98	5300	5400	102	5300	100	P
8. Chromium	46.0	47.0	102%	18.0	19.3	107%	19.0	105%	F
9. Cobalt	261	263	101	261	260	100			P
10. Copper	339	321	95	339	316	93	325	96	P
11. Iron	797	728	91%	797	722	90%	750	94%	P
12. Lead	450	46.1	102%	28	30.1	107%	30.0	107%	F
13. Magnesium	500	510	102	1800	1750	97	1750	97	P
14. Manganese	348	329	94	348	341	98	333	96	P
15. Mercury	1.7	1.8	94	8.7	8.2	94	8.3	95%	Cold Vapor
16. Nickel	207	205	99	207	229	110	203	98	P
17. Potassium	1500	1520	101%	9800	10000	102%			P
18. Selenium	6.0	5.7	95	6.0	6.1	102			Hydride
19. Silver	68	63	93%	68	64	94%	66	97%	P
20. Sodium	8200	7930	97	8200	7570	92	7560	92	P
21. Thallium	252	258	102%						P
22. Tin	No	EPA	Check	Sample Available					Hydride
23. Vanadium	846	857	101%	846	857	101%			P
24. Zinc	209	188	90%	209	193	92%	193	92%	P
Mer:									
Cyanide	70.0	69.6	99.4	70.0	79.9	114	80.9	116	

¹ Initial Calibration Source EPA Check Sample ² Continuing Calibration Source EPA Check Sample

³ Control limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

all

FORM III

Q. C. Report No. 50705-3

BLANKS

LAB NAME General Testing Corporation

JOB NO. 50705

DATE June 28, 1985

UNITS ug/l

Matrix Water

Preparation Compound	<u>Initial</u>	<u>Continuing Calibration</u>				<u>Preparation Blank</u>	
	<u>Calibration</u>	<u>Blank Value</u>					
	<u>Blank Value</u>	1	2	3	4	1	2
Metals:							
1. Aluminum	<100	<100	<100	<100	<100	<100	<100
2. Antimony	<5	<5				<5	<5
3. Arsenic	<2	<2	<2	<2	<2	<2	<2
4. Barium	<100	<100	<100	<100	<100	<100	<100
5. Beryllium	<5	<5	<5	<5	<5	<5	<5
6. Cadmium	<5	<5	<5			<5	<5
7. Calcium	<1000	<1000	<1000	<1000	<1000	<1000	<1000
8. Chromium	<10	<10	<10			<10	<10
9. Cobalt	<50	<50	<50	<50	<50	<50	<50
10. Copper	<20	<20	<20	<20	<20	<20	<20
11. Iron	<50	<50	<50			<50	66
12. Lead	<5	<5				<5	
13. Magnesium	<250	<250	<250	<250	<250	<250	<250
14. Manganese	<20	<20	<20	<20	<20	<20	
15. Mercury	<0.2	<0.2	<0.2			<0.2	
16. Nickel	<40	<40	<40	<40	<40	<40	<40
17. Potassium	<250	<250	<250	<250	<250	<250	<250
18. Selenium	<2	<2	<2	<2	<2	<2	<2
19. Silver	<10	<10	<10	<10		<10	
20. Sodium	<250	<250	<250	<250	<250	<250	<250
21. Thallium	<10	<10				<10	<10
22. Tin	<4	<4				<4	<4
23. Vanadium	<2500	<250				<250	<250
Other: Zinc	<10	<10	<10	<10		<10	<10
Cyanide	<20	<20	<20	<20			

old

SPIKE SAMPLE RECOVERY

LAB NAME General Testing Corp.JOB NO. 50705DATE June 28, 1985Lab Sample ID No. 50705BUnits ug/l

Matrix

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R ¹
Metals:					
1. Aluminum	75-125	550	<100	500	110
2. Antimony	"	8.8	<5	10	88%
3. Arsenic	"	11.1	<2	10	111
4. Barium	"	1080	130	1000	95
5. Beryllium	"	53	<5	50	106
6. Cadmium	"	48	<5	50	96%
7. Calcium	"	83000	65000	20000	90
8. Chromium	"	23.3	<10	25	93%
9. Cobalt	"	489	<50	500	98
10. Copper	"	245	<20	250	98
11. Iron	"	2710	2166	500	109%
12. Lead	"	35.3	26.8	100	85%
13. Magnesium	"	23300	16000	8000	91
14. Manganese	"	1195	954	200	120%
15. Mercury	"	1.0	<0.2	1.0	100
16. Nickel	"	431	<40	40	108
17. Potassium	"	2030	1660	400	92%
18. Selenium	"	10.1	<2	10	101
19. Silver	"	79	30	50	99%
20. Sodium	"	10190	9100	1000	109
21. Thallium	"	2560	<500	2500	102%
22. Tin	"	430	<40	500	86%
23. Vanadium	"	571	<250	500	114%
24. Zinc	"	104	8	100	96%
Other:					
Cyanide *	"	72.8	<10.0	70.4	103

$$\%R = [(SSR - SR) / SA] \times 100$$

R"-out of control

COMMENTS: *Performed on Sample 50705E

DUPLICATES

LAB NAME General Testing Corporation

JOB NO. 50705

Lab Sample ID No. 50705A

DATE June 28, 1985

Units ug/l

Matrix Water

Compound	Control Limit ¹	Sample(S)	Duplicate(D)	RPD ²
Metals:				
1. Aluminum	± 100 ug/l	<100	<100	NC
2. Antimony	± 5 ug/l	<5	<5	NC
3. Arsenic	± 5 ug/l	<2	<2	NC
4. Barium	20%	150	150	0%
5. Beryllium	± 5 ug/l	<5	<5	NC
6. Cadmium	20%	<5	<5	NC
7. Calcium	20%	68000	68000	0%
8. Chromium	20%	<10	<10	NC
9. Cobalt	± 50 ug/l	<50	<50	NC
10. Copper	20%	<20	<20	NC
11. Iron	20%	1,100	1110	0.5%
12. Lead	20%	26	26	0%
13. Magnesium	20%	15000	16000	6.4%
14. Manganese	20%	80	83	3.6%
15. Mercury	20%	<0.2	<0.2	NC
16. Nickel	20%	<40	<40	NC
17. Potassium	20%	1600	1600	0%
18. Selenium	± 2 ug/l	<2	<2	NC
19. Silver	20%	27	32	17%
20. Sodium	20%	10800	11000	1.8%
21. Thallium	± 10 ug/l	<10	<10	NC
22. Tin	± 40 ug/l	<40	<40	NC
23. Vanadium	± 250 ug/l	<250	<250	NC
24. Zinc	± 10 ug/l	13	7	6 ug/l
Other:				
Cyanide	20%	<10	<10	NC

* Control

¹To be added at a later date.

$$^2\text{RPD} = \left[\frac{|S-D|}{(S+D)/2} \right] \times 100$$

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

Form VII

Q. C. Report No. 50705-3

INSTRUMENT DETECTION LIMITS AND
LABORATORY CONTROL SAMPLE

LAB NAME General Testing Corp.

JOB NO. 50705

DATE June 28, 1985

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	100		1000	1040	104
2. Antimony	60	5 (Hydride)		10	9.0	90%
3. Arsenic	10	2 (Hydride)		10	9.05	90
4. Barium	200	100		1000	950	95
5. Beryllium	5	5		50	53	106
6. Cadmium	5	5		50	48	96%
7. Calcium	5000	300		2000	1700	85
8. Chromium	10	50	10	200	204	102
9. Cobalt	50	50		500	516	103
10. Copper	25	20		1080	1030	95
11. Iron	100	50		500	490	98%
12. Lead	5	50	5.0	50.0	44.3	89%
13. Magnesium	5000	250		2000	1900	95
14. Manganese	15	10		200	196	98%
15. Mercury	0.2	0.2		1.00	1.05	105
16. Nickel	40	40		194	197	102
17. Potassium	5000	250		2000	1770	88%
18. Selenium	5	2 (Hydride)		10	8.8	88
19. Silver	10	10		100	96	96%
20. Sodium	5000	250		2000	1700	85
21. Thallium	10	500	10	10	11.6	116%
22. Tin	40	40 (Hydride)		500	440	88%
23. Vanadium	50	250		500	571	114%
24. Zinc	20	10		100	101	101%
Chlor:						
Cyanide	10			51.6	31.0	60.1

Form IX (Quarterly)
 Instrument Detection Limits

Laboratory Name General Testing ICP/Flame AA (Circle One) Model Number Varian 975
 Date 5/8/85 Furnace AA Number G+A 95

Element	Wavelength (nm)	CRDL (ug/L)	IDL (ug/L)	Element	Wavelength (nm)	CRDL (ug/L)	IDL (ug/L)
1. Aluminum	309.3	200	100	13. Magnesium	285.2	5000	250
2. Antimony	217.6	60	5	14. Manganese	279.5	15	10
3. Arsenic	193.7	10	2	15. Mercury	253.7	0.2	0.2
4. Barium	553.5	200	100	16. Nickel	232.0 (B)	40	40
5. Beryllium	234.9 (B)	5	5	17. Potassium	766.5	5000	250
6. Cadmium	228.8	5	5	18. Selenium	196.0	5	2
7. Calcium	422.7	5000	300	19. Silver	328.1	10	10
8. Chromium	357.9	10	10	20. Sodium	589.0	5000	200
9. Cobalt	240.7	50	50	21. Thallium	276.8	10	10
10. Copper	324.7	25	20	22. Tin	286.3	40	40
11. Iron	248.3	100	50	23. Vanadium	318.5	50	250
12. Lead	283.3 (B)	5	5	24. Zinc	213.9 (B)	20	10

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

Comments: _____

Lab Manager _____

Section IV, Subpart D

RAW DATA (INORGANICS) FOR WATER SAMPLES 50705 A-G.

Included in this subpart is raw data in the form of data sheets, computer printouts, summary sheets, and digestion records. Raw data for more than one run may be presented if additional runs were needed to obtain data reported.

Subpart D-1: Aluminum	D-18: Selenium
D-2: Antimony	D-19: Silver
D-3: Arsenic	D-20: Sodium
D-4: Barium	D-21: Thallium
D-5: Beryllium	D-22: Tin
D-6: Cadmium	D-23: Vanadium
D-7: Calcium	D-24: Zinc
D-8: Chromium	D-25: Cyanide
D-9: Cobalt	D-26: Digestion Records
D-10: Copper	
D-11: Iron	
D-12: Lead	
D-13: Magnesium	
D-14: Manganese	
D-15: Mercury	
D-16: Nickel	
D-17: Potassium	

SECTION IV
SUBPART D-1

RAW DATA FOR:

ALUMINUM

SUMMARY - 50705
METALS ANALYSIS DATA SHEET

REV 4/85
 Page 1 of 2

METAL AR DATE 5/13/85 ANALYST dd REVIEWER MP

INSTRUMENT (AA) 12-751
 λ 309.3 nm VOLTAGE 460 V
 current 2.5 ma SLIT 1.0 nm
 D_2 OFF INTEG 4 sec

ANALYSIS METHOD
FLAME HYDRIDE
AS50/AC ACID
 REDUC

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	5.00	10.00	1.00	0.25	0.10
	ABSORBANCE	.070	.135	.013	.004	.001

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	liquid ug/ml	solids ug/g
50690-B SOL	<0.1		<0.10	100ml			
50691-B SOL	<0.1		<0.10				
50758 50758-B SOL	0.20		0.20				
50759-B SOL	0.24		0.24				
BLK 4/26	<0.1		<0.10				
BLK - SPIKE	1.03		1.03				
T	0.29		0.29				
50690-A	0.90		0.90				
50691-A	0.64		0.64				
BLK 5/7	<0.1		<0.10				
4-338	0.64		0.64				
4-338 Rep.	0.43		0.43				
BLK 5/8	<0.1		<0.10				
BLK SPK	1.02		102% REC				
50705-A	<0.1		<0.10		100ml	<0.10	
50705-A REP	<0.1		<0.10			<0.10	
50705-B	<0.1		<0.10			<0.10	
50705-B SPK	1.10		110% REC				
50705-C	<0.10		<0.10			<0.10	
50705-D	<0.1		<0.10			<0.10	
50705-E	<0.1		<0.10			<0.10	
50705-F	<0.1		<0.10			<0.10	
50705-G	<0.1		<0.10			<0.10	
BLK	<0.1		<0.10			<0.10	
BLK SPK	1.04		104% REC	✓	✓		

DT as KPI added to standards and samples, 1000 ppm

METAL AR

DATE 5/13/85 ANALYST dl

REVIEWER _____

INSTRUMENT (AA)

λ _____ nm VOLTAGE _____ V
 current _____ a SLIT _____ nm
 D₂ _____ INTEG _____ sec

ANALYSIS METHOD

FLAME GAS / HYDRIDE
 ACID
 REDUC

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
STOCK					
CONC, UG/ML					
ABSORBANCE					

EPA CHECK KNOWN MEAN SD RSD %RECOVERED

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE #	CONC. ug/ml	D.F.	FINAL ug/ml	F.V. ml	I.V. or gm	liquid ug/ml	solids ug/g
EPA 0760	4.68	1/10	104%	100	0.99 gm		
50705-H	8.12	1/10	81.2		1.02 gm		7960
50705-H REF	8.20	1/10	82.0		1.01 gm		8120
50705-H SPIKE	-	SPIKE	100 LOW		1.02 gm		
50705-I	3.20	1/10	32.0		1.01 gm		3170
50705-J	2.74	1/10	27.4		1.02 gm		2690
50705-K	3.86	1/10	38.6		1.02 gm		3780
50705-L	4.85	1/10	48.5		1.03 gm		4710
50705-M	3.76	1/10	37.6		1.01 gm		3720
50705-N	2.44	1/10	24.4		1.02 gm		2390
50705-O	2.48	1/10	24.8		1.00 gm		2480
50680-A	1.88	1/10	18.8				
50680-B	0.82		0.82				
50680-C	3.11		3.11				
50680-D	<0.1		<0.10				

A" Channel

Aluminum
5/13/85
dd.

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE $= (A-B)/(A+B) \times 100$
(1) 4338	0.64	0.43	
(2) 50705-A	< 0.10	< 0.10	
(3) 50705-H	82.0	81.2	
(4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
(1) BLK	1.03	< 0.10	1.00	1.03	103%
(2) 50705-B	1.10	< 0.10	1.00	1.10	110%
(3) BLK	1.04	< 0.10	1.00	1.04	104%
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) 0760	46.0	46.8	104%	
(2)				
(3)				
(4)				

Statistics from AAS Program 42

B" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE $= (A-B)/(A+B) \times 100$
(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)					
(2)					
(3)					
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

METALS ANALYSIS DATA SHEET

89 VS/14/85 MKP 5/13/85

DATE 5/13/85

ANALYST al

"A" Channel

"A" Channel (CONT)

Metal Pb

Metal _____

Lamp Type Flame Wave Length 283.3

Flame Type _____ Wave Length _____

Lamp Current 3.5 D₂ Background _____

Lamp Current _____ D₂ Background _____

Voltage 160 Slit Width 1.0

Voltage _____ Slit Width _____

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion	Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
STD #1	0.020	5.0			STD #1				
STD #2	0.135	10			STD #2				
STD #3	0.013	1.0			STD #3				
STD #4	0.004	0.25			STD #4				
STD #5	0.001	0.10			STD #5				
Samples					Samples				
1	S0690-0 ml	<0.1		<0.1 ✓	#1	S0690-0	0.14	1/10	1390 mg/lg
2	S0691-0 ml	<0.1		<0.1 ✓	#2	S0691-0	0.48	1/10	480 mg/lg
3	S0758-0 ml	0.20		0.20 ✓	#3	S0758-0	1.28	1/10	128 mg/lg
4	S0759-0 ml	0.24		0.24 ✓	#4	S0759-0	0.87		87 mg/lg
5	BIC 4/26	0.23		0.23 ✓	#5	S0759-0	3.1		3.1 mg/lg
6	BIC 5/10	0.23		0.23 ✓	#6	S0759-0	<0.1		<0.1 mg/lg
7	Tolu	0.25		0.25 ✓	#7				
8	S0850-A	0.64		0.64 ✓	#8				
9	S0851-A	0.64		0.64 ✓	#9				
10	BIC 5/7	<0.1		<0.1 ✓	#10				
11	4375	0.64		64 mg/l ✓	#11				
12	4378	0.17		43 mg/l ✓	#12				
13	BIC 5/8	<0.1		<0.1 ✓	#13				
14	BIC 5/8	1.02		1.02 mg/l ✓	#14				
15	S0765-0	<0.1		<0.1 ✓	#15				
16	S0765-0	<0.1		<0.1 ✓	#16				
17	S0765-0	0.1		0.1 mg/l ✓	#17				
18	S0765-0	1.10		1.10 mg/l ✓	#18				
19	S0765-0	<0.1		<0.1 ✓	#19				
20	S0765-0	<0.1		<0.1 ✓	#20				
21	S0765-0	<0.1		<0.1 ✓	#21				
22	S0765-0	<0.1		<0.1 ✓	#22				
23	S0765-0	<0.1		<0.1 ✓	#23				
24	BIC	<0.1		<0.1 ✓	#24				
25	BIC 7/6	0.04		0.04 mg/l ✓	#25				
26	MCP 0740	4.68	1/10	46.8 mg/l ✓	#26				
27	S0765-0	8.12	1/10	81.2 mg/l ✓	#27				
28	S0765-0	0.20	1/10	2.0 mg/l ✓	#28				
29	S0765-0	1.0		1.0 mg/l ✓	#29				
30	S0765-0	7.10	1/10	71.0 mg/l ✓	#30				
31	S0765-0	7.74	1/10	77.4 mg/l ✓	#31				
32	S0765-0	3.86	1/10	38.6 mg/l ✓	#32				
33	S0765-0	4.85	1/10	48.5 mg/l ✓	#33				
34	S0765-0	3.76	1/10	37.6 mg/l ✓	#34				

All Results in mg/l unless specified otherwise.

If error is empty, the sample is the same as under the "A" Channel.

SECTION IV
SUBPART D-2

RAW DATA FOR:

ANTIMONY

METAL SP DATE 6/14/85 ANALYST MP REVIEWER MP

INSTRUMENT (AA) 1L-751/w Hydride
 λ 217.6 nm VOLTAGE 620 V
 current 10 mA SLIT 1 nm
 D_2 no INTEG PA sec

ANALYSIS METHOD
 FLAME GAS 1 HYDRIDE
 ACID HCl
 REDUC NaBH

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	0.015	0.020	0.010	0.005	0.002
	ABSORBANCE	.514	.659	.342	.183	.100
		.469	.630	.351	.183	.104
EPA CHECK	KNOWN	8.2	6.3			87%
	MEAN	9.7	9.1			94%
	SD					
	RSD					
	%RECOVERED					

ANALYSIS B = BMDL = 0.002 mg/l

INSTRUMENT ANALYSIS

DIGESTION

FINAL CONCENTRATION

SAMPLE#	CONC. UG/ML	D.F.	FINAL UG/ML	DIGESTION		FINAL CONCENTRATION	
				F.V. ml	I.V. ml or gm	liquid UG/ML	solids UG/gm
Blank 5/15	B		B	100	100ml	<0.005	
BLK SPK 9/15	0.0090		.0090			0.0090	
50705-A	B		B			<0.005	
50705-A REP	B		B			<0.005	
50705-2PK	0.0088		.0088			0.0088	
50705-B	B		B			<0.005	
50705-C	B		B			<0.005	
50705-D	B		B			<0.005	
50705-E	B		B			<0.005	
50705-F	B		B			<0.005	
50705-G	B		B			<0.005	
BLK 5/15	B		B			<0.005	
BLK SPK 5/15	0.0091		.0091		✓	0.0091	
H	B		B		1.00 gm		<0.50
H-REP	B		B		1.03 gm		<0.49
H-SPK	0.0104		.0104		.99 gm		<0.48
I	0.0028		.0028		1.05 gm		<0.48
J	0.0035		.0035		1.04 gm		<0.48
K	B		B		1.02 gm		<0.49
L	B		B		1.03 gm		<0.49
M	0.0032		.0032		1.00 gm		<0.50
N	0.003		.003		1.03 gm		<0.49
O	0.003		.003	✓	1.03 gm		<0.49

IDL - Ten analyses run, at 10 ptb level -

A. Precision Data

Antimony 6/14/85

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
(1) 50705 A	< 0.005	< 0.005	
(2) 50705 H	< 0.005	< 0.005	
(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) 50705B	0.0088	< 0.002	0.01	0.088	88%
(2) 50705H	0.0104 0.0104	< 0.002	0.01	0.0104	104%
(3)					
(4)					

C. EPA Reference Standards

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

Statistics from AAS Program 42

8" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 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.

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

Statistics from AAS Program 42

**Enter these results in QC Notebook.

ANALYSIS DATA SHEET

ANTIMONY

Lamp Current 10.00
 Lamp Voltage 10.00
 D₂ Background 10.00

Date 6/14/85
 Analyst [Signature]
 Wave Length 2176

Hydride generator

STANDARD CALIBRATION

Std. #	Conc.	Abs. 1	Abs. 2	Abs. 3	Avg. Abs.	Actual Conc.
Blank						
Std. 1	5.00	0.514	0.404			
Std. 2	2.00	0.254	0.230			
Std. 3	1.00	0.124	0.151			
Std. 4	0.50	0.087	0.087			
Std. 5	0.25	0.040	0.040			
PA	10.20	0.7 (132%)	0.8 (84%)			
PA	9.70	0.7 (100%)				

(Analysis performed on 3rd Ag/Se Digest)

Sample	Conc. mg/l	Dil.	Final Conc.	Amt. Spike	Total Rec.	Net Rec.	% Recovery
Blank	<0.002		<0.005				
RK Spike	0.0010		0.0010	0.010	0.010		100%
URS 56705A	<0.002		<0.005				
Adm	<0.002		<0.005				
Blank	<0.002		<0.005				
B	<0.002		<0.005				
C	<0.002		<0.005				
D	<0.002		<0.005				
E	<0.002		<0.005				
F	<0.002		<0.005				
G	<0.002		<0.005				
Blank	<0.002		<0.005				
RK Spike	0.0010		0.0010	0.010	0.011		110%
H	<0.002		<0.005				
Adm	<0.002		<0.005				
High	0.0010		0.0010	0.010	0.011		110%
I	0.0008		<0.005				
J	0.0005		<0.005				
K	<0.002		<0.005				
L	<0.002		<0.005				
M	0.0010		<0.005				
N	0.0005		<0.005				
O	0.0005		<0.005				
MSL 111	10.28			10.00			
121	10.09						
131	9.76						
141	10.50						
151	10.79						
161	10.97						
171	9.91						
181	10.33						
191	10.30						
110	9.95						
Avg	10.3						
S	0.34						
CV	3.4%						

METALS ANALYSIS DATA SHEET

DATE 5/30/85

ANALYST JB

"A" Channel

"B" Channel

Metal SCREENED SEE REPEAT ANALYSIS BY FURNACE
Sb

Metal Tl

Flame Type Air/Acet Wave Length 217.6

Flame Type Air/Acet Wave Length 276.8

Lamp Current 6.0 D₂ Background

Lamp Current 3.5 D₂ Background

Voltage 620 Slit Width 0.3

Voltage 700 Slit Width 1.0

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion	Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
STD #1		5.0			STD #1		5.0		
STD #2	0.187	10.0			STD #2	0.187	10.0		
STD #3		2.0			STD #3		2.0		
STD #4		1.0			STD #4		1.0		
STD #5		0.5			STD #5		0.5		
Samples					Samples				
50708-B	Σ= A	< 1.5			#1		< 1.5		
BLK 5/13		< 1.5			#2		< 1.5		
BLK SPK		1.38		113%	#3		2.60		101%
50776-A	Mich	< 1.5		< 50 ug/g	#4		< 1.5		< 50 ug/g
BLK 5/14		< 1.5			#5		< 1.5		
BLK SPK		1.15		105%	#6		2.50		100%
50784	Rv20				#7		< 1.5		
BLK 5/30		< 1.5			#8		< 1.5		
BLK SPK		1.08		108%	#9		2.59		104%
4399	Converse				#10		< 1.5		< 50 ug/g
50765	BLK 5/15	< 1.5			#11		< 1.5		
BLK SPK		1.22		102%	#12		2.52		101%
50765-A	Dalton	< 1.5			#13		< 1.5		
A/60		< 1.5			#14		< 1.5		
B		< 1.5			#15		< 1.5		
B/spd		1.01		101%	#16		2.56		102%
C		< 1.5			#17		< 1.5		
D		< 1.5			#18		< 1.5		
E		< 1.5			#19		< 1.5		
F		< 1.5			#20		< 1.5		
G		< 1.5			#21		< 1.5		
BLK SCILS		< 1.5			#22		< 1.5		
BLK SPK		1.08		108%	#23		2.55		102%
SPK 0760		< 1.5			#24		< 1.5		
50765	H Dalton	< 1.5			#25		< 1.5		
H/60		< 1.5			#26		< 1.5		
H/spd		0.96		96%	#27		2.60		104%
I		< 1.5			#28		< 1.5		
J		< 1.5			#29		< 1.5		
K		< 1.5			#30		< 1.5		
L		< 1.5			#31		< 1.5		
M		< 1.5			#32		< 1.5		
N		< 1.5			#33		< 1.5		
O		< 1.5			#34		< 1.5		

All Results in mg/l unless specified otherwise.

If error is shown, the sample is the one analyzed under the "A" Channel.

"A" Channel

SB

15 Antimony

A. Precision Data

R50708 B

R50776 A

ANTIMONY, 5/30/85, FLAME

16 Antimony, Soluble

Sample and Number	Amount in Samp.		
(1) 50705-A	<.5	<.5	0
(2) " H	<.5	<.5	0
(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) 50765-H	0.55	<.5	0.50	0.48	96
2) " 0	0.58	<.5	0.50	0.53	106
(3)					
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1) TMB 1x10	0.063	(0.061-0.101)		
2) TMB 2x10	0.975	1.05 (0.85-1.1)	108	0.089
(3)				
(4)				

Statistics from AAS Pr

05 Thallium

mg/l

"B" Channel

R50708 B

R50776 A

R50778 E NS

R50784

A. Precision Data

06 Thallium, Soluble

mg/l

Sample and Number	Amount in Sample (A)	QC (B)	REC = (A-B)/(A+B) x 100
1) 50705-A	<.5	<.5	0
" H	<.5	<.5	0
(3)			
(4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
50705-H	0.53	<.5	0.50	0.53	106
" 0	0.54	<.5	0.50	0.49	98
(3)					
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
TMB 1x10	0.252	0.258 (0.23-0.28)	102	0.065
TMB 2x10	0.43	(0.430-0.466)		

SECTION IV
SUBPART D-3

RAW DATA FOR:

ARSENIC

SUMMARY - 50705

METALS ANALYSIS DATA SHEET

REV 6/85

METAL As DATE 6/11/85 ANALYST JB REVIEWER MP

INSTRUMENT (AA) 12 751
2194.0 620 nm VOLTAGE 620 V
 current 7 ma SLIT 1 nm
O₂ 0.2 INTEG sec

ANALYSIS METHOD
 FLAME GAS 1 HYDRIDE
 ACID HCl
 REDUC NaBH₄

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	<u>.020</u>	<u>.030</u>	<u>.010</u>	<u>.005</u>	<u>.002</u>
	ABSORBANCE	<u>.157</u>	<u>.225</u>	<u>.077</u>	<u>.039</u>	<u>.016</u>

EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
<u>WS #2</u>	<u>.027</u>	<u>28.2</u>			<u>104%</u>
<u>WS #13</u>	<u>.043</u>	<u>37.5</u>			<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	liquid UG/ml	solids UG/gm
<u>DIGEST BLK 4/5</u>	<u><.002</u>						
<u>BLK SPK</u>	<u>9.05</u>		<u>90.5%</u>	<u>50ml</u>	<u>50ml</u>		
<u>50705-A</u>	<u><.002</u>		<u><.002</u>	<u>50</u>	<u>50 ml</u>	<u><.002</u>	
<u>50705-A REP</u>	<u><.002</u>		<u><.002</u>	<u>50</u>	<u>50 ml</u>	<u><.002</u>	
<u>50705-A + 10</u>	<u>11.1</u>		<u>110% REC</u>	<u>50 ml</u>	<u>50 ml</u>		
<u>50705-B</u>	<u><.002</u>			<u>50</u>	<u>50 ml</u>	<u><.002</u>	
<u>50705-C</u>	<u><.002</u>			<u>50</u>	<u>50 ml</u>	<u><.002</u>	
<u>50705-D</u>	<u><.002</u>			<u>50</u>	<u>50 ml</u>	<u><.002</u>	
<u>50705-E</u>	<u>.002</u>			<u>50</u>	<u>50 ml</u>	<u>0.002</u>	
<u>50705-F</u>	<u><.002</u>			<u>50</u>	<u>50 ml</u>	<u><.002</u>	
<u>50705-G</u>	<u>.002</u>			<u>50</u>	<u>50 ml</u>	<u>0.002</u>	
<u>PLG BLK SPK 6/5</u>	<u>8.90</u>		<u>89% REC</u>	<u>50</u>	<u>50 ml</u>		
<u>DIG BLK 4/7</u>	<u><.002</u>			<u>50</u>	<u>50 ml</u>		
<u>BLK SPIKE</u>	<u>.008 x 2</u>		<u>92% REC</u>	<u>50</u>	<u>50 ml</u>		
<u>50705-H</u>	<u>.010</u>			<u>50</u>	<u>0.49 gm</u>		<u>1.02</u>
<u>50705-H - REP</u>	<u>.00914</u>			<u>50</u>	<u>0.51 gm</u>		<u>0.92</u>
<u>50705-H SPK + 10</u>	<u>.019 x 5</u>		<u>101% REC</u>	<u>50</u>	<u>0.50 gm</u>		
<u>50705-I</u>	<u>.00</u>			<u>50</u>	<u>0.53 gm</u>		<u>0.94</u>
<u>50705-J</u>	<u>.031</u>			<u>50</u>	<u>0.48 gm</u>		<u>3.23</u>
<u>50705-K</u>	<u>.007 x 5</u>			<u>50</u>	<u>0.53 gm</u>		<u>0.66</u>
<u>50705-L</u>	<u>.016</u>			<u>50</u>	<u>0.54 gm</u>		<u>1.48</u>
<u>50705-M</u>	<u>.025</u>			<u>50</u>	<u>0.48 gm</u>		<u>2.60</u>
<u>50705-N</u>	<u>.0055</u>			<u>50</u>	<u>0.54 gm</u>		<u>0.51</u>
<u>50705-O</u>	<u>.010</u>			<u>50</u>	<u>0.51 gm</u>		<u>0.98</u>

1" Channel

Arsenic Sodium Peroxide Analysis
6/11/85 JB

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
1) 50705-A	< 0.002	< 0.002	
2) 50744-D	0.0076	0.0071	
3) 50705-H	0.010	0.0094	
4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1) 50705-A	0.011	< 0.002	0.010	0.011	110%
2) 50744-D	0.0174	0.0076	0.010	0.0174	98%
3) 50705-H	0.0195	0.0094	0.010	0.0101	101%
4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1) WS 2	0.027	(28.2, 36.7, 29.8) = 0.0299	111%	
2) WS 13	0.043	(32.5, 45.9, 46.1) = 0.0432	100%	
3)				
4)				

Statistics from AAS Program 42

3" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

ARSENIC & SELENIUM ANALYSIS DATA SHEET

Lamp Current _____
 Lamp Voltage _____
 D₂ Background _____
 slit 1.0

Date 6/11/85
 Analyst JE
 Wave Length 194.0

STANDARD CALIBRATION

Std. #	Conc.	Abs. 1	Abs. 2	Abs. 3	Avg. Abs.	Actual Conc.
Blank						
Std. 1	0.020					
Std. 2	0.030					
Std. 3	0.010					
Std. 4	0.005					
Std. 5	0.002					
PA 2	0.027	28.2 10%	31.7 11%	29.8		
PA 13	0.043	47.5 87%	48.9 101%	46.1		

Sample	Conc. ug/l	Dil.	Final Conc.	Amt. Spike	Total Rec.	Net. Rec.	% Recovery
BLK 6/5	<2						
BLK SPK	9.05						
50705-A VRS	<2						
A(G)	<2			10.0	10.94		110%
A(spt)	11.1						
B	<2						
C	<2						
D	<2						
E	2.0						
F	<2						
G	2.0						
BLK SPK 6/5	8.40						89%
50744-D Michauk	3.8						
F	<2						
G	6.3						
H	<2						
I	3.2						
J	<2						
K	7.1						
K(G)	* 7.6			10.0	17.41		95%
K(spt)	17.2						
L	4.4						
M	<2						
N	<2						
50776-B Mich	<2		<0.02				
50823 WHT	8.5	50ml/50ml	0.055				
50864-B CE ¹²	<2	1/10 dilution	11.7	10.0	18.3		103%
50864-D "	<2	1/10 dilution	10.02	10.0	10.2		102%
BLK 6/6	<2						
BLK SPK	9.48						97%
4383-A Crew	<2						
B "	<2						
4392-A Crew	<2						
B "	<2						
4401-C H+e	<2						
50784 Russe	<2						
50861-A IS	<2						
B "	<2						
50861-B IS	<2						

ARSENIC & SELENIUM ANALYSIS DATA SHEET

Lamp Current _____
 Lamp Voltage _____
 D₂ Background _____

Date _____
 Analyst _____
 Wave Length _____

STANDARD CALIBRATION

Std. #	Conc.	Abs. 1	Abs. 2	Abs. 3	Avg. Abs.	Actual Conc
Blank						
Std. 1						
Std. 2						
Std. 3						
Std. 4						
Std. 5						
EPA 2	0.0027	29.0	24.5			
EPA 13	0.0043	45.2	43.0			

Sample	Cong. µg/l	Dil.	Final Conc.	Amt. Spike	Total Rec.	Net. Rec.	% Recovery
50862-E Xerox	<2	✓					
G	<2	✓					
G(10)	<2	✓		10.0	9.82		49.70
↓ G(spk) ↓	7.31	✓		10.0	7.31	7.31	37%
50867-A Xerox	<2	✓					
A(10)	<2	✓					
A(spk)	10.5	✓		10.0	10.5	10.5	105%
C	<2	✓					
E	<2	✓					
↓ G ↓	<2	✓					
50872 Medvet	<2	✓					
50879 Medvet	<2	✓					
50879 Medvet	<2	✓					
50880 Medvet	<2	✓					
50885 Medvet	<2	✓					
50888-A Rock	<2	✓					
A(10)	<2	✓					
A(spk)	8.4	✓		10.0	8.4	8.4	84%
B	<2	✓					
↓ C ↓	<2	✓					
50893 Newark	<2	✓					
50933 Rock	<2	✓					
50969 Medvet	<2	✓					
BLK 6/7	<2	✓					
BLK SPK	8.2	✓		10.0	8.2	8.2	82%
5760 EPA	20.8	✓					
50705-H VRS	10	✓					
H(10)	9.4	✓	µg/g				
H(spk)	19.5	✓		10.0	19.5	10.1	101%
I	10.1	✓					
J	31	✓					
K	7.0	✓					
L	16	✓					
M	25	✓					
N	5.5	✓					
↓ D ↓	10	✓					
4399 Converse	29	✓	10 µg/ml	2.6 µg/g			
50947-A Xerox	6.3	✓	1/10 (µg/ml)	3.2 µg/g			
51114-H Xerox	3.6	✓					
51114-H Xerox	<2	✓					

ARSENIC

Lamp Current _____
 Lamp Voltage _____
 D₂ Background _____

Date _____
 Analyst _____
 Wave Length _____

STANDARD CALIBRATION

Std. #	Conc.	Abs. 1	Abs. 2	Abs. 3	Avg. Abs.	Actual Conc.
Blank						
Std. 1						
Std. 2						
Std. 3						
Std. 4						
Std. 5						
IPA 2	0.6027	30.0 11.9	29.1	10.77		
IPA 13	0.6043	15.6 10.2	44.7	10.40		

Sample	Conc. mg/l	Dil.	Final Conc.	Amt. Spike	Total Rec.	Net Rec.	% Recovery
50849-C Xerox	<2		2.52 mg/l				
D	<2						
E	16		1.5 mg/l				
F	<2		2.52 mg/l				
50913-A Medvet	<2						
A(GO)	<2			10.0	8.56		
B	<2			10.0	8.91		
B(spk)	7.7			10.0	7.70		
50981-A Xerox	35	1/10	3.5 mg/l	3.25 mg/l			
B	33	1/10	3.3 mg/l	3.0 mg/l			
BLK 6/8	<2						
BLK SPK	9.3			10.0	9.3	9.3	97%
50915-A WMI	<2						
A(GO)	<2			10.0	9.70	9.7	97%
B	<2						
B(spk)	10.8			10.0	10.4	10.8	95%
C	<2						
D	<2						
E	<2						
F	<2						
G	4.0						
H	<2						
I	<2						
J	<2						
K	<2						
50953-A WMI	<2						
A(GO)	<2			10.0	9.76	9.8	97%
B	<2						
C	<2			10.0	8.87	8.9	97%
C(spk)	7.6			10.0	7.6	7.6	97%
D	<2						
E	<2						
F	<2						
50991-A Duro	<2						
B	<2						
BLK 6/10	<2						
BLK SPK	9.0			10.0	9.1	9.1	91%
50955-A WMI	<2						
A(GO)	<2			10.0	9.3	9.3	93%

SECTION IV
SUBPART D-4

RAW DATA FOR:

BARIUM

METALS ANALYSIS DATA SHEET

REV 4/85

METAL Ba DATE 9/10/85 ANALYST DD REVIEWER _____

Page 1 of 3

INSTRUMENT (AA) 14751

ANALYSIS METHOD

λ 553.8 nm VOLTAGE 380 V
 current 11 A SLIT 1.0 nm
 D₂ No INTEG 4 sec

CELANE GAS NO/AC HYDRIDE
 ACID _____
 REDUC _____

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	<u>5.00</u>	<u>10.00</u>	<u>1.00</u>	<u>0.25</u>	<u>0.10</u>
	ABSORBANCE	<u>.157</u>	<u>.303</u>	<u>.031</u>	<u>.007</u>	<u>.003</u>

EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
<u>TMA1</u>	<u>1.20</u>	<u>1.19</u>		<u>1.6</u>	<u>99</u>
<u>#2</u>	<u>10.00</u>	<u>9.82</u>		<u>1.2</u>	<u>88</u>

ANALYSIS B = BMDL = 0.1 mg/l

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC. ug/ml	D.F.	FINAL ug/ml	F.V. ml	I.V. ml or gm	liquid ug/ml	solids ug/gm
<u>BLK 4/20</u>	<u>B</u>		<u>B</u>	<u>100</u>	<u>100 ml</u>	<u>B</u>	
<u>BLK SPIKE</u>	<u>1.00</u>		<u>1.00</u>	<u>100</u>		<u>1.00</u>	
<u>50655</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>BLK SPIKE</u>	<u>1.15</u>		<u>1.15</u>			<u>1.15</u>	
<u>50698</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50699</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50700</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50700 REP</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>BLK 5/2</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>BLK SPIK</u>	<u>1.03</u>		<u>1.03</u>			<u>1.03</u>	
<u>50716-A</u>	<u>B</u>	<u>1/10</u>	<u>< 1.0</u>			<u>< 1.0</u>	
<u>0.5 STD</u>	<u>0.48</u>		<u>0.48</u>			<u>0.48</u>	
<u>50716-B</u>	<u>B</u>	<u>1/10</u>	<u>< 1.0</u>			<u>< 1.0</u>	
<u>0.5 STD</u>	<u>0.50</u>		<u>0.50</u>			<u>0.50</u>	
<u>50716-C</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50716-D</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>BLK 5/8</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>BLK SPIKE</u>	<u>0.98</u>		<u>0.98</u>			<u>0.98</u>	
<u>50744-D</u>	<u>0.11</u>		<u>0.11</u>			<u>0.11</u>	
<u>50744-F</u>	<u>0.10</u>		<u>0.10</u>			<u>0.10</u>	
<u>50744-G</u>	<u>0.13</u>		<u>0.13</u>			<u>0.13</u>	
<u>50744-H</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50744-I</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50744-J</u>	<u>0.11</u>		<u>0.11</u>	<u>✓</u>		<u>0.11</u>	
<u>50744-K</u>	<u>B</u>		<u>B</u>			<u>B</u>	

2244-

METAL Ba DATE 5/10/85 ANALYST DD REVIEWER _____

INSTRUMENT (AA) K 751

ANALYSIS METHOD

λ 553.8 nm VOLTAGE 380 V
 current 11 a SLIT 1.0 nm
 D₂ No INTEG 4 sec

CEL NO/AC HYDRIDE
 GAS ACID
 REDUC

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	<u>5.00</u>	<u>10.00</u>	<u>1.00</u>	<u>0.25</u>	<u>0.10</u>
	ABSORBANCE	<u>.157</u>	<u>.303</u>	<u>.031</u>	<u>.007</u>	<u>.003</u>

EPA CHECK	KNOWN	MEAN	SD	RSD	RECOVERED
<u>TM#1</u>	<u>1.20</u>	<u>1.19</u>		<u>1.6</u>	<u>99</u>
<u>#2</u>	<u>10.00</u>	<u>8.82</u>		<u>1.2</u>	<u>88</u>

ANALYSIS B = BMDL = 0.1 mg/l

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC. ug/ml	D.F.	FINAL ug/ml	F.V. ml	I.V. ml or gm	liquid ug/ml	solids ug/gm
<u>BLK 4/26</u>	<u>B</u>		<u>B</u>	<u>100</u>	<u>100 ml</u>	<u>B</u>	
<u>BLK SPIKE</u>	<u>1.00</u>		<u>1.00</u>	<u>100</u>		<u>1.00</u>	
<u>50655</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>BLK SPIKE</u>	<u>1.15</u>		<u>1.15</u>			<u>1.15</u>	
<u>50698</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50699</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50700</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50700 REP</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>BLK 5/2</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>BLK SPIK</u>	<u>1.03</u>		<u>1.03</u>			<u>1.03</u>	
<u>50716-A</u>	<u>B</u>	<u>1/10</u>	<u>< 1.0</u>			<u>< 1.0</u>	
<u>0.5 STD</u>	<u>0.48</u>		<u>0.48</u>			<u>0.48</u>	
<u>50716-B</u>	<u>B</u>	<u>1/10</u>	<u>< 1.0</u>			<u>< 1.0</u>	
<u>0.5 STD</u>	<u>0.50</u>		<u>0.50</u>			<u>0.50</u>	
<u>50716-C</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50716-D</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>BLK 5/8</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>BLK SPIKE</u>	<u>0.98</u>		<u>0.98</u>			<u>0.98</u>	
<u>50744-D</u>	<u>0.11</u>		<u>0.11</u>			<u>0.11</u>	
<u>50744-F</u>	<u>0.10</u>		<u>0.10</u>			<u>0.10</u>	
<u>50744-G</u>	<u>0.13</u>		<u>0.13</u>			<u>0.13</u>	
<u>50744-H</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50744-I</u>	<u>B</u>		<u>B</u>			<u>B</u>	
<u>50744-J</u>	<u>0.11</u>		<u>0.11</u>	<u>✓</u>	<u>100</u>	<u>0.11</u>	
<u>50744-K</u>	<u>B</u>		<u>B</u>			<u>B</u>	

METALS ANALYSIS DATA SHEET

REV 4/85

METAL Ba

DATE 5/10/85

ANALYST ddl

REVIEWER

Cont.

Page 2 of 3

INSTRUMENT (AA)

λ _____ nm VOLTAGE _____ V
 current _____ μ SLIT _____ nm
 D₂ _____ INTEG _____ sec

ANALYSIS METHOD

FLAME _____ HYDRIDE _____
 GAS _____ / _____ ACID _____
 REDUC _____

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, μ G/ML					
	ABSORBANCE					

EPA CHECK KNOWN MEAN SD RSD %RECOVERED

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC. μ g/ml	D.F.	FINAL μ g/ml	F.V. ml	I.V. ml or gm	liquid μ g/ml	solids μ g/gm
50744-L	B		B	100	100 ml	B	
50744-M	B		B	100	100 ml	B	
50744-N	0.12		0.12	100	100 ml	0.12	
BLK. S/R	B		B	100	100 ml	B	
BLK. SPK	0.95		0.95	100	100 ml	0.95	
50705-A	0.15		0.15	100	100 ml	0.15	
50705-A QC	0.15		0.15	100	100 ml	0.15	
50705-B	0.13		0.13	100	100 ml	0.13	
50705-B SPK	1.08		1.08	100	100 ml	1.08	
50705-C	B		B	100	100 ml	B	
50705-D	B		B	100	100 ml	B	
50705-E	B		B	100	100 ml	B	
50705-F	0.10		0.10	100	100 ml	0.10	
50705-G	B		B	100	100 ml	B	
BLK. 8/1/85	B		B	100	100 ml	B	
BLK. SPK 8/1	0.97		0.97	100	100 ml	0.97	
EPA #1	1.18		1.18	100	100 ml	1.18	
EPA #2	9.10		9.10	100	100 ml	9.10	
U513 X2	0.72		0.72	100	100 ml	0.72	
50705-H	0.60		0.60	100	1.02 gm		59
50705-H REP	0.59		0.59	100	1.01 gm		58
50705-H SPK	1.57		1.57	100	1.02 gm		
50705-I	0.43		0.43	100	1.01 gm		43
50705-J	0.66		0.66	100	1.02 gm		65
50705-K	0.80		0.80	100	1.02 gm		78

INSTRUMENT (AA)

λ current _____ VOLTAGE _____ V
 D₂ _____ SPLIT _____ nm
 _____ INTEG _____ sec

ANALYSIS METHOD

FLAME GAS _____ / HYDRIDE ACID REDUC _____

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML					
	ABSORBANCE					
EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED	

ANALYSIS B = B MDL = 0.1 mg/l

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
AMPLE#	CONC. ug/ml	D.F.	FINAL ug/ml	F.V. ml	I.V. ml or gm	liquid ug/ml	solids ug/gm
50705-L	0.26		0.26	100	1.03 gm		25
0705-m	0.56		0.56		1.01 gm		55
50705-N	B		B		1.02 gm		< 10
50705-O	0.26		0.26		1.00 gm		26
ALK 5/10	B		B		100 ml	< 10	
ALK SPK	0.98		0.98			0.98	
0770-I	B		B			< 0.1	
50770-J	B		B			< 0.1	
0770-K	B		B			< 0.1	
50770-L	B		B			< 0.1	
0770-M	B		B			< 0.1	
50770-P	B		B			< 0.1	
50770-P REF	B		B			< 0.1	
50770-P SPK	1.01		1.01			1.01	
50770-Q	B		B			< 0.1	
50770-R	B		B			< 0.1	
50770-S	B		B			< 0.1	
50770-T	B		B			< 0.1	
50770-U	B		B	✓	✓	< 0.1	

'A' Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE	$\frac{A-B}{A+B} \times 100$
(1) 50700	<0.1	<0.1	0	
(2) 50705-A	0.15	0.15	0	
(3) 50705-H	0.25	0.55	1.7	
(4) 50770-P	<0.1	<0.1	0	

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
(1) 50700	0.48	<0.1	0.5	0.48	96
(2) 50705-A	0.25	0.15	0.1	0.10	100
(3) 50705-H	0.85	0.55	0.25	0.26	104
(4) 50770-P	0.48	<0.1	0.5	0.48	96

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) TM III 1	1.20	1.19	99	1.6
(2) TM III 2	10.0	9.82	98	1.2
(3) W517x2	0.688	0.71	103	2.5
(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)					
(2)					
(3)					
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) TM III 1	1.20	1.19	99	1.6
(2) TM III 2	10.0	9.82	98	1.4
(3) W517x2	0.688	0.75	109	1.7

Handwritten: 5/14/85

Handwritten: MKP 5/13/85

METALS ANALYSIS DATA SHEET

DATE 5/13/85

ANALYST ML

"A" Channel *REC1 Model 50
SLIT & SAMPLES*

"B" Channel

Metal BA

Metal _____

Flame Type N₂O/Acetylene Wave Length 553.7

Flame Type _____ Wave Length _____

Lamp Current 11 D₂ Background _____

Lamp Current _____ D₂ Background _____

Voltage 380 Slit Width 1.0

Voltage _____ Slit Width _____

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion	Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
10 #1		5.0			STD #1				
11 #2	0.303	1.0			STD #2				
12 #3		1.0			STD #3				
13 #4		0.25			STD #4				
14 #5		0.10			STD #5				
Samples					Samples				
1	B.K. 4/20	<0.1			#1	50705-B	SPK	1.03	95%
2	B.K. 3PK	1.00		100%	#2	50705-C		<0.1	<0.1
3	50705	<0.1		<0.1	#3	50705-D		<0.1	<0.1
4	B.K. 4/20	<0.1			#4	50705-E		<0.1	<0.1
5	B.K. SPK	1.15		115%	#5	50705-F		0.12	0.12
6	50705 med det	<0.1		<0.1	#6	50705-G		<0.1	<0.1
7	50705 "	<0.1		<0.1	#7	B.K.		<0.1	
8	50705 "	<0.1		<0.1	#8	B.K. SPK		0.97	97%
9	50705 "	<0.1		<0.1	#9	50705-H		1.18	118%
10	B.K. 5/7	<0.1			#10	50705-I		0.10	10%
11	B.K. 3PK	1.03		103%	#11	50705-J		0.72	72%
12	50705-A	<0.1	1/10	<1	#12	50705-K		0.32	58 mg/l
13	0.5	0.45			#13	50705-L	ac	0.59	58 "
14	50705-B	<0.1	1/10	<1	#14	50705-M	SPK	1.57	97%
15	0.5	0.50			#15	50705-N		0.43	43 mg/l
16	50705-C	<0.1		<0.1	#16	50705-O		0.62	65 "
17	50705-D	<0.1		<0.1	#17	50705-P		0.82	78 "
18	B.K. 5/7	<0.1			#18	50705-Q		0.25	25 "
19	B.K. SPK	0.98		98%	#19	50705-R		0.56	55 "
20	50705-E	0.11		0.11	#20	50705-S		<0.1	<10 "
21	50705-F	0.10		0.10	#21	50705-T		0.76	26 "
22	50705-G	0.13		0.13	#22	B.K. 5/10		<0.1	
23	50705-H	<0.1		<0.1	#23	B.K. SPK		0.59	98%
24	50705-I	<0.1		<0.1	#24	50705-U		<0.1	<0.1
25	50705-J	0.11		0.11	#25	50705-V		<0.1	<0.1
26	50705-K	<0.1		<0.1	#26	50705-W		<0.1	<0.1
27	50705-L	<0.1		<0.1	#27	50705-X		<0.1	<0.1
28	50705-M	<0.1		<0.1	#28	50705-Y		<0.1	<0.1
29	50705-N	0.12		0.12	#29	50705-Z		<0.1	<0.1
30	B.K. 5/7	<0.1			#30	50705-AA	ac	<0.1	<0.1
31	B.K. SPK	0.95		95%	#31	50705-AB	SPK	1.01	101%
32	50705-AC	0.15		0.15	#32	50705-BA		<0.1	<0.1
33	50705-AD	0.15		0.15	#33	50705-CA		<0.1	<0.1
34	50705-AE	0.13		0.13	#34	50705-DA		<0.1	<0.1

All Results in mg/l unless specified otherwise.

SECTION IV
SUBPART D-5

RAW DATA FOR:

BERYLLIUM

METAL Be DATE 5/17/85 ANALYST DD REVIEWER _____

INSTRUMENT (AA) 14751
 W 235.0 nm VOLTAGE 460 V
 current 3.5 a SLIT 0.5 nm
 D₂ ON INTEG 4 sec

ANALYSIS METHOD
 FLAME HYDRIDE
 GAS 40/ACET ACID _____
 REDUC _____

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5	
STOCK	CONC, UG/ML	0.500	1.000	0.100	0.020	0.013
	AUSSORBANCE	.285	.547	.054	.011	0.006

EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
	.058	.059		1.3	102
	.235	.238		0.91	101

ANALYSIS

B = BMDL = < 0.005 *mg/l*

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC. UG/ML	D.F.	FINAL UG/ML	F.V. ml.	I.V. ml or gm	liquid UG/ml	solids UG/gm
50708-B	< 0.005		B	100	100		
BLK 5/7	< 0.005		B			< 0.005	
4338	< 0.005		B				
4338 Rep	< 0.005		B				
3LK 5/13	< 0.005		B			< 0.005	
BLK SPK	0.053		0.053			106% REC.	106
50726-A	< 0.005		B			< 0.005	
BLK	< 0.005		B			< 0.005	
3LK SPIKE	0.053		0.053			106% REC.	
50705-A	< 0.005		B			< 0.005	
50705-A Rep	< 0.005		B			< 0.005	
0705-B	< 0.005		B			< 0.005	
50705-B SHK	0.054		0.054			108% REC.	
0705-C	< 0.005		B			< 0.005	
50705-D	< 0.005		B			< 0.005	
0705-E	< 0.005		B			< 0.005	
50705-F	< 0.005		B			< 0.005	
50705-G	< 0.005		B			< 0.005	
BLK 5/15/85	< 0.005		B		100	< 0.005	
BLK SPIKE	0.055		0.055		100	110% REC.	
PA 0760 5/7	< 0.005		B		.99 gm	NO DATA	FOR RECOV.
50705-H	< 0.005		B	100 ml	1.00 gm		< 0.50
50705-H Rep	< 0.005		B		1.02 gm		< 0.49
50705-H SPK	0.055		0.055		.99 gm		0.56
50705-I	< 0.005		B		1.05 gm		< 0.48

METALS ANALYSIS DATA SHEET

7/13/85 MKP/s/2/85

DATE 5/1/85

ANALYST

"A" Channel

"B" Channel

Metal Be

Metal _____

Lamp Type N/A Wave Length 279.0

Flame Type _____ Wave Length _____

Lamp Current 3.5 D2 Background

Lamp Current _____ D2 Background _____

Voltage 460 Slit Width 0.5

Voltage _____ Slit Width _____

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion	Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
STD #1		0.50			STD #1				
#2	0.547	1.0			STD #2				
#3		0.10			STD #3				
STD #4		0.025			STD #4				
#5		0.013			STD #5				
Samples					Samples				
1	S0708-B	<0.005		<0.01	#1				
2	Blk 5/7	<0.005			#2				
3	4778	<0.005		<1 mg/g	#3				
4	4778	<0.005		<1 mg/g	#4				
5	Blk 5/7	<0.005			#5				
6	Blk 5/7	0.057		106%	#6				
7	S0776-A	<0.005		<1 mg/g	#7				
8	Blk	<0.005			#8				
9	Blk SPK	0.057		106%	#9				
10	S0705-A	<0.005		<0.005	#10				
11	S0705-A	<0.005		<0.005	#11				
12	S0705-B	<0.005		<0.005	#12				
13	S0705-B	SPK 0.054		105%	#13				
14	S0705-C	<0.005		<0.005	#14				
15	S0705-D	<0.005		<0.005	#15				
16	S0705-E	<0.005		<0.005	#16				
17	S0705-F	<0.005		<0.005	#17				
18	S0705-G	<0.005		<0.005	#18				
19	Blk	<0.005			#19				
20	Blk SPK	0.055		110%	#20				
21	EA 0760	<0.005			#21				
22	S0705-H	<0.005		<0.5 mg/g	#22				
23	S0705-H	<0.005		<0.5 "	#23				
24	S0705-H	SPK 0.055		110%	#24				
25	S0705-I	<0.005		<0.5 "	#25				
26	S0705-J	<0.005		<0.5 "	#26				
27	S0705-K	<0.005		<0.5 "	#27				
28	S0705-L	<0.005		<0.5 "	#28				
29	S0705-M	<0.005		<0.5 "	#29				
30	S0705-N	<0.005		<0.5 "	#30				
31	S0705-O	<0.005		<0.5 "	#31				
32					#32				
33					#33				
34					#34				

All Results in ng/l unless specified otherwise.

If space is empty, the sample is the same as under the "A" Channel.

SECTION IV
SUBPART D-6

RAW DATA FOR:

CADMIUM

METAL Cd DATE 5/14/85 ANALYST JB REVIEWER MP

INSTRUMENT (AA) VARIAN 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
 current _____ a SLIT _____ nm
 D₂ _____ INTEG _____ sec

FLAME HYDRIDE
 GAS AIR/ACET ACID _____
 REDUC _____

COMPUTER PROGRAM

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
STOCK					
COND, UG/ML	.040	.100	.200	.400	1.000
ABSORBANCE	.021	.056	.111	.220	.513

EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
.018	.015	.017	.015		83%
.039	.035	.036			92%

ANALYSIS

SAMPLE#	INSTRUMENT ANALYSIS			DIGESTION		FINAL CONCENTRATION	
	CONC. UG/ML	G.F.	FINAL UG/ML	ml V.	ml I.V. or gm	liquid UG/ML	solids UG/GM
DIB BLK 5/B	.000		<0.005	100 ml	100 ml		
BLK SPK 5/E	.048		96% REC				
50705-A	.000		<0.005			<0.005	
50705-A REP	.000		<0.005			<0.005	
50705-A ^{+ .10} SPK	.093		93% REC				
50705-B	.000		<0.005			<0.005	
50705-B ^{+ .05} SPK	.048		96% REC				
50705-C	.000		<0.005			<0.005	
50705-D	.000		<0.005			<0.005	
50705-E	.000		<0.005			<0.005	
50705-F	.000		<0.005			<0.005	
50705-G	.000		<0.005			<0.005	
SPK BLK	.003		<0.005	100 ml	100 ml		
BLK SPK	.051		102% REC		100 ml		
EPA 0760 1/10	.020	10	95% REC		.99 gm		
50705-H	.001		<0.005		1.02 gm		<0.49
50705-H REP	.001		<0.005		1.01 gm		<0.50
50705-H ^{+ .05} SPK	.055		108% REC		1.02 gm		
-I	.007		<0.005		1.01 gm		<0.50
-J	.003		<0.005		1.02 gm		<0.49
-K	.003		<0.005		1.02 gm		<0.49
-L	.000		<0.005		1.03 gm		<0.49
-M	.003		<0.005		1.01 gm		<0.50
-N	.003		<0.005		1.02 gm		<0.49
-	.000		<0.005		1.00 gm		<0.50

A" Channel

Cadmium
5/14/85
JD

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
1) 50705-H digest	< .010	< 0.01	
2) X	< .010		
3) 50705-A	< 0.005	< 0.005	
4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1) 50705-H digest	.055	.001	.050	.055	108%
2) 50705-A	.093	.000	.100	.093	93%
3) 50705-B	.048	.000	.050	.048	96%
4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1)	.018	.020	102%	
2)	.039	.039	100%	
3)	.022 .020	.022	116%	
4)	.043 .039	.043	110%	

Statistics from AAS Program 42

B" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 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)					
2)					
3)					
4)					

C. EPA Reference Standards

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

20.4507	0.257	5.7%	0.021	0.021	0.021	0.020	1.000
21.81 Cd,Pb	0.256	7.7%	0.015	0.015	0.014	0.015	1.000
" B2 "	0.145	100.0%	0.008	-0.001	0.015	0.015	1.000
" B3 "	0.256	7.7%	0.015	0.015	0.015	0.015	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE

DATE: 5/14/85

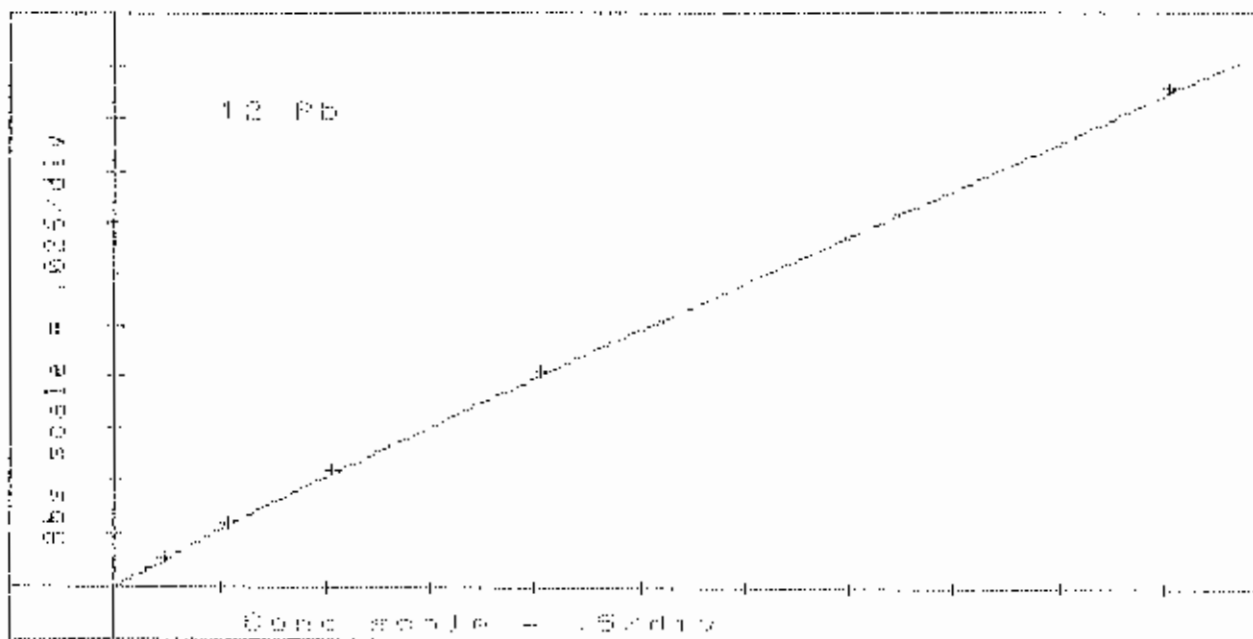
BATCH: Cd and Pb 5/3 - 5/13

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

AUTO-PROGRAM 12 Pb

mkp 5/15/85 *✓✓ 5/24/85*

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	100.0%	0.001	0.001	0.000	0.002	1.000
STANDARD 1	0.200	9.1%	0.011	0.010	0.012	0.013	1.000
STANDARD 2	0.500	3.6%	0.028	0.027	0.028	0.027	1.000
STANDARD 3	1.000	1.9%	0.053	0.052	0.054	0.054	1.000
STANDARD 4	2.000	1.0%	0.103	0.101	0.104	0.103	1.000
STANDARD 5	5.000	0.4%	0.244	0.244	0.246	0.244	1.000



0.2173	0.200	9.1%	0.011	0.012	0.011	0.012	1.000
21.450	0.375	4.8%	0.021	0.021	0.022	0.021	1.000
20.51 Cd,Pb	0.250	7.1%	0.014	0.013	0.013	0.015	1.000

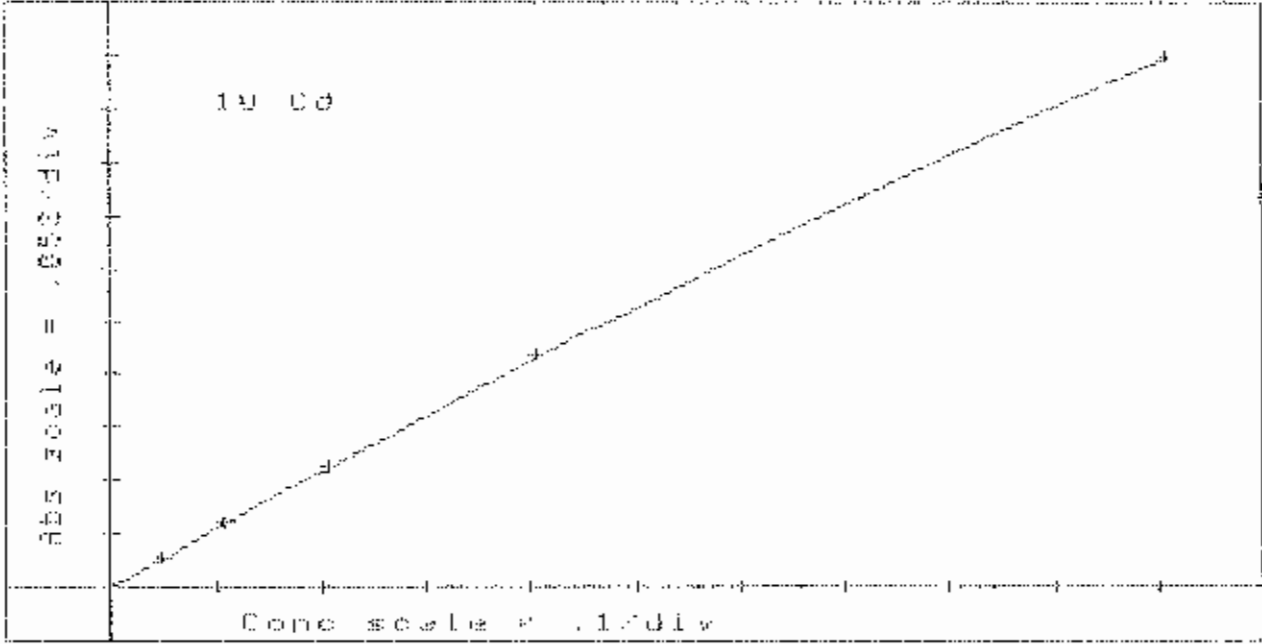
" B3	"	0.233	7.7%	0.013	0.013	0.014	0.014	1.000
" B4	"	0.235	7.7%	0.013	0.013	0.014	0.014	1.000
" B5	"	0.236	7.7%	0.013	0.014	0.013	0.013	1.000
" B6	"	0.257	7.1%	0.014	0.014	0.013	0.013	1.000
" B7	"	0.257	7.1%	0.014	0.014	0.013	0.015	1.000
BLK 5/8		0.018	100.0%	0.001	0.000	0.002	0.001	1.000
BLK SPK		0.482	3.7%	0.027	0.026	0.028	0.026	1.000
50703-A		0.000	0.0%	0.000	0.000	0.002	0.000	1.000
" -A (BC)		0.000	0.0%	0.000	0.000	0.000	0.002	1.000
" -A (.57, 1		0.482	3.7%	0.027	0.027	0.026	0.023	1.000
" -B		0.000	0.0%	0.000	0.000	0.001	0.001	1.000
" -B (SPK)		0.464	3.0%	0.026	0.027	0.026	0.026	1.000
" -C		0.018	100.0%	0.001	0.000	0.002	0.001	1.000
" -D		0.000	0.0%	0.000	0.000	0.001	0.000	1.000
" -E		0.018	0.0%	0.001	0.001	0.001	0.001	1.000
" -F		0.000	0.0%	0.000	0.001	0.000	0.001	1.000
BLANK		0.000	0.0%	0.000	0.000	0.000	0.001	1.000
RESLOPE		0.464	3.0%	0.026	0.027	0.026	0.027	1.000
(.217)		0.215	9.1%	0.011	0.011	0.012	0.010	1.000
2 (.435)		0.404	4.8%	0.021	0.021	0.022	0.020	1.000
50705-B		0.000	0.0%	0.000	0.000	0.001	0.000	1.000
BLK soils		0.000	0.0%	0.000	0.000	0.000	0.000	1.000
BLK SPK		0.519	3.7%	0.027	0.026	0.028	0.028	1.000
EFA0760 1/10		0.519	3.7%	0.027	0.028	0.028	0.027	1.000
50705-H		0.039	50.0%	0.002	0.002	0.002	0.004	1.000
" -H (BC)		0.038	33.3%	0.003	0.004	0.002	0.003	1.000
" -H (SPK)		0.577	3.3%	0.030	0.029	0.032	0.031	1.000
" -I		0.039	50.0%	0.002	0.003	0.002	0.001	1.000
" -J		0.039	50.0%	0.002	0.002	0.004	0.002	1.000
" -K		0.039	0.0%	0.002	0.003	0.002	0.002	1.000
" -L		0.619	100.0%	0.001	0.002	0.000	0.003	1.000
" -M		0.039	50.0%	0.002	0.002	0.003	0.003	1.000
" -N		0.000	0.0%	0.000	0.000	0.000	0.000	1.000
" -O		0.117	16.7%	0.006	0.006	0.005	0.007	1.000
BLK 5/8		0.000	0.0%	0.000	0.000	0.001	0.000	1.000
BLK SPK		0.499	3.8%	0.026	0.027	0.027	0.026	1.000
50725 1/1000		0.697	2.8%	0.036	0.037	0.035	0.036	1.000
BLK 5/8		0.000	0.0%	0.000	0.001	0.000	0.000	1.000
BLANK		0.000	0.0%	0.000	0.000	0.001	0.001	1.000
RESLOPE		0.446	0.0%	0.025	0.026	0.025	0.025	1.121
(.217)		0.193	0.0%	0.009	0.010	0.009	0.009	1.121
2 (.435)		0.401	0.0%	0.020	0.020	0.021	0.020	1.121
BLK SPK		0.520	3.8%	0.026	0.027	0.026	0.027	1.121
50740-A PL		0.000	0.0%	0.000	0.000	0.000	0.000	1.121
" -B "		0.000	0.0%	0.000	0.000	0.001	0.000	1.121
50744-B		0.000	0.0%	0.000	-0.001	0.000	-0.001	1.121
" -F		0.000	0.0%	0.000	0.000	0.001	0.000	1.121
" -G		0.000	0.0%	0.000	0.000	0.000	0.000	1.121
" -H		0.000	0.0%	0.000	0.000	0.000	-0.001	1.121
" -I		0.000	0.0%	0.000	-0.001	-0.001	0.000	1.121
" -J		0.000	0.0%	0.000	0.000	0.000	-0.001	1.121
" -K		0.000	0.0%	0.000	-0.001	0.000	-0.001	1.121
" -L		0.000	0.0%	0.000	-0.001	0.000	0.000	1.121
" -M		0.000	0.0%	0.000	0.000	0.000	-0.001	1.121
" -N		0.000	0.0%	0.000	0.000	0.000	0.000	1.121
BLK 5/8-9		0.000	0.0%	0.000	-0.001	0.000	-0.001	1.121
BLK SPK		0.520	0.0%	0.026	0.026	0.026	0.026	1.121
50739-A		0.000	0.0%	0.000	0.000	0.000	-0.001	1.121
" -B		0.000	0.0%	0.000	-0.001	0.000	-0.001	1.121
" -B (BC)		0.000	0.0%	0.000	0.000	0.000	0.000	1.121
BLANK		0.000	100.0%	-0.001	-0.002	0.000	-0.001	1.121
RESLOPE		0.500	3.6%	0.028	0.028	0.027	0.029	1.000
(.217)		0.200	9.1%	0.011	0.011	0.010	0.012	1.000
50739-B		0.018	0.0%	0.001	0.001	0.001	0.001	1.000

" -D	0.018	0.0%	0.007	0.051	0.001	0.001	1.000
" -E	0.000	0.0%	0.000	0.001	0.000	0.000	1.000
" -F	0.070	0.0%	0.007	0.005	0.005	0.006	1.000

AUTO-PROGRAM 10 CU

msd 7/15/85

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	100.0%	-0.001	-0.001	0.000	-0.007	1.000
STANDARD 1	0.040	4.8%	0.021	0.022	0.022	0.021	1.000
STANDARD 2	0.100	1.0%	0.056	0.057	0.055	0.056	1.000
STANDARD 3	0.200	0.9%	0.111	0.111	0.110	0.112	1.000
STANDARD 4	0.400	0.9%	0.220	0.219	0.223	0.220	1.000
STANDARD 5	1.000	0.8%	0.513	0.512	0.519	0.510	1.000



(.217)	0.015	14.3%	0.007	0.008	0.008	0.008	1.000
2(.435)	0.036	5.3%	0.019	0.019	0.021	0.018	1.000
IDL B1 Cd,Pb	0.047	4.0%	0.025	0.025	0.026	0.024	1.000
" B2 "	0.048	3.8%	0.026	0.025	0.025	0.023	1.000
" B3 "	0.047	4.0%	0.025	0.027	0.024	0.026	1.000
" B4 "	0.048	3.8%	0.026	0.025	0.027	0.026	1.000
" B5 "	0.048	0.0%	0.026	0.027	0.026	0.026	1.000
" B6 "	0.050	7.4%	0.027	0.025	0.028	0.029	1.000
" B7 "	0.047	8.0%	0.025	0.024	0.024	0.028	1.000
BLK 5/B	0.000	100.0%	-0.001	-0.007	-0.002	0.000	1.000
BLK 5/P	0.048	3.8%	0.026	0.027	0.027	0.026	1.000
50705-A	0.000	100.0%	-0.001	0.000	-0.001	-0.002	1.000
" -A(BC)	0.000	100.0%	-0.001	-0.001	-0.002	0.000	1.000
" -A(S/L)	0.073	1.9%	0.032	0.033	0.033	0.032	1.000
" -B	0.000	100.0%	-0.001	-0.003	-0.001	-0.001	1.000
" -B(SPK)	0.048	3.8%	0.026	0.026	0.028	0.025	1.000
" -C	0.000	100.0%	-0.001	-0.007	-0.002	-0.001	1.000
" -D	0.000	50.0%	-0.002	-0.002	-0.003	-0.003	1.000
" -E	0.000	50.0%	-0.002	-0.002	-0.003	-0.003	1.000
" -F	0.000	100.0%	-0.001	-0.003	-0.001	-0.001	1.000
BLANK	0.000	50.0%	-0.002	-0.003	-0.002	-0.003	1.000
RESLOPE	0.101	0.0%	0.037	0.037	0.037	0.037	.99
(.217)	0.020	0.0%	0.011	0.011	0.011	0.012	.99
2(.435)	0.039	0.0%	0.021	0.022	0.019	0.023	.99
50705-B	0.000	0.0%	0.000	0.000	0.000	0.000	.99

PPA0760 1/10	0.020	9.1%	0.011	0.011	0.011	0.013	.97
50705 H	0.001	100.0%	0.001	0.002	0.001	0.002	.97
" -H(20)	0.001	0.0%	0.001	0.001	0.001	0.001	.97
" -H(2PK)	0.055	0.0%	0.050	0.030	0.050	0.031	.97
" -I	0.007	25.0%	0.004	0.005	0.004	0.003	.97
" -J	0.003	50.0%	0.002	0.004	0.001	0.001	.97
" -K	0.003	50.0%	0.002	0.003	0.001	0.003	.98
" -L	0.000	0.0%	0.000	0.000	0.002	0.000	.98
" -M	0.003	0.0%	0.002	0.002	0.002	0.003	.98
" -N	0.003	50.0%	0.002	0.002	0.003	0.001	.98
" -O	0.003	50.0%	0.002	0.003	0.003	0.002	.97
BLK 5/3	0.001	100.0%	0.001	0.001	0.002	0.002	.95
BLK SPK	0.053	3.4%	0.029	0.027	0.028	0.030	.77
50725 1/100d	0.191	0.9%	0.100	0.108	0.110	0.107	.97
BLK 5/8	0.001	100.0%	0.001	0.003	0.001	0.001	.98
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	.98
RESLOPE	0.100	1.8%	0.056	0.055	0.056	0.050	1.000
(.217)	0.022	16.7%	0.012	0.010	0.012	0.015	1.000
2(.435)	0.043	0.0%	0.023	0.023	0.023	0.023	1.000
BLK SPK	0.055	3.3%	0.030	0.032	0.029	0.030	1.000
50740-A Pb	0.003	50.0%	0.002	0.002	0.004	0.002	1.000
" -D "	0.003	33.3%	0.003	0.007	0.003	0.004	1.000
50744-D	0.003	50.0%	0.002	0.003	0.003	0.002	1.000
" -E	0.001	100.0%	0.001	0.002	0.000	0.001	1.000
" -B	0.003	0.0%	0.002	0.003	0.002	0.002	1.000
" -H	0.003	50.0%	0.002	0.001	0.002	0.003	1.000
" -I	0.001	100.0%	0.001	0.002	0.001	0.002	1.000
" -J	0.001	0.0%	0.001	0.002	0.001	0.001	1.000
" -K	0.001	0.0%	0.001	0.001	0.001	0.002	1.000
" -L	0.003	0.0%	0.002	0.002	0.003	0.002	1.000
" -M	0.001	0.0%	0.001	0.002	0.001	0.001	1.000
" -N	0.003	50.0%	0.002	0.004	0.001	0.001	1.000
BLK 5/8-9	0.001	100.0%	0.001	0.001	0.003	0.001	1.000
BLK SPK	0.054	0.0%	0.029	0.029	0.029	0.030	1.000
50739-A	0.003	50.0%	0.002	0.003	0.002	0.001	1.000
" -B	0.003	50.0%	0.002	0.004	0.002	0.001	1.000
" -B (DC)	0.003	33.3%	0.003	0.002	0.004	0.003	1.000
BLANK	0.000	0.0%	0.001	0.001	0.001	0.002	1.000
RESLOPE	0.098	1.8%	0.033	0.056	0.056	0.035	1.00
(.217)	0.019	10.0%	0.010	0.010	0.009	0.011	1.02
50739-B	0.000	0.0%	0.000	0.000	0.000	0.000	1.02
" B (SPK)	0.051	3.7%	0.027	0.028	0.027	0.028	1.02
" -C	0.001	100.0%	0.001	0.002	0.001	0.002	1.02
" -D	0.000	0.0%	0.000	0.000	0.000	0.000	1.02
" -E	0.001	0.0%	0.001	0.002	0.001	0.001	1.02
" -F	0.011	15.7%	0.006	0.006	0.007	0.007	1.01

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE

DATE: 5/14/85

BATCH: Cd and Pb 5/3 - 5/13

MXP 5/15/85

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

SOLUTION	Pb mg/L	Cd mg/L	
(.217) (0.05)	0.200	0.015	92%
2(.435) (0.05)	0.375	0.036	86%
12.81 Cd, Pb	0.252	0.047	
" "	0.235	0.048	

KW
{0.18}
{0.039}

QC recorded

$\sigma_{n-1} = 0.001$

" B5 "	0.235	24%	0.048	
" B6 "	0.253	60%	0.050	
" B7 "	0.252		0.047	
BLK 5/6	0.018	<.05	0.000	<.005
BLK SPK	0.482	43%	0.040	96%
50705-A	0.660	<.05	0.000	<.005
" -A (BC)	0.000	<.05	0.000	<.005
" -A (.5/1)	0.482	96%	0.093	93%
" -B	0.000	<.05	0.000	<.005
" -B (SPK)	0.464	98%	0.040	96%
" -C	0.018	<.05	0.000	<.005
" -D	0.000	<.05	0.000	<.005
" -E	0.018	<.05	0.000	<.005
" -F	0.000	<.05	0.000	<.005
(.217) (008)	0.215	99%	0.020	102%
2(.435) (008)	0.404	93%	0.039	100%
50705-G	0.000	<.05	0.000	<.005
BLK 5/10	0.000	<.05	0.003	<.01
BLK SPK	0.519	104%	0.031	102%
EP60760 1/10	0.519	100%	0.020	95%
50705-H	0.652	5.2%	0.001	<.05 ug/g
" -H (BL)	0.058	3.7%	0.001	<.05 "
" -H (SPK)	0.577	101%	0.055	108%
" -I	0.039	<5%	0.007	<.05 ug/g
" -J	0.039	<5"	0.003	<.05 "
" -K	0.039	<5"	0.003	<.05 "
" -L	0.019	<5"	0.000	<.05 "
" -M	0.039	<5"	0.003	<.05 "
" -N	0.000	<5"	0.003	<.05 "
" -O	0.117	12"	0.003	<.05 "
BLK 5/3	0.000	<.05	0.001	<.01
BLK SPK	0.499	100%	0.053	104%
50725 1/10Cd	0.697		0.191	95 ug/g
BLK 5/8	0.000	<.05	0.001	<.01
(.217) (008)	0.185	84%	0.022	116%
2(.435) (008)	0.401	92%	0.043	110%
BLK SPK	0.520	104%	0.055	108%
50740-A Pb	0.000	<.05	0.003	
" -B "	0.000	<.05	0.005	
50744-D	0.000	<.05	0.003	<.01
" -F	0.000	<.05	0.001	<.01
" -B	0.000	<.05	0.003	<.01
" -B	0.000	<.05	0.003	<.01
" -I	0.000	<.05	0.001	<.01
" -J	0.000	<.05	0.001	<.01
" -K	0.000	<.05	0.001	<.01
" -L	0.000	<.05	0.003	<.01
" -M	0.000	<.05	0.001	<.01
" -N	0.000	<.05	0.003	<.01
BLK 5/6-9	0.000	<.05	0.001	<.01
BLK SPK	0.520	104%	0.054	106%
50737-A	0.000	<.05	0.003	<.01
" -B	0.000	<.05	0.003	<.01
" -B (BC)	0.000	<.05	0.003	<.01
(.217)	0.200	92%	0.019	100%
50739-G	0.018	<.05	0.000	<.01
" B (SPK)	0.482	96%	0.051	97%
" -C	0.018	<.05	0.001	<.01
" -D	0.018	<.05	0.000	<.01
" -E	0.000	<.05	0.001	<.01
" -F	0.090	0.09%	0.011	0.011

SECTION IV
SUBPART D-7

RAW DATA FOR:

CALCIUM

TITLE Ca DATE 5/19/85 ANALYST ML REVIEWER 204
 INSTRUMENT (AA) ANALYSIS METHOD
 Wavelength 423 nm Voltage 380 V Flame Hydride
 Current 5 a Slit 10 nm Geo. AA / Acet. Acid
 D₂ Integ. sec Reduc. _____

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	<u>20</u>	<u>40</u>	<u>10</u>	<u>5.0</u>	<u>1.0</u>
	Absorbance	<u>0.329</u>	<u>0.623</u>	<u>0.176</u>	<u>0.074</u>	<u>0.018</u>
IPA 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 g	w or d weight	Liquid ug/ml	Solids ug/gm
<u>Blank 5/8</u>	<u><1.0</u>							
<u>Blank 2.0</u>	<u>1.7</u>							<u>85.0%</u>
<u>50705-A</u>	<u>6.8</u>	<u>10</u>	<u>68</u>	<u>100</u>	<u>100 mls.</u>		<u>68</u>	
<u>-A dup.</u>	<u>6.8</u>		<u>68</u>					
<u>-B</u>	<u>6.5</u>		<u>65</u>				<u>65</u>	
<u>-B 3pk</u>	<u>7.6</u>							
<u>-C</u>	<u>7.4</u>		<u>74</u>				<u>74</u>	
<u>-d</u>	<u>4.4</u>		<u>44</u>				<u>44</u>	
<u>-E</u>	<u>6.6</u>		<u>66</u>				<u>66</u>	
<u>-F</u>	<u>7.2</u>		<u>72</u>				<u>72</u>	
<u>-G</u>	<u>7.2</u>	<u>↓</u>	<u>72</u>	<u>↓</u>	<u>↓</u>		<u>72</u>	
<u>Blank</u>	<u><1.0</u>							
<u>Blank 2.0</u>	<u>1.6</u>							<u>80.0%</u>
<u>PA</u>	<u>8.0</u>							<u>107%</u>
<u>" m1</u>	<u>38</u>							<u>94%</u>
<u>" m2</u>	<u>5.3</u>							<u>100%</u>
<u>50705-H</u>	<u>6.6</u>		<u>6.6</u>	<u>100</u>	<u>1.02 g</u>			<u>647</u>
<u>-H dup</u>	<u>6.5</u>		<u>6.5</u>		<u>1.01</u>			<u>644</u>
<u>-H 3pk</u>	<u>6.8</u>		<u>6</u>		<u>1.02</u>			
<u>-I</u>	<u>10</u>		<u>10</u>		<u>1.01</u>			<u>990</u>
<u>-J</u>	<u>8.4</u>	<u>10</u>	<u>84</u>		<u>1.02</u>			<u>8240</u>
<u>-K</u>	<u>21</u>		<u>21</u>		<u>1.02</u>			<u>2060</u>
<u>-L</u>	<u>9.8</u>	<u>10</u>	<u>98</u>		<u>1.03</u>			<u>9510</u>
<u>-M</u>	<u>11</u>		<u>11</u>		<u>1.01</u>			<u>1090</u>
<u>-N</u>	<u>19</u>	<u>10</u>	<u>196</u>		<u>1.02</u>			<u>18600</u>

Calcium 5/10/85 alba

612
10:00
10:15

'A' Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
(1) 50705-A	6.8	3.8	0
(2) 50705-B	6.8	6.8	0
(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) 50705-A	5.0	3.8	1.2	1.2	100
(2) 50705-B	5.7	4.6	1.2	1.1	92
(3) 50705-C	8.6	6.8	2.0	1.8	90
(4) 50705-D	8.3	6.8	2.0	1.5	80

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) TAME 2	7.5	7.7	101	
(2) M1	40.6	38	94	
(3) M2	5.3	5.2	98	
(4)				

Statistics from AAS Program 42

'A' Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
(1) 50705-H	6.6	6.5	1.5
(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) 50705-H	3.1	6.5	1.0	1.5	95
(2)					
(3)					
(4)					

C. EPA Reference Standards

at 20

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) TAME 2	7.5	7.6	101	3.4
(2) M1	40.6	37	91	1.2
(3) M2	5.3	5.2	102	2.1

5/11/85

METALS ANALYSIS DATA SHEET

WFO 5/11/85

DATE 5/11/85

ANALYST

"A" Channel Light path to spec & sample

Metal CA A

Flame Type Air/Acety Wave Length 423.0

Lamp Current 5 D₂ Background

Voltage 250 Slit Width 1.0

"A" Channel

Metal

Flame Type Wave Length

Lamp Current D₂ Background

Voltage Slit Width

Standards	Absorbance	Conc. (ng/l)	Dil.	Final Conclusion
#1		2.0		
#2	0.623	46		
#3		10		
#4		5.0		
#5		1.0		
Samples				
1	4305-A	38		78
2	4305-A uc	38		78
3	4305-B	19		19
4	4305-C	38		52
5	4305-D	6.1	1/10	52
6	4305-E	41		41
7	BLK 4/21	<1		
8	BLK SPK	22.5%		
9	50629 Davis	41	1/10	<10
10	BLK 4/26	<1		
11	BLK SPK	1.5		75%
12	50680-A Lagoon	8.7	1/10	87
13	50680-B	8.5	1/10	88
14	50680-C	8.8		8.8
15	50680-D	<1		<1
16	BLK 4/30	<1		
17	BLK SPK	1.4		70%
18	Tobacco	23		23
19	BLK 5/3	<1		
20	BLK SPK	1.5		75%
21	50735 Spinopart	5.0	1/10	50
22	BLK 5/8	<1		
23	BLK SPK	1.5		75%
24	50744-D Mixed	43		43
25	50744-E	4.6		4.6
26	50744-G	17		17
27	50744-H	1.8		1.8
28	50744-I	2.1		2.1
29	50744-J	4.9		4.9
30	50744-K	2.0		2.0
31	50744-L	5.2		5.2
32	50744-M	<1		<1
33	50744-N	5.0		5.0
34	BLK 5/8	<1		

Standards	Absorbance	Conc. (ng/l)	Dil.	Final Conclusion
STD #1				
STD #2				
STD #3				
STD #4				
STD #5				
Samples				
#1	RIK SPK	1.7		85%
#2	50705-A Orange	6.8	1/10	68
#3	50705-B uc	6.8	1/10	68
#4	50705-B	6.5	1/10	65
#5	50705-B SPK	7.6	1/10	20.1%
#6	50705-C	7.4	1/10	74
#7	50705-D	4.4	1/10	44
#8	50705-E	6.6	1/10	66
#9	50705-F	7.2	1/10	7.2
#10	50705-G	7.2	1/10	7.2
#11	BLK	<1		
#12	BLK SPK	1.6		80%
#13	EPA TAG 2	2.6	1/10	26%
#14	1. M 1	38	1/10	38%
#15	1. M 2	5.7	1/10	100%
#16	US EPA 0700	17.2	1/10	
#17	50705-H	6.5		650 mg/l
#18	50705-H uc	6.5		640
#19	50705-H SPK	6.8		680
#20	50705-I	10		990 mg/l
#21	50705-J	8.4	1/10	8200
#22	50705-K	27		1800
#23	50705-L	9.3	1/10	9500
#24	50705-M	11		1100
#25	50705-N	15	1/10	19000
#26	50705-O	7.7		770
#27				
#28				
#29				
#30				
#31				
#32				
#33				
#34				

All Results in ng/l unless specified otherwise.

SECTION IV
SUBPART D-8

RAW DATA FOR:

CHROMIUM

METAL Cd DATE 5/9/85 ANALYST JB REVIEWER MP

INSTRUMENT (AA) Varian 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
 current _____ a SLIT _____ nm
 D_2 _____ INTEG _____ sec

FLAME / HYDRIDE
 _____ / ACID
 _____ / REDUC

Data on Computer Methods File

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	.250	1.000	2.500	5.000	10.000
	ABSORBANCE	.011	.048	.123	.252	.495

EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
WS 13 x2	.092	.090			98%
WS 2	.261	.280			92%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLED	CONC. ug/ml	D.F.	FINAL ug/ml	ml V.	ml I.V. or gm	liquid ug/ml	solids ug/gm
BLK SR	.000		.000	100	100 ml		
BLK SPK .2	.204		102% REC				
50705-A	.000		<0.05				
-A REP	.000		<0.05				
-A SPK	.293		117% REC.				
50705 B	.022						
-C	.000						
-D	.000						
-E	.000						
-F	.000						
-G	.000						
BLK soil	.000						
BLK SPK	.204		102% REC				
EPA 0760	196.6				.99 gm		102% REC
50705-H	8.300		ug/gm		1.02 gm		8.2 ug/gm
-H REP	9.000		ug/gm		1.01 gm		9.0 "
WS 13 x2	.081		88% REC			88% REC	
WS 2	.221		85% REC			85% REC	
50705-H SPK	31.8		ug/gm		1.02 gm		110% REC.
I	.000		ug/gm		1.01 gm		<5 "
J	.000		ug/gm		1.01 gm		<5 "
K	.000		ug/gm		1.02 gm		<5 "
L	4.900		ug/gm		1.03 gm		4.8 "
M	2.400		ug/gm		1.01 gm		<5 "
N	.000		ug/gm		1.02 gm		<5 "
O	.000		ug/gm		1.00 gm		<5 "

See report for furnace analysis

COMPUTER ANALYSIS

"A" Channel

Chromium, Flame
5/9/85
JB

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
1) digest Blk 5/1	.000	.000	
2) 50705-A	.000	.000	
3) 50705-H	8.3	9.0	
4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1) digest Blk 5/8	.204	.000	.200	.204	102%
2) 50705-B	.227	.022	.206	.203	102%
3)					
4)					

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1) 0760	198	196.6	102%	
2) WS 13 x 2	.092	.081	88%	
3) WS 2	.261	.221	85%	
4) EPA 0760	.200, 195	.197	102%	

Statistics from AAS Program 42

"B" Channel

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
1)			
2)			
3)			
4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1)					
2)					
3)					
4)					

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-9755
OPERATOR: JOHN BOLNETTE
DATE: 5/11/85
BATCH: Cr and Mo 5/7 - 5/8

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

UTO-PROGRAM 16 Cr

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	REGLOPE FACTOR
BLANK	0.000	0.0%	0.002	0.002 0.003 0.002	1.000
STANDARD 1	0.250	0.0%	0.008	0.008 0.008 0.005	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

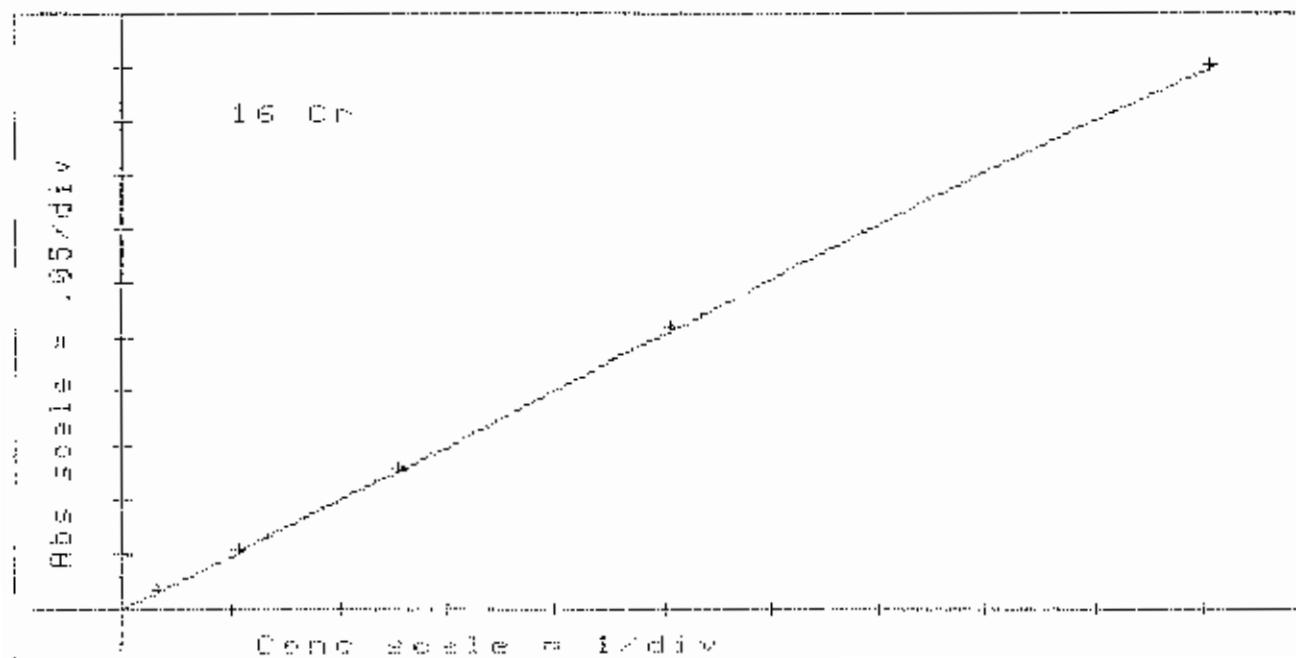
VARIAN AA-975
OPERATOR: JOHN BOLNETTE
DATE: 5/9/85
BATCH: Cr and Mo 5/7 - 5/8

AKP 5/13/85

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

UTO-PROGRAM 16 Cr

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	REGLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.001-0.001 0.000	1.000
STANDARD 1	0.250	0.0%	0.011	0.011 0.011 0.011	1.000
STANDARD 2	1.000	0.0%	0.048	0.049 0.048 0.048	1.000
STANDARD 3	2.500	1.6%	0.123	0.126 0.123 0.122	1.000
STANDARD 4	5.000	0.6%	0.252	0.252 0.255 0.251	1.000
STANDARD 5	10.00	1.2%	0.495	0.503 0.493 0.491	1.000



3x2 (.092)	0.000	00.0%	0.000	0.000	0.004	0.000	1.000
" (.261)	0.227	10.0%	0.000	0.011	0.010	0.011	1.000
4K 5/8	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
4K SPK	0.000	11.1%	0.000	0.010	0.010	0.009	1.000
5K 5/8	0.000	0.0%	0.000	0.001	0.000	0.001	1.000
" -A (00)	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
" -A (.157.1)	0.000	0.0%	0.013	0.013	0.014	0.013	1.000
" -B	0.000	100.0%	0.000	0.000	0.000	0.001	1.000
" -B (.157.1)	0.000	7.7%	0.013	0.014	0.013	0.012	1.000
" -B (SPK)	0.000	10.0%	0.010	0.010	0.011	0.011	1.000
" -C	0.000	0.0%	0.000	0.001	0.000	0.001	1.000
" -D	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
" -E	0.000	0.0%	0.000	0.000	0.001	0.001	1.000
" -F	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
" -G	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
4K 4/16	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
4K SPK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
5A 0760 *	196.6	1.0%	0.000	0.000	0.000	0.000	1.000
0705-M *	6.800	33.3%	0.000	0.000	0.000	0.000	1.000
" -M (00) *	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
BLANK	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
RESLOPE	0.000	0.0%	0.044	0.044	0.044	0.045	1.084
13x2 (.092)	0.000	0.0%	0.000	0.000	0.000	0.000	1.084
" (.261)	0.221	11.1%	0.000	0.000	0.000	0.011	1.084
0705-M (mspk) *	36.50	15.3%	0.015	0.015	0.017	0.016	1.084
" -H (SPK) *	31.90	7.7%	0.013	0.013	0.013	0.013	1.084
" -I *	0.000	0.0%	0.000	0.000	0.001	0.001	1.084
" -J *	0.000	0.0%	0.000	0.001	0.000	0.000	1.084
" -K *	0.000	0.0%	0.000	0.001	0.001	0.000	1.084
" -L *	4.900	50.0%	0.002	0.002	0.003	0.003	1.084
" -M *	2.400	100.0%	0.001	0.003	0.001	0.000	1.084
" -N *	0.000	0.0%	0.000	0.001	0.000	0.000	1.084
" -O *	0.000	0.0%	0.000	0.000	0.001	0.000	1.084
0705-M (mspk) *	0.271	9.1%	0.011	0.012	0.012	0.011	1.084
0705-M (mspk) *	0.000	0.0%	0.000	0.000	0.001	0.000	1.084
0705-M (mspk) *	0.172	14.3%	0.007	0.008	0.006	0.007	1.084
0705-M (mspk) *	0.000	0.0%	0.000	0.000	0.000	0.000	1.084
0705-M (mspk) *	0.000	100.0%	-0.001	-0.001	-0.002	0.000	1.084
0705-M (mspk) *	0.000	0.0%	0.000	0.000	0.000	0.000	1.084
0705-M (mspk) *	0.000	0.0%	0.000	0.000	0.001	-0.001	1.084
0705-M (mspk) *	0.000	0.0%	0.000	0.000	0.000	0.000	1.084
0705-M (mspk) *	0.000	0.0%	0.000	0.000	0.000	-0.001	1.084
0705-M (mspk) *	0.000	0.0%	0.000	-0.001	0.000	-0.001	1.084
BLANK	0.000	0.0%	0.000	-0.001	0.000	-0.001	1.084
RESLOPE	0.000	2.3%	0.044	0.044	0.046	0.044	1.084
	0.000	25.0%	0.004	0.005	0.003	0.004	1.084
	0.221	11.1%	0.000	0.010	0.009	0.010	1.084
	0.000	0.0%	0.000	0.000	0.002	0.000	1.084
	0.000	0.0%	0.000	0.000	0.000	0.000	1.084
	0.000	0.0%	0.000	0.000	0.000	0.000	1.084
	0.024	100.0%	0.001	0.002	0.000	0.001	1.084
	0.000	0.0%	0.000	0.000	0.000	0.000	1.084

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

PARTIAL AA-975
 OPERATOR: JOHN BRUNETTE
 DATE: 5/9/85
 BATCH: Cr and No 5/7 - 5/8

MKP 5/13/85

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

Cr

132(092)	0.070	98%
21(261)	0.250	96%
10(348)	0.700	<.05
85(84)	0.704	102%
50705-A	0.000	<.05
" -A (2)	0.000	<.05
" -A (25) 1	0.293	117%
" -B	0.097	<.05
" -B (25) 1	0.293	117%
" -B (118)	0.227	102%
" -C	0.000	<.05
" -D	0.000	<.05
" -E	0.000	<.05
" -F	0.000	<.05
" -G	0.000	<.05
BLK suite	0.000	<.05
BLK BFK	0.204	102%
EPA 0760	* 158.6	162%
50705-H	* 6.900	8.2 ug/g
" -H (50)	* 9.000	9.0 "
132(092)	0.081	88%
21(261)	0.221	85%
50705-H (spk)	36.50	110%
" -H (EPR)	* 31.80	116%
" -I	* 0.000	< 5 ug/g
" -J	* 0.000	< 5 ug/g
" -K	* 0.000	< 5 "
" -L	* 4.900	4.8 "
" -M	* 2.400	< 5 "
" -N	* 0.000	< 5 "
" -O	* 0.000	< 5 "
50705-A	0.271	108%
BLK 5/8	0.000	<.05
BLK SPA	0.188	94%
50744-E	0.000	<.05 -
SAMPLE 34 F	0.000	<.05 -
SAMPLE 35 G	0.000	<.05 -
SAMPLE 36 H	0.000	<.05 -
SAMPLE 37 I	0.000	<.05 -
SAMPLE 40 J	0.000	<.05 -
131(21092)	0.098	106%
50744-K	0.221	85%
50744-K	0.000	<.05 -
SAMPLE 41 L	0.000	<.05 -
SAMPLE 45 M	0.024	<.05 -
SAMPLE 46 N	0.000	<.05 -

QC recorded

5/21/85

METALS ANALYSIS DATA SHEET

REV 4/85

METAL Cr DATE 5/29/85 ANALYST dd REVIEWER mp

INSTRUMENT (AA) VARIAN 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
 current _____ a SLIT _____ na
 D_2 _____ INT EG _____ sec

FLAME GAS 1 HYDRIDE ACID REDUC

Data on Computer Program

Furnace Analysis

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, $\mu\text{S/NL}$	10.0	20.0	30.0	40.0	50.0 $\mu\text{g/l}$
	ABSORBANCE	.112	.225	.339	.448	.569

EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
WS 2	18	19.3			107%
WS 13	46	47.0			102%

Standards added to Digests

ANALYSIS

SAMPLE #	INSTRUMENT ANALYSIS $\mu\text{g/l}$		DIGESTION		FINAL CONCENTRATION	
	CONC. $\mu\text{g/ml}$	D.F.	F.V. ml	I.V. ml or gm	liquid $\mu\text{g/ml}$	solids $\mu\text{g/gm}$
50705A	3.4		100 ml	100 ml	<10	<10
.025 SPK	26					
50705-A REP	.3				<10	<10
.025 SPK	24.6					
50705 B	.5				<10	<10
.025 SPIKE	23.3					
50705-C	.5				<10	<10
.025 SPK	23.1					
50705-D	1.6				<10	<10
WS 2	19.5					
WS 13	47.6					
50705-P	24.0					
.025 SPK	24.0					
50705-E	3.2				<10	<10
.025 SPK	25.0					
50705-F	1.2				<10	<10
.025 SPK	23.3					
50705 G	1.2				<10	<10
.025 SPK	23.2					
BLK	2.9					
BLK SPK	224					
50705-H	—					
.025 SPK	—					
50705-I REP	—					
.025 SPK	—					

see flame analysis for soils

A" Channel ~~CHROMIUM~~, FURNACE, 5/29/85

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) * 100
1) WS-2	19.54	18.98	
2) WS-13	47.56	45.80	
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) WS-2					
2) BLK - SPK	203.5 ug/l	.62 ug/l			102%
3)					
4) All samples spiked during furnace analysis					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1) WS 2	19.5		108	
2) WS 13	47.6		106	
3) Blank				
4)				

Statistics from AAS Program 42

B" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) * 100

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

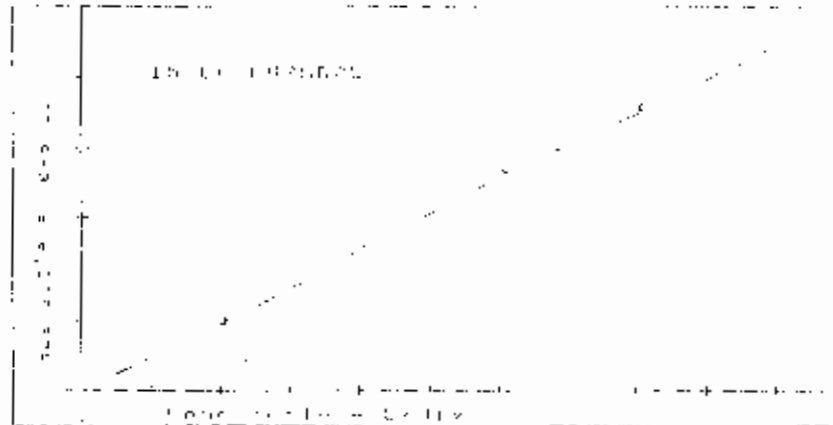
GENERAL TESTING CORPORATION WISCONSIN TO HELP OUR ENVIRONMENT (1460)

MANAGEMENT SYSTEMS (2275)
 CHEMICAL ANALYSIS (0.00000000)
 DATE TIME (00.00.00)
 CONTROL (0)

PLEASE PRINT YOUR SITE IDENTIFICATION NUMBER AND THE NAME OF THE SITE TO BE ANALYZED.

AUTO PROGRAM 15 On FURNACE

SOLUTION	CONC ug/l	RSR	MEAN ABS	ABUNDANCE READINGS	RECOVERY FACTOR
BLANK	0.0000	0.0000	0.0000	0.0000 0.0000	1.0000
STANDARD 1	10.000	0.000	0.0000	0.0000 0.0000	1.0000
STANDARD 2	20.000	0.000	0.0000	0.0000 0.0000	1.0000
STANDARD 3	30.000	0.000	0.0000	0.0000 0.0000	1.0000
STANDARD 4	40.000	0.000	0.0000	0.0000 0.0000	1.0000
STANDARD 5	50.000	0.000	0.0000	0.0000 0.0000	1.0000



00.00	10.000	0.000	0.0000	0.0000 0.0000	1.0000
00.10	20.000	0.000	0.0000	0.0000 0.0000	1.0000
10.01 (25% RE)	30.000	0.000	0.0000	0.0000 0.0000	1.0000
0	40.000	0.000	0.0000	0.0000 0.0000	1.0000
3	50.000	0.000	0.0000	0.0000 0.0000	1.0000
4	00.000	0.000	0.0000	0.0000 0.0000	1.0000
5	20.000	0.000	0.0000	0.0000 0.0000	1.0000
6	30.000	0.000	0.0000	0.0000 0.0000	1.0000
7	40.000	0.000	0.0000	0.0000 0.0000	1.0000
RECOVERY	0.0000	0.000	0.0000	0.0000 0.0000	1.0000
RECOVERY	100.00	0.000	0.0000	0.0000 0.0000	1.0000
00705 (1)	01.000	0.000	0.0000	0.0000 0.0000	1.0000
0.000	06.000	0.000	0.0000	0.0000 0.0000	1.0000
00705 (H3C)	100.00	0.000	0.0000	0.0000 0.0000	1.0000
0.000	08.000	0.000	0.0000	0.0000 0.0000	1.0000
00705 (1)	40.000	0.000	0.0000	0.0000 0.0000	1.0000
0.000	20.000	0.000	0.0000	0.0000 0.0000	1.0000
00705 (3)	30.000	0.000	0.0000	0.0000 0.0000	1.0000
0.000	00.000	0.000	0.0000	0.0000 0.0000	1.0000
00705 (1)	10.000	0.000	0.0000	0.0000 0.0000	1.0000
00705 (1)	00.000	0.000	0.0000	0.0000 0.0000	1.0000
00705 (1)	00.000	0.000	0.0000	0.0000 0.0000	1.0000

GENERAL TESTING CORPORATION WISCONSIN TO HELP OUR ENVIRONMENT (1460)

MANAGEMENT SYSTEMS (2275)
 CHEMICAL ANALYSIS (0.00000000)
 DATE TIME (00.00.00)
 CONTROL (0)

0.001	0.001	0.001	0.001	0.001	0.001
0.002	0.002	0.002	0.002	0.002	0.002
0.005	0.005	0.005	0.005	0.005	0.005
0.01	0.01	0.01	0.01	0.01	0.01
0.02	0.02	0.02	0.02	0.02	0.02
0.05	0.05	0.05	0.05	0.05	0.05
0.1	0.1	0.1	0.1	0.1	0.1
0.2	0.2	0.2	0.2	0.2	0.2
0.5	0.5	0.5	0.5	0.5	0.5
1	1	1	1	1	1
2	2	2	2	2	2
5	5	5	5	5	5
10	10	10	10	10	10
20	20	20	20	20	20
50	50	50	50	50	50
100	100	100	100	100	100

GENERAL TESTING CORPORATION AGREES TO KEEP OUR ENVIRONMENT CLEAN

AMERICAN ANALYTICAL
 BRANCH LABORATORY D. DUNBLETON
 DATE 05/29/85
 LOCATION

Handwritten: 6/9/85

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

SOLUTION	Cr ug/l	
NS - (15)	19.29	107%
NS 13 (14)	46.97	102%
BLK (DEPFB)	23.80	
	26.17	$\bar{y} = 26.48$
	26.13	$s = 0.416$
	26.67	$RSD = 1.60$
	27.02	
	26.32	
	26.76	
BLK 5/15	0.225	
BLK BPK	* 224.5	102%
50705 A	3.392	< 0.010
0.025	25.97	90%
50705 AHC	0.357	< 0.010
0.025	24.57	88%
50705 B	0.535	< 0.010
0.025	23.25	87%
50705 D	0.446	< 0.010
0.025	53.07	92%
50705 D	1.607	< 0.010
NS 2	19.54	102%
NS 13	47.56	106%
50705D 0.025	23.97	91%
50705 E	3.117	< 0.010
0.025	24.96	87%
50705 F	1.192	< 0.010
0.025	23.25	93%
50705 G	1.192	< 0.010
0.025	23.16	92%
BLK	2.934	
BLK BPK	* 224.5	102%
50705 H	>	
0.025	>	
50705 HOC	>	
0.025	>	
50705 I	>	
0.025	>	
50705 J	46.97	
0.025	>	
50705 K	23.68	
NS 2	19.98	105%
NS 13	45.00	102%
50705K 0.025	>	
50705 L	>	

SECTION IV
SUBPART D-9

RAW DATA FOR:
COBALT

Summary - 50705

METALS ANALYSIS DATA SHEET

REV.

METAL Co

DATE 5/17/85

ANALYST dbd

REVIEWER ...

INSTRUMENT (AA)

ANALYSIS METHOD

Wavelength 240.7 nm
 Current 5 a
 D₂

Voltage 460 V
 Slit 0.3 nm
 Integ. sec

Flame ✓ Hydride
 Cas. Sol. / Reagent Acid
 Reduc.

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
Stock	Conc, ug/ml	<u>2.0</u>	<u>5.0</u>	<u>0.20</u>	<u>0.10</u>	<u>0.050</u>
	Absorbance	<u>0.167</u>	<u>0.343</u>	<u>0.019</u>	<u>0.008</u>	<u>0.004</u>
CFA 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
BLANK	<u><0.05</u>							
KOPK	<u>0.516</u>						<u>103%</u>	
50705-A	<u><0.05</u>			<u>100</u>	<u>100</u>		<u><0.05</u>	
-A dup	<u><0.05</u>							
-B	<u><0.05</u>						<u><0.05</u>	
-B spk	<u>0.489</u>						<u>97.8%</u>	
-C	<u><0.05</u>						<u><0.05</u>	
-d	<u><0.05</u>						<u><0.05</u>	
-E	<u><0.05</u>						<u><0.05</u>	
-F	<u><0.05</u>						<u><0.05</u>	
-g	<u><0.05</u>			<u>✓</u>	<u>✓</u>			
BLANK	<u><0.05</u>							
KSPK	<u>0.455</u>						<u>91.0%</u>	
50705-H	<u><0.05</u>			<u>100</u>	<u>100 g</u>			<u><5.0</u>
-H dup	<u><0.05</u>				<u>1.030</u>			<u><4.9</u>
-H spk	<u>0.539</u>				<u>0.99</u>			<u>108%</u>
-I	<u><0.05</u>				<u>1.05</u>			<u><4.8</u>
-J	<u><0.05</u>				<u>1.04</u>			<u><4.8</u>
-K	<u><0.05</u>				<u>1.02</u>			<u><4.9</u>
-L	<u>0.059</u>				<u>1.03</u>			<u>5.7</u>
-M	<u><0.05</u>				<u>1.00</u>			<u><5.0</u>
-N	<u><0.05</u>				<u>1.03</u>			<u><4.9</u>
-O	<u><0.05</u>				<u>1.03</u>			<u><4.9</u>

Calcut 5/17 abel

'A' Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 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)	0.485	0.055	0.5	0.485	97
(2)					
(3)					
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) 1x2	0.096	0.076	88	9.8
(2) 2	0.261	0.263	101	2.4
(3)				
(4)				

Statistics from AAS Program 42

'B' Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 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)					
(2)					
(3)					
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) 1x1	0.086	0.690	112	25

METALS ANALYSIS DATA SHEET

APR 24 1975

DATE _____

ANALYST _____

"A" Channel	"B" Channel
Metal <u>Cu</u>	Metal _____
Lamp Type <u>Arc/Fluor</u> Wave Length <u>746.4</u>	Flame Type _____ Wave Length _____
Lamp Current <u>5</u> D ₂ Background _____	Lamp Current _____ D ₂ Background _____
Voltage <u>400</u> Slit Width <u>6.3</u>	Voltage _____ Slit Width _____

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion	Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
#1		2.0			STD #1				
#2	0.347	5.0			STD #2				
#3		0.20			STD #3				
#4		0.10			STD #4				
#5		0.050			STD #5				
Samples					Samples				
1	BLK	<0.05			#1				
2	BLK STD	0.516		103%	#2				
3	STD #1	<0.05		<0.05	#3				
4	STD #5-A	<0.05		<0.05	#4				
5	STD #5-B	<0.05		<0.05	#5				
6	STD #5-B	0.489		98%	#6				
7	STD #5-C	<0.05		<0.05	#7				
8	STD #5-D	<0.05		<0.05	#8				
9	STD #5-E	<0.05		<0.05	#9				
10	STD #5-F	<0.05		<0.05	#10				
11	STD #5-G	<0.05		<0.05	#11				
12	BLK	<0.05			#12				
13	BLK STD	0.485		77%	#13				
14	STD #5-H	<0.05		<5% rule	#14				
15	STD #5-H	<0.05		<5%	#15				
16	STD #5-H	0.571		107%	#16				
17	STD #5-I	<0.05		<5%	#17				
18	STD #5-J	<0.05		<5%	#18				
19	STD #5-K	<0.05		<5%	#19				
20	STD #5-L	0.633		5.7%	#20				
21	STD #5-M	<0.05		<5%	#21				
22	STD #5-N	<0.05		<5%	#22				
23	STD #5-O	<0.05		<5%	#23				
24					#24				
25					#25				
26					#26				
27					#27				
28					#28				
29					#29				
30					#30				
31					#31				
32					#32				
33					#33				
34					#34				

All Results in mg/l unless specified otherwise.

SECTION IV
SUBPART D-10

RAW DATA FOR:

COPPER

METAL Cu DATE 5/14/85 ANALYST JB REVIEWER MP

INSTRUMENT (AA) VARIAN 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
 current _____ a SLIT _____ nm
 D₂ _____ INTEG _____ sec

FLAME GAS AIR/ACET HYDRIDE ACID REDUC

SEE AUTO PROGRAM

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	.100	.500	1.000	2.500	5.000
	ABSORBANCE	.016	.079	.156	.382	.739

EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
	.170	.175			103%
	.339	.321			95%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE #	CONC. UG/ML	D.F.	FINAL UG/ML	F.V. ml.	I.V. ml or gm	liquid UG/ml	solids UG/gm
DKG BLK 5/8	.012		<0.02	100ml	100ml	<0.02	
BLK SPK	.257		98% REC				
50705-A	.012		<0.02			<0.02	
-A REP	.012		<0.02			<0.02	
-A SPK	.244		93% REC.				
-B	.012		<0.02			<0.02	
-B SPK	.257		98% REC				
-C	.012		<0.02			<0.02	
-D	.012		<0.02			<0.02	
-E	.018		<0.02			<0.02	
-F	.012		<0.02			<0.02	
-G	.000		<0.02			<0.02	
BLK 5/7 DK	.000		.000			<0.02	
BLK SPK	.251		100% REC				
EPA 0760	.102	100	95%		.99 gm		
50705-H					1.02 gm		9.4 ug/gm
-H REP							
50705-H-SPK	.335		96% REC		1.02		9.4 ug/gm
50705-I	.076		.076		1.01		7.5
50705-J	.076		.076		1.02		7.4
50705-K	.057		.057		1.02		5.6
50705-L	.141		.141		1.03		14
50705-M	.102		.102		1.01		10
50705-N	.070		.070		1.02		6.9
50705-O	.083		.083		1.00		8.3

Channel

Precision Data

Copper
5/14/85
JB

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) * 100
50705-A	< 0.02	< 0.02	
50739-A	.012	.019	

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
50705-A	.244	.012	.25	.244	93%
50705-B	.257	.012	.25	.245	98%
50705-H DIGEST	.335	.096	.25	.221	88%
DIGEST BLK	.261	.006	.25	.255	102%

EPA Reference Standards

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

Statistics from AAS Program 42

Channel

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) * 100

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

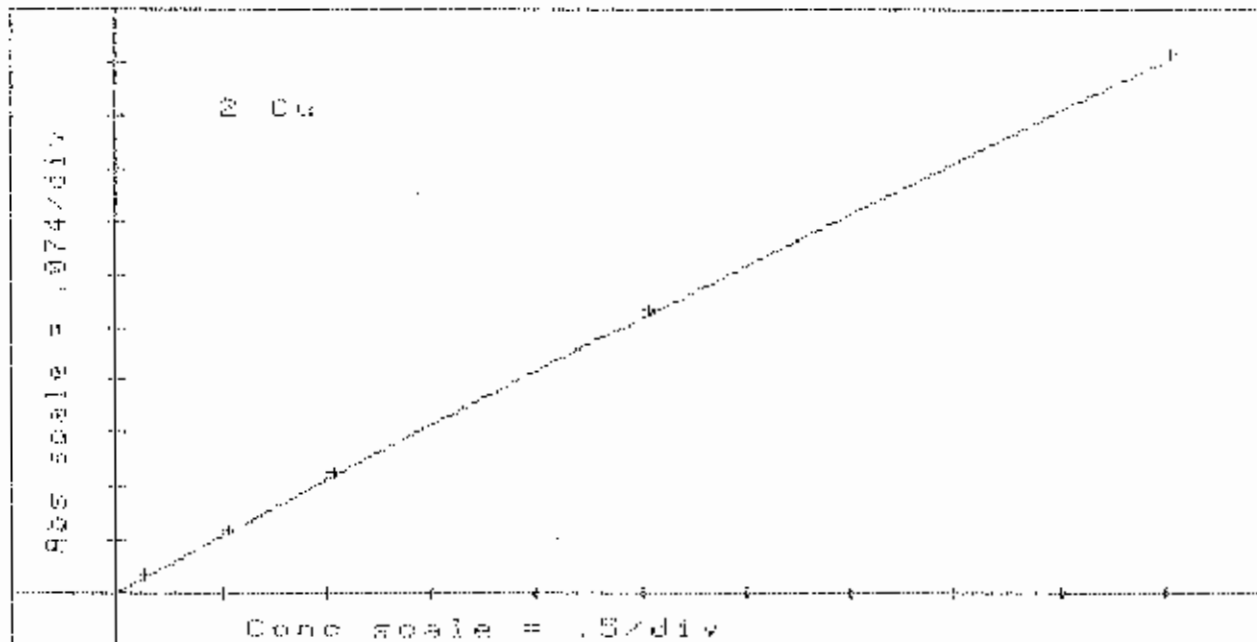
EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

RESLOPE	0.575	1.6%	0.085	0.083	0.062	0.060	.867
(.104/.170)	0.137	6.3%	0.016	0.016	0.017	0.015	.869
50776-A	0.202	12.5%	0.024	0.022	0.029	0.023	.869
50775-A	0.235	7.1%	0.028	0.031	0.027	0.028	.869
50762-A	0.178	23.8%	0.021	0.018	0.018	0.027	.859
50767 Ni	> 9	0.9%	1.030	1.020	1.039	1.033	.869
50767-A	0.145	11.8%	0.017	0.015	0.018	0.019	.859
50767 $\frac{1}{2}$ hr	1.092	2.0%	0.149	0.146	0.153	0.149	.869

AUTO-PROGRAM 2 Cu

mkp 5/10/85

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	6.3%	0.016	0.017	0.017	0.016	1.000
STANDARD 2	0.500	0.0%	0.079	0.079	0.079	0.080	1.000
STANDARD 3	1.000	0.6%	0.156	0.137	0.155	0.157	1.000
STANDARD 4	2.500	0.0%	0.382	0.380	0.387	0.381	1.000
STANDARD 5	5.000	0.5%	0.739	0.737	0.745	0.736	1.000



(.104/.170)	0.175	0.0%	0.029	0.029	0.028	0.028	1.000
2(.207/.339)	0.321	0.0%	0.051	0.051	0.052	0.051	1.000
IDL C1 Ni,Cu	0.106	5.9%	0.017	0.017	0.018	0.018	1.000
" C2 "	0.106	5.9%	0.017	0.018	0.018	0.017	1.000
" C3 "	0.106	5.9%	0.017	0.018	0.017	0.018	1.000
" C4 "	0.112	0.0%	0.018	0.018	0.019	0.018	1.000
" C5 "	0.106	5.9%	0.017	0.018	0.017	0.018	1.000
" C6 "	0.112	0.0%	0.018	0.018	0.018	0.018	1.000
" C7 "	0.106	5.9%	0.017	0.017	0.018	0.016	1.000
BLK 5/B	0.012	0.0%	0.002	0.002	0.002	0.002	1.000
BLK SPK	0.257	2.4%	0.041	0.040	0.041	0.042	1.000
50705-A'	0.012	50.0%	0.002	0.002	0.003	0.001	1.000
" -A(QC)	0.012	50.0%	0.002	0.003	0.002	0.003	1.000
" -A'	0.244	2.6%	0.037	0.039	0.040	0.040	1.000
" -B	0.012	0.0%	0.002	0.002	0.002	0.002	1.000
" -B(SPK)	0.257	2.4%	0.041	0.041	0.042	0.042	1.000
" -C	0.012	50.0%	0.002	0.003	0.003	0.002	1.000
" -D	0.012	50.0%	0.002	0.002	0.001	0.003	1.000
" -E	0.018	0.0%	0.003	0.003	0.002	0.003	1.000
" -E	0.012	0.0%	0.002	0.002	0.002	0.002	1.000

RESLOPE	0.487	1.3%	0.077	0.077	0.077	0.079	1.026
(.1047, 170)	0.187	0.9%	0.026	0.026	0.027	0.026	1.026
2 (.2077, 339)	0.316	2.0%	0.049	0.050	0.050	0.049	1.026
50705-B	0.000	0.0%	0.000	0.001	0.000	0.001	1.026
BLK soils	0.000	0.0%	0.000	0.000	0.002	0.000	1.026
BLK SPK	0.251	0.0%	0.037	0.039	0.039	0.039	1.026
EPA0760, 1.01	0.102	6.3%	0.016	0.016	0.017	0.017	1.026
50705-H	0.096	5.7%	0.015	0.014	0.015	0.016	1.026
" -H(BD)	0.000	0.0%	0.000	0.000	0.001	0.000	1.026
" -H(SPK)	0.335	1.9%	0.052	0.052	0.051	0.053	1.026
" -I	0.076	8.3%	0.012	0.012	0.013	0.013	1.026
" -J	0.076	0.0%	0.012	0.012	0.012	0.012	1.026
" -K	0.057	11.1%	0.009	0.016	0.009	0.010	1.026
" -L	0.141	4.5%	0.022	0.022	0.023	0.021	1.026
" -M	0.102	0.0%	0.016	0.016	0.016	0.016	1.026
" -N	0.070	0.0%	0.011	0.011	0.011	0.011	1.026
" -O	0.083	0.0%	0.013	0.013	0.013	0.013	1.026
MFair, BLK	0.000	0.0%	0.000	0.001	0.000	0.001	1.026
4338	0.089	7.1%	0.014	0.013	0.014	0.013	1.026
" (BD)	0.064	10.0%	0.010	0.011	0.010	0.011	1.026
" (.25)	0.322	0.0%	0.050	0.050	0.050	0.050	1.026
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.026
RESLOPE	0.493	0.0%	0.078	0.078	0.078	0.079	1.014
(.1047, 170)	0.185	0.0%	0.026	0.026	0.026	0.026	1.014
2 (.2077, 339)	0.325	2.0%	0.051	0.052	0.051	0.050	1.014
BLK S/9	0.006	100.0%	0.001	0.002	0.002	0.001	1.014
BLK SPK	0.261	0.0%	0.041	0.041	0.042	0.041	1.014
50739-A	0.012	50.0%	0.002	0.003	0.003	0.002	1.014
" -B	0.012	0.0%	0.002	0.002	0.002	0.002	1.014
" -B(BD)	0.019	0.0%	0.003	0.003	0.003	0.004	1.014
" -B(.25)	0.274	2.3%	0.043	0.044	0.044	0.043	1.014
" -B(SPK)	0.267	0.0%	0.042	0.042	0.042	0.043	1.014
" -C	0.019	0.0%	0.003	0.003	0.003	0.003	1.014
" -D	0.012	50.0%	0.002	0.003	0.002	0.003	1.014
" -E	0.012	50.0%	0.002	0.003	0.002	0.003	1.014
" -F	0.038	16.7%	0.006	0.007	0.006	0.007	1.014
" -G	0.012	50.0%	0.002	0.002	0.001	0.003	1.014
BLK S/13	0.006	0.0%	0.001	0.001	0.001	0.001	1.014
BLK SPK	0.254	0.0%	0.040	0.041	0.040	0.040	1.014
50758-A	0.332	1.9%	0.052	0.053	0.053	0.052	1.014
" -B sol	0.190	3.3%	0.030	0.030	0.031	0.031	1.014
50759-A	0.901	0.7%	0.139	0.141	0.139	0.139	1.014
" -B sol	0.346	1.9%	0.054	0.056	0.054	0.054	1.014
BLANK	0.000	0.0%	0.000	0.000	0.001	0.001	1.014
RESLOPE	0.487	1.3%	0.077	0.077	0.078	0.076	1.026
(.1047, 170)	0.154	4.2%	0.024	0.025	0.024	0.025	1.026
50776-A	0.645	2.0%	0.059	0.097	0.101	0.100	1.026
50779-A	0.012	0.0%	0.002	0.002	0.002	0.002	1.026
50782-A	0.012	50.0%	0.002	0.003	0.002	0.003	1.026

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-970

OPERATOR: JOHN BRUNETTE

DATE: 5/14/85

BATCH: Cu and Ni 5/8 - 5/13; Ag

MAK 5/10/85

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

SOLUTION	Ni mg/L	Cu mg/L
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220

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

MOBILE, ALA. 36617
 CIPHERBOARD DRIVE 7600 BELLINGHILL
 DASTLER 864-14782
 BRYAN COLLEGE Col and Hl 1978 - 5/13/85 Ag

MRB 5/10/85

WEIGHT AND/OR DILUTION CORRECTIONS HAVE BEEN APPLIED TO RESULTS WITH *

SOLUTION	Ni mg/L	Cu mg/L
0.1047-1701	0.095 91%	0.175 103%
0.12077-3391	0.285 91%	0.111 75%
BLK 5/11	0.000	0.106
" B	0.000	0.106
" C	0.014	0.110
" D	0.076	0.106
" E	0.074	0.110
" F	0.214	0.106
BLK 5/12	0.000 <0.04	0.012 <0.02
BLK 5/13	0.422 100%	0.057 98%
50705-A	0.020 <0.04	0.012 <0.02
" -A (0.0)	0.000 <0.04	0.012 <0.02
" -A (0.25)	0.000 97%	0.244 93%
" -B	0.000 <0.04	0.012 <0.02
" -C (SPK)	0.431 100%	0.257 95%
" -D	0.010 <0.04	0.012 <0.02
" -E	0.010 <0.04	0.012 <0.02
" -F	0.000 <0.04	0.012 <0.02
0.1047-1701	0.074 78%	0.167 98%
0.12077-3391	0.229 91%	0.110 73%
50705-B	0.000 <0.04	0.000 <0.02
BLK 5/11	0.000 <0.04	0.100 <0.02
BLK 5/12	0.277 100%	0.251 100%
50705-A	0.095 102%	0.100 95%
" -A (0.0)	0.090 11 1/2%	0.018 9.4 1/2%
" -A (SPK)	0.408 82%	0.305 96%
" -B	0.072 7.5 1/2%	0.076 7.5 1/2%
" -C	0.018 <4"	0.076 7.4 "
" -K	0.005 1.1 "	0.057 5.6 "
" -L	0.000 0.7 "	0.141 14 "
" -M	0.000 0.4 "	0.100 10 "
" -N	0.012 <4"	0.070 6.7 "
" -O	0.054 5.4 "	0.083 8.3 "
HR for BLK	0.000 <4 1/2%	0.000 <2 1/2%
4338	0.027 4 1/2%	0.089 8.9 "
" (0.0)	0.009 <4 1/2%	0.068 6.8 "
" (0.25)	0.087 108%	0.022 102%
0.1047-1701	0.090 86%	0.165 97%
0.12077-3391	0.203 76%	0.109 76%
BLK 5/11	0.000 <0.04	0.006 <0.02
BLK 5/12	0.289 100%	0.261 101%
30777-A	0.000 <0.04	0.017 <0.02
" -B	0.010 <0.04	0.012 <0.02
" -B (0.0)	0.009 <0.04	0.017 0.019
" -C (0.25)	0.090 103%	0.276 104%
" -C (0.10)	0.434 100%	0.267 99%
" -D	0.000 <0.04	0.019 0.019
" -E	0.018 <0.04	0.012 <0.02
" -F	0.016 <0.04	0.012 <0.02
" -G	0.054 0.034	0.031 0.038
" -H	0.010 <0.04	0.012 <0.02
BLK 5/13	0.000 <0.04	0.006 <0.02
BLK 5/14	0.410 104%	0.254 99%
50705-A	0.266 0.77	0.100 0.33
" -A 100	0.553 0.55	0.190 0.19
50705-B	0.670 0.67	0.901 0.90
" -B 100	0.515 0.51	0.244 0.24
0.1047-1701	0.177 131	0.161 98%
50776-A	0.200 20 1/2%	0.345 64 1/2%
50775-A	0.000 0.00	0.012 <0.02
50782-A	0.175 0.00	0.012 <0.02
50787-A	> below	
50787-A	0.145 0.14	
50787-A	1.000 1.00	

QC rec'd
 5/10/85

7.8 1/2%

335
 096
 221

50787-A
 50787-A

SECTION IV
SUBPART D-11

RAW DATA FOR:

IRON

METALS ANALYSIS DATA SHEET

REV 4/85

METAL Fe DATE 5/2/85 ANALYST J.B. REVIEWER MJR

INSTRUMENT (AA)

λ _____ nm VOLTAGE _____ V
 current _____ μ SLIT _____ nm
 D₂ _____ INTEG _____ sec

ANALYSIS METHOD

FLAME HYDRIDE
 GAS Acetylene ACID _____
 REDUC _____

Auto Magn

INTERNAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, US/ML	0.20	0.50	1.00	2.50	5.00
	ABSORBANCE	0.021	0.054	0.107	0.203	0.436

CPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
	0.398	0.364		5.1	91.5
	0.797	0.728		0.0	91.3

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC. μ g/ml	D.F.	FINAL μ g/ml	F.V. ml	I.V. ml or gm	liquid μ g/ml	solids μ g/gm
BLANK: 5/8	0.066						
BLK 50K 0.50	0.490					98.0%	
50705-A	1.097						
-A dup	1.106						
0.50 -A 50K	1.603					100%	
-B	2.166						
0.50 -B 50K	2.390					85%	
0.50 -B 50K	2.708					108%	
-C	0.236						
-d	0.190						
-E	0.190						
EPA (.398)	0.366					92%	
EPA (.797)	0.722					90%	
-F	0.586						
-G	0.462						

Channel

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE $= \frac{A-B}{(A+B)} \times 100$
50705-A	1.097	1.106	0.82

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
50705-B	2.708	2.166	0.500	0.542	108

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1)	0.398	0.364	91.5	
(2)	0.398	0.366	92.0	
(3)	0.797	0.728	91.3	
(4)	0.797	0.722	90.6	

Statistics from AAS Program 42

Channel

Precision Data

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

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

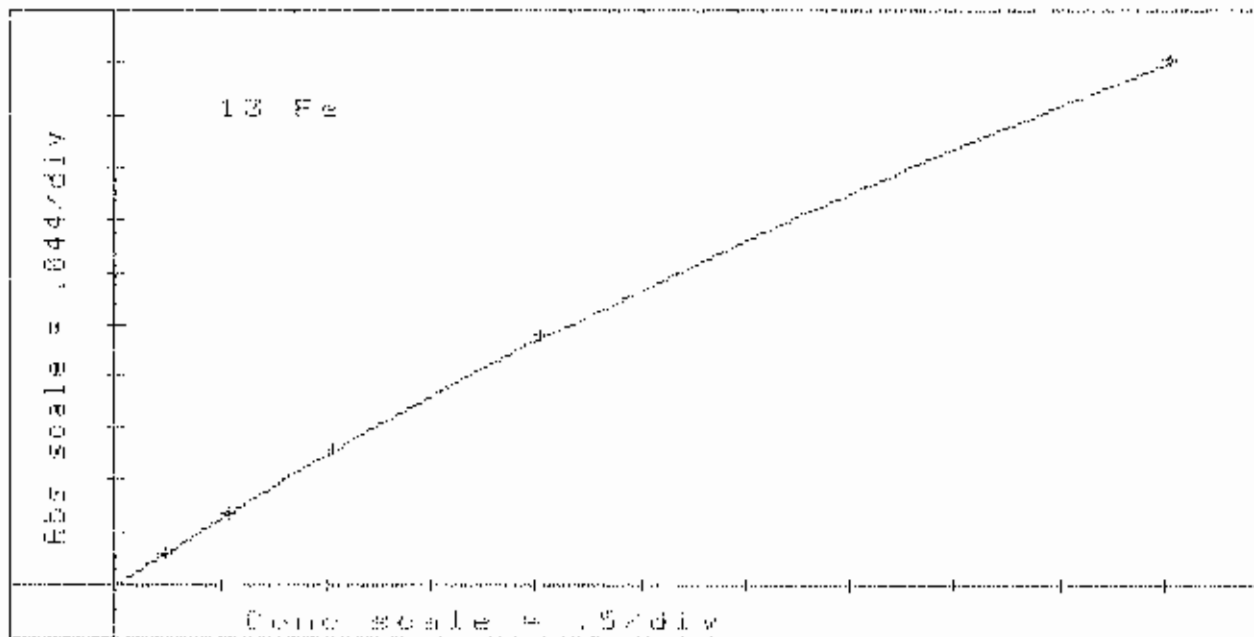
VARIAN AA-975
 OPERATOR: JOHN BRUNETTE
 DATE: 5/10/85
 BATCH: Zn, Fe, and Mn

mkp 5/13/85
✓
5/28/85

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

AUTO-PROGRAM 13 Fe

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	100.0%	-0.001	0.000-0.003 0.000	1.000
STANDARD 1	0.200	0.0%	0.021	0.021 0.022 0.021	1.000
STANDARD 2	0.500	1.9%	0.054	0.054 0.055 0.053	1.000
STANDARD 3	1.000	0.9%	0.107	0.109 0.104 0.108	1.000
STANDARD 4	2.000	1.5%	0.205	0.200 0.207 0.204	1.000
STANDARD 5	5.000	1.6%	0.435	0.411 0.439 0.428	1.000



(.370)	0.364	5.1%	0.039	0.041 0.037 0.039	1.000
2(.797)	0.728	0.6%	0.079	0.080 0.079 0.079	1.000
IDL B1 Fe	0.264	0.0%	0.026	0.028 0.028 0.029	1.000
" / B2 "	0.273	3.4%	0.029	0.028 0.030 0.028	1.000

" 82 "	0.273	3.4%	0.027	0.027	0.034	0.034	1.000
" 84 "	0.319	2.9%	0.034	0.034	0.035	0.033	1.000
" 85 "	0.287	3.5%	0.030	0.030	0.029	0.031	1.000
" 86 "	0.328	6.0%	0.035	0.035	0.035	0.036	1.000
" 87 "	0.273	6.9%	0.027	0.032	0.028	0.029	1.000
BLK 5/8	0.066	14.3%	0.007	0.008	0.007	0.006	1.000
BLK SPK	0.450	1.9%	0.053	0.054	0.053	0.052	1.000
50705-A	1.097	1.7%	0.117	0.117	0.120	0.116	1.000
" -A(BC)	1.106	2.5%	0.118	0.117	0.116	0.122	1.000
" -A(.5)	1.603	0.6%	0.167	0.166	0.168	0.168	1.000
" -B	2.166	1.4%	0.218	0.220	0.215	0.231	1.000
" -B(.5)	2.590	0.4%	0.255	0.255	0.255	0.257	1.000
" -B(SPK)	2.708	0.4%	0.265	0.264	0.265	0.267	1.000
" -C	0.236	4.0%	0.025	0.027	0.024	0.024	1.000
" -D	0.190	0.0%	0.020	0.020	0.020	0.020	1.000
" -E	0.190	0.0%	0.020	0.020	0.020	0.020	1.000
BLANK	0.000	50.6%	0.004	0.004	0.006	0.002	1.000
RESLOPE	0.472	3.9%	0.051	0.053	0.052	0.049	1.059
(.398)	0.366	2.7%	0.037	0.038	0.035	0.033	1.059
2(.797)	0.722	2.7%	0.074	0.074	0.077	0.073	1.059
50705-F	0.586	3.3%	0.060	0.060	0.058	0.062	1.059
" -G	0.462	6.0%	0.047	0.048	0.047	0.047	1.059
BLK soils	0.070	0.0%	0.007	0.007	0.007	0.007	1.059
BLK SPK	0.529	3.7%	0.054	0.054	0.055	0.056	1.059
50705-H *> 14		0.6%	1.283	1.275	1.283	1.292	1.059
" -H(BC) *> 14		0.5%	1.281	1.288	1.274	1.281	1.059
" -H(.5) *> 14		0.4%	1.276	1.280	1.278	1.270	1.059
" -H(SPK) *> 14		0.6%	1.274	1.267	1.283	1.272	1.059
" -I *> 14		0.3%	1.307	1.305	1.312	1.305	1.059
" -J *> 14		0.2%	1.251	1.258	1.235	1.230	1.059
" -K *> 14		0.3%	1.290	1.289	1.295	1.286	1.059
" -L *> 15		0.3%	1.320	1.319	1.325	1.316	1.059
" -M *> 14		0.4%	1.227	1.229	1.231	1.221	1.059
" -N *> 13		0.2%	1.206	1.202	1.209	1.207	1.059
" -O *> 12		0.2%	1.106	1.104	1.106	1.109	1.059
50739-A soil	0.050	20.0%	0.005	0.006	0.004	0.007	1.059
" -B "	0.030	66.7%	0.003	0.004	0.001	0.005	1.059
" -C "	0.010	100.0%	0.001	0.002	0.002	0.000	1.059
BLANK	0.000	300.0%	0.001	0.006	0.001	0.000	1.059
RESLOPE	0.454	2.0%	0.049	0.048	0.051	0.030	1.101
(.398)	0.351	2.9%	0.034	0.034	0.033	0.036	1.101
2(.797)	0.730	1.4%	0.072	0.072	0.071	0.074	1.101
50739-D soil	0.094	11.1%	0.009	0.008	0.011	0.009	1.101
" -E "	0.020	0.0%	0.002	0.002	0.003	0.002	1.101
" -F "	0.291	7.1%	0.028	0.026	0.028	0.031	1.101
" -G "	0.041	25.0%	0.004	0.005	0.005	0.002	1.101
BLK 5/9	0.041	0.0%	0.004	0.004	0.005	0.004	1.101
BLK SPK	0.560	2.0%	0.049	0.051	0.048	0.050	1.101
50739-A	1.919	1.7%	0.180	0.179	0.184	0.177	1.101
" -B	2.311	0.9%	0.212	0.210	0.213	0.215	1.101
" -B(BC)	2.484	0.9%	0.226	0.224	0.226	0.228	1.101
" -B(.5)	3.410	1.0%	0.297	0.296	0.294	0.301	1.101
" -B(SPK)	2.917	0.4%	0.260	0.262	0.261	0.259	1.101
" -C	0.948	3.2%	0.093	0.090	0.096	0.095	1.101
" -D	1.696	0.6%	0.161	0.162	0.160	0.161	1.101
" -E	2.064	3.6%	0.192	0.199	0.185	0.194	1.101
" -F	0.991	1.0%	0.097	0.096	0.096	0.099	1.101
" -G	2.274	0.5%	0.209	0.211	0.208	0.210	1.101
BLK 5/6	0.031	33.3%	0.003	0.003	0.003	0.005	1.101
BLK SPK	0.520	2.0%	0.051	0.050	0.052	0.052	1.101
BLANK	0.000	0.0%	0.000	0.001	0.001	0.000	1.101
RESLOPE	0.436	2.1%	0.047	0.048	0.046	0.048	1.146
(.398)	0.365	2.9%	0.034	0.033	0.034	0.036	1.146
2(.797)	0.750	1.4%	0.071	0.071	0.072	0.070	1.146
4323 1/1000	0.000	0.0%	0.000	0.000	0.001	0.001	1.146

1.170	0.9%	0.111	0.112	0.111	0.112	1.170
1.565	1.4%	0.147	0.141	0.145	0.146	1.146
2.123	2.1%	0.190	0.186	0.193	0.193	1.146

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: JOHN BRUNETTE
 DATE: 5/10/85
 BATCH: Zn, Fe, and Pb

MR 5/13/85

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

SOLUTION Fe mg/L

QC recorded

(.398)	0.364
2(.797)	0.728
10L Bl Fe	0.264
" B2 "	0.273
" B3 "	0.273
" B4 "	0.319
" B5 "	0.282
" B6 "	0.328
" B7 "	0.273
BLK 5/8	0.066
BLK SPK	0.490
50705-A	1.097
" -A(QC)	1.106
" -A(.5)	1.603
" -B	2.166
" -B(.5)	2.590
" -B(SPK)	2.703
" -C	0.236
" -D	0.190
" -E	0.190
(.398)	0.364
2(.797)	0.722
50705-F	0.574
" -B	0.462
BLK soils	0.070
BLK SPK	0.529
50705-H	* *00.0
" -H(QC)	* *00.0
" -H(.5)	* *00.0
" -H(SPK)	* *00.0
" -I	* *00.0
" -J	* *00.0
" -K	* *00.0
" -L	* *00.0
" -M	* *00.0
" -N	* *00.0
" -O	* *00.0

91%
 91%
 $\bar{X} = .287$
 $S_{25} = 119\%$ (omit except data)
 $S_{25} = 0.025$

0.066
 98%
 1.1
 1.1
 100%
 2.2
 85%
 108%
 0.24
 0.19
 0.19
 92%
 90%
 0.57
 0.46
 0.070
 106%

next run

50739-A sol	0.050
" -B "	0.030
" -C "	0.010
(.398)	0.351
2(.797)	0.730
50739-D sol	0.094
" -E "	0.020
" -F "	0.291
" -G "	0.041
BLK 5/9	0.041
BLK SPK	0.500
50739-A	1.919

0.050
 <.05
 <.05
 88%
 92%
 0.094
 <.05
 0.29
 <.05
 <.05
 100%
 1.9

" -B (1.0)	3.410	93%
" -B (SPK)	2.917	87%
" -C	0.948	0.95 -
" -D	1.696	1.7 -
" -E	2.064	2.1 -
" -F	0.991	0.99 -
" -G	2.274	2.3 -
BLK 5/a	0.051	<.05
BLK SPK	0.520	98%
(.39B)	0.365	92%
2(.797)	0.750	94%
4326 171000	0.000	next run
BLK FURNACE	0.010	<.05
5/882 E 65	1.190	120 ug/g > 140 ug/g avg ✓
SAMPL (20)	1.565	160 "
" (15)	2.123	112%

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE
 DATE: 5/10/85
 BATCH: Zn, Fe, and Mn

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

AUTO-PROGRAM 13 Fe

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
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GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

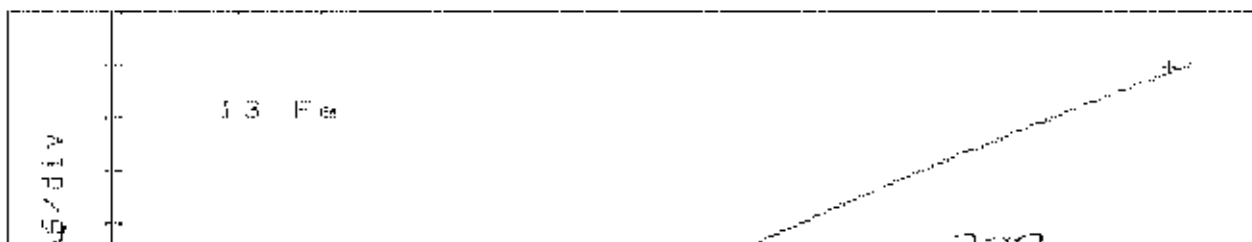
VARIAN AA-975

OPERATOR: JOHN BRUNETTE
 DATE: 5/10/85
 BATCH: Zn, Fe, and Mn

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

AUTO-PROGRAM 13 Fe

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	100.0%	-0.001	-0.001 0.000-0.003	1.000
STANDARD 1	0.200	8.7%	0.023	0.021 0.023 0.025	1.000
STANDARD 2	0.500	1.7%	0.060	0.061 0.060 0.059	1.000
STANDARD 3	1.000	0.9%	0.111	0.113 0.111 0.111	1.000
STANDARD 4	2.000	1.4%	0.210	0.207 0.210 0.213	1.000
STANDARD 5	5.000	0.4%	0.450	0.451 0.452 0.447	1.000



METALS ANALYSIS DATA SHEET

REV 4/85

METAL Fe DATE 5/13/85 ANALYST JB REVIEWER 7/11/85

INSTRUMENT (AA)

λ _____ nm VOLTAGE _____ V
 current _____ μ SLIT _____ nm
 D₂ _____ INTEG _____ sec

ANALYSIS METHOD

FLAME HYDRIDE
 GAS air/acetylene ACID
 REDUC _____

Auto Program

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	0.20	0.50	1.00	2.00	5.00
	ABSORBANCE	0.020	0.047	0.094	0.177	0.473

EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
	0.398	0.384		2.7	96.5
	0.797	0.734		2.9	92.1

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC. UG/ML	D.F.	FINAL UG/ML	E.V. (ml)	I.V. (ml or gm)	liquid UG/ML	solids UG/GM
BLACK Soils	0.060		0.06	100 ml	100 ml		
BLACK SLIKE	0.563		0.56		100 ml		101%
EPA # 0760	1.748	100	174.8		0.99 g		17660
50703-H	0.946	100	94.6		1.02 g		9270
" -H dup	0.925	100	92.5		1.01 g		9160
50703-H	1.452	100	145		1.02 g		104%
" -I	1.065	100	107		1.01 g		10540
" -J	0.712	100	71.2		1.02 g		6980
" -K	0.957	100	95.7		1.02 g		9350
" -L	1.210	100	121		1.03 g		11700
" -M	0.659	100	65.9		1.01 g		6520
" -N	0.595	100	59.5		1.02 g		5830
" -O	0.274	100	27.4	✓	1.00 g		2740

I.Led 3/3/85 J.B.

A" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE $= \frac{A-B}{A+B} \times 100$
(1) 50705-H	0.446	0.425	2.24
(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) 50705-H	1.452	0.436	0.500	0.516	103.2%
(2)					
(3)					
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) 0760	16.500	17.660	107%	
(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)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

SOLUTION	CONC	RSD	MEAN ABS	ABSORBANCE READINGS	SLOPE FACTOR
BLK SOLLS	0.274	1.0%	0.033	0.033 0.034 0.032	1.000
BLK CFX	0.507	0.0%	0.058	0.058 0.058 0.058	1.000
SP6 1/100	* 157.5	0.6%	0.169	0.170 0.170 0.168	1.000
SOYOSH 1/10	* 9	0.9%	0.754	0.753 0.759 0.745	1.000
" H(DD)"	* 9	1.3%	0.760	0.773 0.754 0.754	1.000
" H(LS)"	* 9	0.4%	0.740	0.740 0.743 0.737	1.000
" H(SPK)"	* 9	0.4%	0.726	0.725 0.724 0.730	1.000
" I 1/10	* 9	1.4%	0.785	0.793 0.772 0.791	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE

DATE: 5/13/85

BATCH: Fe, Mn, Pb, and Cd

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

AUTO-PROGRAM 13 Fe

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	SLOPE FACTOR
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MKP 5/13/85

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE

DATE: 5/13/85

BATCH: Fe, Mn, Pb, and Cd

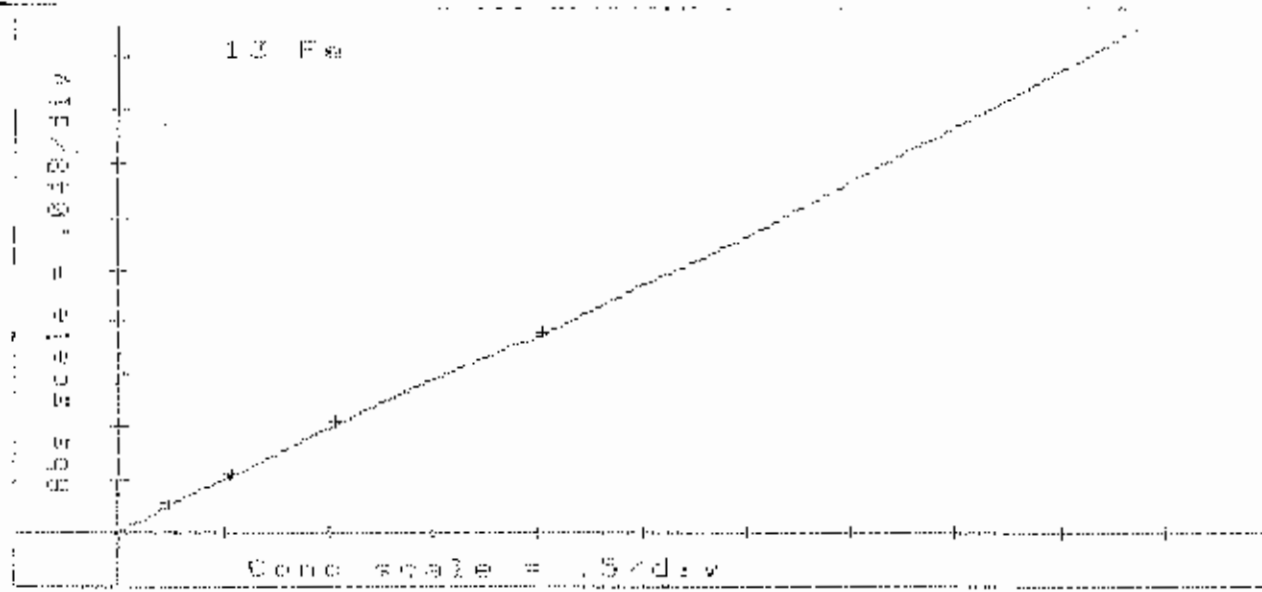
WEIGHT AND/OR DILUTION CORRECTION HAS BEEN MADE ON RESULTS MARKED WITH *

AUTO-PROGRAM 13 Fe

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	SLOPE FACTOR
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BLANK	0.000	0.0%	0.000	0.000 0.001 0.000	1.000
STANDARD 1	0.200	5.0%	0.020	0.020 0.021 0.021	1.000
STANDARD 2	0.500	8.5%	0.047	0.047 0.050 0.050	1.000
STANDARD 3	1.000	4.3%	0.094	0.095 0.090 0.090	1.000
STANDARD 4	2.000	0.6%	0.177	0.178 0.175 0.170	1.000
STANDARD 5	5.000	1.9%	0.470	0.468 0.464 0.467	1.000

13 Fe



(.398)	0.381	2.7%	0.037	0.036	0.038	0.037	1.000
(.797)	0.734	2.9%	0.069	0.067	0.071	0.069	1.000
BLK soil	0.317	3.2%	0.031	0.030	0.032	0.032	1.000
BLK SPK	0.563	1.9%	0.053	0.054	0.053	0.054	1.000
EP6 1/100	1.748	0.6%	0.158	0.159	0.160	0.157	1.000
50705K 1/100	0.946	2.3%	0.089	0.088	0.092	0.089	1.000
" H(BC)"	0.925	1.1%	0.087	0.087	0.086	0.089	1.000
" H(.S)"	1.452	1.5%	0.134	0.134	0.136	0.132	1.000
" H(SPK)"	0.914	1.2%	0.086	0.085	0.087	0.087	1.000
" I 1/100	1.065	0.0%	0.106	0.100	0.101	0.100	1.000
" -J 1/100	0.717	0.0%	0.067	0.068	0.067	0.067	1.000
" -K 1/10	0.957	2.2%	0.090	0.092	0.091	0.088	1.000
" -L 1/100	1.210	0.9%	0.113	0.113	0.114	0.114	1.000
" -M 1/10	0.639	1.6%	0.062	0.061	0.063	0.064	1.000
" -N 1/10	0.595	5.4%	0.056	0.060	0.053	0.057	1.000
" -O 1/10	0.274	7.4%	0.027	0.030	0.026	0.025	1.000
4326 1/10	0.010	0.0%	0.001	0.001	0.002	0.001	1.000
50740-A	> 12	0.3%	1.219	1.216	1.221	1.222	1.000
" -B	0.252	4.0%	0.025	0.026	0.026	0.025	1.000
50744-A	0.170	5.9%	0.017	0.018	0.018	0.018	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.002	1.000
RESLOPE	0.500	2.1%	0.047	0.047	0.048	0.046	1.000
(.398)	0.350	3.9%	0.034	0.032	0.036	0.034	1.000
(.797)	0.723	1.5%	0.068	0.067	0.070	0.067	1.000
50744-A(BC)	0.180	5.6%	0.018	0.018	0.020	0.017	1.000
" -A(.S)	0.659	1.6%	0.062	0.061	0.064	0.063	1.000
" -A(SPK)	0.680	3.1%	0.064	0.066	0.065	0.061	1.000
50744-B	> 12	0.4%	1.235	1.231	1.224	1.231	1.000
" -C	0.200	10.0%	0.020	0.020	0.018	0.022	1.000
" -D	0.453	2.3%	0.043	0.044	0.043	0.042	1.000
" -E	0.070	14.3%	0.007	0.008	0.006	0.008	1.000
" -G	0.030	33.3%	0.003	0.004	0.004	0.002	1.000
" -H	0.242	0.0%	0.024	0.024	0.024	0.024	1.000
" -I	0.070	14.3%	0.007	0.008	0.006	0.007	1.000
" -J	0.020	50.0%	0.002	0.002	0.004	0.002	1.000
" -K	0.030	66.7%	0.003	0.001	0.006	0.003	1.000
" -L	0.150	4.7%	0.015	0.016	0.015	0.016	1.000
" -MV	0.030	33.3%	0.003	0.002	0.003	0.004	1.000
" -N	0.010	100.0%	0.001	0.002	0.001	0.000	1.000
50770-A soil	0.010	0.0%	0.001	0.002	0.001	0.001	1.000
" -B "	0.020	50.0%	0.002	0.001	0.002	0.003	1.000
" -C "	0.200	5.0%	0.020	0.022	0.021	0.019	1.000
BLANK	0.000	100.0%	-0.001	0.000	-0.003	0.002	1.000

SOLUTION	Fe	Mn	Pb	Cd	As	Hg	Se
2(.797)	0.751	2.9%	0.069	0.068	0.072	0.069	1.024
50770-D soil	0.174	11.8%	0.017	0.015	0.017	0.019	1.024
" -E "	0.347	0.0%	0.033	0.033	0.034	0.035	1.024
" -F "	0.947	3.4%	0.087	0.070	0.089	0.083	1.024
" -G "	0.030	33.3%	0.003	0.004	0.005	0.002	1.024
" -H "	0.030	33.3%	0.003	0.004	0.004	0.001	1.024
" -H(DC)	0.020	50.0%	0.002	0.001	0.003	0.002	1.024
" -H(.5)	0.522	4.2%	0.048	0.050	0.048	0.046	1.024
BLK 5/10	0.030	0.0%	0.003	0.003	0.003	0.003	1.024
BLK SPK	0.533	2.0%	0.049	0.049	0.051	0.049	1.024
50770-A	2.465	2.6%	0.215	0.219	0.208	0.230	1.024
" -B	0.370	3.9%	0.035	0.037	0.034	0.036	1.024
" -C	2.189	1.1%	0.188	0.186	0.191	0.189	1.024
" -D	0.133	7.7%	0.013	0.013	0.012	0.014	1.024
" -E 1/10	3.248	1.4%	0.268	0.292	0.284	0.289	1.024
" -F 1/10	2.855	2.4%	0.251	0.246	0.259	0.249	1.024
" -G	3.624	0.3%	0.324	0.324	0.326	0.324	1.024
" -H	0.860	3.8%	0.079	0.076	0.083	0.078	1.024
" -H(DC)	0.740	1.5%	0.068	0.070	0.069	0.067	1.024
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.024
RESLOPE	0.500	6.4%	0.047	0.045	0.051	0.047	1.000
(.398)	0.373	2.8%	0.036	0.035	0.038	0.037	1.000
2(.797)	0.060	16.7%	0.006	0.007	0.005	0.005	1.000
50770-H(.5)	1.232	2.6%	0.115	0.113	0.120	0.114	1.000
" -H(SPK)	1.267	0.8%	0.118	0.119	0.119	0.117	1.000
" -I	0.070	28.6%	0.007	0.009	0.007	0.005	1.000
" -J	0.220	4.5%	0.022	0.021	0.023	0.023	1.000
" -K	0.040	25.0%	0.004	0.004	0.005	0.005	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: JOHN BRUNETTE
 DATE: 5/13/85
 BATCH: Fe, Mn, Pb, and Cd

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

SOLUTION	Fe mg/L	Notes
(.398)	0.384	96%
2(.797)	0.734	92%
BLK soils	0.517	contaminated & repeated 0.060
BLK SPK	0.563	101%
EPA 1/100	1.748	17500 ug/g ✓
50705H 1/100	0.946	9,160 ug/g ✓ 9,270 ✓
" H(DC)"	0.925	9,250 " 9,160 ✓
" H(.5)"	1.482	14,820 " 10,400 ✓
" H(SPK)"	0.914	spike too low
" I 1/100	1.063	10,630 ug/g ✓ 10,510 ✓
" -J 1/100	0.712	7,120 ug/g ✓
" -K 1/100	0.937	9,370 " ✓
" -L 1/100	1.210	12,100 " 11,700 ✓
" -M 1/100	0.659	6,590 " ✓
" -N 1/100	0.395	3,950 " 5,830 ✓
" -O 1/100	0.274	2,740 " ✓
4326 1/10	0.010	repeated
50740-A	>	next run
" -B	0.252	0.25 ✓
50744-A	0.170	0.17 ✓
(.398)	0.350	88%
(.797)	0.723	91%
50744-A (DC)	0.155	0.15 ✓

mmp 5/13/85

2/12

"	-A (SPK)	0.539	41%
50744	-B	> <u>next run</u>	101%
"	-C	0.200	0.20 —
"	-D	0.453	0.45 —
"	-E	0.070	0.070 —
"	-B	0.030	<.05 —
"	-H	0.242	0.24 —
"	-I	0.070	0.070 —
"	-J	0.020	<.05 —
"	-K	0.030	<.05 —
"	-L	0.150	0.15 —
"	-NY	0.030	<.05 —
"	-N	0.010	<.05 —
50770	-A sol	0.010	<.05 —
"	-B "	0.020	<.05 —
"	-C "	0.200	0.20 —
(.39B)		0.347	87%
2(.797)		0.751	94%
50770	-D sol	0.174	0.17 —
"	-E "	0.347	0.35 —
"	-F "	0.947	0.95 —
"	-G "	0.030	<.05 —
"	-H "	0.030	<.05 —
"	-H (OC)	0.020	<.05
"	-H (.5)	0.522	99%
BLK 5/10		0.030	<.05
BLK SPK		0.533	101%
50770	-A	2.465	2.5 —
"	-B	0.370	0.37 —
"	-C	2.169	2.2 —
"	-D	0.133	0.13 —
"	-E 1/10	3.248	3.2 —
"	-F 1/10	2.855	2.8 —
"	-G	3.624	3.6 —
"	-H	0.860	0.86 —
"	-H (OC)	0.740	0.74
(.39B)		0.373	94%
BLK 95/B sol		0.060	0.060
50770	-R (.5)	1.232	98%
"	-H (SPK)	1.267	93%
"	-I	0.070	0.070 —
"	-J	0.220	0.22 —
"	-K	0.040	<.05 —

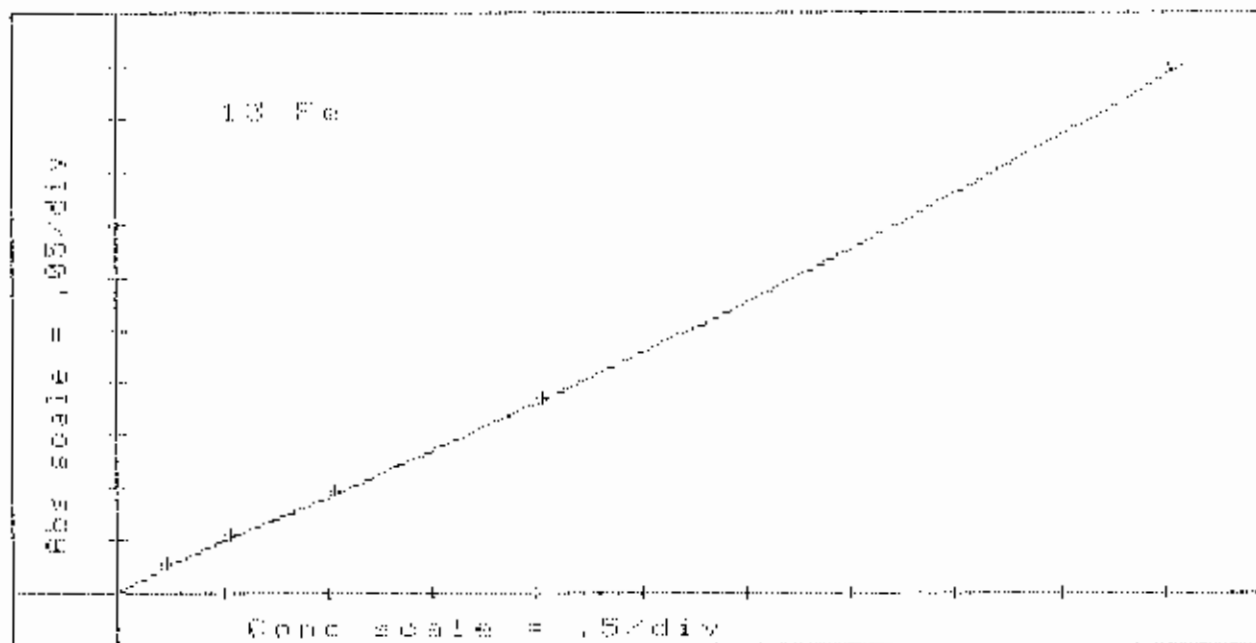
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-575
 OPERATOR: JOHN BLUNETTE
 DATE: 5/13/85
 BATCH: Fe, Mn, Pb, and Cd

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

AUTO-PROGRAM 13 Fe

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.001	0.001	0.000	1.000
STANDARD 1	0.200	4.8%	0.021	0.022	0.020	0.021	1.000
STANDARD 2	0.500	2.1%	0.043	0.047	0.047	0.043	1.000
STANDARD 3	1.000	3.3%	0.079	0.091	0.087	0.094	1.000
STANDARD 4	2.000	0.0%	0.179	0.179	0.160	0.179	1.000
STANDARD 5	5.000	5.5%	0.489	0.517	0.463	0.489	1.000



(.395)	0.384	2.6%	0.038	0.039	0.038	0.037	1.000
2(.797)	0.823	6.7%	0.075	0.071	0.073	0.081	1.000
IDL B1 Fe	0.241	4.0%	0.025	0.026	0.026	0.025	1.000
" B2 "	0.252	3.8%	0.026	0.026	0.028	0.026	1.000
" B3 "	0.263	7.4%	0.027	0.025	0.030	0.027	1.000
" B4 "	0.263	3.7%	0.027	0.028	0.027	0.028	1.000
" B5 "	0.263	3.7%	0.027	0.027	0.026	0.028	1.000
" B6 "	0.252	3.8%	0.026	0.028	0.026	0.026	1.000
" B7 "	0.241	4.0%	0.025	0.026	0.026	0.025	1.000
4526	0.171	0.0%	0.018	0.018	0.018	0.018	1.000
50740-A 1/10	5.254	1.4%	0.518	0.525	0.511	0.518	1.000
50744-B 1/10	5.436	2.6%	0.529	0.544	0.523	0.550	1.000
50770-L	0.076	12.5%	0.008	0.010	0.007	0.008	1.000
" -M	0.066	29.6%	0.007	0.005	0.008	0.009	1.000
" -P	0.066	14.3%	0.007	0.007	0.008	0.006	1.000
" -P(OC)	0.104	9.1%	0.011	0.011	0.011	0.013	1.000
" -P(.5)	0.643	1.7%	0.060	0.060	0.062	0.059	1.000
" -P(1.0)	0.874	1.0%	0.084	0.085	0.084	0.085	1.000

" -R	0.009	100.0%	0.001	0.001	0.000	0.002	1.000
BLANK	0.000	100.0%	0.001	0.002	0.001	0.000	1.000
RESLOPE	0.488	4.3%	0.047	0.045	0.048	0.050	1.028
(.398)	0.405	8.1%	0.009	0.037	0.040	0.042	1.028
(.797)	0.707	31.3%	0.064	0.072	0.080	0.080	1.021
50770-S	0.058	18.7%	0.006	0.005	0.006	0.005	1.021
" -T	0.019	100.0%	0.002	0.003	0.000	0.001	1.004
" -U	0.185	5.3%	0.019	0.020	0.018	0.021	1.004
	0.048	60.0%	0.005	0.005	0.009	0.003	1.024

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE

DATE: 5/13/85

ELEMENT: Fe, Mn, Pb, and Cd

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

SOLUTION	Fe mg/L	
(.398)	0.384	96%
2(.797)	0.823	103%
IDL B1 Fe	0.241	
" B2 "	0.252	
" B3 "	0.263	
" B4 "	0.263	
" B5 "	0.263	
" B6 "	0.252	
" B7 "	0.241	
4326	0.171	
50740-A 1/10	5.254	52 ✓
50744-B 1/10	5.436	54 ✓
50770-L	0.076	0.076 —
" -M	0.066	0.066 —
" -P	0.066	0.066 —
" -P(OO)	0.104	repeated
" -P(.5)	0.643	
" -P(SPK)	0.571	101%
" -Q	0.231	0.23 —
" -R	0.009	<.01 —
(.398)	0.405	102%
(.797)	0.707	89%
50770-S	0.058	0.058 —
" -T	0.019	<.05 —
" -U	0.185	0.18 —
SATTO-P(OO)	0.054	0.054 —

mk P 5/13/85

$\bar{x} = 0.254$
 $\sigma_{rel} = 0.010$
 1.7
 52 ✓
 54 ✓
 0.076 —
 0.066 —
 0.066 —
 101%
 0.23 —
 <.01 —
 102%
 89%
 0.058 —
 <.05 —
 0.18 —
 0.054 —

SECTION IV
SUBPART D-12

RAW DATA FOR:

LEAD

SUMMARY
METALS ANALYSIS DATA SHEET

50705

REV 4/85

METAL Pb DATE 5/11/85 ANALYST JB REVIEWER MP

INSTRUMENT (AA) VARIAN 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
current _____ a SLIT _____ nm
D₂ _____ INTEG _____ sec

FLAS AIR HYDRIDE
ACID
REDUC

COMPUTER PROGRAM

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	<u>.200</u>	<u>.500</u>	<u>1.000</u>	<u>2.000</u>	<u>5.000</u>
	ABSORBANCE	<u>.011</u>	<u>.028</u>	<u>.053</u>	<u>.103</u>	<u>.244</u>
EPA CHECK	KNOWN	<u>.435</u>	<u>.375</u>		<u>.86%</u>	
	MEAN	<u>.217</u>	<u>.200</u>		<u>.92%</u>	
	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	liquid UG/ML	solids UG/GM
BLK 5/8	.018		<.05 .018	100	100	<.05	
BLK SPK	.482		0.482			0.48	93%
50705-A	.000		<.05			<.05	
A REP	.000		<.05			<.05	
B	.000		<.05			<.05	
B-SPK	.464		0.464			0.46	93%
C	.018		<.05			<.05	
D	.000		<.05			<.05	
E	.018		<.05			<.05	
F	.000		<.05			<.05	
EPA .217	.215		0.215			.215	
EPA .435	.404		0.404			.404	
50705 G	.000		<.05			<.05	
BLK, SOIL 5/8	.001		<.05			<.05	
D K SPK	.519		0.519			.52 .52	104% REC.
EPA 0760 1/10	.519		0.519		0.49 gm		100% RECOVER
50705-H	.052		<.05 .052	100	1.02 gm		5.2 5.2
-H REP	.058		.058		1.01		
-H SPK	.577		1.577		1.02		
I	.039		<.05		1.01		<.5
J	.039		<.05		1.02		<.5
K	.039		<.05		1.02		<.5
L	.019		<.05		1.03		<.5
M	.039		<.05		1.01		<.5
N	.000		<.05		1.02		<.5
O	.177		12		1.00		12

See Furnace Analyses for liquid 50705

"A" Channel

Pb - Flame Analysis 5/14/85

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
1) Digest BLK			
2) 50705-A	< 0.05	< 0.05	
3) BLK SPIKE	.482	.464	
4) 50705-H	.052	.058	

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1) 50705-B	.464	< 0.05	0.50	.46	93%
2) BLK SPIKE 5/18	.482	0.018	0.50	.486	93%
3) 50705-H	.052	0.052	0.50	.525	101%
4)					

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1) #2	.217	.215	99%	
2) #13	.435	.404	93%	
3) 0760	.519 x 10	.52 x 10	100%	
4)				

Statistics from AAS Program 42

"B" Channel

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

20.000	7.36%	3.0%	0.000	0.017	0.021	0.020	1.000
ISL R1 Cd,Pb	0.736	7.7%	0.013	0.012	0.014	0.013	1.000
" 12 "	0.115	100.0%	0.000	0.001	0.013	0.013	1.000
" 03 "	0.236	7.7%	0.013	0.015	0.013	0.013	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIATION 09-975

CONTRACTOR: JOHN BURNETTE

DATE: 5/14/85

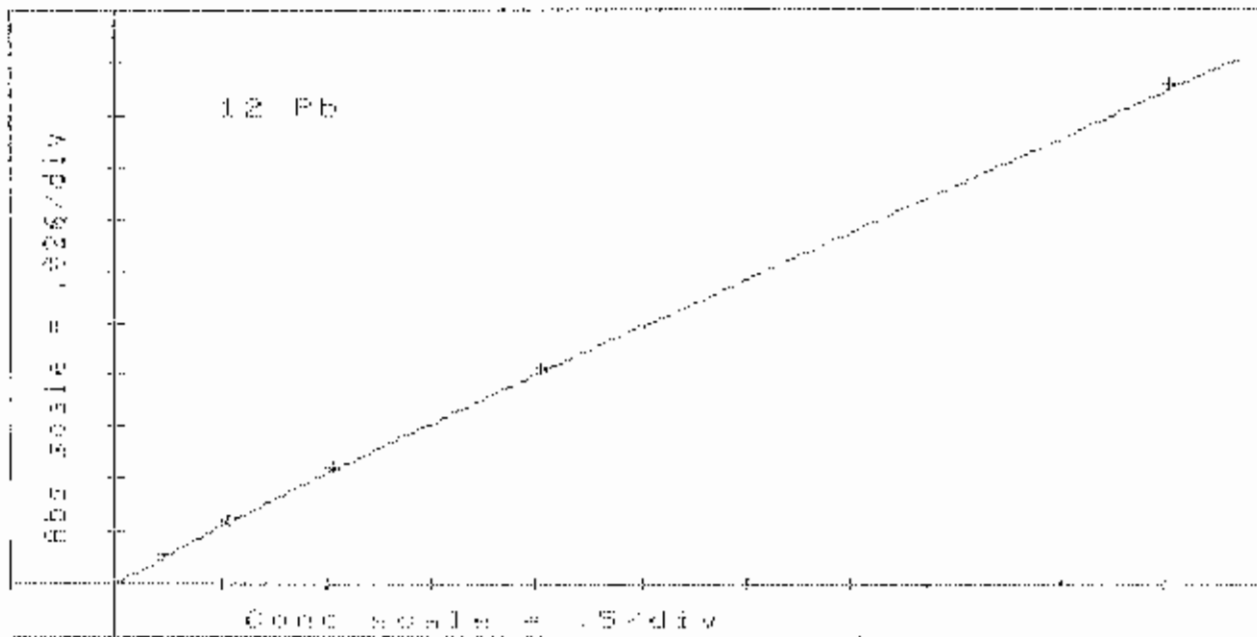
BATCH: Cd and Pb 5/3 - 5/13

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

AUTO-PROGRAM 12 Pb

MKP 5/15/85 ✓ 5/22/85

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	100.0%	0.001	0.001	0.000	0.002	1.000
STANDARD 1	0.200	9.1%	0.011	0.010	0.012	0.013	1.000
STANDARD 2	0.500	3.8%	0.028	0.029	0.028	0.027	1.000
STANDARD 3	1.000	1.9%	0.053	0.052	0.054	0.054	1.000
STANDARD 4	2.000	1.0%	0.103	0.104	0.104	0.103	1.000
STANDARD 5	5.000	0.4%	0.244	0.244	0.246	0.244	1.000



(.217)	0.200	9.1%	0.011	0.010	0.011	0.010	1.000
(.435)	0.500	4.8%	0.021	0.023	0.022	0.022	1.000
ISL R1 Cd,Pb	0.236	7.1%	0.014	0.014	0.013	0.013	1.000
" 12 "	0.115	100.0%	0.000	0.001	0.015	0.015	1.000

2/10

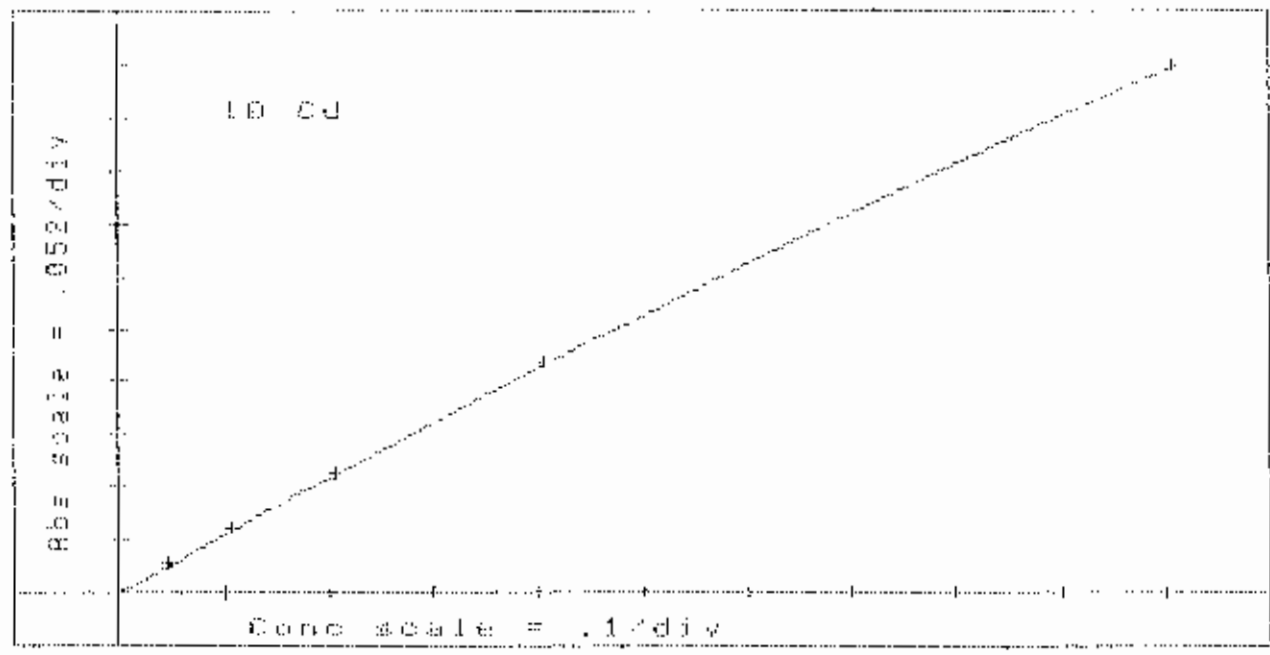
"	"	0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.000
"	B4	"	0.235	7.7%	0.013	0.013	0.014	0.011	1.000
"	B5	"	0.235	7.7%	0.013	0.014	0.012	0.014	1.000
"	B6	"	0.232	7.1%	0.014	0.011	0.013	0.015	1.000
"	B7	"	0.252	7.1%	0.014	0.015	0.013	0.013	1.000
BLK 5/8		0.018	100.0%	0.001	0.000	0.000	0.001	0.001	1.000
ELK SPK		0.402	3.7%	0.027	0.029	0.028	0.026	0.026	1.000
50700-A		0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.000
"	A(OC)	0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.000
"	A(.57, L)	0.482	3.7%	0.027	0.029	0.026	0.028	0.028	1.000
"	-B	0.000	0.0%	0.000	0.000	0.001	0.001	0.001	1.000
"	-B(SPK)	0.464	0.0%	0.026	0.027	0.026	0.026	0.026	1.000
"	-C	0.018	100.0%	0.001	0.000	0.002	0.001	0.001	1.000
"	-D	0.000	0.0%	0.000	0.000	0.001	0.000	0.000	1.000
"	-E	0.018	0.0%	0.001	0.001	0.001	0.001	0.001	1.000
"	-F	0.000	0.0%	0.000	0.001	0.000	0.001	0.001	1.000
BLANK		0.000	0.0%	0.000	0.000	0.000	0.001	0.001	1.000
RESLOPE		0.464	3.8%	0.026	0.027	0.026	0.027	0.027	1.000
(.217)		0.215	9.1%	0.011	0.011	0.012	0.010	0.010	1.000
2(.435)		0.404	4.8%	0.021	0.021	0.022	0.020	0.020	1.000
50700-B		0.000	0.0%	0.000	0.000	0.001	0.000	0.000	1.000
BLK 5/8		0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.000
BLK SPK		0.519	3.7%	0.027	0.028	0.028	0.028	0.028	1.000
EP00760 1/10		0.019	3.7%	0.027	0.028	0.028	0.027	0.027	1.000
50700-H		0.039	50.0%	0.002	0.002	0.002	0.004	0.004	1.000
"	-H(OC)	0.058	33.3%	0.003	0.004	0.002	0.003	0.003	1.000
"	-H(SPK)	0.577	3.3%	0.030	0.029	0.032	0.031	0.031	1.000
"	-I	0.039	50.0%	0.002	0.001	0.002	0.001	0.001	1.000
"	-J	0.039	50.0%	0.002	0.002	0.004	0.002	0.002	1.000
"	-K	0.037	0.0%	0.002	0.003	0.002	0.002	0.002	1.000
"	-L	0.018	100.0%	0.001	0.002	0.000	0.003	0.003	1.000
"	-M	0.039	50.0%	0.002	0.002	0.003	0.003	0.003	1.000
"	-N	0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.000
"	-O	0.117	16.7%	0.006	0.006	0.005	0.007	0.007	1.000
BLK 5/8		0.000	0.0%	0.000	0.000	0.001	0.000	0.000	1.000
ELK SPK		0.499	3.8%	0.026	0.027	0.027	0.026	0.026	1.000
50725 1/1000		0.497	2.8%	0.026	0.027	0.025	0.026	0.026	1.000
BLK 5/8		0.000	0.0%	0.000	0.001	0.000	0.000	0.000	1.000
BLANK		0.000	0.0%	0.000	0.000	0.001	0.001	0.001	1.000
RESLOPE		0.446	0.0%	0.025	0.026	0.025	0.025	0.025	1.121
(.217)		0.183	0.0%	0.009	0.010	0.007	0.007	0.007	1.121
2(.435)		0.401	0.0%	0.020	0.020	0.021	0.020	0.020	1.121
BLK SPK		0.520	3.8%	0.026	0.027	0.026	0.027	0.027	1.121
50740-A Pb		0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.121
"	-B "	0.000	0.0%	0.000	0.000	0.001	0.000	0.000	1.121
50740-D		0.000	0.0%	0.000	-0.001	0.000	-0.001	-0.001	1.121
"	-E	0.000	0.0%	0.000	0.000	0.001	0.000	0.000	1.121
"	-G	0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.121
"	-H	0.000	0.0%	0.000	0.000	0.000	-0.001	-0.001	1.121
"	-I	0.000	0.0%	0.000	-0.001	-0.001	0.000	0.000	1.121
"	-J	0.000	0.0%	0.000	0.000	0.000	-0.001	-0.001	1.121
"	-K	0.000	0.0%	0.000	-0.001	0.000	-0.001	-0.001	1.121
"	-L	0.000	0.0%	0.000	-0.001	0.000	0.000	0.000	1.121
"	-N	0.000	0.0%	0.000	0.000	0.000	-0.001	-0.001	1.121
"	-O	0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.121
BLK 5/8-9		0.000	0.0%	0.000	-0.001	0.000	-0.001	-0.001	1.121
BLK SPK		0.520	0.0%	0.026	0.026	0.026	0.026	0.026	1.121
50739-A		0.000	0.0%	0.000	0.000	0.000	-0.001	-0.001	1.121
"	-B	0.000	0.0%	0.000	-0.001	0.000	-0.001	-0.001	1.121
"	-B(OC)	0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.121
BLANK		0.000	100.0%	-0.001	-0.002	0.000	-0.001	-0.001	1.121
RESLOPE		0.500	3.6%	0.028	0.028	0.027	0.028	0.028	1.000
(.217)		0.200	9.1%	0.011	0.011	0.010	0.012	0.012	1.000
50739-B		0.018	0.0%	0.001	0.001	0.001	0.001	0.001	1.000
"	-B(SPK)	0.482	3.7%	0.027	0.028	0.028	0.026	0.026	1.000

D	0.000	0.0%	0.001	0.001	0.001	0.002	1.000
E	0.000	0.0%	0.000	0.001	0.000	0.000	1.000
F	0.000	0.0%	0.003	0.003	0.003	0.006	1.000

new sps/55

AUTO-PROGRAM 10 Cd

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	100.0%	-0.001	-0.001	0.000	0.000	1.000
STANDARD 1	0.040	1.8%	0.021	0.022	0.022	0.021	1.000
STANDARD 2	0.100	1.8%	0.056	0.057	0.055	0.056	1.000
STANDARD 3	0.200	0.5%	0.111	0.110	0.110	0.112	1.000
STANDARD 4	0.400	0.5%	0.219	0.219	0.223	0.220	1.000
STANDARD 5	1.000	0.0%	0.513	0.512	0.519	0.510	1.000



(.217)	0.015	14.3%	0.007	0.008	0.008	0.008	1.000
2(.435)	0.036	5.3%	0.019	0.019	0.021	0.018	1.000
IDL B1 Cd, Pb	0.047	4.0%	0.025	0.025	0.025	0.024	1.000
" B2 "	0.048	3.8%	0.026	0.025	0.025	0.028	1.000
" B3 "	0.047	4.0%	0.025	0.027	0.024	0.026	1.000
" B4 "	0.048	3.8%	0.026	0.025	0.027	0.026	1.000
" B5 "	0.048	0.0%	0.026	0.027	0.026	0.026	1.000
" B6 "	0.050	7.4%	0.027	0.028	0.028	0.029	1.000
" B7 "	0.047	8.0%	0.025	0.024	0.021	0.028	1.000
BLK 5/8	0.000	100.0%	-0.001	-0.002	-0.002	0.000	1.000
BLK BPK	0.048	3.8%	0.026	0.027	0.027	0.026	1.000
50705-A	0.000	100.0%	-0.001	0.000	0.001	-0.002	1.000
" -A (RC)	0.000	100.0%	-0.001	-0.001	-0.002	0.000	1.000
" -A (.5/.1)	0.093	1.7%	0.052	0.053	0.053	0.052	1.000
" -B	0.000	100.0%	-0.001	-0.003	-0.001	-0.001	1.000
" -E (SPK)	0.048	3.8%	0.026	0.026	0.028	0.025	1.000
" -C	0.000	100.0%	-0.001	-0.002	-0.002	-0.001	1.000
" -D	0.000	50.0%	-0.002	-0.002	-0.003	-0.003	1.000
" -E	0.000	50.0%	-0.002	-0.002	0.003	-0.003	1.000
" -F	0.000	100.0%	-0.001	-0.003	-0.001	-0.001	1.000
BLANK	0.000	50.0%	-0.002	-0.003	-0.002	-0.001	1.000
RESLOPE	0.101	0.0%	0.057	0.057	0.057	0.057	.99
(.217)	0.020	0.0%	0.013	0.011	0.011	0.012	.99
2(.435)	0.039	9.5%	0.021	0.022	0.019	0.023	.99
50705-C	0.000	0.0%	0.000	0.000	0.000	0.000	.99

SAMPLE NO	CONCENTRATION	PERCENTAGE	CD	PB	CD	PB	CD	PB
5070160-1719	0.020	8.1%	0.011	0.011	0.011	0.011	0.011	1.97
50700-41	0.001	100.0%	0.001	0.002	0.001	0.007	0.007	1.97
" -1(20)	0.001	1.0%	0.001	0.001	0.001	0.001	0.001	1.97
" -1(BF10)	0.005	0.0%	0.030	0.070	0.030	0.070	0.070	1.97
" -1	0.007	25.0%	0.001	0.005	0.001	0.005	0.005	1.97
" -1	0.003	20.0%	0.002	0.001	0.001	0.001	0.001	1.97
" -1	0.005	50.0%	0.002	0.007	0.001	0.005	0.005	1.97
" -1	0.000	0.0%	0.000	0.000	0.002	0.000	0.000	1.97
" -1	0.003	0.0%	0.002	0.007	0.002	0.007	0.007	1.97
" -1	0.003	50.0%	0.002	0.002	0.003	0.001	0.001	1.97
" -0	0.003	50.0%	0.007	0.003	0.003	0.002	0.002	1.97
BLK 5/3	0.001	100.0%	0.001	0.001	0.002	0.007	0.007	1.97
BLK 5PK	0.053	3.4%	0.025	0.029	0.028	0.030	0.030	1.97
50720-171004	0.151	0.7%	0.108	0.106	0.110	0.107	0.107	1.97
BLK 5/3	0.001	100.0%	0.001	0.007	0.001	0.001	0.001	1.97
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.97
RESLOPE	0.100	1.8%	0.056	0.055	0.056	0.055	0.055	1.000
(.217)	0.022	16.7%	0.012	0.010	0.012	0.015	0.015	1.000
2(.433)	0.043	0.6%	0.023	0.023	0.023	0.023	0.023	1.000
BLK 5PK	0.055	3.3%	0.030	0.032	0.029	0.030	0.030	1.000
50740-A Pb	0.003	50.0%	0.007	0.002	0.004	0.002	0.002	1.000
" -B "	0.005	33.3%	0.005	0.002	0.003	0.004	0.004	1.000
50744-C	0.003	50.0%	0.002	0.005	0.003	0.002	0.002	1.000
" -F	0.001	100.0%	0.001	0.002	0.000	0.001	0.001	1.000
" -G	0.003	0.0%	0.002	0.003	0.002	0.007	0.007	1.000
" -H	0.003	50.0%	0.002	0.001	0.002	0.003	0.003	1.000
" -I	0.001	100.0%	0.001	0.002	0.001	0.002	0.002	1.000
" -J	0.001	0.0%	0.001	0.002	0.001	0.001	0.001	1.000
" -K	0.001	0.0%	0.001	0.001	0.001	0.002	0.002	1.000
" -L	0.003	0.0%	0.002	0.002	0.003	0.002	0.002	1.000
" -M	0.001	0.0%	0.001	0.002	0.001	0.001	0.001	1.000
" -N	0.003	50.0%	0.002	0.001	0.001	0.001	0.001	1.000
BLK 5/3-9	0.001	100.0%	0.001	0.001	0.003	0.001	0.001	1.000
BLK 5PK	0.054	0.0%	0.029	0.029	0.029	0.030	0.030	1.000
50737-A	0.003	50.0%	0.002	0.003	0.002	0.001	0.001	1.000
" -B	0.003	50.0%	0.002	0.004	0.002	0.001	0.001	1.000
" -B(DD)	0.005	33.3%	0.005	0.002	0.004	0.005	0.005	1.000
BLANK	0.000	0.0%	0.001	0.001	0.001	0.000	0.000	1.000
RESLOPE	0.098	1.8%	0.055	0.056	0.056	0.055	0.055	1.02
(.217)	0.019	10.0%	0.010	0.019	0.009	0.011	0.011	1.02
50739-B	0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.02
" B(SPK)	0.051	3.7%	0.027	0.028	0.027	0.028	0.028	1.02
" -C	0.001	100.0%	0.001	0.002	0.001	0.002	0.002	1.02
" -D	0.000	0.0%	0.000	0.000	0.000	0.000	0.000	1.02
" -E	0.001	0.0%	0.001	0.002	0.001	0.001	0.001	1.02
" -F	0.011	16.7%	0.006	0.006	0.007	0.007	0.007	1.02

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-575
 OPERATOR: JOHN BRUNETTE
 DATE: 5/14/85
 BATCH: Cd and Pb 5/3 - 5/13

myp 5/15/85

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

SOLUTION	Pb mg/L	Cd mg/L				
(.217) <i>(.048)</i>	0.200	91%	0.015	87%	<i>(.018)</i>	<i>QC recorded</i>
2(.433) <i>(.09)</i>	0.078	86%	0.026	92%	<i>(.039)</i>	
10L 5L Cd, Pb	0.272		0.017			
" / B2 "	0.735		0.049			

5-0048 *251-*

$G_{n-1} = 0,001$

" 85 "	0.035	74%	0.048	
" 86 "	0.052	60%	0.050	
" 87 "	0.052		0.047	
BLK 5/8	0.018	<.05	0.000	<.005
BLK SPK	0.482	43%	0.078	96%
50705-A	0.000	<.05	0.000	<.005
" -A (DC)	0.000	<.05	0.000	<.005
" -A (E/L)	0.482	96%	0.073	93%
" -B	0.000	<.05	0.000	<.005
" -B (SPK)	0.464	93%	0.040	96%
" -C	0.018	<.05	0.000	<.005
" -D	0.000	<.05	0.000	<.005
" -E	0.018	<.05	0.000	<.005
" -F	0.000	<.05	0.000	<.005
(.217) (20%)	0.215	97%	0.020	102%
2 (.435) (20%)	0.404	93%	0.059	100%
50705-B	0.000	<.05	0.000	<.005
BLK 5/16	0.000	<.05	0.000	<.01
BLK SPK	0.519	104%	0.051	102%
EP50760 1/10	0.519	100%	0.020	95%
50705-H	0.052	52%	0.001	<.005
" -H (DC)	0.058	37%	0.001	<.05
" -H (SPK)	0.077	101%	0.085	108%
" -I	0.039	<5%	0.007	<.005
" -J	0.039	<5	0.003	<.05
" -K	0.039	<5	0.003	<.05
" -L	0.019	<5	0.000	<.05
" -M	0.039	<5	0.003	<.05
" -N	0.000	<5	0.003	<.05
" -O	0.117	12	0.003	<.05
BLK 5/8	0.000	<.05	0.001	<.01
BLK SPK	0.499	100%	0.053	104%
50725 1/100d	0.697		0.191	95% ug/g
BLK 5/0	0.000	<.05	0.001	<.01
(.217) (20%)	0.183	84%	0.022	116%
2 (.435) (20%)	0.401	92%	0.043	110%
BLK SPK	0.520	104%	0.053	108%
50740-A PB	0.000	<.05	0.005	
" -B "	0.000	<.05	0.005	
50744-B	0.000	<.05	0.005	<.01
" -E	0.000	<.05	0.001	<.01
" -G	0.000	<.05	0.003	<.01
" -H	0.000	<.05	0.003	<.01
" -I	0.000	<.05	0.001	<.01
" -J	0.000	<.05	0.003	<.01
" -K	0.000	<.05	0.001	<.01
" -L	0.000	<.05	0.003	<.01
" -M	0.000	<.05	0.001	<.01
" -N	0.000	<.05	0.003	<.01
BLK 5/8-17	0.000	<.05	0.001	<.01
BLK SPK	0.520	104%	0.054	106%
50739-A	0.000	<.05	0.003	<.01
" -B	0.000	<.05	0.003	<.01
" -C (DC)	0.000	<.05	0.005	<.01
(.217)	0.200	92%	0.019	100%
50739-B	0.018	<.05	0.000	<.01
" -B (SPK)	0.482	96%	0.051	97%
" -C	0.018	<.05	0.001	<.01
" -D	0.018	<.05	0.000	<.01
" -E	0.000	<.05	0.001	<.01
" -F	0.000	0.070	0.011	0.011

SUMMARY - 50705
METALS ANALYSIS DATA SHEET

REV 4/85

METAL Pb DATE 6/10/85 ANALYST dd REVIEWER MP

INSTRUMENT (AA) VARIAN 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
current _____ a SLIT _____ nm
D₂ _____ INTEG _____ sec

FLAME GAS HYDRIDE
ACID REAGENT

FURNACE

DATA ON DISK

Analyzed with Furnace
INITIAL CALIBRATION

STANDARDS:	ug/ml	#1	#2	#3	#4	#5
STOCK	CONC.	<u>.010</u>	<u>.020</u>	<u>.030</u>	<u>.040</u>	<u>.050</u>
	ABSORBANCE	<u>.145</u>	<u>.278</u>	<u>.408</u>	<u>.533</u>	<u>.636</u>

LPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
<u>WS 2</u>	<u>28</u>	<u>30.07</u>		<u>1.2</u>	<u>107%</u>
<u>WS 13</u>	<u>45</u>	<u>46.06</u>		<u>2.0</u>	<u>102%</u>

ANALYSIS FURNACE

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC. <u>ug/ml</u>	D.F.	FINAL <u>ug/ml</u>	F.V. ml.	I.V. ml or gm	liquid <u>ug/ml</u>	solids <u>ug/gm</u>
<u>BLK 5/15</u>	<u>1.86</u>		<u>7.9</u>	<u>100 ml</u>	<u>100 ml</u>	<u>< 0.005</u>	
<u>BLK SPK</u>	<u>> 117</u>						
<u>50705 A</u>	<u>26.3</u>		<u>26.3</u>			<u>26.3</u>	
<u>0.010</u>	<u>36.0</u>						
<u>50705-A REP</u>	<u>25.8</u>		<u>25.8</u>			<u>25.8</u>	
<u>0.010 SPK</u>	<u>35.6</u>						
<u>50705 B</u>	<u>26.8</u>		<u>26.8</u>			<u>26.8</u>	
<u>0.010 SPK</u>							
<u>50705-C</u>	<u>10.5</u>		<u>10.5</u>			<u>10.5</u>	
<u>50705-D</u>	<u>7.38</u>		<u>7.4</u>			<u>7.4</u>	
<u>BLK</u>	<u>0.0</u>		<u>0.0</u>			<u>0.0</u>	
<u>WS-2</u>	<u>30.0</u>		<u>30.0</u>			<u>30.0</u>	
<u>WS-13</u>	<u>48.1</u>		<u>48.1</u>			<u>48.1</u>	
<u>50705 D-SPK</u>	<u>16.7</u>		<u>16.7</u>				
<u>50705-E</u>	<u>9.7</u>		<u>9.7</u>			<u>9.7</u>	
<u>50705-F</u>	<u>17.8</u>		<u>17.8</u>			<u>17.8</u>	
<u>50705-G</u>	<u>20.3</u>		<u>20.3</u>			<u>20.3</u>	
<u>BLK 5/15</u>	<u>5.2</u>		<u>5.2</u>			<u>< 0.005</u>	
<u>BLK SPK</u>	<u>44.3</u>		<u>44.3</u>			<u>44</u>	
<u>50705 H</u>	<u>> 85</u>						
<u>H REP</u>	<u>> 93</u>						
<u>50705 I</u>	<u>> 84</u>						
<u>J</u>	<u>> 107</u>						

} See flame analysis

1" Channel

Pb (FURNACE) 6/10/85 dd

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% Rec = (A-B)/(A+B) x 100
(1) 50705 A	26.32 ug/l	25.78	
(2) 50705 B	10.5		
(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) 50705 A	36.03	26.32	10		97%
(2) 50705 B	35.31	26.78	10		85%
(3) 50705 C	30.00	10.51	10		95%
(4) 50705 G	28.82	20.32	10		85%

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) WS 2	28	30	107%	
(2) WS 13	45	48.1	107%	
(3)				
(4)				

Statistics from AAS Program 42

3" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% Rec = (A-B)/(A+B) x 100
(1)			
(2)			
(3)			
(4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
(1)					
(2)					
(3)					
(4)					

C. EPA Reference Standards

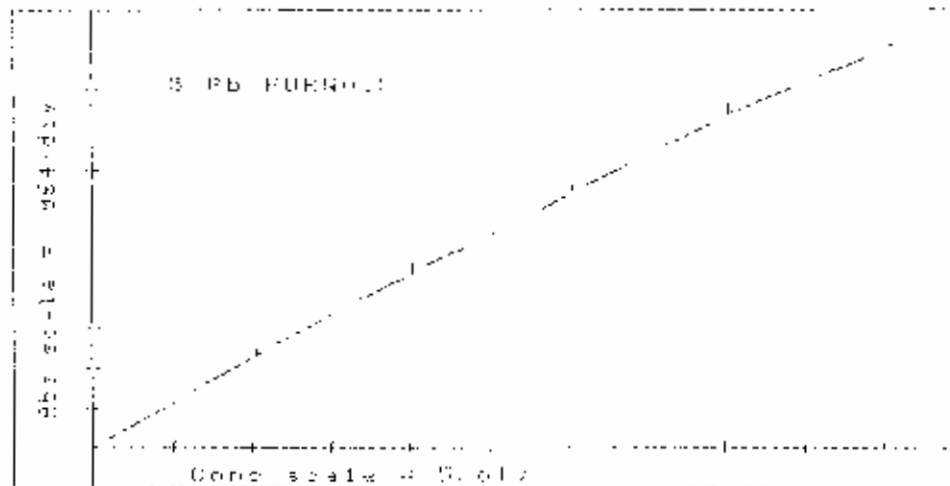
EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1)				
(2)				
(3)				
(4)				

MICHAEL B. WILSON
 CORPORATION
 DOUGLASVILLE, GA 30101
 (404) 582-1000

RECORD ANALYSIS AND DATA CORRECTION HAS BEEN MADE ON BASIS OF PRINTED DATA

AUTO-PROGRAM 5 Pb FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS		RESLOPE FACTOR
BLANK	0.000	13.3%	0.010	0.017	0.014	1.000
STANDARD 1	10.00	0.7%	0.145	0.166	0.144	1.000
STANDARD 2	20.00	0.7%	0.273	0.309	0.277	1.000
STANDARD 3	30.00	1.7%	0.403	0.453	0.414	1.000
STANDARD 4	40.00	0.2%	0.533	0.583	0.530	1.000
STANDARD 5	50.00	0.2%	0.663	0.712	0.635	1.000



60.00	30.07	0.7%	0.399	0.402	0.416	1.000
60.00	16.06	2.0%	0.199	0.197	0.199	1.000
60.00 (10.005)	27.24	1.5%	0.370	0.369	0.376	1.000
2	76.57	1.4%	0.968	0.977	0.974	1.000
3	76.62	1.6%	0.974	0.950	0.969	1.000
4	100.00	0.5%	0.966	0.966	0.967	1.000
5	77.15	1.1%	0.977	0.974	0.969	1.000
6	100.97	1.1%	0.969	0.977	0.967	1.000
7	100.47	0.0%	0.962	0.967	0.962	1.000
110.1200	1.862	0.7%	0.017	0.027	0.020	1.000
50705	> 117	0.0%	1.500	1.500	1.500	1.000
50705 A	26.30	0.3%	0.369	0.361	0.359	1.000
0.010	76.07	0.0%	0.964	0.969	0.969	1.000
50705 ADD	26.40	1.4%	0.355	0.357	0.357	1.000
0.010	26.75	0.7%	0.379	0.378	0.400	1.000
50705 B	76.78	0.5%	0.976	0.975	0.968	1.000
0.010	10.71	0.7%	0.145	0.174	0.176	1.000
50705 D	10.10	0.0%	0.152	0.150	0.155	1.000
0.010	10.00	0.0%	0.150	0.158	0.178	1.000
50705 D	21.79	0.9%	0.307	0.308	0.306	1.000
PLANK	0.000	24.7%	0.019	0.015	0.077	1.000
11.0 GRE	19.89	0.0%	0.263	0.261	0.267	1.000
11.0	27.96	0.0%	0.363	0.363	0.367	1.000
11.0	48.10	0.5%	0.591	0.587	0.577	1.000
50705 (1.010)	17.48	1.0%	0.230	0.239	0.225	1.000
50705 E	9.771	1.3%	0.130	0.131	0.135	1.000
0.010	19.51	1.0%	0.267	0.267	0.269	1.000
50705 F	17.97	1.7%	0.230	0.231	0.225	1.000
0.010	27.10	0.0%	0.350	0.345	0.354	1.000
50705 G	10.77	1.9%	0.167	0.161	0.271	1.000
0.010	29.87	1.0%	0.371	0.376	0.367	1.000
0.010 (1.010)	50.15	7.0%	0.671	0.669	0.671	1.000
0.010	11.70	1.3%	0.150	0.152	0.146	1.000
50705 H	0.00	0.0%	0.000	0.000	0.000	1.000
0.010 (1.010)	75.75	1.0%	0.919	0.920	0.916	1.000
50705 IRR	27	1.0%	1.105	1.100	1.177	1.000
0.010	45.00	0.5%	0.560	0.560	0.567	1.000
50705 J	0.00	1.7%	1.077	1.066	1.067	1.000
0.010	100.00	104.7%	0.971	0.981	0.979	1.000
50705 J	0.00	1.1%	1.767	1.762	1.763	1.000

255-

LABORATORY ANALYSIS REPORT
 10705 J
 06/10/05

10705 J
 10/10/05

WEIGHT THROUGH DILUTION CORRECTION HAS BEEN APPLIED TO RESULTS ABOVE

COLLECTION	Pb ug/l
10705 (23)	26.97 107%
10705 (45)	48.04 107%
DL 1(0.015)	27.24 ✓
	26.77 ✓
	26.12 ✓
	26.72 ✓
	27.17 ✓
	26.77 ✓
	26.77 ✓
ALK 5/15	1.282
BLK BFK	>
10705 A	22.81 0.026 ✓
1.010	22.03 97%
10705 B	25.78 0.026 ✓
1.010	25.13 97%
10705 C	26.75 0.027 ✓
1.010	25.31 95%
10705 D	10.51 0.016 ✓
1.010	20.80 95%
10705 E	7.299 0.0074 ✓
10705 F	29.96 107%
10705 G	48.13 107%
10705 H (1.010)	16.68 93%
10705 I	9.731 0.0097 ✓
1.010	19.31 98%
10705 J	17.87 0.018 ✓
1.010	27.18 97%
10705 K	23.12 0.020 ✓
1.010	28.82 93%
ALK 5/15	5.198
BLK BFK	44.33 93% ✓
10705 L	>
1.010	32.74
10705 MRC	>
1.010 plus 5%	45.22 90%
10705 N	>
1.010 5% 113	1.036 < 0.010 ✓
10705 O	>

$\bar{x} = 26.98$
 $s = 0.276$
 $RM = 1.0$

SECTION IV
SUBPART D-13

RAW DATA FOR:

MAGNESIUM

SUMMARY
METALS ANALYSIS DATA SHEET

~~050~~ 50705
REV 4/85

METAL Mg DATE 5/10/85 ANALYST ddl REVIEWER MP

INSTRUMENT (AA) 1L-751

ANALYSIS METHOD

λ 285.2 nm VOLTAGE 460 V
current 6 mA SLIT 0.3 nm
D₂ OFF INTEG 4 sec

FLAME Ac/ACET HYDRIDE
ACID
REDUC

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	5.00	10.00	2.50	0.50	0.25
	ABSORBANCE	.593	.776	.388	.096	.049

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. or gm	liquid UG/ml	solids UG/gm
PKG BCK 5/8	<0.25		<0.25	100ml	100 ml		
BCK SPK	1.9		95% REC.				
50705-A	1.5	10	15			15	
50705-A REP	1.6	10	16			16	
50705-B	1.6	10	16			16	
50705-B SPK	1.9	10	SPK TOO LOW				
50705-C	1.5	10	15			15	
50705-D	9.4		9.4			9.4	
50705-E	1.4	10	14			14	
50705-F	1.5	10	15			15	
50705-G	1.5	10	15			15	
DIG BCK 5/7	<0.25		<0.25				
BCK SPK	2.0		100% REC.				
50705-H	1.7	10	17		1.02 gm		1700
50705-H REP	1.6	10	16		1.01 gm		1600
50705-H SPK	1.7	10	SPK TOO LOW		1.02 gm		
50705-I	11		11		1.01 gm		1100
50705-J	1.4	10	14		1.02 gm		1400
50705-K	12		12		1.02 gm		1200
50705-L	3.4	10	34		1.03 gm		3400
50705-M	1.5	10	15		1.01 gm		1500
50705-N	4.7	10	47		1.02 gm		4700
50705-O	6.2		62		1.00 gm		620

1A" Channel

24 05 10 14 13
08 08 10 08 08
19 12 13 13 13
14 08 08 08 08

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
(1) 4335-A	0.92	0.91	1.1
(2) 50705-A 1/2	1.6	1.6	0.4
(3) 50705-17 1/2	1.7	1.6	0.1
(4) 4338	0.27	0.25	27

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
(1) 4335-A	1.78	0.91	0.4	0.37	92
(2) 50705-B 1/2	2.33	1.6	0.8	0.73	91
(3) 50705-17 1/2	2.32	1.6	0.8	0.78	90
(4) 4338	0.38	0.25	0.1	0.40	91

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) 1011 Z	0.50	0.51	102	1.7
(2) m1	8.4	8.73	103	1.5
(3) n2	1.8	1.75	97	1.6
(4)				

Statistics from AAS Program 42

1B" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 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)					
(2)					
(3)					
(4)					

C. EPA Reference Standards

A + 20

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) 1011 Z	0.50	0.52	104	1.2
(2) m1	8.4	8.73	103	2.0
(3) n2	1.8	1.75	97	1.9

AK
5/15/85

METALS ANALYSIS DATA SHEET

MKP 5/15/85

DATE 5/15/85

ANALYST *AK*

"A" Channel

"B" Channel

Metal Mg

Metal _____

Flame Type Air/Acetylene Wave Length 789.0

Flame Type _____ Wave Length _____

Lamp Current 6 D2 Background _____

Lamp Current _____ D2 Background _____

Voltage 460 Slit Width 0.7

Voltage _____ Slit Width _____

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion	Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
#1		5.0			STD #1				
#2	0.776	10			STD #2				
#3		2.5			STD #3				
#4		0.50			STD #4				
#5		0.25			STD #5				
Samples					Samples				
1	4335-A	0.42	1/10	9.2	#1	4332	60	0.24	25 mg/l
2	4335-B	0.91	1/10	9.1	#2				
3	4335-B	5.7		5.7	#3				
4	4335-C	11		11	#4				
5	4335-D	1.6	1/10	16	#5				
6	4335-E	9.5		9.5	#6				
7	Blank 1/10	<0.25			#7				
8	Blank SPK	2.0		100%	#8				
9	Sub	8.6		8.6	#9				
10	Blank SPK	<0.25			#10				
11	Blank SPK	1.9		95%	#11				
12	50705-A	1.5	1/10	15	#12				
13	50705-A	1.6	1/10	16	#13				
14	50705-B	1.6	1/10	16	#14				
15	50705-B	1.7	1/10	17	#15				
16	50705-C	1.5	1/10	15	#16				
17	50705-D	9.4		9.4	#17				
18	50705-E	1.4	1/10	14	#18				
19	50705-E	1.5	1/10	15	#19				
20	50705-E	1.5	1/10	15	#20				
21	Blank	<0.25			#21				
22	Blank SPK	2.0		100%	#22				
23	50705-A	1.7	1/10	1700 mg/l	#23				
24	50705-B	1.6	1/10	1600 "	#24				
25	50705-C	1.7	1/10	1700 "	#25				
26	50705-D	1.1	1/10	1100 mg/l	#26				
27	50705-E	1.4	1/10	1400 "	#27				
28	50705-F	1.2	1/10	1200 "	#28				
29	50705-G	3.4	1/10	3700 "	#29				
30	50705-H	1.5	1/10	1500 "	#30				
31	50705-I	4.7	1/10	4600 "	#31				
32	50705-J	6.2		620 "	#32				
33	Blank 1/10	<0.25			#33				
34	4332	0.22		22 mg/l	#34	26	26 mg/l		

All Results in mg/l unless specified otherwise.

SECTION IV
SUBPART D-14

RAW DATA FOR:

MANGANESE

METAL Mn DATE 5/13/85 ANALYST J B REVIEWER MT

INSTRUMENT (AA) VARION 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
 current _____ a SLIT _____ nm
 D_2 _____ INTEG _____ sec

FLAME A I A C HYDRIDE
 ACID
 REDUC

Data on Computer Program

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5	
STOCK	CONC, UG/ML	.050	.100	.400	1.000	2.000
	ABSORBANCE	.015	.026	.103	.251	.488
EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED	
	.174	.157			90%	
	.348	.329			94%	

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION		FINAL CONCENTRATION		
SAMPLE#	CONC. UG/ML	D.F.	FINAL UG/ML	F.V. ml.	I.V. ml or gm	liquid UG/ML	solids UG/gm
BLK 5/8	.000			100ml	100ml	.000	
BLK SPK	.196					.196	
50705-A	.797					.797	
-A REP	.829					.829	
-B	.939					.939	
-B SPK	1.195					1.195	
C	.127					.127	
D	.053					.053	
E	.094					.094	
F	.313					.313	
.174 EPA	.172		98%			.172	98%
.348 EPA	.341		98%			.341	98%
50705-G	.225					.225	
BLK, SOILS 5/7	.003					.003	
BLK, SPK 5/7	.213					.213	
EPA 0760 1/10	.229	1/10			1.99 gm	2.29	
50705-H	2.264				1.02 gm		220
-H REP	2.199				1.01 gm		220
I	.341	1/10			1.01 gm		340
J	.618	1/10			1.02 gm		600
K	.764	1/10			1.02 gm		750
L	.423	1/10			1.02 gm		410
M	.475	1/10			1.01 gm		470
N	.417	1/10			1.02 gm		410
O	.505				1.00 gm		50

"A" Channel

M. Angarone 5/13/85 JB

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% Rec. $\frac{A-B}{A+B} \times 100$
(1) BLK 5/8 SPK	.196	.213	
(2) 50705-A	.797	.829	
(3) 50705-H	2.199	2.264	
(4) 50744-A	.084	.100	

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
(1) BLANK 5/8	.196	.000	.200	.196	98%
(2) 50705-B	1.195	.954	.200		120%
(3) 50744-A	.204	.100	.100	.104	104%
(4) BLK					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) 0760 1/10		.229	114%	
(2)	.174	.161	92%	
(3)	.348	.333	96%	
(4)				

Statistics from AAS Program 42

"B" Channel

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% Rec. $\frac{A-B}{A+B} \times 100$

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

✓ JJ
5/13/85

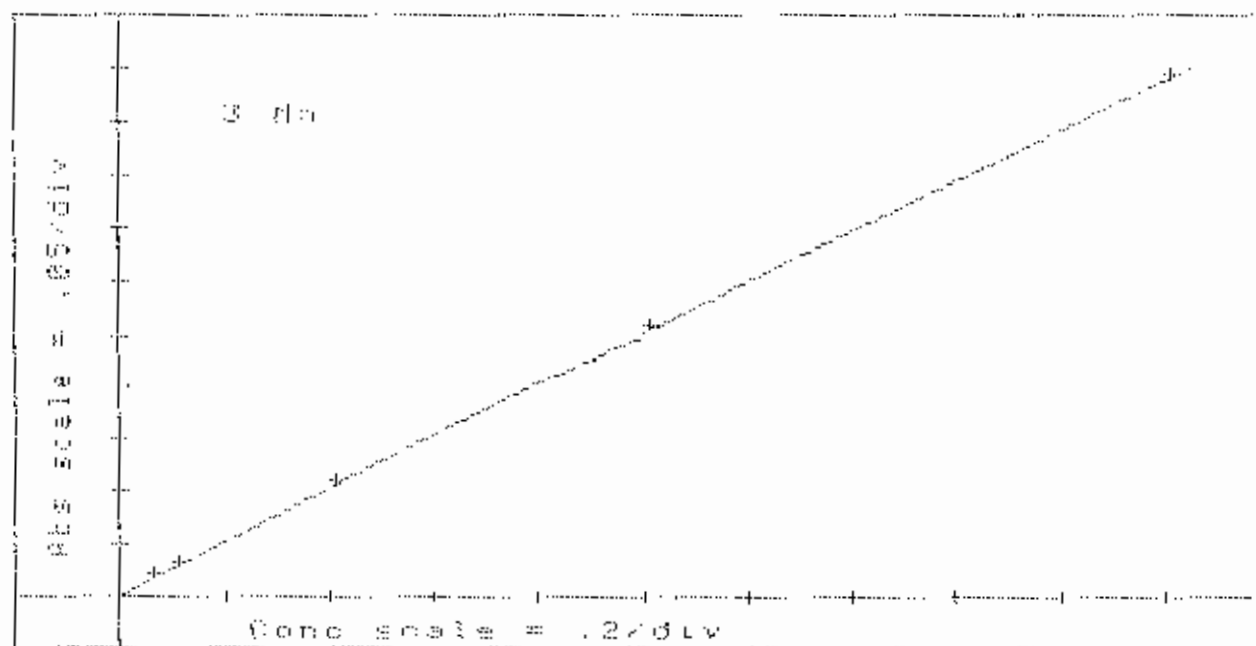
VARIAN AA-575
 OPERATOR: JOHN BRUNETTE
 DATE: 5/13/85
 ELEMENTS: Fe, Ni, Pb, and Cd

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

AUTO-PROGRAM 3 Mn

MHP 5/13/85

SOLUTION	CONC mg/l	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	100.0%	0.001	0.002	0.002	0.000	1.000
STANDARD 1	0.050	6.7%	0.015	0.014	0.016	0.016	1.000
STANDARD 2	0.100	0.0%	0.026	0.026	0.026	0.026	1.000
STANDARD 3	0.400	1.0%	0.103	0.104	0.102	0.104	1.000
STANDARD 4	1.000	1.2%	0.251	0.252	0.247	0.254	1.000
STANDARD 5	2.000	1.0%	0.488	0.482	0.490	0.493	1.000



(.174)	0.157	0.0%	0.041	0.041	0.041	0.041	1.000
2(.348)	0.329	1.2%	0.085	0.085	0.084	0.086	1.000
10L B1 Ni	0.094	4.0%	0.025	0.026	0.024	0.027	1.000
" B2 "	0.100	0.0%	0.026	0.027	0.026	0.026	1.000
" B3 "	0.100	3.8%	0.026	0.027	0.027	0.026	1.000
" B4 "	0.100	3.0%	0.046	0.026	0.025	0.027	1.000
" B5 "	0.094	0.0%	0.025	0.026	0.025	0.025	1.000
" B6 "	0.100	3.8%	0.026	0.026	0.025	0.027	1.000
" B7 "	0.094	0.0%	0.025	0.025	0.026	0.025	1.000
v BLF 5/E	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
2LK SPK	0.196	2.0%	0.051	0.052	0.053	0.050	1.000
50705-A	0.797	1.0%	0.202	0.201	0.205	0.202	1.000
" -A (DC)	0.825	0.5%	0.210	0.210	0.211	0.211	1.000
" -A (1)	0.933	0.4%	0.235	0.236	0.234	0.237	1.000
" B	0.954	1.7%	0.240	0.237	0.239	0.245	1.000
" -B (SP1)	1.195	1.0%	0.290	0.295	0.298	0.292	1.000

" -D	0.053	6.3%	0.016	0.017	0.017	0.016	1.063
" -E	0.054	0.0%	0.023	0.025	0.025	0.024	1.063
" -F	0.313	0.0%	0.021	0.021	0.021	0.022	1.063
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
RESLOPE	0.094	4.0%	0.025	0.025	0.026	0.026	1.063
(.174)	0.172	2.4%	0.042	0.041	0.043	0.042	1.063
2(.348)	0.341	0.0%	0.023	0.024	0.023	0.023	1.063
50705-S	0.225	1.5%	0.025	0.025	0.026	0.026	1.063
BLK soil	0.003	0.0%	0.001	0.001	0.001	0.001	1.063
BLK SPK	0.213	1.5%	0.022	0.023	0.023	0.020	1.063
CPA0700 1/10	0.229	1.5%	0.026	0.027	0.026	0.027	1.063
50705-R	2.264	0.4%	0.518	0.516	0.518	0.529	1.063
" -R (DC)	2.199	1.4%	0.204	0.407	0.512	0.503	1.063
" -R (SPK)	2.130	0.4%	0.429	0.427	0.422	0.409	1.063
" -I	> 2	0.1%	0.730	0.731	0.731	0.729	1.063
" -J	> 4	0.5%	1.130	1.126	1.130	1.131	1.063
" -K	> 5	0.3%	1.273	1.275	1.277	1.281	1.063
" -L	> 3	0.3%	0.871	0.862	0.870	0.875	1.063
" -M	> 3	0.2%	0.927	0.928	0.929	0.921	1.063
" -N	> 3	0.1%	0.884	0.884	0.886	0.884	1.063
" -O	0.503	0.8%	0.122	0.121	0.122	0.124	1.063
BLK 5/7	0.000	0.0%	0.000	0.000	0.000	0.000	1.063
4330	0.007	50.0%	0.002	0.001	0.003	0.002	1.063
" (DC)	0.007	0.0%	0.002	0.002	0.002	0.005	1.063
" (.1)	0.122	3.3%	0.030	0.031	0.029	0.030	1.063
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.063
RESLOPE	0.100	0.0%	0.026	0.027	0.026	0.026	1.063
(.174)	0.161	2.4%	0.042	0.042	0.042	0.044	1.063
2(.348)	0.333	2.3%	0.026	0.026	0.022	0.024	1.063
BLK 5/8	0.000	0.0%	0.000	0.001	0.000	0.000	1.063
BLK SPK	0.204	0.0%	0.023	0.023	0.023	0.024	1.063
50744-A	0.024	4.3%	0.023	0.023	0.023	0.025	1.063
" -A (DC)	0.100	3.8%	0.026	0.027	0.025	0.025	1.063
" -A (.1)	0.204	1.5%	0.023	0.022	0.024	0.024	1.063
" -A (SPK)	0.303	1.3%	0.029	0.029	0.020	0.020	1.063
" -B	> 3	0.0%	0.826	0.824	0.820	0.824	1.063
" -C	0.010	33.3%	0.003	0.002	0.003	0.004	1.063
" -E	0.024	4.3%	0.023	0.024	0.023	0.024	1.063
" -F	0.020	16.7%	0.006	0.007	0.005	0.007	1.063
" -G	0.023	0.0%	0.007	0.007	0.007	0.008	1.063
" -H	0.000	0.0%	0.000	0.002	0.000	0.000	1.063
" -I	0.259	1.5%	0.067	0.066	0.062	0.067	1.063
" -J	0.006	0.0%	0.002	0.002	0.002	0.002	1.063
" -K	0.000	0.0%	0.000	0.000	0.001	0.000	1.063
" -L	0.000	0.0%	0.000	0.000	0.001	0.001	1.063
" -M	0.000	0.0%	0.000	0.000	0.000	0.000	1.063
" -N	0.006	50.0%	0.002	0.003	0.002	0.003	1.063
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.063
RESLOPE	0.100	0.0%	0.026	0.027	0.026	0.026	1.063
(.174)	0.161	2.4%	0.042	0.041	0.043	0.042	1.063
2(.348)	0.325	0.0%	0.024	0.023	0.024	0.024	1.063
	0.341	1.1%	0.020	0.020	0.022	0.020	1.063
	0.518	0.3%	0.152	0.157	0.160	0.157	1.063
	0.764	0.5%	0.194	0.193	0.193	0.196	1.063
	0.423	0.9%	0.109	0.110	0.109	0.110	1.063
	0.475	0.8%	0.122	0.121	0.124	0.122	1.063

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

ORLEAN MA-975
 OPERATOR# JOHN BRUNETTE
 DATE# 5/13/85
 METHOD# Fe, Hg, Pb, and Cd

mw 5/15/85

-363-

30705	41	%	0.818	600 "
SAMPLE	41	%	0.818	600 "
SAMPLE	46	%	0.764	750 "
SAMPLE	62	%	0.423	410 "
SAMPLE	71	%	0.475	470 "

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE
 DATE: 5/13/85
 BATCH: Fe, Mn, Pb, and Cd

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

AUTO-PROGRAM 3 Mn

SOLUTION	CONC mg/l	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	100.0%	-0.001	-0.002-0.001-0.002	1.000
STANDARD 1	0.050	0.0%	0.017	0.017 0.017 0.017	1.000
STANDARD 2	0.100	7.1%	0.035	0.026 0.030 0.028	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

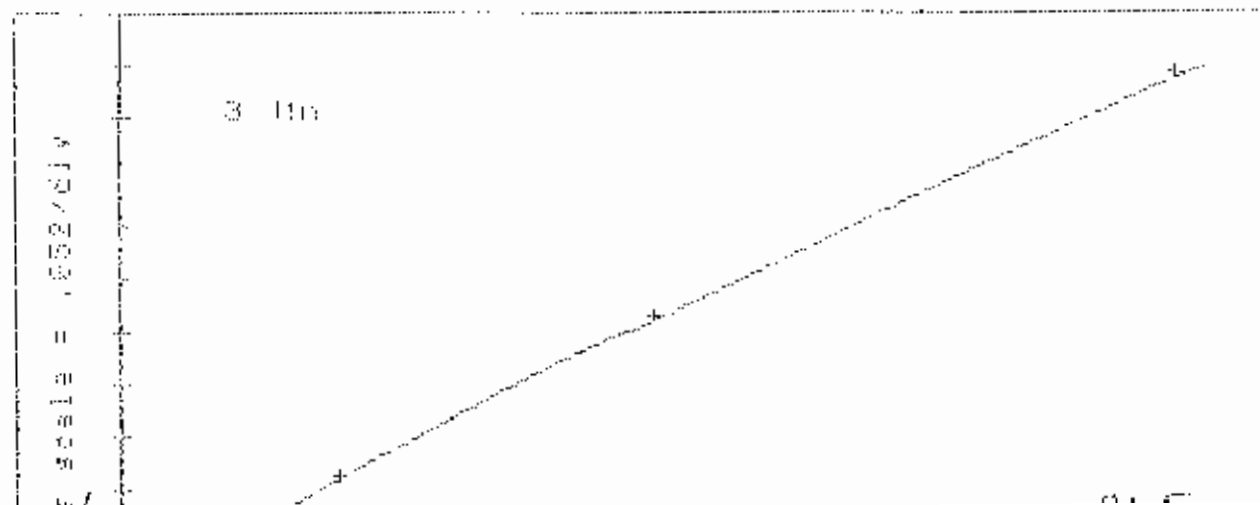
VARIAN AA-975

OPERATOR: JOHN BRUNETTE
 DATE: 5/13/85
 BATCH: Fe, Mn, Pb, and Cd

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

AUTO-PROGRAM 3 Mn

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	0.050	7.7%	0.013	0.012 0.015 0.013	1.000
STANDARD 2	0.100	3.0%	0.026	0.026 0.027 0.027	1.000
STANDARD 3	0.400	0.9%	0.110	0.109 0.110 0.112	1.000
STANDARD 4	1.000	0.8%	0.266	0.264 0.268 0.266	1.000
STANDARD 5	2.000	0.5%	0.503	0.499 0.506 0.505	1.000



Conc scale = .2/div

(.174)	0.170	2.2%	0.045	0.045	0.046	0.044	1.000
2(.348)	0.321	1.1%	0.087	0.089	0.088	0.086	1.000
50705-N 1/10	0.417	0.9%	0.115	0.117	0.115	0.115	1.000
50744-B 1/10	0.389	0.9%	0.107	0.109	0.108	0.107	1.000
BLK 5/10	0.000	0.0%	0.000	0.001	0.000	0.001	1.000
BLK SPK	0.207	0.0%	0.055	0.055	0.056	0.055	1.000
50770-A	0.148	2.6%	0.039	0.038	0.039	0.041	1.000
" -B	0.130	2.9%	0.034	0.035	0.033	0.034	1.000
" -C	0.828	0.0%	0.226	0.236	0.227	0.226	1.000
" -D	0.076	5.0%	0.020	0.019	0.021	0.021	1.000
" -E 1/10	0.033	16.7%	0.006	0.007	0.006	0.005	1.000
" -F	0.221	1.7%	0.059	0.060	0.059	0.060	1.000
" -G	0.148	2.6%	0.039	0.039	0.040	0.040	1.000
" -H	0.033	16.7%	0.006	0.007	0.006	0.007	1.000
" -H(DC)	0.026	14.3%	0.007	0.007	0.008	0.008	1.000
" -H(.1)	0.137	2.8%	0.036	0.037	0.035	0.036	1.000
" -H(SPK)	0.243	0.0%	0.065	0.065	0.065	0.066	1.000
" -I	0.015	25.0%	0.004	0.004	0.005	0.005	1.000
" -J	0.011	33.3%	0.003	0.003	0.004	0.004	1.000
" -K	0.046	0.0%	0.012	0.012	0.013	0.012	1.000
BLANK	0.000	100.0%	0.001	0.002	0.002	0.000	1.000
RESLOPE	0.100	0.0%	0.026	0.026	0.027	0.026	1.000
(.174)	0.156	4.5%	0.041	0.041	0.044	0.046	1.000
2(.348)	0.310	1.2%	0.084	0.084	0.086	0.084	1.000
50770-L	0.015	25.0%	0.004	0.005	0.004	0.003	1.000
" -M	0.026	0.0%	0.007	0.007	0.007	0.007	1.000
" -P	0.544	1.3%	0.151	0.152	0.149	0.153	1.000
" -P(DC)	0.569	1.3%	0.158	0.156	0.158	0.161	1.000
" -P(.1)	0.683	1.1%	0.189	0.187	0.191	0.191	1.000
" -P(SPK)	0.702	0.5%	0.194	0.194	0.195	0.195	1.000
" -Q	0.030	12.5%	0.008	0.009	0.009	0.008	1.000
" -R	0.000	100.0%	0.000	0.000	0.000	0.000	1.000
" -S	0.000	0.0%	0.000	0.001	0.000	0.000	1.000
" -T	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
" -U	0.003	0.0%	0.001	0.001	0.002	0.001	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-970

OPERATOR: JOHN SOUNETTE

DATE: 5/13/85

ELEMENTS: Fe, Mn, Pb, and Cd

mkp 5/13/85

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

SOLUTION	Mn mg/l	
(.174)	0.170	98%
2(.348)	0.321	91%
50705-N 1/10	0.417	410 ug/g
50744-B 1/10	0.389	3.7
BLK 5/10	0.000	<0.01
BLK SPK	0.207	104%
50770-A	0.148	0.15
" -B	0.130	0.13
" -C	0.828	0.83

"	-L	0.1	
"	-M	0.321	0.22 —
"	-N	0.142	0.15 —
"	-R	0.023	0.023 —
"	-H(FC)	0.026	0.026 —
"	-H(L)	0.137	113% —
"	-H(DFC)	0.243	110% —
"	-I	0.015	0.02 0.015 —
"	-J	0.011	0.02 0.011 —
"	-K	0.046	0.046 —
(.174)		0.186	90% —
2(.348)		0.310	89% —
50.704.		0.015	<0.01 —
"	-M	0.026	0.026 —
"	-P	0.544	0.54 —
"	-P(OC)	0.569	0.57 —
"	-P(L)	0.683	114% —
"	-P(SH)	0.702	79% —
"	-G	0.030	0.030 —
"	-R	0.003	0.02 <0.01 —
"	-S	0.000	0.02 <0.01 —
"	-T	0.000	0.02 <0.01 —
"	-U	0.003	0.02 <0.01 —

SECTION IV
SUBPART D-15

RAW DATA FOR:

MERCURY

MERCURY ANALYSIS DATA SHEET

mkp 5/16/55 (2)(1)

IL-751
Lamp Voltage 530
Lamp Current 1.25
D₂ Background None

Date 5/14
Analyst MV
Wave Length 2537

absorbance read as maximum peak height on meter

STANDARD CALIBRATION

Std. #	Conc.	Abs.	Actual Conc.	Conc.	Abs.	Actual Conc.	Conc.	Abs.	Actual Conc.
Blank	0	.000			.000				
1	0.05	.009	.048		.009	.048			
2	0.1	.020	.100		.021	.103			
3	0.2	.039	.191		.041	.200			
4	0.5	.101	.485		.107	.514			
5	1.0	.208	.994		.211	1.00			
WA 52	0.18	.032	1.6 / 1.5 x 100 = 99%		.035	1.7 / 1.8 x 100 = 94%			
WA 22 (H)	0.87	.173	8.3 / 8.7 x 100 = 95%		.171	8.2 / 8.7 x 100 = 94%			

Correlation Coefficient .99977

Y Intercept .0011

Sample	Vol. or wgt.	Abs.	Conc.	Sample	Vol. or wgt.	Abs.	Conc.
10744 H	100	.021	105/105%	10744 H	100 ml	.000	<.0005
10744 I		.051	.00248	10744 I		.001	<.0005
10744 J		.050	.00243	10744 J		.001	<.0005
10744 K		.049	.00238	10744 K		.004	<.0005
10744 L	100	.050	.00243	10744 L	100	.000	<.0005
10744 M	92	.052	.00252	10744 M	92	.003	<.0005
10744 N	90	.052	.00252	10744 N	90	.000	<.0005
10705 A (24Hm)	200	.000	<.0002	Mudcat 10757	100	.000	<.0005
10705 B		.000	<.0002	Mudcat 10768	75	.000	<.0005
10705 C		.000	<.0002	NH 10770 A	100	.000	<.0005
10705 D		.005	<.0002	10770 B		.000	<.0005
10705 E		.007	<.0002	10770 C		.001	<.0005
10705 F		.002	<.0002	10770 D	100	.000	<.0005
10705 G		.000	<.0002	10770 E	94	.000	<.0005
10705 B dup		.000	<.0002	10770 F	93	.000	<.0005
10705 C dup sat (0.1)	200	.020	.0010/100%	10770 G	100	.000	<.0005
10739 A	100	.000	<.0005	10770 H		.000	<.0005
10739 A (60)		.005	<.0005	10770 I		.000	<.0005
10739 B		.000	<.0005	10770 J		.006	<.0005
10739 B dup		.000	<.0005	10770 K		.000	<.0005
10739 B dup (0.1)		.022	.0011/110%	10770 L		.001	<.0005
10739 B (50)		.000	<.0005	10770 M		.000	<.0005
10739 C		.000	<.0005	10770 P		.000	<.0005
10739 C (50)		.000	<.0005	10770 Q		.000	<.0005
10739 D		.000	<.0005	10770 R		.000	<.0005
10739 D (50)		.002	<.0005	10770 S		.000	<.0005
10739 E		.000	<.0005	10770 T		.000	<.0005
10739 E (50)		.000	<.0005	10770 U		.000	<.0005
10739 F	95	.000	<.0005	10770 H dup		.000	<.0005
10739 F (50)	100	.000	<.0005	10770 H spx (0.1)	100	.021	.00105/105%
10739 G	100	.003	<.0005	Mich 10776 A	0.25 g	.001	<.0005
10739 G (50)	100	.000	<.0005	WME 10782	100 ml	.000	<.0005
10744 D	88	.000	<.0005	Mich 10776 A	10	.001	<.0005
10744 E				0.1		.022	
				0.2		.046	

MERCURY ANALYSIS DATA SHEET

(1)

Lamp Voltage 530
 Lamp Current 1.5
 D₂ Background No

Date 5/14
 Analyst YJW
 Wave Length 2537

STANDARD CALIBRATION

Blank	Conc.	Abs.	Actual Conc.	Conc.	Abs.	Actual Conc.	Conc.	Abs.	Actual Conc.
	0	.004							
Std. 1	0.05	.012							
Std. 2	0.1	.025							
Std. 3	0.2	.040							
Std. 4	0.5	.098							
Std. 5	1.0	.192							

Correlation Coefficient .9998

Y Intercept .0038

Sample	Vol. or wgt.	Abs.	Conc.	Sample	Vol. or wgt.	Abs.	Conc.
4320 ✓	10ml	.002	<.005	50785 F ✓	0.5 ml	.009	<.01
0.1		.023		0.1		.023	
0.2		.042		0.2		.038	
0.5		.105		0.5		.095	
50786 A ✓	✓ 1/4	.015	0.0054	50786 G ✓	10 ml	.004	<.005
0.1		.024		0.1		.021	
0.2		.051		0.2		.038	
0.5		.110		0.5		.098	
50786 B ✓		.000	<.005	50786 H ✓		.002	<.005
0.1		.020		0.1		.024	
0.2		.043		0.2		.036	
0.5		.107		0.5		.107	
50786 C ✓		.011	<.005	50786 I ✓		.000	<.005
0.1		.032		0.1		.021	
0.2		.049		0.2		.042	
0.5		.111		0.5		.091	
50786 D ✓		.004	<.005	50786 J ✓		.011	<.005
0.1		.023		0.1		.019	
0.2		.050		0.2		.052	
0.5		.156		0.5		.092	<.01
50786 E ✓		.022	0.011	Dalton 50705 H	0.3 gm	.015	<.01 mg/g
0.1		.038		50705 I	0.2 gm	.002	<.01 mg/g
0.2		.059		50705 J	0.3 gm	.006	<.01 mg/g
0.5		.118		50705 K	0.2 gm	.008	<.01 mg/g
50786 F ✓		.016	<.005	50705 L	0.3 gm	.005	<.01 mg/g
0.1		.038		50705 M	0.4 gm	.022	<.01 mg/g
0.2		.071		50705 N	0.3 gm	.008	<.01 mg/g
0.5		.179		50705 O	0.2 gm	.008	<.01 mg/g
50743	100.	.009	0.0054	50705 H dup	0.2 gm	.009	<.01 mg/g
50743		.013	.0067	50705 H dup spk (0.1)	0.3 gm	.035	<.01 mg/g
50817 ✓		.000	<.005	(ilk spk)		.024	<.01 mg/g
50819 ✓		.014	.0046				
50820 ✓	✓	.011	.0058				
ilk spk (0.1)		.023	.0115/115				
Bin 50705 C	0.5 ml	.052	0.79 spk				
0.1		.068					

"A" Channel

A. Precision Data

Mercury Analysis 5/14/85 117

Sample and Number	Amount in Sample (A)	QC (B)	% CE = (A-B)/(A+B) x 100
1) 50705-B	<0.0002 µg/ml	<0.0002 µg/ml	
2) 50705-H	<0.25 µg/gm	10.25 µg/gm	
3) EPA WS-2	0.0016 µg/ml	0.0017 µg/ml	
4) EPA WP-2	0.0083 µg/ml	0.0082 µg/ml	

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1) 50705-C	0.010 µg/ml	<0.0002	0.010	0.010	100%
2) 50739-B	0.0014 µg/ml	<0.0005	0.0011	0.0011	110%
3) 50770-H	0.0105 µg/ml	<0.0005	0.0100	0.0105	105%
4) 50705-H	0.0106, digest	<0.001	0.010	0.0106	106%

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1) WS 2	0.0018	0.00165	92%	
2) WP 2	0.0087	0.00815	95%	
3)				
4)				

Statistics from AAS Program 42

"B" Channel

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% CE = (A-B)/(A+B) x 100
1)			
2)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

SECTION IV
SUBPART D-16

RAW DATA FOR:

NICKEL

METAL Ni DATE 5/14/85 ANALYST JB REVIEWER MP

INSTRUMENT (AA) VARIAN 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
 current _____ a SLIT _____ nm
 D_2 _____ INTEG _____ sec

FLAME GAS AIR/ACET HYDRIDE ACID REDUC _____

AUTO PROGRAM

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	.100	.500	1.000	2.500	5.000
	ABSORBANCE	.010	.054	.116	.289	.539

EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
<u>DOC</u>	.104	.095			91%
	.207	.205			99%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC UG/ML	D.F.	FINAL CG/ML	F.V. ml.	I.V. ml or gm	liquid UG/ML	solids UG/GM
DIG BCK 5/8	.000			100ml	100ml	<0.04	
BK 3PK	.422		106% REC.				
50705-A	.020		<0.04			<0.04	
50705-A REP	.000		<0.04			<0.04	
50705-A ²⁵ SPK	.252		97% REC.				
50705-B	.000		<0.04			<0.04	
-B SPK	.431		108% REC.			<0.04	
-C	.010		<0.04			<0.04	
-D	.010		<0.04			<0.04	
-E	.000		<0.04			<0.04	
-F	.000		<0.04			<0.04	
-G	.009		<0.04			<0.04	
BLK, SOIL	.000						
BLK, SPK 4	.399		100% REC.				
50705-H	.090				1.02 gm		1.02 gm
50705-H REP	.108				1.01 gm		
50705-H SPK	.469		87% REC.		1.02 gm		
50705-I	.072		.072		1.01 gm		7.1
50705-J	.018		.018		1.02 gm		<4
50705-K	.045		.045		1.02 gm		4.4
50705-L	.090		.090		1.03 gm		8.7
50705-M	.045		.045		1.01 gm		4.4
50705-N	.027		.027		1.02 gm		<4
50705-O	.054		.054		1.00 gm		5.4

A" Channel

NICKEL
5/14/85
JB

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
1) 50705-A	< 0.040	< 0.040	
2) 50705-H DIGEST	0.090	0.108	
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) 50705-A	.252	.090	.250	.242	97%
2) 50705-B	.431	.100	.400	.431	108%
3) 50705-H	.469	.100	.400	.300	87%
4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1)	.104	.099	95%	
2)	.207	.229	111%	
3)	.104	.090	86%	
4)	.207	.203	98%	

Statistics from AAS Program 42

B" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 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)					
2)					
3)					
4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE

DATE: 5/14/85

BATCH: Co and Ni 5/8 - 5/13; Ag

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	RESLOPE FACTOR
BLANK	0.000	75.0%	0.004	0.000 0.005 0.007	1.000
STANDARD 1	0.100	12.5%	0.008	0.000 0.010 0.007	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE

DATE: 5/14/85

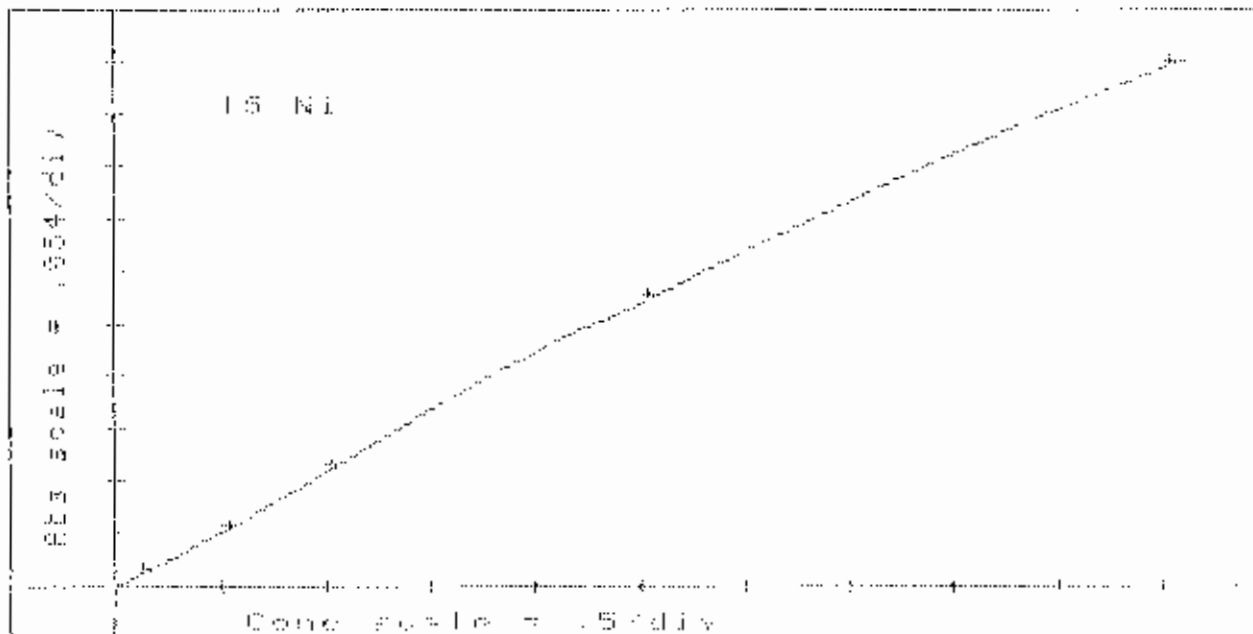
BATCH: Co and Ni 5/8 - 5/13; Ag

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

AUTO-PROGRAM 15 Ni

MFP 5/16/85

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.002 0.001-0.003	1.000
STANDARD 1	0.100	30.0%	0.010	0.007 0.014 0.010	1.000
STANDARD 2	0.500	7.4%	0.051	0.060 0.051 0.037	1.000
STANDARD 3	1.000	4.3%	0.116	0.118 0.120 0.110	1.000
STANDARD 4	2.500	1.7%	0.289	0.286 0.296 0.287	1.000
STANDARD 5	5.000	0.2%	0.531	0.531 0.533 0.531	1.000



(.104/.170)	0.095	25.6%	0.008	0.008	0.011	0.011	1.000
2(.207/.339)	0.205	9.5%	0.021	0.020	0.024	0.020	1.000
BLK C1 N1, Ca	0.205	14.3%	0.021	0.018	0.024	0.021	1.000
" C2 "	0.214	13.5%	0.027	0.025	0.019	0.023	1.000
" C3 "	0.233	20.8%	0.024	0.030	0.025	0.019	1.000
" C4 "	0.214	9.1%	0.022	0.020	0.022	0.025	1.000
" C5 "	0.195	10.0%	0.020	0.020	0.023	0.017	1.000
" C6 "	0.224	8.7%	0.023	0.021	0.024	0.025	1.000
" C7 "	0.214	4.5%	0.022	0.023	0.023	0.020	1.000
BLK 5/8	0.000	100.0%	-0.002	-0.001	-0.001	-0.005	1.000
BLK SPK	0.422	6.7%	0.045	0.042	0.046	0.049	1.000
50705-A	0.020	100.0%	0.002	0.002	0.001	0.005	1.000
" -A (OC)	0.000	0.0%	-0.001	-0.001	-0.001	-0.001	1.000
" -A'	0.252	7.7%	0.025	0.023	0.027	0.028	1.000
" -B	0.000	0.0%	0.000	0.001	0.000	0.000	1.000
" -B (SPK)	0.431	2.2%	0.046	0.040	0.046	0.046	1.000
" -C	0.010	100.0%	0.001	0.001	0.001	0.003	1.000
" -D	0.010	200.0%	0.001	0.001	-0.001	0.003	1.000
" -E	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
" -F	0.000	0.0%	0.000	0.000	-0.003	0.002	1.000
BLANK	0.000	100.0%	-0.001	-0.003	0.000	0.000	1.000
RESLOPE	0.550	3.3%	0.060	0.062	0.060	0.058	.907
(.104/.170)	0.099	27.3%	0.011	0.011	0.000	0.014	.909
2(.207/.339)	0.229	11.5%	0.024	0.024	0.030	0.026	.909
50705-B	0.009	100.0%	0.001	0.002	0.002	0.001	.909
BLK soils	0.000	0.0%	0.000	0.000	0.000	-0.002	.909
BLK SPK	0.399	0.0%	0.047	0.047	0.047	0.048	.909
EPA0760, 1.01	0.195	9.1%	0.022	0.023	0.022	0.021	.909
50705-H	0.090	22.2%	0.090	0.011	0.010	0.006	.909
" -H (OC)	0.408	57.1%	0.092	0.012	0.005	0.005	.909
" -H (SPK)	0.469	1.9%	0.056	0.053	0.058	0.055	.909
" -I	0.072	25.0%	0.008	0.010	0.006	0.000	.909
" -J	0.018	300.0%	0.002	0.009	-0.004	0.002	.909
" -K	0.045	40.0%	0.005	0.004	0.003	0.000	.909
" -L	0.090	40.0%	0.010	0.010	0.015	0.006	.909
" -M	0.045	20.0%	0.005	0.005	0.007	0.005	.909
" -N	0.027	33.3%	0.003	0.003	0.002	0.004	.909
" -O	0.054	50.0%	0.006	0.010	0.007	0.003	.909
NFur, BLK	0.000	0.0%	0.000	0.000	0.001	0.000	.909
433B	0.027	66.7%	0.003	0.005	0.004	0.001	.909
" (OC)	0.009	200.0%	0.001	0.003	-0.001	0.003	.909
" (.25)	0.287	3.0%	0.033	0.033	0.032	0.032	.909
BLANK	0.000	0.0%	0.000	-0.002	0.001	0.000	.909
RESLOPE	0.550	5.0%	0.060	0.060	0.057	0.064	.909
(.104/.170)	0.099	10.0%	0.010	0.010	0.011	0.011	.909
2(.207/.339)	0.203	8.7%	0.023	0.022	0.021	0.026	.909
BLK 5/8	0.000	0.0%	0.000	0.000	0.002	0.000	.909
BLK SPK	0.399	10.6%	0.047	0.049	0.042	0.052	.909
50739-A	0.051	0.0%	0.006	0.007	0.006	0.006	.909
" -B	0.018	100.0%	0.002	0.003	0.000	0.001	.909
" -B (OC)	0.009	100.0%	0.001	-0.001	0.002	0.002	.909
" -B (.25)	0.295	2.5%	0.034	0.035	0.033	0.034	.909
" -B (SPK)	0.451	1.9%	0.054	0.056	0.055	0.053	.909
" -C	0.000	0.0%	0.000	-0.003	0.006	-0.001	.909
" -D	0.018	200.0%	0.002	0.004	-0.002	0.006	.909
" -E	0.036	25.0%	0.004	0.004	0.003	0.005	.909
" -F	0.034	53.3%	0.006	0.006	0.008	0.004	.909
" -G	0.018	200.0%	0.002	0.005	0.004	-0.003	.909
BLK 5/13	0.000	0.0%	0.000	0.002	-0.004	0.000	.909
BLK SPK	0.413	2.0%	0.049	0.048	0.050	0.050	.909
50758-A	0.766	4.2%	0.096	0.093	0.101	0.095	.909
" -B soil	0.553	4.5%	0.067	0.066	0.066	0.071	.909
50759-A	0.672	4.2%	0.083	0.085	0.078	0.087	.909
" -B soil	0.545	1.0%	0.045	0.044	0.043	0.050	.909

GENERAL TESTERS CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

Method 8000 - 8000-127-03
 CHEMICALS & SUPPLIES JOHN BRUNING, INC.
 1250 FIVE 5/14/85
 LANSING, MI 48106-1270 Phone: Ag

MRP 5/10/85

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

SOLUTION	Ni mg/L	Cu mg/L	
(.1047, 170)	0.095 91%	0.175 103%	
2(.2077, 339)	0.200 99%	0.321 95%	
10L Cl Ni, Cu	0.208	0.116	
" -A	0.214	0.109	
" -B	0.235	0.106	
" -C	0.714 2.04	0.112	X=108 ✓
" -D	0.196	0.103	
" -E	0.235 0.012	0.112	σ _{n-1} = 0.023
" -F	0.214	0.103	
BLK 5/8	0.000 <.04	0.017	<.02
BLK 5PK	0.412 100%	0.257	98%
50705-A	0.070 <.04	0.017	<.02
" -A(100)	0.000 <.04	0.012	<.02
" -B(1.25)	0.252 97%	0.244	93%
" -B	0.000 <.04	0.012	<.02
" -C(3F10)	0.431 100%	0.257	91%
" -C	0.010 <.04	0.012	<.02
" -D	0.010 <.04	0.012	<.02
" -E	0.000 <.04	0.018	<.02
" -F	0.000 <.04	0.012	<.02
(.1047, 170)	0.099 95%	0.167	98%
2(.2077, 339)	0.207 101%	0.316	93%
10705-C	0.009 <.04	0.000	<.02
BLK 5011s	0.000 <.04	0.000	<.02
BLK 5PK	0.759 100%	0.251	100%
1760760, 1.01	0.190 101%	0.192 95%	
50705-H	0.070 11 1/2	0.072	9.4 1/2
" -H(100)	0.103 8.8	0.101	
" -H(5PK)	0.103 8.2	0.303	96%
" -I	0.072 7.1 1/2	0.101	7.5 1/2
" -J	0.010 <4"	0.076	7.4 "
" -K	0.045 7.7 "	0.077	5.6 "
" -L	0.039 8.7 "	0.141	14 "
" -M	0.042 4.4 "	0.102	10 "
" -N	0.077 <4"	0.070	6.9 "
" -O	0.054 5.4 "	0.083	8.3 "
HEC-1 BLK	0.000 <.04	0.000	<.02
4338	0.027 <.04	0.000	8.0 "
" -A(100)	0.000 <.04	0.068	6.8 "
" -A(50)	0.287 100%	0.107	10.2%
(.1047, 170)	0.100 86%	0.145	97%
2(.2077, 339)	0.207 98%	0.325	96%
BLK 5/9	0.000 <.04	0.000	<.02
BLK 5PK	0.759 100%	0.261	101%
50739-A	0.000 <.04	0.012	<.02
" -B	0.010 <.04	0.012	<.02
" -B(100)	0.009 <.04	0.019	0.019
" -B(1.25)	0.285 103%	0.274	104%
" -B(100)	0.454 10%	0.767	89%
" -C	0.000 <.04	0.019	0.019
" -D	0.010 <.04	0.012	<.02
" -E	0.073 <.04	0.012	<.02
" -F	0.004 0.054	0.038	0.038
" -G	0.012 <.04	0.012	<.02
BLK 5/13	0.000 <.04	0.000	<.02
BLK 5PK	0.415 104%	0.251	99%
50759-A	0.766 0.77	0.332	0.33
" -B sol	0.533 0.55	0.190	0.19
50759-B	0.672 0.67	0.501	0.50
" -B sol	0.517 0.51	0.344	0.34
(.1047, 170)	0.107 101	0.154	98%
50775-A	0.702 29.0	0.645	64.0 1/2
50775-B	0.203 0.20	0.017	<.02
50775-C	0.173 0.17	0.012	<.02
50775-H	< below		
50782-A6	0.341 0.34		
50782-N1	1.002 1.00		

QC rec'd

5/13/85

7.8 1/2

335
 1096
 221

SECTION IV
SUBPART D-17

RAW DATA FOR:

POTASSIUM.

METALS ANALYSIS DATA SHEET

REV 4/85

METAL K DATE 6/6/85 ANALYST JB REVIEWER JMP

INSTRUMENT (AA) 1L-751
λ 766.5 nm VOLTAGE 1000 V
 current 10 mA SLIT 1.0 nm
D₂ OFF INTEG 4 sec

ANALYSIS METHOD
 FLAME HYDRIDE
 GAS A.21 ACET. ACID
 REDUC

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	<u>5.00</u>	<u>10.00</u>	<u>2.50</u>	<u>0.50</u>	<u>0.25</u>
	ABSORBANCE	<u>0.253</u>	<u>0.499</u>	<u>0.144</u>	<u>0.028</u>	<u>0.015</u>
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	liquid UG/ml	solids UG/gm
BLANK 5/15	<u>4.25</u>		<u>4.25</u>	<u>100</u>	<u>100 ml</u>	<u>4.25</u>	
BLANK SPIKE	<u>1.77</u>		<u>1.77</u>				
50705-A	<u>1.60</u>	<u>10</u>	<u>16</u>			<u>16.0</u>	
-A dup	<u>1.60</u>	<u>10</u>	<u>16</u>			<u>16.0</u>	
-B	<u>1.67</u>	<u>10</u>	<u>16.7</u>			<u>16.7</u>	
-B SPK	<u>1.89</u>	<u>10</u>	<u>110% REC</u>				
-C	<u>3.0</u>		<u>3.0</u>			<u>3.0</u>	
-d	<u>0.85</u>		<u>0.85</u>			<u>0.85</u>	
-E	<u>1.8</u>		<u>1.8</u>			<u>1.8</u>	
-F	<u>7.0</u>		<u>7.0</u>			<u>7.0</u>	
-G	<u>6.0</u>		<u>6.0</u>			<u>6.0</u>	
BLANK (Solids)	<u>4.25</u>		<u>4.25</u>			<u>4.25</u>	
BLK - Spike	<u>1.60</u>		<u>80% REC 1.60</u>				
EPA 0260	<u>7.1</u>		<u>7.1</u>		<u>0.99 gm</u>		
50705-H	<u>4.5</u>		<u>4.5</u>	<u>100 ml</u>	<u>1.00 gm</u>		<u>450</u>
-H dup	<u>6.2</u>		<u>6.2</u>		<u>1.03</u>		<u>600</u>
-H Spk	<u>8.17</u>		<u>98% REC</u>		<u>0.99</u>		
-I	<u>3.2</u>		<u>3.2</u>		<u>1.05</u>		<u>300</u>
-J	<u>3.0</u>		<u>3.0</u>		<u>1.04</u>		<u>290</u>
-K	<u>2.7</u>		<u>2.7</u>		<u>1.02</u>		<u>260</u>
-L	<u>5.2</u>		<u>5.2</u>		<u>1.03</u>		<u>500</u>
-M	<u>3.8</u>		<u>3.8</u>		<u>1.00</u>		<u>380</u>
-N	<u>2.2</u>		<u>2.2</u>		<u>1.03</u>		<u>210</u>
-O	<u>3.4</u>		<u>3.4</u>		<u>1.03</u>		<u>330</u>
BLANK 5/17	<u>4.25</u>		<u>4.25</u>		<u>100 ml</u>		

A" Channel

K

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	RSE = $(A-B)/(A+B) \times 100$
(1) 50705-A	16	16	0
(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) 50705-A Dalton	1.91	1.58	0.40	0.33	82
(2) " -B	2.03	1.66	0.40	0.37	92
(3) " H160	6.85	6.22	0.60	0.63	105
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) TMM# 2	1.5	1.52 (1.1-1.7)	101	1.67
(2) M-1	9.8	10.0 (7.7-10.7)	102	1.46
(3) M-2	2.1	2.07 (1.8-2.4)	98	2.01
(4)				

Statistics from AAS Program 42

B" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	RSE = $(A-B)/(A+B) \times 100$
(1)			
(2)			
(3)			
(4)			

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

Sample and Number	Amount in Sample	Amount Added	Net Rec.	% Rec.
	M9 Potassium	mg/l		
	H04210 A	R50839		
(4)				

C. EPA Reference Standards

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

METALS ANALYSIS DATA SHEET

MFP 6/2/85
 DATE 6/2/85
 ANALYST JE

"B" Channel

~~"B" Channel~~

Metal K

Metal _____

Lamp Type Air/Acet Wave Length 766.5nm

Flame Type _____ Wave Length _____

Lamp Current 10 D₂ Background OFF

Lamp Current _____ D₂ Background _____

Voltage 1000 Slit Width 1.0

Voltage _____ Slit Width _____

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion	Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
#1		5.00			STD #1				
#2	0.499	10.00			STD #2				
#3		2.50			STD #3				
#4		0.50			STD #4				
#5		0.25			STD #5				
Samples					Samples				
1	BLK S/5	4.25			#1				
2	BLK SPR	1.77		88%	#2				
3	50705-A Calton	1.6	1/10	16	#3				
4	A(GO)	1.6	1/10	16	#4				
5	B	1.67	1/10	16.7	#5				
6	B(SPR)	1.87	1/10	18.7	#6				
7	C	3.0			#7				
8	D	0.85			#8				
9	E	1.8 (1.81)			#9				
10	F	7.0			#10				
11	G	6.0			#11				
12	BLK soils	4.25			#12				
13	BLK SPR	1.60			#13				
14	EPA 0760	7.1			#14				
15	50705-H Calton	4.5			#15				
16	H(GO)	6.2			#16				
17	H(SPR)	3.17		48%	#17				
18	I	3.2			#18				
19	J	3.0			#19				
20	K	2.7			#20				
21	L	5.2			#21				
22	M	3.8			#22				
23	N	2.2			#23				
24	O	3.4			#24				
25	BLK S/7	4.25			#25				
26	BLK SPR	2.15		102%	#26				
27	50839 Genesis	3.6			#27				
28	BLK S/3	4.25			#28				
29	BLK SPR	2.15		102%	#29				
30	4210-A G-M	1.0			#30				
31	Y H(SPR)	3.17		110%	#31				
32					#32				
33					#33				
34					#34				

All Results in mg/l unless specified otherwise.

SECTION IV
SUBPART D-18

RAW DATA FOR:

SELENIUM

SUMMARY 50705
METALS ANALYSIS DATA SHEET

REV 4/85

METAL Se DATE 5/16/85 ANALYST DD REVIEWER MP

INSTRUMENT (AA) 1L 751
 λ 196.0 nm VOLTAGE 620 V
 current 18 ma SLIT 1 nm
 D₂ on INTEG sec

ANALYSIS METHOD
 FLASK 1 HYDRIDE
 ACID HCl
 REDUC LA BORON/70M

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, US/ML	<u>.020</u>	<u>.030</u>	<u>.010</u>	<u>.005</u>	<u>.002</u>
	ABSORBANCE	<u>.444</u>	<u>.597</u>	<u>.597</u>	<u>.131</u>	<u>.052</u>

EPA CHECK KNOWN MEAN SD RSD %RECOVERED

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC ug/ml ppb	D.F.	FINAL ug/ml ppb	F.V. ml	I.V. ml of gm	liquid ug/ml	solids ug/gm
EPA WS # 2	<u>5.68</u>		<u>95% REC</u>				
DIGEST BLK 5/9	<u>< 2</u>			<u>50</u>	<u>50</u>	<u>< 0.002</u>	<u>< 0.002</u>
BLK SAK (T10)	<u>8.82</u>		<u>98% REC</u>	<u>50</u>	<u>50</u>		
50705-A	<u>< 2</u>		<u>< 2</u>	<u>50</u>	<u>50 ml</u>	<u>< 0.002</u>	
50705-A REP	<u>< 2</u>		<u>< 2</u>	<u>50</u>	<u>50 ml</u>	<u>< 0.002</u>	
50705-B	<u>< 2</u>		<u>< 2</u>	<u>50</u>	<u>50 ml</u>	<u>< 0.002</u>	
50705-B +10	<u>10.1</u>	<u>101%</u>	<u>99% REC</u>	<u>50</u>	<u>50 ml</u>		
50705-C	<u>< 2</u>		<u>< 2</u>	<u>50</u>	<u>50 ml</u>	<u>< 0.002</u>	
50705-D	<u>< 2</u>		<u>< 2</u>	<u>50</u>	<u>50 ml</u>	<u>< 0.002</u>	
50705-E	<u>< 2</u>		<u>< 2</u>	<u>50</u>	<u>50 ml</u>	<u>< 0.002</u>	
50705-F	<u>< 2</u>		<u>< 2</u>	<u>50</u>	<u>50 ml</u>	<u>< 0.002</u>	
50705-G	<u>< 2</u>		<u>< 2</u>	<u>50</u>	<u>50 ml</u>	<u>< 0.002</u>	

1" Channel

A. Precision Data

Selenium QC - Sodium Borohydride, 5/16/85, DD

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
(1) 50705-A	4.2 ug/l	4.2 ug/l	
(2) 50744-K	4.2 ug/l	4.2 ug/l	
(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) DIGEST BLK 5/9	8.82 ug/l	4.2	10	8.8	88.9%
(2) 50705-B	10.1 ug/l	4.2	10	10.1	101.7%
(3) 50744-L	10.0 ug/l	4.2	10	11.0	110.0%
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1) WS 2		5.68	95%	
(2) WS 2		6.09	102%	
(3)				
(4)				

Statistics from AAS Program 42

3" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
(1)			
(2)			
(3)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

ARSENIC & SELENIUM ANALYSIS DATA SHEET

MSD 5/1/65

Lamp Current 18
 Lamp Voltage 620
 D₂ Background 0.2

Date 5/1/65
 Analyst JAC
 Wave Length 193.7

SODIUM BOROHYDRIDE PROCEDURE

STANDARD CALIBRATION

#	Conc.	Abs. 1	Abs. 2	Abs. 3	Avg. Abs.	Actual Conc.
Blank						
1	0.020					
2	0.070	0.557				
3	0.110					
4	0.005					
5	0.002					

Sample	Conc. mg/l	Dil.	Final Conc.	Amt. Spike	Total Rec.	Net. Rec.	% Recovery
Blank 5/5	< 0.002						
Blank 5/2	8.82		8.82				
Blank 5/2	8.68		8.68				
Blank 5/3	< 0.002	1/10	< 0.02				
Blank 5/10	0.0077	1/10	0.077				
Blank 5/25-A	< 0.002		< 0.002				
Blank 5/25-B	< 0.002		< 0.002	0.010	0.00936	0.00936	94
Blank 5/25-C	< 0.002		< 0.002				
Blank 5/25-D	0.0101		101%				
Blank 5/25-E	< 0.002		< 0.002				
Blank 5/25-F	< 0.002		< 0.002				
Blank 5/25-G	< 0.002		< 0.002				
Blank 5/25-H	< 0.002		< 0.002				
Blank 5/25-I	< 0.002		< 0.002				
Blank 5/25-J	< 0.002		< 0.002				
Blank 5/25-K	< 0.002		< 0.002				
Blank 5/25-L	< 0.002		< 0.002	0.010	0.0101	0.0101	101%
Blank 5/25-M	< 0.002		< 0.002				
Blank 5/25-N	9.65		9.65				
Blank 5/25-O	10.01		10.01				
Blank 5/25-P	< 0.002		< 0.002				
Blank 5/25-Q	11.070		11.070				
Blank 5/25-R	< 0.002		< 0.002				
Blank 5/25-S	< 0.002		< 0.002				
Blank 5/25-T	< 0.002		< 0.002				
Blank 5/25-U	< 0.002		< 0.002				

SUMMARY

METALS ANALYSIS DATA SHEET

REV 4/85

METAL Se DATE 5/25/85 ANALYST J.B REVIEWER MP

INSTRUMENT (AA) 196.0 1L-751
 λ 217.0 nm VOLTAGE 620 V
 current 18 mA SLIT 1 mm
 D_2 ON INTEG 4 sec

ANALYSIS METHOD
 FLAME 1 HYDRIDE
 ACID HCl
 REDUC SO₂ BORONIC ACID

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	<u>0.020</u>	<u>0.030</u>	<u>0.010</u>	<u>0.005</u>	<u>0.002</u>
	ABSORBANCE	<u>0.446</u>	<u>0.585</u>	<u>0.246</u>	<u>0.131</u>	<u>0.055</u>
EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED	

ANALYSIS

INSTRUMENT ANALYSIS			DIGESTION		FINAL CONCENTRATION		
SAMPLE#	CONC. <u>ug/ml</u> <u>ppb</u>	D.F.	FINAL <u>ug/ml</u> <u>ppb</u>	F.V. ml.	I.V. ml or gm	liquid <u>ug/ml</u>	solids <u>ug/gm</u>
EPA 13	<u>7.02</u>		<u>92% REC</u>	<u>100ml</u>	<u>100ml</u>	<u>0.007</u>	
EPA 2	<u>6.14</u>		<u>102% REC</u>		<u>100ml</u>	<u>0.006</u>	
PIG BLK 5/16	<u><0.002</u>				<u>100ml</u>	<u><0.002</u>	
BLK SPK 5/16	<u>10.2</u>		<u>102% REC</u>		<u>100ml</u>	<u>0.010</u>	
50705-H	<u>3.63</u>				<u>1.02 gm</u>		<u>0.356</u>
50705-H REP	<u>4.03</u>				<u>1.01 gm</u>		<u>0.399</u>
50705-H + 10	<u>14.21</u>		<u>102% REC</u>		<u>1.03 gm</u>		
50705-H + 10	<u>13.65</u>		<u>98% REC</u>		<u>1.03 gm</u>		
50705-I	<u>1.91</u>		<u>1.91</u>		<u>1.04 gm</u>		<u>0.184</u>
50705-J	<u>2.42</u>		<u>2.42</u>		<u>1.00 gm</u>		<u>0.242</u>
50705-K	<u><2</u>		<u><2</u>		<u>1.03 gm</u>		<u><0.194</u>
50705-L	<u><2</u>		<u><2</u>		<u>1.02 gm</u>		<u><0.196</u>
50705-M	<u>2.24</u>		<u>2.24</u>		<u>1.01 gm</u>		<u>0.222</u>
50705-N	<u><2</u>		<u><2</u>		<u>1.04 gm</u>		<u><0.192</u>
50705-O	<u>3.52</u>		<u>3.52</u>	<u>✓</u>	<u>1.02 gm</u>		<u>0.345</u>

A" Channel

1. Precision Data

Selenium - Peroxydisulfate Analysis, 5/28/85

Sample and Number	Amount in Sample (A)	QC (B)	$\% RE = \frac{A-B}{A+B} \times 200$
1) 50705-H	3.63 <i>ug/l, digest</i>	4.03 <i>ug/l, digest</i>	
2)			
3)			
4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1) 50705-H	14.2 <i>ug/l dig</i>	4.01	10.0	10.2	102%
2) 50705-H REP	13.65 <i>ug/l dig</i>	3.83	10.0	9.82	98%
3)					
4)					

3. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1) 13	7.6 <i>ug/l</i>	7.02	92%	
2) 2	6.0 <i>ug/l</i>	6.14	102%	
3)				
4)				

Statistics from AAS Program 42

B" Channel

1. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	$\% RE = \frac{A-B}{A+B} \times 200$
1)			
2)			
3)			
4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1)					
2)					
3)					
4)					

3. EPA Reference Standards

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

ARSENIC SELENIUM ANALYSIS DATA SHEET

ml 7013/85

Lamp Current 18
 Lamp Voltage 620
 O₂ Background —

Date 5/28/85
 Analyst LB
 Wave Length 249.0 196

Sodium Borohydride Method

Se STANDARD CALIBRATION

Sl. #	Conc.	Abs. 1	Abs. 2	Abs. 3	Avg. Abs.	Actual Conc.
Blank						
1	0.020					
2	0.030	0.585				
3	0.040					
4	0.050					
5	0.070					
2	7.6	$\bar{x} = 7.02$	7.44	7.41		
13	6.0	$\bar{x} = 6.14$	6.27	6.66		

Sample	Conc.	Dil.	Final Conc.	Amt. Spike	Total Rec.	Net. Rec.	% Recovery
A 13 (7.6)	7.02	92%					
SPR 2 (6.0)	6.14	102%					
BLK 5/16	< 2		< .002				
BLK SPK	10.2			10	10.2	10.2	102
0705-A Dalton	3.63		0.36				
H(DC)	4.03						
H(UB)	14.21			10	14.21	10.2	102
H(SPK)	13.65			10	13.65	9.12	98
I	1.91						
J	2.42						
K	< 2						
L	< 2						
M	2.24						
N	< 2						
O	3.52						
BLK 5/20	< 2		< .002				
BLK SPK	9.70			10	9.40	9.40	94
0775-A WMT	< 2		< .002				
B	< 2		< .002				
B(DC)	< 2		< .002				
B(10)	9.73			10	9.73	9.73	97
B(SPK)	9.75			10	9.75	9.75	98
C	< 2		< .002				
D	< 2		< .002				
E	< 2		< .002				
F	< 2		< .002				
G	< 2		< .002				
0786-A Vos	< 2	1/10	< .02				
A'	4.83	1/10		5.0	4.83	4.83	97
B'	< 2	1/10	< .02				
B'	9.50	1/10		10	9.50	9.50	95
C'	< 2	1/10	< .02				
C'	9.70	1/10		10	9.70	9.70	97
D'	< 2	1/10	< .02				
D'	9.86	1/10		10	9.86	9.86	99
E'	< 2	1/10	< .02				
E'	9.40	1/10		10	9.40	9.40	94

*Sediment
Se
Digest book*

ARSENIC & SELENIUM ANALYSIS DATA SHEET

Date 5-8-85
 Analyst 1-73
 Wave Length _____

and _____

STANDARD CALIBRATION

	Conc.	Abs. 1	Abs. 2	Abs. 3	Avg. Abs.	Actual Conc.
1						
2						
3						
4						
5						

Sample	Conc. mg/l	Dil.	Final Conc.	Amt. Spike	Total Rec.	Net Rec.	% Recovery
00786-G VDS	<2	1/10	<.02 ✓				
G	9.75	1/10		10	9.75	9.75	98
H	<2	1/10	<.02 -				
H	10.1	1/10		10	10.1	10.1	101
I	<2	1/10	<.02 -				
I	9.21	1/10		10	9.21	9.21	92
M	<2	1/10	<.02 -				
M	9.88	1/10		10	9.88	9.88	99
K 5/23	<2		<.02				
K SPK	8.79		0.0088	10	8.79	8.79	88
4328-HH HE	<2	1/10	<.02 -	10	10.40	10.40	104%
4361-Bur HS	<2	1/10	<.02 +	10	10.38	10.38	104
CUT "	<2	1/10	<.02 +	10	10.10	10.10	101
362-Par Wick	<2	1/10	<.02 +	10	10.21	10.21	102
-Q	<2	1/10	<.02 -	10	10.03	10.03	100
-R	<2	1/10	<.02 -	10	10.15	10.15	102
-S	<2	1/10	<.02 -	10	10.30	10.30	103
-T	<2	1/10	<.02 +	10	9.89	9.89	99
1776-A	2.1		0.1945				
0805-C BUD	<2	1/10	<1 +	10	9.90	9.90	99
-E "	<2	1/10	<1 +	10	9.97	9.97	100
02817 Genesee	<2		<.002 +				
02819 Medvet	<2		<.002 +				
00320 "	<2		<.002 +				
50823 WM	<2		<.002 +				
" (100)	<2		<.002	10	10.75	10.75	108
02830 Velux	<2		<.002 -				
" (SPK)	10.41		0.0104	10	10.41	10.41	104
02847-A MWA	<2		<.002 -				
B	<2		<.002 -				
C	<2		<.002 -				
C (100)	<2		<.002 -				
C (SPK)	10.49		0.0105	10	10.49	10.49	105
D	<2		<.002 -				
00855 EPA	<2		<.002 -				
00775-H WVA	<2		<.002 -				

SECTION IV
SUBPART D-19

RAW DATA FOR:

SILVER

METALS ANALYSIS DATA SHEET

REV 4/85

METAL Ag DATE 5/7/85 ANALYST JB REVIEWER MP

INSTRUMENT (AA) VARIAN 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
 current _____ a SLIT _____ nm
 D₂ _____ INTEG _____ sec

FLASK ✓ HYDRIC ACID _____
AIR/ACET REDUC _____

SEE AUTO PROGRAM

INITIAL CALIBRATION

STANDARDS:	#1	#2	#3	#4	#5
STOCK					
CONC, UG/ML	.050	.200	.500	1.000	2.000
ABSORBANCE	.011	.043	.107	.211	.413

EPA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED
	.012	.013			108%
	.049	.045			92%

ANALYSIS

SAMPLED	INSTRUMENT ANALYSIS			DIGESTION		FINAL CONCENTRATION	
	CONC. ug/ml	D.F.	FINAL ug/ml	F.V. ml	I.V. ml or gm	liquid ug/ml	solids ug/g
PIG BLK	.000			100 ml	100 ml		
BLK SPIKE	.096						
50705-A	.027		.027			0.027	
50705-B	.027		.027			0.027	
-BREP	.032		.032			0.032	
-B SPK	.122		92% REC				
-B SPK	.079		99% REC				
-C	.046		0.046			0.046	
-D	.013		0.013			0.013	
-E	.004		< 0.010			< 0.010	
-F	.027		0.027			0.027	
-G	.023		0.023			0.023	
BLK SPK .1	.098		98% REC	✓	✓		

" " Channel

Silver
5/7/85
IB

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
1) 50705-B	.027	.027	
2) EPA (.012)	.013	.013	
3) EPA (.068)	.063	.065	

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1) 50705-B	.122	.029	.100	.092	92%
2) 50705-B	.079	.029	.050	.050	100%
3)					

EPA Reference Standards

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

Statistics from AAS Program 42

" " Channel

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN ANALYZER

OPERATOR: JOHN BRUNETTE

DATE: 5/7/85

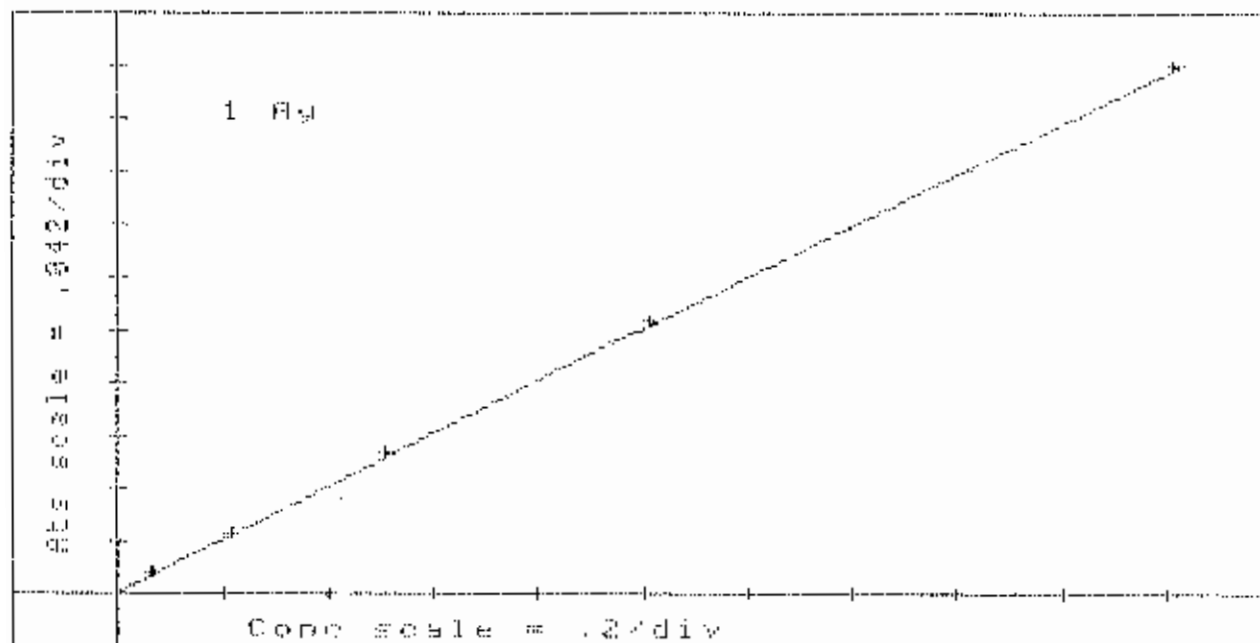
BATCH:

MKP 5/1/85

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

AUTO-PROGRAM 1 Ag

SOLUTION	CONC ppm	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 1	0.050	9.1%	0.011	0.010	0.011	0.012	1.000
STANDARD 2	0.200	0.0%	0.043	0.043	0.043	0.043	1.000
STANDARD 3	0.500	0.9%	0.107	0.106	0.109	0.106	1.000
STANDARD 4	1.000	0.5%	0.211	0.211	0.213	0.211	1.000
STANDARD 5	2.000	0.2%	0.413	0.415	0.413	0.413	1.000



1x10 (.012)	0.013	0.0%	0.003	0.003	0.003	0.003	1.000
2x10 (.049)	0.045	0.0%	0.010	0.010	0.011	0.010	1.000
13x2 (.068)	0.043	0.0%	0.014	0.014	0.014	0.014	1.000
IDL B1 Ag	0.050	0.0%	0.011	0.011	0.011	0.011	1.000
" B2 "	0.050	0.0%	0.011	0.012	0.011	0.011	1.000
" B3 "	0.050	0.0%	0.011	0.011	0.011	0.011	1.000
" B4 "	0.050	0.0%	0.011	0.011	0.011	0.011	1.000
" B5 "	0.050	0.0%	0.011	0.011	0.011	0.011	1.000
" B6 "	0.050	0.0%	0.011	0.011	0.012	0.011	1.000
" B7 "	0.050	0.0%	0.011	0.011	0.011	0.011	1.000
50742A x10	0.031	0.0%	0.007	0.007	0.007	0.007	1.000
" A	0.000	0.0%	0.000	0.001	0.000	0.001	1.000
50742B x10	0.995	0.5%	0.210	0.209	0.212	0.210	1.000
" B	0.100	0.0%	0.022	0.022	0.022	0.022	1.000
50716A EPTX	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
" (.1)	0.091	0.0%	0.020	0.020	0.020	0.020	1.000
50716B EPTX	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
" (.1)	0.086	5.3%	0.019	0.020	0.019	0.020	1.000
BLK? SEP	0.056	2.8%	0.021	0.022	0.020	0.021	1.000

50705-B	0.027	0.0%	0.025	0.028	0.028	0.027	1.025
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
RESLOPE	0.195	0.0%	0.042	0.042	0.043	0.042	1.025
1x10(.012)	0.013	0.0%	0.003	0.003	0.003	0.003	1.025
15x2(.06B)	0.025	0.0%	0.014	0.011	0.014	0.014	1.025
50705-B	0.027	0.0%	0.006	0.006	0.007	0.006	1.025
" -B(02)	0.032	0.0%	0.007	0.007	0.007	0.007	1.025
" -B(.1)	0.122	0.0%	0.076	0.026	0.026	0.027	1.025
" -B(SPK)	0.079	0.0%	0.017	0.017	0.017	0.018	1.025
" -C	0.046	0.0%	0.010	0.010	0.010	0.010	1.025
" -D	0.013	0.0%	0.003	0.003	0.003	0.003	1.025
" -E	0.004	0.0%	0.001	0.001	0.001	0.001	1.025
" -F	0.027	0.0%	0.006	0.006	0.006	0.006	1.025
" -G	0.023	20.0%	0.005	0.006	0.005	0.006	1.025
BLK SPK	0.098	0.0%	0.021	0.021	0.021	0.021	1.025
50720	0.228	0.0%	0.048	0.048	0.048	0.047	1.025
50721	1.351	1.1%	0.271	0.276	0.274	0.260	1.025
50727	5	0.6%	1.183	1.181	1.178	1.192	1.025
50739-A sol	0.000	0.0%	0.000	0.001	0.000	0.001	1.025
" -B "	0.000	0.0%	0.000	0.001	0.000	0.000	1.025
" -C "	0.000	0.0%	0.000	0.001	0.000	0.000	1.025
" -D "	0.000	0.0%	0.000	0.000	0.001	0.000	1.025
" -E "	0.000	0.0%	0.000	0.000	0.000	0.001	1.025
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.025
RESLOPE	0.195	0.0%	0.042	0.045	0.042	0.042	1.025
1x10(.012)	0.009	0.0%	0.002	0.002	0.002	0.002	1.025
2x10(.019)	0.041	11.1%	0.009	0.010	0.009	0.010	1.025
50739 F sol	0.013	0.0%	0.003	0.003	0.003	0.003	1.025
" -G "	0.000	0.0%	0.000	0.000	0.000	0.000	1.025
50739-A	0.000	0.0%	0.000	0.001	0.001	0.000	1.025
" -B "	0.000	0.0%	0.000	0.000	0.001	0.000	1.025
" -B(02)	0.004	0.0%	0.001	0.001	0.001	0.001	1.025
" -B(.2)	0.185	2.6%	0.039	0.040	0.039	0.040	1.025
" -B(SPK)	0.051	0.0%	0.011	0.011	0.012	0.011	1.025
" -C	0.000	0.0%	0.000	0.000	0.000	0.000	1.025
" -D	0.009	0.0%	0.002	0.002	0.002	0.002	1.025
" -E	0.000	0.0%	0.000	0.000	0.000	0.000	1.025
" -F	0.165	2.9%	0.035	0.036	0.036	0.035	1.025
" -G	0.004	100.0%	0.001	0.002	0.002	0.001	1.025
50744-B	0.000	0.0%	0.000	0.000	0.001	0.000	1.025
" -F	0.000	0.0%	0.000	0.000	0.001	0.000	1.025
" -G	0.000	0.0%	0.000	0.001	0.000	0.000	1.025
" -H	0.000	0.0%	0.000	0.001	0.001	0.000	1.025
" -I	0.000	0.0%	0.000	0.000	0.001	0.000	1.025
" -J	0.000	0.0%	0.000	0.000	0.000	0.001	1.025
BLANK	0.000	0.0%	0.000	0.001	0.000	0.001	1.025
RESLOPE	0.195	2.4%	0.042	0.042	0.040	0.044	1.025
2x10(.019)	0.046	11.1%	0.009	0.010	0.010	0.009	1.025
15x2(.06B)	0.060	0.0%	0.013	0.013	0.013	0.013	1.025
50744-K	0.000	0.0%	0.000	0.000	0.000	0.000	1.025
" -L	0.000	0.0%	0.000	0.000	0.000	0.000	1.025
" -M	0.000	0.0%	0.000	0.001	0.000	0.000	1.025
" -N	0.000	0.0%	0.000	0.001	0.000	0.000	1.025
Doug's wawa	0.004	0.0%	0.001	0.001	0.001	0.001	1.025

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975

OPERATOR: JOHN BRUNETTE

DATE: 5/7/85

BATCH:

WEIGHT AND PER DILUTION CORRECTIONS HAS BEEN APPLIED TO RESULTS WITH *

Ag

mkp 5/14/85

1x10 (.012)	0.013
2x10 (.049)	0.045
13x2 (.068)	0.063
1BL B1 Ag	0.050
" B2 "	0.050
" B3 "	0.050
" B4 "	0.050
" B5 "	0.050
" B6 "	0.050
" B7 "	0.050

103%
92%
93%

$\bar{x} = 0.05$
 $\sigma_{n-1} = 0.00$

QC recorded

5/14/85

50742A #10	0.031	0.031
" A	0.000	<.01
50742B #10	0.995	6.00
" B	0.100	0.10

50716A EPTX 1/4	0.000	<.01
" (.1)	0.091	
50716B EPTX 1/4	0.000	<.01
" (.1)	0.056	

ELK SPK	0.026	96%
50705-A	0.027	0.027
1x10 (.012)	0.013	108%
13x2 (.068)	0.065	96%
50705-B	0.027	0.027
" -B (DC)	0.032	0.032
" -B (.1)	0.122	92%
" -B (SPK)	0.079	99%
" -C	0.046	0.046
" -D	0.013	0.013
" -E	0.004	<.01
" -F	0.027	0.027
" -G	0.023	0.023
BLK SPK	0.098	98%
50720	0.228	0.23
50721	1.351	1.4

50727	> next run	
50739-A sol	0.000	<.01
" -B "	0.000	<.01
" -C "	0.000	<.01
" -D "	0.000	<.01
" -E "	0.000	<.01

1x10 (.012)	0.009	75%
2x10 (.049)	0.041	84%
50739-F sol	0.013	0.013
" -B "	0.000	<.01
50739-A	0.000	<.01
" -B "	0.000	<.01
" -B (DC)	0.001	<.01
" -B (.2)	0.185	90%
" -B (SPK)	0.051	94%
" -C	0.000	<.01
" -D	0.009	<.01
" -E	0.000	<.01
" -F	0.155	0.16
" -B	0.001	<.01
50744-D	0.000	<.01
" -F	0.000	<.01
" -G	0.000	<.01
" -H	0.000	<.01
" -I	0.000	<.01
" -J	0.000	<.01

2x10 (.049)	0.046	94%
13x2 (.068)	0.060	88%
50744-I	0.000	<.01
" -L	0.000	<.01
" -M	0.000	<.01

Silver-01
EP Test-V8
Soluble-03

0.029 avg

Doug's wave 0.004 <.01

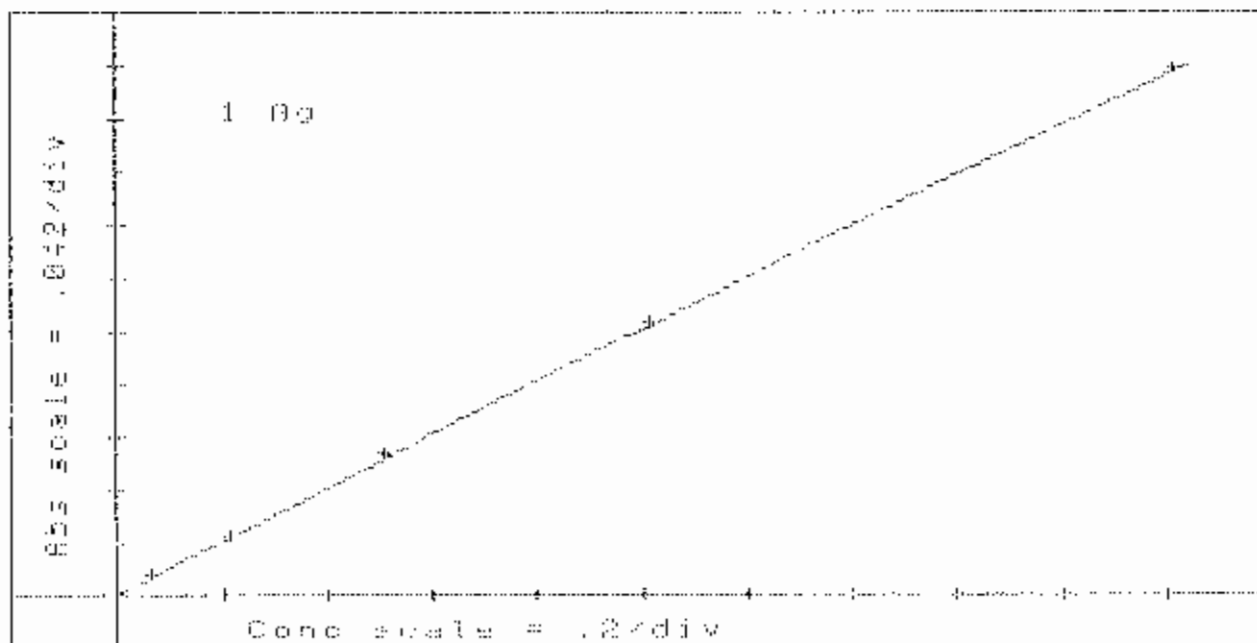
GENSAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-775
 OPERATOR: JOHN BRUNETTE
 DATE: 5/7/05
 BATCH:

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

AUTO-PROGRAM 1 Ag

SOLUTION	CONC ppm	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 1	0.050	0.0%	0.011	0.011	0.011	0.012	1.000
STANDARD 2	0.200	0.0%	0.043	0.043	0.044	0.043	1.000
STANDARD 3	0.500	1.9%	0.107	0.104	0.109	0.108	1.000
STANDARD 4	1.000	2.8%	0.212	0.206	0.211	0.219	1.000
STANDARD 5	2.000	1.2%	0.412	0.408	0.417	0.414	1.000



1x10 (.012)	0.009	0.0%	0.002	0.002	0.002	0.002	1.000
2x10 (.049)	0.040	11.1%	0.009	0.009	0.010	0.010	1.000
13x2 (.068)	0.039	0.0%	0.013	0.013	0.013	0.013	1.000
50727 1/10	0.812	0.0%	0.173	0.173	0.174	0.173	1.000
50750-A	0.335	1.4%	0.072	0.071	0.072	0.073	1.000
" -B 1/10	0.040	0.0%	0.009	0.009	0.010	0.009	1.000
" -C	0.086	0.6%	0.019	0.019	0.020	0.019	1.000
" -D	0.100	0.0%	0.022	0.022	0.023	0.022	1.000
" -E 1/10	0.000	0.0%	0.000	0.000	0.000	0.001	1.000
" -F	0.009	50.0%	0.002	0.002	0.003	0.003	1.000
" -G	0.054	8.3%	0.012	0.011	0.012	0.013	1.000
" -H	0.019	0.0%	0.004	0.004	0.004	0.004	1.000
" -I	0.054	0.0%	0.012	0.012	0.012	0.012	1.000
" -J	0.119	3.8%	0.026	0.026	0.027	0.027	1.000

" -L	0.004	0.0%	0.001	0.001	0.001	0.001	1.000
" -M	0.013	0.0%	0.003	0.003	0.003	0.003	1.000
" -N	0.013	0.0%	0.003	0.004	0.003	0.003	1.000
" -O	0.232	0.0%	0.050	0.051	0.050	0.050	1.000
" -P	0.170	2.4%	0.041	0.042	0.042	0.041	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
RESLOPE	0.200	0.0%	0.043	0.043	0.043	0.043	1.000
1x10 (.012)	0.009	50.0%	0.002	0.003	0.002	0.001	1.000
13x2 (.068)	0.057	0.0%	0.013	0.014	0.013	0.013	1.000
50750-D	0.068	6.7%	0.015	0.015	0.016	0.016	1.000
" -R 1/10	0.009	50.0%	0.002	0.003	0.003	0.003	1.000
" -R(00)	0.009	0.0%	0.002	0.002	0.002	0.003	1.000
" -R(.1)	0.096	0.0%	0.021	0.021	0.022	0.021	1.000
" -R(SPK)	0.013	0.0%	0.003	0.003	0.003	0.004	1.000
"-R(spk)	0.180	0.0%	0.039	0.039	0.039	0.039	1.000
" -S	0.284	1.6%	0.061	0.060	0.062	0.062	1.000
" -T	0.377	1.2%	0.061	0.082	0.081	0.082	1.000
" -U	0.040	0.0%	0.009	0.009	0.009	0.009	1.000
" -V	0.481	1.0%	0.103	0.104	0.102	0.103	1.000
" -W 1/10	0.040	0.0%	0.009	0.009	0.009	0.009	1.000
" -X	0.072	6.3%	0.016	0.017	0.017	0.016	1.000
" -Y 1/10	0.013	0.0%	0.003	0.003	0.004	0.003	1.000
BLK SPK	0.071	5.0%	0.020	0.021	0.020	0.021	1.000
50751-A	0.004	100.0%	0.001	0.001	0.002	0.002	1.000
" -B	0.022	0.0%	0.005	0.005	0.005	0.005	1.000
" -C	0.013	0.0%	0.003	0.003	0.004	0.003	1.000
" -D	0.618	0.0%	0.132	0.132	0.132	0.132	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
RESLOPE	0.195	0.0%	0.042	0.042	0.042	0.042	1.000
1x10 (.012)	0.009	0.0%	0.002	0.002	0.002	0.003	1.000
2x10 (.049)	0.041	11.1%	0.009	0.009	0.010	0.010	1.000
50751-E	0.013	0.0%	0.003	0.003	0.004	0.003	1.000
" -F	0.004	0.0%	0.001	0.001	0.001	0.001	1.000
" -G	0.004	100.0%	0.001	0.002	0.001	0.002	1.000
" -H	0.004	0.0%	0.001	0.001	0.001	0.001	1.000
" -H(00)	0.004	0.0%	0.001	0.001	0.001	0.001	1.000
" -H(.2)	0.185	0.0%	0.039	0.040	0.039	0.039	1.000
" -H(SPK)	0.055	0.0%	0.012	0.012	0.012	0.012	1.000
" -I	0.565	0.0%	0.118	0.118	0.118	0.119	1.000
" -J	0.055	0.0%	0.012	0.012	0.012	0.013	1.000
" -K	> 7	0.0%	1.500	1.500	1.500	1.500	1.000
" -L	0.931	0.5%	0.193	0.194	0.193	0.194	1.000
" -M	0.065	0.0%	0.014	0.014	0.014	0.014	1.000
" -N	0.341	0.9%	0.113	0.117	0.112	0.114	1.000
" -O	0.093	0.0%	0.020	0.020	0.020	0.020	1.000
" -P	0.032	0.0%	0.007	0.007	0.007	0.008	1.000
" -Q	0.305	0.0%	0.064	0.064	0.064	0.064	1.000
" -R	0.070	0.0%	0.015	0.015	0.015	0.015	1.000
" -S	0.156	3.0%	0.033	0.034	0.034	0.033	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
RESLOPE	0.180	2.6%	0.037	0.040	0.039	0.040	1.111
2x10 (.049)	0.045	0.0%	0.009	0.009	0.009	0.009	1.111
13x2 (.068)	0.065	0.0%	0.013	0.013	0.013	0.013	1.111
50751-T	0.951	0.5%	0.182	0.181	0.183	0.183	1.111
" -U	0.993	0.5%	0.190	0.190	0.191	0.189	1.111
" -V	0.268	1.9%	0.033	0.051	0.052	0.053	1.111
" -W	0.179	0.0%	0.033	0.035	0.035	0.036	1.111
" -X	0.185	0.0%	0.036	0.036	0.036	0.036	1.111

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN 6A-975
OPERATOR: JOHN BRUNCE
DATE: 5/7/85
BATCH:

MKA # 5/9/85

SOLUTION	Ag ppm	
1x10 (.012)	0.009	75%
3x10 (.049)	0.040	82%
15x2 (.068)	0.059	87%
50727 1/10	0.812	8.1
50750-A	0.335	0.34
" -B 1/10	0.040	0.40
" -C	0.088	0.088
" -D	0.100	0.10
" -E 1/10	0.000	repeated
" -F	0.009	<.01
" -G	0.054	0.054
" -H	0.018	0.018
" -I	0.054	0.054
" -J	0.119	0.12
" -K	0.027	0.027
" -L	0.004	<.01
" -M	0.013	0.013
" -N	0.013	0.013
" -O	0.232	0.23
" -P	0.190	0.19
1x10 (.012)	0.009	75%
15x2 (.068)	0.059	87%
50750-B	0.068	0.668
" -R 1/10	0.009	0.090
" -R (OC) "	0.009	repeated 0.090
" -R (.1) "	0.096	87%
" -R (SPK) "	0.013	0.13
" -R (spk)	0.180	0.18
" -S	0.284	0.28
" -T	0.377	0.38
" -U	0.040	0.040
" -V	0.481	0.48
" -W 1/10	0.040	0.40
" -X	0.072	0.072
" -Y 1/10	0.013	0.13
BLK SPK	0.091	91%
50751-A	0.004	<.01
" -B	0.022	0.022
" -C	0.013	0.013
" -D	0.618	0.62
1x10 (.012)	0.009	75%
3x10 (.049)	0.041	84%
50751-E	0.013	0.013
" -F	0.004	<.01
" -G	0.004	<.01
" -H	0.004	<.01
" -H (OC)	0.004	<.01
" -H (.2)	0.185	90%
" -H (SPK)	0.055	102%
" -I	0.565	0.56
" -J	0.055	0.055
" -K	next run	
" -L	0.931	0.93
" -M	0.065	0.065
" -N	0.541	0.54
" -O	0.093	0.093
" -P	0.032	0.032
" -Q	0.309	0.30
" -R	0.070	0.070
" -S	0.156	0.16

cont

METAL Ag DATE 5/8/85 ANALYST JB REVIEWER BP

INSTRUMENT (AA) VARIAN 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
 current _____ a SLIT _____ nm
 D₂ _____ INTEG _____ sec

FLAME GAS AIR/ACET HYDRIDE ACID _____
 REDUC _____

SEE AUTO PROGRAM

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	.050	.200	.500	1.00	2.00
	ABSORBANCE	.010	.042	.105	.206	.399
EPA CHECK	KNOWN					
	MEAN	.012	.010			
	SD	.049	.050			
	RSD					
	%RECOVERED				83%	102%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC. ug/ml	D.F.	FINAL ug/ml	F.V. ml	I.V. ml or gm	liquid ug/ml	solids ug/gm
DIG BLK 5/1	.005			100 ml	100 ml		
BLK SPK 5/1	.088		83% REC		100 ml		
EPA 0260	3 ug/gm				.99 gm		3.0 ug/gm
50705-H	0.500 ug/gm				1.02 gm		< 1.0 ug/gm
-H REF	0.500 ug/gm				1.02 gm	COMPUTER ANALYSIS	5.1.0 ug/gm
-H SPK	19.50 ug/gm				1.02 gm		95% REC.
-H SPK	5.00 ug/gm				1.02 gm		90% REC
-I	0.5 ug/gm				1.01 gm		< 1.0
-J	1.0 ug/gm				1.02 gm		< 1.0
-K	0.5 ug/gm				1.02 gm		< 1.0
-L	0.5 ug/gm				1.03 gm		< 1.0
-M	1.0 ug/gm				1.02 gm		< 1.0
-N	0.5 ug/gm				1.02 gm		< 1.0
-O	0.5 ug/gm				1.00 gm		< 1.0

"A" Channel

Silver
5/8/85
JB

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
(1) EPA (.049)	.050 µg/ml	.051 µg/ml	
(2) 50705H	0.50 µg/gm	0.50 µg/ml	
(3) 50750	.140 µg/ml	.139 µg/ml	
(4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
(1) 50705-H	19.50	0.500	20.0	19.5	97%
(2) 50705-H	5.00	0.500	5.00	4.5	90%
(3) 50750-R	.190	.140	.05	.05	100%
(4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
(1)	.049	.051	104%	
(2)	.068	.066	97%	
(3) 0760				
(4)				

Statistics from AAS Program 42

"B" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 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)					
(2)					
(3)					
(4)					

C. EPA Reference Standards

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

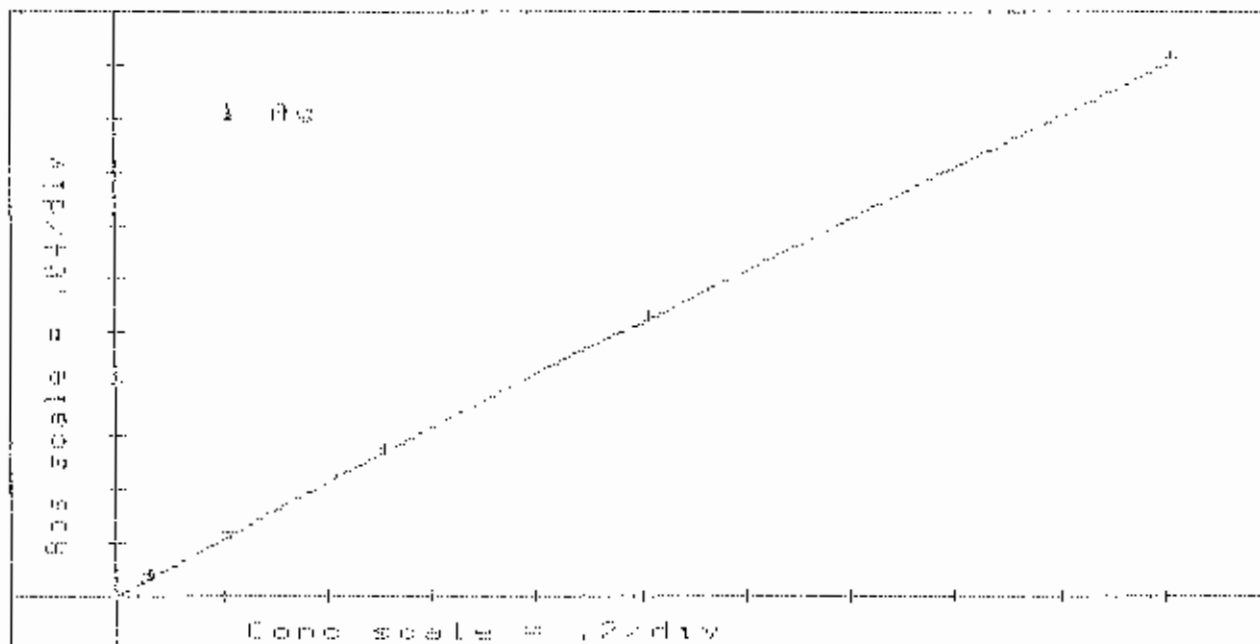
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

MARKER AN 66-9753
 OPERATOR: JOHN BRUNETTE
 DATE: 5/8/85
 BATCH: Ag, Li

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

AUTO-PROGRAM 1 Ag

SOLUTION	CONC ppm	RSD	MEAN ABS	ABSORBANCE READINGS			RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
STANDARD 1	0.050	10.0%	0.010	0.011	0.010	0.011	1.000
STANDARD 2	0.200	0.0%	0.042	0.043	0.042	0.042	1.000
STANDARD 3	0.500	1.0%	0.105	0.106	0.105	0.106	1.000
STANDARD 4	1.000	1.5%	0.206	0.207	0.205	0.206	1.000
STANDARD 5	2.000	0.5%	0.399	0.400	0.400	0.399	1.000



Jx10 (.012)	0.010	50.0%	0.002	0.002	0.003	0.003	1.000
2x10 (.015)	0.050	0.0%	0.010	0.010	0.010	0.010	1.000
13x2 (.068)	0.064	0.0%	0.017	0.013	0.014	0.013	1.000
BLK 8x7	0.005	0.0%	0.001	0.001	0.001	0.001	1.000
BLK SPK	0.088	0.0%	0.018	0.018	0.017	0.018	1.000
EPA 0730 *	2.000	0.0%	0.006	0.007	0.006	0.006	1.000
50705-H *	0.500	0.0%	0.001	0.002	0.001	0.001	1.000
" -H(BC) *	0.500	0.0%	0.001	0.002	0.001	0.001	1.000
" -H(.2) *	19.50	0.0%	0.043	0.041	0.041	0.041	1.000
" -H(SPK) *	5.000	10.0%	0.010	0.011	0.010	0.011	1.000

" I	*	0.500	0.00%	0.000	0.000	0.000	0.000	1.000
" J	*	1.000	0.00%	0.000	0.000	0.000	0.000	1.000
" K	*	2.000	0.00%	0.000	0.000	0.000	0.000	1.000
" L	*	3.000	0.00%	0.000	0.000	0.000	0.000	1.000
" M	*	4.000	0.00%	0.000	0.000	0.000	0.000	1.000
" N	*	5.000	0.00%	0.000	0.000	0.000	0.000	1.000
" O	*	6.000	0.00%	0.000	0.000	0.000	0.000	1.000
50750-R 1/10		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
" -G		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
" -R		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
D 0001		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
E00100E		0.100	0.00%	0.000	0.000	0.000	0.000	1.000
25100.049		0.001	10.00%	0.010	0.010	0.010	0.010	1.000
15020.0500		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
50750-R 0/00		0.100	0.00%	0.000	0.000	0.000	0.000	1.000
" -K 0.10		0.010	0.00%	0.000	0.000	0.000	0.000	1.000
" -R 0000		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
50750-R 1/10		0	0.00%	0.000	0.000	0.000	0.000	1.000
" -Y		1.000	10.00%	0.010	0.010	0.010	0.010	1.000
50756		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
50757		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
10L 01 00		0.001	10.00%	0.010	0.010	0.010	0.010	1.000
" 02 "		0.001	10.00%	0.010	0.010	0.010	0.010	1.000
" 03 "		0.001	10.00%	0.010	0.010	0.010	0.010	1.000
" 04 "		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
" 05 "		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
" 06 "		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
" 07 "		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
10L 01		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
PEELOPE		0.100	0.00%	0.000	0.000	0.000	0.000	1.000
15100.010		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
25100.049		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
50751-E		0.000	0.00%	0.000	0.000	0.000	0.000	1.000
" -F		0.000	0.00%	0.000	0.000	0.000	0.000	1.000

GENERAL TESTING CORPORATION NUMBER TO KEEP OUR ENVIRONMENT CLEAN

VARIABLE: 42-233
 OPERATOR: JOHN BENTLEY
 DATE: 1/2/85
 BATCH: 001 01

PKP

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

SOLUTION	Ag ppm	
1-10 (0.010)	0.000	83%
2-10 (0.049)	0.000	102%
15x2 (0.050)	0.000	94%
5-L 5/7	0.000	<.01
PLI 5/7	0.000	83%
EPA 0/20	* 0.000	3.0 ug/g
50750-R	* 0.000	<1.0 ug/g
" -I 000	* 0.000	<1.0 "
" -H 1.0	* 19.000	95%
" -H 0.0	* 0.000	90%
" -I	* 0.500	<1.0 ug/g
" -J	* 1.000	<1.0 ug/g
" -K	* 0.500	<1.0 "
" -L	* 0.500	<1.0 "
" -M	* 1.000	<1.0 "
" -N	* 0.100	<1.0 "
" -O	* 0.000	<1.0 "
50750-R 1/10	0.000	0.50 0.45 ug/g
" -G	0.000	0.004
" -R	0.100	0.14
25100.049	0.001	104%
15020.0500	0.000	97%
50750-R 0/00	0.100	0.14
" -K 0.10	0.010	96%
" -R 0000	0.000	102%
50750-R 1/10	0.000	below
" -Y	0.000	1.2
50756	0.000	0.37
50757	0.000	<.01
10L 01 Ag	0.001	
" 02 "	0.001	
" 03 "	0.001	
" 04 "	0.000	
" 05 "	0.000	
" 06 "	0.000	
" 07 "	0.000	
50742-A x10	0.000	0.035
50742-A	0.000	<.01
50742-B x10	0.000	0.07
50742-B	0.000	0.10
10L 01 Ag	0.010	125%
15x2 (0.050)	0.000	98%
50751-K *	0.000	25%
USEPA #	0.000	2.6 ug/g

$\bar{y} = 0.054$
 $G_{n-1} = 0.0027$

SECTION IV
SUBPART D-20

RAW DATA FOR:

SODIUM

SUMMARY 50705
METALS ANALYSIS DATA SHEET

REV 4/85

METAL Na DATE 5/15/85 ANALYST DD REVIEWER MP

INSTRUMENT (AA) 14-751

ANALYSIS METHOD

λ 589.6 nm VOLTAGE 380 V
current 9 mA SLIT 1.0 nm
D₂ No INTEG 4 sec

~~FLAME~~ HYDRIDE
GAS AIR/ACET ACID
REDUC

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	5.00	10.00	2.50	0.50	0.25
	ABSORBANCE	.428	.746	.234	.049	.024

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	liquid UG/ml	solids UG/gm
DIG BLK 5/8	<0.25			100	100 ml		
BK SPK	1.70		85% REC.	100			
50705-A	10.8	10	108	100		108	
50705-A-REP	11.0	10	110	100		110	
50705-B	9.10	10	91.0	100		91	
50705-C	3.01	10	30.1	100		30	
50705-D	1.20	10	12.0	100		12	
50705-E	1.71	10	17.1	100		17	
50705-F	6.25	10	62.5	100		63	
50705-G	6.07	10	60.7	100		61	
DIGEST BLK 8/7	<0.25	1	<.25	100			
50705-H	1.60	1		100	1.02 gm		157 ug/gm
50705-H-REP	1.54	1			1.01 gm		152
50705-H-SPK	3.47	1	95% REC.		1.02 gm		
50705-I	2.20	1			1.01 gm		218
50705-J	3.18	1			1.02 gm		312
50705-K	1.16	1			1.02 gm		114
50705-L	0.66	1			1.03 gm		64
50705-M	0.90	1			1.01 gm		89
50705-N	1.11	1			1.02 gm		109
50705-O	0.93	1			1.00 gm		93

A" Channel

A. Precision Data

Sodium Analysis 5/14/85 DD

Sample and Number	Amount in Sample (A)	QC (B)	% RE $\frac{A-B}{A+B} \times 100$
1) 4305-A	6.0	5.9	1.7
2) 50770-H	3.1	2.2	3.2
3) 50778-C	<0.25	<0.25	0
4) 50705-H 20	10.8	11.0	1.8

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1) 4305-A	7.50	5.9	2.0	1.6	80
2) 50770-H	4.00	2.2	1.0	0.80	80
3) 50778-C	1.10	<0.25	1.0	1.10	110
4) 50705-B 10	10.19	9.10	1.0	1.09	109

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1) T.M. 2	1.5	1.60	107	1.0
2) M1 10	46.5	42.6	92	0.172
3) M2	8.2	7.93	97	0.61
4)				

Statistics from AAS Program 42

A" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE $\frac{A-B}{A+B} \times 100$
1) 50705-H	1.60	1.57	3.8
2)			
3)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

C. EPA Reference Standards

at 16

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
T.M. 2	1.5	1.60	107	1.0
M1 10	46.5	42.7	90	2.4

MKP 5/14/85

5/15/85

METALS ANALYSIS DATA SHEET

DATE 5/14/85

ANALYST

"A" Channel

"A" Channel

Metal Na

Metal _____

Flame Type A, 1/2 in Wave Length 589.0

Flame Type _____ Wave Length _____

Lamp Current 9 D2 Background _____

Lamp Current _____ D2 Background _____

Voltage 380 Slit Width 1.0

Voltage _____ Slit Width _____

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
STD #1		5.0		
#2	0.746	10		
#3		2.5		
STD #4		0.50		
#5		0.25		
Samples				
4305-A		6.0		6.0
4305-A	BL	5.9		5.9
4305-B		0.15	1/10	1.5
4305-C		0.14	1/10	1.4
4305-D		1.0		1.0
4305-F		5.6		5.6
Blank		1.1		1.1
BLK 5/12		<0.25	0.14	
BLK SPK		2.27		114%
50648		6.9		6.9
50680-A		2.9		2.9
50680-B		7.7		7.7
50680-C		9.1	1/10	9.1
50680-D		<0.25		<0.25
5/10 BLK		0.19		
BLK SPK		2.08		104%
50770-A		1.7		1.7
50770-B		2.2	1/10	2.2
50770-C		1.8	1/10	1.8
50770-D		1.3	1/10	1.3
50770-E		1.0		1.0
50770-F		1.4	1/10	1.4
50770-G		1.6	1/10	1.6
50770-H		3.1		3.1
50770-H	BL	3.2		3.2
50770-H	SPK	5.3		108%
BLK 5/12		<0.25		
BLK SPK		1.90		95%
50778-A		<0.25		<0.25
50778-B		<0.25		<0.25
50778-C		<0.25		<0.25
50778-C	BL	<0.25		<0.25
50778-C	SPK	1.90		95%
50778-D		1.1		1.1

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
STD #1				
STD #2				
STD #3				
STD #4				
STD #5				
Samples				
#1 50778-E		<0.25		<0.25
#2 50761		8.1	1/10	8.1
#3 BLK 5/2		<0.25		
#4 BLK SPK		1.70		85%
#5 50705-A		13.8	1/10	108
#6 50705-A	BL	11.2	1/10	110
#7 50705-B		9.16	1/10	92%
#8 50705-B	SPK	10.0	1/10	100%
#9 50705-C		3.01	1/10	30.1
#10 50705-D		1.20	1/10	12.0
#11 50705-F		1.71	1/10	17.1
#12 50705-E		6.25	1/10	62.5
#13 50705-G		6.07	1/10	60.7
#14 BLK		<0.25		
#15 BLK SPK		1.91		96%
#16 TM FL 7		1.56	1/10	15.6
#17 M-1		40.2	1/10	402
#18 M-2		7.56	1/10	75.6
#19 50705-H		1.63		157 mg/l
#20 50705-H	BL	1.54		152 "
#21 50705-H	SPK	2.47		95%
#22 50705-F		2.20		218 "
#23 50705-F		3.18		312 "
#24 50705-K		1.16		114 "
#25 50705-L		0.66		64 "
#26 50705-M		0.90		89 "
#27 50705-N		1.11		109 "
#28 50705-O		0.93		93 "
#29				
#30				
#31				
#32				
#33				
#34				

All Results in mg/l unless specified otherwise.

If space is empty, the sample is the same as under the "A" Channel.

SECTION IV
SUBPART D-21

RAW DATA FOR:

THALLIUM

METAL Thallium DATE 5/30/85 ANALYST JB REVIEWER HP

INSTRUMENT (AA)

λ 276.8 nm VOLTAGE 700 V
 current 3.5 mA SLIT 1.0 nm
 D₂ OFF INTEG 1.0 sec

ANALYSIS METHOD

FLAME HYDRIDE
 GAS AIR/ACET ACID
 REDUC

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	5.00	10.00	2.00	1.00	0.50
	ABSORBANCE	.097	.187	.037	.021	.008

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	liquid UG/ML	solids UG/gm
DK BLK 5/15	<0.5		<0.5	100ml	100ml		
BLK SPIKE	2.52		102% REC				
50705-A	<0.5		<0.5				
50705-A REP	<0.5		<0.5				
50705-B	<0.5		<0.5				
50705-B-SM	2.56		102% REC				
50705-C	<0.5		<0.5				
50705-D	<0.5		<0.5				
50705-E	<0.5		<0.5				
50705-F	<0.5		<0.5				
50705-G	<0.5		<0.5				
SOIL BLK	<0.5		<0.5				
BLK SPK	2.55		102% REC				
EPA 0760	<0.5		<0.5 NA		1.99 gm		
50705-H	<0.5		<0.5		1.00		<50
-H. REF	<0.5		<0.5		1.03		<49
-H. SPK	2.60		104% REC		0.99		
I	<0.5		<0.5		1.05		<48
J	<0.5		<0.5		1.04		<48
K	<0.5		<0.5		1.02		<49
L	<0.5		<0.5		1.03		<49
M	<0.5		<0.5		1.00		<50
N	<0.5		<0.5		1.03		<49
O	<0.5		<0.5		1.03		<49

1" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
1) 50705-A	40.5	40.5	---
2) 50705-H	40.5	40.5	---
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) 50705-B	2.56	40.5	2.50	2.56	102
2) 50705-H	2.60	40.5	2.50	2.60	104
3) BLANK	2.52	---	2.50	2.52	102
4) "	2.55	---	2.50	2.55	104

C. EPA Reference Standards

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

Statistics from AAS Program 42

1" Channel

A. Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 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.

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

at 2-

METALS ANALYSIS DATA SHEET

V 3/10/15 M 11 01 01

DATE 5/30/15

ANALYST JB

"A" Channel

"B" Channel

Metal SCREEN 56 SEE REPEAT ANALYSIS BY FURNACE

Metal TL

Flame Type Air/Acet Wave Length 217.6

Flame Type Air/Acet Wave Length 276.8

Lamp Current 6.0 D₂ Background

Lamp Current 3.5 D₂ Background

Voltage 620 Slit Width 0.3

Voltage 700 Slit Width 1.0

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
#1		5.0		
#2	0.189	10.0		
#3		2.0		
#4		1.0		
#5		0.5		
Samples				
50708-B EA		<1.5		
BLK 5/13		<1.5		
BLK SPK		1.38		113%
50776-A Mich		<1.5		<50 ug/g
BLK 5/14		<1.5		
BLK SPK		1.15		105%
50784 Rusin				
BLK 5/30		<1.5		
BLK SPK		1.08		108%
4399 Converse				
50705 BLK 5/15		<1.5		
BLK SPK		1.22		102%
50705-A Dalton		<1.5		
A(GC)		<1.5		
B		<1.5		
B(spk)		1.01		101%
C		<1.5		
D		<1.5		
E		<1.5		
F		<1.5		
G		<1.5		
BLK 50115		<1.5		
BLK SPK		1.08		108%
EPA 0760		<1.5		
50715 H Dalton		<1.5		
H(GC)		<1.5		
H(spk)		0.96		76%
I		<1.5		
J		<1.5		
K		<1.5		
L		<1.5		
M		<1.5		
N		<1.5		
O		<1.5		

Standards	Absorbance	Conc. (mg/l)	Dil.	Final Conclusion
STD #1		5.0		
STD #2	0.187	10.0		
STD #3		2.0		
STD #4		1.0		
STD #5		0.5		
Samples				
#1		<1.5		
#2		<1.5		
#3		2.60		101%
#4		<1.5		<50 ug/g
#5		<1.5		
#6		2.50		100%
#7		<1.5		
#8		<1.5		
#9		2.59		104%
#10		<1.5		<50 ug/g
#11		<1.5		
#12		2.52		101%
#13		<1.5		
#14		<1.5		
#15		<1.5		
#16		2.56		102%
#17		<1.5		
#18		<1.5		
#19		<1.5		
#20		<1.5		
#21		<1.5		
#22		<1.5		
#23		2.55		102%
#24		<1.5		
#25		<1.5		
#26		<1.5		
#27		2.60		104%
#28		<1.5		
#29		<1.5		
#30		<1.5		
#31		<1.5		
#32		<1.5		
#33		<1.5		
#34		<1.5		

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

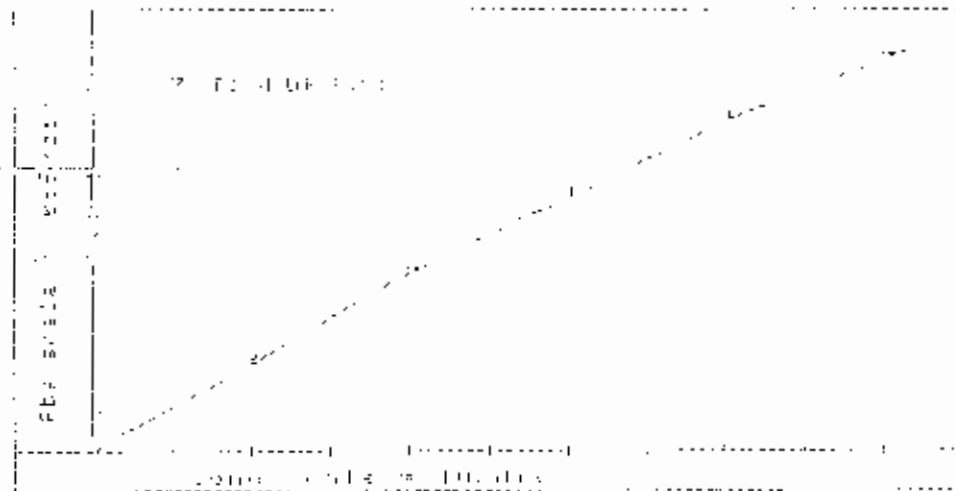
GENERAL TESTING CONFIGURATION RESULTS TO KEEP JOB ENVIRONMENT CLEAR

MANUFACTURE (NAME) : 30777
 QUALIFICATION (TYPE) : CALIBRATION
 DATE (TIME) : 06/14/05
 DATE (TIME) :

METHOD NUMBER (OR OTHER CODE) USED FOR THIS TEST WAS 00012600 AND RESULTS REPORTED 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	1.000	0.1%	0.106	0.106 0.106	1.000
STANDARD 2	2.000	0.1%	0.207	0.208 0.207	1.000
STANDARD 3	4.000	0.1%	0.411	0.413 0.410	1.000
STANDARD 4	6.000	0.1%	0.611	0.611 0.611	1.000
STANDARD 5	10.000	0.1%	0.847	0.847 0.847	1.000



STANDARD 6	15.000	0.1%	0.106	0.108 0.106	1.000
STANDARD 7	2.164	0.0%	0.065	0.065 0.065	1.000
STANDARD 8	4.328	1.0%	0.131	0.133 0.130	1.000
STANDARD 9	6.492	0.0%	0.197	0.199 0.196	1.000
STANDARD 10	8.656	0.0%	0.262	0.262 0.262	1.000
STANDARD 11	10.820	0.0%	0.328	0.329 0.327	1.000
STANDARD 12	12.984	0.1%	0.393	0.394 0.392	1.000
STANDARD 13	15.148	0.1%	0.459	0.460 0.458	1.000
STANDARD 14	17.312	0.1%	0.524	0.525 0.523	1.000
STANDARD 15	19.476	0.1%	0.590	0.591 0.589	1.000
STANDARD 16	21.640	0.1%	0.655	0.656 0.654	1.000
STANDARD 17	23.804	0.1%	0.721	0.722 0.720	1.000
STANDARD 18	25.968	0.1%	0.786	0.787 0.785	1.000
STANDARD 19	28.132	0.1%	0.852	0.853 0.851	1.000
STANDARD 20	30.296	0.1%	0.917	0.918 0.916	1.000
STANDARD 21	32.460	0.1%	0.983	0.984 0.982	1.000
STANDARD 22	34.624	0.1%	1.048	1.049 1.047	1.000
STANDARD 23	36.788	0.1%	1.114	1.115 1.113	1.000
STANDARD 24	38.952	0.1%	1.179	1.180 1.178	1.000
STANDARD 25	41.116	0.1%	1.245	1.246 1.244	1.000
STANDARD 26	43.280	0.1%	1.310	1.311 1.309	1.000
STANDARD 27	45.444	0.1%	1.376	1.377 1.375	1.000

GENERAL TESTING CONFIGURATION RESULTS TO KEEP JOB ENVIRONMENT CLEAR

MANUFACTURE (NAME) : 30777
 QUALIFICATION (TYPE) : CALIBRATION
 DATE (TIME) : 06/14/05
 DATE (TIME) :

METHOD NUMBER (OR OTHER CODE) USED FOR THIS TEST WAS 00012600 AND RESULTS REPORTED WITH :

AUTO-PROGRAM 7 T1 FURNACE

SOLUTION	CONC ug/l	RSD	MEAN ABS	ABSORBANCE READINGS	SLOPE FACTOR
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SECTION IV
SUBPART D-22

RAW DATA FOR:

TIN

METAL Sn DATE 6/14/85 ANALYST MP REVIEWER MP

INSTRUMENT (AA) 1L-751
 WAVELENGTH 286.3 nm VOLTAGE 530 V
 current 7 ma SLIT 1.5 nm
 D₂ OFF INTEG PH sec

ANALYSIS METHOD
 FLAME GAS 1 HYDRIDE
 ACID HCl
 REDUC NaBH

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	.030	.050	.020	.010	.005
	ABSORBANCE	.330	.445	.230	.126	.075

EPA CHECK KNOWN MEAN SD RSD %RECOVERED
NONE AVAILABLE

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC UG/ML	D.F.	FINAL UC/ML	F.V. ml	I.V. ml or gm	liquid UG/ML	solids UG/GM
DIGEST BLK 4/8	<.004	10	<.04	100 ml	100 ml		
BLK SPK	.035	70	70% REC.				
50705-A	<.004		<.04			<.04	
-A REP	<.004		<.04			<.04	
-B	<.004		<.04			<.04	
-B SPK	.043		86% REC.				
C	<.004		<.04			<.04	
D	<.004		<.04			<.04	
E	<.004		<.04			<.04	
F	<.004		<.04			<.04	
G	<.004		<.04			<.04	
DIGEST BLK 5/7	<.004		<.04			<.04	
BLK SPK	.028		56% REC.				
50705-H	<.004		<.04		1.00 gm		<4.0
50705-H REP	<.004		<.04		1.03 gm		<3.9
50705-H SPK	0.040		80% REC.		0.99 gm		
-I	<.004		<.04		1.05 gm		<3.8
-J	.0058		0.058		1.04 gm		5.6
-K	<.004		<.04		1.02 gm		<3.9
-L	<.004		<.04		1.03 gm		<3.9
-M	<.004		<.04		1.00 gm		<4.0
-N	<.004		<.04		1.03 gm		<3.9
-O	<.004		<.04		1.03 gm		<3.9

1" Channel

Sn Analysis 6/11/85 M. Perry

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
1) 50705-A	<0.004	<0.004	---
2) 50705-H	<0.004	<0.004	---
3)			
4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1) Blank 5/8	0.35	---	0.50	0.35	70%
2) 50705-B	0.43	<0.004	0.50	0.43	86%
3) Blank 5/7	0.28	---	0.50	0.28	56%
4) 50705-H	0.40	<0.004	0.50	0.40	80%

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1)	None Available			
2)				
3)				
4)				

Statistics from AAS Program 42

3" Channel

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

ANALYSIS DATA SHEET

Tin

Lamp Current _____
 Lamp Voltage _____
 D₂ Background _____

Date _____
 Analyst _____
 Wave Length _____

STANDARD CALIBRATION

Std. #	Conc.	Abs. 1	Abs. 2	Abs. 3	Avg. Abs.	Actual Conc.
Blank						
Std. 1	5	0.53				
Std. 2	5	1.475				
Std. 3	5	1.72				
Std. 4	5	2.12				
Std. 5	5	2.525				
EPA						
EPA						

(Analysis performed on 2nd reading. Digest)

Sample	Conc. mg/l	Dil.	Final Conc.	Amt. Spike	Total Rec.	Net. Rec.	% Recovery
Blank - 5/8	<0.04	(10)					
Blank 5/8	0.35			0.50	0.35	-	70%
UCS 5/8	<0.04		<0.04				
Blank	<0.04		<0.04				
B.C.	0.43			0.50	0.43	0.43	86%
B	<0.04		<0.04				
C	<0.04		<0.04				
D	<0.04		<0.04				
E	<0.04		<0.04				
F	<0.04		<0.04				
G	<0.04		<0.04				
Blank 5/7	<0.04						
Blank 5/7	0.28			0.50	0.28	-	56%
H	<0.04		<0.04				
Blank	<0.04		<0.04				
I	0.40			0.50	0.40	0.40	80%
J	<0.04		<0.04				
K	0.55		0.55				
L	<0.04		<0.04				
M	<0.04		<0.04				
N	<0.04		<0.04				
O	<0.04		<0.04				
P	<0.04		<0.04				
Blank	<0.04		<0.04				
Blank 5/7	0.44			0.50	0.44	-	88%
Blank (1)							
(2)							
(3)							
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							
Ave	9.37						
Std	0.50						

Small amount

SECTION IV
SUBPART D-23

RAW DATA FOR:

VANADIUM

SUMMARY - 50705
METALS ANALYSIS DATA SHEET

REV 4/85

METAL V DATE 6/13/85 ANALYST DD REVIEWER MP

INSTRUMENT (AA) VARIAN 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
current _____ a SLIT _____ nm
D₂ _____ INTEG _____ sec

FLAME GAS AIR/ACET HYDRIDE ACID REDUC

SEE AUTO PROGRAM

INITIAL CALIBRATION

STANDARDS:

STOCK

CONC, UG/ML
ABSORBANCE

#1	#2	#3	#4	#5
2.00	5.00	10.00	20.00	50.00
.014	.034	.062	.102	.216

EPA CHECK

KNOWN

MEAN

SD

RSD

%RECOVERED

MP #2

.846

.857

101%

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC. UG/ML	D.F.	FINAL UG/ML	F.V. ml	I.V. ml or gm	liquid UG/ML	solids UG/GM
DIG. BLK 5/8	.000			100 ml	100 ml		
BLK. SPK	.571		114% REC				
50705-A	.000					<0.25	
50705-B REP	.000						
50705-B						<0.25	
50705-B SPK	.571		114% REC				
50705-C	.142		<0.25			<0.25	
-D	.000		<0.25			<0.25	
-E	.000		<0.25			<0.25	
-F	.000		<0.25			<0.25	
-G	.000		<0.25			<0.25	
DIG. BLK 5/7	.000		.000				
BLK SPK 5/7	.571		114% REC				
50705-H	.285		0.28		1.00 gm		28
50705-H-REP	.285		0.28		1.03 gm		27
50705-H SPK	.714		86% REC		0.99 gm		
50705-I	.142		<0.25		1.05 gm		<24
-J	.142		<0.25		1.04 gm		<24
-K	.142		<0.25		1.02 gm		<25
-L	.142		<0.25		1.03 gm		<24
-M	.142		<0.25		1.00 gm		<25
-N	.000		<0.25		1.03 gm		<24
-O	.142		<0.25	✓	1.03 gm		<24

Channel

Vanadium
6/13/85
DD

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE $= (A-B)/(A+B) \times 100$
1) 50705-A	0.000	0.000	
2) EPA WP-2	0.857	0.857	
3) 50705-H DIGEST	0.285	0.285	

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1) 50705-B	.571	.000	.500	.571	114%
2) 50705-H (DIG)	.714	.285	.500	.429	86%
3)					

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1) WP 2	.846	.857	101%	#
2) "	.846 - .857	.857	101%	
3) "	.846 - .714	.714	86%	

Statistics from AAS Program 42

3" Channel

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE $= (A-B)/(A+B) \times 100$

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

SECTION IV
SUBPART D-24

RAW DATA FOR:

ZINC

METAL Zn DATE 5/9/85 ANALYST J.B. REVIEWER MP

INSTRUMENT (AA) VARIAN 975

ANALYSIS METHOD

λ _____ nm VOLTAGE _____ V
 current _____ a SLIT _____ nm
 D₂ ON INTEG _____ sec

FLAME GAS ACET HYDRIDE ACID REDUC

COMPUTER AUTO PROGRAM

INITIAL CALIBRATION

STANDARDS:		#1	#2	#3	#4	#5
STOCK	CONC, UG/ML	0.040	0.100	0.200	0.400	1.000
	ABSORBANCE	0.026	0.065	0.124	0.238	0.489
IQA CHECK	KNOWN	MEAN	SD	RSD	%RECOVERED	
	.209	.188			90%	
	.418	.372			89%	

ANALYSIS

INSTRUMENT ANALYSIS				DIGESTION		FINAL CONCENTRATION	
SAMPLE#	CONC. UG/ML	D.F.	FINAL UG/ML	F.V. ml	I.V. ml or gm	liquid UG/ML	solids UG/gm WET WEIGHT
P/G BLK 5/8/85	0.003		< 0.01	100ml	100ml	< 0.01	
BLK SPK (t.10)	0.104		101% REC				
50705-A	0.013		< 0.01			0.01	
50705-A REP	0.007		< 0.01			< 0.01	
50705-A-SPK(t.10)	0.111		104% REC				
50705-B	0.008		< 0.01			< 0.01	
50705-C	0.015		0.015			0.015	
50705-D	0.013		0.013			0.013	
50705-E	0.001		< 0.01			< 0.01	
50705-F	0.006		< 0.01			< 0.01	
50705-G	0.006		< 0.01			< 0.01	
P/G BLK, SALS	0.000		< 0.01			< 0.01	
BLK SP, T.10	0.090		90% REC	↓	↓		
50705-H 5/2				100 ml	1.02 gm		35.10
50705-H REP					1.01 gm	COMPUTER	32.80
50705-H-SPK					1.02 gm	ANALYSIS	88% RECOVERED
50705-H-SPK					1.02 gm	FOR	SPK. TOO LOW
50705-I					1.01 gm	WET WEIGHT	49.40
50705-J					1.02 gm	CALCULATION	39.40
50705-K					1.02 gm		28.00
50705-L					1.02 gm		30.30
50705-M					1.01 gm		33.30
50705-N					1.02 gm		10.20
50705-O				↓	1.00 gm		18.60

A" Channel

A. Precision Data

June, 5/9/85, J.B.

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100
1) 50705-A	0.013 ug/ml	0.007	
2) 50705-H	35.10 ug/gm	32.80 ug/gm	
3) 50739-A	0.028 ug/ml	0.035 ug/ml	
4)			

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.
1) 50705-A	0.111 ug/ml	0.007	.100	.104	104%
2) 50705-H (METHOD)			.100	.088	88%
3) 50739-A	0.120	0.018	.100	.102	102%
4)					

C. EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*
1)	.209	.193	92%	
2)	.418	.374	89%	
3)	.209	.195	93%	
4)	.418	.378	90%	

Statistics from AAS Program 42

B" Channel

Precision Data

Sample and Number	Amount in Sample (A)	QC (B)	% RE = (A-B)/(A+B) x 100

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

Sample and Number	Total Recovery	Amount in Sample	Amount Added	Net Rec.	% Rec.

EPA Reference Standards

EPA #	True Value	Mean Recovery (X)*	% Recovery	RSD*

-4110-

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: JOHN BRUNETTE
 DATE: 5/9/85
 BATCH: Zn 4/26 -5/8

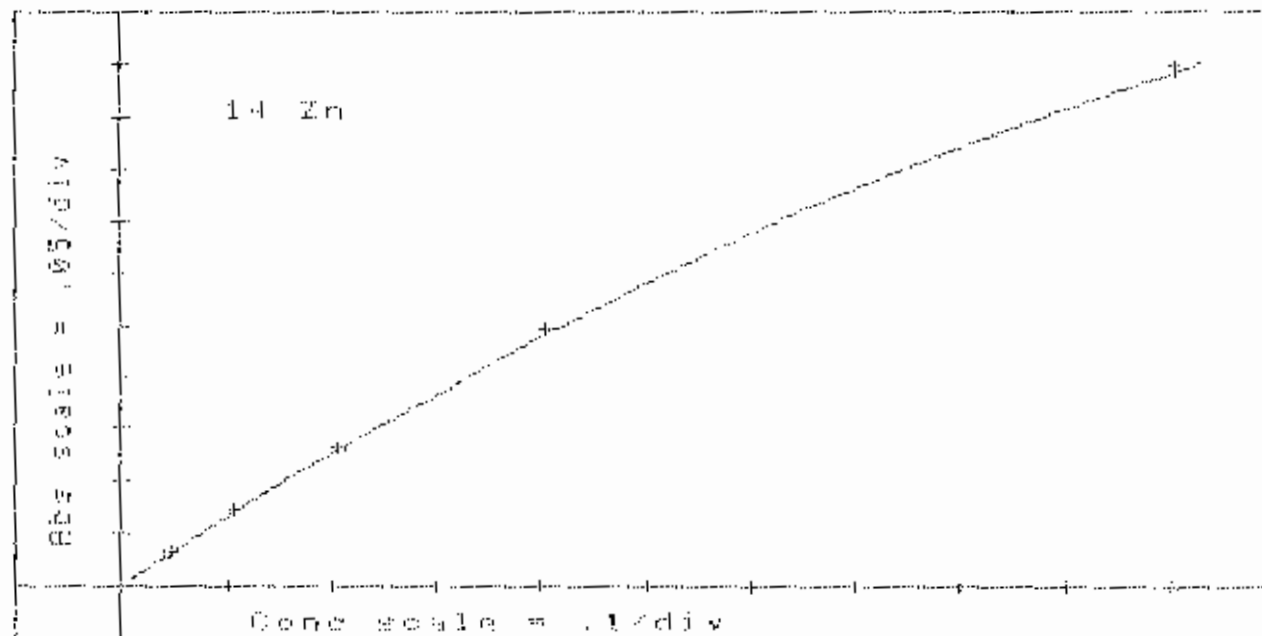
✓
JJ.
5/24/85

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

AUTO-PROGRAM 14 Zn

MRP 5/13/85

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	0.0%	0.026	0.026	0.026	0.026	1.000
STANDARD 2	0.100	1.5%	0.065	0.064	0.066	0.067	1.000
STANDARD 3	0.200	0.8%	0.124	0.126	0.124	0.124	1.000
STANDARD 4	0.400	0.4%	0.238	0.238	0.239	0.239	1.000
STANDARD 5	1.000	0.4%	0.489	0.490	0.487	0.491	1.000



(.209)	0.133	0.0%	0.113	0.115	0.115	0.115	1.000
2(.418)	0.369	0.0%	0.220	0.220	0.221	0.220	1.000

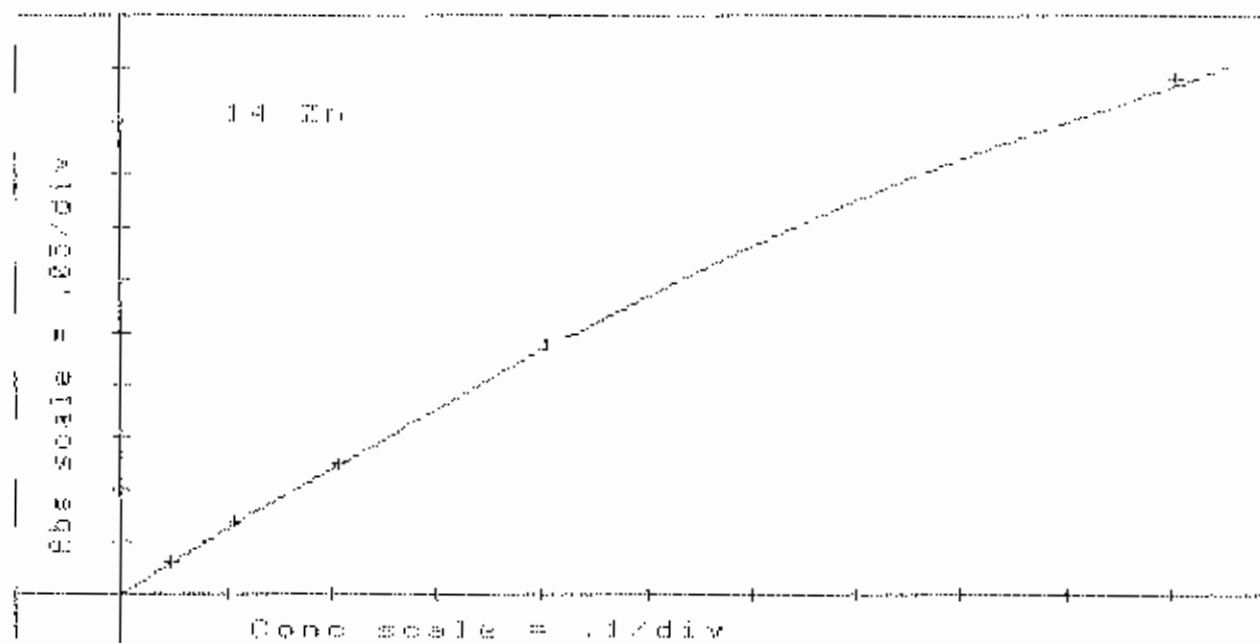
Alert

VARIAN AA-975
 OPERATOR: JOHN BRUNETTE
 DATE: 5/9/85
 BATCH: Zn 4/26 -5/B

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

AUTO-PROGRAM 14 Zn

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS			SLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.000	0.001	0.000	1.000
STANDARD 1	0.040	0.0%	0.024	0.024	0.024	0.025	1.000
STANDARD 2	0.100	0.0%	0.062	0.062	0.062	0.062	1.000
STANDARD 3	0.200	0.0%	0.119	0.119	0.120	0.119	1.000
STANDARD 4	0.400	0.9%	0.232	0.232	0.230	0.234	1.000
STANDARD 5	1.000	0.2%	0.481	0.482	0.480	0.482	1.000



(.209)	0.188	0.9%	0.115	0.113	0.114	0.114	1.000
2(.418)	0.371	0.5%	0.216	0.217	0.214	0.217	1.000
BLK 5/B	0.003	50.0%	0.002	0.003	0.001	0.002	1.000
BLK SPK	0.104	1.5%	0.065	0.066	0.064	0.066	1.000
30705-A	0.013	0.0%	0.008	0.008	0.008	0.008	1.000
" -A(QC)	0.004	33.3%	0.003	0.004	0.003	0.004	1.000
" -A(.25/.1	0.111	1.4%	0.069	0.069	0.068	0.070	1.000
" -B	0.008	0.0%	0.005	0.005	0.005	0.005	1.000
" -B(.25/.1	0.114	1.4%	0.071	0.071	0.072	0.070	1.000
" -B(SPK)	0.104	0.0%	0.065	0.066	0.065	0.065	1.000
" -C	0.015	0.0%	0.009	0.009	0.010	0.009	1.000
" -D	0.013	0.0%	0.008	0.008	0.008	0.008	1.000
" -E	0.001	100.0%	0.001	0.002	0.002	0.001	1.000
" -F	0.006	0.0%	0.004	0.004	0.004	0.004	1.000
" -G	0.006	25.0%	0.004	0.004	0.005	0.005	1.000
BLK soils	0.000	33.3%	-0.003	-0.002	-0.003	-0.004	1.000
BLK SPK	0.070	0.0%	0.056	0.056	0.056	0.056	1.000
EPA 0740	* 2	0.1%	1.042	1.042	1.042	1.044	1.000
30705-H	* 35.10	0.5%	0.205	0.204	0.207	0.205	1.000

" -H(QC) *	22.80	0.2%	0.152	0.151	0.154	0.152	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
RESLOPE	0.100	0.0%	0.062	0.063	0.062	0.062	1.000
(.209)	0.153	0.0%	0.116	0.116	0.117	0.116	1.000
2(.418)	0.482	0.4%	0.275	0.274	0.277	0.275	1.000
50705-cl(mspic)*	41.60	0.4%	0.241	0.240	0.241	0.243	1.000
" -H(SPK) *	40.00	1.3%	0.232	0.229	0.235	0.232	1.000
" -I *	49.40	0.7%	0.281	0.282	0.279	0.281	1.000
" -J *	39.40	0.4%	0.229	0.229	0.229	0.231	1.000
" -K *	23.00	0.6%	0.165	0.165	0.167	0.165	1.000
" -L *	30.30	0.0%	0.178	0.178	0.179	0.178	1.000
" -M *	33.30	1.0%	0.195	0.193	0.193	0.197	1.000
" -N *	10.70	1.5%	0.067	0.069	0.066	0.068	1.000
" -O *	18.60	0.5%	0.112	0.112	0.113	0.112	1.000
50739-A sol	0.033	0.0%	0.030	0.031	0.030	0.030	1.000
" -B "	0.016	9.1%	0.011	0.012	0.010	0.011	1.000
" -B(.1)	0.120	1.3%	0.075	0.076	0.075	0.074	1.000
" -B(SPK)	0.139	1.2%	0.086	0.084	0.088	0.086	1.000
" -C	0.059	0.0%	0.036	0.036	0.036	0.036	1.000
" -D	0.046	3.6%	0.028	0.029	0.029	0.027	1.000
" -E	0.043	0.0%	0.026	0.026	0.026	0.027	1.000
" -F	1	0.2%	0.566	0.567	0.565	0.567	1.000
" -G sol	0.028	0.0%	0.017	0.017	0.017	0.017	1.000
BLANK	0.000	0.0%	0.000	-0.001	0.000	0.000	1.000
RESLOPE	0.100	0.0%	0.062	0.063	0.062	0.062	1.000
(.209)	0.153	0.9%	0.116	0.117	0.116	0.115	1.000
2(.418)	0.374	0.5%	0.218	0.219	0.220	0.216	1.000
BLK 5/6	0.003	0.0%	0.002	0.003	0.002	0.002	1.000
BLK SPK	0.100	0.0%	0.062	0.062	0.062	0.062	1.000
50739-A	0.031	0.0%	0.019	0.020	0.019	0.019	1.000
" -B	0.028	5.9%	0.017	0.017	0.018	0.018	1.000
" -B(QC)	0.035	0.0%	0.021	0.021	0.022	0.021	1.000
" -B(.1)	0.139	1.2%	0.086	0.086	0.087	0.085	1.000
" -C	0.026	0.0%	0.016	0.016	0.016	0.016	1.000
" -D	0.035	4.8%	0.021	0.022	0.021	0.022	1.000
50739-E	0.016	0.0%	0.010	0.010	0.010	0.010	1.000
" -F	0.527	0.3%	0.297	0.297	0.298	0.298	1.000
" -G	0.030	0.0%	0.018	0.018	0.019	0.018	1.000
4318-A	0.597	1.0%	0.330	0.337	0.328	0.335	1.000
" -A(QC)	0.561	0.3%	0.313	0.313	0.312	0.314	1.000
" -A(.1)	0.689	0.5%	0.370	0.368	0.372	0.372	1.000
" -C	0.248	0.7%	0.147	0.145	0.148	0.148	1.000
4324A 1/1000*	1	0.1%	0.807	0.808	0.808	0.807	1.000
"A(QC1/1000*)	1	0.2%	0.803	0.801	0.805	0.805	1.000
4324E 1/1000*	1	0.1%	0.873	0.873	0.874	0.872	1.000
BLANK	0.000	0.0%	0.000	0.000	0.000	0.000	1.000
RESLOPE	0.098	0.0%	0.061	0.061	0.061	0.061	1.00
(.209)	0.155	0.9%	0.115	0.116	0.116	0.114	1.00
2(.418)	0.378	0.0%	0.216	0.217	0.216	0.216	1.00
4324000 " 1	1	0.2%	0.879	0.881	0.881	0.876	1.00
50690-A	0.856	0.7%	0.428	0.425	0.431	0.428	1.00
" -P sol	0.172	1.0%	0.103	0.103	0.105	0.103	1.00
50691-B sol 1	1	0.2%	0.516	0.516	0.517	0.517	1.00
50725 1/10 " 1	1	0.2%	0.960	0.958	0.962	0.960	1.00

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: JOHN BRUNETTE
 DATE: 5/9/85
 BATCH# Zn 4/26 -5/8

4A-

mRP
5/13/85

QC recorded

SOLUTION	Zn mg/L	
(.209)	0.188	90%
2(.418)	0.372	89%
BLK 5/8	0.003	<.01
BLK SPK	0.104	101%
50705-A	0.013	0.013
" -A(QC)	0.007	0.01
" -A(.25/.1)	0.111	104%
" -B	0.008	<.01
" -B(.25/.1)	0.114	106%
" -B(SPK)	0.101	96%
" -C	0.015	0.015
" -D	0.013	0.013
" -E	0.001	<.01
" -F	0.006	<.01
" -G	0.006	<.01
BLK soils	0.000	<.01
BLK SPK	0.090	90%
EPA 0760	* *00.0	next run
50705-H	* 35.10	34 ug/g
" -H(QC)	* 32.80	33 "
(.209)	0.193	92%
2(.418)	0.482	
50705-H (respl)*	41.60	88%
" -H(SPK)*	40.00	72% found control special review
" -I	* 49.40	48 ug/g
" -J	* 39.40	38 "
" -K	* 28.00	27 "
" -L	* 30.30	29 "
" -M	* 33.30	33 "
" -N	* 10.70	11 "
" -O	* 18.60	19 "
50739-A sol	0.033	0.033
" -B "	0.018	0.018
" -B(.1)	0.120	102%
" -B(SPK)	0.139	121%
" -C	0.059	0.059
" -D	0.046	0.046
" -E	0.043	0.043
" -F	>	next run
" -G sol	0.028	0.028
(.209)	0.193	92%
2(.418)	0.374	89%
BLK 5/6	0.003	<.01
BLK SPK	0.100	97%
50739-A	0.031	0.031
" -B	0.028	0.028
" -B(QC)	0.035	0.035
" -B(.1)	0.139	104%
" -C	0.026	0.026
" -D	0.035	0.035
50739-E	0.016	0.016
" -F	0.527	0.53
" -G	0.030	0.030
4318-A	0.597	0.60
" -A(QC)	0.561	0.56
" -A(.1)	0.589	110%
" -C	0.240	0.25
4324A 1/1000*	*00.0	
" A(QC) 1/1000*	*00.0	repeated
4324B 1/1000*	*00.0	

EPA

1.158

4/20-

4324500 " > next run
 50690-A 0.856 0.86
 " -B sol 0.172 0.17
 50691-B sol > next run
 50725 1/10 > "

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: JOHN BRUNETTE
 DATE: 5/10/85
 BATCH#: Zn, Fe, and Pb

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

AUTO-PROGRAM 14 Zn

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	20.0%	-0.003	-0.005-0.004-0.006	1.000

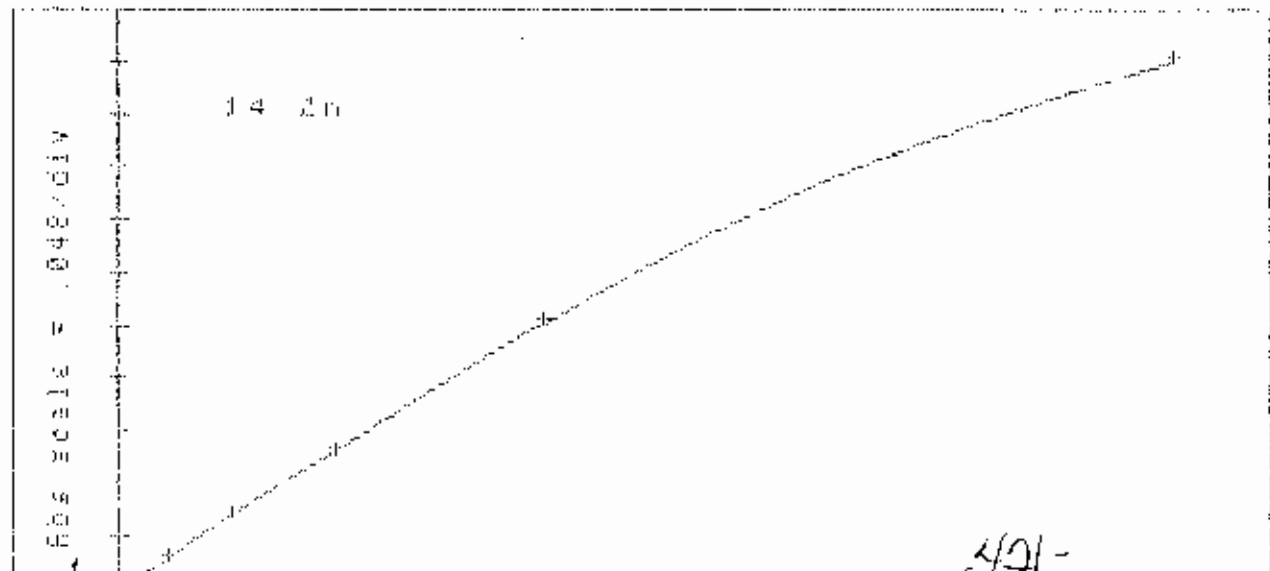
GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: JOHN BRUNETTE
 DATE: 5/10/85
 BATCH#: Zn, Fe, and Pb

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

AUTO-PROGRAM 14 Zn

SOLUTION	CONC mg/L	RSD	MEAN ABS	ABSORBANCE READINGS	RESLOPE FACTOR
BLANK	0.000	0.0%	0.000	0.001 0.000 0.000	1.000
STANDARD 1	0.040	4.2%	0.024	0.025 0.025 0.024	1.000
STANDARD 2	0.100	0.0%	0.063	0.063 0.063 0.064	1.000
STANDARD 3	0.200	0.0%	0.121	0.121 0.121 0.122	1.000
STANDARD 4	0.400	0.4%	0.239	0.238 0.239 0.240	1.000
STANDARD 5	1.000	1.5%	0.470	0.479 0.471 0.485	1.000



(.209)	0.191	0.9%	0.117	0.116	0.116	0.117	1.000
2(.418)	0.433	0.4%	0.257	0.257	0.259	0.256	1.000
EPA 0760	* > 1	0.2%	0.584	0.584	0.583	0.584	1.000
50739F sol	* 1.290	0.0%	0.082	0.082	0.083	0.082	1.000
" F	0.519	0.7%	0.301	0.299	0.303	0.302	1.000
4324A1/10000	0.267	1.2%	0.161	0.159	0.162	0.163	1.000
" A(00) "	0.258	0.6%	0.156	0.157	0.155	0.153	1.000
" A(.1) "	0.348	0.5%	0.209	0.209	0.211	0.209	1.000
"B 1/10000	0.340	0.5%	0.204	0.204	0.203	0.205	1.000
"B(00) "	0.353	0.0%	0.212	0.212	0.212	0.213	1.000
"B(.1) "	0.444	1.1%	0.263	0.263	0.267	0.261	1.000
50691Bcal.1	0.110	0.0%	0.070	0.070	0.070	0.071	1.000
507251/100	* 27.70	0.9%	0.318	0.318	0.322	0.316	1.000
	0.141	2.2%	0.089	0.089	0.091	0.087	1.000

GENERAL TESTING CORPORATION WORKING TO KEEP OUR ENVIRONMENT CLEAN

VARIAN AA-975
 OPERATOR: JOHN BRUNETTE
 DATE: 5/10/85
 BATCH: Zn, Fe, and Ni

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

MKP 5/24/85

QC rec'd

SOLUTION	Zn mg/L		
(.209)	0.191	41%	
2(.418)	0.433	104%	
EPA 0760	* 800.0		
50739F sol	* 1.290	1/10 1.3	
" F	0.519	1/10 5.2	
4324A1/10000	0.267	267000 ug/g	> 262,000 ug/g
" A(00) "	0.258	258000 ug/g	
" A(.1) "	0.348	90%	
"B 1/10000	0.340	340000 ug/g	> 346,000 ug/g
"B(00) "	0.353	353000 ug/g	
"B(.1) "	0.444	41%	
50691Bcal.1	0.110	1/10 1.1	
507251/100	* 27.70 634	1410 3200 ug/g	
507251/100	* 0.141	1/100 1410 ug/g	107%

SECTION IV
SUBPART D-25

RAW DATA FOR:

CYANIDE

general testing corporation

AUTO ANALYZER ANALYSIS: Cyanide
water and wastewater testing specialists

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

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

NO.	COMPANY	JOB#	STA.	SAMPLE VOL. <i>distilled</i>	PEAK HT.	CORR. PK. HT.	mg./L <i>distillate</i>	DIL. FACTOR	N mg/l
1	1.50 ppm STD.								
2	BLANK					3.0			
3	.02 ppm STD.					7.4			
4	.05 "					9.5			
5	.10 "		DELETED						
6	.20 "					25.6			REPEAT
7	.50 "					42.0			
8	.70 "					65.3			
9	1.00 "					76.1			
10	1.50 "		DELETED			97.0			
11	BLANK					3.5			
12	.70 ppm STD.					66.5			
13	50638	A		430	FCN	5.5	2.02	.58	Free Fixed
14	50653	A		415	FCN	REPEAT	2.02	.60	.03 2.02 **
15	50659	A		500	TCN	3.1	2.02	.50	.12 2.02 **
*16	"	A dup.		"	"	3.0	2.02	.50	2.02
*17	(1)	A spk.		"	"	63.9	.926	.50	2.02
18	1.10 ppm STD.					15.1			
19	BLANK spike (2) (.120 ppm)					23.9	.199		
20	.70 ppm STD.					64.3	.751		
21	50663	O		500	"	3.5	2.02	.50	2.02
22	"	E		"	"	3.1	2.02	.50	2.02
*23	"	E dup.		"	"	3.1	2.02		2.02
*24	(1)	E spk.		"	"	52.2	.267		2.02
25	"	F		"	"	3.3	2.02	.50	2.02
26	50666			465	"	2.8	2.02	.54	2.02
27	50667			437	"	3.0	2.02	.57	2.02
28	50696	B		295	"	3.0	2.02	.85	2.02
29	"	B dup.		"	"	3.1	2.02		2.02
30	"	F		280	"	3.1	2.02	.89	2.02
31	50690	A		500	"	6.5	2.02	.50	2.02
32	50691	A		500	"	6.3	2.02	.50	2.02
33	BLANK					3.1			
34	.70 ppm STD.					61.2	.715		
35	50692			440	"	5.7	2.02	.57	2.02
36	50696	G		349	"	3.3	2.02	.72	2.02
*37	"	G dup.		"	"	3.1	2.02		2.02
38	(1)	G spk.		"	"	53.9	.592		
39	50703			459	"	3.0	2.02	.54	2.02
40	URS-Dartm	50705	A	500	"	3.1	2.02	.50	2.01 ✓

(1) 50 ul 100 ppm Intermediate Stock Solution Added To 10mls Sample.
(2) 20 ul " " " " " " " " " " " "

** FCN = Total cyanide - Fixed cyanide

* Quality Control performed AT AATC ANALYSIS.

1102

RESULTS FROM REPORT FILE XXXXXX.LRPT

DATE 6-10-65 TIME 11:24

METHOD NAME - CYANIDE SAMPLES/HR. - 20
 SAMPLE/WASH RATIO - .250 SAMPLES/REFERENCE - 20

REF STANDARD CONC. - "A" .700 "B" .000 "C" .000 "D" .000
 CHECK SAMPLE CONC. - "A" .700 "B" .000 "C" .000 "D" .000

*** STANDARDS DATA ***

TRAY POS.	STD #	CYANIDE	CHANNEL "B"	CHANNEL "C"	CHANNEL "D"
3	STD-1	.020	-1.000	-1.000	-1.000
4	STD-2	.050	-1.000	-1.000	-1.000
5	STD-3	.100	-1.000	-1.000	-1.000
6	STD-4	.200	-1.000	-1.000	-1.000
7	STD-5	.500	-1.000	-1.000	-1.000
8	STD-6	.700	-1.000	-1.000	-1.000
9	STD-7	1.000	-1.000	-1.000	-1.000
10	STD-8	1.500	-1.000	-1.000	-1.000

*** CHECK SAMPLE RESULTS ***
 CHECK SAMPLE I.D. NUMBER ---- STD#6

12 CHECK SMPL .791 .000 .000 .000

*** CALIBRATION CURVES APPLIED ***

CYANIDE $Y = .47885E-04 X^2 .98779E-02 X + -.20931E-01$
 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	SMPL.#	CYANIDE % Drift	CHANNEL "B" % Drift	CHANNEL "C" % Drift	CHANNEL "D" % Drift
13	13	-.100E-02	.000	.000	.000
14	14	-.549E-01	.000	.000	.000
15	15	-.249E-01	.000	.000	.000
16	16	-.258E-01	.000	.000	.000
17	17	.826	.000	.000	.000

18	18	-.548E-01	.000	.000	.000
19	19	.197	.000	.000	.000
20	20	.751	.000	.000	.000
21	21	-.209E-01	.000	.000	.000
22	22	-.248E-01	.000	.000	.000

*** ANALYTICAL RESULTS ***

TRAY	SAMPL. #	CYANIDE % Drift	CHANNEL "E" % Drift	CHANNEL "C" % Drift	CHANNEL "D" % Drift				
23	23	-.248E-01	.000	.000	.000				
24	24	.567	.000	.000	.000				
25	25	-.229E-01	.000	.000	.000				
26	26	-.277E-01	.000	.000	.000				
27	27	-.258E-01	.000	.000	.000				

28	28	-.252E-01	.000	.000	.000				
29	29	-.248E-01	.000	.000	.000				
30	30	-.248E-01	.000	.000	.000				
31	31	-.658E-02	.000	.000	.000				
32	32	.653E-02	.000	.000	.000				

34	Ref Std.	.715	1.7	.000	.0	.000	.0	.000	.0
35	35	.464E-02	.000	.000	.000	.000	.000		
36	36	-.190E-01	.000	.000	.000	.000	.000		
37	37	-.209E-01	.000	.000	.000	.000	.000		
38	38	.592	.000	.000	.000	.000	.000		

39	39	-.219E-01	.000	.000	.000	.000	.000		
40	40	-.209E-01	.000	.000	.000	.000	.000		
41	41	-.219E-01	.000	.000	.000	.000	.000		
42	42	.714	.000	.000	.000	.000	.000		
43	43	-.209E-01	.000	.000	.000	.000	.000		

44	44	-.219E-01	.000	.000	.000	.000	.000		
45	45	-.219E-01	.000	.000	.000	.000	.000		
46	46	.708	.000	.000	.000	.000	.000		
47	47	.959E-02	.000	.000	.000	.000	.000		
49	Ref Std.	.716	1.8	.000	.0	.000	.0	.000	.0

*Realized
purchased
in 31
issued
at 3.1*

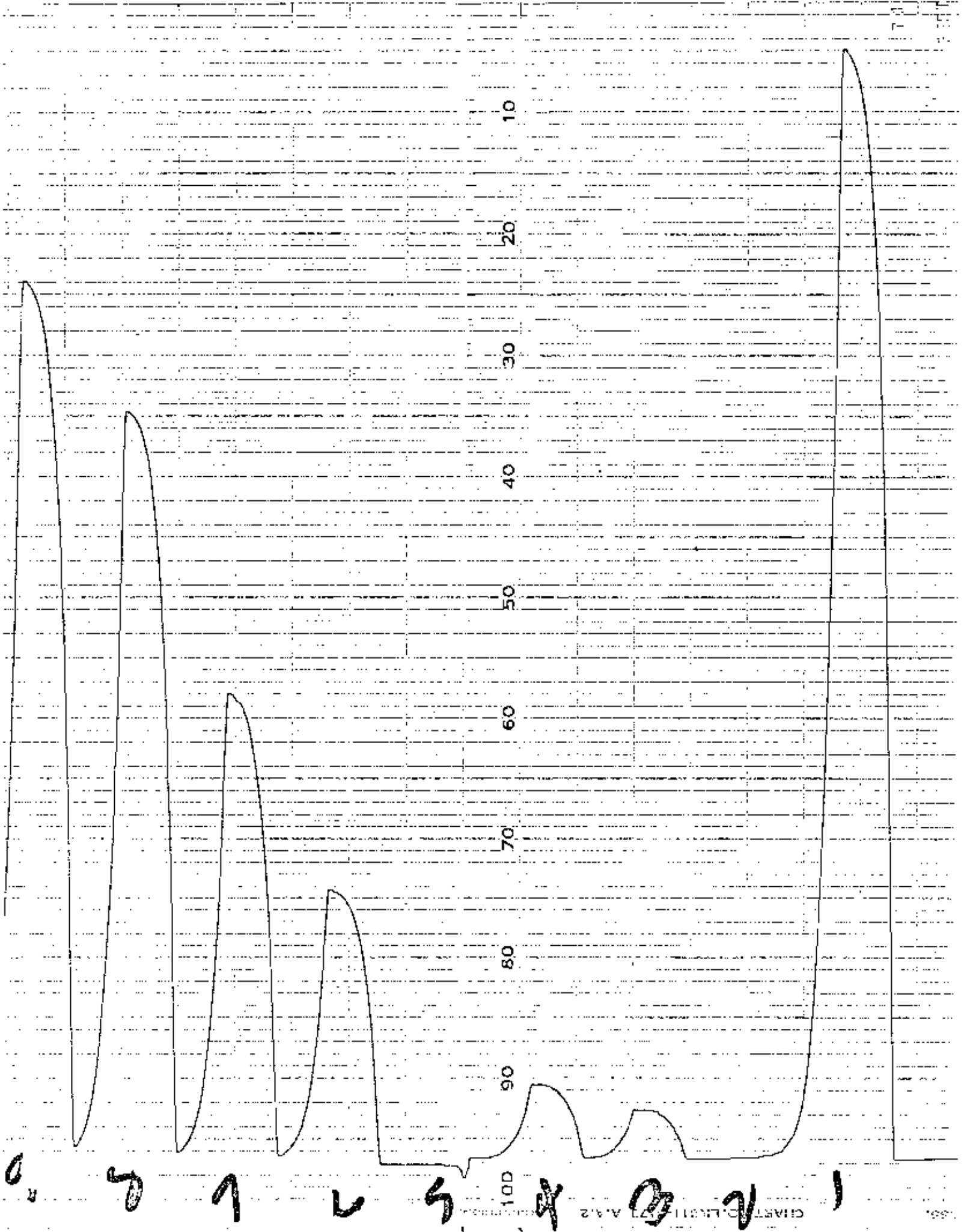
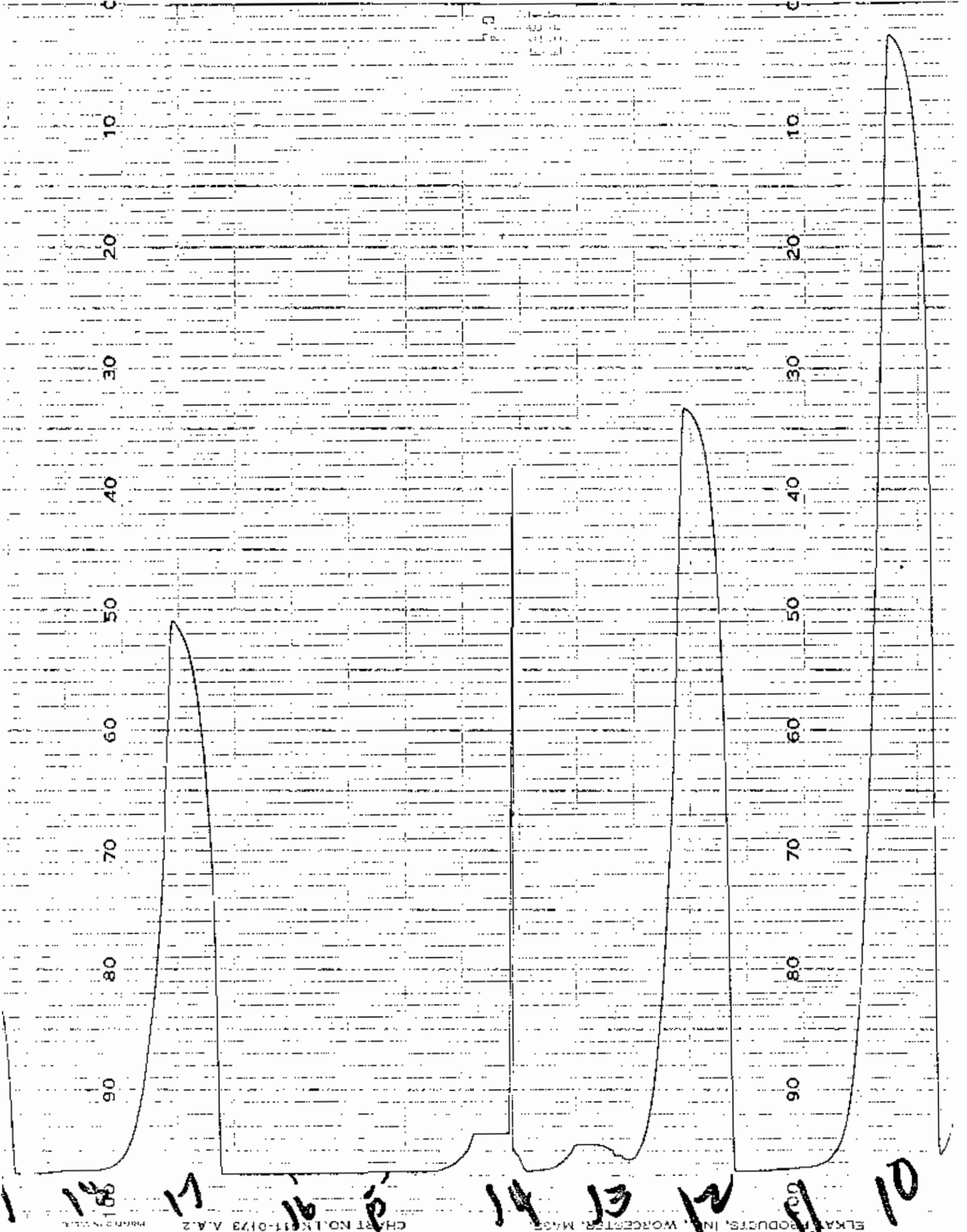
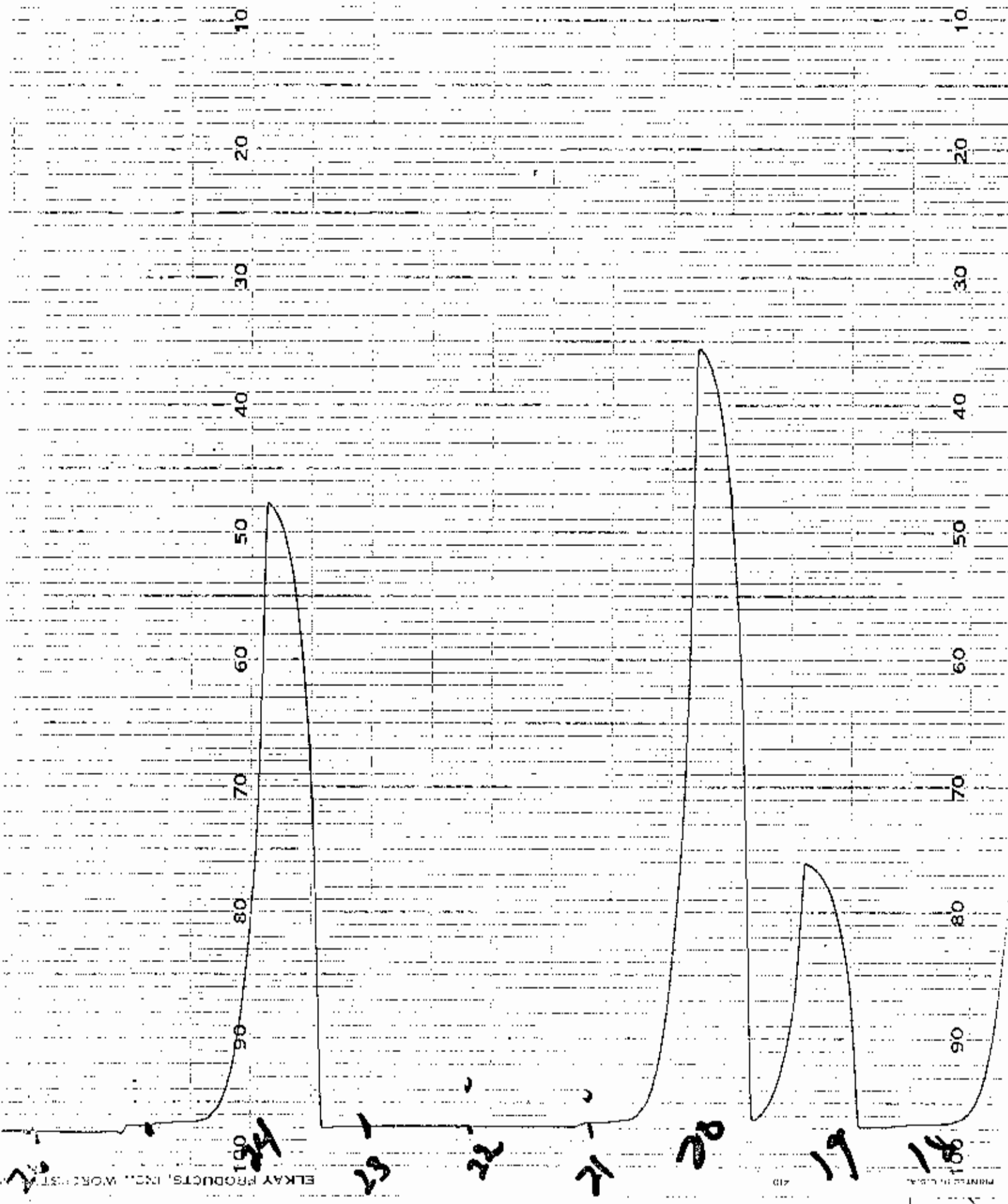


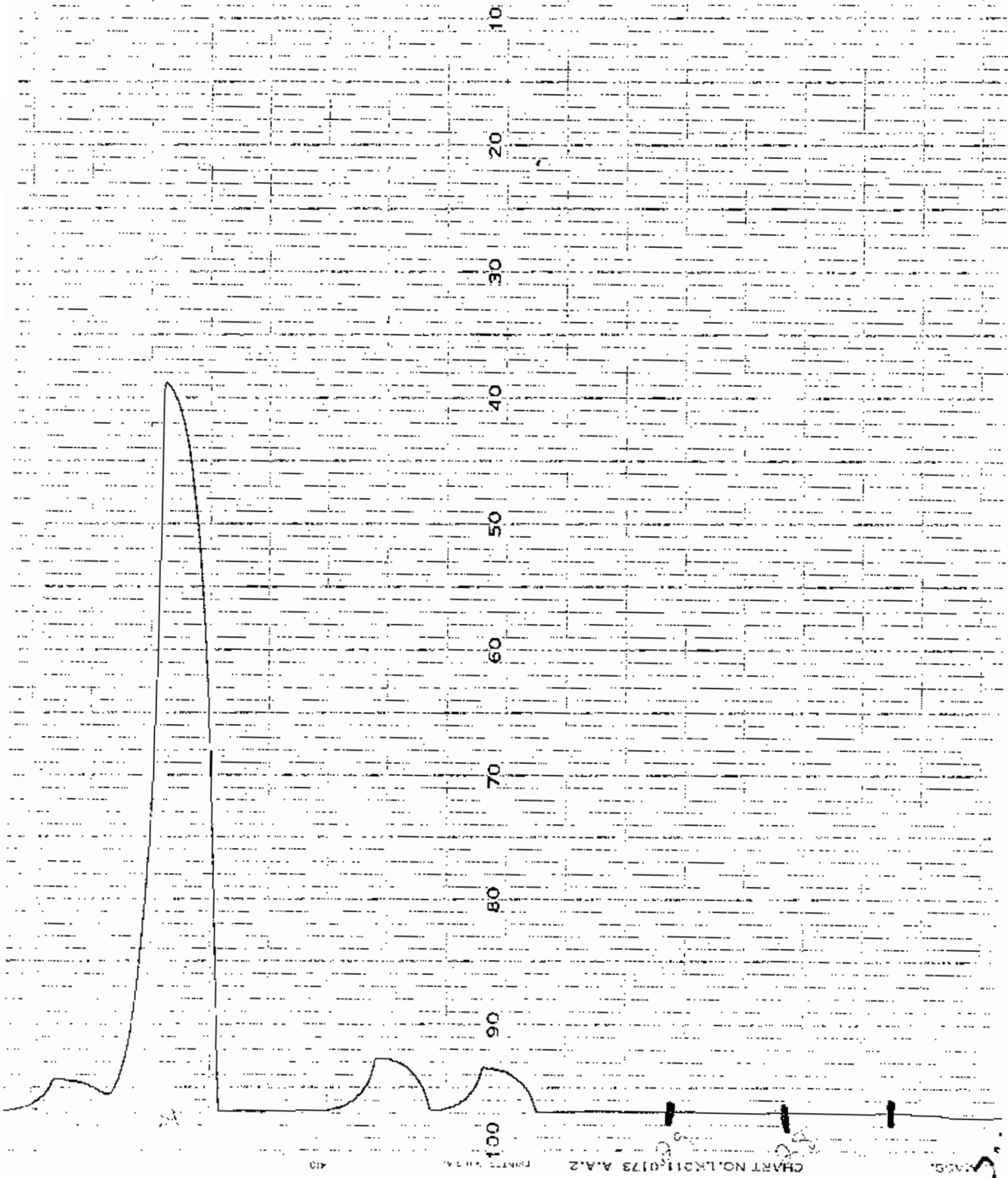
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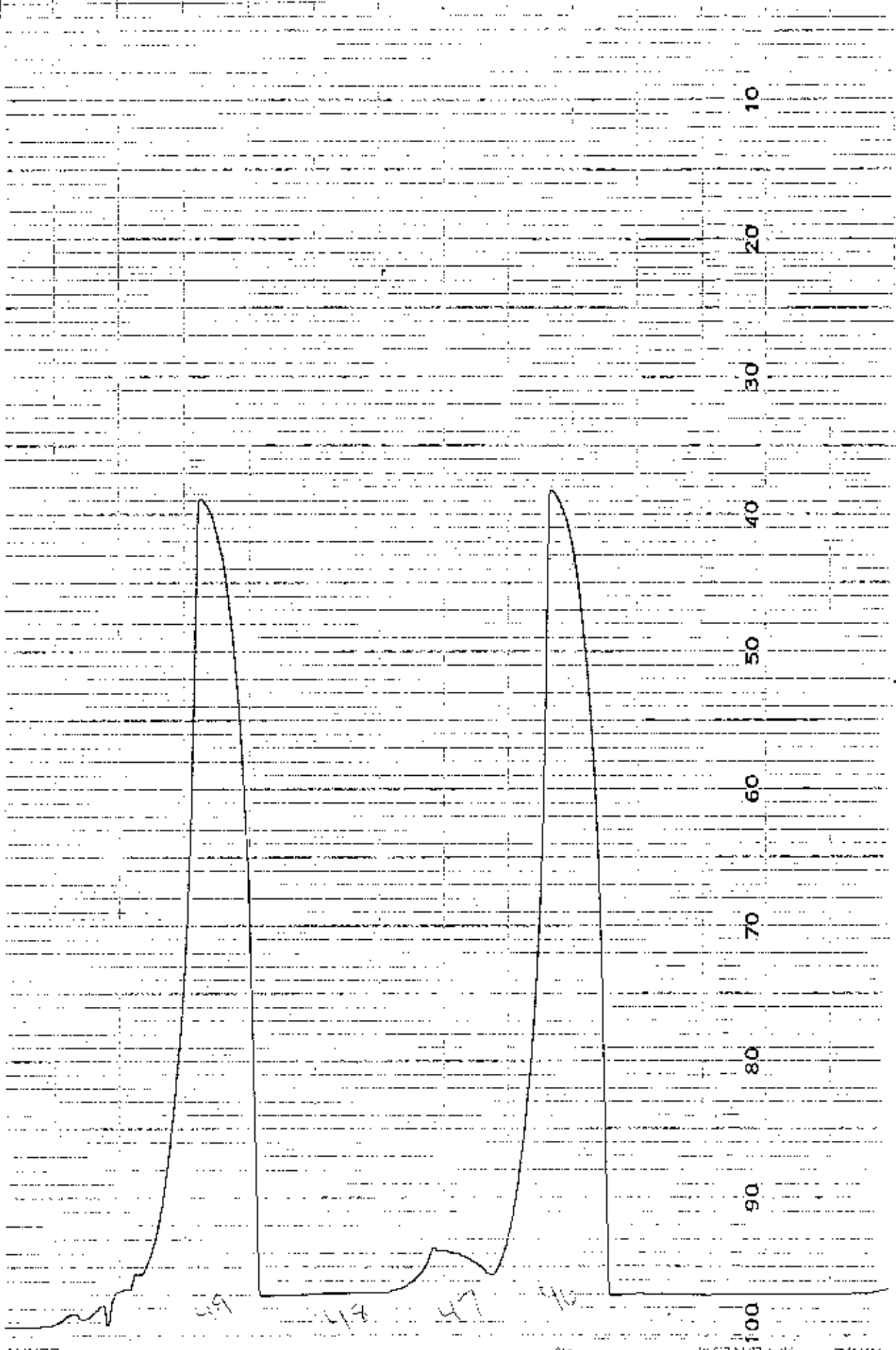
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ELIAY

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DE MINICIA

A.A.2

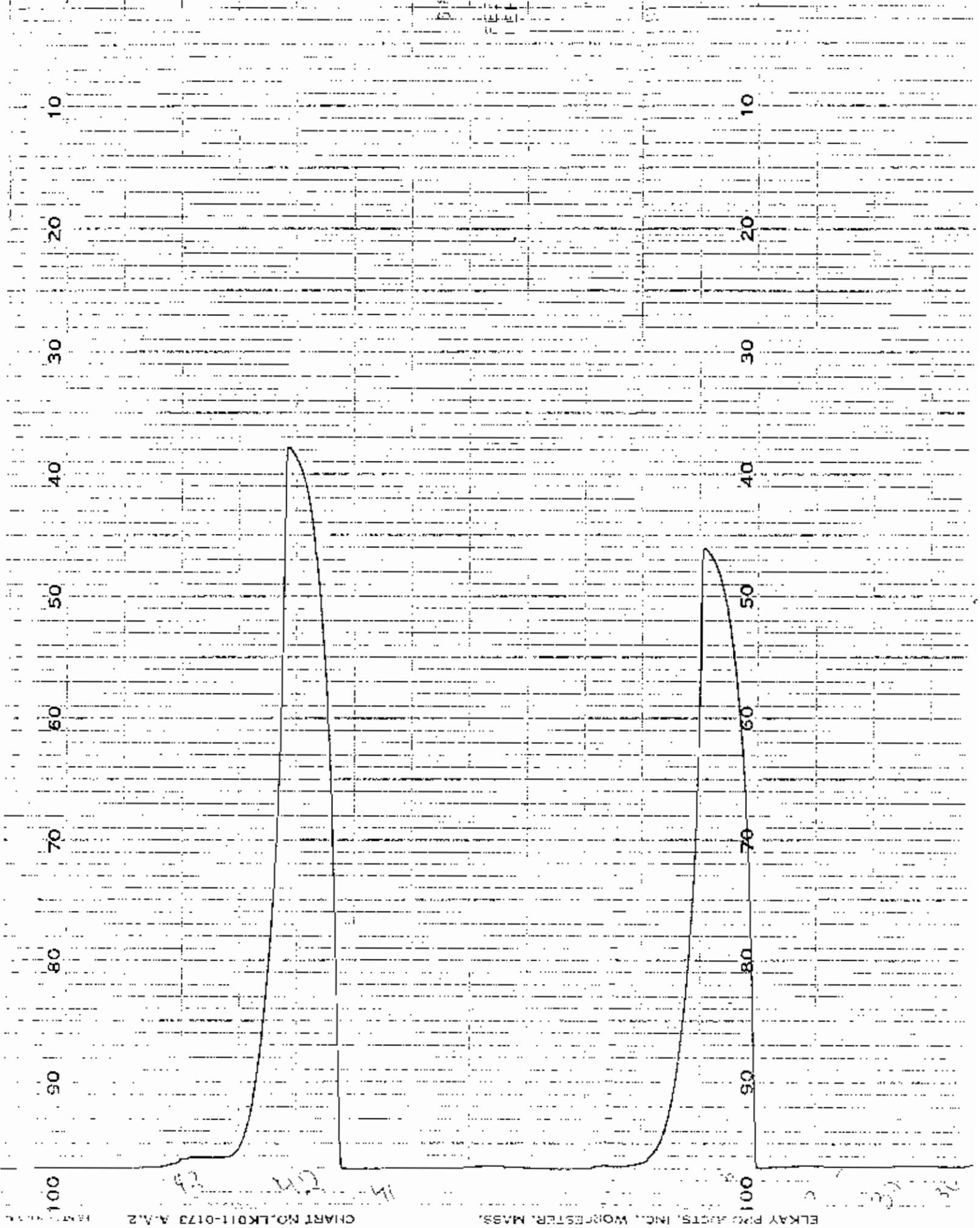


CHART NO. LK011-0173 A.A.2

ELKAY PRODUCTS, INC., WORCESTER, MASS.

14
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16

17

CYANIDE

Standardization of AgNO_3

Date: 5/1/85

Analyst: S. Baker AgNO_3

BLANK \rightarrow $\frac{1.25}{.92}$
 $\frac{.33 \text{ mL}}$

Trial 1 $\frac{5.50}{1.25}$
 $\frac{.33}{4.35} - .33 = 4.01$

Trial 2 $\frac{6.65}{2.37}$ $\bar{x} = 3.98$
 $\frac{.33}{4.28} - .33 = 3.95$

$$3.98 \times (x) = 5.00 \times .0141$$
$$x = .0177 \text{ N } \text{AgNO}_3$$

Standardization of CN

Date: 5/1/85

Analyst: S. Baker

Blank $\frac{.92}{.33}$ $\frac{.04 \text{ mL}}$ 3 mL stock CN
 $\text{AgNO}_3 .0177$

Trial 1 $\frac{5.96}{.48}$ overshoot -
 $\frac{.04}{5.48}$

Trial 2 $\frac{6.20}{.86}$
 $\frac{.04}{5.34}$ $\bar{x} 1, 2 = 5.30 - .04$

Trial 3 $\frac{2.95}{2.70}$
 $\frac{.04}{5.25}$ $\bar{x} = 5.26$
 $\frac{5.26}{5.00} = 1.052$

$$2 \times 1.052 \times .0177 = .0372$$

general testing corporation

910

TOTAL
AUTO ANALYZER ANALYSIS: Cyanide
water and wastewater testing specialists
32 samples

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

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

NO.	COMPANY	JOB#	STA.	SAMPLE VOL Distilled	FRSK HT.	CORR. PK. HT.	mg/L Distillate	DIL. FACTOR	N mg/l
1	1.50 ppm std.								
2	BLANK				5.3				
3	.02 ppm std.				6.8				
4	.05	"			9.7				
5	.10	"			15.0				
6	.20	"			26.0				
7	.50	"			56.5				
8	.70	"			74.9				
9	1.00	"	Distill		96.9				
10	1.50	"	Distill		100.2				
11	BLANK				5.3				
12	.70 ppm std.				74.6				1.696
13	BLANK				5.5				
14	URS-DATON 50705		T	14.29g	5.0		1.02	17.49	
15	"	"	O	11.25g	5.0		1.02	22.22	
16	"	"	d	500	5.0		1.02	.50	1.01 ✓
17	"	"	E	500	5.0		1.02	.50	1.01 ✓
18 *	"	"	E dup.		5.0		1.02		
19 *	"	"	E spk. (1)		80.6		.728		
20	"	"	F	500	7.0		.024	.50	.012 ✓
21	"	"	G	500	6.0		1.02	.50	1.01 ✓
22		50708	C	430	5.0		1.02	.58	1.01
23		50718		500			1.02	.50	1.01
24 *		"	Dup.				1.02		
25	CYANIDE CHECK sample EPA #8/500				57.6		.474	.50	.24
26 *	BLANK SPIKE (20 ppm)			(2)	72.7		1.018	ERROR	
27	BLANK				7.0				
28	URS-DATON 50705		J	12.94g	7.0		.024	19.32	
29	"	"	K	12.11g	7.0		.024	20.54	
30	"	"	M	11.26g	7.0		.024	22.20	
31	"	"	H	13.16g	6.9	.0226	.023	19.00	
32 *	"	"	H dup.		6.9	.0226			
33	BLANK				6.9				
34	.70 ppm std.				85.5				.799
35	Distilled	50739	B	500	7.0	.0107	1.02	.50	1.01
36	"	"	B dup.	500	7.0	.0107		.50	
37	"	"	B spk	500	88.6		.728	.50	
38	URS-DATON 50705		L	14.69g	6.9		1.02	17.02	
39	"	"	N	10.09g	6.9		1.02	24.28	
40 *	"	"	N dup.		6.9		1.02		

* Quality Control performed at AAET Analysis.

- (1) 50 ul 100 ppm INTERMEDIATE STOCK SOLUTION ADDED TO 7.2 ml. SAMPLE.
- (2) 20 ul 100 ppm " " " " TO ml. D.I. WATER
- (3) 50 ul 100 ppm INTERMEDIATE STOCK SOLUTION ADDED TO 8.1 ml. SAMPLE.

QUALITY CONTROL

PRECISION:

High Level

Low Level

Warning Limit: _____

Critical Limit: _____

First Value	Second Value	A-B	A+B	$\frac{A-B}{A+B}$	$\frac{A-B}{A} \times 100$
705E 4.02	4.02	-	-	-	-
705H .0226	.0226	-	-	-	-
739B 4.02	4.02	-	-	-	-
705N 4.02	4.02	-	-	-	-
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

SPIKED RECOVERY:

UCL UWL LCL LWL

High Level

Low Level

Sample Value	Spiked Value	Amount Added	Amount Recovery	% Recovery
705E 4.02	7.28	.704	1.728	103.4%
739B 4.02	7.28	.752	1.728	97%
705N 4.02	6.55	.655	1.655	100.6%
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

EPA STANDARD RECOVERY:

UCL UWL LCL LWL

High Level

Low Level

True Value	Analytical Value	% Recovery	
EPA#8 .516	.216	42%	> No off added?
.516	.31	60.1%	
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	

1100

Labelled 7-8

RESULTS FROM REPORT FILE CN-BSXX.RPT

DATE 6-11-85 TIME 11:46

METHOD NAME - CYANIDE SAMPLES/HR. - 20
SAMPLE/WASH RATIO - .250 SAMPLES/REFERENCE - 20

REF STANDARD CONC. - "A" .700 "B" .000 "C" .000 "D" .000
CHECK SAMPLE CONC. - "A" .700 "B" .000 "C" .000 "D" .000

*** STANDARDS DATA ***

TRAY POS.	STD #	CYANIDE	CHANNEL "B"	CHANNEL "C"	CHANNEL "D"
3	STD-1	.020	-1.000	-1.000	-1.000
4	STD-2	.050	-1.000	-1.000	-1.000
5	STD-3	.100	-1.000	-1.000	-1.000
6	STD-4	.200	-1.000	-1.000	-1.000
7	STD-5	.500	-1.000	-1.000	-1.000
8	STD-6	.700	-1.000	-1.000	-1.000
9	STD-7	1.000	-1.000	-1.000	-1.000
10	STD-8	1.500	-1.000	-1.000	-1.000

*** CHECK SAMPLE RESULTS ***
CHECK SAMPLE I.D. NUMBER ---- .7

12 CHECK SMPL .696 .000 .000 .000

*** CALIBRATION CURVES APPLIED ***

CYANIDE Y = .15223E-04 X^2 .88386E-02 X + .97192E-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	SMPL.#	CYANIDE % Drift	CHANNEL "B" % Drift	CHANNEL "C" % Drift	CHANNEL "D" % Drift
13	13	.117E-01	.000	.000	.000
14	14	.730E-02	.000	.000	.000
15	15	.732E-02	.000	.000	.000
16	16	.733E-02	.000	.000	.000
17	17	.735E-02	.000	.000	.000

18	18	.734E-02	.000	.000	.000
19	19	.728	.000	.000	.000
20	20	.243E-01	.000	.000	.000
21	21				

*** ANALYTICAL RESULTS ***

TRAY	SKFL.#	CYANIDE % Drift	CHANNEL "B" % Drift	CHANNEL "C" % Drift	CHANNEL "D" % Drift
23	23	-.336E-01	.000	.000	.000
24	24	-.334E-01	.000	.000	.000
25	25	.474	.000	.000	.000
26	26	.618	.000	.000	.000
27	27	.237E-01	.000	.000	.000
<hr/>					
28	28	.237E-01	.000	.000	.000
29	29	.236E-01	.000	.000	.000
30	30	.235E-01	.000	.000	.000
31	31	.226E-01	.000	.000	.000
32	32	.226E-01	.000	.000	.000
<hr/>					
34	Ref Std.	.799 12.8	.000	.0	.000 .0
35	35	.107E-01	.000	.000	.000
36	36	.107E-01	.000	.000	.000
37	37	.738	.000	.000	.000
38	38	.992E-02	.000	.000	.000
<hr/>					
39	39	.992E-02	.000	.000	.000
40	40	.992E-02	.000	.000	.000
41	41	.655	.000	.000	.000
42	42	.342E-01	.000	.000	.000
43	43	.107E-01	.000	.000	.000
<hr/>					
44	44	.433	.000	.000	.000
45	45	.227	.000	.000	.000
46	46	.227	.000	.000	.000
40	Ref Std.	.807 14.0	.000	.0	.000 .0

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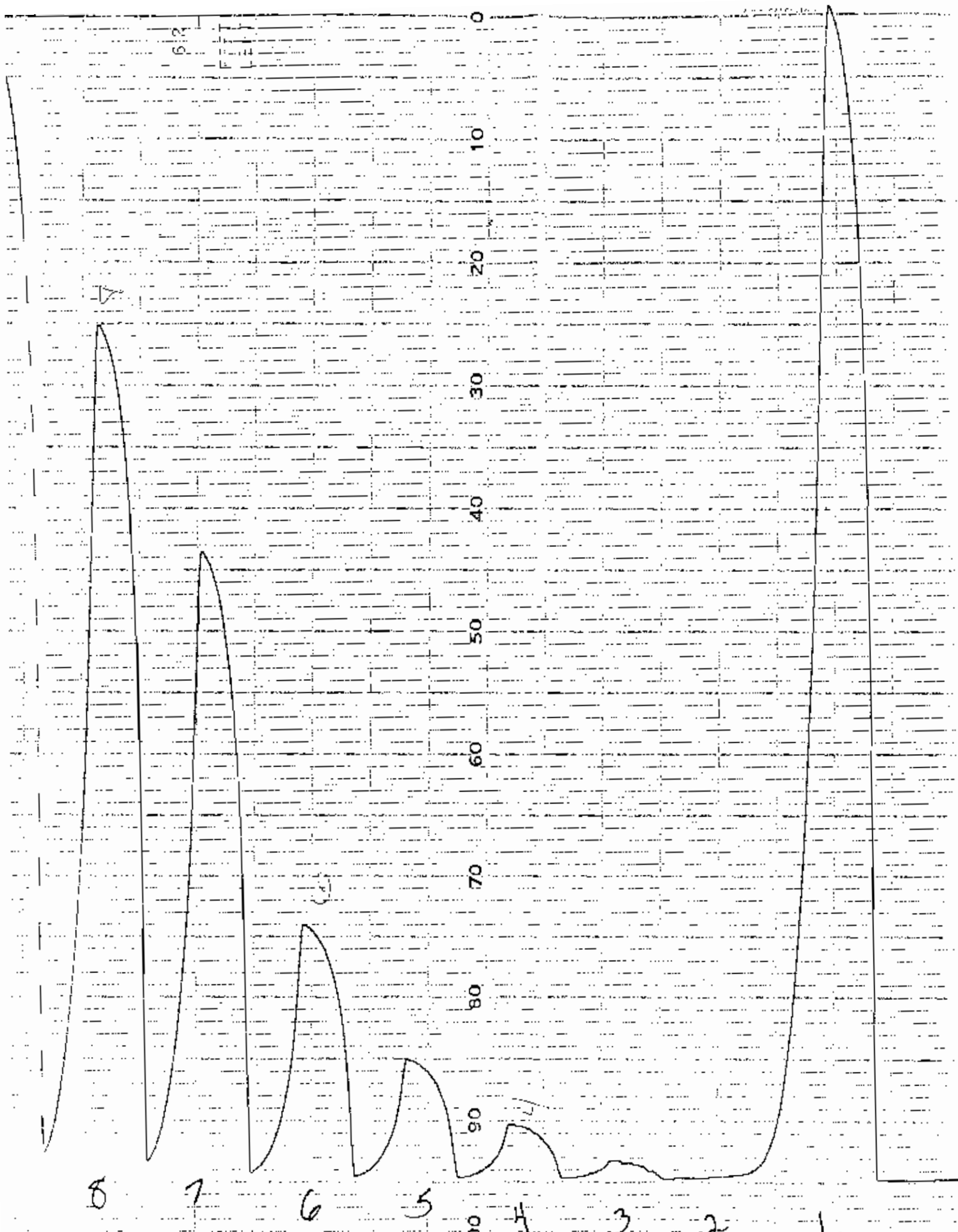
710 Exchange Street
Rochester, NY 14608
(716) 454-3760

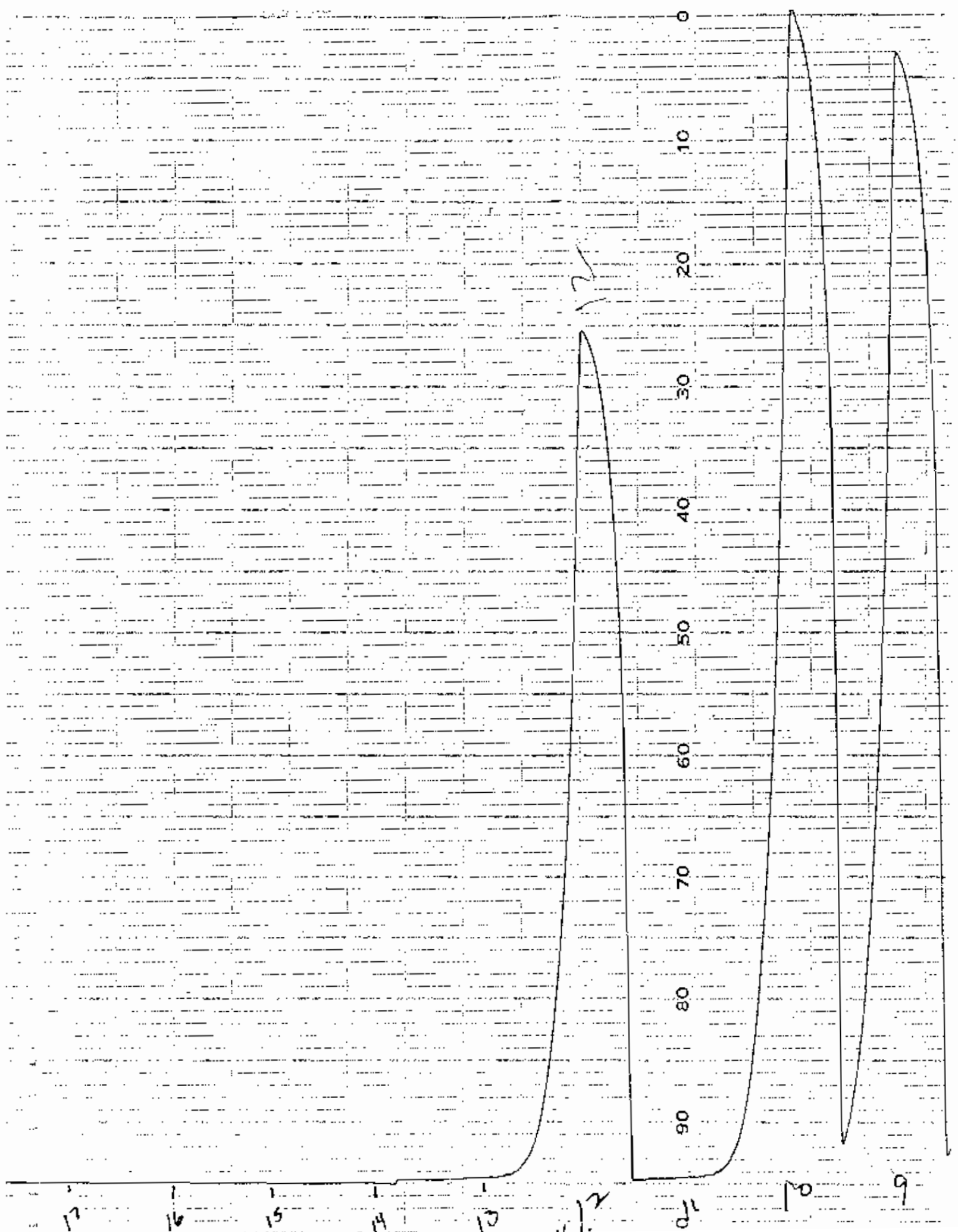
85 Trinity Place
Hackensack, N.J 07601
(201) 488-5242

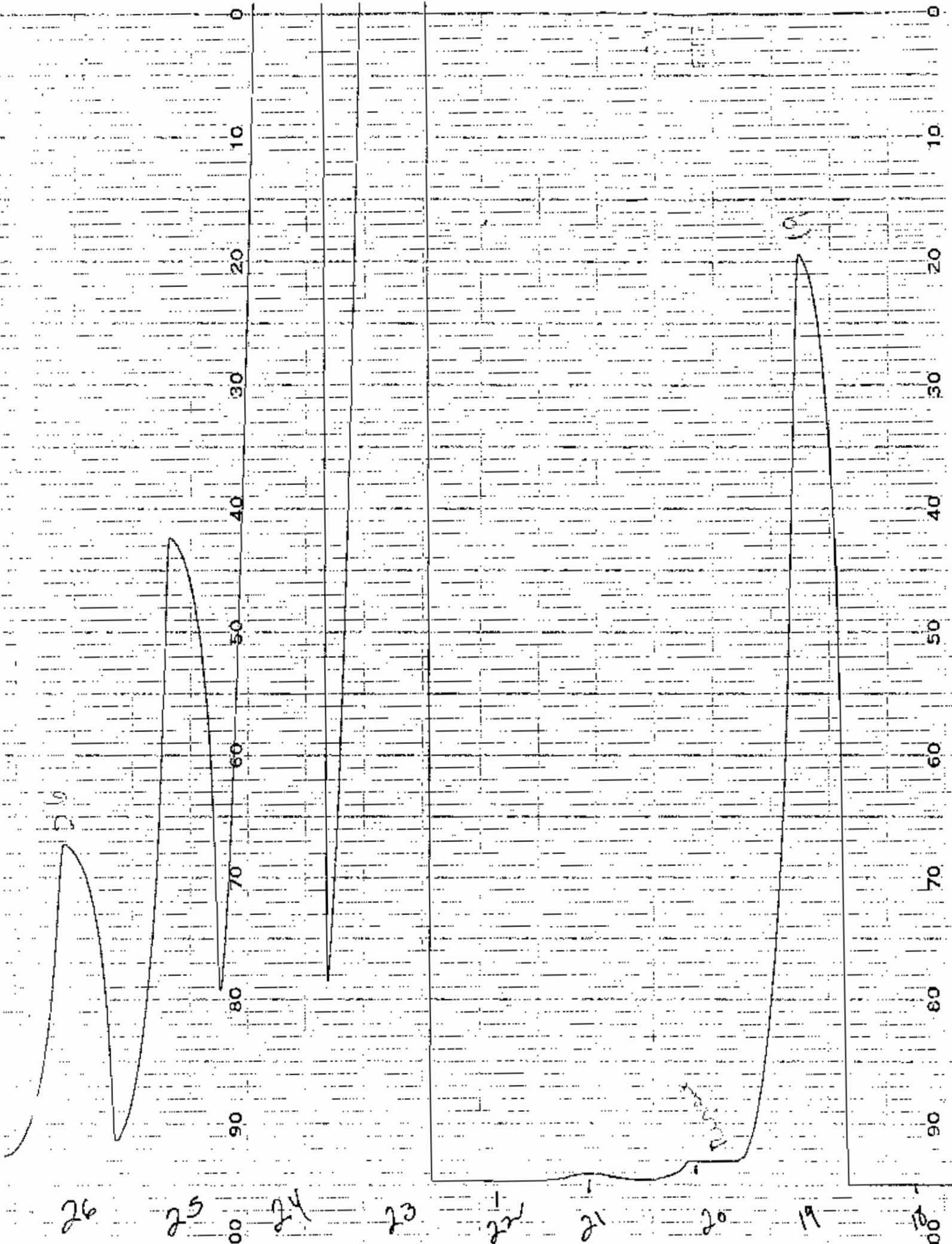
CYANIDE DISTILLATION

P. Prudhomme

PARATUS *	DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACTOR	TCN	FCN
1	5-9	50705 J	DARTON	12.94 gr	2.50	19.32	✓	
2		K	"	12.17 gr	"	20.54	✓	
3		M	"	11.26 gr	"	22.20	✓	
4		H	"	13.16 gr	"	19.00	✓	
5		50739 B	KEDAK	500	"	.50	✓	
6		B-Dup		500	"	.50	✓	
7		B-Sub	20 ml 4.6 ppm + 9.41 ppm 507	507	"	.50	✓	
8		50705 L	DARTON	14.69 gr	"	17.02	✓	
9		N	"	10.07 gr	"	24.78	✓	
					* Standardized 5/16/85			



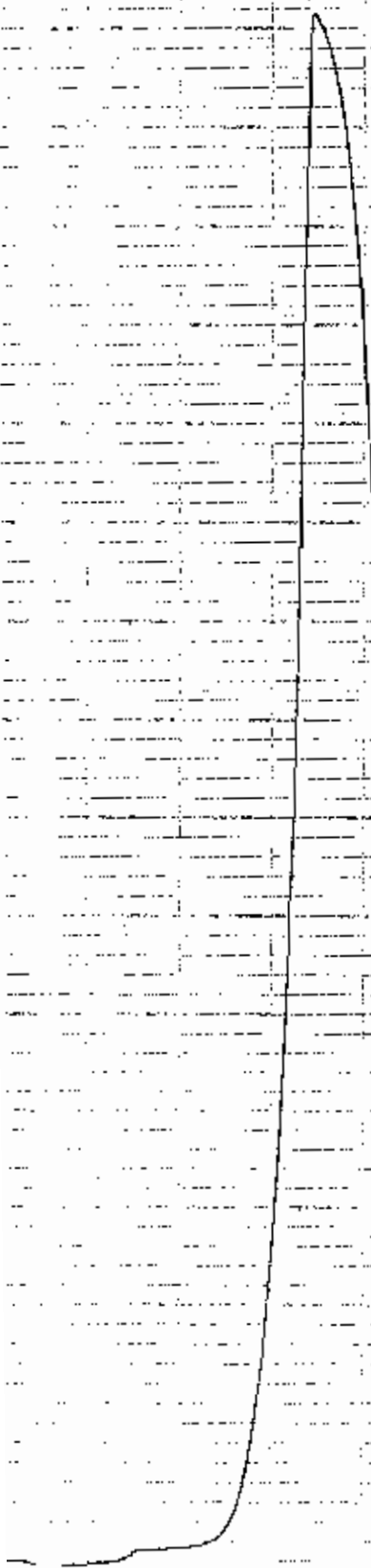




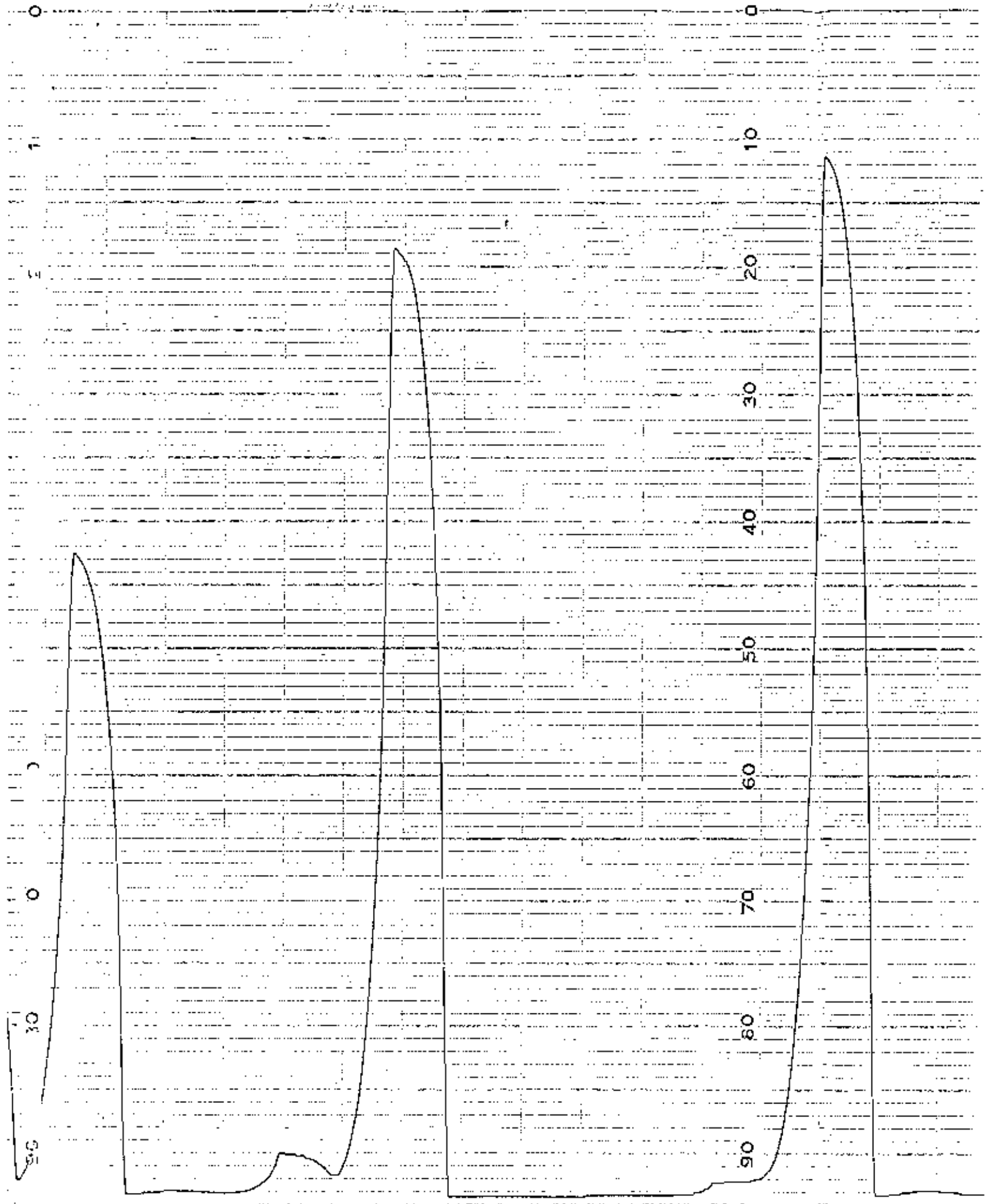
60

FEET

0
10
20
30
40
50
60
70
80
90



6 35 34 33 32 31 30 29 28 27



44

43

42

41

40

39

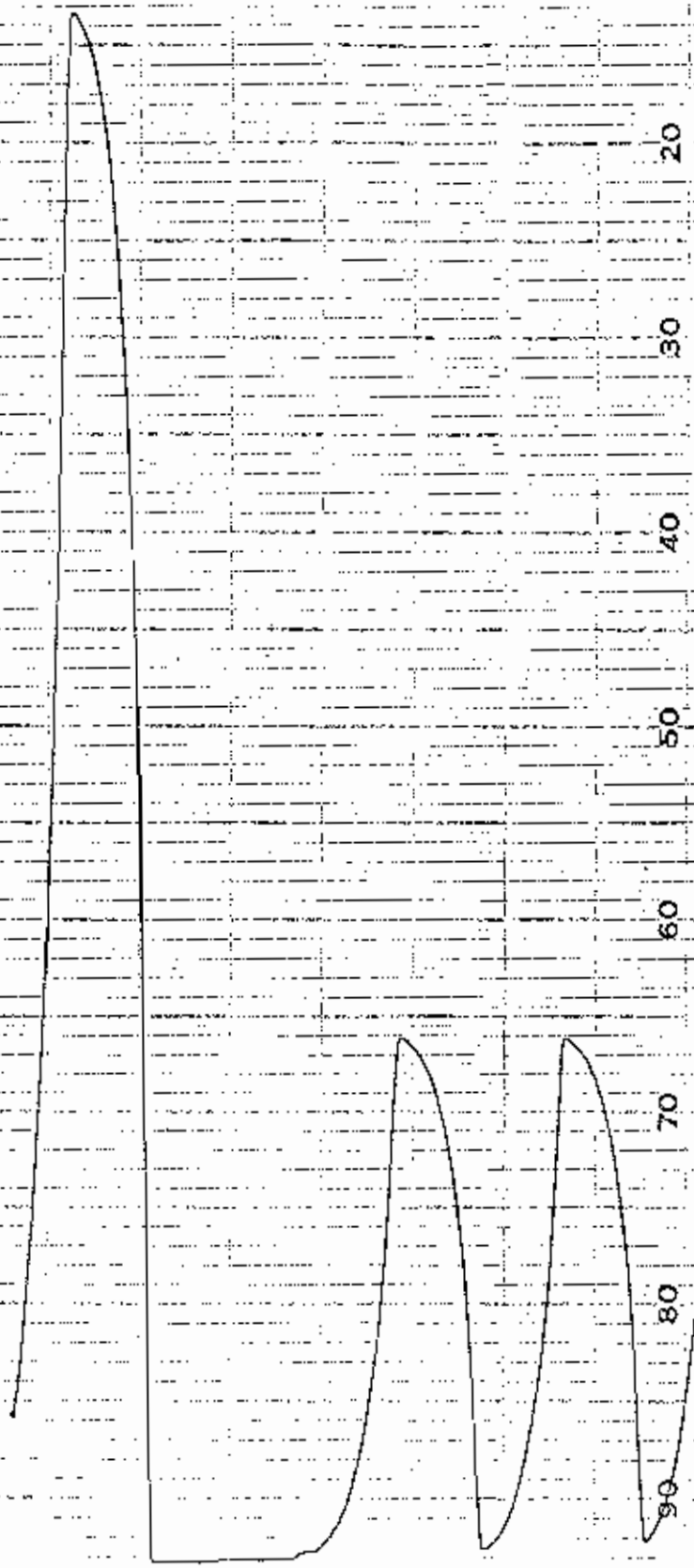
38

37

36

50
FEET

0
10
20
30
40
50
60
70
80
90



48 47 46 45
00

Cyanide

Standardization of

Date: 5-16-85

Analyst: C. Kiefer AgNO₃

Blank $\begin{array}{r} 1.25 \\ .92 \\ \hline .33 \text{ mls} \end{array}$

#1 $\begin{array}{r} 5.50 \\ 1.25 \\ \hline 4.35 - .33 \text{ ml} = 4.01 \end{array}$

#2 $\begin{array}{r} 6.65 \\ 2.37 \\ \hline 4.28 - .33 = 3.95 \end{array}$ $\bar{x} = 3.98$

$$3.98 \times (x) = 5.00 \times .0141$$

$$x = .0177 \text{ N AgNO}_3$$

Standardization of CN^-

5/16/85

C. Kiefer

stock CN^-

3 mls, AgNO_3 .0177

Blank = .04 ml

Trial #1 = 4.8 mls

Trial #2 = 5.48 mls

Trial #3 = 5.20 mls

$$\bar{x} = 5.76 - .04$$

$$\bar{x} = 5.12$$

$$\frac{5.12}{5.00} = 1.024$$

$$2 \times (1.024) \times .0177 = .0362$$

$$(.0362) \times (26,000) = 941.2$$

general testing corporation

gto

AUTO ANALYZER ANALYSIS: Cyanide
water and wastewater testing specialists

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

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

NO.	COMPANY	JOB#	STA.	SAMPLE VOL.	PEAK HT.	A. mg CORR. RECORDED	B. mg.	DIL. FACTOR	N mg/1
1	1.5				43.7				
2	BLANK				5.0				
3	.02				6.8				
4	.05				9.5				
5	.10				11.6	delete			
6	.20				24.0				
7	.50				48.9				
8	.70				63.2				
9	1.00				80.1	delete			
10	* 1.50				93.5	delete			
11	BLANK				5.0				
12	.70 mg/lie check				62.4	.691	.700		
13	URS DALCO 50705 (1)	H. spk		28.99 ml	12.5	.078	.081		.078
14		H. dup		29.58 ml	5.2	.007	.018		<.17 ug/l
15	sp. of food etc. → (1)	H. spk		30.19 ml	10.8	.061	.065		.061
16		I		32.51 ml	5.4	.009	.020		<.15 ug/l
17		J		34.09 ml	5.9	.013	.024		<.15 ug/l
18		K		33.46 ml	5.7	.012	.022		<.15 ug/l
19		L		34.60 ml	5.6	.011	.022		<.15 ug/l
20		M		35.45 ml	5.0	.005	.017		<.14 ug/l
21		N		31.55 ml	5.0	.005	.017		<.15 ug/l
22		O		31.45 ml	5.0	.005	.017		<.15 ug/l
23	EPA # 8				80.0	.947	.977	.5	1489
24	Need to 7010X 10	50897	A	500 ml	33.5	.306	.295	.5	.15 ✓ Free
25	"	50862	E	250	PCN 5.0	.005	.017	1.0	<.02 ✓ .03
26	"	50863	E	250	PCN 5.0	.005	.017	1.0	<.02 ✓ .03
27	Continue	4399		10.01 ml	5.0	.005	.017		<.50 ug/l
28		4399	Dup	10.21 ml	5.0	.005	.017		
29	H.E.E.	4361	B1	13.01 ml	5.0	.005	.017		<.38 ug/l
30	MTD BLANK	→ A.A.			5.0	.005	.021		
31	BLANK	spk Dist.			0.21				
32	WAK	50897		500 ml	Concentration				
33	"	BLANK			4.8				
34	"	70 check			63.8	.711	.722		
35	Need to 7010X 10	50904	A	300 ml	14.0	.094	.094	.833	.08 ✓
36	EPA # 8			600 ml	56.6	.600	.594	.5	.300 ✓
37	Need to 7010X 10	50974	A	200	8.3	.038	.045	1.25	.05 ✓
38	"		A-dup	200	9.2	.046	.053		
39	"		A-spk	200	0.21				
40	MID BLANK Dist			500	5.0	.007	.021		<.02

* Aug of peak # 1 at 41

(1) 2.5 ml of 10 ppm Std
value in final conc 250 ml 0.10 mg/l

A. Rechecked file - some values more consistent
B. using this data yield positive skew on low values

↑ Scott Gabel
rework file
6-7-85

general testing corporation

910

AUTO ANALYZER ANALYSIS:

water and wastewater testing specialists

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

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

NO.	COMPANY	JOB#	STA.	SAMPLE VOL.	PEAK HT.	PK HT.	mg.	DIL. FACTOR	N mg/l
1		1.5mg/l check			93.2	detect	1.		
2		50705	H-d.p	29.88mg	5.2	.009	.020		<.17mg/l
3		50896A		500 ml	28.0	.156	.151	.5	.08 ✓
4		300 spk		500	54.8	.578	.571	.25	
5		4261	C	11.61	4.5	.002	.015		<.43mg/l
6	EPDRE	50911		300mls	4.5	.002	.015	.833	<.02 ✓
7		50563	A	100mls	4.5	.002	.015	2.5	<.04
8			A-dup	100	4.7	.004	.018		
9			A-spk	100	0.11				
10	WALF	50938	A	300	5.0	.007	.018	.833	<.02 ✓
11	ZELAK	50935	A	500	4.6	.003	.015	.5	<.02 ✓
12	EPH CHECK # 8			500mls	77.3	.910	.930	.5	.755
13	BARCOCK	50943	A	500mls	12.8	.083	.089	.5	.04 ✓
14	BARCOCK	50891		500	4.4	.001	.014	.5	<.02 ✓
15	BLANK				4.4	.001	.014		<.02
16		1.20mg/l check sample			62.8	.702	.713		
17	ZELAK	50900	A	400	10.5	.064	.067	.625	.04 ✓
18	WALF	50909	A	400	50.0	.522	.512	.625	.33 ✓
19		50705	I-Dup	AN 32.5 lps	5.3	.013	.024		<.15mg/l
20		(1.10mg/l)	I-spk		15.2	.111	.110		
21	LSK	50894		500mls	9.5	.054	.059	.5	.03 ✓
22		POSITION 31 blk spk			10.0	.059	.063	1:10	
23		2 blk spk AA			15.0	.109	.108		
24		" "			15.0	.109	.108		
25		pos 39 50974	A-spk		20.0	.658	.655	1:10	
26		BLANK spk dist. 1st dist.			0.01				
27		AA 50974	A-dup		9.3	.052	.057		
28		spk send 50974	A-spk		52.8	.557	.542		
29		Pos 39 50863	A-spk		56.1	.602	.596	1:10	
30		BLANK			4.6				
31		check			63.3	.707			
32		pos 31 blk spk report			44.7	.450	.438	1:10	
33		MTD BLANK dist.			4.7	.007	.018		
34									
35									
36									
37									
38									
39									
40									

* 100ul of 10ppm stock (1.0mg/l)
+ 50ul 100ppm stock (.495mg/l)

DISTILLED Spikes 50974, 50863 spiked ten times too great read value of spk in 250 (7.52 mg/l)
BLANK Spikes positions 31, 16

QUALITY CONTROL

PRECISION:

High Level

Low Level

Warning Limit: _____

Critical Limit: _____

First Value	Second Value	A-B	A+B	$\frac{A-B}{(A+B)}$	$\frac{A-B}{A} \times 100$
263-17 <.04	<.04	_____	_____	_____	_____
705-H <.17 ug/lpm	<.17 ug/lpm	_____	_____	_____	_____
"-I <.15 ug/lpm	<.15 ug/lpm	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

SPIKED RECOVERY:

UCL UWL LCL LWL

High Level

Low Level

Sample Value	Spiked Value	Amount Added	Amount Recovery	% Recovery	
<.02	.578	.752	.578	76.9	DIST
<.02	.458	.752	.458	60.9	DIST
705-I <.02	.111	.100	.111	110%	AA
"-H <.02	.081	.094	.081	86.2%	DIST
"-H <.02	.065	.094	.065	69.1%	DIST
263-A <.02	.602	.752	.602	80.1%	DIST

EPA STANDARD RECOVERY:

UCL UWL LCL LWL

High Level

Low Level

True Value	Analytical Value	% Recovery
PA#8 .561	.455	81.1%
.561	.489	87.2%
.561	.300	53.5
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

1105

RESULTS FROM REPORT FILE CN-89XX-RPT

DATE 6-10-85

TIME 11:19

METHOD NAME - CYANIDE
 SAMPLE/WASH RATIO - .250

SAMPLES/HR. - 20
 SAMPLES/REFERENCE - 20

REF STANDARD CONC. - "A" .700 "B" .000 "C" .000 "D" .000
 CHECK SAMPLE CONC. - "A" .700 "B" .000 "C" .000 "D" .000

*** STANDARDS DATA ***

TRAY POS.	STD #	CYANIDE	CHANNEL "B"	CHANNEL "C"	CHANNEL "D"
3	STD-1	.020	-1.000	-1.000	-1.000
4	STD-2	.050	-1.000	-1.000	-1.000
5	STD-3	.100	-1.000	-1.000	-1.000
6	STD-4	.200	-1.000	-1.000	-1.000
7	STD-5	.500	-1.000	-1.000	-1.000
8	STD-6	.700	-1.000	-1.000	-1.000
9	STD-7	1.000	-1.000	-1.000	-1.000
10	STD-8	1.500	-1.000	-1.000	-1.000

*** CHECK SAMPLE RESULTS ***

CHECK SAMPLE I.D. NUMBER ---- .7 STD

12 CHECK SMPL .691 .000 .000 .000

*** CALIBRATION CURVES APPLIED ***

CYANIDE $Y = .43570E-04 X^2 + .93948E-02 X + .49582E-02$
 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.#	CYANIDE % Drift	CHANNEL "B" % Drift	CHANNEL "C" % Drift	CHANNEL "D" % Drift
13	13	.778E-01	.000	.000	.000
14	14	.684E-02	.000	.000	.000
15	15	.608E-01	.000	.000	.000
16	16	.871E-02	.000	.000	.000
17	17	.134E-01	.000	.000	.000
18	18	.115E-01	.000	.000	.000
19	19	.106E-01	.000	.000	.000
20	20	.496E-02	.000	.000	.000

*** ANALYTICAL RESULTS ***

TRAY	SAMPL. #	BYONIDE		CHANNEL "8"		CHANNEL "D"		CHANNEL "E"	
			% Drift		% Drift		% Drift		% Drift
23	23	.947		.000		.000		.000	
24	24	.306		.000		.000		.000	
25	25	.496E-02		.000		.000		.000	
26	26	.496E-02		.000		.000		.000	
27	27	.496E-02		.000		.000		.000	

28	28	.496E-02		.000		.000		.000	
29	29	.496E-02		.000		.000		.000	
30	30	.496E-02		.000		.000		.000	
31	31	-.404E-01		.000		.000		.000	
32	32	-.404E-01		.000		.000		.000	

34	Ref Std.	.711	1.3	.000	.0	.000	.0	.000	.0
35	35	.939E-01		.000		.000		.000	
36	36	.600		.000		.000		.000	
37	37	.380E-01		.000		.000		.000	
38	38	.467E-01		.000		.000		.000	

39	39	-.387E-01		.000		.000		.000	
40	40	.682E-02		.000		.000		.000	
41	41	1.16		.000		.000		.000	
42	42	.869E-02		.000		.000		.000	
43	43	.156		.000		.000		.000	

44	44	.578		.000		.000		.000	
45	45	.217E-02		.000		.000		.000	
46	46	.216E-02		.000		.000		.000	
47	47	.216E-02		.000		.000		.000	
48	48	.589E-02		.000		.000		.000	

49	49	-.389E-01		.000		.000		.000	
50	50	.683E-02		.000		.000		.000	
51	51	.309E-02		.000		.000		.000	
52	52	.910		.000		.000		.000	
53	53	.826E-01		.000		.000		.000	

54	54	.122E-02		.000		.000		.000	
56	Ref Std.	.702	.3	.000	.0	.000	.0	.000	.0
57	57	.637E-01		.000		.000		.000	
58	58	.522		.000		.000		.000	
59	59	.134E-01		.000		.000		.000	

60	60	.111		.000		.000		.000	
61	61	.538E-01		.000		.000		.000	
62	62	.587E-01		.000		.000		.000	
63	63	.109		.000		.000		.000	
64	64	.109		.000		.000		.000	

65	65	.658		.000		.000		.000	
66	66	.857E-01		.000		.000		.000	

HEC

68	68	.557	.000	.000	.000
69	69	.602	.000	.000	.000

*** ANALYTICAL RESULTS ***

TRAY	SMPL.#	CYANIDE		CHANNEL "B"		CHANNEL "C"		CHANNEL "D"	
			% Drift		% Drift		% Drift		% Drift
70	70	.603E-02		.000		.000		.000	
71	71	.450		.000		.000		.000	
73	Ref std.	.707	.8	.000	.0	.000	.0	.000	.0

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910

water and wastewater testing specialists

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

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

CYANIDE DISTILLATION

5/30/85 M. Rubinstein

APPARATUS #	DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACTOR	TCN	FCN
#1	5/30/85	50705H	D4D	29.99 gm	250 ml	8.62	✓	
#2	5/30/85	50705H- Duo	D4D	29.88 gm	"	8.32	✓	
#3	5/30/85	50705H- SAKE	D4D	30.19 gm + 2.5 ml of 10 ppm spike	"		✓	
#4	5/30/85	50705I	D4D	32.51 gm	"	7.69	✓	
#5	5/30/85	50705J	D4D	34.09 gm	"	7.33	✓	
#6	5/30/85	50705K	D4D	33.46 gm	"	7.47	✓	
#7	5/30/85	50705L	D4D	34.60 gm	"	7.23	✓	
#8	5/30/85	50705M	D4D	35.45 gm	"	7.05	✓	
#9	5/30/85	50705N	D4D	31.55 gm	"	7.92	✓	
#10	5/30/85	50705O	D4D	31.45 gm	"	7.95	✓	

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g l o

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(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
TCN 1	5-31	4361B	HFE	13.01 gms	250	19.22	✓	
↓ 2		4361C	HFE	11.61 gms	"	21.53	✓	
3		4399	CONVERSE	10.01 gms	"	24.98	✓	
4		50896A	XEROX	500	"	.50	✓	
5		50894	LISK	500	"	.50	✓	
6	EPA X8			500	"	.50	✓	
7	EPA X8 Dup			500	"	.50	✓	
8	Bik spr		20 ml of 9.48 gm spike		"	.50	✓	
9		4399 Dup		10.21 gms	"	24.49	✓	
10		50897A (50897A) ?	XEROX	500	"	.50	✓	

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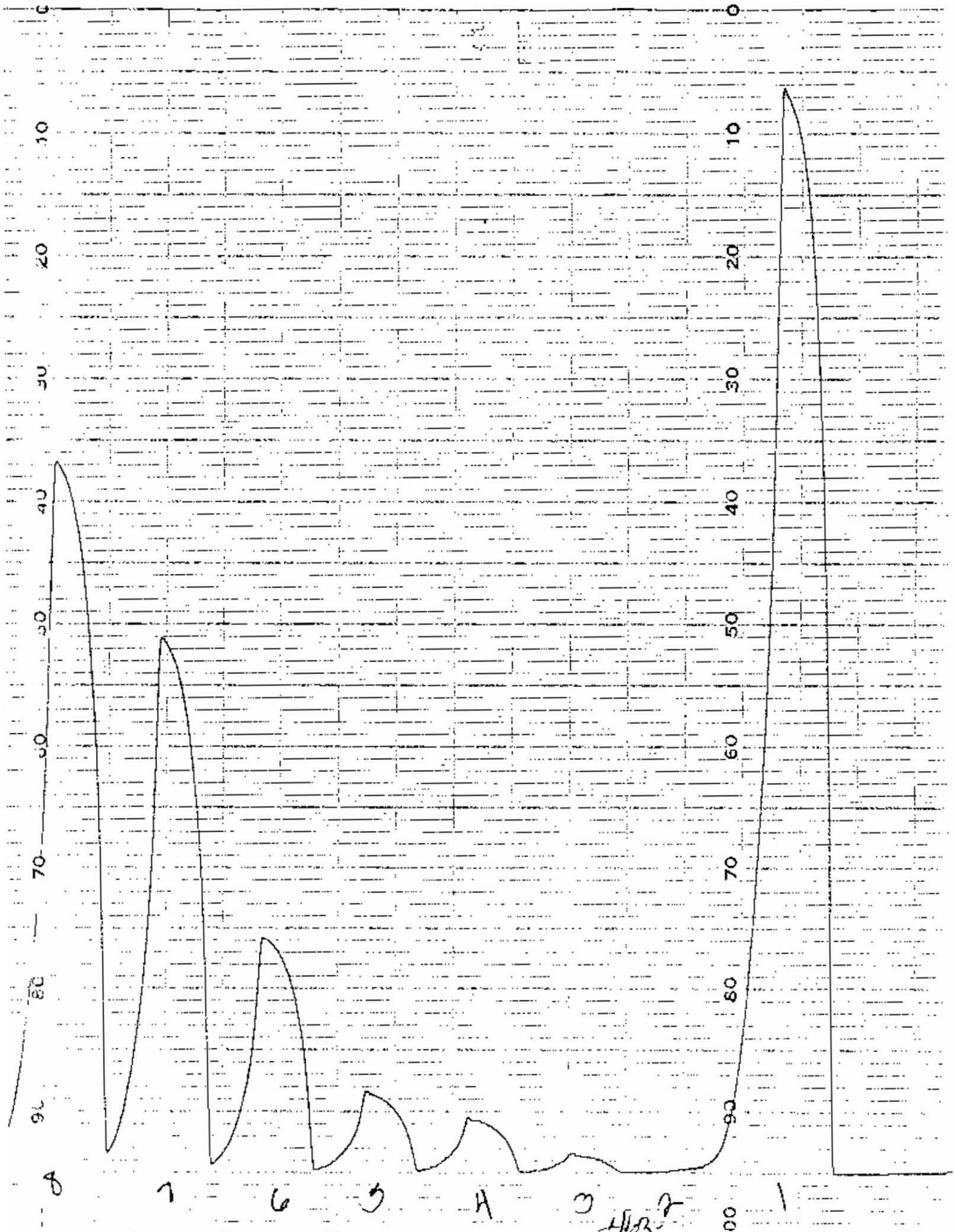
CYANIDE DISTILLATION

6/3/85

M. Rubinstein

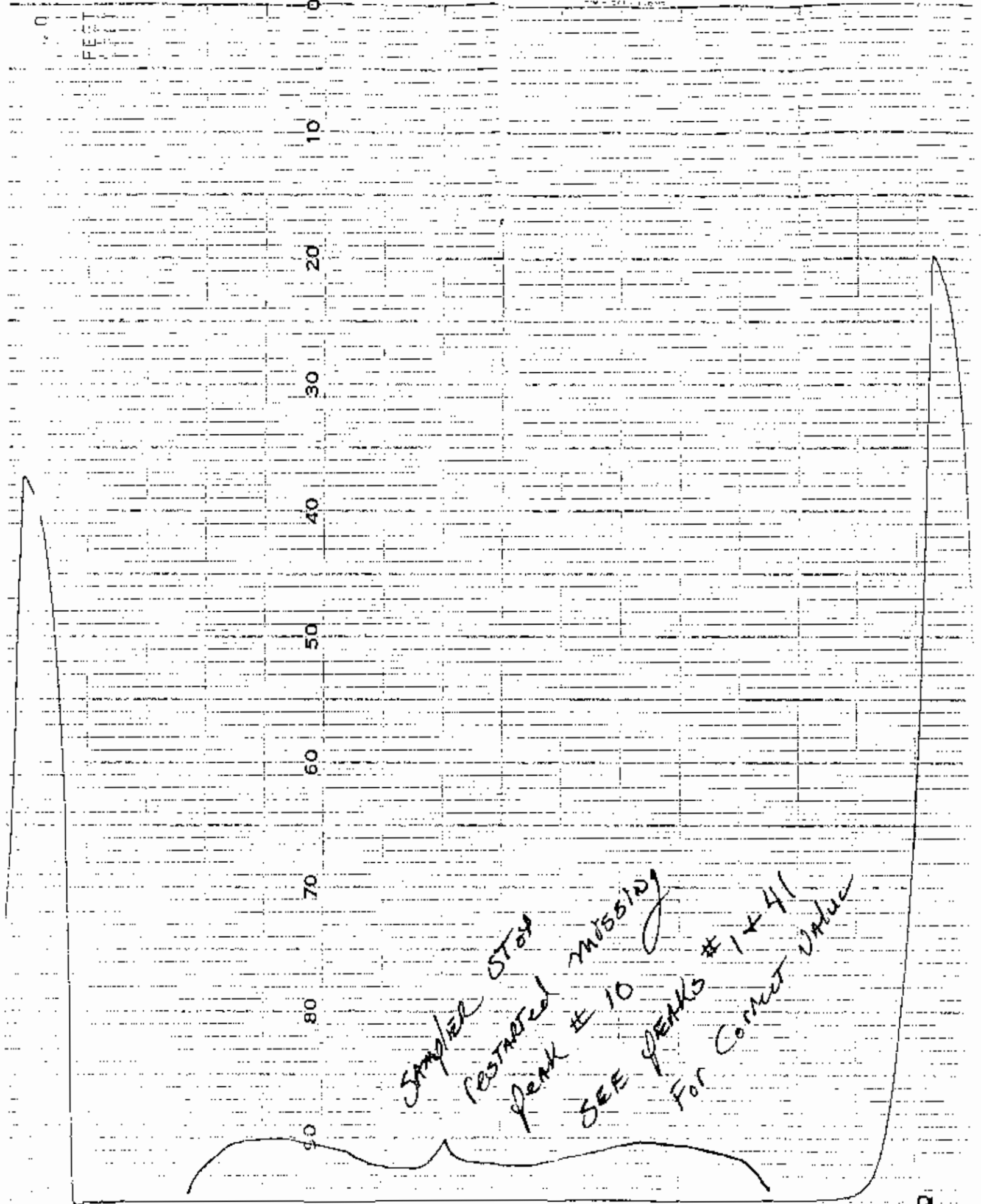
APPARATUS #	DATE	JOB #	NAME	ORIGINAL VOLUME	FINAL VOLUME	DILUTION FACTOR	TCN	FCN
#1	6/3/85	50863-A	XEROX	100 ml	250	2.5	✓	
#2	"	50863-A DVP	XEROX	100 ml	"	2.5	✓	
#3 *	"	50863-A SPIKE (20 ml of 1:100 spike)	XEROX	100 ml	"	2.5	✓	
#4	"	50891	BABCOCK	500 ml	"	.50	✓	
#5	"	50900-A	XEROX	400 ml	"	.625	✓	
#6	"	50909-A	MOTURON	400 ml	"	.625	✓	
#7	"	50911	ELPRE	300 ml	"	.833	✓	
#8	"	50935-A	XEROX	500 ml	"	.50	✓	
#9	"	50938-A	WOLFE	300 ml	"	.833	✓	
#10	"	50943-A	XEROX	500 ml	"	.50	✓	

89 CN STOCK



0
FEET

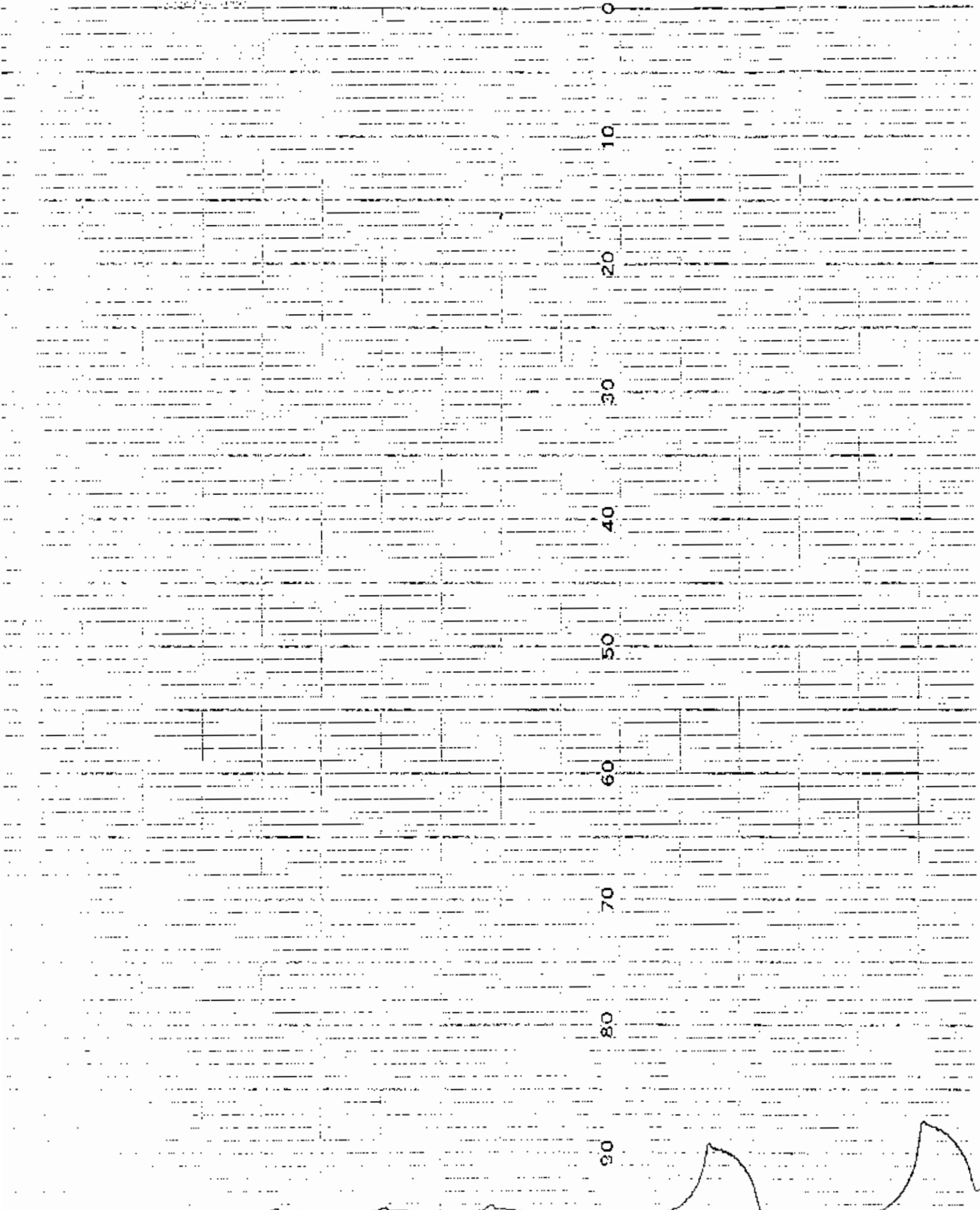
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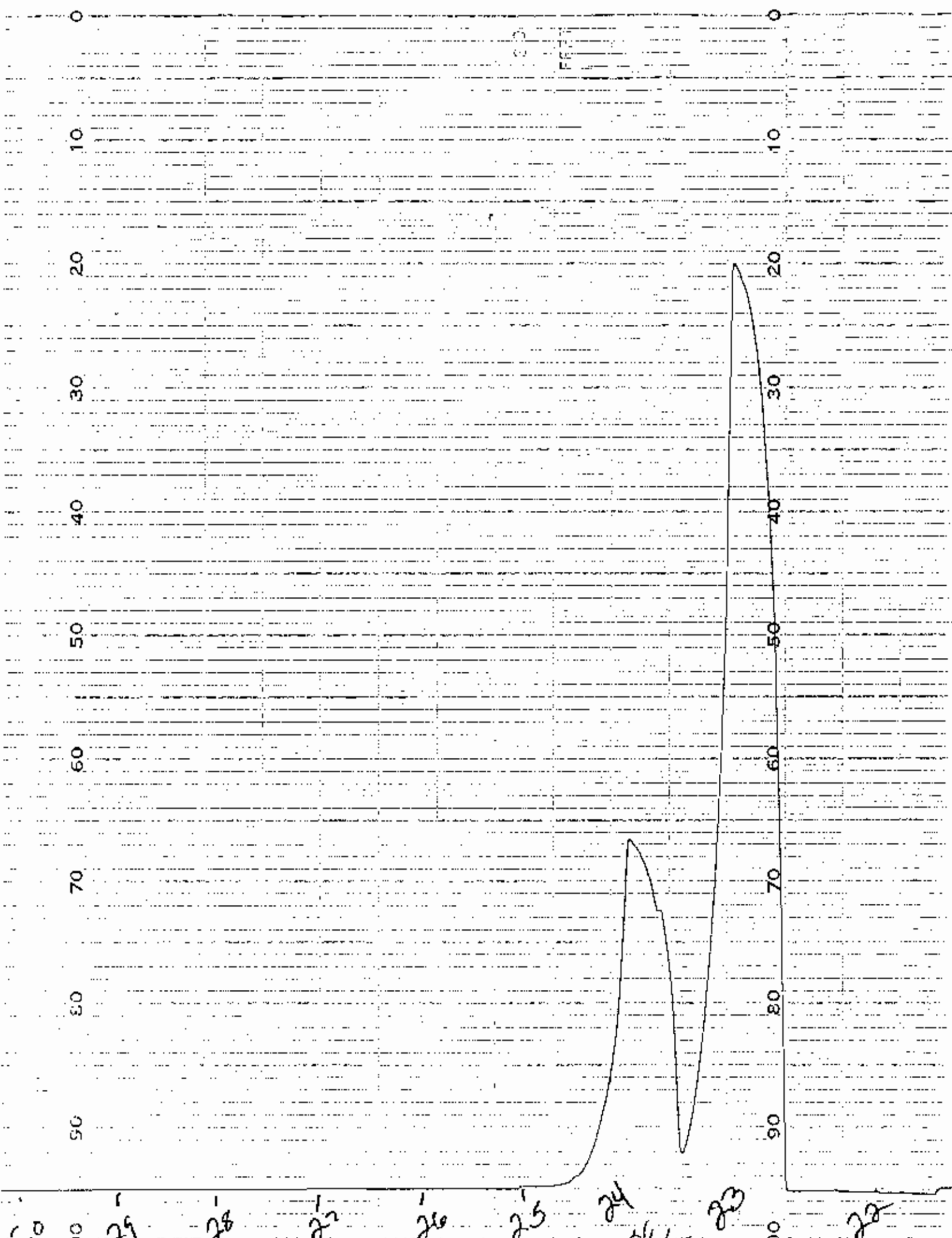


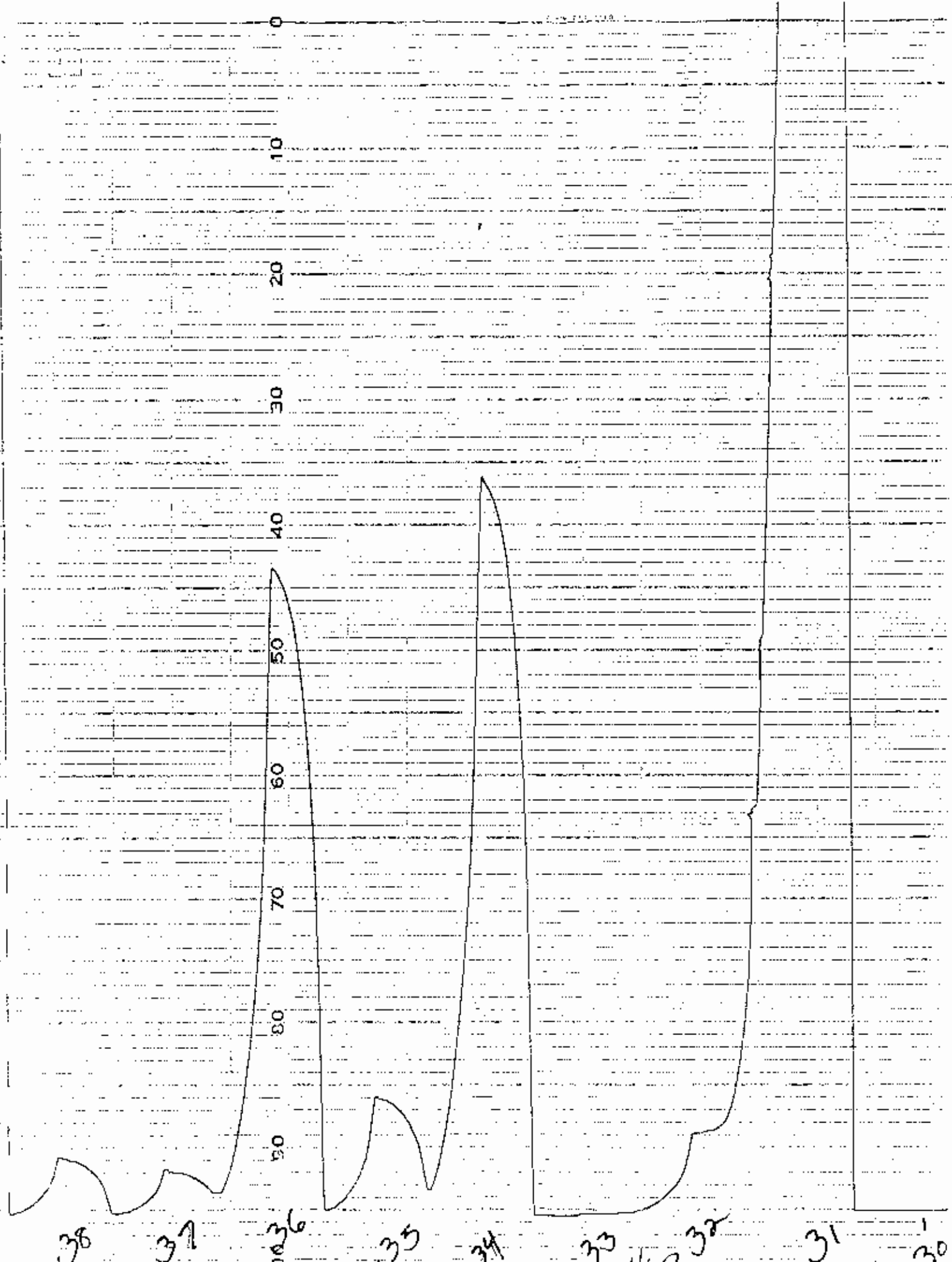
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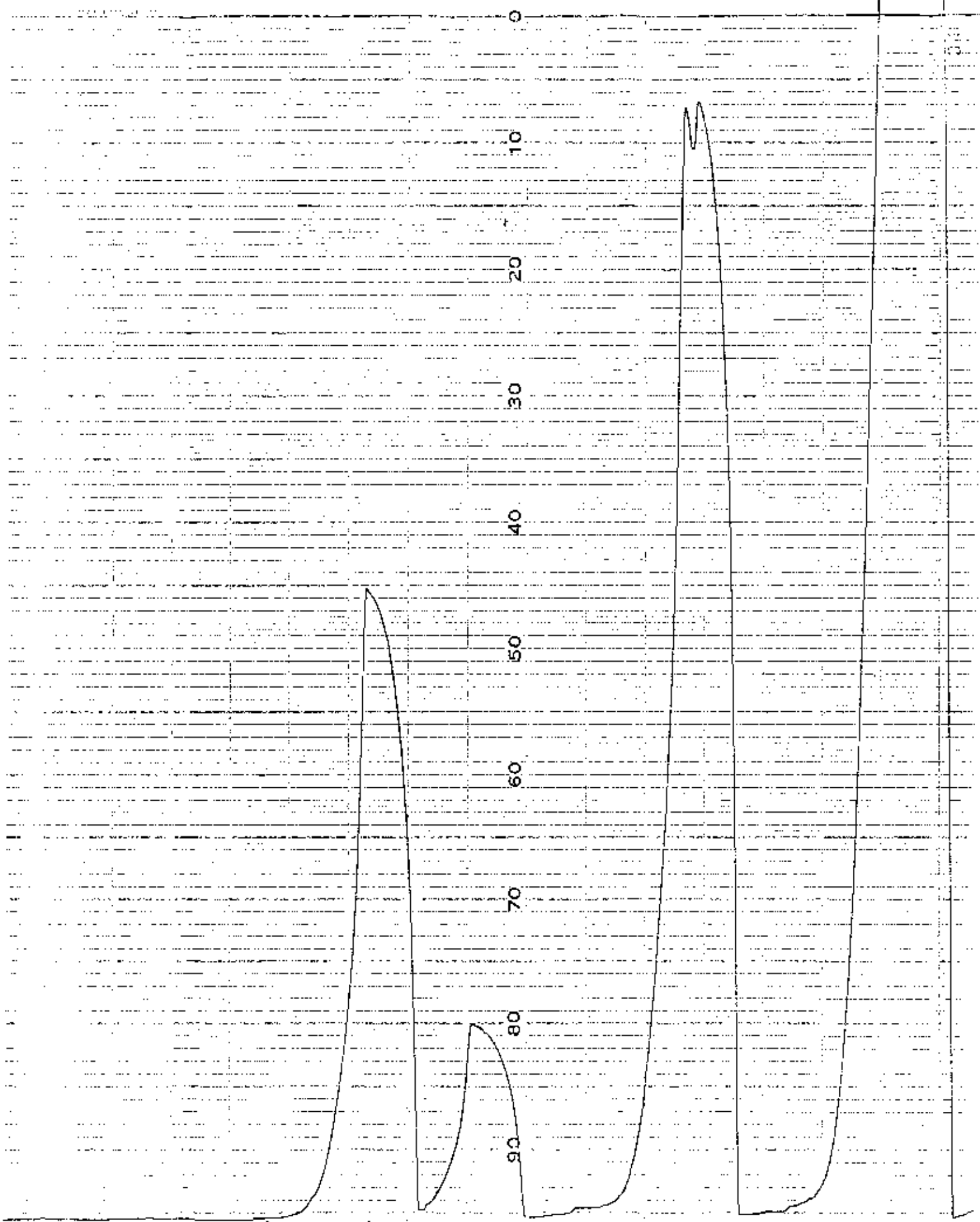
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21 20 19 18 17 16 15 14 13









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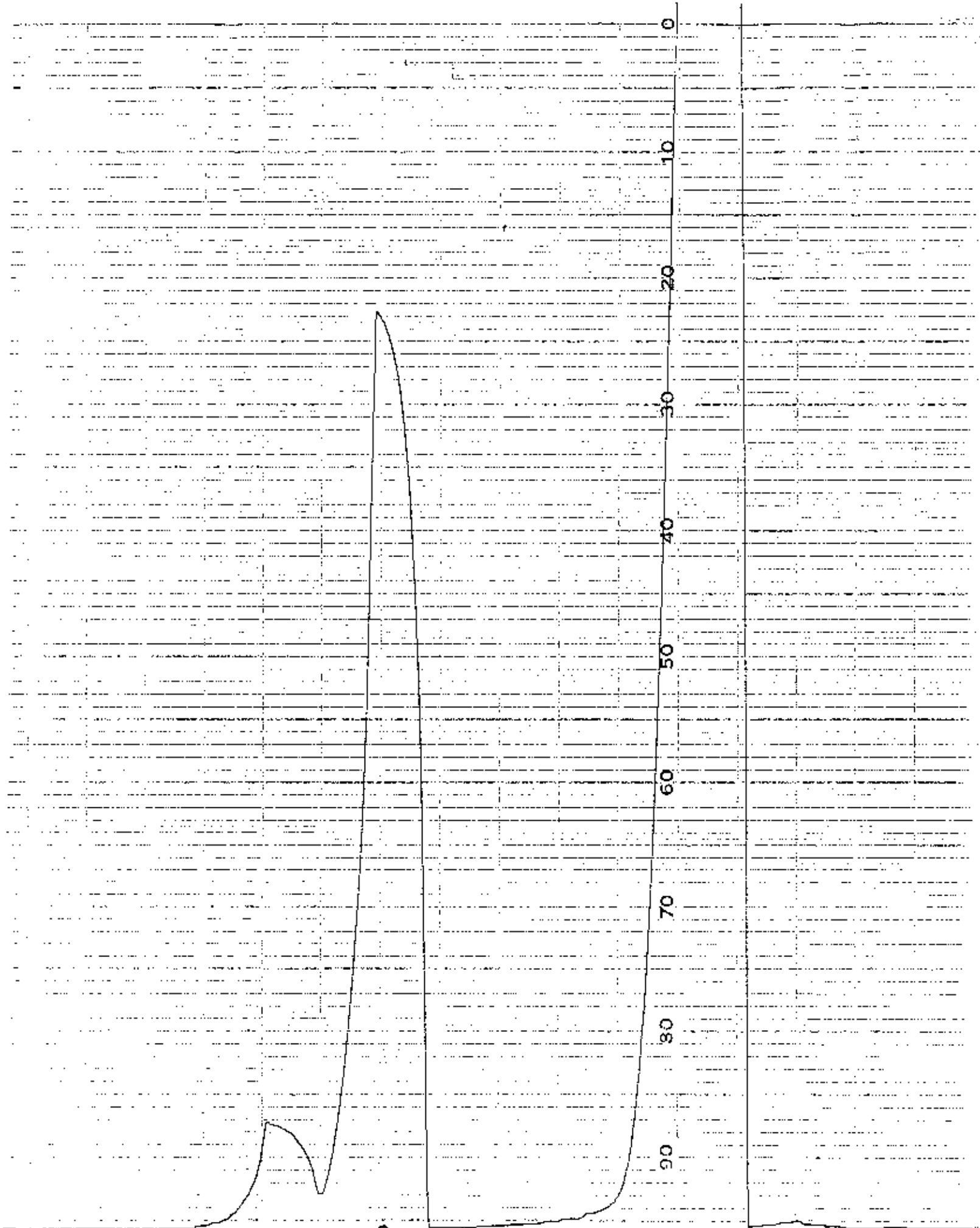
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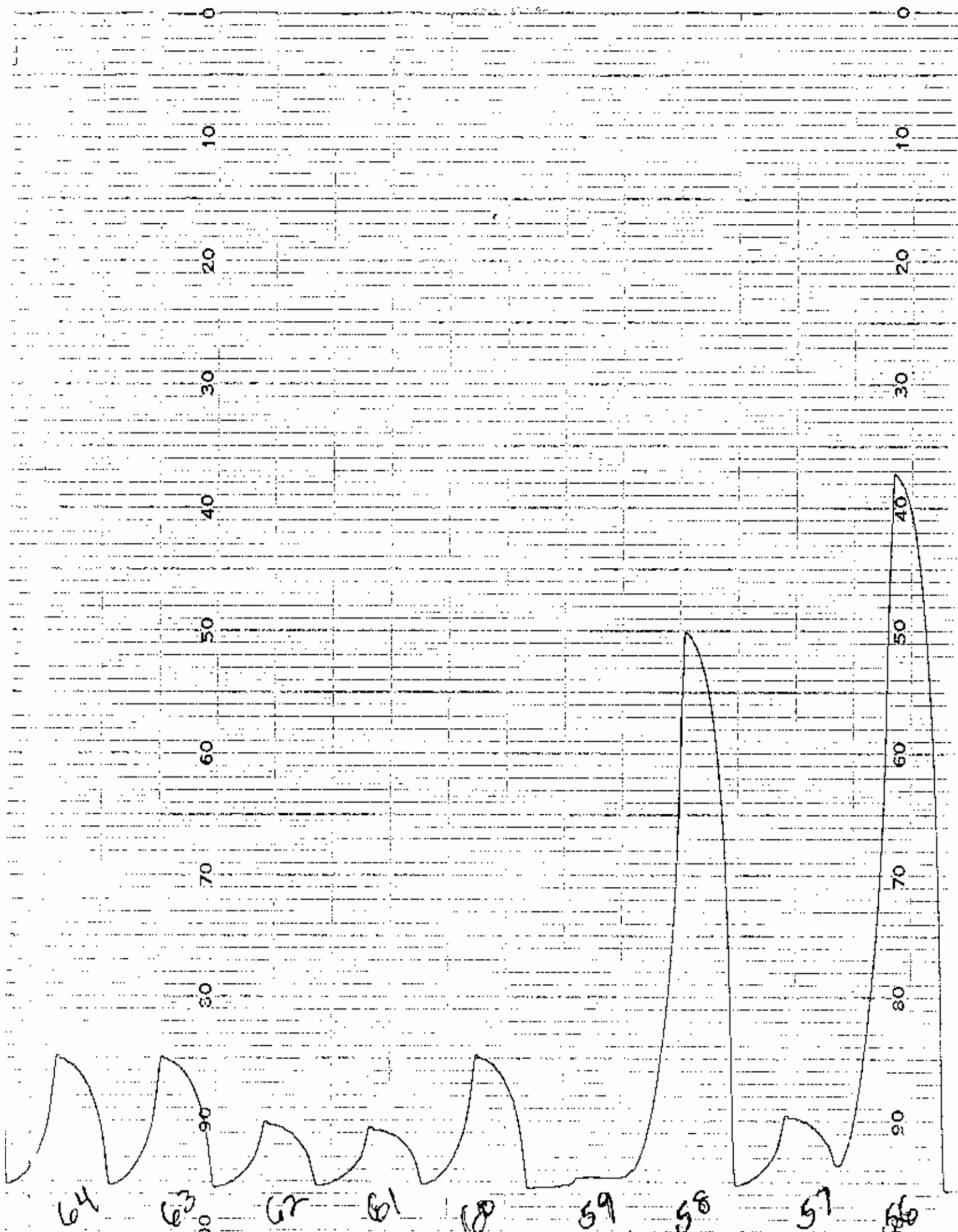
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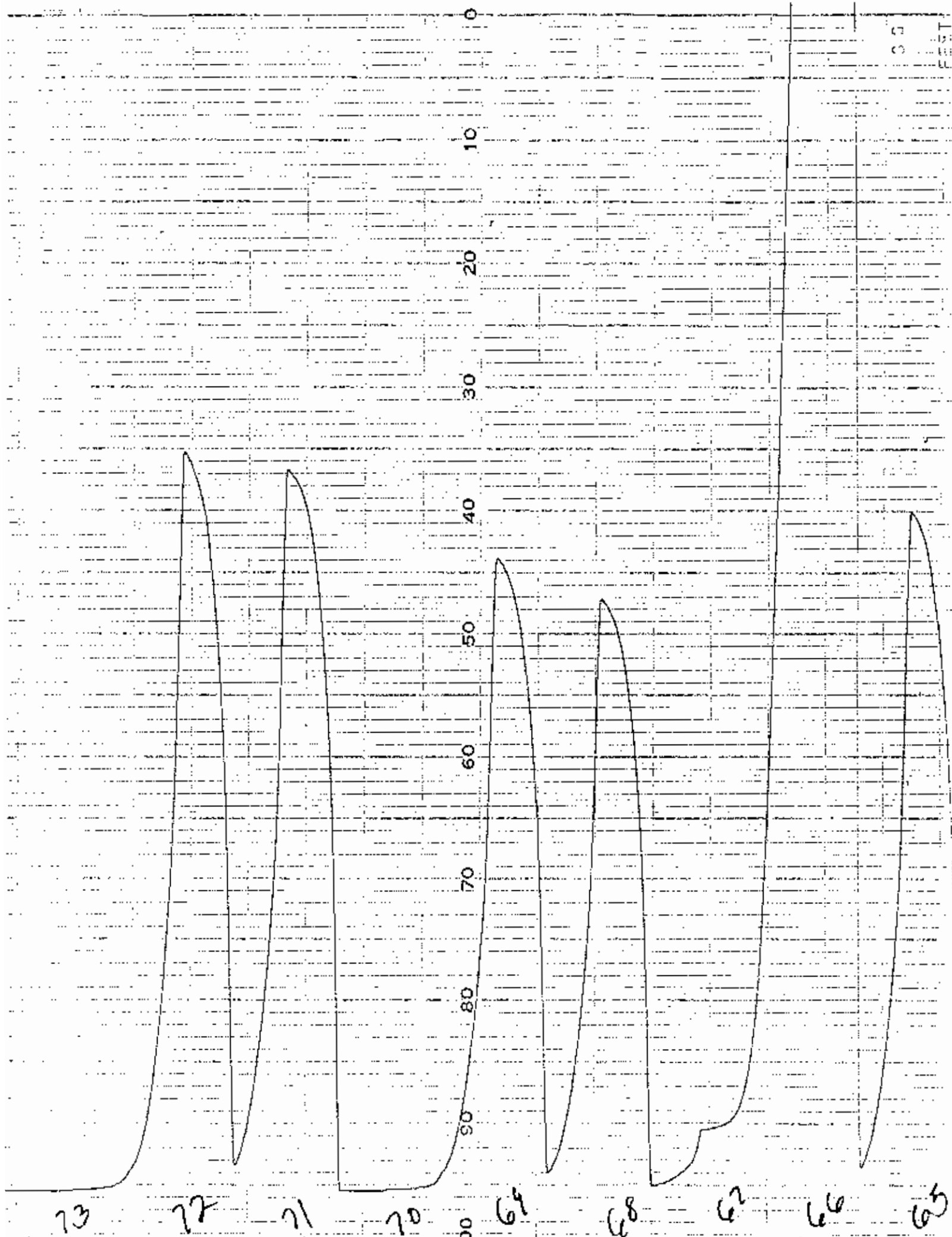
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48

47





Cyanide

Standardization of

Date: 5-16-85

Analyst: C. Kiefer AgNO₃

Blank $\begin{array}{r} 1.25 \\ .92 \\ \hline .33 \text{ mls} \end{array}$

#1 $\begin{array}{r} 5.50 \\ 1.25 \\ \hline 4.38 - .33 \text{ ml} = 4.01 \end{array}$

#2 $\begin{array}{r} 6.65 \\ 2.37 \\ \hline 4.28 - .33 = 3.95 \end{array}$ $\bar{x} = 3.98$

$$3.98 \times (x) = 5.00 \times .0141$$

$$x = .0177 \text{ N AgNO}_3$$

Standardization of CN⁻

5/16/85

C. Kiefer

stock CN⁻

3 mls, AgNO₃ .0177

Blank = .04 ml

Trial # 1 = 4.8 mls

Trial # 2 = 5.48 mls

Trial # 3 = 5.20 mls

$$\bar{x} = 5.76 - .04$$
$$\bar{x} = 5.12$$

$$\frac{5.12}{5.00} = 1.024$$

$$2 \times (1.024) \times .0177 = .0362$$

$$(.0362) \times (26,000) = 941.2$$

SECTION IV
SUBPART D-26

RAW DATA FOR:

DIGESTION RECORDS

Site	Sample name and #	wgt or vol.	final vol.	Dryer Wet	Analyses	Spike levels and acids used
Z	Blank	100 μ l	100	w		
L	Blank spike	100 μ l	100	w		1.0 ml 4-2-55
	USEPA 6760	1.02g	100	D		50% HNO ₃ , 30% H ₂ O
	Orion Omega 52705 # DEC	1.02g	100	w	DEC metals 21	conc HNO ₃ , 50% HCl
	H Dup	1.02g	100			
	H spike	1.02g	100			1.0 ml 4-2-55
	F	1.02g	100			
	J	1.02g	100			
	K	1.02g	100			
	L	1.02g	100			
	M	1.02g	100			
	N	1.02g	100			
	O	1.02g	100	↓		
					Ag Al Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Na Tl Sb Sn V Zn	
	Separate sample broken out after digest for Silver (Ag)					

* Silver Spike : 400 μ l Blank 200 μ l sample

Sample name and #	wgt or vol.	final vol.	Dry wt wet	Analyses	Spike levels and acids used
Blank	100	100	.	DEE metals	
BIK 50K Daxton	100	100			100 ml 5-7-85 Co, U, Sn 4-2-85
50705 A control	100	100			
A. Dup	100	100			
B	100	100			
B 50K	100	100			5-7-85 Co, U, Sn 100 ml 4-2-85
C	100	100			
D	100	100			
E	100	100			
F	100	100			
G	100	100			
				Al, Ba, Be, Ca, Cd, Cr, Cu, Co, Fe, K, Mg, Mn, Na, Ni, Pb Sb, Sn, Tl, V, Zn	

Sample name and #	Wgt or vol.	Final vol.	Dry or Wet	Analyses	Spike levels and acids used
Blank	100	100		DCI method	
Blank Spike	100	100			5-7-85 1.0 ml 4-2-85
50705 A	100	100		Repeat Digest	
A Dup	100	100		Fe, Co, Cu, K, Na	
B	100	100		Sr, Tl, V	
B SpK	100	100			1.0 ml 4-2, 5-7
C	100	100			
D	100	100			
E	100	100			
F	100	100			
G	100	100			
H	1.00	100			
H Dup	1.03	100			
H SpK	0.99	100			1.0 ml 4-2, 5-7
I	1.05	100			
J	1.04	100			
K	1.02	100			
L	1.03	100			
M	1.00	100			
N	1.03	100			
O	1.03	100			
US EPA 0760	1.03	100			
Blank soil	100	100			
Blank SpK soil	100	100			

407E

Sample name and #	wgt or vol.	final vol.	Dry or wet	Analyses	Spike levels and acids used
Blank	50		W	As, Se	
Blank spike	50				0.5 mL 4-2-85
50765 A Dalton sample	50				
A Dip	50				
B	50				
B Dip	50				0.5 mL 4-2-85
C	50				
D	50				
E	50				
F	50				
G	50				
4320 H+E	50				EP TOX
50744 D network	50				
F	50				
G	50				
H	50				
I	50				
J	50				
K	50				
K Dip	50				
L	50				
L spike	50				0.5 mL 4-2-85
M	50				
N	50				
50757 medvet	50				
50768 Honeyox	50				

RE DIPPED

Sl. No.	Sample name and #	wgt or vol.	final vol.	Dry or Wet	Analyses	Spike levels and acids used
6	Blank	100	100		As, Se	1.0 ml 4-2-55
L	Blank Spike	100	100			
	5070.5 H	1.02	100			
	H Dup	0.97	100		1.0 ml	
	H 50K	1.03	100		1.0 ml	1.0 ml 4-2-55
	I	1.04	100		1.0 ml	
	J	1.00	100		1.0 ml	
	K	1.03	100			
	L	1.02	100			
	M	1.01	100			
	N	1.04	100			
	O	1.02	100			
	502	50				
	100	50				
					samples	

Date	Sample name and #	wgt or vol.	final vol.	Dry or Wet	Analyses	Spike levels & acids used
10/20	Blank	50	50	W	As, Se	
EL	Blank Spike	50	50			
	50705 A ^{Dalton} only	50	50			
	<u>A DAD</u>	50	50			
	B	50	50			
	<u>B 50K</u>	50	50			0.5 ml 4-2-85
10/20	C	50	50			
	D	50	50			
	E	50	50			
	F	50	50			
	G	50	50			
	50744 A ^{Dalton} only	50	50			
	F	50	50			
	G	50	50			
	H	50	50			
	I	50	50			
	J	50	50			
	K	50	50			
	<u>K DAD</u>	50	50			
	L	50	50			
	<u>L 50K</u>	50	50			0.5 ml 4-2-85
	M	50	50			
	N	50	50			
	50757 med val	50	50			
	50768 Homepage	50	50			
	HOE 4320	50		↓		EP TOX.

6-5-85 R. Lawrence

Sample name and number	Wgt. or Vol.	Final Vol.	Dry or Wet	Analyses	Spike levels acids used
Blank	50	50		As - Report Analysis (?)	
Blank Spike	50	50			0.5 ml 6-4
H/5W 50705 A	50	50			
A Dup	50	50			
A 50K	50	50			0.5 ml 6-4
B	50	50			
C	50	50			
D	50	50			
E	50	50			
F	50	50			
G	50	50			
W/h 50776 B	5.0	50		As 30	
W/h 50823	5.0	50			
W/h 50744 D	50	50			
F	50	50			
G	50	50			
H	50	50			
I	50	50			
J	50	50			
K	50	50			
K Dup	50	50			
K Spk	50	50			0.5 ml 6-4
L	25	25			
M	50	50			
N	50	50			
Blank Spike	50	50			

Sample name and number	Wt or Vol.	Final Vol.	Dry or Wet	6-7-85 R. Lawrence Analyses	spike levels acids used
Blank	50	50		As, Se	2 ml ammonium oxalate
Blank Spike	50	50			0.5 ml 6-4
50849 A	0.53	50			HAZ. WASTE
B	0.51	50			
C	0.62	50			
D	0.53	50			
E	0.52	50			
F	0.52	50			
50981 A	0.54	50			
B	0.55	50			
90947 A	1.00g	50		(Digested the whole sample)	filter
B	1.07g	50		"	filter
inverse 4399	0.51g	50			
Blank 50913 A	50	50			
B	50	50			
1/05U 50705 H	0.49	50		As - Report Analysis (3)	soil
H Dip	0.51	50			
H soil	0.50	50			0.5 ml 6-4
I	0.53	50			
J	0.48	50			
K	0.53	50			
L	0.54	50			
M	0.48	50			
N	0.54	50			
O	0.51	50			
50913 A. Dip	50	50			
50913 B. soil	50	50			0.5 ml 6-4

SECTION V

INORGANIC ANALYSIS ON SEDIMENT SAMPLES 50705 H-O.

Subpart A: Evaluation of Analytical Data

Subpart B: Analytical Data

Subpart C: Quality Control

Subpart D: Raw Data

SECTION V, SUBPART A

Evaluation of Analytical Data for Sediment Samples 50705 H-D.

- 1.) Aluminum, Arsenic, Calcium, Copper, Iron, Magnesium, Manganese, Potassium, Sodium, and Zinc were detected in all samples.
- 2.) Antimony, Beryllium, Cadmium, Mercury, Silver, Thallium, were not detected in any of the samples.
- 3.) Barium was detected in all samples except 50705-N (PAS-WNC-DS-6).
- 4.) Chromium was detected in samples 50705-H (PAS-WC-DS-3), and 50705-I (PAS-WNC-US-2A) only.
- 5.) Cobalt was detected in sample 50705-L (PAS-WNC-US-2A).
- 6.) Lead was detected in samples 50705-H (PAS-WC-DS-3), and 50705-O (PAS-MP-7).
- 7.) Nickel was detected in all samples except 50705-J (PAS-WNC-US-2), and 50705-N (PAS-WNC-DS-6).
- 8.) Selenium was detected in all samples except 50705-K (PAS-WC-US-1A), 50705-L (PAS-WNC-US-2A), and 50705-N (PAS-WNC-DS-6).
- 9.) Tin was detected in sample 50705-J (PAS-WNC-US-2) only.
- 10.) Vanadium was detected in sample 50705-H (PAS-WC-DS-3) only.
- 11.) Cyanide was detected in sample 50705-J (PAS-WNC-US-2) only.

DATA SUMMARY FOR SEDIMENT SAMPLES 50705 H-0

	II	I	J	K	L	M	N	O
Aluminum	11200	4880	3640	6630	6040	4770	2910	15500
Antimony	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	1.4	1.4	4.3	1.2	1.9	3.3	0.62	6.1
Barium	83	66	88	137	32	71	ND	163
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	915	1520	11100	3160	12200	1410	23200	4810
Chromium	12	ND	ND	ND	6.2	ND	ND	ND
Cobalt	ND	ND	ND	ND	7.3	ND	ND	ND
Copper	13	12	10	9.8	18	13	8.4	52
Iron	13100	16200	9430	16500	15000	8360	5830	17100
Lead	7.2	ND	ND	ND	ND	ND	ND	75
Magnesium	2390	1690	1890	2110	4230	1920	5610	3880
Manganese	310	523	811	1320	526	603	500	312
Mercury	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	12	11	ND	7.7	526	5.6	ND	34
Potassium	634	469	389	465	647	487	261	2060
Selenium	0.50	0.28	0.32	ND	ND	0.28	ND	2.1
Silver	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	221	335	422	200	82	114	133	581
Thallium	ND	ND	ND	ND	ND	ND	ND	ND
Tin	ND	ND	7.5	ND	ND	ND	ND	ND
Vanadium	39	ND	ND	ND	ND	ND	ND	ND
Zinc	48	74	51	47	37	42	13	119
Cyanide	ND	ND	0.20	ND	ND	ND	ND	ND

Note: All data reported in mg/kg dry weight.

Date June 28, 1985

COVER PAGE

INORGANIC ANALYSIS DATA PACKAGE

Lab Name General Testing Corp.

Job No. 50705

PAS Environmental Assessment

Q.C. Report No. 50705-4

SAMPLE NUMBERS

<u>Lab ID No.</u>	<u>Lab ID No.</u>
<u>50705-II PAS-WC-DS-3</u>	<u>50705-N PAS-WNC-DS-6</u>
<u>50705-I PAS-WC-US-1</u>	<u>50705-O PAS-MP-7</u>
<u>50705-J PAS-WNC-US-2</u>	
<u>50705-K PAS-WC-US-1A</u>	
<u>50705-T PAS-WNC-US-2A</u>	
<u>50705-M PAS-WNC-DS-4</u>	

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 element was analyzed for but not detected. Report with the detection limit value (e.g., 10E).

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

s - Indicates value determined by Method of Standard Addition.

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

* - Indicates duplicate analysis is not within control limits.

+ - Indicates the correlation coefficient for method of standard addition is less than 0.995.

Sample No.
PAS-WC-05-3

Date 6/28/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing Corp. JOB NO. 50705

LAB SAMPLE ID. NO. 50705-H QC REPORT NO. 50705-4

Elements Identified and Measured

Concentration: Low _____ Medium X

Matrix: Water _____ Soil _____ Sludge _____ Other Sediment

ug/L or mg/kg dry weight (Circle One)

1. <u>Aluminum</u>	<u>11,200</u>	13. <u>Magnesium</u>	<u>2390</u>
2. <u>Antimony</u>	<u>0.7</u> u	14. <u>Manganese</u>	<u>310</u>
3. <u>Arsenic</u>	<u>1.4</u>	15. <u>Mercury</u>	<u>0.3</u> u
4. <u>Barium</u>	<u>83</u>	16. <u>Nickel</u>	<u>12</u>
5. <u>Beryllium</u>	<u>0.7</u> u	17. <u>Potassium</u>	<u>634</u>
6. <u>Cadmium</u>	<u>1</u> u	18. <u>Selenium</u>	<u>0.50</u>
7. <u>Calcium</u>	<u>915</u>	19. <u>Silver</u>	<u>1</u> u
8. <u>Chromium</u>	<u>12</u>	20. <u>Sodium</u>	<u>221</u>
9. <u>Cobalt</u>	<u>7</u> u	21. <u>Thallium</u>	<u>70</u> u
10. <u>Copper</u>	<u>13</u>	22. <u>Tin</u>	<u>6</u> u
11. <u>Iron</u>	<u>13,100</u>	23. <u>Vanadium</u>	<u>39</u>
12. <u>Lead</u>	<u>7.2</u>	24. <u>Zinc</u>	<u>48</u>
<u>Cyanide</u>	<u>0.24</u> u	<u>Percent Solids (%)</u>	<u>71%</u>

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

Comments: _____

Lab Manager Michael K. Perry

Sample No.
PAS-WC-US-1

Date 6/28/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing

JOB NO. 50705

LAB SAMPLE ID. NO. 50705T

QC REPORT NO. 50705-4

Elements Identified and Measured

Concentration: Low _____ Medium X

Matrix: Water _____ Soil _____ Sludge _____ Other Sediment

ug/L or (mg/kg) dry weight (Circle One)

1. <u>Aluminum</u>	<u>4880</u>	13. <u>Magnesium</u>	<u>1690</u>
2. <u>Antimony</u>	<u>0.8</u> u	14. <u>Manganese</u>	<u>523</u>
3. <u>Arsenic</u>	<u>1.4</u>	15. <u>Mercury</u>	<u>0.3</u> u
4. <u>Barium</u>	<u>66</u>	16. <u>Nickel</u>	<u>11</u>
5. <u>Beryllium</u>	<u>0.8</u> u	17. <u>Potassium</u>	<u>469</u>
6. <u>Cadmium</u>	<u>2</u> u	18. <u>Selenium</u>	<u>0.28</u>
7. <u>Calcium</u>	<u>1520</u>	19. <u>Silver</u>	<u>2</u> u
8. <u>Chromium</u>	<u>8</u> u	20. <u>Sodium</u>	<u>335</u>
9. <u>Cobalt</u>	<u>8</u> u	21. <u>Thallium</u>	<u>80</u> u
10. <u>Copper</u>	<u>12</u>	22. <u>Tin</u>	<u>6</u> u
11. <u>Iron</u>	<u>16,200</u>	23. <u>Vanadium</u>	<u>40</u> u
12. <u>Lead</u>	<u>0</u> u	24. <u>Zinc</u>	<u>74</u>
Cyanide	<u>0.23</u> u	Percent Solids (%)	<u>65%</u>

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

Comments: _____

Lab Manager

Michael K. Perry

Sample No.
 PAS-WNC-US-2

Date 6/28/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing Corp. JOB NO. 50705

LAB SAMPLE ID. NO. 50705J QC REPORT NO. 50705-4

Elements Identified and Measured

Concentration: Low _____ Medium X

Matrix: Water _____ Soil _____ Sludge _____ Other Sediment

ug/L or (ng/kg) dry weight (Circle One)

1. <u>Aluminum</u>	<u>3640</u>	13. <u>Magnesium</u>	<u>1,890</u>
2. <u>Antimony</u>	<u>0.7</u> u	14. <u>Manganese</u>	<u>811</u>
3. <u>Arsenic</u>	<u>4.3</u>	15. <u>Mercury</u>	<u>0.3</u> u
4. <u>Barium</u>	<u>88</u>	16. <u>Nickel</u>	<u>5</u> u
5. <u>Beryllium</u>	<u>0.7</u> u	17. <u>Potassium</u>	<u>389</u>
6. <u>Cadmium</u>	<u>1</u> u	18. <u>Selenium</u>	<u>0.32</u>
7. <u>Calcium</u>	<u>11,100</u>	19. <u>Silver</u>	<u>1</u> u
8. <u>Chromium</u>	<u>7.</u> u	20. <u>Sodium</u>	<u>422</u>
9. <u>Cobalt</u>	<u>7</u> u	21. <u>Thallium</u>	<u>70</u> u
10. <u>Copper</u>	<u>10</u>	22. <u>Tin</u>	<u>7.5</u>
11. <u>Iron</u>	<u>9,430</u>	23. <u>Vanadium</u>	<u>30</u> u
12. <u>Lead</u>	<u>7</u> u	24. <u>Zinc</u>	<u>51</u>
Cyanide	<u>0.20</u>	Percent Solids (%)	<u>74%</u>

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

Comments: _____

Lab Manager

Michael K. Perry

Sample No.
 PAS-WC-US-1A

Date 6/28/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing Corp. JOB NO. 50705

LAB SAMPLE ID. NO. 50705K QC REPORT NO. 50705-4

Elements Identified and Measured

Concentration: Low _____ Medium x

Matrix: Water _____ Soil _____ Sludge _____ Other Sediment

ug/L or mg/kg dry weight (Circle One)

1. <u>Aluminum</u>	<u>6630</u>	13. <u>Magnesium</u>	<u>2.110</u>
2. <u>Antimony</u>	<u>0.9</u> u	14. <u>Manganese</u>	<u>1,320</u>
3. <u>Arsenic</u>	<u>1.2</u>	15. <u>Mercury</u>	<u>0.3</u> u
4. <u>Barium</u>	<u>137</u>	16. <u>Nickel</u>	<u>7.7</u>
5. <u>Beryllium</u>	<u>0.9</u> u	17. <u>Potassium</u>	<u>465</u>
6. <u>Cadmium</u>	<u>2</u> u	18. <u>Selenium</u>	<u>0.3</u> u
7. <u>Calcium</u>	<u>3160</u>	19. <u>Silver</u>	<u>2</u> u
8. <u>Chromium</u>	<u>9</u> u	20. <u>Sodium</u>	<u>200</u>
9. <u>Cobalt</u>	<u>9</u> u	21. <u>Thallium</u>	<u>90</u> u
10. <u>Copper</u>	<u>9.8</u>	22. <u>Tin</u>	<u>7</u> u
11. <u>Iron</u>	<u>16,500</u>	23. <u>Vanadium</u>	<u>40</u> u
12. <u>Lead</u>	<u>9</u> u	24. <u>Zinc</u>	<u>47</u>
<u>Cyanide</u>	<u>0.26</u> u	Percent Solids (%)	<u>57%</u>

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

Comments: _____

Lab Manager Michael K. Perry

Sample No.
 PAS-WNC-US-27

Date 6/28/05

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing Corp. JOB NO. 50705

LAB SAMPLE ID. NO. 50705L QC REPORT NO. 50705-4

Elements Identified and Measured

Concentration: Low _____ Medium x

Matrix: Water _____ Soil _____ Sludge _____ Other Sediment

ug/L or mg/kg dry weight (Circle One)

1. <u>Aluminum</u>	<u>6040</u>		13. <u>Magnesium</u>	<u>4230</u>	
2. <u>Antimony</u>	<u>0.6</u>	<u>u</u>	14. <u>Manganese</u>	<u>526</u>	
3. <u>Arsenic</u>	<u>1.9</u>		15. <u>Mercury</u>	<u>0.3</u>	<u>u</u>
4. <u>Barium</u>	<u>32</u>		16. <u>Nickel</u>	<u>526</u>	
5. <u>Beryllium</u>	<u>0.6</u>	<u>u</u>	17. <u>Potassium</u>	<u>647</u>	
6. <u>Cadmium</u>	<u>1</u>	<u>u</u>	18. <u>Selenium</u>	<u>0.3</u>	<u>u</u>
7. <u>Calcium</u>	<u>12200</u>		19. <u>Silver</u>	<u>1</u>	<u>u</u>
8. <u>Chromium</u>	<u>6.2</u>		20. <u>Sodium</u>	<u>82</u>	
9. <u>Cobalt</u>	<u>7.3</u>		21. <u>Thallium</u>	<u>60</u>	<u>u</u>
10. <u>Copper</u>	<u>18</u>		22. <u>Tin</u>	<u>5</u>	<u>u</u>
11. <u>Iron</u>	<u>15,000</u>		23. <u>Vanadium</u>	<u>30</u>	<u>u</u>
12. <u>Lead</u>	<u>6</u>	<u>u</u>	24. <u>Zinc</u>	<u>37</u>	
<u>Cyanide</u>	<u>0.19</u>	<u>u</u>	<u>Percent Solids (%)</u>	<u>78%</u>	

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

Comments: _____

Lab Manager

Michael K. Perry

Sample No.
PAS-WNC-DS-4

Date 6/28/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing Corp. JOB NO. 50705

LAB SAMPLE ID. NO. 50705M QC REPORT NO. 50705-4

Elements Identified and Measured

Concentration: Low _____ Medium _____ X _____

Matrix: Water _____ Soil _____ Sludge _____ Other Sediment

ug/L or mg/kg dry weight (Circle One)

1. <u>Aluminum</u>	<u>4770</u>	13. <u>Magnesium</u>	<u>1920</u>
2. <u>Antimony</u>	<u>0.6</u> u	14. <u>Manganese</u>	<u>603</u>
3. <u>Arsenic</u>	<u>3.3</u>	15. <u>Mercury</u>	<u>0.3</u> u
4. <u>Barium</u>	<u>71</u>	16. <u>Nickel</u>	<u>5.6</u>
5. <u>Beryllium</u>	<u>0.6</u> u	17. <u>Potassium</u>	<u>487</u>
6. <u>Cadmium</u>	<u>1</u> u	18. <u>Selenium</u>	<u>0.28</u>
7. <u>Calcium</u>	<u>1410</u>	19. <u>Silver</u>	<u>1</u> u
8. <u>Chromium</u>	<u>6</u> u	20. <u>Sodium</u>	<u>114</u>
9. <u>Cobalt</u>	<u>6</u> u	21. <u>Thallium</u>	<u>60</u> u
10. <u>Copper</u>	<u>13</u>	22. <u>Tin</u>	<u>5</u> u
11. <u>Iron</u>	<u>8360</u>	23. <u>Vanadium</u>	<u>30</u> u
12. <u>Lead</u>	<u>6</u> u	24. <u>Zinc</u>	<u>42</u>
<u>Cyanide</u>	<u>0.18</u> u	<u>Percent Solids (%)</u>	<u>78%</u>

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

Comments: _____

Lab Manager Michael K. Perry

Sample No.
 PAS-WNC-DG-6

Date 6/28/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing Corp. JOB NO. 50705

LAB SAMPLE ID. NO. 50705N QC REPORT NO. 50705-4

Elements Identified and Measured

Concentration: Low _____ Medium X

Matrix: Water _____ Soil _____ Sludge _____ Other Sediment

ug/L or (mg/kg) dry weight (Circle One)

1. <u>Aluminum</u>	<u>2910</u>	13. <u>Magnesium</u>	<u>5610</u>
2. <u>Antimony</u>	<u>0.6</u> u	14. <u>Manganese</u>	<u>500</u>
3. <u>Arsenic</u>	<u>0.62</u>	15. <u>Mercury</u>	<u>0.2</u> u
4. <u>Barium</u>	<u>10</u> u	16. <u>Nickel</u>	<u>5</u> u
5. <u>Beryllium</u>	<u>0.6</u> u	17. <u>Potassium</u>	<u>261</u>
6. <u>Cadmium</u>	<u>1</u> u	18. <u>Selenium</u>	<u>0.2</u> u
7. <u>Calcium</u>	<u>23200</u>	19. <u>Silver</u>	<u>1</u> u
8. <u>Chromium</u>	<u>6</u> u	20. <u>Sodium</u>	<u>133</u>
9. <u>Cobalt</u>	<u>6</u> u	21. <u>Thallium</u>	<u>60</u> u
10. <u>Copper</u>	<u>8.4</u>	22. <u>Tin</u>	<u>5</u> u
11. <u>Iron</u>	<u>5830</u>	23. <u>Vanadium</u>	<u>30</u> u
12. <u>Lead</u>	<u>6</u> u	24. <u>Zinc</u>	<u>13</u>
<u>Cyanide</u>	<u>0.18</u> u	<u>Percent Solids (%)</u>	<u>82%</u>

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

Comments: _____

Lab Manager

Michael K. Perry

Sample No.
PAS-MP-7

Date _____

INORGANIC ANALYSIS DATA SHEET

LAB NAME General Testing Corp. JOB NO. 50705

LAB SAMPLE ID. NO. 507050 QC REPORT NO. 50705-4

Elements Identified and Measured

Concentration: Low _____ Medium X

Matrix: Water _____ Soil _____ Sludge _____ Other Sediment

ug/L or (mg/kg) dry weight (Circle One)

1. <u>Aluminum</u>	<u>15500</u>	13. <u>Magnesium</u>	<u>3880</u>
2. <u>Antimony</u>	<u>3</u> u	14. <u>Manganese</u>	<u>312</u>
3. <u>Arsenic</u>	<u>6.1</u>	15. <u>Mercury</u>	<u>1</u> u
4. <u>Barium</u>	<u>163</u>	16. <u>Nickel</u>	<u>34</u>
5. <u>Beryllium</u>	<u>3</u> u	17. <u>Potassium</u>	<u>2060</u>
6. <u>Cadmium</u>	<u>6</u> u	18. <u>Selenium</u>	<u>2.1</u>
7. <u>Calcium</u>	<u>4810</u>	19. <u>Silver</u>	<u>6</u> u
8. <u>Chromium</u>	<u>30</u> u	20. <u>Sodium</u>	<u>581</u>
9. <u>Cobalt</u>	<u>30</u> u	21. <u>Thallium</u>	<u>300</u> u
10. <u>Copper</u>	<u>52</u>	22. <u>Tin</u>	<u>25</u> u
11. <u>Iron</u>	<u>17100</u>	23. <u>Vanadium</u>	<u>150</u> u
12. <u>Lead</u>	<u>75</u>	24. <u>Zinc</u>	<u>119</u>
<u>Cyanide</u>	<u>0.94</u> u	<u>Percent Solids (%)</u>	<u>16%</u>

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

Comments: _____

Lab Manager Michael K. Perry

SECTION V, Subpart C

QUALITY CONTROL (INORGANICS) FOR SEDIMENT SAMPLES 50705 H-0

Quality Control is presented in this subpart for the inorganic parameters called for under Contract Laboratory Protocol. Quality Control Data is presented covering:

- 1.) Form II: Initial and continuing calibration verification; Initial calibration verification is performed immediately following the analysis of calibration standards by analyzing an EPA Check Sample, the value of which is known. The value obtained must fall within $\pm 10\%$ of the known value for analysis to proceed. During the course of the analytical run the check sample is reanalyzed after every ten samples as a continuing calibration verification.
- 2.) Form III: Blank Analysis; A calibration blank (deionized water containing all reagents used for sample analysis) is analyzed immediately following the analysis of calibration standards. The value of this blank must be less than the CRDL in order for sample analysis to proceed. The calibration blank is reanalyzed after every ten samples with the same requirement. A preparation blank is analyzed which has been subjected to any digestions or distillations used in preparation of the samples for analysis.
- 3.) Form V: Spiked Sample Recovery; For each batch of samples analyzed, (up to 20 samples within a given matrix and concentration level), a known amount of analyte is added to one sample. The value obtained should equal the sum of the sample value and the amount of analyte added. By subtracting the sample value from the combined "spiked" value, a spike recovered value is obtained. The obtained value divided by the amount added multiplied by 100 equals the % recovery. The spiked % recovery must fall within the limits stated in the contract laboratory protocol.
- 4.) Form VI: Duplicate Analysis; For each batch of samples analyzed, (up to 20 samples within a given matrix and concentration level), one sample is reanalyzed as a duplicate. The relative % difference for the duplicates is calculated by subtracting the first value from the second, dividing the difference by the average, and multiplying by 100. The RPD Limit is $\pm 20\%$ for values $>5X$ the CRDL, and \pm the CRDL for values $<5X$ the CRDL.

- 5.) Forms VII & IX: Instrument Detection Limits:
IDL's are reported as determined under
Contract Laboratory Protocol, and
reported on Forms VII & IX.
- 6.) Form VII: Laboratory Control Sample: A Laboratory
Control Sample (EPA Check Sample) recovery
has been reported on form VII.



710 Exchange Street
Rochester, NY 14608

FORM II

Q. C. Report No. 50705-4

INITIAL AND CONTINUING CALIBRATION VERIFICATION³

LAB NAME General Testing Corp.

JOB NO. 50705

DATE June 28, 1985

UNITS ug/l

Compound	Initial Calib. ¹			Continuing Calibration ²					Method ⁴
	True Value	Found	%R	True Value	Found	%R	Found	%R	
Metals:									
1. Aluminum	1,460	1,440	99	1,460	1,440	99%			P
2. Antimony	9.7	9.1	94%	8.2	7.3	89%	6.3	82%	Hydride
2. Arsenic	43	45.9	107	27	28.2	104	29.0	107	Hydride
4. Barium	1,280	1,150	90%	688	710	103%	750	109%	P
5. Beryllium	58	59	102%	235	238	101%	241	103%	P
6. Cadmium	39	36	92%	39	39	100%	43	110%	P
7. Calcium	5,300	5,200	98%	7,500	7,700	103%	7,600	101%	P
8. Chromium	92	90	98	92	81	88	98	106	P
9. Cobalt	86	76	88%	261	263	101%	260	100%	
0. Copper	339	321	95	339	316	93	325	96	P
1. Iron	398	384	96%	797	734	92%	751	94%	P
2. Lead	217	200	92%	435	404	93%	401	92%	P
3. Magnesium	500	510	102%	8,400	8,730	103%	8,730	103%	P
4. Manganese	348	329	94	348	341	98	333	96	P
5. Mercury	1.8	1.7	94%	8.7	8.3	95%	8.2	94%	Cold Vapor
6. Nickel	207	205	99	207	229	111	203	98	P
7. Potassium	9,800	10,000	102%	3,100	2,070	98%			P
8. Selenium	7.6	7.02	92%	7.6	7.44	98%	7.41	98%	Hydride
9. Silver	68	63	93%	68	64	94%	66	97%	P
10. Sodium	1,500	1,600	102%	8,200	7,930	97%	7,570	92%	P
11. Thallium	252	258	102%						P
12. Tin		NO	EPA	Check	Samples	Available			Hydride
13. Vanadium	846	857	101%	846	857	101%			
14. Zinc	209	188	90%	209	193	92%	193	92%	P
Other:									
Hydride	70.0	69.1	98.7	70.0	71.1	102	70.2	100	

1. Initial Calibration Source EPA 2. Continuing Calibration Source EPA
 3. Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110
 4. Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

SPIKE SAMPLE RECOVERY

General Testing
Corporation710 Exchange Street
Rochester, NY 14608LAB NAME General Testing CorporationJOB NO. 50705DATE June 28, 1985Lab Sample ID No. 50705HUnits mg/kg (wet weight)Matrix Sediment

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R
Metals:					
1. Aluminum	75-125	9.520*	8.200	1.500	88%
2. Antimony	"	1.04	<0.5	1.00	104%
3. Arsenic	"	1.95	0.96	1.00	100%
4. Barium	"	154	58.8	98.0	97%
5. Beryllium	"	5.6	<0.5	5.1	110%
6. Cadmium	"	5.4	<0.5	5.0	108%
7. Calcium	"	8,400*	6,500	2,000	95%
8. Chromium	"	31.8	855	20.0	116%
9. Cobalt	"	54	<5.0	50.5	107%
10. Copper	"	33.5	9.4	25	96%
11. Iron	"	1.45*	0.93	0.50	104%
12. Lead	"	56.6	5.1	50	103%
13. Magnesium	"	2.32*	1.6	0.8	90%
14. Manganese	"	Spiked	to low		
15. Mercury	"	0.35	<0.2	0.33	106%
16. Nickel	"	45.9	9.7	40	87%
17. Potassium	"	825	602	200	111%
18. Selenium	"	1.33	0.37	0.97	101%
19. Silver	"	4.9	<1	4.9	100%
20. Sodium	"	340	155	196	94%
21. Thallium	"	262	<50	253	104%
22. Tin	"	43	<4	50	86%
23. Vanadium	"	72.1	28	50	88%
24. Zinc	"	41.6	33	10.0	86%
Other:					
Cyanide	"	0.505	<0.15	0.828	61.0R

$$\%R = [(SSR - SR)/SA] \times 100$$

"R"-out of control

COMMENTS: ALL results corrected for a digestion of 1 gram/100ml

* These spiked results were done on a diluted sample.

DUPLICATES

LAB NAME General Testing Corporation

JOB NO. 50705

Lab Sample ID No. 50705H

DATE June, 1985

Units mg/kg (wet weight)

Matrix Soil

Compound	Control Limit ¹	Sample(S)	Duplicate(D)	RPD ²
Metals:				
1. Aluminum	20%	7,960	8120	20%
2. Antimony	± 0.5	<0.5	<0.5	NC
3. Arsenic	20%	1.0	0.92	8.3%
4. Barium	20%	58.8	58.4	0.7%
5. Beryllium	± 0.5	<0.5	<0.5	NC
6. Cadmium	± 0.5	<0.5	<0.5	NC
7. Calcium	20%	650	640	1.6%
8. Chromium	20%	8.9	8.2	8.2
9. Cobalt	± 5	<5	<5	NC
10. Copper	± 2	9.4	<2	NC* Out of Control
11. Iron	20%	9,270	9160	1.2%
12. Lead	20%	5.1	5.7	11%
13. Magnesium	20%	1700	1600	6.1%
14. Manganese	20%	220	220	0%
15. Mercury	± 0.2	<0.2	<0.2	NC
16. Nickel	± 4	8.8	11	2.2 mg/kg
17. Potassium	20%	450	602	99% * Out of Control
18. Selenium	20%	0.36	0.39	3.0%
19. Silver	20%	<1.0	<1.0	NC
20. Sodium	20%	157	152	3.2%
21. Thallium	± 50	<50	<50	NC
22. Tin	± 4	<4	<4	NC
23. Vanadium	20%	28	27	3.6%
24. Zinc	20%	34	33	3.0%
Other:				
Cyanide				

* Out of Control

¹To be added at a later date.

$$^2\text{RPD} = \frac{|S-D|}{((S+D)/2)} \times 100$$

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



general testing corporation

710 Exchange Street
Rochester, NY 14608

Form VII

Q. C. Report No. 50705-4

INSTRUMENT DETECTION LIMITS AND
LABORATORY CONTROL SAMPLE

TAB NAME General Testing Corp.

JOB NO. 50705

DATE June 28, 1985

LCS UNITS ug/L For others, mg/kg For EPA
(Circle One) M.D.S.

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
		ICP/VA	Furnace	True	Found	%R
Metals:						
1. Aluminum	200	100		4560	4730	104% *
2. Antimony	60	5 (Hydride)		10	9.0	90%
3. Arsenic	10	2 (Hydride)		17.0	2.04	12% *
4. Barium	200	100		1000	950	95%
5. Beryllium	5	5		50	53	106%
6. Cadmium	5	5		19.1	20.2	106% *
7. Calcium	5000	300		2000	1700	85%
8. Chromium	10	50	10	193	198	97% *
9. Cobalt	50	50		500	516	103%
10. Copper	25	20		1080	1030	95% *
11. Iron	100	50		16,500	17500	106% *
12. Lead	5	50	5	526	525	100% *
13. Magnesium	5000	250		2000	1900	95%
14. Manganese	15	10		202	231	114% *
15. Mercury	0.2	0.2 (Cold Vapor)		1.00	1.05	105%
16. Nickel	40	40		194	197	102% *
17. Potassium	5000	250		2000	1770	88%
18. Selenium	5	2 (Hydride)		10	8.8	88%
19. Silver	10	10		100	96	96% *
20. Sodium	5000	250		2000	1700	85%
21. Thallium	10	500	10	2500	2550	102%
22. Tin	40	400 (Hydride)		500	440	88%
23. Vanadium	50	250		13.0	14.3	110% *
24. Zinc	20	10		1320	1420	108% *
Other:						
Chloride	10					

Form IX (Quarterly)
 Instrument Detection Limits

Laboratory Name General Testing ICP/Flame AA (Circle One) Model Number Varian 975

Date May 8, 1985

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	309.3	200	100	13. Magnesium	285.2	5000	250
2. Antimony	217.6	60	5	14. Manganese	279.5	15	10
3. Arsenic	193.7	10	2	15. Mercury	253.7	0.2	0.2
4. Barium	553.5	200	100	16. Nickel	232 (B)	40	40
5. Beryllium	234.9 (B)	5	5	17. Potassium	766.5	5000	250
6. Cadmium	228.8 (B)	5	5	18. Selenium	196.0	5	2
7. Calcium	422.7	5000	300	19. Silver	328.1	10	10
8. Chromium	357.9	10	50	20. Sodium	589.0	5000	250
9. Cobalt	240.7	50	50	21. Thallium	276.8	10	50
10. Copper	324.7	25	20	22. Tin	286.3	40	40
11. Iron	248.3	100	50	23. Vanadium	318.5	50	250
12. Lead	283.3	5	50	24. Zinc	213.9 (B)	20	10

Notes:

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

Comments:

Lab Manager

Michael K. Perry

Section V, Subpart D

RAW DATA (INORGANICS) FOR SEDIMENT SAMPLES 50705 H-0.

Included in this subpart is raw data in the form of data sheets, computer printouts, summary sheets, and digestion records. Raw data for more than one run may be presented if additional runs were needed to obtain data reported.

(See Section IV, Subparts D-1 through D-26).

SECTION VI

GRAIN SIZE DETERMINATION
ON SEDIMENT SAMPLES

50705 H-0

SUMMARY SILET, GRAIN SIZE DETERMINATION SEDIMENT SAMPLES 50705 H-0

Sieve #	Mesh Size mm	H % Finer	I % Finer	J % Finer	K % Finer	L % Finer	M % Finer	N % Finer	O % Finer
4	4.76	99.0	80.3	100	86.4	99.3	89.6	84.0	100
8	2.38	97.5	72.8	99.3	81.3	90.0	84.3	79.4	100
16	1.19	92.9	63.1	89.4	77.5	64.5	78.6	73.3	81.5
30	0.595	82.0	49.2	57.5	72.5	32.0	71.4	62.4	63.7
50	0.297	66.7	25.4	24.6	53.5	8.9	50.9	14.5	46.6
100	0.149	39.4	7.9	9.9	19.7	3.5	22.8	0.75	26.1
200	0.074	18.9	1.8	3.0	4.9	1.0	11.1	0.00	13.2

URS/D:1ton

50705 H

Jim Murphy

5/23/85

#	Diameter mm	Gross weight grams	Tare weight grams	Difference grams	% Finer
4	4.76	527.5	527.0	.5	99.8
8	2.38	470.5	464.0	6.5	97.5
16	1.19	447.2	434.1	13.1	92.9
30	.595	439.5	408.5	31.0	82.0
50	.297	535.1	491.5	43.6	66.7
100	.149	443.7	366.5	77.2	39.7
200	.074	400.5	342.5	58.0	18.9
PAN	-	416.6	363.0	53.6	0

Total weight }
of sample }

283.5

wt. of Dish + Dry Sample 636.5

wt. of Dish 351.5

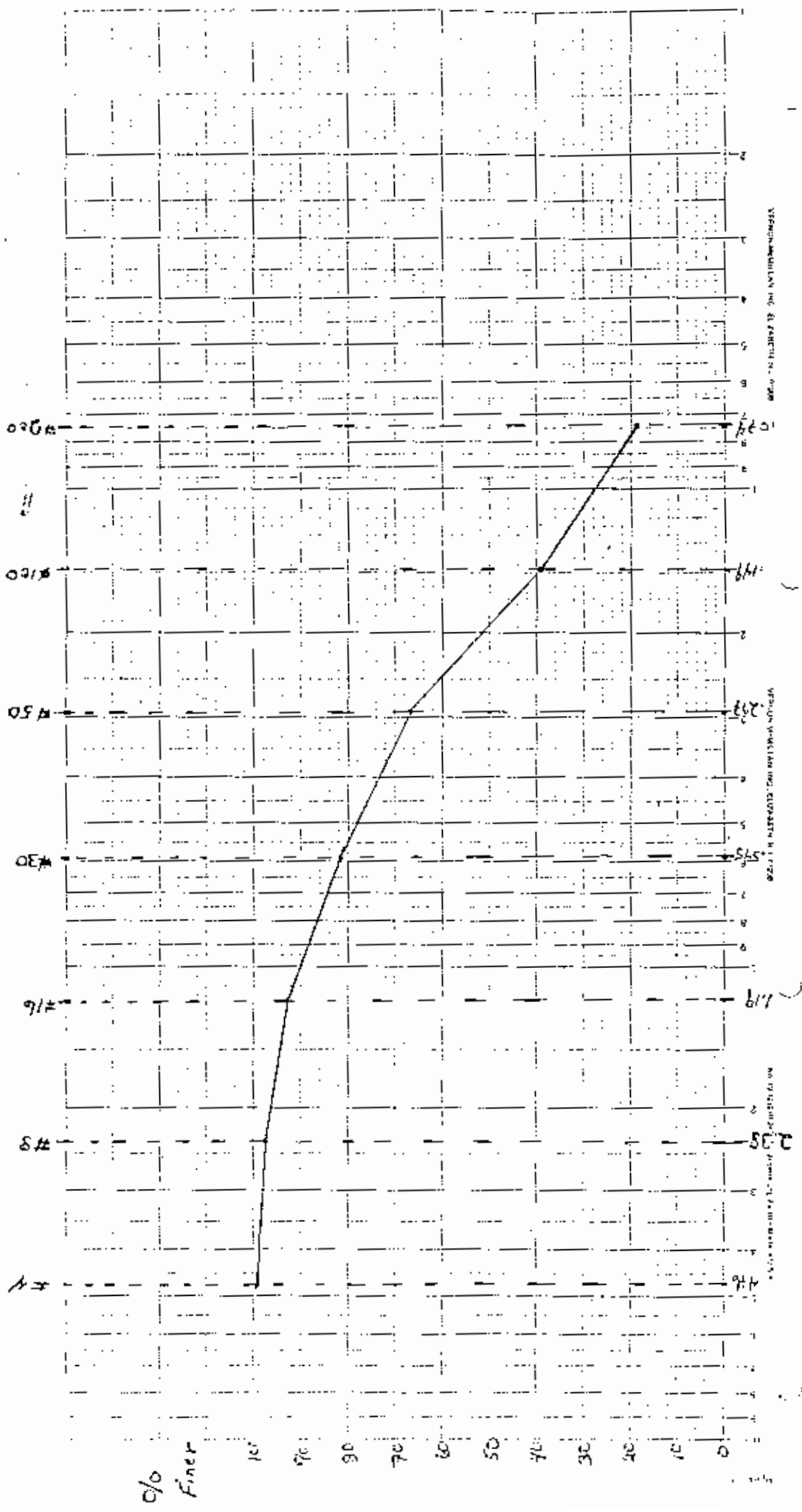
wt. of Dry Sample 285.0

$$283.5 / 285 = 99.5\%$$

0.5% loss

URS/ Dalton 50705 H

U.S. Standard Sieve Sizes



Grain Diameter - mm

URS/Dalton

50705 F

Jim Murphy 5/23/85

#	Diameter mm	Gross weight grams	Tare weight grams	Difference grams	% Finer
4	4.76	661.3	527.0	74.3	80.3
8	2.38	492.5	464.0	28.5	72.8
16	1.19	470.5	434.1	36.4	63.1
30	.595	461.0	408.5	52.5	49.2
50	.297	581.5	491.5	90.0	25.4
100	.149	432.4	366.5	65.9	7.9
200	.074	365.6	342.5	23.1	1.8
PAN	-	371.7	363.0	8.7	-

Total weight } 379.4
 of Sample }

Wt. of Dish and Dry Sample 728.5

Wt. of Dish 351.0

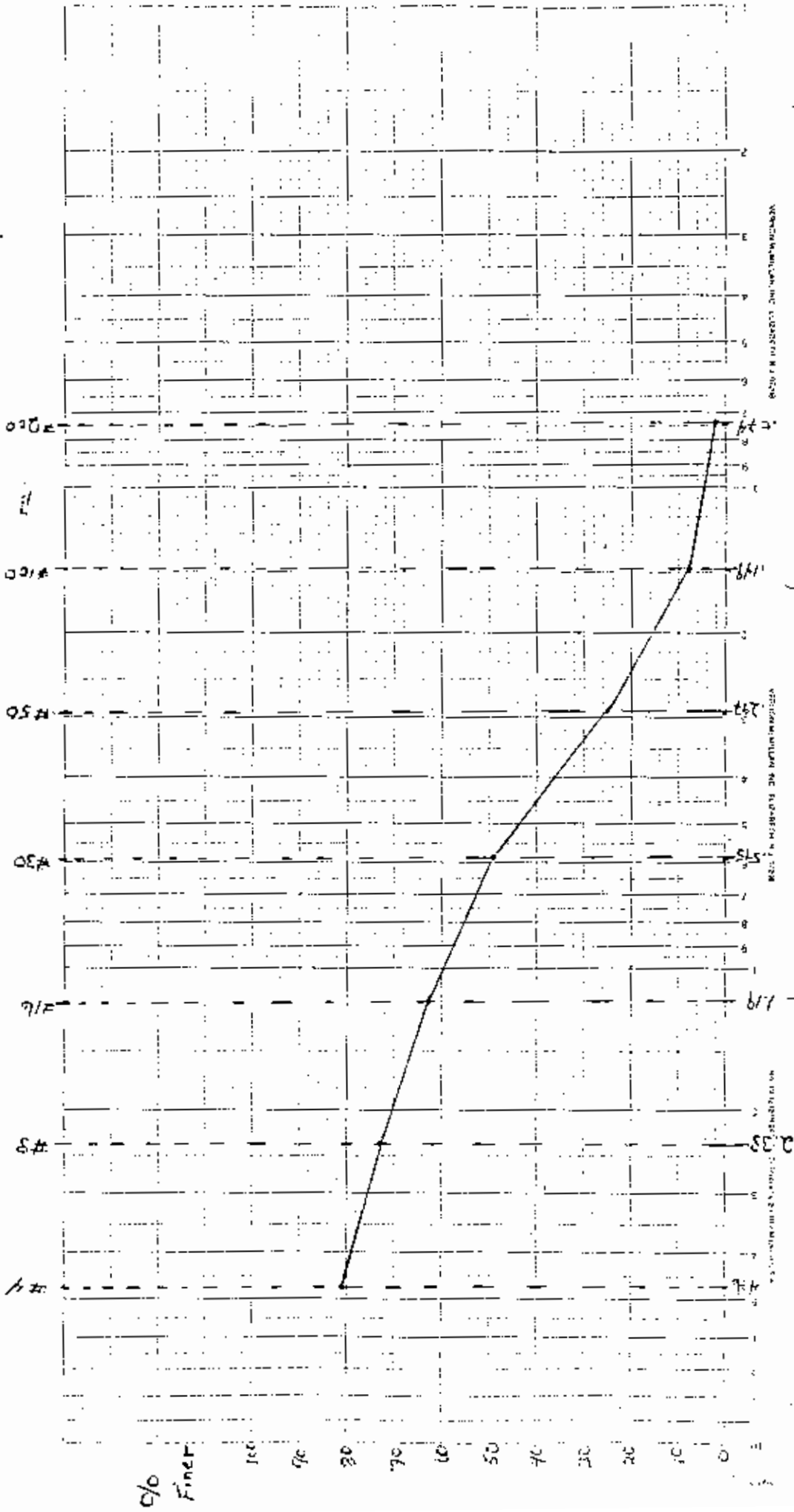
Wt. of Dry Sample 377.5

$$379.4 / 377.5 = 100.5\%$$

0.5% gain

URS Dalton
50705 I

U.S. Standard Sieve Sizes



Grain Diameter - mm

50705 I

Jim Murphy

5/23/85

#	Diameter mm	Gross weight grams	Tare weight grams	Difference grams	% Finer
4	4.76	527.5	527.0	.5	100
8	2.38	466.2	464.0	2.2	99.3
16	1.19	470.7	434.1	36.6	89.4
30	.595	526.8	408.5	118.3	57.5
50	.299	613.5	491.5	122.0	24.6
100	.149	421.3	366.5	54.8	9.9
200	.074	368.1	342.7	25.4	3.0
PAN	-	372.0	363.0	9.0	-

Total weight of Sample }
368.8

Wt. of Dish and Dry Sample 722.0

Wt. of Dish 351.0

Wt. of Dry Sample 371.0

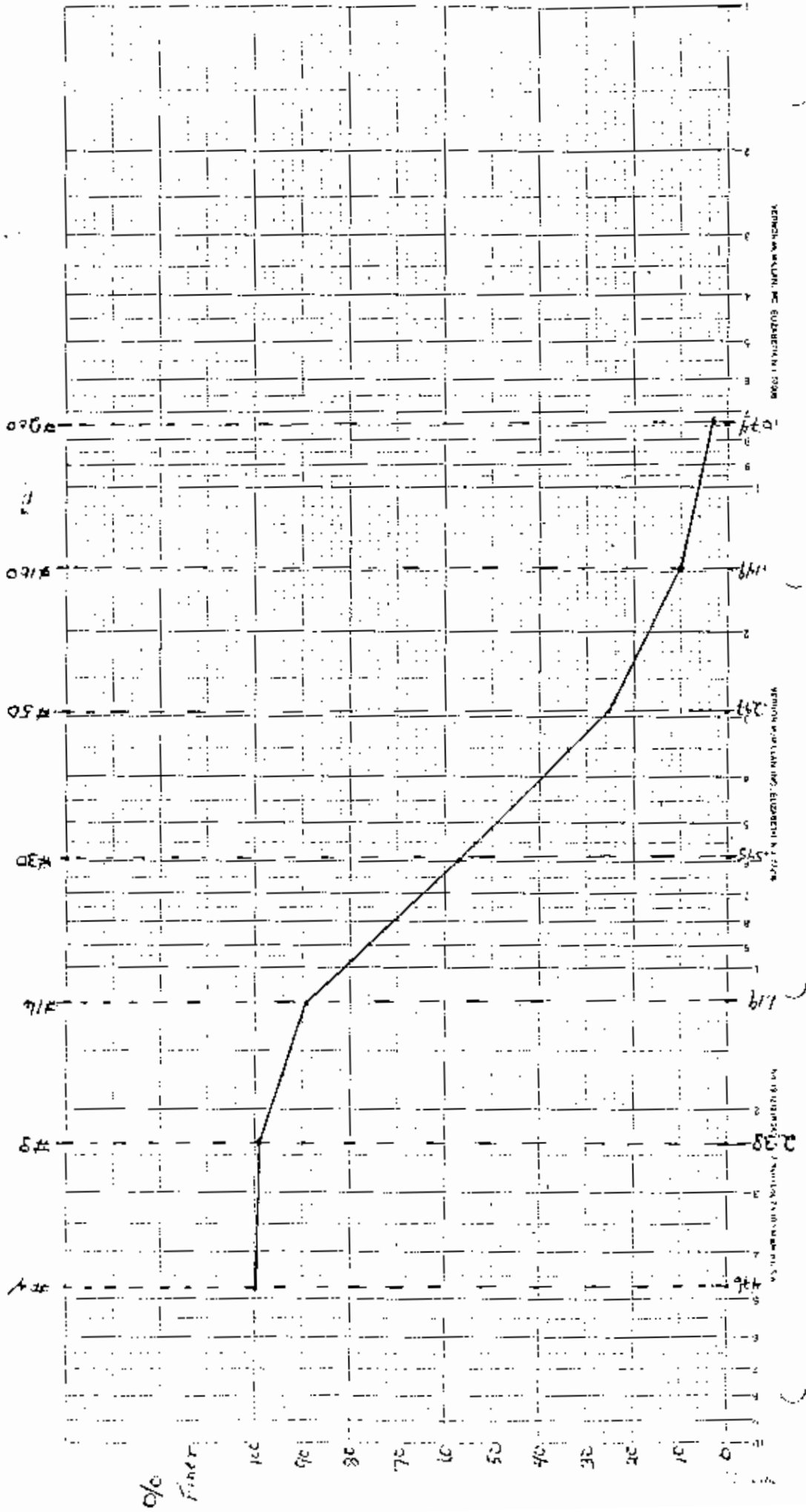
$$371.0 / 368.8 = 100.6$$

0.6% loss

URS / Dalton

50705 J

U.S. Standard Sieve Sizes



Grain Diameter - mm

URS/Dalton

50705K

John Murphy

5/23/85

ie #	Diameter mm	Gross weight grams	Tare weight grams	Difference grams	% Finer
4	4.76	567.8	527.0	40.8	86.4
8	2.38	479.6	464.0	15.6	81.3
16	1.19	445.3	434.1	11.2	77.5
30	.595	423.6	408.5	15.1	72.5
50	.297	548.6	491.5	57.1	53.5
100	.149	468.3	366.5	101.8	19.7
200	.074	387.2	342.7	44.5	4.9
PAN	-	376.7	363.0	13.7	-
Total weight of sample				299.8	

wt. of Dish and Dry Sample 652.0

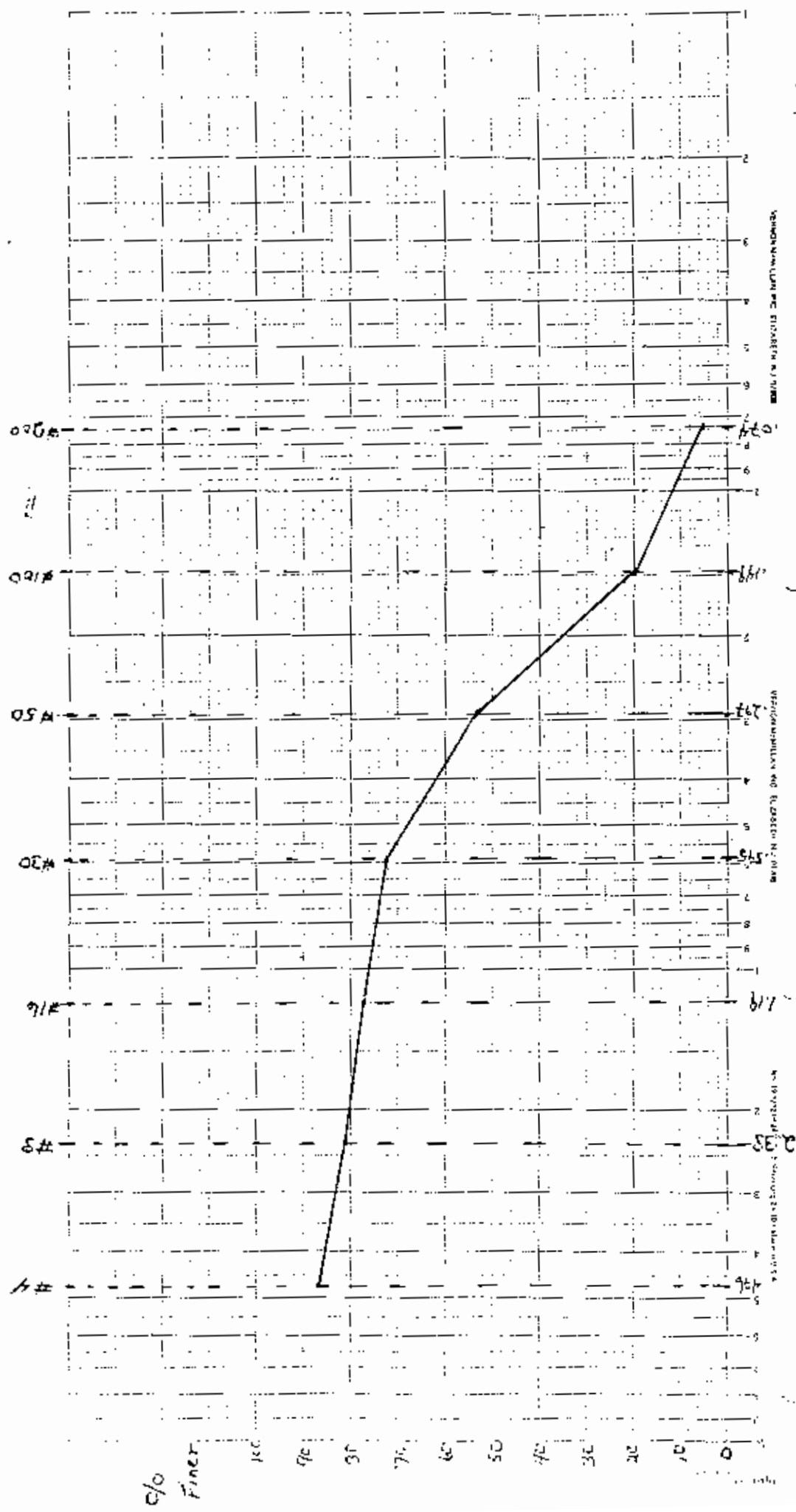
wt. of Dish 351.1

wt. of Dry Sample 300.9

$$299.8 / 300.9 = 99.4$$

0.6% Loss

U.S. Standard Sieve Sizes



Grain Diameter - mm

Size	50705 L Gross Weight g	Tare Weight g	Difference g	Jim Murphy % Finer	5/23/85 Diameter mm
4	530.4	527.0	3.4g	99.3	4.76
8	569.7	464.0	45.7	90.0	2.38
16	558.5	434.1	124.4	64.5	1.19
30	567.3	408.5	158.8	32.0	.595
50	604.1	491.5	112.6	8.9	.297
100	393.0	366.5	26.5	3.5	.149
00	355.2	342.7	12.5	1.0	.074
Pan	367.7	363.0	4.7	0	-
			488.6g		

Wt. of Dry Sample + Dish 836.5

Wt. of Dish 349.5

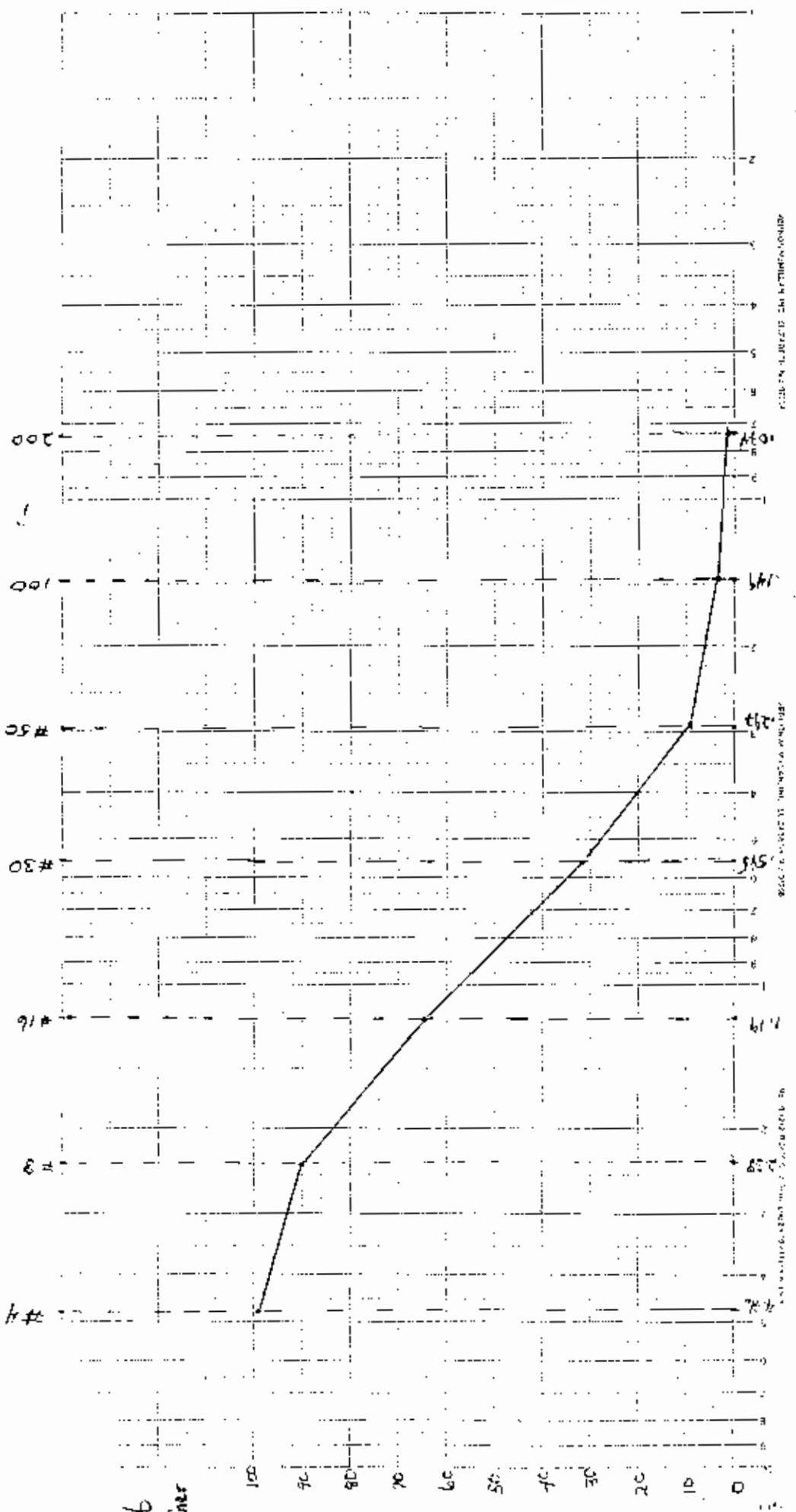
Wt. of Dry Sample 487.0

$\frac{488.6}{487.0} = 100.3$

0.3% gain

507057

U.S. Standard Sieve Sizes



Grain Diameter - mm.

URS / Daiten

50705 10

June 21, 1955

or #	Diameter mm	Gross weight grams	Tare weight grams	Difference grams	% Finer
4	4.76	563.0	527.0	36.0	89.6
8	2.38	483.0	464.5	18.5	84.3
16	1.19	455.5	435.6	19.9	78.6
30	.595	433.5	408.5	25.0	71.4
50	.297	562.8	491.5	71.3	50.9
100	.149	464.0	366.5	97.5	22.8
200	.074	383.0	36 342.5	40.5	11.1
PAN	-	396.5	363.0	33.5	-

Total weight } 342.2

of sample }

wt of Disk + Dry Sample 698.5

wt of Disk 351.0

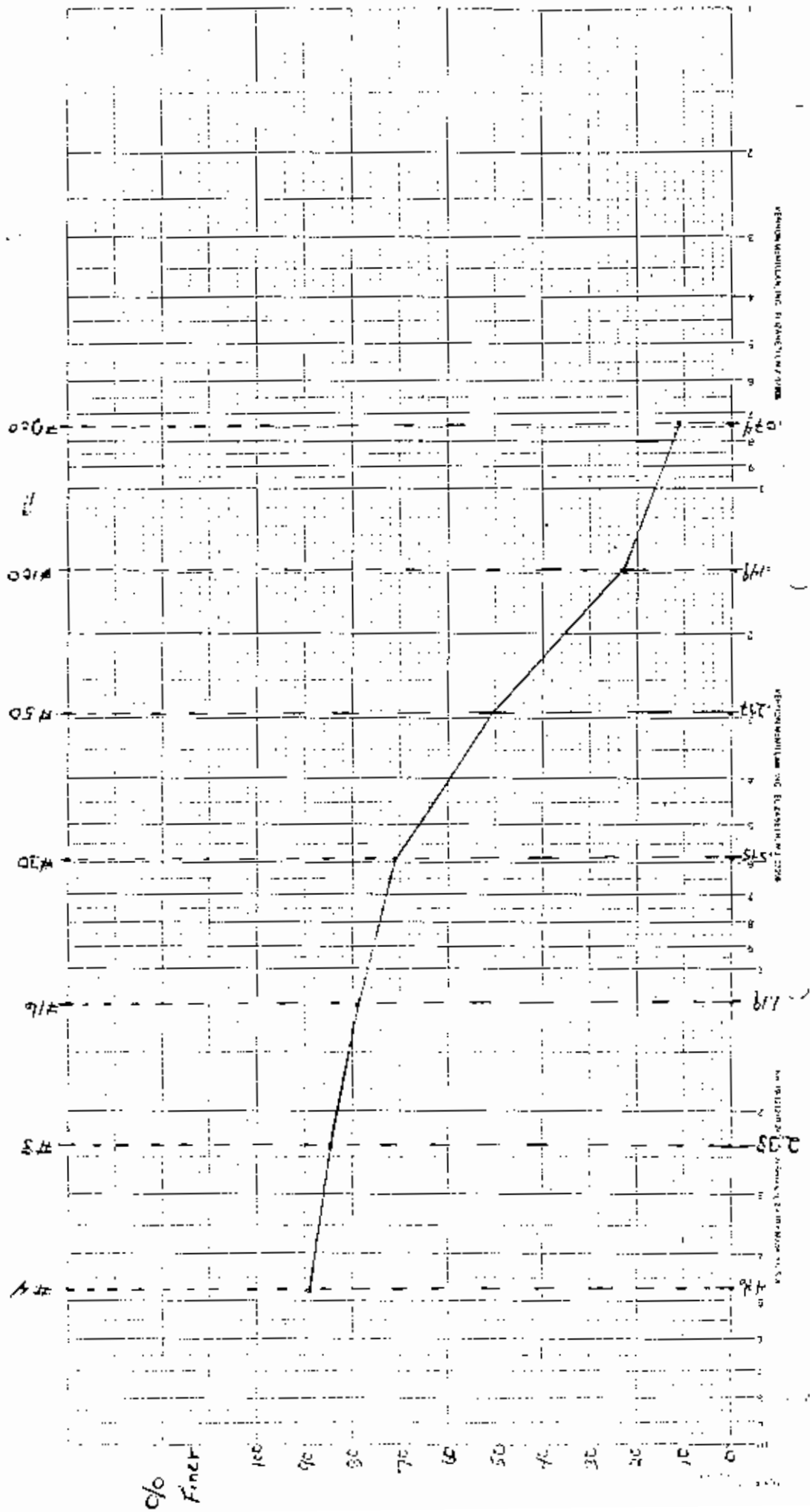
wt of Dry Sample 347.5

$\frac{342.2}{347.5} = 98.5\%$

1.5% loss

URS / Dulton
50705 M

U.S. Standard Sieve Sizes



Grain Diameter - mm

URS Dalton

SP 305 10

Jim Murphy

5/23/85

SE #	Diameter mm	Gross weight grams	Tare weight grams	Difference grams	% Finer
4	4.76	610.7	526.0	84.7	84.0
8	2.38	487.5	462.8	24.7	79.4
16	1.19	468.0	435.6	32.4	73.3
30	.595	465.1	407.7	57.4	62.4
50	.297	744.6	490.7	253.9	14.5
100	.149	439.1	366.0	73.1	0.75
200	.074	343.0	342.5	.5	0
PAN	-	363.0	363.0	0	0

Total weight

of sample

526.7

Wt. of Dish and Dry Sample

880.2

Wt. of Dish

350.0

Wt. of Dry Sample

530.2 g

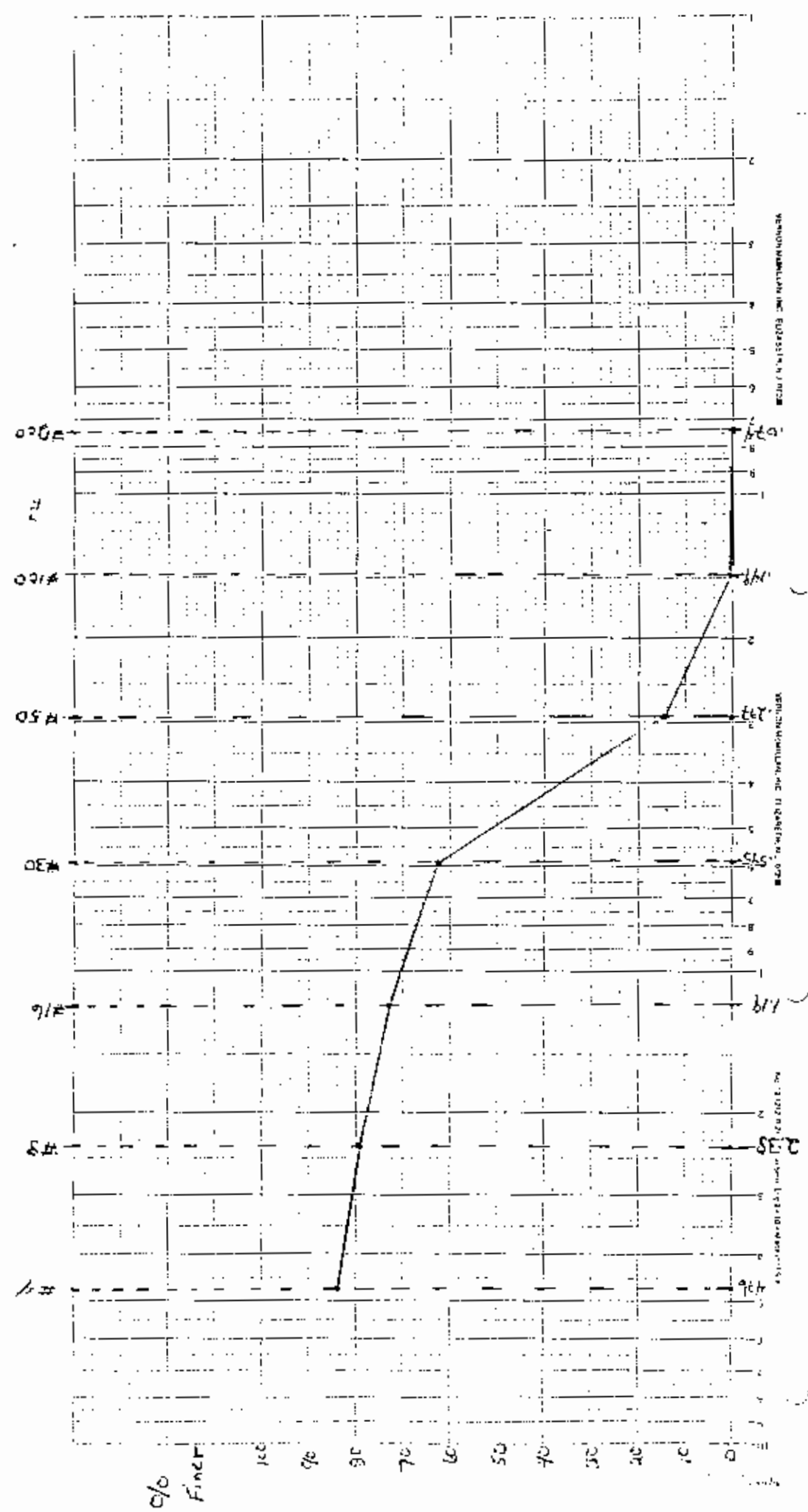
$$526.7 / 530.2 = 99.3$$

0.7 % LOSS

URS/Dutton

50705A

U.S. Standard Sieve Sizes



Grain Diameter - mm

-510-

URS Dalton

50705 O

Rene Murphy

5/23/05

sieve #	Diameter mm	Gross weight grams	Tare weight grams	Difference grams	% finer
4	4.76	527.0	527.0	0	100
8	2.38	464.0	464.0	0	100
16	1.19	450.5	434.1	16.4	91.5
30	.595	424.3	408.5	15.8	63.7
50	.297	506.7	491.5	15.2	46.6
100	.149	384.7	366.5	18.2	26.1
200	.074	354.0	342.5	11.5	13.2
PAN	-	376.6	363.0	13.6	-

Total weight
of sample

90.7

wt. of Dish + Dry Sample 740.8

wt. of Dish 352.0

wt. of Dry sample 88.8

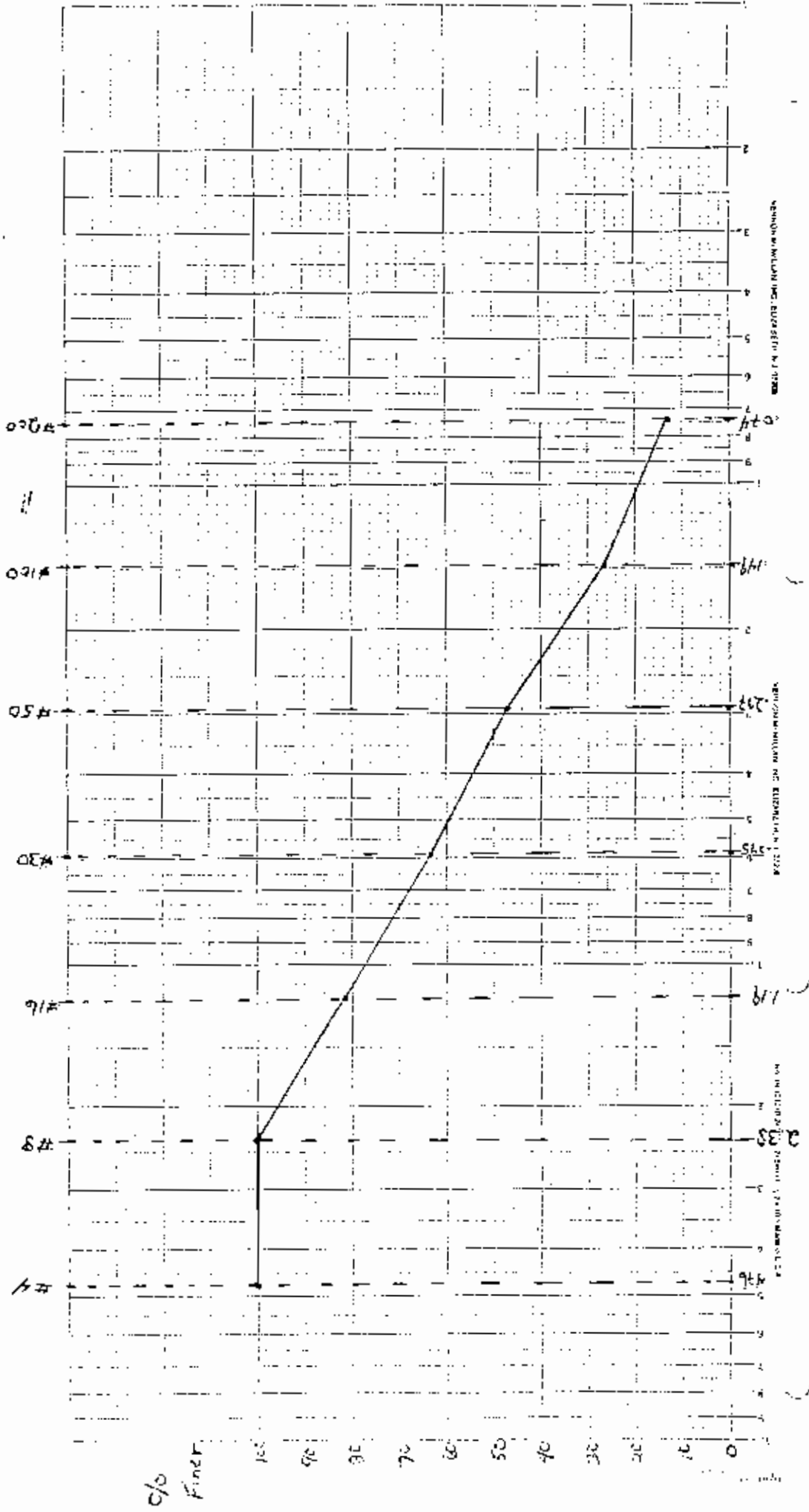
$$90.7 / 88.8 = 102.0$$

2% gain

Retry

ORS 1 Dutton 50705 H

U.S. Standard Sieve Sizes



Grain Diameter - mm

SECTION VII

Custody Documentation for Job #50705, URS/Dalton,
PAS Environmental Assessment received 5/1-3/85.

GTC #50705

CUSTODY DOCUMENTATION

For samples received 5/1/85.

URS#	g1#	AA Sampled	LA# Received	TY Sample	AN# Site	CC	Test	Notes
2a	50705-L	4/30	5/1	Sed.	grain size	✓	✓	
"	"	"	"	"	Mt, cp, phos.	✓	✓	
"	50705-E	"	"	WATER	Phenol	✓	✓	
"	"	"	"	"	NUT.	✓	✓	
"	"	"	"	"	Cyd.	✓	✓	
1a	50705-K	"	"	Sediment	grain size	✓	✓	
"	"	"	"	"	Mt, cp, phos.	✓	✓	
"	50705-L	"	"	WATER	Metals	✓	✓	
"	"	"	"	"	CN	✓	✓	
"	"	"	"	"	Phenol	✓	✓	
2a	50705-E	"	"	"	Metals	✓	✓	
"	"	"	"	"	Solids	✓	✓	
"	50705-L	"	"	Sed.	BN/AE	✓	✓	
Tip Blank	11446	"	"	WATER	VOA	✓	✓	
1a	50705-L	"	"	WATER	Solids	✓	✓	
1a	50705-L	"	"	"	NUT.	✓	✓	
1a	50705-K	"	"	Sed.	BN/AE	✓	✓	
Tip Blank	11446	"	"	WATER	BN/AE	✓	✓	
"	11446	"	"	"	VOA	✓	✓	

CHAIN OF CUSTODY RECORD

No 1522 General Testing

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS
SAMPLERS: (Signature)		PAS (URS / Dalton & Dalton)				
STATION	DATE	TIME	BYES	STATION LOCATION	VOL - WATER	VOL. BOTTLE - WATER
49814				40ml Vial	X	Trip Blank T/BK 11446
49818	4/29/85	10:15a	X	1L Clear Bottle	X	Trip Blank
49827	4/30/85	2:00p	X	PAS WNC US 2A	X	1L General Testing No 50705-L
			X	PAS WNC US 1A	X	1L General Testing No 50705-K
<p>Note: This chain of custody originated at General Testing (Rec) because it was not completed on-site by URS personnel. Noted on URS chain of custody that samples covered by this chain of custody were received at General Testing (Rec) 5/1/85 and shipped in Compuchem's cooler #11446</p>						
Relinquished by: (Signature)		Received by: (Signature)		Date / Time		Received by: (Signature)
D. Smith P. Murphy				5/2/85 5:00P		
Relinquished by: (Signature)		Received by: (Signature)		Date / Time		Received by: (Signature)
Relinquished by: (Signature)		Received for Laboratory by: (Signature)		Date / Time		Remarks
		C. [Signature]		5/2/85 10:00		Compuchem Shipping Cooler No. 11446

520

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

710 Exchange Street 85 Trinity Place
 Rock Hill, NY 14608 Hackensack, NJ 07601

GTC Job No. 50705
 Client Project No. PAS

Sample Origination & Shipping Information

Collection Site PAS-Site USWEG White + White Creek
 Address Route 104 Orange NJ
 Street City State Zip
 Collector WAYNE S DAVIS Wayne S Davis
 Print Signature
 Shippers Name _____ Phone () _____
 Container Type _____ # _____ Seal # _____
 Method of Shipment _____ Shipping ID # _____

Custody: Bottle Sets Prepared by: Timothy P. Murphy Date: 4/29/85 TIME: 3:30P
 Relinquished by: _____ Date/Time Received by: _____ Date/Time

1. Sign <u>Timothy P. Murphy</u>	4/29/85	1. Sign <u>Wayne S Davis</u>	4/30/85
for GTC <u>Rocky</u>	3:30P	for	6:00
2. Sign <u>Wayne S Davis</u>	4/30/85	2. Sign <u>Stanton H. DeWalla</u>	4/30/85
for	6:00P	for	6:00
3. Sign	1/1	3. Sign	1/1
for	:	for	:

Sample(s) SAMPLES REC'D IN LAB by Timothy P. Murphy Date: 5-1-85 TIME: 2:00A

ID.# Lab#	Sample Location Date/Time	Analyte or Analyte Groups(s) Required (see below for additional)	Sample Prep				Bottle Set(s) (see below)	Rec'd at GTC
			Preserved Y N	Filtered Y N				
PAS-WC-US-3 50705A		See below				2,6,7		
PAS-WC-US-1 50705B								
PAS-WC-US-2 50705C								
PAS-WC-US-1A 50705D	4/30/85 2:00		✓					
PAS-WC-US-2A 50705E	4/30/85 10:45		✓					
PAS-WC-US-4 50705F								
PAS-WC-US-6 50705G								

Use following Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each bottle type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Glass Plastic	Qt. Gal.	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	QL. Pl.	Gal. Pl.	Stent. Pl.		
# of each		1				1	3				

Additional Analytes DEC Metals, Phenols, Total Cyanide, NO₃, TKN, NH₃, TP, TOC, NO₂, O-Po₄, D.S., S.S., PH

* Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

710 Exchange Street 85 Trinity Place
 Rochester, NY 14608 Hackensack, NJ 07601

GTC Job No. 50705
 Client Project No. PAS

Sample Origination & Shipping Information

Collection Site PAS Site - Oswego - White + Wine Creeks
 Address Rt 104 Street Chicago City NY State NY Zip _____
 Collector WAYNE S. DAVIS Print Wayne S. Davis Signature
 Shippers Name _____ Phone () _____
 Container Type _____ # _____ Seal # _____
 Method of Shipment _____ Shipping ID # _____

Custody: Bottle Sets Prepared by Timothy P. Murphy Date/Time 4/13/85 3:30p

Reinquished by:	Date/Time	Received by:	Date/Time
1. Sign <u>Timothy P. Murphy</u>	<u>4/13/85</u>	1. Sign <u>Wayne S. Davis</u>	<u>4/13/85</u>
for	<u>3:30p</u>	for	<u>6:00p</u>
2. Sign <u>Wayne S. Davis</u>	<u>4/13/85</u>	2. Sign <u>Wayne S. Davis</u>	<u>1/1</u>
for	<u>6:00p</u>	for	<u>1/1</u>
3. Sign	<u>1/1</u>	3. Sign	<u>1/1</u>
for		for	

Sample(s) Samples Rec'd in Lab by: Timothy P. Murphy Date/Time 5/1/85 9:00a

ID.# Lab#	Sample Location Date/Time	Analyte or Analyte Groups(s) Required (see below for additional)	Sample Prep				Bottle Set(s) (see below)	Rec'd at GTC
			Preserved Y N	Filtered Y N				
<u>PAS-WC-05-3</u>		<u>S. See below</u>					<u>2,3</u>	
<u>50705 H</u>								
<u>PAS-WC-05-1</u>								
<u>50705 I</u>								
<u>PAS-WAL-05-2</u>								
<u>50705 J</u>								
<u>PAS-WC-05-1A</u>								
<u>50705 K</u>	<u>4/13/85 7:00</u>		<input checked="" type="checkbox"/>					
<u>PAS-WAL-05-2A</u>								
<u>50705 L</u>	<u>4/13/85 p.m.</u>		<input checked="" type="checkbox"/>					
<u>PAS-WAL-05-4</u>								
<u>50705 M</u>								
<u>PAS-WAL-05-6</u>								
<u>50705 N</u>								
<u>PAS-MD-27</u>								
<u>50705 O</u>								

Use following Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each bottle type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Glass 16oz	Ot. Glass 6oz	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Ot. Pl.	Gal. Pl.	Steril. Pl.		
# of each		1	1								

Additional Analytes DEC METALS, CN, phenol, grain size

I shipped the Trip
 blank for VOA in
 Sample Saver # 11446
 To Mend Compachem
 on 5/2/85. The Sediment
 Sample P93-WNC-US-2A for
 VOA, BN/AE was also shipped.
 Timothy P. Murphy
 5/2/85

CHAIN OF CUSTODY RECORD

URS Company, Inc.

[Signature]
 SAMPLER (Signature)

11446-Sample Saver # Cooler: Coleman Cooler

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-WNC-US-2a	4/30	10:15	Cooler 50705-E		✓	HNO ₃	Water DEC Metals
PAS-WNC-US-2a	4/30	10:15	Cooler 50705-E		✓	4°C	Water NH ₄ -PO ₄ , DS, SS PH
PAS-WNC-US-2a	4/30	10:15	11446 50705-L		✓	4°C	Sediments VOA, BN/AE
QC-Trip Blank	-	-	11446 Trip Blank			4°C	VOA

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date/Time 4/30/85 6:00 P
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature) <i>Timothy P. Murphy</i>	Date/Time 5/1/85 9:00 A

Name and Location of Laboratory
 General Testing Corporation Rochester NY

I Did not receive Sample Saver 11449 or the Containers specified on the four lines that are crossed off.

Timothy P. Murphy
5/1/85

CHAIN OF CUSTODY RECORD

URS Company, Inc.

SAMPLER (Signature) Wayne Davis 11449 = Sample Saver # Cooler = Coleman Cooler

SAMPLE DESCRIPTION	DATE	TIME PM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
P15-WC-US-1a	4/30/85	2:00	11449 50705-D		<input checked="" type="checkbox"/>	11°C	Water VOA
F15-WC-US-1a	4/30/85	2:00	11449 50705-D		<input checked="" type="checkbox"/>	4°C	Water VOA
P15-WC-US-1a	4/30	2:00	11449 50705-D		<input checked="" type="checkbox"/>	4°C	Water BN/AE
PAS-WC-US-1a	4/30	2:00	11449 50705-D		<input checked="" type="checkbox"/>	4°C	Water BN/AE
PAS-WC-US-1a	4/30	2:00	Cooler 50705-K		<input checked="" type="checkbox"/>	-	Sediment Grain Size
FAS-WC-US-1a	4/30	2:00	Cooler 50705-K		<input checked="" type="checkbox"/>	4°C	Sediment DEC-Metal-CN Phos
F15-WC-US-1a	4/30	2:00	Cooler 50705-D		<input checked="" type="checkbox"/>	HNO ₃	Water DEC-Metals
P15-WC-US-1a	4/30	2:00	Cooler 50705-D		<input checked="" type="checkbox"/>	NaOH	Water HCL, total
PAS-WC-US-1a	4/30	2:00	Cooler 50705-D		<input checked="" type="checkbox"/>	CuSO ₄ , H ₃ PO ₄	Water Phenol

THIS SECTION TO BE COMPLETED BY URS COMPANY INC

Relinquished by: (Signature) <u>Wayne Davis</u>	Received by: (Signature) <u>Walter A. Schulte</u>	Date/Time 4/30/85 6:00P
Relinquished by: (Signature) X	Received by: (Signature) X	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) <u>Timothy P. Murphy</u>	Date/Time 5/1/85 9:00AM

Name and Location of Laboratory

General Testing Corporation Rochester NY

Return Completed Chain Of Custody Record To

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

CHAIN OF CUSTODY RECORD

URS Company, Inc.

I Did not receive
Sample Saver 11449
or Containers specified
on the four liners
that are crossed
off.

Timothy P. Murphy
5/1/85

SAMPLER (Signature) Wayne S. Davis 11449 = Sample Saver # Cooler = Coleman Cooler

SAMPLE DESCRIPTION	DATE	TIME AM	SAMPLE IDENT NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
FAS-WNC-US-2a	4/30/85	10:15	11449 50705E	✓	✓	4°C	Water VOA
FIS-WNC-US-2a	4/30	10:15	11449 50705E	✓	✓	4°C	Water VOA
PIS-WNC-US-2a	4/30	10:15	11449 50705E	✓	✓	4°C	Water BOD/AE
PAS-WNC-US-2a	4/30	10:15	11449 50705E	✓	✓	4°C	Water BOD/AE
PAS-WNC-US-2a	4/30	10:15	Cooler 50705 L	✓	✓	—	Sediment Grain Size
FAS-WNC-US-2a	4/30	10:15	Cooler 50705E	✓	✓	CuSO ₄ , H ₃ PO ₄	Water Phenol
PIS-WNC-US-2a	4/30	10:15	Cooler 50705E	✓	✓	H ₂ SO ₄	Water NO ₂ , TKN, NH ₃ , TP, TSS
FIS-WNC-US-2a	4/30	10:15	Cooler L 50705E	✓	✓	4°C	Sediment PEC Metal, CN, Phos
PAS-WNC-US-2a	4/30	10:15	Cooler 50705E	✓	✓	NaOH	Water CN total

THIS SECTION TO BE COMPLETED BY JRS COMPANY INC.

Relinquished by: (Signature) <u>Wayne S. Davis</u>	Received by: (Signature) <u>Patrick N. Schultz</u>	Date/Time 4/30/85 6:00 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) <u>Timothy P. Murphy</u>	Date/Time 5/1/85 9:00 AM

Name and Location of Laboratory

General Testing Corporation Rochester NY

Return Completed Chain Of Custody Record To

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

GTC #50705

CUSTODY DOCUMENTATION

For samples received 5/2/85.

Well #	gt #	Date Sampled	Date received	type sample	analy	labs	gt #	no. cc
25-4	50705-F	5/1	5/2	water	(A) VOA'S	✓		✓
"	"	"	"	"	(B) BI/AE'S	✓		✓
"	"	"	"	"	Metals	✓		✓
"	"	"	"	"	Cd	✓		✓
"	"	"	"	"	phenol	✓		✓
"	"	"	"	"	Nitr	✓		✓
"	"	"	"	"	Solids	✓		✓
"	50705-M	"	"	Sediment	Met, Cd, phenol	✓		✓
"	"	"	"	"	VOA, BI, AE	✓		✓
"	"	"	"	"	GRAV SIZE	✓		✓
45-1	50705-3	"	"	water	VOA	✓		✓
"	"	"	"	"	VOA	✓		✓
"	"	"	"	"	BI/AE	✓		✓
"	"	"	"	"	BI/AE	✓		✓
"	"	"	"	"	Metals	✓		✓
"	"	"	"	"	Cd	✓		✓
"	"	"	"	"	phenol	✓		✓
"	"	"	"	"	Nitr	✓		✓
"	"	"	"	"	Solids	✓		✓

W.S.#	GT#	Date Sampled	Date Received	Type Sample	Analysis	UOS CC	GT CC	mp CC
CD-2	50705-A	5/1	5/2	Water	VOA	✓		✓
"	"	"	"	"	VOA	✓		✓
"	"	"	"	"	B/A/E	✓		✓
"	"	"	"	"	B/A/E	✓		✓
"	"	"	"	"	Metals	✓	✓	
"	"	"	"	"	Solids	✓	✓	
"	"	"	"	"	CN	✓	✓	
"	"	"	"	"	Special	✓	✓	
"	"	"	"	"	Met.	✓	✓	
UD-2	50705-C	"	"	"	VOA	✓		✓
"	"	"	"	"	VOA	✓		✓
"	"	"	"	"	B/A/E	✓		✓
"	"	"	"	"	B/A/E	✓		✓
"	"	"	"	"	Metals	✓	✓	
"	"	"	"	"	CN	✓	✓	
"	"	"	"	"	Special	✓	✓	
"	"	"	"	"	Met.	✓	✓	
"	"	"	"	"	Solids	✓	✓	

115#	gt #	Te- Sampled	Date received	Typ. Sample	Qualy-	1103 cc	g- cc	1103 cc
U5-2	50705-J	JH	8/2	Sediment	VCA, BD, AE	✓	✓	✓
"	"	"	"	"	Met, CD, phos	✓	✓	
"	"	"	"	"	GRAIN SIZE	✓	✓	
U5-1	50705-I	"	"	"	VCA, BD, AE	✓		✓
U5-1	"	"	"	"	Met, CD, phos	✓	✓	
U5-1	"	"	"	"	GRAIN SIZE	✓	✓	
Q5-3	50705-H	"	"	"	VCA, BD, AE	✓		✓
"	"	"	"	"	Met, CD, phos	✓	✓	
"	"	"	"	"	GRAIN SIZE	✓	✓	
QA	11448	"	"	?	VCA	✓		✓
"	11452	"	"	?	VCA	✓		✓
"	11450	"	"	?	VCA	✓		✓

No 1520 - 11452

General Testing

CHAIN OF CUSTODY RECORD

COMPUCHEM LABORATORIES

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS	
1520 - 11452		PAS (URS / Dalton & Dalton)		1		Trip Blank T-BIK 11452	
SAMPLERS: (Signature)		STATION LOCATION		VEA - Waters		VEA, GD/LAF sediment	
STAMP NO.	DATE	TIME	GRAB	GRAB	NO. OF CONTAINERS	REMARKS	REMARKS
49816	5/4/85	11:00A	X		1	40 mL. Yield	
49828	5/1/85		X		1	PAS - WWC - OS - 3	12 Container General Testing # 502058H
49829	5/1/85		X		1	PAS - WWC - US - 1	12 Container General Testing # 502058I
49830	5/1/85		X		1	PAS - WWC - US - 2	12 Container General Testing # 502058J
49831	5/1/85	11:30P	X		1	PAS - WWC - DS - 4	12 Container General Testing # 502058K
<p>Note This chain of custody originated at General Testing (ROC) because it was not completed on-site by URS personnel. Noted on URS chain of custody that samples were received at General Testing (ROC) 5/2/85 and shipped in Compu Chem's cooler # 11452.</p>							
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time	
Dimitry P. Mandryk		5/2/85 5:00P					
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time	
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time	
				Dulene Toakley		5/3/85 10:00	
Remarks				Remarks			
Compu Chem				Compu Chem Shipping Cooler			
No. 11452							

Distribution: Original Accompaniment Shipment; Copy to Field Files

CHAIN OF CUSTODY RECORD

No. 1520 - 11448 General Testing

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS	
1520 - 11448		PAS (URS/Dalton & Dalton)		1		SS # 11448	
SAMPLERS: (Signature)		PAS (URS/Dalton & Dalton)		2		VCA - Coolers	
SAMPLERS: (Signature)		PAS (URS/Dalton & Dalton)		2		BNA/E - Coolers	
STAMP NO.	DATE	TIME	COOL	DRAB	STATION LOCATION		
49815					40 ml Kial	X	Trip Blank
49803	5/1/85	11:00A	X		PAS-WC-OS-3	X	2-40ml Vials General Testing #50255A
↓	5/1/85	11:00A	X		PAS-WC-OS-3	X	2-1L Containers General Testing #50255A
49811	5/1/85	1:30P	X		PAS-WNC-DS-4	X	2-40ml Vials General Testing #50255 F
↓	5/1/85	1:30P	X		PAS-WNC-DS-4	X	2-1L Containers General Testing #50255 F
Note: This chain of custody originated at General Testing (ROC) because it was not completed on-site by URS personnel. Noted on URS Chain of Custody that samples covered by this chain of custody were received at General Testing (ROC) 5/2/85 and shipped in Compu Chem's cooler #11448							
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time	
Janet P. Murphy		5/2/85 5:00P					
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time	
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time	
				W. Lee Taylor		5/3/85 10:00	
				Remarks		Compu Chem Shipping Cooler	
				No. 11448			

Distribution: Original Accompanies Shipment; Copy to Field Files

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

710 Exchange Street 85 Trinity Place
 Rochester, NY 14608 Hackensack, NJ 07601

GTC Job No. 50705
 Client Project No. PAS

Sample Origination & Shipping Information

Collection Site PAS - Oswego 1,2,3,4
 Address Oswego NY State NY Zip _____
 Collector WAYNE DAVIS Street _____ City _____ State _____ Zip _____
 Print _____ Signature Wayne Davis
 Shippers Name _____ Phone () _____
 Container Type _____ # _____ Seal # _____
 Method of Shipment _____ Shipping ID # _____

Custody: Bottle Sets Prepared by: Timothy P. Murphy Date: 4/29/85 TIME: 3:30

Relinquished by:	Date/Time	Received by:	Date/Time
1. Sign <u>Timothy P. Murphy</u> for <u>GTC Roch.</u>	<u>4/29/85</u> <u>3:30P</u>	1. Sign _____ for _____	<u>1/1</u> :
2. Sign <u>Wayne Davis</u> for _____	<u>5/1/85</u> <u>6:00</u>	2. Sign <u>Timothy P. Murphy</u> for <u>GTC Roch</u>	<u>5/1/85</u> <u>6:00P</u>
3. Sign <u>Timothy P. Murphy</u> for <u>GTC Rochester</u>	<u>5/2/85</u> <u>9:00A</u>	3. Sign _____ for _____	<u>1/1</u> :

Sample(s) SAMPLES REC'D IN LAB by David L. Benn Date: 5/2/85 TIME: 9:00A

I.D.# Lab#	Sample Location Date/Time	Analyte or Analyte Groups(s) Required (see below for additional)	Sample Prep		Bottle Set(s) (see below)	Rec'd at GTC
			Preserved Y N	Filtered Y N		
<u>PAS-WC-OS-3</u> <u>50705A</u>	<u>5/1/85 11:00</u>	<u>See below</u>			<u>2,6,7</u>	
<u>PAS-WC-US-1</u> <u>50705B</u>	<u>5/1/85 9:30</u>					
<u>PAS-WC-US-2</u> <u>50705C</u>	<u>5/1/85 8:00</u>					
<u>PAS-WC-US-1A</u> <u>50705D</u>	<u>5/1/85</u>					
<u>PAS-WC-US-2A</u> <u>50705E</u>	<u>5/1/85</u>					
<u>PAS-WC-US-4</u> <u>50705F</u>	<u>5/1/85 1:30</u>					
<u>PAS-WC-US-6</u> <u>50705G</u>	<u>5/1/85</u>					

Use following Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each bottle type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Glass 16 oz	Q. Gal.	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Ql. Pl.	Gal. Pl.	Steril. Pl.		
# of each		<u>1</u>				<u>1</u>	<u>3</u>				

Additional Analytes DEC Metals, Phenols, Total Cyanide, NO₃, TK10, NH₃, TP, TOC, NO₂, C-PO₄, D.S., S.D., pH

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

710 Exchange Street 85 Trinity Place
 Rochester, NY 14608 Hackensack, NJ 07601

GTC Job No. 50705
 Client Project No. PAS

Sample Origination & Shipping Information

Collection Site OAS Oswego 1, 2, 34
 Address Oswego NY State Wayne DAVIS Zip _____
 Collector WAYNE DAVIS Print Signature
 Shippers Name _____ Phone () _____
 Container Type _____ # _____ Seal # _____
 Method of Shipment _____ Shipping ID # _____

Custody: Bottle Sets Prepared by Timothy P. Murphy Date/Time Received by: _____ Date/Time _____
 Relinquished by: _____ Date/Time _____

1. Sign <u>Timothy P. Murphy</u> for _____	4/12/1985 3:30	1. Sign _____ for _____	1/1
2. Sign <u>Wayne Davis</u> for _____	5/1/1985 6:00	2. Sign <u>Timothy P. Murphy</u> for <u>GTC Rochester</u>	5/1/1985 6:00
3. Sign <u>Timothy P. Murphy</u> for <u>GTC Rochester</u>	5/12/1985 9:00	3. Sign _____ for _____	1/1

Sample(s) Samples Recd in Lab by: David L. Berner Date 5/2/85 Time 9:00am

I.D.# Lab#	Sample Location Date/Time	Analyte or Analyte Groups(s) Required (see below for additional)	Sample Prep		Bottle Set(s) (see below)	Rec'd at GTC
			Preserved Y N	Filtered Y N		
PAS-WC-OS-3 50705 H	5/1/1985 11:00	3 See below			2, 3	
PAS-WC-OS-1 50705 I	5/1/1985 9:30					
PAS-WC-OS-2 50705 J	5/1/1985 8:00					
PAS-WC-OS-1A 50705 K						
PAS-WC-OS-2A 50705 L						
PAS-WC-OS-4 50705 M	5/1/1985 1:30					
PAS-WC-OS-6 50705 N						
PAS-MP-27 50705 O						

Use following Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each bottle type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Glass 16oz	16oz Gal.	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.		
# of each		1	1								

Additional Analytes DEC METALS, CN, phenol, grain size

CHAIN OF CUSTODY RECORD

URS Company, Inc.

SAMPLER (Signature)

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
QA	5-1		11448			4°C	VOA
CA	5-1		11452			4°C	VOA
CA	5-1		11450			4°C	VOA

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>Simothy P. Murphy</i>	Date/Time 5/1/85 6:00 P
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature) <i>Simothy P. Murphy</i>	Received by: (Signature) <i>David L. Berner</i>	Date/Time 5-2-85 9:00am

Name and Location of Laboratory
General Testing 710 Exchange St Rochester NY

Return Completed Chain Of Custody Record To URS Company Inc.
625 Delaware Ave.
Buffalo, New York 14202

535

CHAIN OF CUSTODY RECORD

URS Company, Inc.

 SAMPLER (Signature) *Wayne A. [Signature]*

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
P1S-WNC-US-2	5-1	8:00	11452 50705-J		✓	4°C	Sediments VOA, BN/AE
P1S-WNC-US-2	5-1	8:00	Blue 50705-J		✓	4°C	Sediments DEC Metal, Cd, Pb
P1S-WNC-US-2	5-1	8:00	Blue 50705-J		✓	—	Sediments Grain Size
P1S-WC-US-1	5-1	9:30	11452 50705-I		✓	4°C	Sediments VOA, BN/AE
PAS-WC-US-1	5-1	9:30	Red 50705-I		✓	4°C	Sediments DEC Metal, Cd, Pb
P1S-WC-US-1	5-1	9:30	Red 50705-I		✓	—	Sediments Grain Size
P7S-WC-OS-3	5-1	11:00	11452 50705-II		✓	4°C	Sediments VOA, BN/AE
P7S-WC-OS-3	5-1	11:00	Red 50705-II		✓	4°C	Sediments DEC Metal, Cd, Pb
P7S-WC-OS-3	5-1	11:00	Red 50705-II		✓	—	Sediments Grain Size

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne A. [Signature]</i>	Received by: (Signature) <i>Symphony P. Murphy</i>	Date/Time 5/1/85 6:00 P
Relinquished by: (Signature) <i>Symphony P. Murphy</i>	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) <i>Symphony P. Murphy</i>	Received by: (Signature) <i>David L. Berner</i>	Date/Time 5-2-85 9:00am

Name and Location of Laboratory

General Testing 710 Exchange St Rochester NY

Return Completed Chain Of Custody Record To

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

536

CHAIN OF CUSTODY RECORD

URS Company, Inc.

 SAMPLER (Signature) *Wayne S. De...*

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
IAS-WNC-US-2	5-1	8:00 AM	11450 50705-C		✓	4°C	Water VOA
P.S-WNC-US-2	5-1	8:00	11450 50705-C		✓	4°C	Water VOA
P.S-WNC-US-2	5-1	8:00	11450 50705-C		/	4°C	Water BN/AE
PAS-WNC-US-2	5-1	8:00	11450 50705-C		✓	4°C	Water BN/AE
PAS-WNC-US-2	5-1	8:00	Blue 50705-C		✓	HNO ₃	Water DEL-Metals
PAS-WNC-US-2	5-1	8:00	Blue 50705-C		✓	NaOH	Water CU-Total
P.S-WNC-US-2	5-1	8:00	Blue 50705-C		✓	CuSO ₄ +H ₃ PO ₄	Water Phenol
P.S-WNC-US-2	5-1	8:00	Blue 50705-C		✓	H ₂ SO ₄	Water TOC NO ₃ , TRN, NH ₃ , T.P.
PAS-WNC-US-2	5-1	8:00	Blue 50705-C		✓	4°C	Water NO ₂ , OP, DS, TS, pH

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature)

Wayne S. De...

Received by: (Signature)

Timothy P. Murphy

Date/Time

5/1/85 6:00 P

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Timothy P. Murphy
 Name and Location of Laboratory

David Berner

5-2-85 9:00 AM

General Testing 710 Exchange St Rochester NY

Return Completed Chain Of Custody Record To

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

5351-

CHAIN OF CUSTODY RECORD

URS Company, Inc.

 SAMPLER (Signature) *Wayne S. D.*

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
P15-WC-OS-3	5-1	11:00 AM	11418 50705-A		✓	4°C	Water VOA
P15-WC-OS-3	5-1	11:00	11418 50705-A		✓	4°C	Water VOA
P15-WC-OS-3	5-1	11:00	11418 50705-A		✓	4°C	Water BN/AE
P15-WC-OS-3	5-1	11:00	11418 50705-A		✓	4°C	Water BN/AE
P15-WC-OS-3	5-1	11:00	Red 50705-A		✓	HNO ₃	Water DEC - Metals
P15-WC-OS-3	5-1	11:00	Red 50705-A		✓	HNO₃ 4°C	Water NO ₃ , OP, OS, TS, pH
P15-WC-OS-3	5-1	11:00	Red 50705-A		✓	NaOH	Water CU - Total
P15-WC-OS-3	5-1	11:00	Red 50705-A		✓	CaSO ₄ + H ₃ PO ₄	Water Phenol
P15-WC-OS-3	5-1	11:00	Red 50705-A		✓	H ₂ SO ₄	Water TOC, TP, NO ₃ , TKO ₄

THIS SECTION TO BE COMPLETED BY URS COMPANY, INC.

Relinquished by: (Signature) <i>Wayne S. D.</i>	Received by: (Signature) <i>Timothy P. Murphy</i>	Date/Time 5/1/85 6:00P
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) <i>Timothy P. Murphy</i>	Received by: (Signature) <i>David J. Lemur</i>	Date/Time 5-2-85 9:00am

Name and Location of Laboratory

General Testing 710 Exchange St Rochester NY

Return Completed Chain Of Custody Record To

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

-538-

CHAIN OF CUSTODY RECORD

URS Company, Inc.

 SAMPLER (Signature) *Wayne S. De...*

SAMPLE DESCRIPTION	DATE 1985	TIME AM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
PAS-WC-US-1	5-1	9:30	11450 50705-B		✓	4°C	Water VOA
PAS-WC-US-1	5-1	9:30	11450 50705-B		✓	4°C	Water VOA
PAS-WC-US-1	5-1	9:30	11450 50705-B		✓	4°C	Water BN/AE
PAS-WC-US-1	5-1	9:30	11450 50705-B		✓	4°C	Water BN/AE
PAS-WC-US-1	5-1	9:30	Red 50705-B		✓	HNO ₃	Water DEL - Metals
PAS-WC-US-1	5-1	9:30	Red 50705-B		✓	NaOH	Water CN - Total
PAS-WC-US-1	5-1	9:30	Red 50705-B		✓	CuSO ₄ + H ₃ PO ₄	Water Phenol
PAS-WC-US-1	5-1	9:30	Red 50705-B		✓	H ₂ SO ₄	Water NO ₃ , TN, NH ₃ , TP, TOC
PAS-WC-US-1	5-1	9:30	Red 50705-B		✓	4°C	Water NO ₃ , OP, DS, TS, pH

THIS SECTION TO BE COMPLETED BY URS COMPANY, INC.

Relinquished by: (Signature) <i>Wayne S. De...</i>	Received by: (Signature) <i>Timothy P. Murphy</i>	Date/Time 5/1/85 6:00 P
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature) <i>Timothy P. Murphy</i>	Received by: (Signature) <i>David L. Berner</i>	Date/Time 5-2-85 9:00am

Name and Location of Laboratory

General Testing 710 Exchange St Rochester NY

Return Completed Chain Of Custody Record To

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

559-

CHAIN OF CUSTODY RECORD

URS Company, Inc.

 SAMPLER (Signature) *Wayne J. Davis*

SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
P17S-WNC-DS-4	5-1	1:30 PM	2 Bottles 50705-F	11448	✓	4°C	Water VOA
FAS-WNC-DS-4	5-1	1:30	2 Bottles 50705-F	11448	✓	4°C	Water BN/AE
P2S-WNC-DS-4	5-1	1:30	Blue 50705-F		✓	HNO ₃	Water DEC Metals
P4S-WNC-DS-4	5-1	1:30	Blue 50705-F		✓	NaOH	Water Cu-Total
PAS-WNC-DS-4	5-1	1:30	Blue 50705-F		✓	CuSO ₄ /H ₂ PO ₄	Water Cu-Phenol
IAS-WNC-DS-4	5-1	1:30	Blue 50705-F		✓	H ₂ SO ₄	Water NO ₂ -TKO, NH ₃ , TP
F. S-WNC-DS-4	5-1	1:30	Blue 50705-F		✓	4°C	Water NO ₂ , OP, OS, TS, pH
QAS-WNC-DS-4	5-1	1:30	Blue 50705-M		✓	4°C	Sediments Pb, Metal, Cu, Pb, Cd
PAS-WNC-DS-4	5-1	1:30	50705-M	11452	✓	4°C	VOA, BN/AE
SAS-WNC-DS-4	5-1	1:30	50705-M	Blue	✓	-	Grain Size

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature)

Wayne J. Davis

Received by: (Signature)

Simothy P. Murphy

Date/Time

5/1/85 6:00P

Relinquished by: (Signature)

Simothy P. Murphy

Received by: (Signature)

Date/Time

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)

Relinquished by: (Signature)

Simothy P. Murphy

Received by: (Signature)

Received by: (Signature)

David L. Berner

Date/Time

Date/Time

5-2-85 9:00am

General Testing 710 Exchange St Rochester NY

Return Completed Chain Of Custody Record To

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

-5410-

A-1185

GTC #50705

CUSTODY DOCUMENTATION

For samples received 5/3/85.

Well ID	Depth (ft)	Date Sampled	Date Received	Type of Sample	Analysis	WAS CC	GT CC	Sp. CC
D5-G	5070.5-D	5/2	5/3	Sediment	Metals, Pb, Cd	✓	✓	
"	"	"	"	"	Grain Size	✓	✓	
"	5070.5-G	"	"	Water	Metals	✓	✓	
"	"	"	"	"	Pb, Cd	✓	✓	
"	"	"	"	"	Cd	✓	✓	
"	"	"	"	"	Solids	✓	✓	
"	"	"	"	"	Metals	✓	✓	
MP-7	5070.5-0	"	"	Sediment	Metals, Pb, Cd	✓	✓	
"	"	"	"	"	Grain Size	✓	✓	
D5-G	5070.5-G	"	"	Water	VOA	✓		
"	"	"	"	"	VOA	✓		
"	"	"	"	"	Ba/AE	✓		
"	"	"	"	"	Ba/AE	✓		
MP-7	5070.5-0	"	"	Sediment	VOA, Ba, AE	✓		
D5-G	5070.5-D	"	"	"	VOA, Ba, AE	✓		
QA	"	"	"	"	VOA	✓		
QA	"	"	"	"	VOA	✓		

General Testing

SS# 11447
Off 7309

CHAIN OF CUSTODY RECORD CCA'S 49859 → 49862

URS Company, Inc.

SAMPLER (Signature)

Wayne S. De...

SAMPLE DESCRIPTION	DATE 1985	TIME AM	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
P.S-WNC-DS-6	5-2	8:30	50705-6		✓	4°C	Water VOA
P.S-WNC-DS-6	5-2	8:30	50705-6		✓	4°C	Water VOA
P.S-WNC-DS-6	5-2	8:30	50705-6		✓	4°C	Water BN/AE
P.S-WNC-DS-6	5-2	8:30	50705-6		✓	4°C	Water BN/AE
VAS-MP-7	5-2	10:30	50705- ⁰		✓	4°C	Sediment VOA, BN/AE
P.S-WNC-DS-6	5-2	8:30	50705- ^H		✓	4°C	Sediment VOA, BN/AE
QA							VOA
QA							VOA

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. De...</i>	Received by: (Signature) <i>Timothy P. Murphy</i>	Date/Time 5/3/85 9:30 A
Relinquished by: (Signature) <i>Timothy P. Murphy</i>	Received by: (Signature)	Date/Time 5/3/85 2:40 P

METHOD OF SHIPMENT:

THIS SECTION TO BE COMPLETED BY THE SUBCONTRACTOR

Relinquished by: (Signature)	Received by: (Signature) <i>Arlene S. Farber</i>	Date/Time 5/6/85 10:00
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. [Signature]*

SAMPLE DESCRIPTION	DATE 1985	TIME AM	SAMPLE IDENT NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
1.45-MP-7	5-2	10:30	50705-0		✓	4°C	<i>Sediment DEC. METAL, CU, PHOS</i>
1.75-MP-7	5-2	10:30	50705-0		✓	—	<i>Sediment Grain Size</i>

THIS SECTION TO BE COMPLETED BY URS COMPANY INC.

Relinquished by: (Signature) <i>Wayne S. [Signature]</i>	Received by: (Signature)	Date/Time 5/3/85 9:30 A
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) <i>Timothy P. Murphy</i>	Date/Time 5/3/85 9:30 A

Name and Location of Laboratory

General Testing Corporation Rochester, NY

Return Completed Chain Of Custody Record To

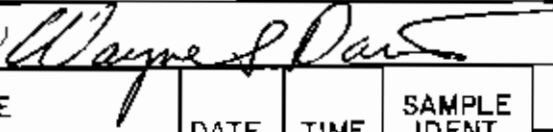
URS Company Inc.
625 Delaware Ave.
Buffalo, New York 14202

543-

CHAIN OF CUSTODY RECORD

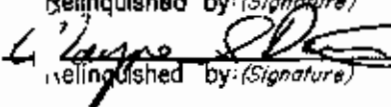
URS Company, Inc.

SAMPLER (Signature)



SAMPLE DESCRIPTION	DATE	TIME	SAMPLE IDENT. NO.	SAMPLE TYPE		PRESERVATION USED	ANALYSIS REQUIRED
				COMP	GRAB		
FAS-WNC-DS-6	5-2	8:30	50705-N		<input checked="" type="checkbox"/>	4°C	Sediment NOA, BNA/E
AAS-WNC-DS-6	5-2	8:30	50705-N		<input checked="" type="checkbox"/>	4°C	Sediment DEC, METALS, CN, (Mn)
FAS-WNC-DS-6	5-2	8:30	50705-N		<input checked="" type="checkbox"/>	—	Sediment Grain Size
PAS-WNC-DS-6	5-2	8:30	50705-G		<input checked="" type="checkbox"/>	H ₂ SO ₄	Water TOC, TP, NO ₃ , NH ₃ , TKN
PAS-WNC-DS-6	5-2	8:30	50705-G		<input checked="" type="checkbox"/>	CuSO ₄ + H ₃ PO ₄	Water Phenol
PAS-WNC-DS-6	5-2	8:30	50705-G		<input checked="" type="checkbox"/>	NaOH	Water CN - Total
FAS-WNC-DS-6	5-2	8:30	50705-G		<input checked="" type="checkbox"/>	4°C	Water pH NO ₂ , O-P, DS, TS
FAS-WNC-DS-6	5-2	8:30	50705-G		<input checked="" type="checkbox"/>	HNO ₃	Water DEC - Metals

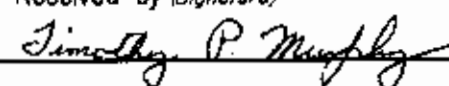
THIS SECTION TO BE COMPLETED BY URS COMPANY INC

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		5/2/85 9:30 A
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
		5/3/85 9:30 A

Name and Location of Laboratory

General Testing Corporation Rochester, NY

Return Completed Chain Of Custody Record To

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

544-

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

710 Exchange Street 85 Trinity Place
 Rochester, NY 14608 Hackensack, NJ 07601

GTC Job No. 50705
 Client Project No. PAS

Sample Origination & Shipping Information

Collection Site PAS Wine Creek - Oswego - Marsh
 Address Oswego NY
 Street City State

Collector Wayne S. Davis Wayne S. Davis
 Print Signature

Shippers Name _____ Phone () _____

Container Type _____ # _____ Seal # _____

Method of Shipment _____ Shipping ID # _____

Custody: Bottle Sets Prepared by Timothy P. Murphy Date 4/26/85 Time 3:30

Relinquished by:	Date/Time	Received by:	Date/Time
1. Sign <u>Timothy P. Murphy</u>	<u>4/26/85</u>	1. Sign _____	<u>1/1</u>
for _____	<u>3:30</u>	for _____	<u>:</u>
2. Sign <u>Wayne S. Davis</u>	<u>5/13/85</u>	2. Sign _____	<u>1/1</u>
for _____	<u>9:30</u>	for _____	<u>:</u>
3. Sign _____	<u>1/1</u>	3. Sign _____	<u>1/1</u>
for _____	<u>:</u>	for _____	<u>:</u>

Sample(s) Samples Rec'd in Lab by: Timothy P. Murphy Date 5/3/85 Time 10:30

I.D.# Lab#	Sample Location Date/Time	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep		Bottle Set(s) (see below)	Rec'd at GTC
			Preserved Y N	Filtered Y N		
<u>PAS-WC-OS-3</u> <u>50705 H</u>	<u>5/1/85</u>	<u>3 See below</u>			<u>2,3</u>	
<u>PAS-WC-OS-1</u> <u>50705 I</u>	<u>5/1/85</u>					
<u>PAS-WC-OS-2</u> <u>50705 J</u>	<u>5/1/85</u>					
<u>PAS-WC-OS-4</u> <u>50705 K</u>	<u>5/1/85</u>					
<u>PAS-WC-OS-5</u> <u>50705 L</u>	<u>5/1/85</u>					
<u>PAS-WC-OS-6</u> <u>50705 M</u>	<u>5/1/85</u>					
<u>PAS-WC-OS-7</u> <u>50705 N</u>	<u>5/12/85 8:30</u>					
<u>PAS-MP-27</u> <u>50705 O</u>	<u>5/12/85 10:00</u>					

Use following Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each bottle type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Glass 16oz	1/4 Gal	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.		
# of each		<u>1</u>	<u>1</u>								

Additional Analytes DEC METALS, CN, phenol, grain size

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

710 Exchange Street 85 Trinity Place
 Rochester, NY 14608 Hackensack, NJ 07601

GTC Job No. 50705
 Client Project No. PAS

Sample Origination & Shipping Information

Collection Site Oswego - Wine Creek - Mass
 Address Oswego City NY State NY Zip _____
 Collector WAYNE S DAVIS Print Wayne S Davis Signature
 Shippers Name _____ Phone () _____
 Container Type _____ # _____ Seal # _____
 Method of Shipment _____ Shipping ID # _____

Custody: Bottle Sets Prepared by: Timothy P. Murphy Date: 4/24/85 TIME: 3:30

Relinquished by:	Date/Time	Received by:	Date/Time
1. Sign <u>Timothy P. Murphy</u> for GTC <u>Rock</u>	<u>4/29/85</u> <u>3:30P</u>	1. Sign _____ for _____	<u>1/1</u> :
2. Sign <u>Wayne S Davis</u> for _____	<u>5/13/85</u> :	2. Sign _____ for _____	<u>1/1</u> :
3. Sign _____ for _____	<u>1/1</u> :	3. Sign _____ for _____	<u>1/1</u> :

Sample(s) SAMPLES REC'D IN LAB by Timothy P. Murphy Date: 5/3/85 TIME: 9:30A

I.D.# Lab#	Sample Location Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep				Bottle Set(s) (see below)	Rec'd at GTC
				Preserved	Filtered	Y	N		
<u>PAS-WC-05-3</u>		<u>X</u>	<u>See below</u>					<u>2,6,7</u>	
<u>50705A</u>	<u>1/1/85</u>								
<u>PAS-WC-05-1</u>									
<u>50705B</u>	<u>1/1/85</u>								
<u>PAS-WC-05-2</u>									
<u>50705C</u>	<u>1/1/85</u>								
<u>PAS-WC-05-1A</u>									
<u>50705D</u>	<u>1/1/85</u>								
<u>PAS-WC-05-2A</u>									
<u>50705E</u>	<u>1/1/85</u>								
<u>PAS-WC-05-4</u>									
<u>50705F</u>	<u>1/1/85</u>								
<u>PAS-WC-05-6</u>									
<u>50705G</u>	<u>5/12/85</u>	<u>8:30</u>							

Use following Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each bottle type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Glass <u>Plastic</u>	Qt. Gal.	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.		
# of each		<u>1</u>				<u>1</u>	<u>3</u>				

Additional Analytes DEL metals, Phenols, Total Cyanide, NO₃, TKIV, NH₃, TP, TCC, CO₂, C-PCF, D.S., S.D., pH

* Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River c

LABORATORY RECEIVING LOGBOOK

COVERING JOB #50705

URS/DALTON PAS ENVIRONMENTAL
ASSESSMENT, RECEIVED 5/1-3/05

N.V.D.F.O. Contract With
Public of Guyana and
Zimbabwe Contract

5/1/85 URS / Dalton
GTC # 50705
Client: Procell - PAS

Received 5/1/85 by T. Murphy
for General Testing Corporation

Comments on Shipment as Received

GR

I did not receive Sample Super #11449
on 5/1/85. This container was to contain
Samples: 50705 D (PAS-WC-US-19), 7000 #10180 at 100m,
and 50705 E (PAS-WC-US-20), 7000 #10180 at 100m.
These samples were to receive VOB and AB/HE at
Mead Compa (M.M.). The Chain of Custody forms
from URS show these locations sampled
and then Culture etc.

A shipment to Mead Compa even will be
sent on 5/21/85 by Shipper

This shipment will consist
of, Sample 50705 K (PAS-WC-US-19) for VOB and AB/HE,
Sample 50705 L (PAS-WC-US-20) for VOB and AB/HE,
1 Trip Blank for B/LAR, 7 Trip Blanks for VOB
This is the contents of Sample Super #11449. Free
are Sediments

Timothy S. Murphy 5/1/85

5/1/85

URS/ Dalton

GTC # 50705 D

Client Project #, location PAS-WAC-US-1A

Date Sampled: 4/30/85

Time Sampled: 2:00P

Type of Sample - Water

Sample Condition - 4°C AT GT Lab

Containers returned as

Per GTC Chain of Custody

from site

Containers Received

- 1- Quart Plastic - DEC Metals
- 1- Quart Plastic - Total Cyanide
- 1- Quart Plastic - NO₂, Fe, Mn, Pb, Cu, Zn, Ni, Cd, Cr, Hg, Se, As, P, B
- 1- Pint Plastic - NO₂, Fe, Mn, Pb, Cu, Zn, Ni, Cd, Cr, Hg, Se, As, P, B
- 1- Pint Glass - Phenol

Containers Returned on

URS Chain of Custody

Labels on Containers

- DEC Metals
- Total Cyanide
- Phenol
- NO₂, Cr, Pb, Cu, Zn, Ni, Cd, Cr, Hg, Se, As, P, B
- NO₂, Fe, Mn, Pb, Cu, Zn, Ni, Cd, Cr, Hg, Se, As, P, B, TOC

Kimberly B. Daughy 5/1/85

5/1/85

URS/ Dalton

GTC # 50705 E

Client Project + location PAS-WAC-US-2A

Date Sampled: 4/30/85

Time Sampled: 10:15A

Type of Sample - Water

Sample Condition: 4°C AT GT Lab

Containers sent out as

Per GTC Chain of Custody

from site

Containers Received

- 1- 5L Plastic - DEC Metals
- 1- 5L Plastic - Total Cyanide
- 1- 5L Plastic - NO₂, Fe, Mn, Pb, Cu, Zn, Ni, Cd, Cr, Hg, Se, As, P, B
- 1- 5L Plastic - NO₂, Fe, Mn, Pb, Cu, Zn, Ni, Cd, Cr, Hg, Se, As, P, B
- 1- 5L Glass - Phenol

Containers Returned on

URS Chain of Custody

Labels on Containers

- DEC Metals
- Total Cyanide
- Phenol
- NO₂, Cr, Pb, Cu, Zn, Ni, Cd, Cr, Hg, Se, As, P, B
- NO₂, Fe, Mn, Pb, Cu, Zn, Ni, Cd, Cr, Hg, Se, As, P, B, TOC
- NO₂, Cr, Pb, Cu, Zn, Ni, Cd, Cr, Hg, Se, As, P, B, TOC

Kimberly B. Daughy 5/1/85

5/1/85

URS/Dutton

GTC # 50705 K

Client Project + location = PAS - WC - US - IA

Date Sampled: 4/30/85

Time Sampled: 2:00p

Type of Sample: Sediment

Sample Conditions: 4°C AT GT 266

Containers Sent out as per GTC Chain of Custody

1 - Pt glass - DEC metals, Cyanide, Phenol

1 - Qt glass - Grain size

Containers Recorded on URS Chain of Custody

1 - Grain size

1 - DEC Metals, Cu, Phenol

Amity P Sample
5/1/85

Containers Received from Site

1 - Pt glass: DEC Metals, Cyanide, Phenol

1 - Qt glass - Grain size

Labels on Containers

1 - Grain size

1 - DEC Metals, Cyanide, Phenol

5/1/85

URS/Dutton

GTC # 50705 L

Client Project + location = PAS - WC - US - IA

Date Sampled: 4/30/85

Time Sampled: 10:15A

Type of Sample: Sediment

Sample Conditions: 4°C AT GT 267

Containers Sent out as per GTC Chain of Custody

1 - Pt glass: DEC metals, Cyanide, Phenol

1 - Qt glass - Grain size

Containers Recorded on URS Chain of Custody

1 - DEC Metals, Cu, Phenol

1 - Grain size

Amity P Sample
5/1/85

Containers Received from Site

1 - Pt glass: DEC metals, Cyanide, Phenol

1 - Qt glass - Grain size

Labels on Containers

1 - DEC Metals, Cyanide, Phenol

1 - Grain size

5/1/85

URS/Dutton

GTC # 50705

Client Project # PAS

Check of Containers to Confirm Field Preservation

50705D Preservative pH

1) DEC Metals Container HNO₃ 2.30

2) NO₃, TN, NH₃, TP, TOC container H₂SO₄ 4.10 1.95

3) Cyanide, Total Container HNO₃ 11.10

4) Phenol Container H₃PO₄ + CuSO₄ 5.66

NO₃, O-Po₄, DS, SS, pH container none 7.70

50705E Preservative pH

1) DEC Metals Container HNO₃ 7.41

NO₃, TN, NH₃, TP, TOC container H₂SO₄ 1.71

2) Cyanide Container NaOH 11.00

3) Phenol Container H₃PO₄ + CuSO₄ 6.47

NO₃, O-Po₄, DS, SS, pH container none 7.50

1) PH Adjusted w/ HNO₃ to 1.95

2) PH Adjusted w/ NaOH to 12.08

3) PH Adjusted w/ H₃PO₄ to 2.00

4) PH Adjusted w/ HNO₃ to 1.90

5) PH Adjusted w/ NaOH to 12.00

6) PH Adjusted w/ H₃PO₄ to 1.91

Simly B. Ruffly 5/1/85

5/2/85

URS/Dutton

GTC # 50705

Client Project # PAS

Received 5/2/85 by D. Berner for General Testing Corporation Rochester, NY

Comments on Shipment as Received

I received Sample Saver 4749 on 5/1/85 at the Helway Harbor Ice Gauge. It was not documented as the URS GTC-48 Custody for the day. Wayne Davis of Dutton and Dutton told me to discard the samples - General Testing Reagents when I logged in the rest of the samples for 5/1/85. Sample Saver 4749 contained samples (PAS-W-105-11) GTC# 50705D and (PAS-WMC-105-11) GTC# 50705E. I discarded the samples at 11:30a 5/2/85 and I will return Sample Saver # 4749 to your company later this week.

Simly B. Ruffly 5/2/85

5/2/85
 URS/Dalton
 GTC 50705 B
 Client Project - Allocation # PAS-100-05-1
 Date Sampled: 5/1/85
 Time Sampled: 9:30 AM
 Sample Type: Water
 Sample Conditions: 4°C AT 67' sub

Containers Sent out as
 P/N GTC Chain of Custody
 1-OT Plastic - DEC Metals
 1-OT Plastic - Total Cyanide
 1-OT Plastic - NO₂, P, NH₃, TP, DS, PH
 1-OT Plastic - NO₂, TP, NH₃, TP, DS, PH
 1-OT Glass - Phenol

Containers Received
 From Site
 1-OT Plastic - DEC Metals
 1-OT Plastic - Total Cyanide
 1-OT Plastic - NO₂, P, NH₃, TP, DS, PH
 1-OT Plastic - NO₂, TP, NH₃, TP, DS, PH
 1-OT Glass - Phenol

Containers Recorded in
 URS Chain of Custody
 1- DEC Metals
 1- CN Total
 1- Phenol
 1- NO₂, P, NH₃, TP, DS, PH
 1- NO₂, P, NH₃, TP, DS, PH

5/2/85
 Kimberly P. Murphy

5/2/85
 URS/Dalton
 GTC # 50705 C
 Client Project - Allocation # PAS-100-05-2
 Date Sampled: 5/1/85
 Time Sampled: 8:00 AM
 Sample Type: Water
 Sample Conditions: 4°C AT 67' sub

Containers sent out as
 P/N GTC Chain of Custody
 1-OT Plastic - DEC Metals
 1-OT Plastic - Total Cyanide
 1-OT Plastic - NO₂, P, NH₃, TP, DS, PH
 1-OT Plastic - NO₂, TP, NH₃, TP, DS, PH
 1-OT Glass - Phenol

Containers Received in
 URS Chain of Custody
 1- DEC Metals
 1- CN Total
 1- Phenol
 1- NO₂, P, NH₃, TP, DS, PH
 1- NO₂, P, NH₃, TP, DS, PH

Containers Recorded in
 URS Chain of Custody
 1- DEC Metals
 1- Cyanide Total
 1- Phenol
 1- NO₂, P, NH₃, TP, DS, PH
 1- NO₂, P, NH₃, TP, DS, PH

6/2/85
URS/Dalton

GTC # 50705 F.

Client Project + Location: PASWING DS-Y

Date Sampled: 5/1/85

Time Sampled: 1:30 PM

Sample Type: Water

Sample Condition: AT AT GT Lab

Containers Sent out as per GTC chain of custody

- 1 - GT Plastic - DEC Metals
- 1 - GT Plastic - Total Cyanide
- 1 - GT Plastic - AS, M, P, D, W, P
- 1 - Pt. Plastic - Cu, Zn, Pb, Cd, Ni, Cr, Mn, Fe, SS, pH
- 1 - Pt. Glass - Phenol

Containers Received

Seen

- 1 - GT Plastic - DEC Metals
- 1 - GT Plastic - Total Cyanide
- 1 - GT Plastic - NO₃, C, PO₄, D₅, SS, pH
- 1 - Pt. Plastic - Ni, T, KM, Cu, Li, TP, TOC
- 1 - Pt. Glass - Phenol

Containers Recorded on URS Chain of Custody

DEC Metals

1 - Cu - Total

1 - Cu - Phenol

1 - NO₃, T, KM, Ni, Li, TP

1 - Cu, Cr, Pb, Zn, pH

Containers on Containers

DEC Metals

1 - Cyanide Total

Phenol

1 - NO₃, T, KM, Ni, Li, TP, TOC

1 - Cu, Cr, Pb, Zn, SS, pH

Stanley P. Murphy

5/1/85

5/1/85

URS/Dalton

GTC # 50705 M

Client Project + Location: PASWING DS-Y

Date Sampled: 4/1/85

Time Sampled: 11:00 AM

Sample Type: Sediment

Sample Condition: AT AT GT Lab

Containers sent out as per GTC chain of custody

1 - Pt. Glass - Dec Metals, Cyanide, Phenol

1 - GT Glass - Grain Size

Containers Recorded on URS Chain of Custody

1 - DEC Metals, Cu, Phenol

1 - Grain Size

Labels on Containers

1 - DEC Metals, Cyanide, Phenol

1 - Grain Size

Stanley P. Murphy

5/1/85

5/2/85

URS/Dalton

GTC # 50705 I

Client: Protect + Insulation

PAS-WC-US-1

Date Sampled: 5/1/85

Time Sampled: 9:30 AM

Sample Type: Sediment

Sample Conditions: POC AT 67 Lab

Containers Sent out by
Per GTC Chain of Custody1 Pt. Glass - DEC Metals, Cyanide
Phenol

1 Qt Glass - Grain Size

Containers Received on
URS Chain of Custody1 DEC METAL, CU, Phenol
1 Grain Size

Annaly P. Murphy

5/2/85

5/2/85

URS/Dalton

GTC # 50705 J

Client: Protect + Insulation

PAS-WC-US-2

Date Sampled: 5/1/85

Time Sampled: 8:00 AM

Sample Type: Sediment

Sample Conditions: when received at 67 Lab. POC

Containers Sent out by per
GTC Chain of Custody1 Pt. Glass - DEC Metals, Cyanide,
Phenol

1 Qt Glass - Grain Size

Containers Received on
URS Chain of Custody

1 DEC METAL, CU, Phenol

1 Grain Size

Annaly P. Murphy

5/2/85

5/2/85
 URS / Dalton
 GTC # 50705A
 Client Project & Location = PAS - WAC - DS-4
 Date Sampled: 5/1/85
 Time Sampled: 1:30 pm
 Sample Type: Sediment
 Sample Condition when received at GT Lab: #2

5/2/85
 URS / Dalton
 GTC # 50705
 Client Project # PAS

Check of Containers to
 Field Preservation

Containers sent out as per
 GTC: Chain of Custody Form Site

1-Pt glass: DEC Metals, Cyanide, 1-Pt Glass-DEC Metals, Cyanide, Phenol
 Phenol

1-Pt glass: Grain Size
 1-Pt Glass-Grain Size

Containers Received on
 URS Chain of Custody

1-DEC Metal, Cu, Phenol
 1-Grain Size

Labels on Containers
 1-DEC Metals, Cyanide, Phenol
 1-Grain Size

50705 A
 Metals
 Ni, Pb, Zn
 Phenol
 Cyanide
 Cr-Pb, Ni, Cu

Preservative
 HNO₃
 H₂SO₄
 CuSO₄-H₂PO₄
 NaOH

pH
 1.70
 1.70
 1.50
 9.2

adjusted pH
 -
 -
 -
 12.1

50705 B
 Metals
 Ni, Pb, Zn
 Phenol
 Cyanide
 Cr-Pb, Ni, Cu

50705 C
 Metals
 Ni, Pb, Zn
 Phenol
 Cyanide
 Cr-Pb, Ni, Cu

HNO₃
 H₂SO₄
 CuSO₄-H₂PO₄
 NaOH

pH
 2.0
 1.85
 3.0
 10.1

adjusted pH
 -
 -
 -
 12.1

Smally P. Murphy

5/2/85

Smally P. Murphy

5/2/85

5/2/85
URS/Dalton
GTC # 50705
Client Project # TAs

5/3/85
URS/Dalton
GTC # 50705
Client Project # PAS

Check to Con-Sim Field Preservation
of Samples

Received 5/3/85 by T. Murphy
for GTC Rochester NY

Container	Preservative	pH	Adjusted pH
50705 F	HNO ₃	2.0	-
Metals	H ₂ SO ₄	1.80	-
TKN, NO ₃	CaSO ₄ + H ₃ PO ₄	2.00	-
Phenol	NaOH	7.90	12.10
Cyanide	-	7.7	-
O-Pb, Ni, Mn	-	-	-

I received samples 50705 G (PAS-1010C-DS-G), 50705 N (PAS-1010C-DS-G), and 50705 O (PAS-1010C-72) from Wayne Davis at 9:30 AM at General Testing, Rochester, NY. I sent out sample several to Mead Chem on Federal Express. This shipment contained UCA's, BA's and AE for samples 50705 G, 50705 N, and 50705 O plus two vials for the Trip blanks.

Timothy P. Murphy 5/2/85

Timothy P. Murphy 5/3/85

5/3/85
 URS Dalton
 BTC # 507050
 Client Product and Location # PAS-LWAC-DS-6
 Date Sampled: 5/2/85
 Time Sampled: 8:30 AM
 Type of Sample: Water
 Sample Condition: 4°C at GT Lab

5/3/85
 URS Dalton
 GTC # 507050
 Client Product # PAS-LWAC-DS-6
 Date Sampled: 5/2/85
 Time Sampled: 8:30 AM
 Type of Sample: Sediment
 Sample Condition: 4°C at GT Lab

Containers Sent out as per GTC Chain of Custody	Containers Received from Site	Containers Sent out as per GTC Chain of Custody	Containers Received
1-OT Plastic DEC Metals 1-OT Plastic TCN 1-OT Plastic NO ₃ , O ₃ , P, AS, NH ₃ , TP, TOC 1-PT Plastic NO ₃ , TP, NH ₃ , P, H 1-PT Glass - Phenol	1-OT Plastic DEC Metals 1-OT Plastic TCN 1-OT Plastic NO ₃ , O ₃ , P, AS, NH ₃ , TP, TOC 1-PT Plastic NO ₃ , TP, NH ₃ , P, H, P, TOC 1-PT Glass - Phenol	1-OT Glass 1-OT Glass Grain Size	1-PT Glass DEC Metals, Cyanide, Phenol 1-PT Glass Grain Size 1-PT Glass DEC Metals, Cyanide, Phenol 1-PT Glass Grain Size
Containers Received on URS Chain of Custody 1- DEC Metals 1- CN ₃ Total 1- Phenol 1- NO ₃ , TCN, NH ₃ , TP, TOC 1- NO ₂ , O ₃ , O ₃ , DS, TS, PH	Labels on Containers 1- DEC Metals 1- Cyanides Total 1- Phenol 1- NO ₃ , TP, NH ₃ , TP, TOC 1- NO ₂ , O ₃ , O ₃ , DS, TS, PH	Containers Received on URS Chain of Custody 1- DEC Metal, CN, Phenol 1- Grain Size	Labels on Containers 1- DEC Metals, Cyanide, Phenol 1- Grain, Size

Kimberly R. Murphy

5/3/85

Kimberly R. Murphy

5/3/85

5/3/85
URS/Dutton

GTC # 50705 0
Client: Project and location # PHS: MP #7

DATE Sampled: 5/2/85
Time Sampled: 10:00 AM
Type of Sample: Sediment
Condition of Sample: 4°C at 67 Lab

Containers Sent out
as per GTC chain of custody
1-07 Glass - Grain size
1-pt Glass - DEC Metals,
Cyanide, Phenol

Containers Received from
Site
1-07 Glass - Grain size
1-04 Glass - DEC Metals,
Cyanide, Phenol

Containers Received on
URS Chain of Custody

1- DEC Metal, CRP, Phenol
1- Grain size

Finally P. R. Hg

5/3/85

5/3/85
URS/Dutton

GTC # 50705 6
Client: Project and location # PHS: WRC - DS-6

Check to Con Sirm Field Presentation

Container	pH	Preservative	Adjusted pH
Metals	2.0	HNO3	-
TRU, Ni3	1.7	H2SO4	-
Phenol	2.0	H2PO4 + ClSO4	-
* Cyanides	9.6	NaOH	12.0
C. for Ni3	6.90	-	-

* Adjusted to pH 13 with 1 N NaOH

Finally P. R. Hg 5/3/85

