SDMS US EPA REGION V -1

SOME IMAGES WITHIN THIS DOCUMENT MAY BE ILLEGIBLE DUE TO BAD SOURCE DOCUMENTS.

REF 151

INORGANIC DATA VALIDATION REPORT

1.0 INTRODUCTION

Site:	Sauget Area 1				
Laboratory:	Ecology and Environment, Inc.				
Validation:	PRC Environmental Management, Inc.				
Review Date:	July 1993				
Case Numbers:	U-4835, U-4846, U-4863, and U-4872				
Sample Numbers:	DC-G3-33	DC-GB-34	DC-G4-35	DC-G4-36	DC-G5-37
	DC-I1-38	DC-I2-39	DC-I3-40	DC-I5-41	DC-I5-42
	DC-I6-43	DC-IB-44	DC-I7-45	DC-I7-46	DC-I7-47
	DC-I9-48	DC-I9-49	DC-I10-50	DC-I11-51	DC-I11-52
Analyses:	Target Analyte List (TAL) Metals and Cyanide				
Collection Dates:	January 26 through 28, 30, and February 2 through 5, 1987				

The data for these 20 samples were reviewed according to the EPA document "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses" (July 1988). Data sheets (Form Is) with appropriate data validation qualifiers are provided in Appendix A. The justifications for qualification of sample results are discussed in the following section.

2.0 DATA REVIEW REQUIREMENTS

The quality control (QC) criteria reviewed include data completeness, holding times, calibrations, blanks, interference check sample (ICS) results, laboratory control sample (LCS) results, duplicate sample results, matrix spike sample results, furnace QC, and sample results verification. The criteria are discussed below.

2.1 DATA COMPLETENESS

The laboratory failed to complete the appropriate report form for the analysis of the ICS; however, the raw data were reviewed, and the results are within acceptable QC limits. The zinc inductively coupled plasma raw data was not found in the data package. All zinc results are considered estimated

and qualified "J" until the data is submitted and verified. The cyanide raw data for samples DC-I3-40, DC-I5-41, DC-I5-42, DC-I11-51, and DC-I11-52 are illegible. The results for these samples cannot be verified, therefore, the cyanide results for these samples are considered estimated and qualified "UJ" if undetected and "J" if positive.

2.2 HOLDING TIMES

All holding time requirements were met.

2.3 CALIBRATIONS

All calibrations are acceptable and meet QC requirements for initial and continuing calibration checks.

2.4 BLANKS

All blank results are less than the contract required detection limit (CRDL) and therefore do not indicate any presence of contamination.

2.5 INTERFERENCE CHECK SAMPLES

The ICSs analyzed by inductively coupled plasma (ICP) generally meet the QC requirements. The laboratory failed to report the results on the appropriate form; however, the raw data were reviewed, and the results are within acceptable limits.

2.6 LABORATORY CONTROL SAMPLES

The LCSs prepared and analyzed with the sample batch are within acceptable QC limits.

2.7 DUPLICATE SAMPLE ANALYSIS

The laboratory duplicate sample results are acceptable.

2.8 MATRIX SPIKE SAMPLE ANALYSIS

The matrix spike percent recoveries (%R) for antimony (41 %R), manganese (165 %R), and tin (0 %R) are outside the acceptable QC limits. A high bias is indicated for manganese. The magnesium results are considered estimated and qualified "J." False positive results are possible for magnesium. A low bias is indicated for antimony. All antimony results, both positive and undetected, are considered estimated and qualified "J" or "UJ," respectively. Since the tin spike was not recovered (0 %R), all undetected results for tin are considered unusable and qualified "R," and all positive results are considered estimated and qualified "J." The potential for false negatives exists for antimony and tin.

2.9 FURNACE ATOMIC ABSORPTION QC

To determine the extent of matrix interference in graphite furnace analyses, a post-digestion spike (PDS) was analyzed for each sample. Initially, the sample digest was analyzed, followed by a second analysis to which a known amount of analyte was added. The %R of the spike indicates the extent of matrix interference and bias. The following samples have PDS recoveries less than the lower QC limit of 85 %R.

Analyte	Samples
Selenium	DC-I5-41, DC-I6-43, DC-IB-44, DC-I7-46, and DC-I9-49
Tin	DC-G3-33, DC-G5-37, DC-I2-39, and DC-I5-41

The selenium results for the analytes and sample numbers listed above are considered estimated and qualified "UJ." The sample results are biased low. Since the tin results have already been qualified "R", no further qualification is necessary.

2.10 SAMPLE RESULT VERIFICATION

The thallium results for samples DC-I6-43, DC-IB-44, DC-I7-45, DC-I7-46, DC-I7-47, DC-I9-48, DC-I9-49, and DC-I10-50 were incorrectly reported. The correct values have been inserted on the Form Is.

The analytical results are reported on an as-received basis instead of on a dry-weight basis. Conversion factors are included in the organic data validation report for these cases.

3.0 OVERALL ASSESSMENT

Generally, the data are acceptable Level IV data with the exceptions noted in Section 2.0. The data are qualified due to matrix interference, possibly caused by high organic content. This matrix interference may contribute to biased data. The qualified data are biased as indicated in Sections 2.8 and 2.9 and may be used for scoring.

APPENDIX A

CORRECTED FORMS I

CASE NUMBERS U-4835, U-4846, U-4863, AND U-4872

Form I

Sample No.
DC-G3-33

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0752 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	9320		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P UJ	14.	Manganese	203	R P	J
3.	Arsenic	3.3		F	15.	Mercury	0.10	U CV	
4.	Barium	150		P	16.	Nickel	11	P	
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.93	U F	
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	12		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.8	U F	
10.	Copper	5.9		P	22.	Tin	7.4	U F	R
11.	Iron	9280		P	23.	Vanadium	18	P	
12.	Lead	7.8	*	F	24.	Zinc	32	P	J
Cyanide		1.0	U		Percent Solids (%)		73		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-GB-34

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0753 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	11200		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	298 R		P J
3.	Arsenic	5.1		F	15.	Mercury	0.10	U	CV
4.	Barium	331		P	16.	Nickel	15		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	2.2		P	18.	Selenium	0.99	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	10		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	26		P	22.	Tin	7.9	U	F R
11.	Iron	10800		P	23.	Vanadium	22		P
12.	Lead	40 *		F	24.	Zinc	148		P J
	Cyanide	1.0	U			Percent Solids (%)	78		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-G4-35

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0754 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	6590		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	138 R		P J
3.	Arsenic	3.3		F	15.	Mercury	0.10	U	CV
4.	Barium	89		P	16.	Nickel	10		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	1.0	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	6.5		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	14		P	22.	Tin	8.0	U	F R
11.	Iron	6710		P	23.	Vanadium	10	U	P
12.	Lead	6.2 *		F	24.	Zinc	38		P J
Cyanide		1.0	U		Percent Solids (%)		76		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
PC-G4-36

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0755 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	6560		P	13.	Magnesium	NR		
2.	Antimony	12 L	U	P UJ	14.	Manganese	167	R	P J
3.	Arsenic	3.3		F	15.	Mercury	0.10	U	CV
4.	Barium	112		P	16.	Nickel	10		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.97	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	5.8		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.9	U	F
10.	Copper	20		P	22.	Tin	7.8	U	F R
11.	Iron	7920		P	23.	Vanadium	15		P
12.	Lead	31	*	F	24.	Zinc	52		P J
Cyanide		1.0	U		Percent Solids (%)		80		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager M. [illegible]

Form I

Sample No.
DC-G5-37

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0756 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	7350		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	364 R	P	J
3.	Arsenic	4.3		F	15.	Mercury	0.10	U CV	
4.	Barium	184		P	16.	Nickel	70	P	
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.94	U F	
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	13		P	20.	Sodium	NR		
9.	Cobalt	13		P	21.	Thallium	1.9	U F	
10.	Copper	13		P	22.	Tin	7.6	U F	R
11.	Iron	9020		P	23.	Vanadium	21	P	
12.	Lead	11 *		F	24.	Zinc	177	P	J

Cyanide 1.0 U Percent Solids (%) 79

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I1-38

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0757 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	9890	P	13.	Magnesium	NR	
2.	Antimony	12 R U	P U J	14.	Manganese	187 R	P J
3.	Arsenic	8.0	F	15.	Mercury	1.6	CV
4.	Barium	2630	P	16.	Nickel	81	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	8.3	P	18.	Selenium	0.99 U	F
7.	Calcium	NR		19.	Silver	2.0 U	P
8.	Chromium	84	P	20.	Sodium	NR	
9.	Cobalt	10 U	P	21.	Thallium	2.0 U	F
10.	Copper	460	P	22.	Tin	40	F R
11.	Iron	30300	P	23.	Vanadium	404	P
12.	Lead	125 *	F	24.	Zinc	4620	P J

Cyanide 1.0 U Percent Solids (%) 73

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

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Form I

Sample No.
DC-I2-39

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0758 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	932		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	71	R	P J
3.	Arsenic	2.0	U	F	15.	Mercury	0.40		CV
4.	Barium	680		P	16.	Nickel	726		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	4.3		P	18.	Selenium	0.98	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	11		P	20.	Sodium	NR		
9.	Cobalt	20		P	21.	Thallium	2.0	U	F
10.	Copper	62		P	22.	Tin	16	U	F R
11.	Iron	7500		P	23.	Vanadium	15		P
12.	Lead	60 *		F	24.	Zinc	363		P J

Cyanide 1.0 U Percent Solids (%) 74

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager M. [illegible]

Form I

Sample No.: AC-I3-40

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0799 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	8750		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	287 R	P	J
3.	Arsenic	4.1		F	15.	Mercury	0.10	U CV	
4.	Barium	237		P	16.	Nickel	20	P	
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	2.4		P	18.	Selenium	0.99	U F	
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	11		P	20.	Sodium	NR		
9.	Cobalt	9.7		P	21.	Thallium	2.0	U F	
10.	Copper	361		P	22.	Tin	39	F	J
11.	Iron	13300	*	P	23.	Vanadium	23	P	
12.	Lead	265		F	24.	Zinc	235	P	J

Cyanide 1.0 U J Percent Solids (%) 71

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I5-41

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0800 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1630		P	13.	Magnesium	NR		
2.	Antimony	.12	R U	P UJ	14.	Manganese	91	R	P J
3.	Arsenic	2.4		F	15.	Mercury	0.87		CV
4.	Barium	2800		P	16.	Nickel	1900		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.2		P	18.	Selenium	0.97	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	28		P	20.	Sodium	NR		
9.	Cobalt	17		P	21.	Thallium	2.0	U	F
10.	Copper	124		P	22.	Tin	7.8	U	F R
11.	Iron	9000		P	23.	Vanadium	16		P
12.	Lead	183 *		F	24.	Zinc	159		P J

Cyanide 2.0 J Percent Solids (%) 79

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-IS-42

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0801 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	901		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P UJ	14.	Manganese	30	R P	J
3.	Arsenic	2.0	U	F	15.	Mercury	0.10	U CV	
4.	Barium	40	U	P	16.	Nickel	26	P	
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	1.0	U F	
7.	Calcium	NR			19.	Silver	20	U P	
8.	Chromium	2.0	U	P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U F	
10.	Copper	5.0	U	P	22.	Tin	8.0	U F	R
11.	Iron	3020		P	23.	Vanadium	10	U P	
12.	Lead	5.0	*	F	24.	Zinc	11	P	J

Cyanide 1.0 U J Percent Solids (%) 85

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I6-43

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0859 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	814		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P UJ	14.	Manganese	93	R P	J
3.	Arsenic	9.1		F	15.	Mercury	1.0	CV	
4.	Barium	260		P	16.	Nickel	33	P	
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.5		P	18.	Selenium	0.98	U F	UJ
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	475		P	20.	Sodium	NR		
9.	Cobalt	14		P	21.	Thallium	1.96 ~~0.98~~	U F	
10.	Copper	97		P	22.	Tin	9.3	F	J
11.	Iron	15100		P	23.	Vanadium	45	P	
12.	Lead	190	*	F	24.	Zinc	424	P	J

Cyanide 1.0 U Percent Solids (%) 65

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-IB-44

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0860 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	6320		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P UJ	14.	Manganese	308	R P	J
3.	Arsenic	5.1		F	15.	Mercury	0.16	U CV	
4.	Barium	271		P	16.	Nickel	12	P	
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.6		P	18.	Selenium	0.97	U F	UJ
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	9.3		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.94 ~~0.97~~	U F	
10.	Copper	22		P	22.	Tin	3.3	F	J
11.	Iron	11500		P	23.	Vanadium	16	P	
12.	Lead	97 *	U	F	24.	Zinc	158	P	J
Cyanide		1.0	U		Percent Solids (%)		78		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I7-45

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 08601 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	5540		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	191 R	P	J
3.	Arsenic	4.2		F	15.	Mercury	0.15	U CV	
4.	Barium	268		P	16.	Nickel	27	P	
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.2		P	18.	Selenium	0.97	U F	
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	18		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.94 ~~0.97~~	U F	
10.	Copper	199		P	22.	Tin	8.7	F	J
11.	Iron	11500		P	23.	Vanadium	14	P	
12.	Lead	100 *	U	F	24.	Zinc	338	P	J

Cyanide 1.0 U Percent Solids (%) 77

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I7-46

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0862 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	2290		P	13.	Magnesium	NR			
2.	Antimony	12	R U	P UJ	14.	Manganese	99	R	P	J
3.	Arsenic	2.0		F	15.	Mercury	0.10	U	CV	
4.	Barium	66		P	16.	Nickel	8.0	U	P	
5.	Beryllium	1.0	U	P	17.	Potassium	NR			
6.	Cadmium	1.0	U	P	18.	Selenium	0.95	U	F	UJ
7.	Calcium	NR			19.	Silver	2.0	U	P	
8.	Chromium	3.9		P	20.	Sodium	NR			
9.	Cobalt	10	U	P	21.	Thallium	1.90 ~~0.95~~	U	F	
10.	Copper	5.0	U	P	22.	Tin	3.3		F	J
11.	Iron	5840		P	23.	Vanadium	10	U	P	
12.	Lead	8.2	*	F	24.	Zinc	23		P	J

Cyanide 1.0 U Percent Solids (%) 80

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I7-47

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0863 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	2170		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	99 R	P	J
3.	Arsenic	1.8		F	15.	Mercury	0.10	U CV	
4.	Barium	65		P	16.	Nickel	8.3	P	
5.	Beryllium	1.6	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.97	U F	
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	3.6		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.94 0.97	U F	
10.	Copper	5.0	U	P	22.	Tin	2.5	F	J
11.	Iron	5900		P	23.	Vanadium	10	U P	
12.	Lead	7.8 *		F	24.	Zinc	21	P	J

Cyanide 1.0 U Percent Solids (%) 79

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager

Form I

Sample No.
DC-I9-48

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0864 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	6050		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P UJ	14.	Manganese	163	R	P J
3.	Arsenic	9.7		F	15.	Mercury	0.2		CV
4.	Barium	353		P	16.	Nickel	140		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	8.6		P	18.	Selenium	9.8	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	65		P	20.	Sodium	NR		
9.	Cobalt	23		P	21.	Thallium	1.96 0.98	U	F
10.	Copper	391		P	22.	Tin	16		F J
11.	Iron	18800		P	23.	Vanadium	27		P
12.	Lead	3840 *		F	24.	Zinc	786		P J

Cyanide 1.1 Percent Solids (%) 68

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

23

Form I

Sample No.
DC-I9-49

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0865 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1260		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	28 R	P	J
3.	Arsenic	1.0	U	F	15.	Mercury	0.10	U CV	
4.	Barium	40	U	P	16.	Nickel	8.0	U P	
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.99	U F	UJ
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	3.4		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.98 ~~0.99~~	U F	
10.	Copper	5.0	U	P	22.	Tin	4.1	F	J
11.	Iron	3780		P	23.	Vanadium	10	U P	
12.	Lead	570 *		F	24.	Zinc	101	P	J
Cyanide		1.0	U		Percent Solids (%)		81		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I10-50

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0866 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1400		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P UJ	14.	Manganese	51	R P	J
3.	Arsenic	1.2		F	15.	Mercury	0.10	U CV	
4.	Barium	40	U	P	16.	Nickel	120	P	
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.98	U F	
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	4.7		P	20.	Sodium	NR		
9.	Cobalt	11		P	21.	Thallium	1.96 ~~0.98~~	U F	
10.	Copper	5.0	U	P	22.	Tin	1.7	F	J
11.	Iron	3890		P	23.	Vanadium	10	U P	
12.	Lead	7.4	*	F	24.	Zinc	74	P	J
Cyanide		1.0	U		Percent Solids (%)		83		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-I11-51

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0900 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	3990		P	13.	Magnesium	NR		
2.	Antimony	12	L U	P UJ	14.	Manganese	144	R P	J
3.	Arsenic	4.8		F	15.	Mercury	0.52	CV	
4.	Barium	918		P	16.	Nickel	792	P	
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	3.9		P	18.	Selenium	0.98	U F	
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	84		P	20.	Sodium	NR		
9.	Cobalt	14		P	21.	Thallium	2.0	U F	
10.	Copper	326		P	22.	Tin	7.8	U F	~~J~~ R
11.	Iron	14000		P	23.	Vanadium	26	P	
12.	Lead	3290 *		F	24.	Zinc	1910	P	J
Cyanide		1.0	U	J	Percent Solids (%)		60		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager

Form I

Sample No.
DC-I11-52

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0901 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	839			P	13.	Magnesium	NR			
2.	Antimony	12	R	U	P UJ	14.	Manganese	36	R	P	J
3.	Arsenic	1.0		U	F	15.	Mercury	0.10	U	CV	
4.	Barium	40		U	P	16.	Nickel	8.9		P	
5.	Beryllium	1.0		U	P	17.	Potassium	NR			
6.	Cadmium	1.0		U	P	18.	Selenium	0.96	U	F	
7.	Calcium	NR				19.	Silver	2.0	U	P	
8.	Chromium	2.0		U	P	20.	Sodium	NR			
9.	Cobalt	10		U	P	21.	Thallium	2.0	U	F	
10.	Copper	5.0		U	P	22.	Tin	7.7	U	F	R
11.	Iron	2380			P	23.	Vanadium	10	U	P	
12.	Lead	24	*		F	24.	Zinc	15		P	J
Cyanide		1.0	U		J	Percent Solids (%)		83			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

ATTACHMENT A

FORMS I

CASE NUMBERS U-4835, U-4846, U-4863, AND U-4872

SUBSURFACE SOIL INORGANICS

Date 3-24-87

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Ecology and Environment, Inc. Case No. U-4835/U-4846/U-4863/U-4872

SOW No. 784 Q.C. Report No. _____

Sample Numbers

	Lab ID No.		Lab ID No.
DC-G3-33	0752	DC-I5-42	0801
DC-G3-34	0753	DC-I6-43	0859
DC-G4-35	0754	DC-I8-44	0860
DC-G4-36	0755	DC-I7-45	0861
DC-G5-37	0756	DC-I7-46	0862
DC-I1-38	0757	DC-I7-47	0863
DC-I2-39	0758	DC-I9-48	0864
DC-I3-40	0799	DC-I9-49	0865
DC-I5-41	0800	DC-I10-50	0866

Comments: _____

ICP Interelement and background corrections applied? Yes X No ___.

If yes, corrections applied before X or after _____ generation of raw data.

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 note 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

Date 3-24-87

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Ecology and Environment, Inc. Case No. U-4835/U-4846/U-4863/U-4872

SOW No. 784 Q.C. Report No. _____

Sample Numbers

	Lab ID No.		Lab ID No.
DC-III-51	0900		
DC-III-52	0901		

Comments: _____

ICP Interelement and background corrections applied? Yes X No ____.

If yes, corrections applied before X or after _____ generation of raw data.

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 note 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

ecology and environment, inc.
ANALYTICAL SERVICES CENTER, P.O. BOX D, BUFFALO NEW YORK 14225, TEL. 716-631-0360
International Specialists in the Environment

March 26, 1987

JOB # U-4835
U-4846
U-4863
U-4872

CASE NARRATIVE

Enclosed are the inorganic analytical results for soil samples received on January 29 and 31, 1987 and February 5 and 6, 1987. All samples were received in good condition.

Interference Check Sample (ICS) information has not been reported as sequential ICP was used.

Information on furnace AA strip chart recordings and ICP printouts is identified by laboratory sample numbers. The cover page contains the necessary cross reference information.

Mercury analysis was performed on February 2, 4, and 19, 1987.
Cyanide analysis was performed on January 30, 1987 and February 10 and 12, 1987.

Approximately one gram of sample was digested and brought to a final volume of 200 mL in preparation for ICP/furnace AA analysis.

Samples were re-digested and re-analyzed for zinc because of blank contamination.

If you have any questions, please contact me at (716) 631-0360.

Gary Hahn/BJK

Gary Hahn, Manager
Analytical Services Center

GH/lo
enclosures

recycled paper

ecology and environment, inc.
195 SUGG ROAD, P.O. BOX D, BUFFALO, N.Y., 14225, TEL 716 632 4491
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.: IL3140
Project Name: DEAD CREEK
Project Manager: Mike Miller
Samplers (Signatures): Ronald E. Beck
Field Team Leader: Dan Sewell

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	2-120 ml VOA	1-8oz Metals + Cyanide	1-8oz HSL Organics				REMARKS	
DC-G3-33	1-26-87	1130	X			unknown / OVA Screen = 500 ppm	BORING G-3 (10'-20')	4	2	1	1				Slight organic odor	0752
DC-G8-34	1-26-87	1600	X			unknown	SOIL BLANK	4	2	1	1				BLANK	0753
DC-G4-35	1-26-87	1630	X			unknown / OVA Screen = 62 ppm	BORING G-4 (5'-20')	4	2	1	1					0754
DC-G4-36	1-26-87	1635	X			unknown / OVA Screen = 62 ppm	BORING G-4 (5'-20')	4	2	1	1				Duplicate of DC-G4-35	0755
DC-G5-37	1-27-87	1100	X			unknown / OVA Screen > 1000 ppm	BORING G-5 (5'-15')	4	2	1	1				Strong organic odor	0756
DC-I1-38	1-27-87	1600	X			unknown / OVA screen = 300 ppm	BORING I-1 (0'-10')	4	2	1	1					0757
DC-I2-39	1-28-87	1450	X			unknown / OVA Screen > 1000 ppm	BORING I-2 (5'-25')	4	2	1	1				strong organic odor	0758

Relinquished By: (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	Ship Via
Ronald E. Beck	1-28-87 1730	FEDERAL EXPRESS				FEDERAL EXPRESS
Relinquished By: (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	
						BL/Airbill Number: 561-464-390
Relinquished By (Signature): Fed Express	Date/Time: 1-28-87/0930	Received For Laboratory By (Signature): [illegible]	Relinquished By (Signature)	Date/Time	Received For Laboratory By (Signature)	Date: 1/28/87

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*See CONCENTRATION RANGE on back of form.

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International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.: IL3140
Project Name: DEAD CREEK
Project Manager: Mike Miller
Samplers (Signatures): Ronald E Bosh
Field Team Leader: Don Sewell

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	GRAB	AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	2-120 ml Vial	1-8 oz. HSL Organics	1-8 oz Metals-Cyanide				REMARKS
DC-I3-40	1-31-87	1000	X			Unknown / OVA screen > 1000 ppm	Boring I-3 (5'-15')	4	2	1	1				Strong solvent odor
DC-I5-41	1-30-87	0930	X			Unknown / OVA screen > 1000 ppm	Boring I-5 (5'-27½')	4	2	1	1				Strong organic odor
DC-I5-42	1-30-87	1030	X			Unknown / OVA screen > 1000 ppm	Boring I-5 (28½-37½)	4	2	1	1				

Relinquished By (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)
Ronald E Bosh	1-30-87 1430	FEDERAL EXPRESS			
Fed Express	1-31-87 0910	Received For Laboratory By (Signature): [illegible]			Received For Laboratory By (Signature)

Ship Via: FEDERAL EXPRESS
BL/Airbill Number: # 561 464 901
Date: 1/30/87

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*See CONCENTRATION RANGE on back of form.

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International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No: IL3140
Project Name: DEAD CREEK
Project Manager: MIKE MILLER
Samplers (Signatures): Daniel T. Sewall, Peter Alberg
Field Team Leader: DAN SEWALL

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	2-120 ml VOAs	1-8oz HSL Organic	1-4oz Metals + CN-				REMARKS
DC-I6-43	2/2/87	1300	✓			Unknown OVA Screen >1000 ppm	Boring I-6 10'-25'	4	2	1	1				STRONG Solvent Odor
DC-IB-44	2/2/87	0800	✓			Unknown	Soil Blank	4	2	1	1				Blank
DC-I7-45	2/4/87	1130	✓			Unknown OVA Screen 32 ppm	Boring I-7 (3½-12½)	4	2	1	1				
DC-I7-46	2/4/87	1130	✓			Unknown OVA Screen 13 ppm	Boring I-7 (13½-22½)	4	2	1	1				
DC-I7-47	2/4/87	1130	✓			Unknown OVA Screen 13 ppm	Boring I-7 (13½-22½)	4	2	1	1				Duplicate of DC-I7-46
DC-I9-48	2/4/87	1130	✓			Unknown OVA Screen >1000 ppm	Boring I-9 (6½'-22½')	4	2	1	1				Strong Solvent odor
DC-I9-49	2/4/87	1130	✓			Unknown OVA Screen >1000 ppm	Boring I-9 (23½'-30')	4	2	1	1				Strong Solvent odor
DC-I10-50	2/4/87	1430	✓			Unknown OVA Screen >1000 ppm	Boring I-10 (15'-30')	4	2	1	1				Strong organic odor

Relinquished By (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	Ship Via
Daniel T. Sewall	2-4-87/1730	Federal Express				Federal Express
Relinquished By (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	BL/Airbill Number: 2295199041
Relinquished By (Signature)	Date/Time	Received For Laboratory By (Signature)	Relinquished By (Signature)	Date/Time	Received For Laboratory By (Signature)	Date: 2/4/87
Fed Express	2-5-87/0730	[illegible]				

Distribution: Original Accompanies Shipment, Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form.

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International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.: IL 3140
Project Name: DEAD CREEK
Project Manager: MIKE MILLER
Samplers (Signatures): Daniel F. Sewall, Peter Alley
Field Team Leader: DAN SEWALL

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	GRAB	AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	2-120 ml VOAS	1-8 oz HSL Organics	1-8 oz Metals + CN⁻				REMARKS
DC-IN-51	2/5/87	1330	✓			UNKNOWN OVA Screen >1000 ppm	Boring I-11 6'-20'	4	2	1	1				Strong Solvent Odor
DC-IN-52	2/5/87	1330	✓			UNKNOWN OVA SCREEN >1000 ppm	Boring I-11 26'-33½'	4	2	1	1				Strong Solvent Odor

Relinquished By (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	Ship Via
Daniel F. Sewall	2/5/87-1630	FEDERAL EXPRESS				FEDERAL EXPRESS
Relinquished By (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	BL/Airbill Number
						561464912
Relinquished By (Signature)	Date/Time	Received For Laboratory By (Signature)	Relinquished By (Signature)	Date/Time	Received For Laboratory By (Signature)	Date 2/15/87

Distribution: Original Accompanies Shipment, Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form.

Form I

Sample No.
DC-G3-33

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0752 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	9320		P	13.	Magnesium	NR		
2.	Antimony	112	R U	P	14.	Manganese	203	R	P
3.	Arsenic	3.3		F	15.	Mercury	0.10	U	CV
4.	Barium	150		P	16.	Nickel	11		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.93	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	12		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.8	U	F
10.	Copper	5.9		P	22.	Tin	7.4	U	F
11.	Iron	9280		P	23.	Vanadium	18		P
12.	Lead	7.8	*	F	24.	Zinc	32		P
Cyanide		1.0	U		Percent Solids (%)		73		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested. 1/31/88

Lab Manager [signature]

Form I

Sample No.
DC-GB-34

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0753 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	11200		P	13.	Magnesium	NR		
2.	Antimony	12 RU		P	14.	Manganese	298 R		P
3.	Arsenic	5.1		F	15.	Mercury	0.10	U	CV
4.	Barium	331		P	16.	Nickel	15		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	2.2		P	18.	Selenium	0.99	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	10		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	26		P	22.	Tin	7.9	U	F
11.	Iron	10800		P	23.	Vanadium	22		P
12.	Lead	40 *		F	24.	Zinc	148		P
Cyanide		1.0	U		Percent Solids (%)		78		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-G4-35

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0754 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	6590		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	138	R	P
3.	Arsenic	3.3	/	F	15.	Mercury	0.10	U	CV
4.	Barium	89		P	16.	Nickel	10		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	/ U	P	18.	Selenium	1.0	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	6.5		P	20.	Sodium	NR		
9.	Cobalt	10	/ U	P	21.	Thallium	2.0	U	F
10.	Copper	14		P	22.	Tin	8.0	U	F
11.	Iron	6710		P	23.	Vanadium	10	U	P
12.	Lead	6.2	*	F	24.	Zinc	38		P
Cyanide		1.0	U		Percent Solids (%)		76		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-G4-36

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0755 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	6560		P	13.	Magnesium	NR		
2.	Antimony	12 L	U	P	14.	Manganese	167	R	P
3.	Arsenic	3.3		F	15.	Mercury	0.10	U	CV
4.	Barium	112		P	16.	Nickel	10		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.97	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	5.8		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.9	U	F
10.	Copper	20		P	22.	Tin	7.8	U	F
11.	Iron	7920		P	23.	Vanadium	15		P
12.	Lead	31	*	F	24.	Zinc	52		P
Cyanide		1.0	U		Percent Solids (%)		80		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested. 100/103

Lab Manager M. [illegible]

Form I

Sample No.
DC-G5-37

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0756 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	7350	P	13.	Magnesium	NR	
2.	Antimony	12 R u	P	14.	Manganese	364 R	P
3.	Arsenic	4.3	F	15.	Mercury	0.10 u	CV
4.	Barium	184	P	16.	Nickel	70	P
5.	Beryllium	1.0 u	P	17.	Potassium	NR	
6.	Cadmium	1.0 u	P	18.	Selenium	0.94 u	F
7.	Calcium	NR		19.	Silver	2.0 u	P
8.	Chromium	13	P	20.	Sodium	NR	
9.	Cobalt	13	P	21.	Thallium	1.9 u	F
10.	Copper	13	P	22.	Tin	7.6 u	F
11.	Iron	9020	P	23.	Vanadium	21	P
12.	Lead	11 *	F	24.	Zinc	177	P

Cyanide 1.0 u Percent Solids (%) 79

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No. DC-I1-38

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0757 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	9890	P	13.	Magnesium	NR	
2.	Antimony	12 R U	P	14.	Manganese	187 R	P
3.	Arsenic	8.0	F	15.	Mercury	1.6	CV
4.	Barium	2630	P	16.	Nickel	81	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	8.3	P	18.	Selenium	0.99 U	F
7.	Calcium	NR		19.	Silver	2.0 U	P
8.	Chromium	84	P	20.	Sodium	NR	
9.	Cobalt	10 U	P	21.	Thallium	2.0 U	F
10.	Copper	460	P	22.	Tin	40	F
11.	Iron	30300	P	23.	Vanadium	404	P
12.	Lead	125 *	F	24.	Zinc	4620	P
	Cyanide	1.0 U			Percent Solids (%)	73	

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager

Form I

Sample No.
DC-I2-39

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0758 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	932		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	71	R	P
3.	Arsenic	2.0	U	F	15.	Mercury	0.40		CV
4.	Barium	680		P	16.	Nickel	726		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	4.3		P	18.	Selenium	0.98	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	11		P	20.	Sodium	NR		
9.	Cobalt	20		P	21.	Thallium	2.0	U	F
10.	Copper	62		P	22.	Tin	16	U	F
11.	Iron	7500		P	23.	Vanadium	15		P
12.	Lead	60 *		F	24.	Zinc	363		P

Cyanide 1.0 U Percent Solids (%) 74

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager M. [illegible]

Form I

Sample No.
DC-I3-40

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0799 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	8750		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	287	R	P
3.	Arsenic	4.1		F	15.	Mercury	0.10	U	CV
4.	Barium	237		P	16.	Nickel	20		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	2.4		P	18.	Selenium	0.99	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	11		P	20.	Sodium	NR		
9.	Cobalt	9.7		P	21.	Thallium	2.0	U	F
10.	Copper	361		P	22.	Tin	39		F
11.	Iron	13300	*	P	23.	Vanadium	23		P
12.	Lead	265		F	24.	Zinc	235		P

Cyanide 1.0 U Percent Solids (%) 71

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I5-41

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0800 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1630		P	13.	Magnesium	NR		
2.	Antimony	.12 R	U	P	14.	Manganese	91 R		P
3.	Arsenic	2.4		F	15.	Mercury	0.87		CV
4.	Barium	2800		P	16.	Nickel	1900		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.2		P	18.	Selenium	0.97	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	28		P	20.	Sodium	NR		
9.	Cobalt	17		P	21.	Thallium	2.0	U	F
10.	Copper	124		P	22.	Tin	7.8	U	F
11.	Iron	9020		P	23.	Vanadium	16		P
12.	Lead	183 *		F	24.	Zinc	159		P

Cyanide 2.0 Percent Solids (%) 79

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager M. [illegible]

Form I

Sample No. DC-IS-42

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0801 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	901		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	30	R	P
3.	Arsenic	2.0	U	F	15.	Mercury	0.10	U	CV
4.	Barium	40	U	P	16.	Nickel	26		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	1.0	U	F
7.	Calcium	NR			19.	Silver	20	U	P
8.	Chromium	2.0	U	P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.0	U	P	22.	Tin	8.0	U	F
11.	Iron	3020		P	23.	Vanadium	10	U	P
12.	Lead	5.0	*	F	24.	Zinc	11		P

Cyanide 1.0 U Percent Solids (%) 85

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I6-43

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0859 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	814		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	93	R	P
3.	Arsenic	9.1		F	15.	Mercury	1.0		CV
4.	Barium	260		P	16.	Nickel	33		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.5		P	18.	Selenium	0.98	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	475		P	20.	Sodium	NR		
9.	Cobalt	14		P	21.	Thallium	0.98 1.96	U	F
10.	Copper	97		P	22.	Tin	9.3		F
11.	Iron	15100		P	23.	Vanadium	45		P
12.	Lead	190	*	F	24.	Zinc	424		P

Cyanide 1.0 U Percent Solids (%) 65

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-IB-44

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0860 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	6320		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	308	R	P
3.	Arsenic	5.1		F	15.	Mercury	0.16	U	CV
4.	Barium	271		P	16.	Nickel	12		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.6		P	18.	Selenium	0.97	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	9.3		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.97 1.94	U	F
10.	Copper	22		P	22.	Tin	3.3		F
11.	Iron	11500		P	23.	Vanadium	16		P
12.	Lead	97 *	U	F	24.	Zinc	158		P
Cyanide		1.0	U		Percent Solids (%)		78		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager M. [illegible]

Form I

Sample No.
DC-I7-45

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 08601 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	5540		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	191	R	P
3.	Arsenic	4.2		F	15.	Mercury	0.15	U	CV
4.	Barium	268		P	16.	Nickel	27		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.2		P	18.	Selenium	0.97	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	18		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	~~0.97~~ 1.94	U	F
10.	Copper	199		P	22.	Tin	8.7		F
11.	Iron	11500		P	23.	Vanadium	14		P
12.	Lead	100 *	U	F	24.	Zinc	338		P
	Cyanide	1.0	U			Percent Solids (%)	77		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I7-46

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0862 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	2290		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	99	R	P
3.	Arsenic	2.0		F	15.	Mercury	0.10	U	CV
4.	Barium	66		P	16.	Nickel	8.0	U	P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.95	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.9		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	~~0.95~~ 1.90	U	F
10.	Copper	5.0	U	P	22.	Tin	3.3		F
11.	Iron	5840		P	23.	Vanadium	10	U	P
12.	Lead	8.2	*	F	24.	Zinc	23		P

Cyanide 1.0 U Percent Solids (%) 80

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I7-47

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0863 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	2170		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	99 R		P
3.	Arsenic	1.8		F	15.	Mercury	0.10	U	CV
4.	Barium	65		P	16.	Nickel	8.3		P
5.	Beryllium	1.6	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.97	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.6		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	~~0.97~~ 1.94	U	F
10.	Copper	5.0	U	P	22.	Tin	2.5	–	F
11.	Iron	5900		P	23.	Vanadium	10	U	P
12.	Lead	7.8 *		F	24.	Zinc	21		P

Cyanide 1.0 U Percent Solids (%) 79

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I9-48

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0864 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	6050		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	163	R	P
3.	Arsenic	9.7		F	15.	Mercury	2.2		CV
4.	Barium	353		P	16.	Nickel	140		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	8.6		P	18.	Selenium	9.8	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	65		P	20.	Sodium	NR		
9.	Cobalt	23		P	21.	Thallium	~~0.98~~ 1.96	U	F
10.	Copper	391		P	22.	Tin	16		F
11.	Iron	18800		P	23.	Vanadium	27		P
12.	Lead	3840 *		F	24.	Zinc	786		P

Cyanide 1.1 Percent Solids (%) 68

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I9-49

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0865 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1200		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	28 R		P
3.	Arsenic	1.0	U	F	15.	Mercury	0.10	U	CV
4.	Barium	40	U	P	16.	Nickel	8.0	U	P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.99	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.4		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.99 1.98	U	F
10.	Copper	5.0	U	P	22.	Tin	4.1		F
11.	Iron	3780		P	23.	Vanadium	10	U	P
12.	Lead	570 *		F	24.	Zinc	101		P
Cyanide		1.0	U		Percent Solids (%)		81		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I10-50

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0866 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1400		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	51	R	P
3.	Arsenic	1.2		F	15.	Mercury	0.10	U	CV
4.	Barium	40	U	P	16.	Nickel	120		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.98	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	4.7		P	20.	Sodium	NR		
9.	Cobalt	11		P	21.	Thallium	~~0.98~~ 1.96	U	F
10.	Copper	5.0	U	P	22.	Tin	1.7		F
11.	Iron	3890		P	23.	Vanadium	10	U	P
12.	Lead	7.4	*	F	24.	Zinc	74		P
Cyanide		1.0	U		Percent Solids (%)		83		

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-I11-51

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0900 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	3990		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	144	R	P
3.	Arsenic	4.8		F	15.	Mercury	0.52		CV
4.	Barium	918		P	16.	Nickel	792		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	3.9		P	18.	Selenium	0.98	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	84		P	20.	Sodium	NR		
9.	Cobalt	14		P	21.	Thallium	2.0	U	F
10.	Copper	326		P	22.	Tin	7.8	U	F
11.	Iron	14000		P	23.	Vanadium	26		P
12.	Lead	3290 *		F	24.	Zinc	1910		P

Cyanide 1.0 U Percent Solids (%) 60

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-I11-52

Date 3-24-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

LAB SAMPLE ID. NO. 0901 QC REPORT NO.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	839		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	36	R	P
3.	Arsenic	1.0	U	F	15.	Mercury	0.10	U	CV
4.	Barium	40	U	P	16.	Nickel	8.9		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.96	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	2.0	U	P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.0	U	P	22.	Tin	7.7	U	F
11.	Iron	2380		P	23.	Vanadium	10	U	P
12.	Lead	24	*	F	24.	Zinc	15		P

Cyanide 1.0 U Percent Solids (%) 83

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 1/30/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
nide				48	44	92			

[1] Initial Calibration Source ASC I [2] Continuing Calibration Source ASC II

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/2/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury	1.0	0.93	93	1.0	0.93	93	1.1	110	CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/2/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury				1.0	1.1	110	0.98	98	CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/2/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury				1.0	1.2	120			CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/4/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury	1.0	0.98	98	1.0	1.0	100	0.89	89	CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/5/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic	50	50	100	50	50	100	53	106	F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium	25	25	100	25	26	104	27	108	F
19. Silver									P
20. Sodium									
21. Thallium	50	51	102	50	49	98	48	96	F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/5/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic				50	52	104	54	108	F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium				25	27	108			F
19. Silver									P
20. Sodium									
21. Thallium				50	47	94			F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/5/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic				50	54	108			F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/6/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead	50	50	100	50	51	102	52	104	F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium	50	51	102	50	49	98	48	96	F
22. Tin	100	109	109	100	106	106	101	101	F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/6/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium				50	47	94			F
22. Tin				100	101	101	103	103	F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/9/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum	500	506	101	500	484	97	488	98	P
2. Antimony	500	507	101	500	535	107	498	100	P
3. Arsenic									F
4. Barium	500	527	105	506	540	108	542	108	P
5. Beryllium	500	527	105	500	533	107	534	107	P
6. Cadmium	500	534	107	500	546	109	532	106	P
7. Calcium									
8. Chromium	500	526	104	500	534	107	536	107	P
9. Cobalt	500	530	106	500	536	107	530	106	P
10. Copper	500	526	105	500	534	107	532	106	P
11. Iron	500	523	105	500	532	106	535	107	P
12. Lead									F
13. Magnesium									
14. Manganese	500	536	107	500	533	107	539	108	P
15. Mercury									CV
16. Nickel	500	513	103	500	524	105	519	104	P
17. Potassium									
18. Selenium									F
19. Silver	500	532	106	500	550	110	539	108	P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium	500	531	106	500	533	107	543	109	P
24. Zinc	500	548	110	500	549	110	541	108	P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/9/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum				500	528	106	529	106	P
2. Antimony				500	477	95			P
3. Arsenic									F
4. Barium				500	544	109	545	109	P
5. Beryllium				500	536	107			P
6. Cadmium				500	543	109			P
7. Calcium									
8. Chromium				500	538	108			P
9. Cobalt				500	532	106			P
10. Copper				500	530	106			P
11. Iron				500	534	107	535	107	P
12. Lead									F
13. Magnesium									
14. Manganese				500	538	108			P
15. Mercury									CV
16. Nickel				500	504	101			P
17. Potassium									
18. Selenium									F
19. Silver				500	552	110			P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium				500	536	107			P
24. Zinc				500	546	109			P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/9/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum				500	539	108			P
2. Antimony									P
3. Arsenic									F
4. Barium				500	546	109			P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron				500	539	108			P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/10/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
nide				47	47	100	46	98	

[1] Initial Calibration Source VHG-1 [2] Continuing Calibration Source VHG-2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/11/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic	50	49	98	50	54	108	50	100	F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury	1.1	0.92	92	1.0	0.97	97	1.1	110	CV
16. Nickel									P
17. Potassium									
18. Selenium	50	51	102	50	49	98	49	98	F
19. Silver									P
20. Sodium									
21. Thallium	50	46	92	50	46	92	46	92	F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/11/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury				1.0	1.1	110	1.1	110	CV
16. Nickel									P
17. Potassium									
18. Selenium				50	49	98			F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
.nide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/12/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin	100	104	104	100	102	102	102	102	F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide				47	47	100			

Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/12/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin				100	98	98			F
23. Vanadium									P
24. Zinc									P
Other:									
C ide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/13/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum	500	514	103	500	537	107	540	108	P
2. Antimony	500	497	99	500	478	96			P
3. Arsenic									F
4. Barium	500	521	104	500	522	104	498	100	P
5. Beryllium	500	523	105	500	489	98			P
6. Cadmium	500	542	108	500	502	100			P
7. Calcium									
8. Chromium	500	538	108	500	523	105			P
9. Cobalt	500	524	105	500	506	101			P
10. Copper	500	522	104	500	542	108			P
11. Iron	500	530	106	500	514	103	515	103	P
12. Lead									F
13. Magnesium									
14. Manganese	500	531	106	500	517	103			P
15. Mercury									CV
16. Nickel	500	544	109	500	508	102			P
17. Potassium									
18. Selenium									F
19. Silver	500	511	102	500	541	108			P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium	500	530	106	500	526	105			P
24. Zinc	500	536	107	500	525	105	551	110	P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/13/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum				500	539	108			P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron				500	551	110			P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/16/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium	50	48	96	50	54	108			F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/17/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic	50	52	104	50	50	100			F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
nide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/18/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead	50	53	106	50	51	102	52	104	F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/18/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead				50	51	102	54	108	F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/24/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony	500	505	101	500	459	92	511	102	P
3. Arsenic									F
4. Barium	500	531	106	500	528	106	526	105	P
5. Beryllium	500	533	107	500	524	105	522	104	P
6. Cadmium	500	528	106	500	530	106	522	104	P
7. Calcium									
8. Chromium	500	536	107	500	524	105	519	104	P
9. Cobalt	500	525	105	500	517	103	506	101	P
10. Copper	500	526	105	500	520	104	515	103	P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese	500	537	107	500	523	105	522	104	P
15. Mercury									CV
16. Nickel	500	536	107	500	525	105	525	105	P
17. Potassium									
18. Selenium									F
19. Silver	500	490	98	500	486	97	487	97	P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium	500	526	105	500	522	104	518	104	P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/25/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									
6. Cadmium									F
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron	10000	10200	102	10000	10100	101			P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc	500	540	108	500	503	101	511	102	P
Other:									
C ide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 2/26/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum	10000	10300	103	10000	9590	96	10900	109	P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG-1 [2] Continuing Calibration Source VHG-2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 3/3/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium	50	52	104	50	48	96	48	96	F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 3/3/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium				50	48	96			F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 3/4/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin	100	102	102	100	98	98	102	102	F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

SOW NO. 784

DATE 3/4/87 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin	100	103	103						F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG.1 [2] Continuing Calibration Source VHG.2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-48

DATE 1/30/87 UNITS ug/L

Matrix water for soils

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide		104				104	

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/2/87 UNITS ug/L

Matrix water for soils

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/2/87 UNITS ug/L

Matrix water for soils

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury		0.24	0.24				
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/4/87 UNITS ug/L

Matrix water for soils

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury	0.24	0.24	0.24	0.24			
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/5/87 UNITS ug/L

Matrix water for soils

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/5/87 UNITS ug/L

Matrix water for soils

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/6/87 UNITS ug/L

Matrix water for soils

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-48

DATE 2/9/87 UNITS ug/L

Matrix water for soils

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum	200U	200U	200U	200U	200U	200U	
2. Antimony	60U	60U	61	60U		60U	
3. Arsenic							
4. Barium	200U	200U	200U	200U	200U	200U	
5. Beryllium	5U	5U	5U	5U		5U	
6. Cadmium	5U	5U	5U	5U		5U	
7. Calcium							
8. Chromium	10U	10U	10U	10U		10U	
9. Cobalt	50U	50U	50U	50U		50U	
10. Copper	25U	25U	25U	25U		25U	
11. Iron	100U	100U	100U	100U	100U	100U	
12. Lead							
13. Magnesium							
14. Manganese	15U	15U	15U	15U		15U	
15. Mercury							
16. Nickel	40U	40U	40U	40U		40U	
17. Potassium							
18. Selenium							
19. Silver	10U	10U	10U	10U		10U	
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium	50U	50U	50U	50U		50U	
24. Zinc	20U	20U	20U	20U		20U	
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/9/87 UNITS ug/L

Matrix water for soils

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum		200U					
2. Antimony							
3. Arsenic							
4. Barium		200U					
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron		100U					
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. 1

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-48

DATE 2/10/87 UNITS ug/L

Matrix water for soils

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/11/87 UNITS ug/L

Matrix water for soils

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/12/87 UNITS ug/L

Matrix water for soils

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/13/87 UNITS ug/L

Matrix water for soils

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum	200U	200U	200U	200U		200U	
2. Antimony	60 U	60U				60U	
3. Arsenic							
4. Barium	200U	200U				200 U	
5. Beryllium							
6. Cadmium	5U	5U				5U	
7. Calcium							
8. Chromium	10U	10U				10U	
9. Cobalt	50U	50U				50U	
10. Copper	25U	25U				25U	
11. Iron	100U	100U	100U	100U		100U	
12. Lead							
13. Magnesium							
14. Manganese	15U	15U				15U	
15. Mercury							
16. Nickel	40U	40U				40U	
17. Potassium							
18. Selenium							
19. Silver	10U	10U				10U	
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium	50U	50U				50U	
24. Zinc	20U	20U	20U			20U	
Other:							
Cyanide							

Form III

Q. C. Report No. 1

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-48

DATE 2/16/87 UNITS ug/L

Matrix water for soils

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/17/87 UNITS ug/L

Matrix water for soils

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/18/87 UNITS ug/L

Matrix water for soils

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead	54	54	54	54	54	54	54
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/24/87 UNITS ug/L

Matrix water for soils

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum							
2. Antimony	60U	60U	60U			60U	
3. Arsenic							
4. Barium	200 U	200U	200U			200U	
5. Beryllium	5.0 U	5.0U	5.0U			5.0U	
6. Cadmium	5.0 U	5.0U	5.0U			5.0U	
7. Calcium							
8. Chromium	10 U	10U	10U			10U	
9. Cobalt	50 U	50U	50U			50U	
10. Copper	25 U	25U	25U			25U	
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese	15 U	15U	15U			15U	
15. Mercury							
16. Nickel	40 U	40U	40U			40U	
17. Potassium							
18. Selenium							
19. Silver	10U	10U	10U			10U	
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium	50 U	50U	50U			50U	
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-48

DATE 2/25/87 UNITS ug/L

Matrix water for soils

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-487

DATE 2/26/87 UNITS ug/L

Matrix water for soils

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum	200 U	200U	200U			200 U	
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-48

DATE 3/3/87 UNITS ug/L

Matrix water for soils

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-48

DATE 3/4/87 UNITS ug/L

Matrix water for soils

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

Form VI

Q. C. Report No. _____

DUPLICATES

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

Sample No. DC-G4-35

DATE 3-24-87

Lab Sample ID No. 0754

Units mg/kg as received

Matrix soil

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum		6590	5630	16
2. Antimony		12 U	12 U	NC
3. Arsenic		3.3	3.0	9.5
4. Barium		89	101	13
5. Beryllium		1 U	1 U	NC
6. Cadmium		1.0 U	1.0 U	NC
7. Calcium				
8. Chromium		6.5	6.7	3.0
9. Cobalt		10 U	10 U	NC
10. Copper		14	17	19
11. Iron		6710	7560	12
12. Lead				
13. Magnesium				
14. Manganese		138	157	13
15. Mercury				
16. Nickel		10	8.4	17
17. Potassium				
18. Selenium		1.0 U	0.95 U	NC
19. Silver		2.0 U	2.0 U	NC
20. Sodium				
21. Thallium		2.0 U	1.9 U	NC
22. Tin		8.0 U	7.6 U	NC
23. Vanadium		10 U	12	NC
24. Zinc		38	46	19
Other:				
Cyanide				

* Out of Control

[1] To be added at a later date.

[2] RPD = [|S - D|/((S + D)/2)] x 100

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

Form VI

Q. C. Report No. _____

DUPLICATES

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

Sample No. DC-I1-38

DATE 3-24-87

Lab Sample ID No. 0757

Units mg/kg as received

Matrix soil

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum				
2. Antimony				
3. Arsenic				
4. Barium				
5. Beryllium				
6. Cadmium				
7. Calcium				
8. Chromium				
9. Cobalt				
10. Copper				
11. Iron				
12. Lead				
13. Magnesium				
14. Manganese				
15. Mercury				
16. Nickel				
17. Potassium				
18. Selenium				
19. Silver				
20. Sodium				
21. Thallium				
22. Tin				
23. Vanadium				
24. Zinc				
Other:				
Cyanide		1.0 U	1.0 U	NC

* Out of Control

[1] To be added at a later date.

[2] RPD = [|S - D|/((S + D)/2)] x 100

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

Form VI

Q. C. Report No. _____

DUPLICATES

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-4872

Sample No. DC-I11-51

DATE 3-24-87

Lab Sample ID No. 0900

Units mg/kg as received

Matrix soil

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum				
2. Antimony				
3. Arsenic				
4. Barium				
5. Beryllium				
6. Cadmium				
7. Calcium				
8. Chromium				
9. Cobalt				
10. Copper				
11. Iron				
12. Lead		3290	4450	30 *
13. Magnesium				
14. Manganese				
15. Mercury				
16. Nickel				
17. Potassium				
18. Selenium				
19. Silver				
20. Sodium				
21. Thallium				
22. Tin				
23. Vanadium				
24. Zinc				
Other:				
Cyanide				

* Out of Control

[1] To be added at a later date.

[2] RPD = [|S - D|/((S + D)/2)] x 100

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

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-487

DATE 3-24-87

Sample No. DC-64-86

Lab Sample ID No. 0755

Units µg/L *

Matrix soil

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	75-125				
2. Antimony	"				
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"				
6. Cadmium	"				
7. Calcium	"				
8. Chromium	"				
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"				
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"				
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"				
22. Tin	"	99	27	80	90
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

1 %R = [(SSR - SR)/SA] x 100 "R"- out of control

Comments: * Results in µg/L because this is a post-digestion spike

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-487

DATE 3-24-87

Sample No. DC-I1-38

Lab Sample ID No. 0757

Units mg/kg as received

Matrix soil

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	75-125				
2. Antimony	"	41	12 U	100	41R
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"	10	1U	10	100
6. Cadmium	"	18	8.3	10	97
7. Calcium	"				
8. Chromium	"	126	84	40	105
9. Cobalt	"	107	10U	100	107
10. Copper	"				
11. Iron	"				
12. Lead	"				
13. Magnesium	"				
14. Manganese	"	352	187	100	165R
15. Mercury	"				
16. Nickel	"	180	81	100	99
17. Potassium	"				
18. Selenium	"				
19. Silver	"	7.5	2U	10	75
20. Sodium	"				
21. Thallium	"				
22. Tin	"				
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

1 %R = [(SSR - SR)/SA] x 100 "R"- out of control

Comments: Iron, Copper, Vanadium and Zinc Concentrations are 4X spike amount.

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4835/U-4846/U-4863/U-487

DATE 3-24-87

Sample No. DC-I54-

Lab Sample ID No. 0801

Units mg/kg as received

Matrix soil

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	75-125				
2. Antimony	"				
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"				
6. Cadmium	"				
7. Calcium	"				
8. Chromium	"				
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"				
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"				
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"				
22. Tin	"				
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"	4.8	1.0U	4.7	102

1 %R = [(SSR - SR)/SA] x 100

"R"- out of control

04A

Comments: _____

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INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/2/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5			
3. Arsenic	10		5			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2		4.7	4.8	102
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
						85
Cyanide	10					

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INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/4/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5			
3. Arsenic	10		5			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2		4.7	4.5	96
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
						SG
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/5/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5			
3. Arsenic	10		5	20	20	100
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2				
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5	7.9	8.4	106
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5	25	25	100
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
Cyanide	10					

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INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/6/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5			
3. Arsenic	10		5			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5	17	16	94
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2				
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
						88
Cyanide	10					

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Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/9/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100		970	957	99
2. Antimony	60	6	5	990	998	101
3. Arsenic	10		5			
4. Barium	200	10		970	968	100
5. Beryllium	5	5		960	936	98
6. Cadmium	5	5	1	940	919	98
7. Calcium	5000	1000				
8. Chromium	10	10		1030	1000	97
9. Cobalt	50	10		1000	981	98
10. Copper	25	10		1020	976	96
11. Iron	100	25		1020	988	97
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5		1020	972	95
15. Mercury	0.2	0.2				
16. Nickel	40	15		1020	982	96
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5			
20. Sodium	5000	1000		6000	5750	96
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10		1010	981	97
24. Zinc	20	10		1010	1030	102
Other:						
Cyanide	10					

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Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/11/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5			
3. Arsenic	10		5	20	19	95
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2		4.7	5.0	106
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5	7.9	8.0	101
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5	25	25	100
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
						90
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/13/87 LCS UNITS (ug/L) mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100		970	992	102
2. Antimony	60	6	5	990	978	99
3. Arsenic	10		5			
4. Barium	200	10		970	984	101
5. Beryllium	5	5		960	888	92
6. Cadmium	5	5	1	940	867	92
7. Calcium	5000	1000				
8. Chromium	10	10		1030	932	90
9. Cobalt	50	10		1000	925	92
10. Copper	25	10		1030	917	89
11. Iron	100	25		1010	940	93
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5		1020	916	90
15. Mercury	0.2	0.2				
16. Nickel	40	15		1020	928	91
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5	6000	5690	95
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10		1010	932	92
24. Zinc	20	10		1011	930	92
Other:						
Cyanide	10					

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Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/16/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5			
3. Arsenic	10		5			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2				
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5	7.9	8.7	110
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/17/87 LCS UNITS (ug/L) mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5			
3. Arsenic	10		5	20	19	95
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2				
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
						93
Cyanide	10					

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Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/18/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5			
3. Arsenic	10		5			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5	17	17	100
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2				
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/24/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l ICP/AA	Furnace	Lab Control Sample True	Found	%R
Metals:						
1. Aluminum	200	100				
2. Antimony	60	6	5	990	993	100
3. Arsenic	10		5			
4. Barium	200	10		970	1014	105
5. Beryllium	5	5		960	931	97
6. Cadmium	5	5	1	940	885	94
7. Calcium	5000	1000				
8. Chromium	10	10		1030	962	93
9. Cobalt	50	10		1000	954	95
10. Copper	25	10				
11. Iron	100	25		1030	951	92
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5		1020	955	94
15. Mercury	0.2	0.2				
16. Nickel	40	15		1020	951	93
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5	6000	5630	94
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10		1010	954	94
24. Zinc	20	10				
Other:						
Cyanide	10					

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INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/25/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5			
3. Arsenic	10		5			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25		1020	912	89
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2				
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10		1010	944	93
Other:						
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 2/26/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100		970	990	102
2. Antimony	60	6	5			
3. Arsenic	10		5			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2				
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
Cyanide	10					

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Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4835/U-4846/U-4863/U-4872

DATE 3/3/87 LCS UNITS (ug/L) mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5			
3. Arsenic	10		5			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2				
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5	25	25	100
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
Cyanide	10					

Lead Creek

REPORT > SELECT RESULT 87/02/13

ANALYZE > MANUAL MODE 15:39

Job# 4835

Ag, Sb, Ba, Be, Cd, Cr, Co, Cu, Fe, Mn, Ni, V, Zn

Result Name: 8702130905

blank	10000 PPB	500 PPM ICS	754.R 0.1/10
standard	CAL BLK	CAL BLK	755. 0.1/10
standard	JCB#4835 B-48	500 PPB	756. 1/10
standard	752.0401	500 PPB	756. 0.1/10
standard	50 PPM	500 PPB	CAL BLK
500 PPB	753.0401	500 PPB	500 PPB
500 PPB	754.0401	500 PPB	500 PPB
500 PPB	754.0401 R	500 PPB	757. 1/10
ICAP-19	755.0401	752. 1/10	757. 0.1/10
ICAP-7	756.0101	752. 0.1/10	757.S 1/10
EPA 283#2 1/50	757.0401	753. 1/10	757.S 0.1/10
EPA 283#2 1/50	757.0401 S	753. 0.1/10	500 PPM ICS
EPA 283#2 1/50	758.0401	754. 1/10	CAL BLK
500 PPM ICS	758.0401	754. 0.1/10	500 PPB

Command?

REPORT > SELECT RESULT 87/02/11

ANALYZE > MANUAL MODE 15:40

Result Name: 8702130905

500 PPB	CAL BLK
500 PPB	500 PPB
500 PPB	
JOB#4857 B-63	
JOB#4857 B-63	
845.0101	
845. 0.1/10	
JOB#4878 B-75	
919.0101	
920.0101	
920. 0.1/10	
B-79	
935.0201	
935.0201 R	

Command?

Sb_VHG

blank	38.67	intensity	4.98	cv	window edge
standard	899.30	intensity	4.14	cv	
standard	899.35	intensity	3.36	cv	
500 PPB	427.15	ug/L	11.87	cv	
500 PPB	497.10	ug/L	7.96	cv	
ICAP-19	978.00	ug/L	7.55	cv	
500 PPM ICS	1058.50	ug/L	1.81	cv	
CAL BLK	-9.85	ug/L	-795.7	cv	
JOB#4835 E-48	-11.22	ug/L <60	-406.9	cv	
752.0401	2.53	ug/L <10.0 mg/kg	533.9	cv	window edge
753.0401	-65.33	ug/L	-133.4	cv	
754.0401	38.17	ug/L	142.69	cv	
754.0401 R	24.02	ug/L	179.87	cv	
755.0401	-32.39	ug/L	-92.78	cv	window edge
756.0101	-40.06	ug/L	-51.57	cv	
757.0401	-30.68	ug/L	-122.6	cv	window edge
757.0401 S	204.60	ug/L -41% rec	17.91	cv	
758.0401	51.89	ug/L <10.0 mg/kg	8.25	cv	
758.0401	44.18	ug/L	156.24	cv	
500 PPM ICS	1059.50	ug/L	1.12	cv	
CAL BLK	50.29	ug/L	5.24	cv	
500 PPB	478.00	ug/L	0.77	cv	

$\frac{40.92}{100} = 41$

Zn_VHG

blank	34.78	intensity	21.08	cv	
standard	8886.50	intensity	1.60	cv	
standard	8869.50	intensity	0.17	cv	
500 PPB	535.60	ug/L	1.40	cv	
ICAP-19	930.45	ug/L	1.21	cv	
500 PPM ICS	962.35	ug/L	0.95	cv	
10000 PPB	10565.00	ug/L	1.38	cv	
CAL BLK	-1.63	ug/L	-62.01	cv	
JOB#4835 B-48	4.06	ug/L <20.0	7.88	cv	
752.0401	153.25	~~ug/L~~ 31.7 mg/kg	1.02	cv	
753.0401	738.50	~~ug/L~~ 148	0.60	cv	
754.0401	192.90	~~ug/L~~ 37.8	0.80	cv	
754.0401 R	235.85	~~ug/L~~ 46.2	0.92	cv	
755.0401	259.15	~~ug/L~~ 51.8	0.52	cv	
756.0101	928.55	~~ug/L~~ 177	0.53	cv	
757.0401	~~23200.00~~	ug/L	0.78	cv	
757.0401 S	~~31250.00~~	ug/L	1.09	cv	
~~758.0401~~	~~[illegible]~~	~~ug/L~~	~~[illegible]~~	~~cv~~	
758.0401	1852.00	~~ug/L~~ 363	2.02	cv	
500 PPM ICS	985.05	ug/L	1.79	cv	
CAL BLK	-1.98	ug/L	-39.22	cv	
500 PPB	524.80	ug/L	0.89	cv	
757. 1/10	2309.50	~~ug/L~~ 4619	1.02	cv	
757.S 1/10	2846.00	ug/L -107% rec	1.15	cv	
500 PPM ICS	950.90	ug/L	1.68	cv	
CAL BLK	1.11	ug/L	131.91	cv	
500 PPB	551.20	ug/L	0.87	cv	

$\frac{5292-4619}{100} = 107\%$ rec

C__VHG

blank	7.70	intensity	63.66	cv
standard	4912.00	intensity	0.58	cv
standard	4888.50	intensity	0.26	cv
500 PPB	541.65	ug/L	1.42	cv

ICAP-19	867.25	ug/L		1.08	cv
500 PPM ICS	891.25	ug/L		0.20	cv
10000 PPB	10520.00	ug/L		1.45	cv
CAL BLK	0.33	ug/L		544.62	cv
JOB#4835 B-48	1.21	ug/L	<5.00	10.51	cv
752.0401	3.01	ug/L	<1.00 mg/Kg	0.96	cv
753.0401	11.13	~~ug/L~~	2.23	14.63	cv
754.0401	2.10	ug/L	<1.00	148.09	cv
754.0401 R	1.86	ug/L		46.33	cv
755.0401	0.68	ug/L		103.87	cv
756.0101	4.31	ug/L		44.85	cv
757.0401	41.47	~~ug/L~~	8.29	0.57	cv
757.0401 S	92.01	ug/L	-101% rec	1.43	cv
~~752.0401~~	~~[illegible]~~	~~ug/L~~		~~[illegible]~~	~~cv~~
758.0401	22.15	~~ug/L~~	4.34	7.20	cv
500 PPM ICS	907.75	ug/L		0.56	cv
CAL BLK	3.08	ug/L		86.65	cv
500 PPB	502.00	ug/L		0.84	cv

$$\frac{18.4 - 8.29}{10} = 101\%$$

Co_VHG

blank	23.05	intensity		102.96	cv	
standard	1929.50	intensity		1.01	cv	
standard	1936.50	intensity		0.34	cv	
500 PPB	524.20	ug/L		0.86	cv	
ICAP-19	925.45	ug/L		1.23	cv	
500 PPM ICS	880.70	ug/L		0.38	cv	
10000 PPB	10170.00	ug/L		2.11	cv	
CAL BLK	-4.04	ug/L		-314.6	cv	window edge
JOB#4835 B-48	0.20	ug/L	<50.0	2035.4	cv	
752.0401	5.65	ug/L	<10.0 mg/Kg	39.07	cv	
753.0401	20.51	ug/L		26.35	cv	
754.0401	4.76	ug/L		5.93	cv	
754.0401 R	10.34	ug/L		69.25	cv	
755.0401	10.51	ug/L		40.86	cv	
756.0101	69.34	~~ug/L~~	13.2	0.20	cv	
757.0401	28.25	ug/L	<10.0	27.16	cv	
757.0401 S	532.60	ug/L	-107% rec	0.39	cv	
~~758.0401~~	~~[illegible]~~	~~ug/L~~		~~[illegible]~~	~~cv~~	
758.0401	100.40	~~ug/L~~	19.7	13.70	cv	
500 PPM ICS	892.40	ug/L		0.97	cv	
CAL BLK	-5.39	ug/L		-14.08	cv	
500 PPB	505.80	ug/L		0.88	cv	

$$\frac{107}{100} = 107\%$$

Ni_VHG

blank	2.64	intensity		344.94	cv	window edge
standard	4964.00	intensity		0.99	cv	
standard	4822.00	intensity		0.04	cv	
500 PPB	544.55	ug/L		2.56	cv	
ICAP-19	928.55	ug/L		0.51	cv	
500 PPM ICS	869.45	ug/L		0.91	cv	
10000 PPB	10195.00	ug/L		0.92	cv	
CAL BLK	9.55	ug/L		70.13	cv	
JOB#4835 B-48	9.83	ug/L	<40.0	152.14	cv	window edge
752.0401	54.51	~~ug/L~~	10.6 mg/Kg	8.67	cv	
753.0401	73.19	~~ug/L~~	14.6	3.11	cv	
754.0401	50.92	~~ug/L~~	9.98	6.37	cv	
754.0401 R	42.63	~~ug/L~~	8.36	26.74	cv	
755.0401	51.24	~~ug/L~~	10.2	13.79	cv	
756.0101	370.35	~~ug/L~~	70.5	3.80	cv	

757.0401	403.15	ug/L 80.6 mg/Kg	3.38	cv
757.0401 S	900.85	ug/L -100% rec	0.94	cv
~~758.0401~~	~~1701.67~~	~~ug/L~~	~~140.38~~	~~cv~~
758.0401	3704.50	ug/L 726	0.28	cv
500 PPM ICS	890.90	ug/L	0.75	cv
CAL BLK	5.71	ug/L	34.12	cv
500 PPB	507.70	ug/L	0.31	cv

$$\frac{180 - 80.6}{100} = 99\%$$

Mn_VHG

blank	3.41	intensity	71.69	cv
standard	6529.50	intensity	0.85	cv
standard	6509.00	intensity	0.64	cv
500 PPB	530.65	ug/L	0.87	cv
ICAP-19	916.05	ug/L	0.11	cv
500 PPM ICS	896.80	ug/L	0.65	cv
10000 PPB	10175.00	ug/L	1.03	cv
CAL BLK	0.09	ug/L	851.65	cv
JOB#4835 B-48	-0.63	ug/L <15.0	-329.4	cv
752.0401	1048.00	ug/L 203 mg/Kg	0.84	cv
753.0401	1487.50	ug/L 298	0.61	cv
754.0401	702.55	ug/L 138	0.09	cv
754.0401 R	799.35	ug/L 157	0.13	cv
755.0401	833.05	ug/L 167	0.72	cv
756.0101	1909.00	ug/L 364	0.28	cv
757.0401	934.80	ug/L 187	0.44	cv
757.0401 S	1759.50	ug/L -16% rec	0.11	cv ← lab matrix problem
~~758.0401~~	~~[illegible]~~	~~ug/L~~	~~141.17~~	~~cv~~
758.0401	362.65	ug/L 71.1	2.60	cv
500 PPM ICS	922.40	ug/L	0.49	cv
CAL BLK	1.55	ug/L	152.14	cv
500 PPB	516.80	ug/L	0.63	cv

$$\frac{352 - 187}{100} = 165\%$$

Fe_VHG

blank	-1.04	intensity	-1528.	cv
standard	3591.50	intensity	0.93	cv
standard	3554.50	intensity	0.64	cv
500 PPB	530.40	ug/L	0.64	cv
ICAP-19	940.30	ug/L	0.12	cv
500 PPM ICS	292950.0	ug/L	0.11	cv
10000 PPB	10094.00	ug/L	2.06	cv
CAL BLK	3.47	ug/L	112.60	cv
JOB#4835 B-48	2.21	ug/L <100	311.99	cv
752.0401	47820.00	ug/L 9285 mg/Kg	0.15	cv
50 PPM	48595.00	ug/L	0.54	cv
753.0401	~~53883.00~~	ug/L	1.26	cv
754.0401	34225.00	ug/L 6711	0.07	cv
754.0401 R	38555.00	ug/L 7560	1.31	cv
755.0401	39610.00	ug/L 7922	0.10	cv
756.0101	~~37620.00~~	ug/L	0.07	cv
757.0401	~~172200.0~~	ug/L	0.61	cv
757.0401 S	~~172000.0~~	ug/L	0.76	cv
~~758.0401~~	~~[illegible]~~	~~ug/L~~	~~142.22~~	~~cv~~
758.0401	38260.00	ug/L 7502	3.66	cv
500 PPM ICS	293100.0	ug/L	0.00	cv
CAL BLK	2.14	ug/L	331.53	cv
500 PPB	514.00	ug/L	0.58	cv
753. 1/10	5417.00	ug/L 1083.4	0.03	cv
756. 1/10	4734.00	ug/L 947.1	0.07	cv
CAL BLK	-0.46	ug/L	-269.6	cv

window edge

500 PPB	514.75	ug/L	0.07	cv	
757. 1/10	15170.00	ug/L → 3034 ug/Kg	.46	cv	
757.S 1/10	14850.00	ug/L	0.10	cv	N/A
500 PPM ICS	291700.0	ug/L	0.01	cv	
CAL BLK	6.98	ug/L	27.04	cv	
500 PPB	551.90	ug/L	0.46	cv	

Cr_VHG

blank	18.95	intensity	164.83	cv	
standard	4944.00	intensity	2.21	cv	
standard	4976.00	intensity	0.34	cv	
500 PPB	537.85	ug/L	0.51	cv	
ICAP-19	931.85	ug/L	0.54	cv	
500 PPM ICS	904.55	ug/L	0.36	cv	
10000 PPB	10415.00	ug/L	1.21	cv	
CAL BLK	-5.92	ug/L	-100.8	cv	window edge
JOE#4835 B-48	-2.92	ug/L <10.0	-434.8	cv	
752.0401	60.36	ug/L → 11.7 ug/Kg	3.66	cv	
753.0401	51.95	ug/L → 10.4	0.65	cv	
754.0401	33.32	ug/L → 6.53	11.07	cv	
754.0401 R	34.09	ug/L → 6.68	18.38	cv	
755.0401	29.19	ug/L → 5.84	25.76	cv	
756.0101	67.13	ug/L → 12.8	10.53	cv	
757.0401	419.25	ug/L → 83.9	1.89	cv	
757.0401 S	627.65	ug/L - 104% rec	0.11	cv	
~~758.0401~~	~~[illegible]~~	~~ug/L~~	~~[illegible]~~	~~cv~~	
758.0401	57.19	ug/L → 11.2	0.93	cv	
500 PPM ICS	953.05	ug/L	1.73	cv	
CAL BLK	0.01	ug/L	105640	cv	
500 PPB	523.05	ug/L	1.17	cv	

$$\frac{126 - 83.9}{40} = 105\%$$

V_VHG

blank	-19.69	intensity	-175.8	cv	
standard	13890.00	intensity	0.70	cv	
standard	13870.00	intensity	0.10	cv	
500 PPB	529.55	ug/L	0.01	cv	
ICAP-19	932.00	ug/L	0.24	cv	
500 PPM ICS	951.05	ug/L	0.91	cv	
10000 PPB	10570.00	ug/L	2.00	cv	
CAL BLK	5.71	ug/L	67.47	cv	
JOB#4835 B-48	4.01	ug/L <50.0	106.40	cv	
752.0401	93.99	ug/L → 18.3 ug/Kg	4.57	cv	
753.0401	109.85	ug/L → 22.0	8.70	cv	
754.0401	45.03	ug/L <10.0	18.85	cv	
754.0401 R	61.79	ug/L → 12.1	6.08	cv	
755.0401	73.89	ug/L → 14.8	4.89	cv	
756.0101	112.20	ug/L → 24.4	4.30	cv	
757.0401	2022.00	ug/L → 404	0.51	cv	
757.0401 S	4116.50	ug/L - Dil Matrix	.15	cv	
~~758.0401~~	~~[illegible]~~	~~ug/L <10.0~~	~~[illegible]~~	~~cv~~	
758.0401	75.64	ug/L → 14.8	0.44	cv	
500 PPM ICS	989.25	ug/L	0.87	cv	
CAL BLK	3.88	ug/L	19.89	cv	window edge
500 PPB	526.05	ug/L	1.27	cv	

$$\frac{823 - 404}{100} = 419\%$$

Be_VHG

blank	1.64	intensity	133.31	cv	window edge
standard	4332.00	intensity	0.04	cv	
standard	4338.00	intensity	0.10	cv	

500 PPB	523.10	ug/L		0.49	cv	
ICAP-19	887.70	ug/L		0.14	cv	
500 PPM ICS	912.25	ug/L		0.09	cv	
10000 PPB	10190.00	ug/L		1.68	cv	
CAL BLK	0.25	ug/L		156.01	cv	window edge
JOB#4835 B-49	-1.32	ug/L	<5.00	-83.64	cv	
752.0401	1.78	ug/L	<1.00mg/Kg	4.06	cv	
753.0401	3.26	ug/L		35.62	cv	
754.0401	0.83	ug/L		18.13	cv	
754.0401 R	0.80	ug/L		60.45	cv	
755.0401	0.91	ug/L		19.43	cv	
756.0101	1.75	ug/L		6.19	cv	
757.0401	1.73	ug/L		24.85	cv	
757.0401 S	51.63	ug/L	108% rec	3.51	cv	
~~758.0401~~	~~-0.38~~	~~ug/L~~	~~<1.00~~	~~3.22~~	~~cv~~	
758.0401	0.41	ug/L		172.51	cv	
500 PPM ICS	950.05	ug/L		1.14	cv	
CAL BLK	-0.07	ug/L		-162.2	cv	
500 PPB	489.40	ug/L		0.41	cv	

$\frac{10.3}{10} = 103\%$

Cu_VHG

blank	116.19	intensity		37.63	cv	
standard	12685.00	intensity		0.20	cv	
standard	12770.00	intensity		0.16	cv	
500 PPB	521.90	ug/L		1.24	cv	
ICAP-19	916.80	ug/L		0.14	cv	
500 PPM ICS	919.60	ug/L		1.61	cv	
10000 PPB	10200.00	ug/L		0.25	cv	
CAL BLK	2.69	ug/L		135.36	cv	
JOB#4835 B-48	-4.91	ug/L	<25.0	-217.0	cv	
752.0401	29.29	ug/L	5.86mg/Kg	3.81	cv	
753.0401	128.85	ug/L	25.8	5.09	cv	
754.0401	70.29	ug/L	13.8	7.08	cv	
754.0401 R	87.72	ug/L	17.2	2.72	cv	
755.0401	98.58	ug/L	19.7	6.22	cv	
756.0101	65.94	ug/L	13.1	8.23	cv	
757.0401	2298.00	ug/L	460	0.13	cv	
757.0401 S	6946.50	ug/L	matrix	0.07	cv	
~~758.0401~~	~~[illegible]~~	~~ug/L~~		~~0.02~~	~~cv~~	
758.0401	313.40	ug/L	61.5	0.55	cv	
500 PPM ICS	948.80	ug/L		0.70	cv	
CAL BLK	3.89	ug/L		9.26	cv	
500 PPB	542.00	ug/L		1.26	cv	

$\frac{1389-460}{50} = 1858$

Ag_VHG

blank	111.05	intensity		10.24	cv	
standard	10220.00	intensity		0.25	cv	
standard	10660.00	intensity		0.55	cv	
500 PPB	510.60	ug/L		0.38	cv	
EPA 283#2 1/50	113.75	ug/L		2.72	cv	
500 PPM ICS	1031.50	ug/L		0.76	cv	
CAL BLK	-14.79	ug/L		-66.11	cv	window edge
JOB#4835 B-48	-12.79	ug/L	<10.0	-48.05	cv	window edge
752.0401	-13.65	ug/L	<2.00mg/Kg	2.96	cv	
753.0401	-2.73	ug/L		-356.8	cv	window edge
754.0401	-0.21	ug/L		-312.2	cv	
754.0401 R	-6.64	ug/L		-172.8	cv	
755.0401	-9.83	ug/L		-26.37	cv	
756.0101	-2.78	ug/L		-22.94	cv	

757.0401	-9.67	ug/L <2.00 mg/Kg	17.1	cv	window edge
757.0401 S	37.37	ug/L - 75% rec	4.64	cv	$\frac{7.47}{10.0} = 75\%$
~~758.0401~~	~~2.13~~	~~ug/L <200~~	~~[illegible]~~	~~cv~~	
758.0401	-10.16	ug/L	37.02	cv	window edge
500 PPM ICS	1071.00	ug/L	1.05	cv	
CAL BLK	-9.56	ug/L	-94.50	cv	window edge
500 PPB	540.85	ug/L	2.70	cv	

AI_VHG

blank	679.65	intensity	83.90	cv	
standard	19940.00	intensity	1.57	cv	
standard	18980.00	intensity	0.74	cv	
500 PPB	514.30	ug/L	1.90	cv	
ICAP-7	991.85	ug/L	5.02	cv	
500 PPM ICS	49490.00	ug/L	0.06	cv	
10000 PPB	11095.00	ug/L	1.24	cv	
CAL BLK	-18.46	ug/L	-130.9	cv	window edge
JOB#4835 B-48	-9.61	ug/L <200	-494.3	cv	window edge
752.0401	~~31360.00~~	ug/L	0.49	cv	
753.0401	~~41750.00~~	ug/L	0.43	cv	
754.0401	~~12740.00~~	ug/L	2.82	cv	
754.0401 R	~~21245.00~~	ug/L	1.00	cv	
755.0401	~~31430.00~~	ug/L	0.47	cv	
756.0101	~~33290.00~~	ug/L	0.26	cv	
757.0401	~~42780.00~~	ug/L	1.26	cv	
757.0401 S	~~53375.00~~	ug/L	0.03	cv	
~~758.0401~~	~~755.00~~	~~ug/L~~	~~[illegible]~~	~~cv~~	
758.0401	4752.50	~~ug/L~~ 932 mg/Kg	[illegible].47	cv	
500 PPM ICS	49085.00	ug/L	0.22	cv	
CAL BLK	-99.62	ug/L	-30.75	cv	window edge
500 PPB	537.25	ug/L	2.60	cv	
752. 1/10	3563.50	ug/L	0.14	cv	
752. 0.1/10	479.80	~~ug/L~~ 9317	7.98	cv	
753. 1/10	4160.00	ug/L	1.03	cv	
753. 0.1/10	561.85	~~ug/L~~ 11237	5.07	cv	
754. 1/10	1848.50	ug/L	0.39	cv	
754. 0.1/10	336.05	~~ug/L~~ 6589	10.14	cv	
754.R 0.1/10	287.10	~~ug/L~~ 5629	4.19	cv	
755. 0.1/10	328.00	~~ug/L~~ 6560	5.68	cv	
756. 1/10	2685.00	ug/L	0.64	cv	
756. 0.1/10	385.90	~~ug/L~~ 7350	2.37	cv	
CAL BLK	-23.37	ug/L	-16.14	cv	
~~500 PPB~~	~~558.20~~	~~ug/L~~	~~0.22~~	~~cv~~	
500 PPB	540.15	ug/L	3.76	cv	
757. 1/10	3713.50	ug/L	1.78	cv	
757. 0.1/10	494.60	~~ug/L~~ 9892	1.63	cv	
757.S 1/10	5424.00	ug/L	0.66	cv	
757.S 0.1/10	605.60	ug/L - N.A.	4.54	cv	
500 PPM ICS	48355.00	ug/L	0.01	cv	
CAL BLK	-20.58	ug/L	-29.61	cv	
~~500 PPB~~	~~544.10~~	~~ug/L~~	~~0.53~~	~~cv~~	
500 PPB	538.75	ug/L	5.58	cv	

T VHG

blank	4.83	intensity	33.28	cv
standard	3463.00	intensity	0.28	cv
standard	3490.00	intensity	0.64	cv
500 PPB	521.20	ug/L	0.09	cv
ICAP-7	984.25	ug/L	1.10	cv

105A

500 PPM ICS	951.80	ug/L		0.03	cv
10000 PPB	10275.00	ug/L		1.32	cv
CAL BLK	1.28	ug/L		22.60	cv
JOB#4835 B-48	0.60	ug/L	<200	5.96	cv
752.0401	780.00	ug/L	151 mg/Kg	0.13	cv
753.0401	1655.50	ug/L	331	0.29	cv
754.0401	354.70	ug/L	89.2	4.47	cv
754.0401 R	514.25	ug/L	101	0.03	cv
755.0401	559.85	ug/L	112	0.28	cv
756.0101	921.90	ug/L	184	0.33	cv
757.0401	[illegible]	ug/L		0.56	cv
757.0401 S	~~[illegible]~~	ug/L	N.A.	0.46	cv
~~758.0401~~	~~[illegible]~~	~~ug/L~~		~~[illegible]~~	~~cv~~
758.0401	3435.50	ug/L	680	1.46	cv
500 PPM ICS	1015.50	ug/L		0.07	cv
CAL BLK	0.22	ug/L		336.41	cv
~~500 PPB~~	~~[illegible]~~	~~ug/L~~		~~[illegible]~~	~~cv~~
500 PPB	522.00	ug/L		0.19	cv
757. 1/10	1316.00	ug/L	2632 ⊥	0.78	cv
757.S 1/10	2664.00	ug/L	N.A.	0.35	cv
500 PPM ICS	974.60	ug/L		1.00	cv
CAL BLK	-0.96	ug/L		-153.3	cv
~~500 PPB~~	~~[illegible]~~	~~ug/L~~		~~[illegible]~~	~~cv~~
~~500 PPB~~	~~[illegible]~~	~~ug/L~~		~~[illegible]~~	~~cv~~
500 PPB	498.60	ug/L		0.42	cv

window edge

Job # 4346

Ag, Al, Ba, Be, Cd, Ca, Cr, Cu, Fe, Mn, Ni, Sb, V, Zn

Result Name 8702090937

blank	JOB#4767 B-29	400 0401	503 PPB
standard	B-24	JOB#4919 B-39	500 PPB
standard	394 0401	643 0401	394. 1/10
standard	395 0401	643 0401 R	395. 1/10
standard	395 0101 S	643 0401 S	395.S 1/10
500 PPB	396 0401	CAL BLK	396. 1/10
500 PPB	397 0401	500 PPB	398. 1/10
ICAP-19	399 0401	500 PPB	399. 1/10
ICAP-19	50 PPM	JOB#4846 B-52	399. 0.1/10
ICAP-7	CAL BLK	799 0401	399.R 1/10
PPA 399#3 1/50	500 PPB	800 0401	400. 1/10
500 PPM ICS	500 PPB	801 0401	643. 1/10
10000 PPB	399 0401	500 PPM ICS	CAL BLK
CAL BLK	399 0401 R	CAL BLK	500 PPB

Command?

[illegible]

16 39

Result Name 8702090937

643 R 1/10

643 T 1/10

759 1/10

800 1/10

500 PPM ICS

CAL BLK

500 PPB

Command?

W_VHG

blank	13.00	intensity	1209.0	cv	window edge
standard	17945.00	intensity	0.90	cv	
500 PPB	530.95	ug/L	4.01	cv	
ICAP-19	980.60	ug/L	2.31	cv	
500 PPM ICS	933.25	ug/L	1.02	cv	
10000 PPB	10605.00	ug/L	3.14	cv	
CAL BLK	1.17	ug/L	106.08	cv	
CAL BLK	5.32	ug/L	258.48	cv	
500 PPB	533.40	ug/L	0.27	cv	
CAL BLK	2.54	ug/L	51.00	cv	
500 PPB	542.30	ug/L	2.11	cv	
JOB#4846 B-52	5.01	ug/L <50.0	67.87	cv	
799 0401	123.10	~~ug/L~~ 23.0 mg/kg	1.76	cv	
800 0401	24.14	~~ug/L~~ 16.4	14.93	cv	
801 0401	12.70	ug/L <10.0	6.70	cv	
500 PPM ICS	944.05	ug/L	2.70	cv	
CAL BLK	1.02	ug/L	1304.3	cv	window edge
500 PPB	535.60	ug/L	0.71	cv	

Cb_VHG

blank	42.12	intensity	59.54	cv	window edge
standard	1049.00	intensity	6.07	cv	
standard	1044.50	intensity	5.75	cv	
500 PPB	507.10	ug/L	3.35	cv	
ICAP-19	1190.50	ug/L	1.37	cv	
ICAP-19	999.10	ug/L	8.62	cv	
500 PPM ICS	819.00	ug/L	3.28	cv	
CAL BLK	37.25	ug/L	118.70	cv	
CAL BLK	21.87	ug/L	28.32	cv	
500 PPB	535.35	ug/L	11.27	cv	
CAL BLK	60.71	ug/L	54.16	cv	
500 PPB	497.65	ug/L	5.98	cv	
JOB#4846 B-52	46.67	ug/L <60.0	15.53	cv	
799 0401	-31.13	ug/L <62.0 mg/kg	86.79	cv	window edge
800 0401	27.07	ug/L	67.86	cv	
801 0401	14.64	ug/L	186.91	cv	
500 PPM ICS	1031.80	ug/L	4.42	cv	
CAL BLK	34.65	ug/L	106.68	cv	
500 PPB	476.65	ug/L	19.27	cv	

Zn_VHG

blank	41.23	intensity	68.04	cv	
standard	10765.00	intensity	2.57	cv	
standard	10675.00	intensity	1.10	cv	
500 PPB	548.25	ug/L	1.61	cv	
ICAP-19	1028.00	ug/L	1.94	cv	
500 PPM ICS	964.35	ug/L	1.86	cv	
10000 PPB	10555.00	ug/L	2.99	cv	
CAL BLK	-0.42	ug/L	-269.8	cv	
CAL BLK	-0.85	ug/L	-12.55	cv	window edge
500 PPB	549.45	ug/L	0.16	cv	
CAL BLK	-0.89	ug/L	-67.00	cv	
500 PPB	541.30	ug/L	0.62	cv	
JOB#4846 B-52	-2.43	ug/L <20.0	-61.14	cv	
799 0401	1242.00	~~ug/L~~ 23 mg/kg	1.32	cv	
800 0401	812.30	~~ug/L~~ 15.9	0.40	cv	
801 0401	57.04	~~ug/L~~ 10.8	4.52	cv	

500 PPM ICS	[illegible]	ug/L	1.44	cv	
CAL BLK	-0.58	ug/L	-82.74	cv	
500 PPB	545.52	ug/L	0.45	cv	

Cr_VHG

blank	-0.11	intensity	-1118	cv	window edge
standard	6555.50	intensity	0.45	cv	
500 PPB	533.95	ug/L	3.11	cv	
ICAP-19	919.35	ug/L	1.44	cv	
500 PPM ICS	829.15	ug/L	0.35	cv	
10000 PPB	10146.50	ug/L	2.52	cv	
CAL BLK	1.36	ug/L	88.43	cv	
CAL BLK	0.88	ug/L	230.48	cv	
500 PPB	515.60	ug/L	0.40	cv	
CAL BLK	1.03	ug/L	241.09	cv	
500 PPB	532.40	ug/L	0.05	cv	
JOB#4846 B-52	[illegible].49	ug/L <5.00	18.78	cv	window edge
799 0401	[illegible].85	~~ug/L~~ 2.42mg/kg	4.50	cv	
800 0401	[illegible].33	~~ug/L~~ 1.22	12.46	cv	
801 0401	4.30	ug/L <1.00	5.91	cv	
500 PPM ICS	887.95	ug/L	0.59	cv	
CAL BLK	1.31	ug/L	179.22	cv	window edge
500 PPB	542.75	ug/L	0.20	cv	

Co_VHG

blank	-0.01	intensity	-492.7	cv	window edge
standard	2463.00	intensity	0.52	cv	
500 PPB	529.60	ug/L	2.46	cv	
ICAP-19	981.15	ug/L	1.25	cv	
500 PPM ICS	873.90	ug/L	1.46	cv	
10000 PPB	10107.00	ug/L	1.61	cv	
CAL BLK	7.48	ug/L	66.76	cv	window edge
CAL BLK	5.42	ug/L	69.81	cv	
500 PPB	536.45	ug/L	0.28	cv	
CAL BLK	0.72	ug/L	395.83	cv	
500 PPB	530.20	ug/L	2.62	cv	
JOB#4846 B-52	6.68	ug/L <30.0	139.92	cv	
799 0401	51.23	~~ug/L~~ 9.67mg/kg	2.72	cv	
800 0401	88.66	~~ug/L~~ 17.2	6.60	cv	
801 0401	10.35	ug/L <10.0	19.05	cv	
500 PPM ICS	875.55	ug/L	0.19	cv	
CAL BLK	8.09	ug/L	53.13	cv	
500 PPB	531.70	ug/L	2.67	cv	

Ni_VHG

blank	45.80	intensity	87.02	cv	
standard	6291.50	intensity	0.56	cv	
500 PPB	513.00	ug/L	1.46	cv	
ICAP-19	982.15	ug/L	0.07	cv	
500 PPM ICS	837.50	ug/L	0.46	cv	
10000 PPB	10094.00	ug/L	1.51	cv	
CAL BLK	1.36	ug/L	36.75	cv	
CAL BLK	8.56	ug/L	61.22	cv	
500 PPB	524.05	ug/L	0.95	cv	
CAL BLK	1.38	ug/L	268.10	cv	
500 PPB	519.20	ug/L	1.00	cv	
JOB#4846 B-52	-7.38	ug/L <40.0	-94.52	cv	window edge
799 0401	103.28	~~ug/L~~ 20.4mg/kg	[illegible].52	cv	
800 0401	8793.50	~~ug/L~~ 1403	0.56	cv	

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
500 PPM ICS	[illegible]	ug/L	[illegible]	cv
CAL BLK	1.35	ug/L	41.95	cv
500 PPB	503.90	ug/L	1.37	cv

Mn_VHG

Blank	2.55	intensity	397.35	cv
standard	3027.00	intensity	0.15	cv
500 PPB	536.35	ug/L	0.75	cv
ICAP-19	972.25	ug/L	0.91	cv
500 PPM ICS	092.45	ug/L	0.06	cv
10000 PPB	10225.00	ug/L	1.61	cv
CAL BLK	0.67	ug/L	186.58	cv
CAL BLK	1.77	ug/L	35.49	cv
500 PPB	533.40	ug/L	0.13	cv
CAL BLK	0.35	ug/L	248.50	cv
500 PPB	538.90	ug/L	0.28	cv
JOB#4846 B-52	-0.38	ug/L <15.0	-131.5	cv
799 0401	1523.00	~~ug/L~~ 287 mg/kg	1.65	cv
800 0401	868.80	~~ug/L~~ 91.0	0.84	cv
801 0401	555.65	~~ug/L~~ 30.5	0.39	cv
500 PPM ICS	905.50	ug/L	0.69	cv
CAL BLK	1.08	ug/L	65.68	cv
500 PPB	538.50	ug/L	0.05	cv

Fe_VHG

Blank	17.17	intensity	354.86	cv
standard	4412.00	intensity	0.58	cv
500 PPB	523.10	ug/L	2.22	cv
ICAP-19	987.70	ug/L	0.37	cv
500 PPM ICS	237000.0	ug/L	0.05	cv
10000 PPB	10127.00	ug/L	1.86	cv
CAL BLK	0.86	ug/L	450.96	cv
50 PPM	50525.00	ug/L	1.17	cv
CAL BLK	7.30	ug/L	92.80	cv
500 PPB	532.15	ug/L	0.94	cv
CAL BLK	2.34	ug/L	224.18	cv
500 PPB	535.65	ug/L	1.23	cv
JOB#4846 B-52	12.68	ug/L <160	85.26	cv
799 0401	~~24945.00~~	ug/L	0.01	cv
800 0401	97775.00	~~ug/L~~ 9014 mg/kg	0.62	cv
801 0401	15380.00	~~ug/L~~ 3025	0.37	cv
500 PPM ICS	236850.0	ug/L	0.09	cv
CAL BLK	13.32	ug/L	90.60	cv
500 PPB	534.10	ug/L	0.43	cv
CAL BLK	1.41	ug/L	488.64	cv
500 PPB	535.35	ug/L	0.17	cv
799 1710	4799.00	~~ug/L~~ 13531	0.89	cv
500 PPM ICS	236700.0	ug/L	0.05	cv
CAL BLK	24.58	ug/L	29.26	cv
500 PPB	539.15	ug/L	1.12	cv

Cr_VHG

Blank	134.42	intensity	120.79	cv
standard	4177.00	intensity	0.74	cv
500 PPB	519.90	ug/L	0.81	cv
ICAP-19	1000.70	ug/L	0.21	cv
500 PPM ICS	905.20	ug/L	1.90	cv
10000 PPB	10460.00	ug/L	1.05	cv

[illegible]	[illegible]	ug/L	[illegible]	[illegible]	cv
[illegible] BLK	[illegible]	ug/L	-17.72	cv	
500 PPB	534.50	ug/L	0.66	cv	
CAL BLK	-20.79	ug/L	-70.93	cv	
500 PPB	536.45	ug/L	0.54	cv	
JOB#[illegible] B-32	-12.55	ug/L <10.0	-18.02	cv	
799 0401	40.55	~~ug/L~~ 11.4mg/kg	12.94	cv	
800 0401	149.15	~~ug/L~~ 28.2	2.28	cv	
801 0401	-4.79	ug/L <2.00	-60.64	cv	
500 PPM ICS	[illegible]	ug/L	0.20	cv	
CAL BLK	-11.93	ug/L	-28.01	cv	
500 PPB	538.30	ug/L	0.95	cv	

Ba_VHG

blank	1.84	intensity	4.06	cv	window edge
standard	5514.50	intensity	0.24	cv	
500 PPB	527.35	ug/L	0.48	cv	
ICAP-19	935.70	ug/L	0.62	cv	
500 PPM ICS	911.25	ug/L	0.50	cv	
10000 PPB	10115.00	ug/L	1.47	cv	
CAL BLK	0.22	ug/L	420.54	cv	
CAL BLK	0.69	ug/L	50.01	cv	
500 PPB	533.35	ug/L	0.44	cv	
CAL BLK	-0.25	ug/L	-85.10	cv	window edge
500 PPB	533.95	ug/L	0.27	cv	
JOB#4846 B-32	-0.14	ug/L <5.00	-57.26	cv	
799 0401	2.68	~~ug/L~~ <1.00mg/kg	2.18	cv	
800 0401	0.23	ug/L	81.00	cv	
801 0401	0.37	ug/L	31.80	cv	
500 PPM ICS	926.50	ug/L	0.95	cv	
CAL BLK	0.26	ug/L	83.92	cv	
500 PPB	535.55	ug/L	0.73	cv	

Cu_VHG

blank	89.40	intensity	75.58	cv	window edge
standard	14565.00	intensity	0.03	cv	
500 PPB	526.20	ug/L	1.11	cv	
ICAP-19	975.55	ug/L	1.07	cv	
500 PPM ICS	914.55	ug/L	1.20	cv	
10000 PPB	10245.00	ug/L	0.99	cv	
CAL BLK	-0.36	ug/L	-1694.	cv	
CAL BLK	-0.53	ug/L	-2658.	cv	window edge
500 PPB	534.40	ug/L	0.48	cv	
CAL BLK	3.57	ug/L	8.48	cv	
500 PPB	531.55	ug/L	0.30	cv	
JOB#484[illegible] B-32	-1.76	ug/L <25.0	-213.5	cv	window edge
799 0401	1913.50	~~ug/L~~ 36mg/kg	0.55	cv	
800 0401	537.10	~~ug/L~~ 124	0.35	cv	
801 0401	17.69	ug/L <5.00	19.30	cv	
500 PPM ICS	928.85	ug/L	1.42	cv	
CAL BLK	2.94	ug/L	57.16	cv	
500 PPB	529.95	ug/L	0.81	cv	

[illegible]_VHG

blank	247.55	intensity	0.27	cv	
standard	17300.00	intensity	0.42	cv	
500 PPB	531.70	ug/L	5.24	cv	
EPA 200#2 1/50	115.25	ug/L	3.54	cv	
500 PPM ICS	1078.00	ug/L	0.01	cv	

CAL BLK	-0.72	ug/L	-1183	cv	
CAL BLK	1.64	ug/L	-596.4	cv	window edge
500 PPB	549.80	ug/L	3.17	cv	
CAL BLK	1.10	ug/L	1119.7	cv	
500 PPB	539.45	ug/L	0.38	cv	
JOB#4846 B-52	-1.76	ug/L <100	-115.0	cv	
799.0401	0.88	ug/L <2.00mg/Kg	4.82	cv	
800.0401	-2.97	ug/L	-418.4	cv	window edge
801.0401	-3.48	ug/L	-1.23	cv	
500 PPM ICS	1102.50	ug/L	2.52	cv	
CAL BLK	-1.63	ug/L	-278.0	cv	window edge
500 PPB	552.15	ug/L	1.47	cv	

Al_VHG

blank	111.85	intensity	770.85	cv	window edge
standard	71495.00	intensity	1.67	cv	
standard	20790.00	intensity	1.44	cv	
500 PPB	505.85	ug/L	9.41	cv	
ICAP-7	956.80	ug/L	1.05	cv	
500 PPM ICS	38110.00	ug/L	0.60	cv	
10000 PPB	10085.00	ug/L	1.06	cv	
CAL BLK	19.95	ug/L	73.93	cv	
50 PPM	42160.00	ug/L	0.00	cv	
CAL BLK	32.65	ug/L	14.93	cv	
500 PPB	484.15	ug/L	4.76	cv	
CAL BLK	-25.62	ug/L	-159.6	cv	window edge
500 PPB	488.55	ug/L	0.51	cv	
JOB#4846 B-52	5.68	ug/L <200	941.32	cv	window edge
799.0401	~~11950.00~~	ug/L	0.18	cv	
800.0401	9657.00	~~ug/L~~ 1633mg/Kg	1.40	cv	
801.0401	4638.50	~~ug/L~~ 801	1.23	cv	
500 PPM ICS	38285.00	ug/L	0.36	cv	
CAL BLK	-37.45	ug/L	-140.6	cv	
500 PPB	528.30	ug/L	4.22	cv	
CAL BLK	16.38	ug/L	89.03	cv	window edge
500 PPB	529.30	ug/L	2.01	cv	
799.1/10	4503.50	~~ug/L~~ 875	1.18	cv	
500 PPM ICS	37890.00	ug/L	0.57	cv	
CAL BLK	63.81	ug/L	41.36	cv	
500 PPB	539.05	ug/L	2.50	cv	

Ba_VHG

blank	7.76	intensity	174.18	cv	window edge
standard	3957.00	intensity	0.23	cv	
500 PPB	527.05	ug/L	0.44	cv	
ICAP-7	967.85	ug/L	0.30	cv	
500 PPM ICS	940.15	ug/L	0.19	cv	
10000 PPB	10100.00	ug/L	0.45	cv	
CAL BLK	0.58	ug/L	62.45	cv	
CAL BLK	0.79	ug/L	74.54	cv	
500 PPB	540.30	ug/L	0.34	cv	
CAL BLK	-0.72	ug/L	-235.5	cv	window edge
500 PPB	542.40	ug/L	0.55	cv	
JOB#4846 B-52	-0.40	ug/L <200	-104.6	cv	
799.0401	1258.00	~~ug/L~~ 237mg/Kg	0.95	cv	
800.0401	~~[illegible]~~	~~ug/L~~	0.43	cv	
801.0401	188.25	ug/L <40.0	1.00	cv	
500 PPM ICS	975.70	ug/L	0.13	cv	
CAL BLK	-0.82	ug/L	-58.29	cv	

500 PPB	544.13	ug/L	0.22	cv	
CAL BLK	-1.05	ug/L	-106.8	cv	window edge
500 PPB	545.15	ug/L	0.11	cv	
600. 1/10	1427.00	~~ug/L~~ 2778 mg/kg	0.50	cv	
500 PPM ICS	945.15	ug/L	1.24	cv	
CAL BLK	-0.45	ug/L	-371.3	cv	window edge
500 PPB	546.30	ug/L	0.57	cv	

Job # 4863

Sb, Cd, Co, Ni, Mn, Cr, V, Be, Cu, Ag, Ba

87/02/03

03:56

Result Name: 8702230941

blank	500 PPM ICS	862.0401	500 PPB
standard	10000 PPB	863.0401	JOB#4896 B-86
standard	CAL BLK	864.0401	999.0101
standard	10000 PPB	865.0401	999.0101 R
standard	JOB#4863 B-66	866.0401	JOB#4900 E-88
standard	859.0401	JOB#4872 B-81	1014.0701
500 PPB	860.0401	900.0401	1018.1401
500 PPB	860.0401 R	900.0401 R	1018.1401 R
500 PPB	861.0401	900.0401 S	1018.1401 S
ICAP-19	861.0401 S	901.0401	1019.1401
ICAP-7	CAL BLK	500 PPM ICS	1020.1401
EPA 283#2 1/50	500 PPB	CAL BLK	1021.1401
EPA 283#2 1/50	500 PPB	500 PPB	CAL BLK
10000 PPB	500 PPB	500 PPB	500 PPB

Command?

- Zn contamination found in prep. blk. Will be redigested & run.
- Fe & Al values above calibration range Will be diluted & rerun.

Result Name: 8702230941

500 PPB

JOB#4903 D-100

1027.0101

1028.0101

1073.0101

1074.0101

1075.0101

1075 0101 R

1075.0101 S

CAL BLK

500 PPB

Command?

SL_VHG

blank	100.93	intensity	24.35	cv	
standard	1337.50	intensity	5.23	cv	
standard	1525.00	intensity	6.01	cv	
standard	1563.00	intensity	1.21	cv	
500 PPB	505.55	ug/L	8.88	cv	
ICAP-19	993.00	ug/L	3.14	cv	
500 PPM ICS	629.40	ug/L	3.20	cv	
CAL BLK	-30.46	ug/L	-99.32	cv	
JOB#4863 B-66	61.17	ug/L <60.0	33.58	cv	
859.0401	-25.97	ug/L <62.0 mg/kg	22.57	cv	
860.0401	-28.67	ug/L	-58.54	cv	
860.0401 R	13.82	ug/L	32.31	cv	
861.0401	-95.30	ug/L	-76.42	cv	window edge
861.0401 S	130.24	ug/L -26% rec	56.96	cv	$\frac{25.8}{100}$ =
CAL BLK	14.41	ug/L	66.89	cv	
500 PPB	459.05	ug/L	6.72	cv	
862.0401	-38.45	ug/L <62.0 mg/kg	67.68	cv	window edge
863.0401	19.64	ug/L	62.37	cv	
864.0401	-15.07	ug/L	-140.8	cv	
865.0401	3.15	ug/L	119.48	cv	
866.0401	19.81	ug/L	156.11	cv	
500 PPM ICS	831.40	ug/L	13.81	cv	
CAL BLK	-37.18	ug/L	-173.2	cv	window edge
~~500 PPB~~	~~420.93~~	~~ug/L~~	~~24.56~~	~~cv~~	
500 PPB	511.30	ug/L	10.15	cv	

Zn_VHG

blank	40.98	intensity	17.66	cv
standard	13300.00	intensity	1.82	cv
standard	13500.00	intensity	0.73	cv
500 PPB	539.05	ug/L	1.78	cv
ICAP-19	955.35	ug/L	1.72	cv
500 PPM ICS	979.95	ug/L	1.87	cv
CAL BLK	1.01	ug/L	184.66	cv
10000 PPB	10550.00	ug/L	1.09	cv
JOB#4863 B-66	30.12	ug/L	2.03	cv
500 PPB	535.75	ug/L	0.94	cv
500 PPM ICS	1011.30	ug/L	1.76	cv
CAL BLK	-1.34	ug/L	-50.34	cv
500 PPB	521.05	ug/L	0.20	cv

Cd_VHG

blank	-7.85	intensity	-22.25	cv	
standard	11975.00	intensity	0.90	cv	
500 PPB	553.60	ug/L	3.20	cv	
500 PPB	528.40	ug/L	0.24	cv	
ICAP-19	885.30	ug/L	1.18	cv	
500 PPM ICS	945.35	ug/L	1.97	cv	
CAL BLK	0.96	ug/L	171.88	cv	
10000 PPB	10475.00	ug/L	0.04	cv	
JOB#4863 B-66	1.34	ug/L <5.00	94.51	cv	
859.0401	7.66	~~ug/L~~ 1.54 mg/kg	21.52	cv	
860.0401	7.82	~~ug/L~~ 1.55	40.37	cv	
860.0401 R	8.93	~~ug/L~~ 1.78	21.66	cv	
861.0401	6.13	~~ug/L~~ 1.20	14.52	cv	$\frac{10.69 - 1.20}{10.0}$ =
861.0401 S	53.99	ug/L - 98% rec	5.78	cv	
CAL BLK	0.32	ug/L	470.61	cv	

500 PPB	[illegible]	ug/L		1.55	cv
862 0401	2.41	ug/L	<1.00mg/Kg	52.98	cv
863 0401	0.57	ug/L		91.32	cv
864 0401	44.9[illegible]	~~ug/L~~	8.65	4.31	cv
865 0401	1.23	ug/L	<1.00	15.25	cv
866 0401	0.68	ug/L		327.11	cv
500 PPM ICS	956.05	ug/L		1.54	cv
CAL BLK	0.75	ug/L		20.17	cv
500 PPB	521.90	ug/L		0.40	cv

Co_VHG

blank	16.11	intensity		247.13	cv
standard	3951.50	intensity		1.30	cv
standard	7938.50	intensity		0.32	cv
500 PPB	525.35	ug/L		0.82	cv
ICAP-19	954.40	ug/L		0.67	cv
500 PPM ICS	904.05	ug/L		2.21	cv
CAL BLK	4.48	ug/L		48.31	cv
10000 PPB	10250.00	ug/L		0.84	cv
JOB#4863 B-66	10.24	ug/L	<50.0	19.72	cv
859.0401	69.33	~~ug/L~~	13.9mg/Kg	4.70	cv
860.0401	24.62	ug/L	<10.0	7.12	cv
860.0401 R	19.42	ug/L		1.89	cv
861.0401	20.48	ug/L		43.98	cv
861.0401 S	481.20	ug/L	-95%rec	0.17	cv
CAL BLK	2.64	ug/L		254.04	cv
500 PPB	517.05	ug/L		2.26	cv
862.0401	11.78	ug/L	<10.0mg/Kg	1.43	cv
863.0401	13.59	ug/L		42.80	cv
864.0401	121.85	~~ug/L~~	23.4	2.15	cv
865.0401	6.79	ug/L	<10.0	163.27	cv
866.0401	56.71	~~ug/L~~	10.6	13.76	cv
500 PPM ICS	884.70	ug/L		0.27	cv
CAL BLK	-0.03	ug/L		-15502	cv
500 PPB	505.60	ug/L		2.04	cv

$$\frac{95.3}{100} =$$

Ni_VHG

blank	26.95	intensity		731.73	cv	window edge
standard	10054.00	intensity		2.35	cv	
500 PPB	535.50	ug/L		1.93	cv	
ICAP-19	951.10	ug/L		0.44	cv	
500 PPM ICS	915.25	ug/L		0.44	cv	
CAL BLK	0.94	ug/L		476.90	cv	window edge
10000 PPB	10460.00	ug/L		0.84	cv	
JOB#4863 B-66	-3.04	ug/L	<40.0	-29.56	cv	
859.0401	164.65	~~ug/L~~	32.9mg/Kg	1.28	cv	
860.0401	58.13	~~ug/L~~	11.5	4.67	cv	
860.0401 R	62.16	~~ug/L~~	12.3	18.58	cv	
861.0401	136.40	~~ug/L~~	26.7	0.19	cv	
861.0401 S	695.90	ug/L	-111%rec	1.49	cv	
CAL BLK	-2.44	ug/L		-230.2	cv	
500 PPB	525.25	ug/L		0.50	cv	
862.0401	37.03	ug/L	<200mg/Kg	7.96	cv	
863.0401	43.67	~~ug/L~~		9.26	cv	
864.0401	725.95	~~ug/L~~		3.07	cv	
865.0401	23.08	ug/L	<8.00	17.82	cv	
866.0401	544.40	~~ug/L~~		0.83	cv	
500 PPM ICS	892.10	ug/L		1.44	cv	
CAL BLK	3.00	ug/L		242.81	cv	

$$\frac{138 - 26.7}{100}$$

500 PPB	535.20	ug/L	0.27	cv	

Na_VHG

blank	4.37	intensity	214.29	cv	window edge
standard	11510.00	intensity	0.88	cv	
standard	11495.00	intensity	0.05	cv	
500 PPB	537.25	ug/L	0.78	cv	
ICAP-19	955.15	ug/L	1.89	cv	
500 PPM ICS	939.05	ug/L	1.41	cv	
CAL BLK	0.38	ug/L	19.19	cv	
10000 PPB	10415.00	ug/L	0.50	cv	
JOB#4863 B-66	1.14	ug/L <15.0	57.06	cv	
859.0401	[illegible]	~~ug/L~~ 92.9 mg/kg	0.39	cv	
860.0401	[illegible]	~~ug/L~~ 308	0.71	cv	
860.0401 R	[illegible]	~~ug/L~~ 297	0.07	cv	
861.0401	[illegible]	~~ug/L~~ 91	0.18	cv	
861.0401 S	2462.50	ug/L -262%	0.62	cv	
CAL BLK	1.03	ug/L	17.27	cv	
500 PPB	522.60	ug/L	1.16	cv	
862.0401	[illegible]	~~ug/L~~ 99.4 mg/kg	1.84	cv	
863.0401	[illegible]	~~ug/L~~ 99.4	0.67	cv	
864.0401	[illegible]	~~ug/L~~ 163	0.00	cv	
865.0401	[illegible]	~~ug/L~~ 27.7	0.47	cv	
866.0401	[illegible]	~~ug/L~~ 50.8	0.76	cv	
500 PPM ICS	929.15	ug/L	0.30	cv	
CAL BLK	-0.36	ug/L	-213.5	cv	
500 PPB	522.35	ug/L	2.22	cv	

$\frac{460-191}{100} =$

Fe_VHG

blank	62.47	intensity	76.07	cv	
standard	6330.50	intensity	2.40	cv	
500 PPB	545.55	ug/L	0.94	cv	
ICAP-19	981.60	ug/L	2.51	cv	
500 PPM ICS	165000.0	ug/L	0.08	cv	
CAL BLK	-7.11	ug/L	-34.87	cv	
10000 PPB	10430.00	ug/L	0.98	cv	
JOB#4863 B-66	54.51	ug/L	4.03	cv	
859.0401	77560.00	ug/L	0.49	cv	
860.0401	58035.00	ug/L	1.28	cv	
860.0401 R	63090.00	ug/L	0.59	cv	
861.0401	58395.00	ug/L	0.73	cv	
861.0401 S	159700.0	ug/L	0.07	cv	
CAL BLK	-2.21	ug/L	-166.1	cv	
500 PPB	530.35	ug/L	2.12	cv	
862.0401	28625.00	ug/L	1.84	cv	
863.0401	28690.00	ug/L	0.55	cv	
864.0401	98075.00	ug/L	0.81	cv	
865.0401	18670.00	ug/L	0.63	cv	
866.0401	19680.00	ug/L	0.86	cv	
500 PPM ICS	165300.0	ug/L	0.06	cv	
CAL BLK	-0.01	ug/L	-39293	cv	
500 PPB	525.40	ug/L	3.24	cv	

Refer to dilutions

C VHG

blank	54.41	intensity	1.11	cv
standard	9264.50	intensity	0.16	cv
standard	9252.50	intensity	0.65	cv
500 PPB	536.30	ug/L	0.11	cv
ICAP-19	962.15	ug/L	1.68	cv

[illegible]	[illegible]	ug/L	[illegible]	2.5[illegible]	cv	
CAL BLK	-5.41	ug/L		-122.9	cv	window edge
10000 PPB	10445.00	ug/L		0.90	cv	
JOB#4863 B-66	-10.93	ug/L	<10.0	-9.70	cv	window edge
859 0401	2374.00	~~ug/L~~	475 mg/kg	0.89	cv	
860 0401	47.12	~~ug/L~~	9.34	13.24	cv	
860 0401 R	51.55	~~ug/L~~	10.2	3.01	cv	
861 0401	84.33	~~ug/L~~	18.5	4.12	cv	$\frac{230 - 18.5}{40} = 528\%$
861 0401 S	1159.00	ug/L		0.83	cv	
CAL BLK	-4.20	ug/L		-73.49	cv	window edge
500 PPB	524.10	ug/L		1.19	cv	
862 0401	19.41	~~ug/L~~	3.88 mg/kg	4.81	cv	
863 0401	[illegible].02	~~ug/L~~	363	15.11	cv	
864 0401	335.25	~~ug/L~~	64.6	1.17	cv	
865 0401	[illegible].12	~~ug/L~~	3.45	11.40	cv	
866 0401	[illegible].00	~~ug/L~~	4.69	4.09	cv	
500 PPM ICS	947.30	ug/L		0.62	cv	
CAL BLK	-3.41	ug/L		-193.4	cv	window edge
500 PPB	519.20	ug/L		0.72	cv	

V_VHG

blank	113.89	intensity		70.69	cv
standard	23645.00	intensity		1.77	cv
500 PPB	526.40	ug/L		0.85	cv
ICAP-19	954.10	ug/L		1.59	cv
500 PPM ICS	980.90	ug/L		1.08	cv
CAL BLK	-5.14	ug/L		-110.1	cv
10000 PPB	10740.00	ug/L		0.78	cv
JOB#4863 B-66	1.48	ug/L	<50.0	118.53	cv
859 0401	223.86	~~ug/L~~	44.8 mg/kg	1.90	cv
860 0401	83.34	~~ug/L~~	16.5	0.56	cv
860.0401 R	86.58	~~ug/L~~	17.1	1.57	cv
861.0401	68.78	~~ug/L~~	13.5	3.62	cv
861 0401 S	552.65	ug/L	-96% rec	2.03	cv
CAL BLK	-4.04	ug/L		-80.58	cv
500 PPB	522.55	ug/L		0.26	cv
862.0401	39.36	ug/L	<10.0 mg/kg	4.72	cv
863.0401	38.02	ug/L		11.33	cv
864.0401	140.25	~~ug/L~~	27.0	1.44	cv
865.0401	41.94	ug/L	<10.0	13.08	cv
866.0401	20.93	ug/L		40.95	cv
500 PPM ICS	997.25	ug/L		1.07	cv
CAL BLK	-2.76	ug/L		-121.5	cv
500 PPB	517.60	ug/L		0.51	cv

$\frac{109 - 13.5}{100} =$

Be_VHG

blank	3.59	intensity		23.54	cv
standard	6332.50	intensity		0.28	cv
500 PPB	533.00	ug/L		0.36	cv
ICAP-19	931.00	ug/L		0.55	cv
500 PPM ICS	989.90	ug/L		1.71	cv
CAL BLK	0.15	ug/L		208.66	cv
10000 PPB	10440.00	ug/L		0.30	cv
JOB#4863 B-66	-0.02	ug/L	<5.00	-1364.	cv
859.0401	-0.17	ug/L	<1.00 mg/kg	3.83	cv
860.0401	1.74	ug/L		9.94	cv
860.0401 R	1.79	ug/L		18.56	cv
861.0401	1.64	ug/L		16.82	cv
861.0401 S	48.09	ug/L	-97% rec	0.14	cv

$\frac{9.70}{10} =$

CAL BLK	0.05	ug/L		1451.5	cv	
500 PPB	524.00	ug/L		1.03	cv	
862.0401	0.42	ug/L	<5.00 mg/kg	.32	cv	
863.0401	-0.05	ug/L		-353.4	cv	
864.0401	2.35	ug/L		0.23	cv	
865.0401	-0.05	ug/L		-478.1	cv	
866.0401	-0.04	ug/L		-1121.	cv	
500 PPM ICS	979.55	ug/L		0.03	cv	
CAL BLK	0.69	ug/L		80.34	cv	
500 PPB	522.40	ug/L		0.59	cv	

Cu_VHG

blank	205.40	intensity		22.59	cv	
standard	15930.00	intensity		1.17	cv	
standard	16160.00	intensity		0.21	cv	
500 PPB	526.25	ug/L		0.18	cv	
ICAP-19	951.50	ug/L		0.49	cv	
500 PPM ICS	951.85	ug/L		1.12	cv	
CAL BLK	-9.98	ug/L		-224.8	cv	window edge
10000 PPB	10440.00	ug/L		1.31	cv	
JOB#4863 B-66	-0.39	ug/L	<25.0	-127.9	cv	
859.0401	485.15	ug/L	97.0 mg/kg	0.04	cv	
860.0401	113.20	ug/L	22.4	0.76	cv	
860.0401 R	132.55	ug/L	26.9	6.51	cv	
861.0401	1015.00	ug/L	199	0.67	cv	
861.0401 S	871.35	ug/L		0.40	cv	
CAL BLK	0.29	ug/L		2417.0	cv	
500 PPB	520.55	ug/L		0.37	cv	
862.0401	7.27	ug/L	<5.00 mg/kg	2.05	cv	
863.0401	5.86	ug/L		94.79	cv	
864.0401	2034.50	ug/L	391	0.15	cv	
865.0401	21.86	ug/L	<5.00	12.30	cv	
866.0401	3.73	ug/L		251.66	cv	
500 PPM ICS	935.05	ug/L		0.13	cv	
CAL BLK	-6.06	ug/L		-74.94	cv	
500 PPB	514.80	ug/L		0.27	cv	

Ag_VHG

blank	102.81	intensity		17.61	cv	
standard	22805.00	intensity		0.54	cv	
500 PPB	489.60	ug/L		1.60	cv	
EPA 283#2 1/50	112.55	ug/L		2.68	cv	
500 PPM ICS	993.60	ug/L		0.05	cv	
CAL BLK	-9.10	ug/L		-170.1	cv	window edge
JOB#4863 B-66	-3.89	ug/L	<10.0	-71.15	cv	
859.0401	1.28	ug/L	<2.00 mg/kg	8.69	cv	
860.0401	-2.98	ug/L		-29.56	cv	
860.0401 R	1.78	ug/L		79.70	cv	
861.0401	5.17	ug/L		101.05	cv	$\frac{6.53}{10}$ =
861.0401 S	32.99	ug/L	-65% rec	1.83	cv	
CAL BLK	-7.59	ug/L		-20.20	cv	
500 PPB	485.80	ug/L		2.60	cv	
862.0401	-3.52	ug/L	<2.00 mg/kg	4.69	cv	
863.0401	-1.93	ug/L		-98.90	cv	window edge
864.0401	-5.15	ug/L		-197.4	cv	window edge
865.0401	-1.82	ug/L		-907.3	cv	window edge
866.0401	-8.60	ug/L		-56.22	cv	window edge
500 PPM ICS	976.95	ug/L		0.63	cv	
CAL BLK	1.52	ug/L		124.47	cv	

500 PPB	487.00	ug/L	0.61	cv

Al_VHG

blank	333.25	intensity	37.24	cv	
standard	10980.00	intensity	0.38	cv	
500 PPB	494.05	ug/L	2.21	cv	
ICAP-7	1038.00	ug/L	0.38	cv	
500 PPM ICS	84595.00	ug/L	0.49	cv	
CAL BLK	35.24	ug/L	0.63	cv	
10000 PPB	10775.00	ug/L	1.00	cv	
JOB#4863 B-66	0.39	ug/L	61.55	cv	
859 0401	4160.50	ug/L	2.74	cv	
860.0401	34455.00	ug/L	0.76	cv	
860.0401 R	39035.00	ug/L	0.42	cv	Refer to dilutions
861 0401	29950.00	ug/L	0.52	cv	
861.0401 S	31740.00	ug/L	1.07	cv	
CAL BLK	-70.17	ug/L	-4.45	cv	window edge
500 PPB	496.40	ug/L	1.44	cv	
862.0401	12130.00	ug/L	1.29	cv	
863.0401	11570.00	ug/L	0.86	cv	
864.0401	33425.00	ug/L	0.09	cv	
865.0401	6356.00	ug/L	0.68	cv	
866.0401	7667.00	ug/L	2.28	cv	
500 PPM ICS	85525.00	ug/L	0.06	cv	
CAL BLK	-26.29	ug/L	-187.3	cv	window edge
500 PPB	489.95	ug/L	0.18	cv	

Ba_VHG

blank	5.68	intensity	58.41	cv	
standard	5594.50	intensity	0.24	cv	
500 PPB	531.30	ug/L	1.17	cv	
ICAP-7	1014.00	ug/L	1.37	cv	
500 PPM ICS	987.75	ug/L	2.33	cv	
CAL BLK	-0.46	ug/L	-302.6	cv	
10000 PPB	10350.00	ug/L	0.08	cv	
JOB#4863 B-66	0.17	ug/L <200	265.86	cv	
859.0401	1297.50	~~ug/L~~ 260 mg/kg	0.07	cv	
860.0401	1370.50	~~ug/L~~ 271	0.66	cv	
860.0401 R	1758.50	~~ug/L~~ 348	0.42	cv	
861.0401	1328.00	~~ug/L~~ 260	0.32	cv	$\frac{527-260}{400}$
861.0401 S	2659.50	ug/L -67% rec	0.94	cv	
CAL BLK	0.36	ug/L	141.99	cv	
500 PPB	527.65	ug/L	0.45	cv	
862.0401	330.75	~~ug/L~~ 65.6 mg/kg	0.07	cv	
863.0401	344.40	~~ug/L~~ 65.2	0.54	cv	
864.0401	1834.50	~~ug/L~~ 353	0.04	cv	
865.0401	141.25	ug/L <40.0	0.97	cv	
866.0401	157.00	ug/L	0.62	cv	
500 PPM ICS	990.20	ug/L	0.62	cv	
CAL BLK	1.12	ug/L	125.17	cv	
500 PPB	526.15	ug/L	1.12	cv	

Year 4060 -
Zn-redigest

Result Name: 8702251441

blank	860.0401X R
standard	861.0401X
ICAP-19	862.0401X
ICAP-7	863.0401X
10000 PPB	CAL BLK
100 PPM	500 PPB
500 PPM	864.0401X
CAL BLK	865.0401X
500 PPM ICS	866.0401X
500 PPB	500 PPM ICS
JOB#4863 B-110	CAL BLK
859.0401X	500 PPB
860.0401X	
860.0401X R	

200 mls F.V.

Displaying page 1 of 1.

Command?

Job #4863
A1

10:20

Result Name. 8702260932

blank	863.0401
standard	864.0401
1.000 PPM	865.0401
CAL BLK	CAL BLK
10.0 PPM	1.000 PPM
50.0 PPM	866.0401
ICAP-7	JOB#4872 B-81
JOB#4863 B-66	900.0401
859.0401	900.0401 R
860.0401	900.0401 S
860.0401 R	901.0401
861.0401	854.07 Ionic
861.0401 S	CAL BLK
862.0401	1.000 PPM

Command?

AI_HIGH

blank	-194.65	intensity	-14.37	cv	window edge
standard	2571.500	intensity	0.13	cv	
1.000 PPM	1.041	mg/L	4.29	cv	
CAL BLK	0.039	mg/L	48.85	cv	
10.0 PPM	10.295	mg/L	0.22	cv	
50.0 PPM	52.580	mg/L	0.11	cv	
ICAP-7	0.990	mg/L	7.08	cv	
JOB#4863 B-66	0.119	mg/L <200	12.59	cv	
859.0401	4.070	~~mg/L~~ 814 mg/Kg	3.58	cv	
860.0401	31.506	~~mg/L~~ 6301	0.93	cv	
860.0401 R	36.845	~~mg/L~~ 7296	0.14	cv	
861.0401	26.240	~~mg/L~~ 5537	0.11	cv	
861.0401 S	30.140	mg/L - N.A.	0.52	cv	- sample value is 3-5x greater than the spike ammount
862.0401	11.345	~~mg/L~~ 2286	0.05	cv	
863.0401	11.390	~~mg/L~~ 2170	0.51	cv	
864.0401	31.44[illegible]	~~mg/L~~ 6047	1.01	cv	
865.0401	6.354	~~mg/L~~ 1258	0.46	cv	
CAL BLK	-0.016	mg/L	-138.6	cv	
1.000 PPM	0.959	mg/L	2.41	cv	
866.0401	7.494	~~mg/L~~ 1401	0.07	cv	
CAL BLK	0.061	mg/L	10.08	cv	
1.000 PPM	1.094	mg/L	3.78	cv	

Bear Creek

Job#4863
Fe

Result Name: 8702251537

blank	859.0401	900.0401 R
standard	860.0401	900.0401 S
blank	860.0401 R	901.0401
standard	861.0401	CAL BLK
standard	861.0401 S	1.000 PPM
ICAP-19	862.0401	
ICAP-7	863.0401	
500 PPM	864.0401	
500 PPM	865.0401	
500 PPM N	CAL BLK	
200 PPM	1.000 PPM	
50 PPM	866.0401	
CAL BLK	JOB#4872 B-81	
JOB#4863 B-66	900.0401	

Command?

Fe_HIGH

blank	29.79	intensity	4.09	cv
standard	507.450	intensity	1.24	cv
blank	46.410	intensity	38.76	cv
standard	1612.000	intensity	4.46	cv
standard	1669.000	intensity	0.85	cv
ICAP-19	0.912	mg/L	3.19	cv
500 PPM N	554.150	mg/L	0.53	cv
CAL BLK	0.093	mg/L	25.34	cv
JOB#4863 D-66	0.095	mg/L <100	4.84	cv
859.0401	75.685	~~mg/L~~ 15137 mg/kg	0.07	cv
860.0401	58.295	~~mg/L~~ 11544	0.69	cv
860.0401 R	65.655	~~mg/L~~ 13000	0.10	cv
861.0401	58.680	~~mg/L~~ 11506	0.14	cv
861.0401 S	170.850	mg/L - N.A.	0.88	cv
862.0401	29.490	~~mg/L~~ 5840	0.58	cv
863.0401	31.005	~~mg/L~~ 5905	0.28	cv
864.0401	97.930	~~mg/L~~ 18833	0.27	cv
865.0401	20.225	~~mg/L~~ 3780	0.53	cv
CAL BLK	0.004	mg/L	72.96	cv
1.000 PPM	1.017	mg/L	2.76	cv
866.0401	20.815	mg/L	1.12	cv
CAL BLK	0.011	mg/L	186.92	cv
1.000 PPM	1.010	mg/L	3.64	cv

sample value 3-5X higher than spike amount.

Job #4872

Sb, Zn, Cd, Co, Ni, Mn, Cr, V, Be, Cu, Ag, Ba

Result Name [illegible]

blank	500 PPM ICS	862.0401	500 PPB
standard	10000 PPB	863.0401	JOB#4894 B-86
standard	CAL BLK	864.0401	999.0101
standard	10000 PPB	865.0401	999.0101 R
standard	JOB#4863 B-66	866.0401	JOB#4900 B-88
standard	859.0401	JOB#4872 B-21	1014.0701
[illegible] PPB	860.0401	900.0401	1018.1401
500 PPB	860.0401 R	900.0401 R	1018.1401 R
500 PPB	861.0401	900.0401 S	1018.1401 S
ICAP-12	861.0401 S	901.0401	1019.1401
ICAP-2	CAL BLK	500 PPM ICS	1020.1401
EPA 28342 1/50	500 PPB	CAL BLK	1021.1401
EPA 28342 1/50	500 PPB	500 PPB	CAL BLK
10000 PPB	500 PPB	500 PPB	500 PPB

Command?

– Fe + Al values above calibration range
Will be diluted & rerun

[illegible]

blank	90.[illegible]	intensity	24.25	cv	
standard	1537.00	intensity	2.22	cv	
standard	1525.00	intensity	1.01	cv	
standard	1562.00	intensity	1.21	cv	
500 PPB	505.55	ug/L	8.88	cv	
ICAP-19	990.00	ug/L	3.14	cv	
500 PPM ICS	529.40	ug/L	0.20	cv	
CAL BLK	-30.46	ug/L	-99.32	cv	
CAL BLK	14.41	ug/L	66.89	cv	
500 PPB	497.05	ug/L	6.72	cv	
JOB#4072 B-01	29.43	ug/L <60.0	0.81	cv	
900.0401	24.98	ug/L <12.0mg/Kg	9.82	cv	
900.0401 R	24.51	ug/L ⊥	53.77	cv	62.3 / 100
900.0401 S	211.50	ug/L -60%	17.87	cv	
901.0401	-20.82	ug/L <10.0 ⊥	-164.3	cv	window edge
500 PPM ICS	831.40	ug/L	13.81	cv	
CAL BLK	-37.18	ug/L	-173.2	cv	window edge
500 PPB	428.00	ug/L	24.30	cv	
500 PPB	511.30	ug/L	10.15	cv	

Zn_VHG

blank	40.93	intensity	17.66	cv	
standard	10300.00	intensity	1.82	cv	
standard	10500.00	intensity	0.73	cv	
500 PPB	539.05	ug/L	1.78	cv	
ICAP-19	950.35	ug/L	1.72	cv	
500 PPM ICS	979.85	ug/L	1.87	cv	
CAL BLK	1.01	ug/L	184.66	cv	
10000 PPB	10550.00	ug/L	1.09	cv	
500 PPB	535.75	ug/L	0.94	cv	
JOB#4072 B-01	16.13	ug/L <20.0	9.94	cv	
900.0401	10028.00	ug/L 1910mg/Kg	2.59	cv	
900.0401 R	6285.00	ug/L 1245 ⊥	0.77	cv	2057 − 1245 / 100
900.0401 S	10285.00	ug/L	0.04	cv	
901.0401	[illegible]	ug/L	0.10	cv	
500 PPM ICS	1011.00	ug/L	1.76	cv	
CAL BLK	-1.34	ug/L	-50.34	cv	
500 PPB	521.05	ug/L	0.20	cv	

Cd_VHG

blank	-7.35	intensity	-22.25	cv	
standard	11975.00	intensity	0.90	cv	
500 PPB	553.60	ug/L	3.20	cv	
500 PPB	528.40	ug/L	0.24	cv	
ICAP-19	885.30	ug/L	1.18	cv	
500 PPM ICS	945.35	ug/L	1.97	cv	
CAL BLK	0.96	ug/L	171.88	cv	
10000 PPB	10475.00	ug/L	0.04	cv	
CAL BLK	0.32	ug/L	470.61	cv	
500 PPB	529.70	ug/L	1.55	cv	
JOB#4072 B-01	2.37	ug/L <5.00	74.64	cv	
900.0401	40.21	ug/L 3.9mg/Kg	4.64	cv	
900.0401 R	11.[illegible]	ug/L 2.37 ⊥	2.99	cv	14.1 − 2.37 / 10
900.0401 S	70.[illegible]	ug/L -117% rec	1.94	cv	
901.0401	1.04	ug/L <1.00	1.95	cv	window edge
500 PPM ICS	906.05	ug/L	1.54	cv	
CAL BLK	0.75	ug/L	30.17	cv	

[illegible]	[illegible]	ug/L		[illegible]	cv

[illegible]_VHC

blank	[illegible]	intensity		247.13	cv
standard	9851.00	intensity		1.00	cv
standard	[illegible]	intensity		0.39	cv
500 PPB	525.05	ug/L		3.82	cv
ICAP-19	954.40	ug/L		0.67	cv
500 PPM ICS	904.05	ug/L		2.21	cv
CAL BLK	4.48	ug/L		48.31	cv
10000 PPB	10250.00	ug/L		0.84	cv
CAL BLK	2.64	ug/L		254.04	cv
500 PPB	517.05	ug/L		2.26	cv
JOB-4872 B-01	2.32	ug/L	<50.0	40.70	cv
900.0401	72.81	ug/L	13.9mg/Kg	2.24	cv
900.0401 R	51.42	ug/L	10.2 ⊥	15.21	cv
900.0401 S	549.30	ug/L	-100%rec	0.64	cv
901.0401	11.27	ug/L	<N.O ⊥	81.39	cv
500 PPM ICS	884.70	ug/L		0.27	cv
CAL BLK	-0.03	ug/L		-15502	cv
500 PPB	505.60	ug/L		2.04	cv

$\frac{110 - 10.2}{100}$

[illegible]_VHC

blank	26.95	intensity		731.73	cv	window edge
standard	10054.00	intensity		2.35	cv	
500 PPB	533.50	ug/L		1.92	cv	
ICAP-19	951.10	ug/L		0.41	cv	
500 PPM ICS	915.25	ug/L		0.44	cv	
CAL BLK	0.94	ug/L		476.90	cv	window edge
10000 PPB	10460.00	ug/L		0.84	cv	
CAL BLK	-2.44	ug/L		-230.2	cv	
500 PPB	525.25	ug/L		0.50	cv	
JOB-4872 B-01	3.91	ug/L	<40.0	186.25	cv	
900.0401	[illegible]	ug/L	792mg/Kg	1.21	cv	
900.0401 R	[illegible]	ug/L	704 ⊥	1.10	cv	
900.0401 S	[illegible]	ug/L		0.46	cv	
901.0401	44.35	ug/L	8.86 ⊥	4.13	cv	
500 PPM ICS	892.10	ug/L		1.44	cv	
CAL BLK	3.00	ug/L		242.81	cv	
500 PPB	525.20	ug/L		0.27	cv	

$\frac{1269 - 704}{100}$

[illegible]_VHC

blank	4.37	intensity		214.29	cv	window edge
standard	11510.00	intensity		0.08	cv	
standard	11495.00	intensity		0.05	cv	
500 PPB	537.25	ug/L		0.78	cv	
ICAP-19	955.15	ug/L		1.89	cv	
500 PPM ICS	939.05	ug/L		1.41	cv	
CAL BLK	0.88	ug/L		19.19	cv	
10000 PPB	10415.00	ug/L		0.50	cv	
CAL BLK	1.03	ug/L		17.27	cv	
500 PPB	522.60	ug/L		1.16	cv	
JOB-4872 B-01	0.55	ug/L	<15.0	77.87	cv	
900.0401	[illegible]	ug/L	144mg/Kg	0.30	cv	
900.0401 R	[illegible]	ug/L	75.0 ⊥	0.52	cv	
900.0401 S	[illegible]	ug/L		1.51	cv	
901.0401	[illegible]	ug/L	35.9 ⊥	0.88	cv	
500 PPM ICS	929.15	ug/L		0.30	cv	
CAL BLK	-0.36	ug/L		-213.3	cv	

$\frac{248 - 75}{100}$

[illegible]	[illegible]	ug/L	[illegible]	cv	

[illegible]_MG

blank	[illegible]	intensity	[illegible]	cv	
standard	[illegible]	intensity	2.40	cv	
500 PPB	545.55	ug/L	0.94	cv	
ICAP-19	981.40	ug/L	2.51	cv	
500 PPM ICS	165000.0	ug/L	0.00	cv	
CAL BLK	-7.11	ug/L	-34.87	cv	
10000 PPB	10430.00	ug/L	0.98	cv	
CAL BLK	-2.21	ug/L	-166.1	cv	
500 PPB	530.35	ug/L	2.12	cv	
JOB#4872 B-81	0.30	ug/L <100	2376.8	cv	
900.0101	78140.00	ug/L	0.54	cv	
900.0401 R	40445.00	ug/L	0.35	cv	
900.0401 S	77490.00	ug/L	0.16	cv	
901.0401	11550.00	ug/L	0.29	cv	
500 PPM ICS	165300.0	ug/L	0.06	cv	
CAL BLK	-0.01	ug/L	-39293	cv	
500 PPB	525.40	ug/L	3.24	cv	

Refer to dilutions

CA_/MG

blank	54.41	intensity	1.11	cv	
standard	9264.00	intensity	0.16	cv	
standard	9252.00	intensity	0.65	cv	
500 PPB	536.20	ug/L	0.11	cv	
ICAP-19	962.15	ug/L	1.68	cv	
500 PPM ICS	941.45	ug/L	2.56	cv	
CAL BLK	-5.41	ug/L	-122.8	cv	window edge
10000 PPB	10445.00	ug/L	0.90	cv	
CAL BLK	-4.20	ug/L	-73.49	cv	window edge
500 PPB	524.10	ug/L	1.19	cv	
JOB#4872 B-81	-2.71	ug/L <10.0	-113.7	cv	
900.0401	[illegible]	ug/L → 83.8mg/kg	0.39	cv	
900.0401 R	[illegible]	ug/L → 248	0.36	cv	
900.0401 S	[illegible]	ug/L	0.64	cv	
901.0401	6.28	ug/L <3.00	35.91	cv	
500 PPM ICS	947.30	ug/L	0.62	cv	
CAL BLK	-3.41	ug/L	-193.4	cv	window edge
500 PPB	519.20	ug/L	0.72	cv	

$\frac{91.3 - 248}{40}$

V_MG

blank	115.89	intensity	70.69	cv	
standard	23645.00	intensity	1.77	cv	
500 PPB	526.40	ug/L	0.85	cv	
ICAP-19	954.10	ug/L	1.59	cv	
500 PPM ICS	980.90	ug/L	1.08	cv	
CAL BLK	-5.14	ug/L	-110.1	cv	
10000 PPB	10740.00	ug/L	0.78	cv	
CAL BLK	-4.04	ug/L	-80.58	cv	window edge
500 PPB	522.55	ug/L	0.26	cv	
JOB#4872 B-81	-4.23	ug/L <50.0	-211.3	cv	window edge
900.0401	[illegible]	ug/L → 25.8mg/kg	0.43	cv	
900.0401 R	[illegible]	ug/L → 38.5	0.55	cv	
900.0401 S	497.45	ug/L -101% rec	0.82	cv	
901.0401	12.81	ug/L <10.0	16.23	cv	
500 PPM ICS	997.25	ug/L	1.07	cv	
CAL BLK	-2.76	ug/L	-121.5	cv	window edge
500 PPB	517.40	ug/L	0.51	cv	

$\frac{139 - 38.5}{100}$

[illegible]	[illegible]	intensity	[illegible]	cv	
standard	[illegible]	intensity	0.28	cv	
500 PPB	533.00	ug/L	0.36	cv	
ICAP-19	931.00	ug/L	0.55	cv	
500 PPM ICS	989.90	ug/L	1.71	cv	
CAL BLK	0.15	ug/L	208.66	cv	
10000 PPB	10443.00	ug/L	0.30	cv	
CAL BLK	[illegible]	ug/L	1456.5	cv	
500 PPB	524.00	ug/L	1.03	cv	
JOB#4372 D-01	-0.66	ug/L <5.00	-25.39	cv	window edge
900 0401	[illegible]	ug/L <1.00mg/kg	7.94	cv	
900.0401 R	-0.75	ug/L	-11.55	cv	window edge
900 0401 S	40.68	ug/L -97%rec	1.18	cv	9.74
901.0401	-0.15	ug/L ⊥	-237.2	cv	10
500 PPM ICS	979.55	ug/L	0.03	cv	
CAL BLK	0.69	ug/L	80.34	cv	
500 PPB	522.40	ug/L	0.59	cv	

Cu_VHC

blank	205.40	intensity	22.59	cv	
standard	15930.00	intensity	1.17	cv	
standard	16160.00	intensity	0.21	cv	
500 PPB	524.25	ug/L	0.18	cv	
ICAP-19	951.50	ug/L	0.49	cv	
500 PPM ICS	951.05	ug/L	1.12	cv	
CAL BLK	-9.98	ug/L	-224.3	cv	window edge
10000 PPB	10440.00	ug/L	1.31	cv	
CAL BLK	0.29	ug/L	2417.0	cv	
500 PPB	520.55	ug/L	0.37	cv	
JOB#4372 D-01	-6.88	ug/L <25.0	-165.1	cv	window edge
900 0401	[illegible]	ug/L → 326mg/kg	0.13	cv	
900.0401 R	[illegible]	ug/L → 249	0.94	cv	
900 0401 S	[illegible]	ug/L	0.06	cv	444 − 249
901 0401	-0.28	ug/L <5.00 ⊥	-4072.	cv	50
500 PPM ICS	935.05	ug/L	0.13	cv	
CAL BLK	-6.06	ug/L	-74.94	cv	
500 PPB	514.80	ug/L	0.27	cv	

Ag_VHC

blank	102.81	intensity	17.61	cv	
standard	22805.00	intensity	0.54	cv	
500 PPB	489.60	ug/L	1.60	cv	
EPA 280#2 1/50	112.55	ug/L	2.68	cv	
500 PPM ICS	993.60	ug/L	0.05	cv	
CAL BLK	-9.10	ug/L	-170.1	cv	window edge
CAL BLK	-7.59	ug/L	-20.20	cv	
500 PPB	485.80	ug/L	2.60	cv	
JOB#4372 D-01	-8.89	ug/L <10.0	-56.21	cv	window edge
900 0401	-0.60	ug/L <2.00mg/kg	52.6	cv	window edge
900 0401 R	-4.49	ug/L	-33.7	cv	window edge
900 0401 S	40.29	ug/L -81%rec	17.18	cv	
901 0401	-1.77	ug/L ⊥	-84.31	cv	window edge
500 PPM ICS	976.95	ug/L	0.63	cv	8.06
CAL BLK	1.52	ug/L	124.47	cv	10
500 PPB	487.00	ug/L	0.61	cv	

Al_VHC

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	cv
[illegible]	[illegible]	[illegible]	intensity	0.39	cv
500 PPB	[illegible]	ug/L		2.21	cv
ICAP-7	1038.00	ug/L		0.38	cv
500 PPM ICS	84595.00	ug/L		0.42	cv
CAL BLK	33.24	ug/L		0.63	cv
10000 PPB	10775.00	ug/L		1.00	cv
CAL BLK	-70.17	ug/L		-4.45	cv
500 PPB	496.40	ug/L		1.44	cv
JOB#4872 B-91	-2.30	ug/L		-934.3	cv
900 0401	[illegible]	ug/L		0.17	cv
900 0401 R	[illegible]	ug/L		0.72	cv
900 0401 C	16475.00	ug/L		0.22	cv
901 0401	4340.50	ug/L		0.15	cv
500 PPM ICS	85535.00	ug/L		0.06	cv
CAL BLK	-26.29	ug/L		-187.3	cv
500 PPB	489.95	ug/L		0.18	cv

window edge

Refer to dilutions

Na_MG

blank	2.60	intensity		58.41	cv
standard	5594.50	intensity		0.24	cv
500 PPB	531.30	ug/L		1.17	cv
ICAP-7	1014.00	ug/L		1.37	cv
500 PPM ICS	987.75	ug/L		2.33	cv
CAL BLK	-0.46	ug/L		-302.6	cv
10000 PPB	10350.00	ug/L		0.08	cv
CAL BLK	0.36	ug/L		141.99	cv
500 PPB	527.65	ug/L		0.45	cv
JOB#4872 B-91	0.64	ug/L	<200	6.14	cv
900 0401	4819.50	~~ug/L~~	918mg/kg	0.92	cv
900 0401 R	3008.30	~~ug/L~~	596	0.22	cv
900 0401 C	6460.00	ug/L		0.61	cv
901 0101	74.83	ug/L	<40.0	0.88	cv
500 PPM ICS	990.20	ug/L		0.62	cv
CAL BLK	1.12	ug/L		125.17	cv
500 PPB	526.15	ug/L		1.12	cv

$$\frac{1292 - 596}{400}$$

Job #4872
Fe

Result Name [illegible]

Blank	859 0401	900 0401 D
standard	860 0401	900 0401 E
Blank	860 0401 R	901 0401
standard	861 0401	CAL BLK
standard	861 0401 S	1.000 PPM
ICAP-10	862 0401	
ICAP-7	863 0401	
500 PPM	864 0401	
500 PPM	865 0401	
500 PPM H	CAL BLK	
100 PPM	1.000 PPM	
50 PPM "	866 0401	
CAL BLK	JOB#4872 B-81	
JOB#4863 B-66	900 0401	

Command?

blank	29.79	intensity	4.09	cv
standard	507.450	intensity	1.24	cv
blank	46.410	intensity	33.76	cv
standard	1112.000	intensity	4.46	cv
standard	1639.000	intensity	0.85	cv
ICAP-19	0.912	mg/L	3.19	cv
500 PPM N	554.150	mg/L	0.53	cv
CAL BLK	0.093	mg/L	25.34	cv
CAL BLK	0.004	mg/L	72.96	cv
1.000 PPM	1.017	mg/L	2.76	cv
~~[illegible]~~	~~[illegible]~~	~~mg/L~~	~~1.12~~	~~cv~~
JOB#4872 B-31	0.027	mg/L <100	4.92	cv
900 0401	73.603	~~mg/L~~ 1403 mg/kg	0.82	cv
900 0 01 R	39.290	~~mg/L~~ 7780	0.76	cv
900 0401 C	72.605	mg/L N.A.	0.98	cv
901 0401	11.900	~~mg/L~~ 2380	0.22	cv
CAL BLK	0.011	mg/L	186.92	cv
1.000 PPM	1.010	mg/L	3.64	cv

Job #4872
A1

Result Name: 870226[illegible]

[illegible]	863 0401
[illegible]	864.0401
1.000 PPM	865 0401
CAL BLK	CAL BLK
10.0 PPM	1.000 PPM
20.0 PPM	866.0401
ICAP-7	JOB#4872 B-81
JOB#4863 E-66	900.0401
859.0401	900.0401 R
860.0401	900.0401 S
860 0401 R	901.0401
861.0401	854.07 Ionic
861 0401 C	CAL BLK
863.0401	1.000 PPM

Command?

01_HIGH

blank	124.60	intensity	14.37	cv	window edge
standard	2571.500	intensity	3.13	cv	
1.000 PPM	1.041	mg/L	4.29	cv	
CAL BLK	0.039	mg/L	40.35	cv	
10.0 PPM	10.295	mg/L	0.22	cv	
50.0 PPM	51.580	mg/L	3.11	cv	
ICAP-7	0.990	mg/L	7.08	cv	
CAL BLK	-0.016	mg/L	-128.6	cv	
1.000 PPM	0.959	mg/L	3.41	cv	
JOB#4873 5-01	0.037	mg/L <200ug/L	52.34	cv	window edge
901 0101	[illegible]	mg/L → 3940mg/Kg	0.66	cv	
900 0401 R	[illegible]	mg/L → 1469	2.35	cv	
900 0401 C	15.790	mg/L N.A.	1.79	cv	
901 0401	[illegible]	mg/L → 839	1.18	cv	
CAL BLK	0.061	mg/L	10.08	cv	
1.000 PPM	1.094	mg/L	3.79	cv	

From Page No.

Test Performed: DIGESTIONS / SOILS
Date Received: 1/30/87
Work Performed By: JW MM

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Amount of Sample (01)	Amount of Sample (03)	Final Volume
					01 X2		
4727	0097.04 WA		NO	A-21	1.03g.	—	200ml.
	0098.04 WA		NO	A-21	1.05g.	—	200ml.
	0098.04 R1		NO	A-21	1.05g.	—	200ml.
	0099.04				1.02g.	—	
	0099.04 S1				1.02g.	—	
	0100.04				1.00g.	—	
	0101.04				1.05g.	—	
	0102.04				1.00g.	—	
					01	03	
4835	0752.04	YES		A-28	1.03g.	1.08g	200ml.
	0753.04				1.00g.	1.01g	
	0754.04				1.02g.	1.00g.	
	0754.04 R2				1.02g.	1.05g.	
	0755.04				1.00g.	1.03g.	
	0756.04				1.05g.	1.06g.	
	0757.04				1.00g.	1.01g.	
	0757.04 S2				1.00g.	1.03g.	
	0758.04				1.07g.	1.02g.	
BLANK	48				01 DIGESTION		200ml.
BLANK	49				03 DIGESTION		200ml.

QC
JS 2/20/87

To Page No.

Witnessed & Understood by [illegible] Date

Invented by Date 1/30/87

Recorded by William Gray

Project No. _____
Book No. _____ TITLE _____

From Page No. ___

Test Performed: DIGESTIONS
Date Received: 2/2/87
Work Performed By: W.M.

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Amount of Sample	Initial pH	Digestion	Final Volume
4843	0790.01	YES	A-34	~~100 ml~~ N.A.	1		
	0791.01	YES	A-34	100 ml.	4	01	100 ml
4845	0798.03	YES	A-33	100 ml.	1	01	100 ml
4844	0795.01	YES	A-34	100 ml.	6	01, 03	100 ml
	0796.01				1		
	0796.01 R1				1		
	0797.01				1		
	0797.01 S1				1		
WATER	BLANK	50	—	—	—	01	100 ml.
	BLANK	51	—	—	—	03	100 ml.

Other diet

				Amount of Sample (01)	Amount of Sample (03)		Final Volume
4846	0799.04	YES ~~no~~	A-28	1.06 g.	1.01 g.		200 ml.
	0800.04	YES	A-28	1.03 g.	1.03 g.		200 ml.
	0801.04	YES	A-28	1.02 g.	1.00 g.		200 ml.
SOILS	BLANK	52	—	—	—	01	200 ml.
	BLANK	53	—	—	—	03	200 ml.

To Page No. ___

Witnessed & Understood by me,	Date	Invented by	Date	129
		Recorded by William May	2/2/87	

Project No. _____

Book No. _____ TITLE _____

Form F No. _____

Test Performed: DIGESTIONS
Date Received: 3/6/81
Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Amount of Sample	Initial pH	Digestion	Final Volume
4860	0851.05	YES	A-35	100 ml.	1	01	100 ml.
	0851.05 R1						
	0853.06						
	0853.06 S1						
	0852.05						
	BLANK 65	—		—		01	100 ml.

Other Client

		Amount of Sample (01)	Amount of Sample (03)	Final Volume
4863	0859.04	1.00 g.	1.02 g.	200 ml.
	0860.04	1.01 g.	1.03 g.	
	0860.04 R2	1.01 g.	1.03 g.	
	0861.04	1.02 g.	1.03 g.	
	0861.04 S2	1.01 g.	1.03 g.	
	0862.04	1.01 g.	1.05 g.	
	0863.04	1.05 g.	1.03 g.	
	0864.04	1.04 g.	1.02 g.	
	0865.04	1.01 g.	1.01 g.	
	0866.04	1.07 g.	1.02 g.	
	BLANK 66	—	—	01 DIGESTION 200 ml.
	BLANK 67	—	—	03 DIGESTION 200 ml.

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Witnessed & Understood by me.	Date	Invented by	Date
		Recorded by [illegible]	2/6/87

TITLE

From Page No.

Test Performed: DIGESTIONS
Date Received: 2/12/87
Work Performed By: W.M.

Job No.	ID No.	Custody Seal Intact Yes	Custody Seal Intact No	Secure Storage Area Received From	Amount of Sample	Digestion	Initial pH	Final Volume	
MENNEN [4885]	0935.02	YES		A-2	100 ml.	01,03	1	100 ml.	Other Client
	0935.02R1	YES		A-2	100 ml.	01,03	1	100 ml.	
BLANK 79				—	—	01	—	100 ml.	
BLANK 80				—	—	03	—	100 ml	

			Amount of Sample (01)	Amount of Sample (03)	Final Volume	
4872	0900.04	YES	1.05 g.	1.02 g.	200 ml.	
	0900.04R2	YES	1.01 g.	1.01 g.		
	0900.04S1	YES	1.00 g.	1.04 g.		
	0901.04	YES	1.00 g.	1.04 g.		
4843	0791.01	NO	1.01 g. (01X)	—	200 ml.	Other Client
	0791.01R3	NO	1.00 g. (01X)	—		
	0791.01S2	NO	1.03 (01X)	—		
BLANK 81			—	—	01 DIGESTION	200 ml.
BLANK 82			—	—	03 DIGESTION	200 ml.

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Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by William Moy	2/12/87

Project No.

TITLE Book No.

From Page No.

Test Performed: DIGESTIONS/SOLS
Date Received: 2/13/87
Work Performed By: William

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Amount of Sample (01 Digestion)	Amount of Sample (03 Digestion)	Final Volume
4863	0859.04	NO	A-5	—	1.02 g. (03 X)	100 ml.
	0860.04			—	1.03 g. (03 X)	
	0860.04 (R1)			—	1.05 g. (03 X)	
	~~0860.04 (S1)~~			—	—	
	0861.04			—	1.00 g. (03 X)	
	0861.04 (S1)			—	1.00 g. (03 X)	
	0862.04			—	1.03 g. (03 X)	
	0863.04			—	1.01 g. (03 X)	
	0864.04			—	1.00 g. (03 X)	
	0865.04			—	1.05 g. (03 X)	
	0866.04			—	1.01 g. (03 X)	
4912	1060.01	YES	A-12	1.02 g.	1.01 g.	200 ml.
	1060.01 (R2)			1.00 g.	1.00 g.	
	1060.01 (S2)			1.03 g.	1.04 g.	
	1061.01			1.00 g.	1.01 g.	
	1062.01			1.01 g.	1.00 g.	
	1063.01			1.00 g.	1.01 g.	
	1064.01			1.03 g.	1.02 g.	
	1065.01			1.01 g.	1.03 g.	
	1066.01			1.03 g.	1.00 g.	
	1067.01			1.02 g.	1.02 g.	
	1068.01			1.03 g.	1.04 g.	
	1069.01			1.04 g.	1.02 g.	
	1070.01			1.03 g.	1.00 g.	
	BLANK 94			—	03 DIGESTION	100 ml.
	BLANK 95			—	01 DIGESTION	200 ml.
	BLANK 96			—	03 DIGESTION	200 ml.

Other Chem

To Page No.

Witnessed & Understood by me.	Date	Invented by	Date
		Recorded by William May	2/18/87

Project No. _____
Book No. _____ TITLE _____

From Page No. ___

Test Performed: DIGESTIONS
Date Received: 2/24/87
Work Performed By: W. M.

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	AMOUNT OF SAMPLE (01 DIGESTION)	AMOUNT OF SAMPLE 03 DIGESTION	FINAL VOLUME
4863	0859.04	NO		A-5	1.00g (01 X)	—	200 ml.
	0860.04				1.01g	—	
	0860.04R1				1.04g	—	
	0860.04S1				1.03g	—	
	0861.04				1.05g	—	
	0862.04				1.05g	—	
	0863.04				1.04g	—	
	0864.04				1.06g	—	
	0865.04				1.06g	—	
	0866.04				1.06g	—	
	BLANK 110				—	01 DIGESTION	200ml.
						TYPE OF DIGESTION	INITIAL ml
4929	1118.06	YES		A-23	100 ml.	01,03	1 100 ml.
	1119.06						
	1120.06						
	1121.06						
	1122.04						
	1123.04						
	1124.04						
	1125.04						
4922	1085.02	YES		A-8	100ml.	01,03	1 100ml.
	1085.02R2					03 has possibly spike	1
	1086.03						1

Other client

To Page No. ___

Witnessed & Understood by me.	Date	Invented by	Date	143
		Recorded by William May	2/24/87	

Project No. _____

Book No. _____ TITLE _____

From Page No. __

Performed: As

Date Received: 7/5/87

Work Performed By: [illegible]

See pg 2 CLP 200 ml Final Vol

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	% CV ~~Rec~~	200ppb Spike	% Rec.	DF	Samp Wgt	Units	Final Conc
	WS 578 #2					20.4				38.1	89			µg/l	50.4
	Cal Blk					1.6				26.8	108				<10.0
	50.0ppb					50.1				73.84	126			µg/l	50.1
4319	C643 C403					29.3	30.4	29.9	2.61	45.8	80		1.00	mg/kg	/
	C643.C403	K				28.2	28.3	28.3	0.25	48.9	103		1.06		7.34
	C643.K1S1					58.4	59.8	59.1	1.62	73.9	/		1.06	mg/kg	78%
	Blk 4C					1.2	0.5	0.9	–	19.7	99			µg/l	<10.0
4335	C752.C403					17.0	18.1	17.6	4.43	35.4	89		1.03	mg/kg	3.26
	C753.C403					25.9	25.8	25.8	0.27	42.9	86		1.01		5.11
	C754.C403					16.2	16.8	16.5	2.57	38.1	108		1.00		3.30
	C754.K1					15.9	15.0	15.4	4.12	38.0	113		1.05		2.90
	C755.C403					18.3	15.9	17.4	11.8	39.9	113		1.03		4.33
	C756.C403					21.8	22.6	22.2	2.55	39.6	87		1.06	mg/kg	4.31
	Cal Blk					-0.7	1.0	0.1	–	20.7	104			µg/l	<10.0
	50.0ppb					49.9	49.6	49.8	0.43	73.5	124			µg/l	[illegible]
	C757.C403					44.1	43.9	44.0	0.32	60.1	/		1.01	mg/kg	[illegible]
	C757.S2					70.9	65.6	68.2	5.49	75.6	/		1.03		/
	C758.C403					7.1	6.9	7.0	2.02	27.1	101		1.02	mg/kg	<1.96
	Blk 49					1.2	-0.2	0.5	–	19.5	98			µg/l	<10.0
	Cal Blk					-0.3	0.9	0.3	–	16.7	84			µg/l	<10.0
	50.0ppb					52.6	53.4	53.0	1.07	73.2	101			µg/l	53.0
4916	C799.C403					21.2	19.7	20.5	5.49	38.5	90		1.01	mg/kg	4.06
	C800.C403					12.9	12.3	12.6	3.37	33.3	104		1.00		2.47
	C801.C403					6.5	5.8	6.5	11.2	26.4	101		1.00	mg/kg	<2.00
	Blk 53					0.6	0.2	0.4	–	18.5	93			µg/l	<10.0
	Cal Blk					0.5	-1.6	-0.6	–	20.5	103				<10.0
	50.0ppb					54.2	50.1	52.1	5.56	75.8				µg/l	52.1
	C643.C403					24.6	28.7	26.7	10.9	42.8	81			/	/

To Page No. 145

Witnessed & Understood by me. | Date | Invented by | Date 7/5/87

Recorded by G. Cho

Project No.

TITLE Book No.

From Page No.

Test Performed: As (contd)

Date Received: 3/5/87

Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave.	CV	20.0ppb Spike	% Rec	DF	Samp. Wgt	Units	Final Conc
	0757.0100					20.0	20.7	20.3	2.43	40.5	101	1→2	1.01	mg/kg	8.04
	0757.S2					34.4	33.3	36.4	7.59	52.0	/	1→2	1.03	⊥	81% (14.14 mg/kg)
	Cal Blk					0.9				21.0	105			ug/l	<10.0
	50.0ppb					53.9				72.9	95			⊥	53.9
	0643.0100					15.6	15.3	15.5	1.31	34.3	97	1→2	1.00		6.20 JG
	0643.K					14.4	15.0	14.7	2.87	33.8	96	1→2	1.06		5.55
	0643 R,S,					31.6	30.0	30.8	3.67	49.0	91	1→2	1.06		79% (11.62 mg/kg)
	Cal Blk					2.3 ~~15.0~~				19.6	98				<10.0
	50.0ppb					54.1				75.4	122				54.1

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

Recorded by [illegible] | 3/5/87

HGA FORM #1

ELEMENT: As ~~Se~~, DATE: 2/4-5/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 269, pg 144.

JOB #:				ATTACH TAPE	
	S01	WS378#3			
	X02	Cal Blank			
	X03	50.0 ppb			
	X04	0643.0403 (4819)			
	X05	0643. (R1)			
	X06	0643. (R1S)		(3)	
	X07	Prep Blank 040			
	X08	0752.0403 (4835)		530	40.5
	X09	0753.		531	52.0
	X10	0754		532	21.0
	X11	0754. (R2)		533	72.9
	X12	0755.			
	X13	0756.			
	X14	Cal Blank			
	X15	50.0 ppb			
	X16	0757.			15.6
	X17	0757. (S2), S_2		534	15.3
	X18	0758.			15.5 AV
	X19	Prep Blank 049			1.37 CV
	X20	Cal Blank			14.4
	X21	50.0 ppb		535	15.0
	X22	0799.0403			14.7 AV
	X23	0800			2.89 CV
	X24	0801		536	31.6
	X25	Blk 53			30.0
	X26	Cal Blk		537	30.8 AV
	X27	50.0ppb		538	3.67 CV
	X28				1.3
	X29				54.1
	X30	0757.0403 (1→2)			
	X31	0757. S_2 (1→2)		534	34.8
	X32	Cal Blk		535	33.8
	X33	50.0ppb		536	49.0
	X34	0643.0403 (1→2)		537	19.6
	X35	0643 R1, S_3		538	78.4
	36	0643 R1 S1			
	37	Cal Blk			
	38	50.0ppb			

recycled paper

ecology and environment

(1)

As

	-0.005	
	0.006	AZ
	0.082	
	25.0	S1
	49.6	C
	50.0	S2
	57.9	C
	100.0	S3
~~501~~	~~17.1~~	
501	20.4	
502	1.6	
503	50.1	
	29.3	
	30.4	
504	29.9	AV
	2.61	CV
	28.2	
	29.3	
505	28.3	AV
	0.25	CV
	58.4	
	59.8	
506	59.1	AV
	1.69	CV
	1.2	
	0.5	
507	0.9	AV
	58.23	CV
	17.0	
	18.1	
508	17.6	AV
	4.43	CV
	25.9	
	25.8	
509	25.9	AV
	0.27	CV
	16.2	
	16.8	
510	16.5	AV
	2.57	CV
	15.9	
	15.0	
511	15.4	AV
	4.12	CV
	19.9	
	15.9	
512	17.4	AV
	11.82	CV
	21.9	
	22.6	
513	22.2	AV
	2.55	CV
	-0.7	
	1.0	

514	0.1	AV
	06	ER
	49.9	
	49.6	
515	49.8	AV
	0.43	CV
	44.1	
	43.9	
516	44.0	AV
	0.32	CV
	70.9	
	65.5	
517	68.2	AV
	5.49	CV
	7.1	
	6.9	
518	7.0	AV
	2.02	CV
	1.2	
	-0.2	
519	0.5	AV
	06	ER
	-0.3	
	0.9	
520	0.3	AV
	06	ER
	52.6	
	53.4	
521	53.0	AV
	1.07	CV
	21.2	
	19.7	
522	20.5	AV
	5.19	CV
	12.9	
	12.3	
523	12.6	AV
	3.37	CV
	6.8	
	5.8	
524	6.3	AV
	11.22	CV
	0.5	
	0.2	
525	0.4	AV
	70.71	CV
	0.5	
	-1.6	
526	-0.6	AV
	06	ER
	54.2	
	50.1	
527	52.1	AV
	5.56	CV

(2)

As + Spike

501	38.1	
502	20.9	
503	72.4	
504	45.8	
505	48.9	
506	73.9	
507	19.7	
508	35.4	
509	42.9	
510	38.1	
511	38.0	
512	40.8	
513	39.6	
512 Repeat	39.9	
514	20.7	
515	73.8	
516	60.1	
517	75.6	
518	27.1	
519	19.5	
520	16.7	
521	73.2	
522	38.5	
523	33.3	
524	31.6	
525	18.5	
524 repeat	26.4	
526	20.5	
527	75.8	
	24.6	
	28.7	
504	26.7	AV
	10.88	CV
	42.8	
504	42.1	
	20.0	
	20.7	
530	20.3	AV
	2.43	CV
	34.4	
	38.3	
531	36.4	AV
	7.59	CV
532	0.9	
533	53.9	

516 0757

615 500 ppb

514 Cal Blk

513 0756

512 0755

511 0754 K_2

510 0754

509 0753

508 0752

507 Blk HC

506 0643 K_5

505 0643 K_4

504 0643

50 ppb

Blk

Ws 375 #3

Ws 375 #3

100 ppb

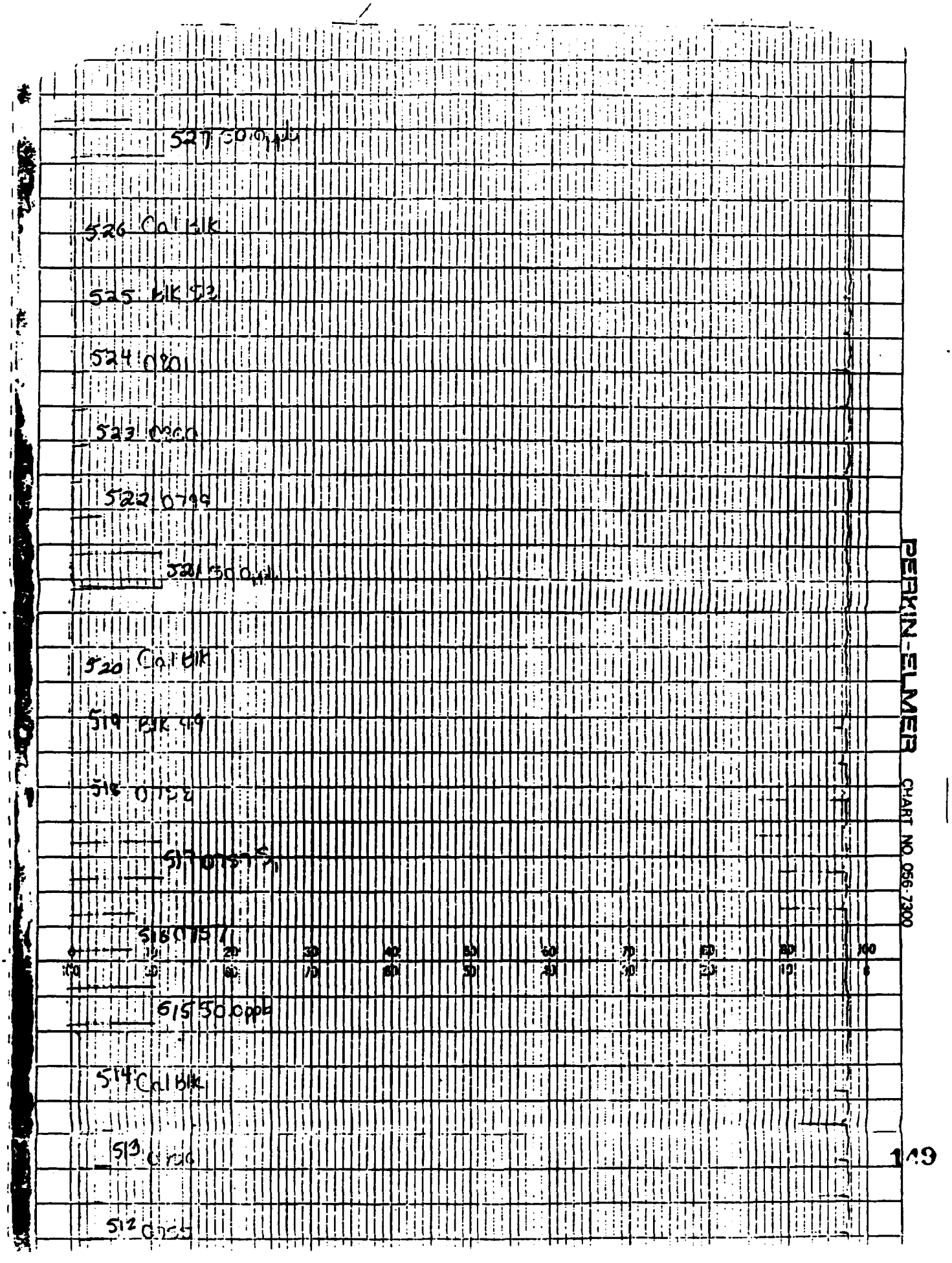
500 ppb

25.0 ppb

Blk

As 4819 4835 4346

PERKIN-ELMER CHART NO. 056-7302


527 50.0ppb
526 Cal blk
525 blk 52
524 080
523 0800
522 0799
521 50.0ppb
520 Cal blk
519 blk 49
518 0192
517 0197 51
516 0195 1
615 50.0ppb
514 Cal blk
513 0192
512 0195
PERKIN-ELMER
CHART NO. 056-7300

530

504 Spk

504 repeated 0643

527 300 μb

526 Cal Blk

524 Repeated 0801

525 Blk 53

524 0801

523 0800

522 0799

521 500 μb

520 Cal Blk

519 49

518 0758

517 0757 Spk

516 0757

515 500 μb

514 Cal Blk

512 Repeated 0755

513 0756

512 0755

511 0754R

510 0754

509 0753

508 0752

507 Blk 40

506 0643 R.

505 0643 R.

504 0643

503 500 μb

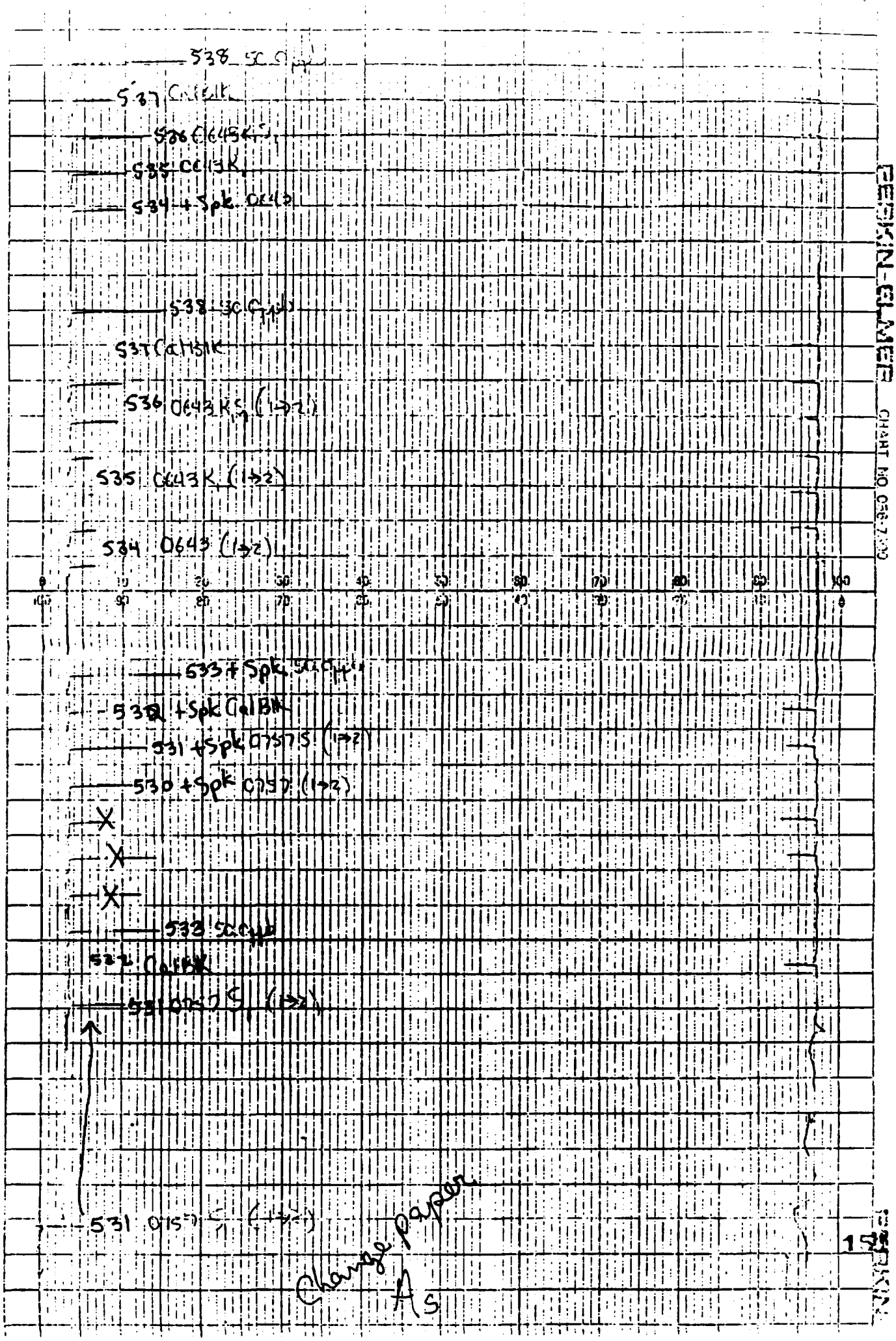
502 Blk

501 [illegible]

0 10 20 30 40 50 60 70 80 90 100

100 90 80 70 60 50 40 30 20 10 0

PERKIN-ELMER CHART NO. 056-7300



DEBKIN-BLAMER CHART NO 056-7300

Page No.
Performed: AS
Received: February 11, 1987
Performed by:

(SEE page 2)

S_1 = 25.0
S_2 = 50.0
S_3 = 100.0

CLP FINAL VOLUME = 200 ml.

ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From No	C	ppb Burn 1	ppb Burn 2	ppb Avg.	C.V.	20.0 ppb Spike	% Rec	D.F.	Amt. of Sample (gms.)	Units	Final Conc.
WS378 #3					19.7	18.9	19.3	3.31	41.2	110			µg/L	19.3
Cal Blank					0.3	0.9	0.6	/	18.9	95			µg/L	<10.0
50.0 ppb					48.2	49.2	48.7	1.45	79.4	/			µg/L	48.7
0859.0403					47.5	45.2	46.3	3.51	67.2	105		1.02	mg/Kg	9.08
0860.0403					25.9	26.8	26.3	2.95	44.3	90		1.03	↓	5.11
0860.(2)					27.6	28.9	28.3	3.25	45.2	90		1.03		5.50
0861.0403					21.3	22.2	21.8	2.93	39.[illegible]	88		1.03		4.23
0861.(2)					54.5	54.8	54.6	0.39	[illegible]	93		1.03		[illegible]
0862.0403					11.2	10.2	10.7	6.61	29.6	95		1.05		2.0[illegible]
0863.0403					9.4	8.6	9.0	6.29	27.3	91		1.03	mg/Kg	1.75
Cal Blank					1.4	1.3	1.4	5.24	18.2	91			µg/L	<10.0
50.0 ppb					53.8	53.5	53.7	0.40	76.5	114			µg/L	53.7
0864.0403					48.6	50.6	49.6	2.85	68.0	92		1.02	mg/Kg	9.73
0865.0403					4.8	4.9	4.8	1.46	23.6	94		1.01	↓	<0.99
0866.0403					6.3	6.5	6.4	2.2	24.8	92		1.02	mg/Kg	.25
Prep Blank 067					1.5	0.5	1.0	/	18.2	91			µg/L	<10.0
Cal Blank					1.1	1.5	1.3	/	18.2	91			µg/L	<10.0
50.0 ppb					48.2	50.8	49.5	3.71	71.6	111			µg/L	49.5

4863

HGA FORM #1

ELEMENT: As, DATE: 2/10-11/87

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 369, Pg 154.

	01	WS378 #3	
	X02	Cal Blank	
	X03	50.0 ppb	
	X04	0859.0403	
JOB #:	X05	0860.	
	X06	0860. B1	
	X07	0861.	
	X08	0861. S1	
	X09	0862.	
	X10	0863.	
	X11	Cal Blank	
	X12	50.0 ppb	
	X13	0864.	
	X14	0865.	
	X15	0866.	
	X16	Prep Blank 067	
	X17	Cal Blank, S_2	
	X18	50.0 ppb	
	X19		
	X20		
	X21		
	X22		
	X23		
	X24		
	X25		
	X26		
	X27		
	X28		
	X29		
	X30		
	X31		
	X32		
	X33		
	X34		
	X35	, S_3	

IS SPIKE

501	41.2
502	18.3
503	73.6
~~504~~	~~65.5~~
504	67.2
~~505~~	~~52.4~~
505	44.3
506	16.2
507	33.4
508	73.1
509	29.8
510	27.3
511	18.2
512	76.5
513	58.0
514	23.[illegible]
515	24.[illegible]
516	18.2
517	18.1
518	71.6

recycled paper

ecology and environment

	[illegible]	
	[illegible]	
	[illegible]	AV
	[illegible]	CV
	[illegible]	
	[illegible]	
	0.096	
	0.367	
	0.197	AV
	0.73	CV
	[illegible]	
	[illegible]	
	[illegible]	
	45.8	AV
	3.18	CV
	[illegible]	
	[illegible]	
	[illegible]	
	101.1	AV
	2.94	CV
	[illegible]	
	20.2	
	19.5	
501	19.9	AV
	2.69	CV
	2.2	
	2.9	
502	2.6	AV
	14.41	CV
	49.3	
	49.2	
503	49.2	AV
	0.14	CV
	21.9	
	43.7	
504	32.5	AV
	[illegible]	CV
	28.1	
	27.4	
505	28.2	AV
	6.20	CV
	27.1	
	29.4	
506	28.3	AV
	5.75	CV
	21.4	
	22.7	
507	22.1	AV
	4.17	CV
	47.4	
	47.6	
508	47.5	AV
	0.30	CV
	11.6	
	11.0	
509	11.3	AV
	3.7[illegible]	CV
	9.5	
	9.5	

AS

	[illegible]	
	[illegible]	CV
	[illegible]	
	1.2	
	[illegible]	
511	3.3	AV
	35.55	CV
	7.4	
	[illegible]	
512	2.3	AV
	[illegible]	CV
	2.4	
	[illegible]	
	[illegible]	
	0.007	AV
	9.83	CV
	[illegible]	
	[illegible]	
	0.097	AV
	4.37	CV
	[illegible]	
	[illegible]	
	44.7	AV
	1.27	CV
	[illegible]	
	[illegible]	
	115.3	C
	114.9	AV
	0.49	CV
	[illegible]	
	19.7	
	18.8	
501	19.3	AV
	3.31	CV
	0.3	
	0.9	
502	0.6	AV
	70.71	CV
	48.2	
	49.2	
503	48.7	AV
	1.45	CV
	47.5	
	45.2	
504	46.3	AV
	3.51	CV
	28.9	
	25.5	
505	26.2	AV
	2.55	CV
	27.6	
	28.9	

TUBE BURNED OUT ABOUT RUN

	[illegible]	
	[illegible]	CV
	[illegible]	
	1.4	
	22.2	
507	21.3	AV
	2.93	CV
	54.5	
	54.8	
508	54.6	AV
	0.33	CV
	11.2	
	10.2	
509	10.7	AV
	6.51	CV
	9.4	
	9.5	
510	9.0	AV
	6.29	CV
	1.4	
	1.3	
511	1.4	AV
	5.24	CV
	53.8	
	53.5	
512	53.7	AV
	0.47	CV
	48.6	
	50.6	
513	49.6	AV
	2.85	CV
	4.4	
	4.9	
514	4.8	AV
	1.46	CV
	6.3	
	6.5	
515	6.4	AV
	2.21	CV
	1.5	
	0.5	
516	1.0	AV
	70.71	CV
	1.1	
	1.5	
517	1.3	AV
	21.76	CV
	~~[illegible]~~	
	52.6	
518	56.7	AV
	10.34	CV
	48.2	
	50.8	
519	49.5	AV
	4.71	CV

518	50.0 ppb
517	Cal Blk
516	Prep Blk
515	0866
514	0865
513	0864
512	50.0 ppb
511	Cal Blk
510	0863
509	0862
508	0862 S
507	0861
506	0860 R
505	0860
504	0859
503	50 ppb
502	Cal Blk
501	WS 378 #3

As
Spikes

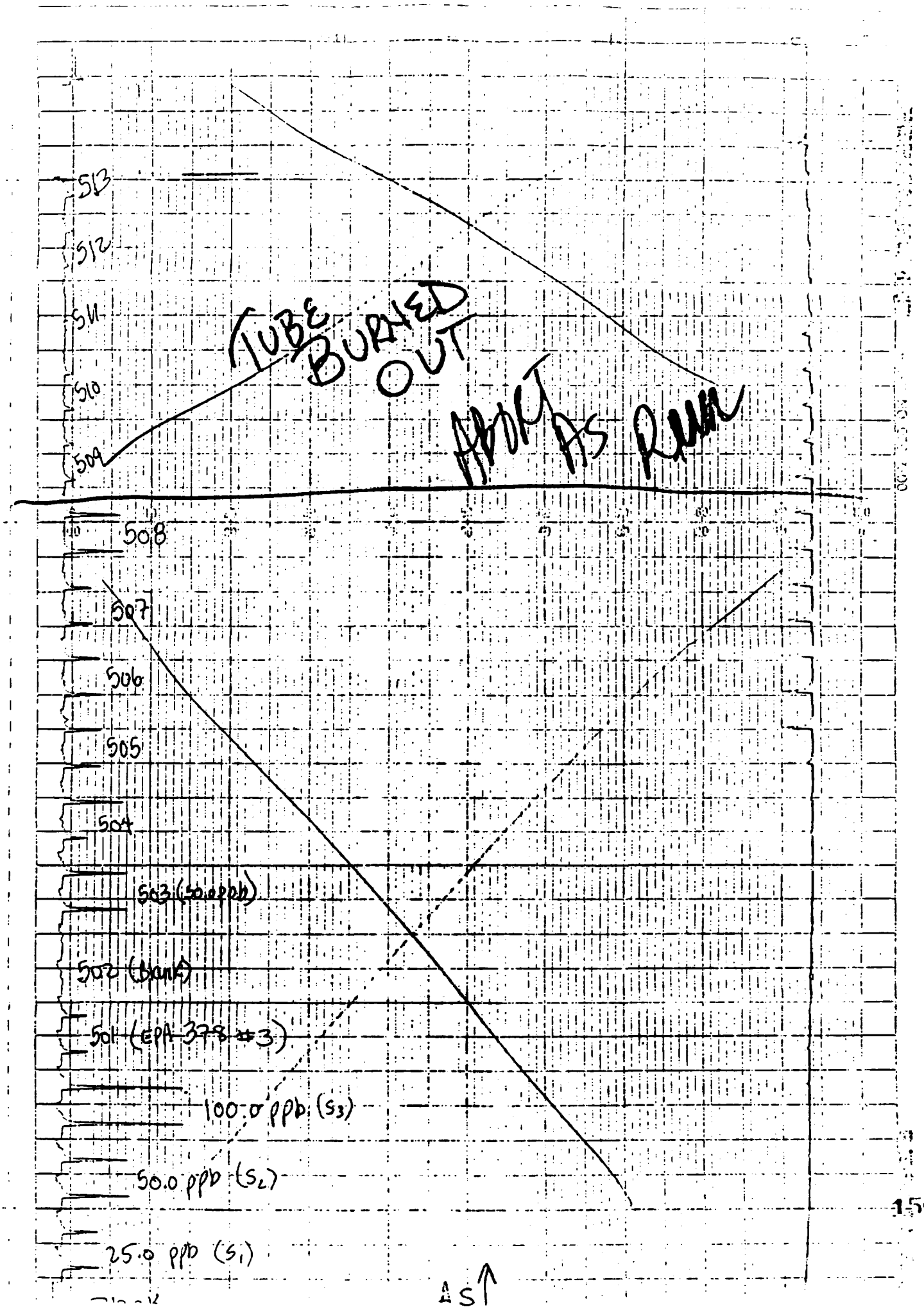
518

X Omit

517

516

515


513
512
511
510
509
TUBE BURNED OUT
ABORT AS RUN
508
507
506
505
504
503 (50.0 ppb)
502 (Blank)
501 (EPA 378 #3)
100.0 ppb (S3)
50.0 ppb (S2)
25.0 ppb (S1)
As

S18 50.0 ppb

X Omit

S17 CAL BLK

S16 Prep BLK

S15 0866

S14 0865

S13 0864

S12 50.0 ppb

S11 CAL BLK

S10 0863

S09 0862

S08 0861 S

S07 0861

S06 0860 R

S05 0860

S04 0859

S03 (50.0 ppb)

S02 (BLANK)

EPA 2354.3 (Rev)

Project No.

TITLE Book No.

From Page No.

Test Performed: As

Date Received: February 17, 1987

Work Performed By:

(SEE page 2)

S_1 = 25.0
S_2 = 50.0
S_3 = 100.0

CLP Final Volume = 200 ml.

Job No.	ID No.	Custody Seal Intact Yes No	Bottle Storage Area Received Empty No	C	ppb Burn 1	ppb Burn 2	ppb Avg.	C.V.	20.0 ppb Spike	% Rec.	D.F.	Amt. of Sample (Gms)	Units	Final Conc.	Pre-Dig. Spike Rec.
	WS 378#3				18.7	19.4	19.1	2.61	41.1	110			µg/L	18.7	
	Cal Blank				1.6	0.4	1.0	/	23.5	118			µg/L	<10.0	
	50.0 ppb				51.1	52.0	51.6	1.24	72.2	103			µg/L	51.6	
4872	Prep Blank 082				0.5	0.2	0.3	/	22.2	111			µg/L	<10.0	
	0900.04a3				24.3	24.9	24.6	1.73	43.4	94		1.02	mg/kg	4.82	
	0900. Ru				23.0	22.0	22.5	3.14	44.2	109		1.01	mg/kg	4.46	
	0900. RuSu				63.2	64.7	63.9	1.66	88.3	/		1.04	mg/kg	12.38	98
	0901.04a3				3.4	3.9	3.7	9.69	27.8	121		1.04	mg/kg	<0.962	
	Cal Blank				1.2	-0.0	0.6	/	23.0	115			µg/L	<10.0	
	50.0 ppb				50.4	49.9	50.2	0.71	75.4	/			µg/L	50.2	

To Page No.

Witnessed & Understood by me, CO

Date 3/2/87

Invented by

Date 2/17/87

HGA FORM #1

ELEMENT: As, DATE: 2/17/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB. BOOK NO. 269, pg 173

	X01	WS 378 #3
	X02	Cal Blank
	X03	50.0 ppb
	X04	Prep Blank 082 (4872)
JOB #:	X05	0900.0103
	X06	0900. R1
	X07	0900. R1S1
	X08	0901.
	X09	Cal Blank
	X10	50.0 ppb
	X11	
	X12	
	X13	
	X14	
	X15	
	X16	
	X17	, S_2
	X18	
	X19	
	X20	
	X21	
	X22	
	X23	
	X24	
	X25	
	X26	
	X27	
	X28	
	X29	
	X30	
	X31	
	X32	
	X33	
	X34	
	X35	, S_3

As

	-0.026	
	-0.025	
	-0.026	AV
	2.77	CV
	[illegible]	
	0.089	
	0.094	
	0.092	AV
	1.88	CV
	[illegible]	
	[illegible]	
	[illegible]	
	45.0	AV
	0.62	CV
	[illegible]	
	[illegible]	
	[illegible]	
	35.5	AV
	4.64	CV
	[illegible]	
	18.7	
	19.4	
501	19.1	AV
	2.60	CV
	1.6	
	1.4	
502	1.5	AV
	84.85	CV
	51.1	
	52.5	
503	51.8	AV
	1.28	CV
	0.5	
	[illegible]	

[illegible]	[illegible]	AV
	[illegible]	CV
	[illegible]	
	[illegible]	
505	[illegible]	AV
	1.73	CV
	[illegible]	
	[illegible]	
506	[illegible]	AV
	[illegible]	CV
	[illegible]	
	[illegible]	
507	[illegible]	AV
	[illegible]	CV
	[illegible]	
	[illegible]	
508	[illegible]	AV
	[illegible]	CV
	1.2	
	[illegible]	
509	[illegible]	AV
	[illegible]	CV
	[illegible]	
	[illegible]	
510	[illegible]	AV
	0.71	CV

501	[illegible]
502	[illegible]
503	[illegible]
504	[illegible]
505	[illegible]
506	[illegible]
507	[illegible]
508	[illegible]
509	[illegible]
510	[illegible]

50.0 ppb
Cal Blk
0901

509
508
X 507 (~~[illegible]~~) OK
506
504
503
502
501
500

0900 R1
Prep Blk
50.0 ppb
Cal Blk
WS 378 #3

AS
Spikes

X omit
510 (50.0 ppb)
509 (Hawk)

508 0901
507 0900 RS
504 00900 R
505 00900
504 Prep Blk
503 (50.0 ppb)
502 (Blank)
501 (Std 378#3)

100.0 ppb (S_3)

500 ppb (S_2)

Page No.

Test Performed: Hg (con't)
Date Received: 2/2/87
Work Performed By: JH

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Read	Conc.	D.F.	Amount of Sample	Units	Final Conc.
	Blank				0					
	0.02 µg				5					
	0.04				9					
	0.08				18					
	0.20				42					
	0.40				84					
	0.80				168					
	WP 1183 #2				100	.475		100mL	µg/L	4.75
	Blank				0	0				
	CCVS				20	.093		100mL	µg/L	0.93
1844	0795.01	NO	A-3		10	.045		100mL	µg/L	0.45
	0796.01				0					<0.20
	0796.01					.02				<0.20
	0796.01+ 4.0 ppb				95	.45				4.50
	0797.01				0	<.02				<0.20
1834	0748.01	NO	A18		2	<.02		0.33g	mg/Kg	<0.10
	0748.01				4	<.02		0.38		<0.10
	0748.01				6	<.02		0.37		<0.10
	0749.01	NO	A18		4	<.02		0.33		<0.10
	0749.01				2	<.02		0.36		<0.10
	Blank				0	<.02			10. µg/L	<0.20
	CCVS				20	.093		100mL		0.93

Other Client

Other Client

r = .999975
y = .00478 x − .0020

113% recovery

Instrument Understood by me. Date Witnessed by Date

From Page No. 3P

Test Performed: Hg (con't)

Date Received:

Work Performed By:

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Read	Conc.	D.F.	Amount of Sample	Units	Final Conc	
4834 (con't)	0749.01		NO	A18	10	.045		0.33g	mg/Kg	0.14	<0.10 Hue
	0750.01		NO	A18	7	.031		0.32		<0.10	
	0750.01		⊥	⊥	6	.026		0.40		<0.10	
	0750.01		⊥	⊥	6	.026		0.37		<0.10	
	0751.01		NO	A18	6	.026		0.32		<0.10	
	0751.01		⊥	⊥	6	.026		0.37		<0.10	
	0751.01		⊥	⊥	6	.026		0.32		<0.10	
4819	0643.04		NO	A2	13	.059		0.39		0.153	} 0.155 Hue
	0643.04		⊥	⊥	10	.045		0.29		0.156	
	0643.04+1.0µg		⊥	⊥	35	.16		0.37	⊥	0.44	108% recovery
	Blank				2	<0.02			µg/L	<0.20	
	CCVS				23	.11		100mL	⊥	1.07	
4835	0752.04		NO	A-28	6	.026		0.39	mg/kg	<0.10	
	0752.04		⊥	⊥	5	.021		0.36		<0.10	
	~~0753.04~~										
	0753.04		NO	A-28	6	.026		0.37		<0.10	
	0753.04		⊥	⊥	7	.031		0.32		<0.10	
	0754.04		NO	A-28	4	<.02		0.35		<0.10	
	0754.04		⊥		4	<.02		0.36		<0.10	
	0755.04		NO	A-28	4	<.02		0.33		<0.10	
	0755.04		⊥		4	<.02		0.38		<0.10	
	0755.04+1.0µg		⊥		18	.083		0.40	⊥	0.21	83% recovery

Other Check

To Page No. 9

Date 2/3/87

Date 2/2/87

Project No.
Book No.

Form Page No. 89
Test Performed: Hg (con't)
Date Received:
Work Performed By:

Job No.	ID No.	Custody Seal Intact Yes	Custody Seal Intact No	Secure Storage Area Received From	Read	Conc	D.F.	Amount of Sample	Units	Final Conc	
4835	Blank				3	<.02			mg/L	<0.20	
(con't)	CCVS				24	.11		100mL	⊥	1.12	
	0756.04	NO		Air	3	<.02		0.33g	mg/kg	<0.10	
	0756.04	⊥		⊥	4	<.02		0.36		<0.10	
Rerun	0757.04	NO		Air	114	.54		0.37		1.46	
	0757.04	⊥		⊥	>8.0			0.31			possible BAD contamination
	0758.04	NO		Air	31	.14		0.34		0.43	
	0758.04	⊥		⊥	28	.13		0.35		0.37	
4846	0799.04	NO		Air	1	<.02		0.36		<0.10	
	0799.04	⊥		⊥	1	<.02		0.36		<0.10	
	0799.04+1.0ppb	⊥		⊥	19	.088		0.33	⊥	0.27	88% recovery
	Blank				6	<.02			ug/L	<0.20	
	CCVS				21	.098		100mL	⊥	0.98	
Rerun	0800.04	NO		Air	80	.38		0.35	mg/kg	1.08	
	0800.04	⊥		⊥	38	.18		0.37		0.48	
	0800.04	⊥		⊥	31	.14		0.24		0.61	
	0801.04	NO		Air	4	~~.02~~ <.02		0.25		<0.10	
	0801.04	⊥		⊥	3	<.02		0.21		<0.10	
	0801.04	⊥		⊥	3	<.02		0.33	⊥	<0.10	
	Blank				3	<.02			ug/L	<0.20	
	CCVS				25	.117		100mL	⊥	1.17	

2/2/87 JD.

Witnessed & Understood by

2/2/87

Test Performed: Hg CVAA
Date Received: 2/4/87
Performed By: JJ.

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Read	Conc	D.F.	Amount of Sample	Units	Final Conc.	r=.99938
	Blank				3				µg/L	<.02	Y = .00462x
	0.02 µg				10 ~~14~~ 9					0.29	
	0.04				10 9 14					0.52	
	0.05				17					0.66	
	0.20				43					~~0.19~~ 1.86	
	0.40				90					4.04	
	0.80				176					8.01	
	WP 1183#2				101	.454		100mL		4.54	
	Blank				0	<.02					
	CCVS 0.1mg				24	.098		100mL	µg/L	.98	
4846	0800.04	NO	A28		31	~~2.10~~ 0.13		0.35g	mg/kg	~~0.37~~	Sample was impossible to homogenize.
	0800.04				66	0.29		0.28g		1.04	and ~~small~~ to
	0800.04				84	0.38		0.31g		1.21	
4835	0757.04	NO	A28		126	0.57		0.36g	mg/kg	1.58	
	0757.04				>8.0			0.28g			
	0757.04				*			0.31g			*SEE PG 9
	0757.04+10ppb				—			0.26g			Spike not run to high Hg c
4849	0828.01	NO	A28		16	0.07		100mL	µg/L	~~0.61~~	
	0828.01				108	0.49				0.66	
	0828.01+4.0ppb									4.87	106% recove
	Blank				2	<.02					
	CCVS				25	0.10		10mL	µg/L	1.03	

Other Client

To Page No.

Witnessed by: DH 2/12 Date

Project No.

Book No. HHLE

om ie No. 9

Performed: Hg (con't)

Received:

k Performed By:

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		Read	Conc	D.F.	Amount of Sample	Units	Final Conc	
1853	Rerun 0839.01		Yes	A33	>>20			100mL			Contamination was so large, following results may be wrong.
1849	~~0829.01~~	~~SMA~~	no	A18	~~22~~	~~0.043~~		0.20g	mg/kg	~~0.21~~	
Rerun	0829.01				33	0.14		0.24g		0.58	
	0829.01				34	0.14		0.35g		0.38	
	~~0829.01+4.0 ppb~~				81	0.34		0.23g		1.57	30% recovery
	Blank				0	<0.02				<0.20	
	CCVS				22	0.089		100mL	µg/L	0.89	
	0757.04		No	A28	14	0.052	1→10	.31g	mg/kg	1.68	
	0757.04				13	0.048	1→10	.31g		1.53	
	0757.04				14	0.052	1→10	.31g		1.68	

Other Chit

TLE

From Page No.

Performed: Hg
ed: 2/11/87
Performed By: JM

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Read	Conc.	D.F.	Amount of Sample	Units	Final Conc.	
											r = .9998
	Blank				5				µg/L	<0.20	y = .00450x - .0
	0.02 ug				9					0.25	
	0.04				12					0.38	
	0.08				19					0.70	
	0.20				47					1.96	
	0.40				93					4.03	
	0.80				181					8.00	
	WP 118342				114	.498		100mL		4.98	known = 4.70
	Blank				6	<.02				<0.20	
	CCVS				24	.092		100mL	µg/L	0.92	
4853	0839.01	NO		A33	>8.0		1→100	1mL	µg/L		
	0839.01				>8.0		1→200	.5mL			* See pg 95 for I
	0839.01				*						
	0839.01 + 4.0ppb				>8.0		1→1000	.1mL			
4861	0854.16	NO		A32	9	.025		100mL	µg/L	0.25	
	0854.16				1	<.02	1→10	10mL		<0.20	
	0855.16	NO		A32	10	.029		100mL	µg/L	0.29	
	0855.16				7	<.02	1→10	10mL		<0.20	
	0856.16	NO		A32	113	.49		100mL	µg/L	4.93	
	0856.16				73	.31	1→10	10mL		31.33	possible BOD contaminati
											REPEAT
	Blank				3	<.02				<0.20	
	CCVS				25	.097		100mL	µg/L	0.97	

To Page No.

Witnessed & Understood by: Date: Recorded by: Date: 2/11/87

Timothy J. Stunzak

Page No. A3

Test Performed: Hg (cont'd)
Date Received:
Work Performed By:

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Read	Conc	D.F.	Amount of Sample	Units	Final Conc	
					Other Test					
4861	0856.16+40ppb	NO	A22	97						invalid spike
4863	0859.04	NO	A5	>8.0			.23 g	mg/kg		
	0859.04			15	.052	1→4	.23		0.40	
	0859.04			18	.066	1→4	.23		1.14	
	0860.04			15	.052		~~.26~~ .23		0.23	
	0860.04			8	.020		~~.33~~ .26		<0.10	
	0861.04	NO	A5	18	.065		~~.32~~ .33	mg/kg	0.20	
	0861.04			7	.016		~~.28~~ .32		<0.10	
	0862.04	NO	A5	2	<.02		~~.37~~ .28	mg/kg	<0.10	
	0862.04			3	<.02		~~.34~~ .37		<0.10	
	0862.04+1.0ppb			65	.28		.34		0.82	280% recovery
	Blank			4	<.02				<0.20	
	~~0863.04~~ 14 CCVS			28	.11		100mL	ug/L	1.10	
	0863.04	NO	A5	0	<.02		.24	mg/kg	<0.10	
	0863.04			~~8~~ 2	<.02		.30		<0.10	
	0864.04			161	.70		.24		2.96	
	0864.04			90	.39		.28		1.39	
	0865.04	NO	A5	4	<.02		.39	mg/kg	<0.10	
	0865.04			5	<.02		.27		<0.10	
	0866.04	NO	A5	0	<.02		.23	mg/kg	<0.10	
	0866.04			9	.025		.22		.11	
1872	0900.04	NO	A32	37	.15		.28	mg/kg	0.54	
	0900.04			38	.15		.32		0.49	

Page No. 74

Performed: Hg (cont'd)

Rec

Rec'd By:

ID No.	Custody Seal Intact Yes	Custody Seal Intact No	Secure Storage Area Received From		Read	Conc	D.F.	Amount of Sample	Units	Final Conc
Blank			~~NO~~	~~AS2~~	5	<.02				<0.20
CCVS					28	.110		100mL	µg/L	1.10
0901.04			NO	AS2	5	<.02		.30	mg/kg	<0.10
0901.04			↓	↓	1	<.02		.22	↓	<0.10
Blank					4	<.02				<0.20
CCVS					27	.106		100mL	µg/L	1.06
0839.01			NO	AS3	72	.31	1→4000	.025mL	µg/L	12,353
0839.01					69	.30	1→~~10,000~~ 1000	.025mL		11,812
0839.01					30	.12	1→10,000	.01 mL		11,959
0839.01					15	.052	1→20,000	.005mL	↓	10,401

2/11/87 JJ.

To Page No. 169

Date 2/11/87

Jonathan I. Ghumah

TITLE

Page No.
Test Performed: Pb
Date Received: FEBRUARY 6, 1987
Work Performed By: [illegible]

(SEE pgs. 142-143)

CLP FINAL VOLUME = 200 ml.

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb BURN 1	ppb BURN 2	ppb AVG.	C.V.	10.0 ppb SPIKE	% REC	Amt of SAMPLE (GMS.)	D.F. UNITS	UNITS	FINAL CONC.
									25.4 ~~28.5~~					
	WS878#3				16.5					94			µg/L	16.5
	Cal Blank				-0.0				10.3	103			µg/L	< 5.00
	50.0 ppb				49.7				62.8	/			µg/L	49.7
4819	0643.0403				39.5	38.9	39.2	1.08	50.7 ~~51.4~~	115	1.00	0.5→10	mg/Kg	156.8
	0643.(R)				28.0	27.7	27.9	0.76	37.4	95	1.06	0.5→10	mg/Kg	105.3
	0643.(R.S.)				26.3	25.5	25.9	2.18	35.1	92	1.06	0.5→10	mg/Kg	97.7
	PrepBlank 040				0.1	0.3	0.2	/	10.6	106			µg/L	< 5.00
4835	0752.0403				42.2	42.2	42.2	0.00	51.6	94	1.08		mg/Kg	7.81
	0753.0403				20.3	20.5	20.4	0.69	31.3	109	1.01	1→10	mg/Kg	40.40
	0754.0403				31.0	31.2	31.1	0.46	40.6	95	1.00		mg/Kg	6.22
	0754.(R)				32.0	31.9	31.9	0.22	42.4	105	1.05		mg/Kg	6.16
	0755.0403				15.7	16.1	15.9	1.78	24.9	90	1.03	1→10	mg/Kg	30.87
	0756.0403				28.6	28.7	28.7	0.25	38.5	98	1.06	1→2	mg/Kg	10.83
	Cal Blank				0.1	-0.1	-0.0	/	10.6	106			µg/L	≤ 5.00
	50.0 ppb				50.6	50.5	50.6	0.14	63.9 ~~58.0~~	/			µg/L	50.6
	0757.0403				6.6	6.1	6.3	5.57	15.0	87	1.01	0.1→10	mg/Kg	124.15
	0757.(S)				11.1	11.3	11.2	1.26	20.0	88	1.03	0.1→10	mg/Kg	217.46
	0758.0403				31.3	29.9	30.6	3.24	41.1	105	1.02	1→10	mg/Kg	60.00
	PrepBlank 049				0.5	1.3	0.9	/	9.0	90			µg/L	< 5.00
4846	0799.0403				524.7	495.7	509.9	4.02	/	/	1.01		mg/Kg	/
	0800.0403				481.4	486.0	483.7	0.67	/	/	1.03		mg/Kg	/
	0801.0403				25.3	25.0	25.1	0.84	34.7	98	1.00		mg/Kg	5.02
	PrepBlank 053				0.9	1.2	1.0	/	8.5	85			µg/L	< 5.00
	Cal Blank				-0.1	-0.1	-0.1	0.00	7.6	76			µg/L	< 5.00
	50.0 ppb				51.5	52.5	52.0	1.36	64.7	127			µg/L	52.0
4846	0799.0403				66.7	67.0	66.9	0.32	75.1	112	1.01	0.5→10	mg/Kg	264.15
	0800.0403				47.6	46.7	47.2	1.35	57.1	99	1.03	0.5→10	mg/Kg	183.30
	Cal BLK				0.1				7.6					< 5.00
	50.0 ppb				51.2				64.7					51.20

Witnessed & Understood by me: Date

Invented by: Date

Recorded by: J.C. Ti.P. Date: 2/6-9/87

4819

HGA FORM #1

ELEMENT: Pb, DATE: 2/6/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 269 ~~149~~ 150

Pb SPIKES:

JOB #:

2 01	WS 373#3	~~201~~	~~28.3~~ REINJ
X02	Cal BLK	202	10.3
X03	50.0ppb	203	62.8
X04	~~0643.0403 (0.5→10)~~	~~204~~	~~51.4~~ REINJ
X05	~~0643. R1~~	205	37.4
X06	~~0643. R S1~~	206	35.1
X07	BLK 40	207	10.6
X08	0752.0403	208	51.6
X09	0753 (1→10)	209	31.3
X10	0754	210	40.6
X11	0754 R		
X12	0755 (1→10)	201	25.9
X13	0756 (1→2)	204	50.7
X14	Cal BLK		
X15	50.0ppb		
X16	0757.0403 (.1→10)		
X17	0757. S. (.1→10), S_2	211	42.4
X18	0758 (1→10)	212	24.9
X19	BLK 49	213	38.5
X20	0799.0403 +(0.5→10)	214	10.6
X21	0800 +(0.5→10)	~~215~~ REINJ	~~68.6~~
X22	0801	215	63.9
X23	BLK 53	216	15.0
X24	Cal BLK	217	20.0
X25	50.0ppb	218	41.1
X26		219	9.0
X27		220	78.1
X28		221	57.1
X29		222	34.9
X30		223	8.5
X31		224	7.8
X32		225	64.7
X33			
X34			
X35	, S_3		

recycled paper

ecology and environment

Pb

	-0.010	
	0.000	A2
	0.125	
	25.0	S1
	45.5	C
	50.5	S2
	99.1	C
	100.0	S3
201	16.5	
202	-0.0	
203	49.7	
~~204~~	~~39.3~~	
	39.5	
	38.9	
204	39.2	AV
	1.08	CV
	28.0	
	27.7	
205	27.9	AV
	0.76	CV
	25.3	
	25.5	
206	25.9	AV
	2.18	CV
	0.1	
	0.3	
207	0.2	AV
	70.71	CV
	42.2	
	42.2	
208	42.2	AV
	0.00	CV
	20.3	
	20.5	
209	20.4	AV
	0.69	CV
	31.0	
	31.2	
210	31.1	AV
	0.46	CV
	32.0	
	31.9	

211	31.9	AV
	0.22	CV
	15.7	
	16.1	
212	15.9	AV
	1.78	CV
	28.6	
	28.7	
213	28.7	AV
	0.25	CV
	0.1	
	-0.1	
214	-0.0	AV
	0.0	CV
	50.6	
	50.5	
215	50.6	AV
	0.14	CV
	6.6	
	6.1	
216	6.3	AV
	5.57	CV
	11.1	
	11.3	
217	11.2	AV
	1.26	CV
	31.3	
	29.9	
218	30.6	AV
	3.24	CV
	0.5	
	1.3	
219	0.9	AV
	62.85	CV
	524.7	C
	495.7	C
220	509.9	AV
	4.02	CV
	481.4	C
	486.0	C
221	483.7	AV
	0.67	CV
	25.3	
	25.0	
222	25.1	AV
	0.84	CV
	0.9	
	1.2	
223	1.0	AV
	20.20	CV
	-0.1	
	-0.1	
224	-0.1	AV
	0.00	CV
	51.5	
	52.5	
225	52.0	AV
	1.36	CV

	133.7	C
	135.4	C
220	134.6	AV
	0.74	CV
	94.8	
	94.5	
221	94.7	AV
	0.22	CV
	5.3	
	6.3	
220	5.3	AV
	0.00	CV
	3.7	

(DF = .1 → 10) - suspect

JRC

DF too great

DF = 0.5 → 10

	66.7	
	67.0	
220	66.9	AV
	0.32	CV
	47.6	
	46.7	
221	47.2	AV
	1.35	CV

Pb

224	0.1
225	51.2

216 [illegible]

215 [illegible] ppb

214 Cal Blk

213 0156

212 0155

211 0154K

210 0154

209 0152 (1→10)

208 0152

207 Blk 4r

206 0143K 31

205 0143K

204 0643

X omit

203 [50.0 ppb]

202 [BLANK]

201 [EPA 378 WS]

100.0 (S2)

50.0 (S1)

25.0 (S1)

Blank

Ph labs 4519 4836 4532

PERKIN-ELMER CHART NO 056-7300

225 [illegible]

~~224~~ [illegible]

224 [illegible]

223 [illegible]

222 [illegible]

[illegible] 221 (DILUTE, REINJECT)

[illegible] 220 (" ")

219 [illegible]

218 [illegible]

217 [illegible]

216 [illegible]

215 [illegible]

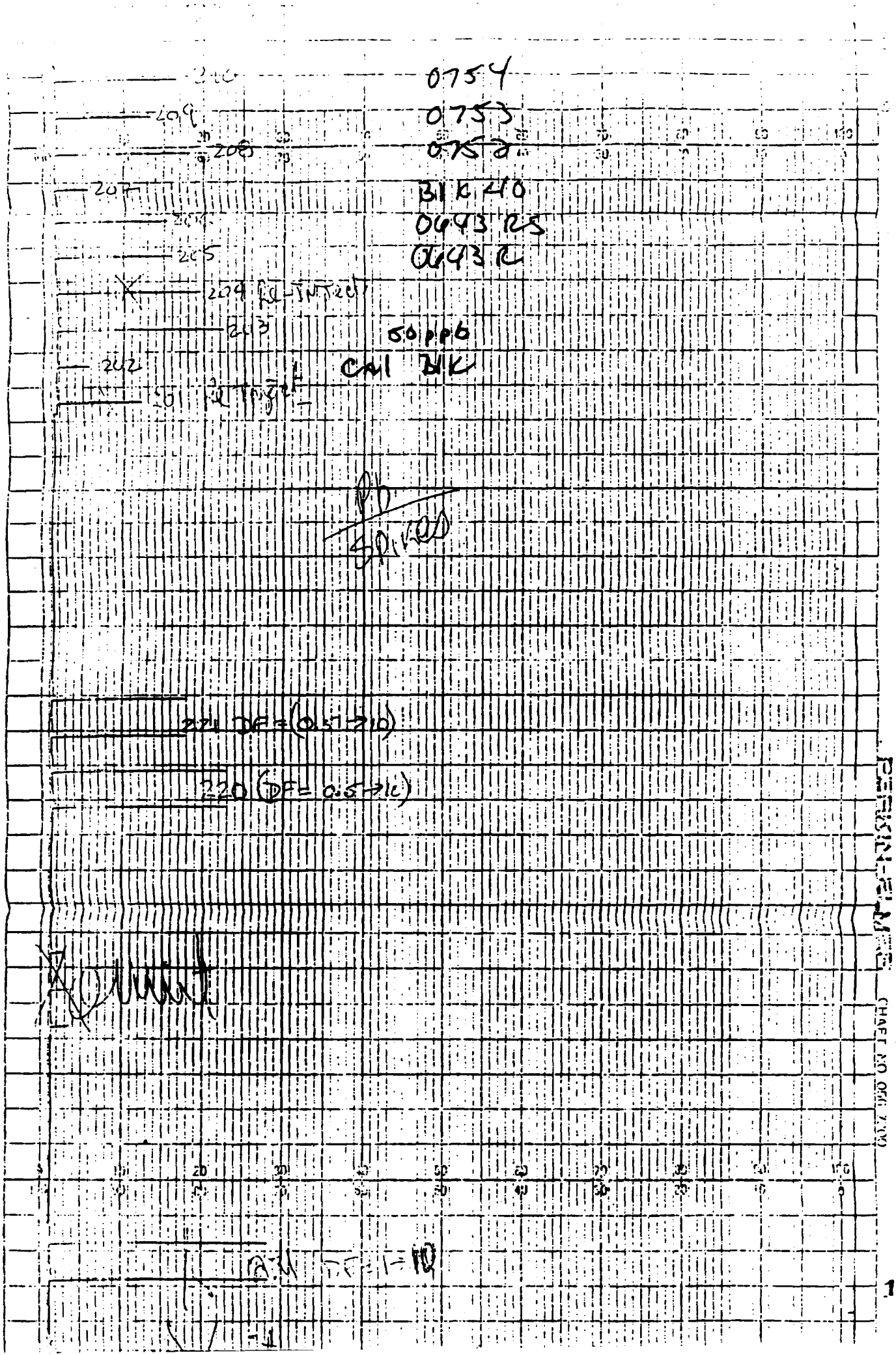
214 [illegible]

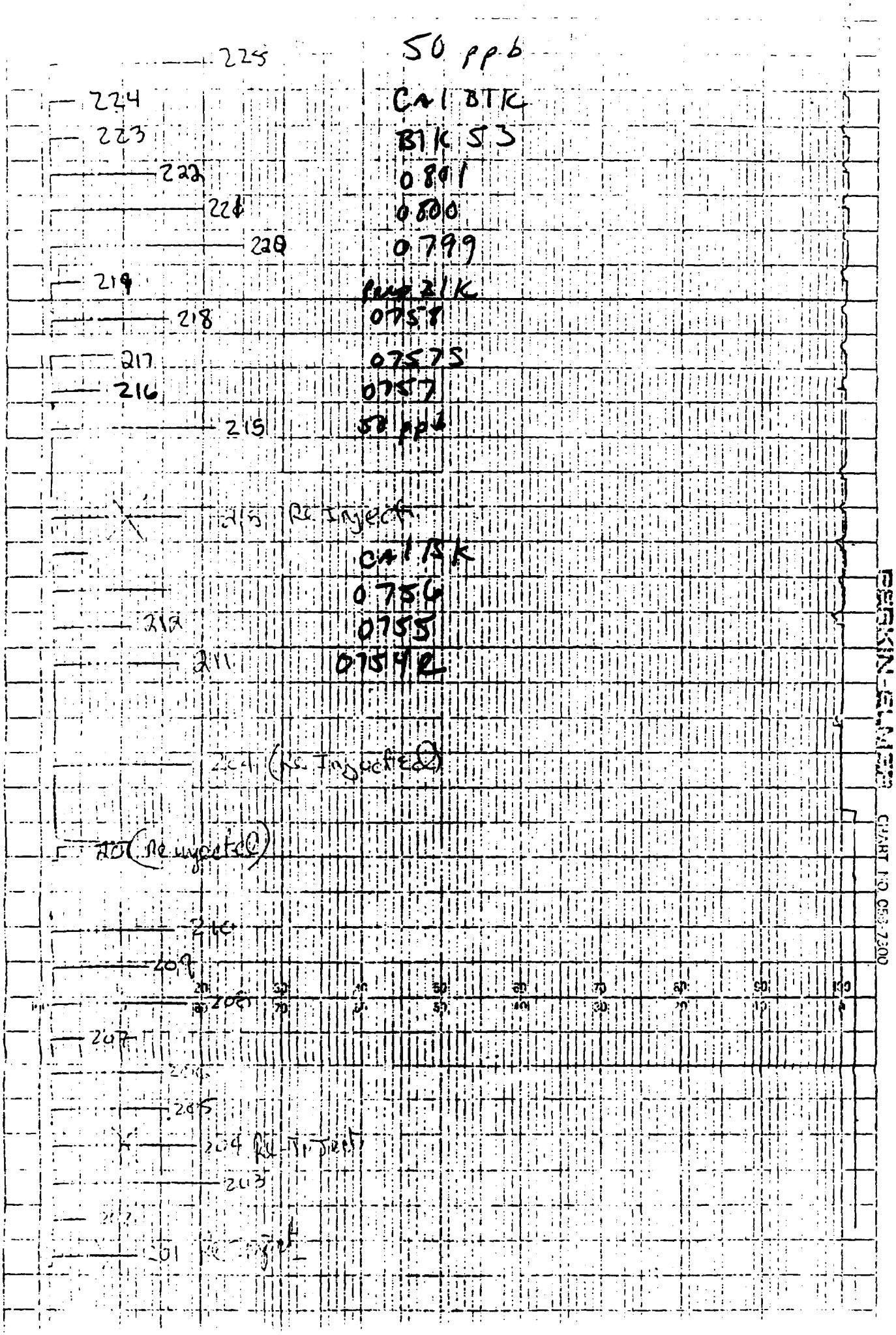
213 [illegible]

212 [illegible]

211 [illegible]

PERKIN-ELMER CHART NO 09-7300


0754
0753
0752
BLK 40
0643 RS
0643 R
50 ppb
CAL BLK
220 DF = (0.5 → 10)
220 (DF = 0.5 → 10)
DF = 10


50 ppb
Cal BTK
BTK 53
0801
0800
0799
Cal 21K
0758
0757S
0757
58 ppb
Re Inject
Cal 15K
0756
0755
0754E
(Re Injected)
(Re Injected)
(Re Injected)
225
224
223
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201
CHART NO 05-7300

Project No.

TITLE Book No.

From Page No.

Test Performed: Pb

Date Received: February 18, 1987

Work Performed By:

(SEE page 1)

S_1 = 25.0
S_2 = 50.0
S_3 = 100.0

CLP FINAL VOLUME = 200 ml.

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From No	C	ppb BURN 1	ppb BURN 2	ppb Avg.	C.V.	20.0 ppb Spike	% Rec	D.F.	Amt. of Sample	UNITS	FINAL CONC	PRE DIG. SPIKE REC
	WS378 #3					16.8	16.7	16.7	0.42							
	Cal Blank					-0.3	-0.3	-0.1	/							
	50.0 ppb					50.1	49.8	49.9	0.43							
4872	PrepBlank 082					0.5	0.4	0.4	/							
	0900.0403					05 ER	05 ER	05 ER	/							
	0900. (R1)					05 ER	05 ER	05 ER	/							
	0900. (R1S1)					05 ER	05 ER	05 ER	/							
	0901.0403					372.0	191.1	240.7	/							
	Cal Blank					1.3	1.0	1.2	/							
	50.0 ppb					48.7	48.6	48.7	0.15							
4863	PrepBlank 094					1.6	1.4	1.5	9.43							
	0859.0403x1					05 ER	05 ER	05 ER	/							
	0860.0403x1					05 ER	05 ER	05 ER	/							
	0860. (R1)					05 ER	05 ER	05 ER	/							
	0861.0403x1					05 ER	05 ER	05 ER	/							
	0861. (S1)					05 ER	05 ER	05 ER	/							
	Cal Blank					2.4	1.9	2.1	/							
	50.0 ppb					43	45.7	/	/							
	0862.0403x1					37.8	37.0	37.4	1.51							
	0863.0403x1					35.9	36.5	36.2	1.17							
	0864.0403x1					05 ER	05 ER	05 ER	/							
	0865.0403x1					05 ER	05 ER	05 ER	/							
	0866.0403x1					49.8	35.9	42.5	/							
	Cal Blank					3.3	2.7	3.0	/							
	50.0 ppb					45.7	46.0	45.8	0.46							

Type Replaced — DILUTIONS ON PAGE 176

FOR REFERENCE ONLY

To Page No. 176

Witnessed & Understood by me, Date

Invented by

Checked by

Date 2/18/87

Project No. _____
Book No. _____ TITLE _____

From Page No. 175
Performed: Pb (contd)
Date Received: February 18, 1987
Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From No	C	ppb Burn 1	ppb Burn 2	ppb Avg.	C.V.	20.0 ppb Spike	% Rec.	D.F.	Amt. of Sample (Grms)	Units	Final Conc.	Pre-Dig Spike Rec
	WS378#3					17.6	17.0	17.3	2.45	39.5	111			µg/L	17.3	
	Cal Blank					-1.2	-0.8	-1.0	/	22.2	111			µg/L	<5.00	
	50.0 ppb					53.7	52.1	52.9	2.14	75.4	113			µg/L	52.9	
4872	PrepBlank 082					-0.4	-0.5	-0.4	/	21.3	107			µg/L	<5.00	
	0900.043					16.8	16.8	16.8	0.00	38.1	107	0.01→10	1.02	mg/Kg	3294.1	
	0900. (R1)					22.7	22.4	22.5	0.94	41.8	97	0.01→10	1.01	mg/Kg	4454.4	
	0900. (R.S)					35.1	34.6	34.8	1.02	54.4	98	0.01→10	1.01	mg/Kg	6692.3	
	0901.043					12.1	12.8	12.5	3.98	32.7	101	1→10	1.01	mg/Kg	24.84	
	Cal Blank					-0.1	-0.0	-0.1	/	20.1	101			µg/L	<5.00	
	50.0 ppb					50.6				72.3	109			µg/L	50.6	
4863	PrepBlank 094					0.1	0.5	0.3	/	20.2	101			µg/L	<5.00	
	0859.043 x1					9.4	9.9	9.7	3.66	28.9	96	0.1→10	1.02	mg/Kg	190.20	
	0860.043 x1					3.5	3.4	3.4	2.05	23.2	99	0.1→10	1.03	mg/Kg	<97.1	
	0860. (R1)					2.8	2.7	2.8	2.57	22.6	99	0.1→10	1.05	mg/Kg	<95.2	
	0861.043 x1					2.2	2.2	2.2	0.00	22.0	99	0.1→10	1.00	mg/Kg	<100.0	
	0861. (S1)					3.2	2.8	3.0	9.43	22.7	99	0.1→10	1.00	mg/Kg	<100.0	
	Cal Blank					1.7	1.9	1.8	7.86	21.5	99		~~1.05~~	µg/L	<5.00	
	50.0 ppb					51.7	52.0	51.8	0.41	68.7	85		~~1.00~~	µg/L	51.8	
	0862.043 x1					43.0	43.4	43.2	0.66	58.0	/		1.03	mg/Kg	/	
	0863.043 x1					40.8	39.4	40.1	2.47	55.6	/		1.01	mg/Kg	/	
	0864.043 x1					19.4 ~~14.16~~	19.1 ~~14.16~~	19.2 ~~14.16~~	1.10 ~~14.16~~	36.8	88	0.01→10	1.00	mg/Kg	3840.0	
	0865.043 x1					30.0 ~~3.00~~	29.7 ~~3.00~~	29.9 ~~3.00~~	0.71 ~~3.00~~	48.1	91	0.1→10	1.05	mg/Kg	5625	
	0866.043 x1					32.6 ~~-0.4~~	32.1 ~~-0.5~~	32.4 ~~-0.5~~	1.09	46.2	/		1.01	mg/Kg	/	
	Cal Blank					-0.2	-0.3	-0.3	/	19.2	96			µg/L	<5.00	
	50.0 ppb					51.8	51.0	51.4	1.10	68.6	86			µg/L	51.4	
	0862.043 x1					21.5	21.0	21.2	1.66	42.1	105	1→2	1.03	mg/Kg	8.23	
	0863.043 x1					19.7	19.6	19.7	0.36	39.9	101	1→2	1.01	mg/Kg	7.80	
	0866.043 x1					18.3	19.3	18.8	3.76	37.4	93	1→2	1.01	mg/Kg	7.45	
	Cal Blank					-0.4				20.0	100					
	50.0 ppb					54.5				75.0	103					

To Page No. _____

Witnessed & Understood by me, GC Date 3/2/87

Invented by [illegible] Date 3/19/87

HGA FORM #1

ELEMENT: Pb, DATE: 2/18/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB. BOOK NO. 262 pg

	201	WS378 #3
	X02	Cal Blank
	X03	50.0 ppb
	X04	Prep Blank 082 (4872)
JOB #:	X05	0900.0403 +(.1→10) +(.01→10)
4872	X06	0900. R. +(.01→10)
4863	X07	0900 R.S. +(.01→10)
	X08	0901. +(1→10)
	X09	Cal Blank
	X10	50.0 ppb
	X11	Prep Blank 094 (4863)
	X12	0859. 0403 X1 +(.1→10)
	X13	0860. X1
	X14	0860. R. X1
	X15	0861. X1
	X16	0861. S. X1
	X17	Cal Blank, S_2
	X18	50.0 ppb
	X19	0862. X1 +(1→2)
	X20	0863. X1 +(1→2)
	X21	0864. X1 +(.1→10) +(.01→10)
	X22	0865. X1
	X23	0866. X1 +(1→2)
	X24	Cal Blank
	X25	50.0 ppb
	X26	
	X27	
	X28	
	X29	
	X30	
	X31	
	X32	
	X33	
	X34	
	X35	S_3

Pb

	-0.019	
	-0.019	
	-0.019	AV
	0.009	CV
	0.183	
	0.182	
	0.002	AV
	0.01	CV
	48.8	AV
	1.89	CV
	16.8	
	16.7	
201	16.7	AV
	0.02	CV
	-1.3	
	-0.8	
202	-1.1	AV
	0.1	
203		

	[illegible]	CV
	[illegible]	
	[illegible]	
	[illegible]	
	[illegible]	
	1.00	CV
	[illegible]	
	[illegible]	
	[illegible]	
	0.00	CV
	[illegible]	
	[illegible]	
	[illegible]	
	0.00	CV
	[illegible]	
	[illegible]	
	[illegible]	
208	201.7	AV
	45.43	CV
	1.3	
	1.0	
209	1.2	AV
	19.45	CV
	43.7	
	44.6	
210	45.7	AV
	0.15	CV
	1.6	
	1.4	
211	1.5	AV
	9.43	CV
	[illegible]	
	[illegible]	
212	[illegible]	
	0.00	CV
	[illegible]	
	[illegible]	
213	[illegible]	
	0.00	CV
	[illegible]	
	[illegible]	
214	[illegible]	
	0.00	CV
	[illegible]	
	[illegible]	
215	[illegible]	
	0.00	CV
	[illegible]	
	[illegible]	
216	[illegible]	
	0.00	CV
	2.4	
	1.9	
217	2.1	AV
	16.44	CV
	[illegible]	
	45.7	
218	24.5	AV
	[illegible]	
	[illegible]	

	[illegible]	
	[illegible]	
	[illegible]	
	[illegible]	
	[illegible]	
	[illegible]	AV
	1.17	CV
	[illegible]	
	[illegible]	
	[illegible]	
	[illegible]	CV
	[illegible]	
	[illegible]	
	[illegible]	
	0.10	CV
	[illegible]	
	45.4	
223	42.5	AV
	25.96	CV
	1.3	
	2.7	
224	2.0	AV
	14.14	CV
	45.7	
	46.0	
225	45.3	AV
	0.46	CV
	[illegible]	
	0.002	
	0.006	AV
	59.49	CV
	[illegible]	
	0.006	
	0.002	
	1.106	AV
	70.71	CV
	[illegible]	
	[illegible]	
	[illegible]	
	51.9	AV
	[illegible]	
	[illegible]	
	43.6	
	34.2	
	10.1	AV
	14.51	CV
	[illegible]	

	0.012	
	0.011	
	0.011	AV
	0.15	CV
	[illegible]	
	0.077	
	0.077	
	0.077	AV
	[illegible]	CV
	[illegible]	
	[illegible]	
	[illegible]	
	47.4	AV
	1.49	CV
	[illegible]	
	[illegible]	
	[illegible]	
	90.2	AV
	2.12	CV
	[illegible]	
	17.5	
	17.3	
201	17.3	AV
	2.45	CV
	-1.2	
	-0.5	
202	-1.0	AV
	25.28	CV
	53.7	
	52.1	
203	52.9	AV
	2.14	CV
	-0.4	
	-0.5	
204	-0.4	AV
	15.71	CV
	[illegible]	
	[illegible]	
	0.00	CV
	[illegible]	
	[illegible]	
	[illegible]	
	0.00	CV
	[illegible]	
	[illegible]	
	[illegible]	
	12.3	
	12.3	
206	12.4	AV
	[illegible]	CV

206	15.3	
	15.3	
	16.4	AV
	0.86	CV
	22.7	
	22.4	
207	22.5	AV
	0.98	CV
	35.1	
	33.5	
207	34.3	AV
	1.02	CV
	12.1	
	12.4	
208	12.3	AV
	3.08	CV
	-0.1	
	-0.0	
209	-0.1	AV
	[illegible]	[illegible]
	55.8	
	55.[illegible]	
[illegible]	[illegible]	AV
	1.[illegible]	CV
	0.5	
	0.4	
[illegible]	0.[illegible]	AV
	15.71	CV
210	50.5	
	0.1	
	0.5	
211	0.3	AV
	94.25	CV
	9.1	
	9.9	
212	9.7	AV
	3.66	CV
	3.5	
	3.4	
213	3.4	AV
	2.05	CV
	2.5	
	2.7	
214	2.5	AV
	2.57	CV
	2.2	
	2.2	
215	2.2	AV
	0.00	CV
	3.2	
	3.[illegible]	
216	3.2	AV
	[illegible]	CV
	1.7	
	1.[illegible]	

217	[illegible]	[illegible]
	[illegible]	[illegible]
	51.7	
	[illegible]	
218	51.2	AV
	[illegible]	CV
	[illegible]	
	43.4	
219	43.2	AV
	0.65	CV
	40.3	
	39.4	
220	40.1	AV
	2.47	CV
	[illegible]	
	[illegible]	
	[illegible]	
	[illegible]	CV
	30.0	
	29.7	
222	29.9	AV
	0.71	CV
	19.4	
	19.1	
221	19.2	AV
	1.10	CV
	[illegible]	
	[illegible]	
223	[illegible]	AV
	1.09	CV
	-0.2	
	-0.3	
224	-0.3	AV
	[illegible]	CV
	51.8	
	51.0	
225	51.4	AV
	1.16	CV

DF=ad>10

Pb
SPIKED

201	49.5	
202	22.[illegible]	
203	75.4	
204	21.[illegible]	
205	35.1	
206	41.[illegible]	
207	50.4	
208	32.7	
209	26.1	
210	72.5	
211	20.2	
212	24.[illegible]	
213	23.[illegible]	
214	22.5	
215	22.0	
216	23.7	
217	21.[illegible]	
218	63.7	
219	52.0	
220	55.[illegible]	
221	35.[illegible]	
222	43.1	
223	46.2	
224	13.2	
225	64.6	

	21.5	
210	21.0	
	21.2	AV
	1.6[illegible]	CV

	14.7	
30	14.6	
	14.7	AV
	[illegible]	CV

	14.3	
	13.3	
2,4,5T	14.3	AV
	3.7[illegible]	CV

[illegible]	[illegible]
[illegible]	42.[illegible]
204	-0.4
[illegible]	[illegible]
226	54.5
210	42.1
[illegible]	33.[illegible]
[illegible]	37.4
[illegible]	20.[illegible]
[illegible]	75.0

m Page No.
t Performed: Pb
e R ed: February 18, 1987
rk Performed By:

(SEE page 1)

S_1 = 25.
S_2 = 50.
S_3 = 100.

CLP FINAL VOLUME = 200 ml.

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From No	C	ppb BURN 1	ppb BURN 2	ppb Avg	CV.	200 ppb Spike	% REC	D.F.	Amt. of Sample	UNITS	FINAL CONC	PR DK SP RE
	WS37E #3					16.8	16.7	16.7	0.42							
	Cal Blank					-0.3	-0.3	-0.1	/							
	50.0 ppb					50.1	49.8	49.9	0.43							
E72	PrepBlank 062					0.5	0.4	0.4	/							
	c9cc.c403					05 CR	05 CR	05 CR	/							
	c9cc.(R1)					05 CR	05 CR	05 CR	/							
	c9cc.(R.S.)					05 CR	05 CR	05 CR	/							
	c9cl.c403					372.0	191.1	240.7	/							
	Cal Blank					1.3	1.0	1.2	/							
	50.0 ppb					48.7	48.6	48.7	0.15							
E63	PrepBlank 094					1.6	1.4	1.5	9.43							
	cE59.c403x1					05 CR	05 CR	05 CR	/							
	cE6c.c403x1					05 CR	05 CR	05 CR	/							
	cE6c.(R1)					05 CR	05 CR	05 CR	/							
	cE6l.c403x1					05 CR	05 CR	05 CR	/							
	cE6l.(S)					05 CR	05 CR	05 CR	/							
	Cal Blank					2.4	1.9	2.1	/							
	50.0 ppb					43	45.7	/	/							
	cE62.c403x1					37.8	37.0	37.4	1.51							
	cE63.c403x1					35.4	36.5	36.2	1.17							
	cE64.c403x1					05 CR	05 CR	05 CR	/							
	cE65.c403x1					05 CR	05 CR	05 CR	/							
	cE66.c403x1					49.8	35.4	42.5	/							
	Cal Blank					3.3	2.7	3.0	/							
	50.0 ppb					45.7	46.0	45.8	0.46							

FOR REFERENCE ONLY

Values reflaged - Difficulty's on page 176

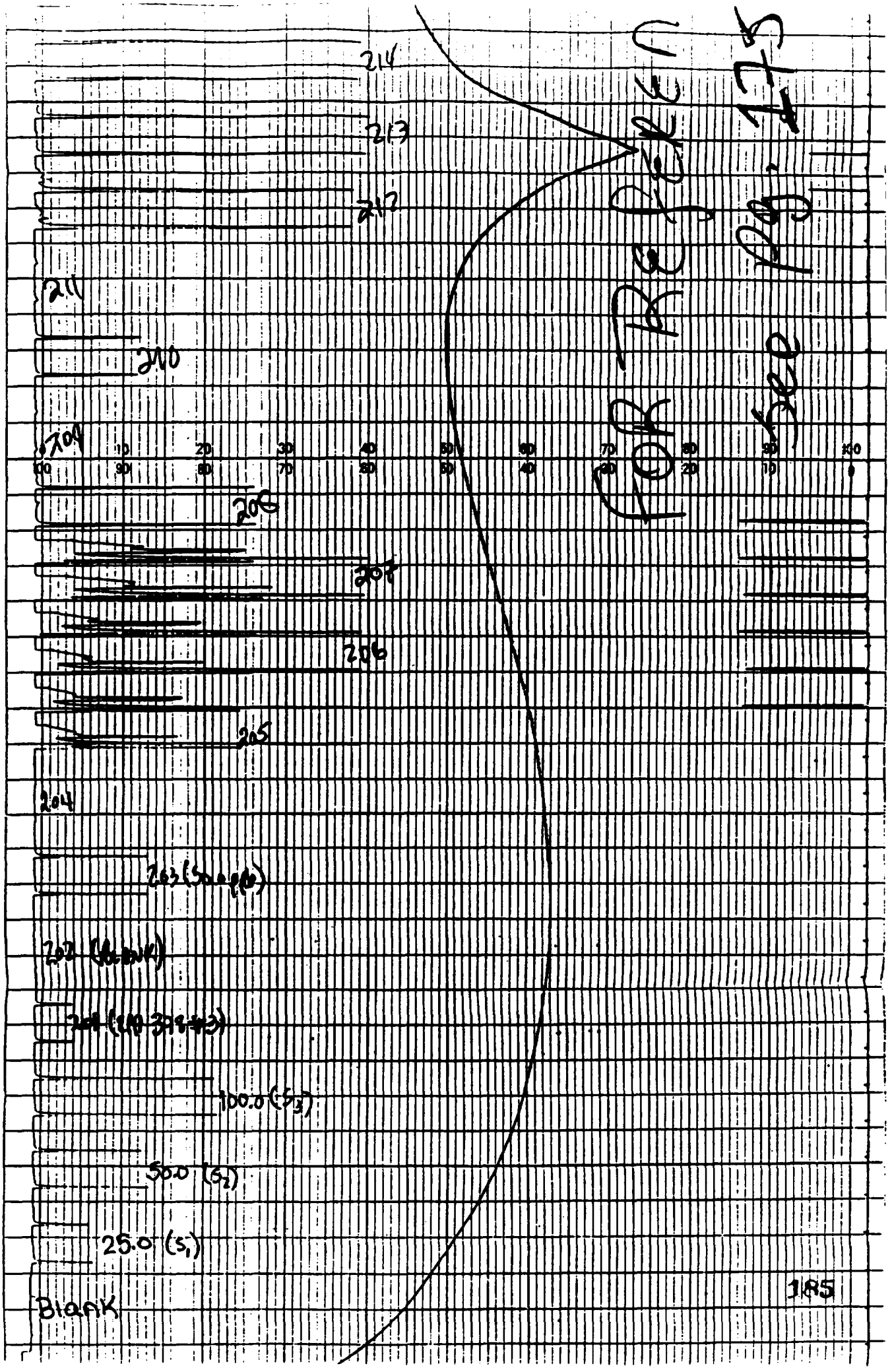
176

Page No. (1)
Test Performed: Pb (contd)
Date Received: February 18, 1987
Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb Burn 1	ppb Burn 2	ppb Avg.	C.V.	20.0 ppb Spike	% Rec.	D.F.	Amt. of Sample (Grams)	Units	Final Conc.
	WS378 #3				17.6	17.0	17.3	2.49	39.5	111			µg/L	17.3
	Cal Blank				-1.2	-0.8	-1.0	/	22.2	111			µg/L	<5.0
	50.0 ppb				53.7	52.1	52.9	2.14	75.4	113			µg/L	52.9
-872	PrepBlank 082				-0.4	-0.5	-0.4	/	21.3	107			µg/L	<5.0
	0900.043				16.8	16.8	16.8	0.00	38.1	107	0.1→10	1.02	mg/Kg	3294.
	0900. (R)				22.7	22.4	22.5	0.94	41.8	97	0.1→10	1.01	mg/Kg	4454.
	0900. (R.S)				35.1	34.6	34.8	1.02	54.4	98	0.1→10	1.04	mg/Kg	6692.
	0901.043				12.1	12.8	12.5	3.98	32.7	101	1→10	1.04	mg/Kg	24.8
	Cal Blank				-0.1	-0.0	-0.1	/	20.1	101			µg/L	<5.0
	50.0 ppb				50.6				72.3	109			µg/L	50.6
4863	PrepBlank 094				0.1	0.5	0.3	/	20.2	101			µg/L	<5.0
	0859.043 x1				9.4	9.9	9.7	3.66	28.9	96	0.1→10	1.02	mg/Kg	190.
	0860.043 x1				3.5	3.4	3.4	2.05	23.2	99	0.1→10	1.03	mg/Kg	<97.1
	0860. (R)				2.8	2.7	2.8	2.57	22.6	99	0.1→10	1.05	mg/Kg	<95.
	0861.043 x1				2.2	2.2	2.2	0.00	22.0	99	0.1→10	1.00	mg/Kg	<100.
	0861. (S)				3.2	2.8	3.0	9.43	22.7	99	0.1→10	1.00	mg/Kg	<100.
	Cal Blank				1.7	1.9	1.8	1.80	21.5	99		~~1.05~~	µg/L	<5.0
	50.0 ppb				51.7	52.0	51.8	0.91	68.7	85		~~1.0~~	µg/L	51.8
	0862.043 x1				43.0	43.4	43.2	0.66	58.0	/		1.03	mg/Kg	/
	0863.043 x1				46.8	39.4	40.1	2.47	55.6	/		1.01	mg/Kg	/
	0864.043 x1				~~19.4~~	~~19.1~~	~~19.2~~	~~1.10~~	36.8	88	0.0 10	1.00	mg/Kg	3640.
	0865.043 x1				~~30.0~~	~~29.7~~	~~29.9~~	~~0.34~~	48.1	91	0.1→10	1.05	mg/Kg	562.
	0866.043 x1				~~32.6~~	~~32.1~~	~~32.4~~	~~1.09~~	46.2	/		1.01	mg/Kg	/
	Cal Blank				-0.2	-0.3	-0.3	/	19.2	96			µg/L	<5.0
	50.0 ppb				51.8	51.0	51.4	1.10	68.6	86			µg/L	51.4
	0862.043 x1				21.5	21.0	21.2	1.66	42.1	105	1→2	1.03	mg/Kg	8.2
	0863.043 x1				19.7	19.6	19.7	0.36	39.9	101	1→2	1.01	mg/Kg	7.8
	0866.043 x1				18.3	19.3	18.8	3.70	37.4	93	1→2	1.01	mg/Kg	7.4
	Cal Blank				-0.4				20.0	100			To Fa	[illegible]
	50.0 ppb				54.5				75.0	103				

Witnessed & Understood by me. Date

Invented by: Date


214
213
212
211
210
209
208
207
206
205
204
203 (500 ppb)
202 (blank)
201 (LD 378-43)
100.0 (S_3)
50.0 (S_2)
25.0 (S_1)
Blank
10 20 30 40 50 60 70 80 90 100
90 80 70 60 50 40 30 20 10 0
185

PERKIN-ELMER CHART NO. 056-7300
PERKIN-ELMER CHART NO. 056
Reference ONLY
(use book slide)
186

208 DF = 1 → 10

207

206

205

DF = 0.01 → 10

207

206

205

204

ALL OVER THE Calibration
DILUTE TO .01 → 10
Re Run

203

202

201 (s10 3-9-83)

100.0 ppb (S2)

50.0 ppb (S1)

25.0 ppb (S1)

187

DILUTIONS

222

X 221 Beer Cal DILUTE 0.01 → 10

220

219

0 10 20 30 40 50 60 70 80 90 100

100 90 80 70 60 50 40 30 20 10 0

218

217

216

215

214

213

212

211

210 (Single Injection)

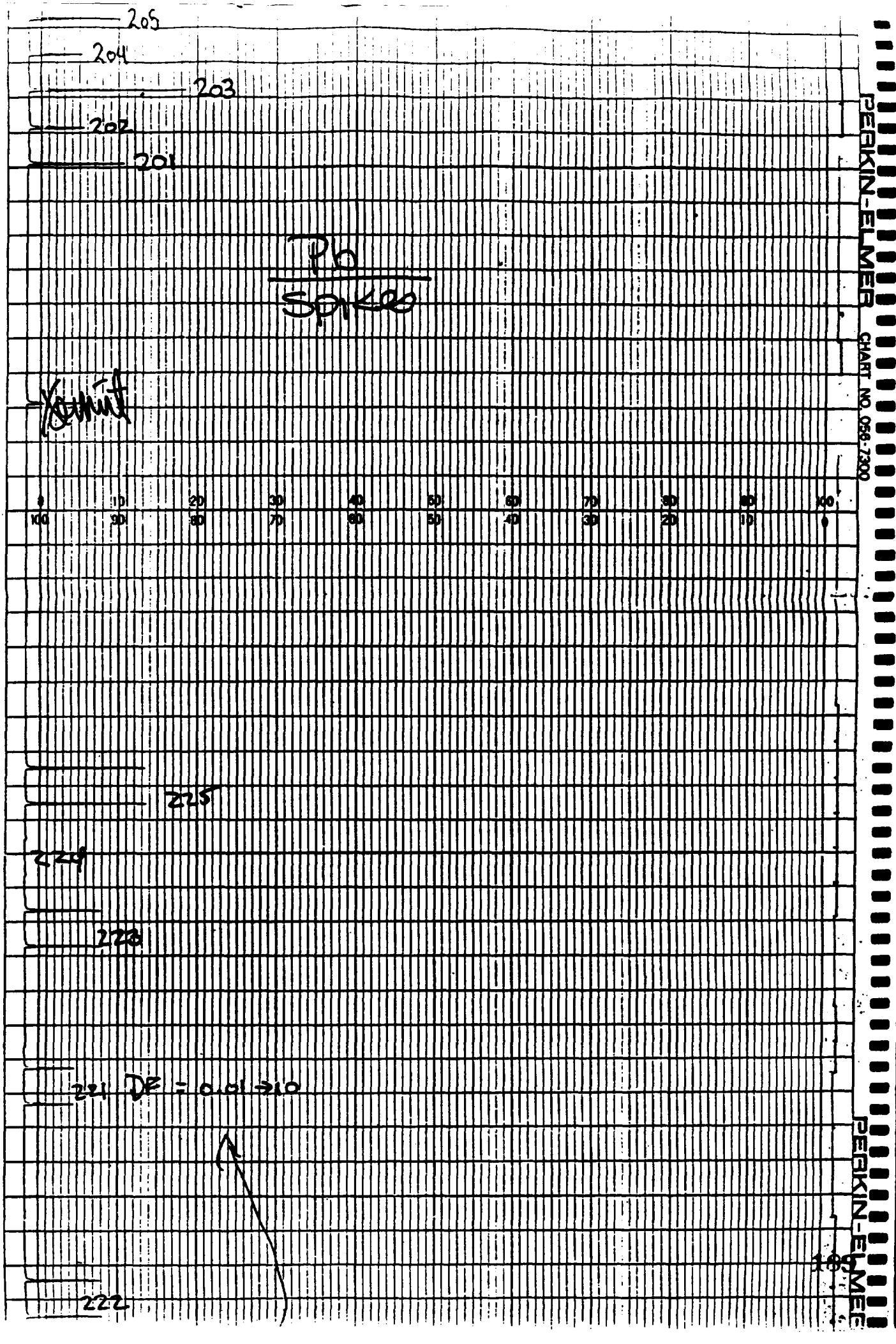
~~209~~

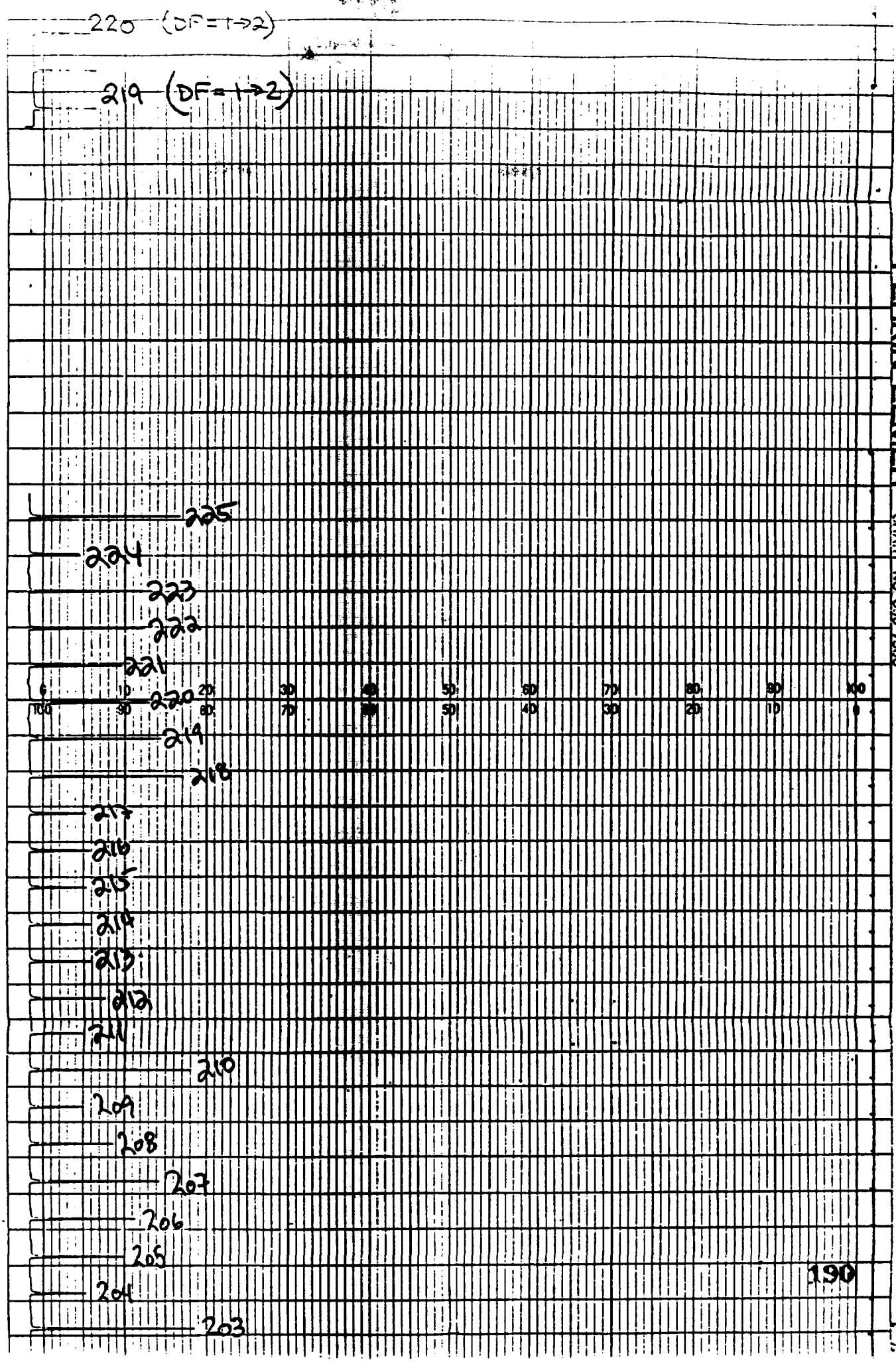
X 210 Re Inject

209

208 DF = (1 → 10)

PERKIN-ELMER CHART NO. 056-7300


205
204
203
202
201
Pb
Spikes
Yamit
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
225
224
223
221 DF = 0.01 → 10
222
PERKIN-ELMER
CHART NO. 056-7300
PERKIN-ELMER


220 (DF=1→2)
219 (DF=1→2)
225
224
223
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206
205
204
203
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
PERKIN-ELMER
CHART NO. 056-7300

225

224

223

220

219

Spikes

225 (500 ppb)

X Poor IPS (#220) REINJECT

BLANK (#224)

0 10 20 30 40 50 60 70 80 90 100

X REINJECT

BLANK (#224)

223 (DF = 1→2)

220 (DF = 1→2)

PERKIN-ELMER CHART NO. 056-7300

ed: SE
d: FEBRUARY 5, 1987
ned: [illegible]

(SEE page 5)

S_1 = 25.0
S_2 = 50.0
S_3 = 100.0

CLP FINAL VOLUME = 200 ml.

ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From No	C	ppb Burn 1	ppb Burn 2	ppb Avg	C.Y.	10.0 ppb Spike	% Rec.	D.F.	Amt of Sample (Gms.)	Units	Final Conc.
0537E #14					8.0	8.7	8.4	/	17.8	94			µg/L	8.40
Cal Blank					-0.2	0.3	0.1	/	10.0	100			µg/L	< 5.00
25.0 ppb					25.1	24.2	24.7	/	36.2	115			µg/L	24.7
0643.0403					1.1	1.6	1.3	/	7.6	76		1.00	mg/kg	< 1.00
0643. (R1)					2.1	1.6	1.9	/	8.7	87		1.06	↓	[illegible]
0643. (R1S1)					11.2	10.4	10.8	/	17.0			1.06	mg/kg	100% Rec
Prep Blank 040					0.4	0.2	0.3	/	10.4 ~~9.9~~	104			µg/L	< 5.00
0752.0403					1.6	1.5	1.6	/	9.9 ~~10.1~~	99		1.05	mg/kg	< 0.926
0753.0403					1.7	2.2	2.0	/	10.1 ~~10.9~~	101		1.01	↓	< 0.990
0754.0403					0.6	1.3	1.0	/	10.9 ~~10.3~~	109		1.00	↓	< ~~0.500~~ 1.00
0754. (B2)					0.7	1.1	0.9	/	10.3 ~~10.6~~	103		1.05	↓	< ~~0.476~~ 0.952
0755.0403					0.3	1.2	0.8	/	10.6 ~~9.2~~	106		1.03	↓	< 0.971
0756.0403					0.4	0.4	0.4	0.00	9.2 ~~10.0~~	92		1.06	mg/kg	< 0.943
Cal Blank					-0.8	-0.1	-0.5	/	10.0 ~~[illegible]~~	100			µg/L	< 5.00
25.0 ppb					26.3	26.1	26.2	/	35.7	95			µg/L	26.2
0757.0403					2.1	2.1	2.1	0.00	9.0	90		1.01	mg/kg	< 0.990
0757. (S2)					8.3	9.3	8.8	8.04	14.4			1.03	↓	83% Rec
0758.0403					2.5	2.6	2.6	2.77	10.9	109		1.02	mg/kg	< 0.980
Prep Blank 049					0.0	-0.2	-0.1	/	10.5	105			µg/L	< 5.00
Cal Blank					0.1	0.2	0.1	/	10.9	109			µg/L	< 5.00
25.0 ppb					26.6				38.9	/			µg/L	26.6
0799.0403					2.9	2.2	2.5	/	11.0	110		1.01	↓	< 0.990
0800.0403					1.1	1.2	1.1	0.15	8.4	84		1.03	↓	< 0.971
0801.0403					0.3	0.5	0.4	/	11.8	114		1.00	mg/kg	< 1.00
Prep Blank 053					0.5	0.6	0.5	/	10.2	102			µg/L	< 5.00
Cal Blank					0.1	0.0	0.1	/	11.9	119			↓	< 5.00
25.0 ppb					27.6	26.3	27.0	3.41	38.2	112			µg/L	27.0

2/6/87 2/5/87

HGA FORM #1

ELEMENT: Se, DATE: 2/4-5/87.

S_1 = 10.00 PPB., S_2 = 25.00 PPB.

S_3 = 50.00 PPB, BOOK NO. ,

JOB #:

601	WS 378 # 14	
X02	Cal Blank	
X03	25.00 ppb	
X04	~~0643.0403~~ (4819)	
X05	~~0643. (R1)~~	
X06	~~0643. (R,S2)~~	
X07	Prep Blank 040	
X08	0752.0403 (4835)	
X09	0753.	
X10	0754.	
X11	0754. (R2)	
X12	0755.	
X13	0756.	
X14	Cal Blank	
X15	25.00 ppb	
X16	0757.	
X17	0757. (S2)	, S_2
X18	0758.	
X19	Prep Blank 049	
X20	Cal Blank	
X21	25.00 ppb	
X22	0799.0403 (4846)	
X23	0800	
X24	0801	
X25	BLK 53	
X26	Cal BLK	
X27	25.0 ppb	
X28		
X29		
X30		
X31		
X32		
X33		
X34		
X35		, S_3

Se

	0.030	C
	0.006	AZ
	0.015	C
	10.00	S1
	35.30	C
	25.00	S2
	34.72	C
	12	LR
	-0.013	
	0.060	AZ
	0.059	
	25.0	S1
	49.6	C
	50.0	S2
	101.2	C
	100.0	S3
601	8.0	
602	-0.2	
603	25.1	
604	1.1	
605	2.1	
606	11.2	
607	0.4	
608	1.6	
609	1.7	
610	0.6	
611	0.7	
612	0.3	
613	0.4	
614	-0.8	
615	25.1	263
616	1.7	
617	8.6	
618	2.7	
619	-0.2	
620	0.2	
621	28.9	
622	0.3	
623	-0.0	
620	28.5	
621	11.5	
622	12.0	

Lost Cal. Return

recycled paper

	0.023	
	0.000	AZ
	0.064	
	100.0	S1
	0.129	

	0.021	
	0.000	AZ
	0.064	
	25.0	S1
	53.1	C
	50.0	S2
601	9.0	

	0.024	
	0.000	AZ
	0.064	
	25.0	S1
	49.0	C
	50.0	S2
	99.7	C
	100.0	S3
601	8.7	
602	0.3	
603	24.2	
604	1.6	
605	1.6	
606	10.4	
607	0.2	
608	1.5	
609	2.2	
610	1.3	
611	1.1	
612	1.2	
613	0.4	
614	-0.1	
615	26.1	

	2.1	
	2.1	

616	2.1	AV
	0.00	CV
	8.3	
	9.3	
617	8.8	AV
	8.04	CV
	2.5	
	2.6	
618	2.6	AV
	2.77	CV
	0.0	
	-0.2	
619	-0.1	AV
	06	ER
	0.1	
	0.2	
620	0.1	AV
	47.14	CV
	29.0	
	30.2	
621	29.6	AV
	2.87	CV

Retyped

[redacted]

621	26.6

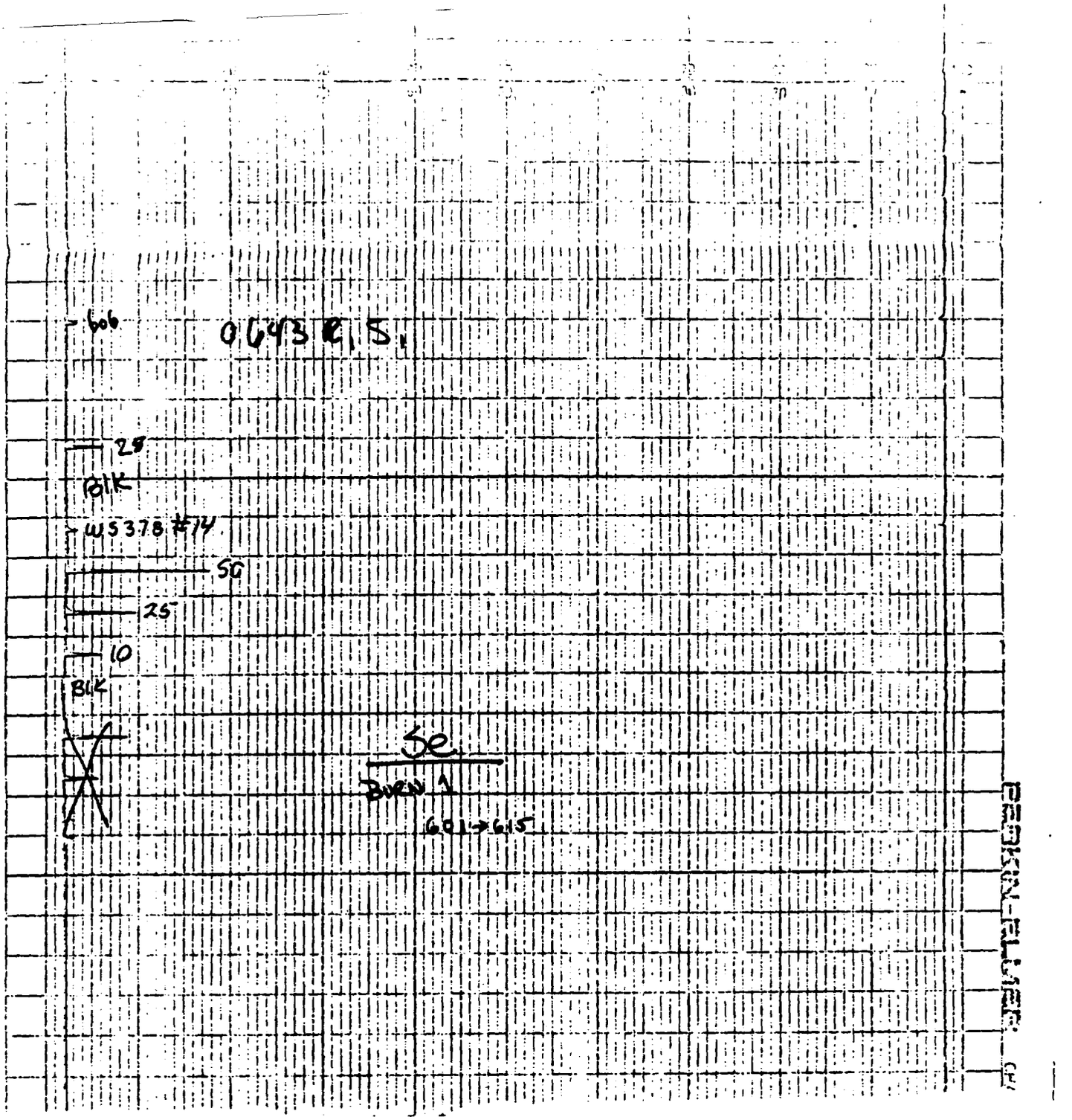
	2.9	
	2.2	
622	2.5	AV
	19.41	CV
	1.2	
	1.1	
623	1.1	AV
	6.15	CV
	0.3	
	0.5	
624	0.4	AV
	35.36	CV
	0.5	
	0.6	
625	0.5	AV
	12.86	CV
	0.1	
	0.0	
626	0.1	AV
	06	ER
	27.6	
	26.3	
627	27.0	AV
	3.41	CV

	15.3	
601	12.6	AV

601	16.6

3e
SPIKES

601	17.8
602	10.0
603	36.2
604	7.6
605	8.7
606	17.0
607	10.4
608	9.9
609	10.1
610	10.3
611	10.3
612	10.6
613	3.2
614	10.0
615	35.7
616	9.0
617	14.4
618	10.6
619	10.5
620	10.0
621	28.6
622	11.0
623	9.3
624	11.8
625	10.2
626	11.3
627	33.2


606
0643 R.S.
28
BLK
W5378 #14
50
25
10
BLK
Se
BURN 1
601→615

601-615

50.0 ppb (Cu)

25.0 ppb (Cu)

BLANK

10.0 ppb (Cu)

BLANK

621

621

621

621

617

615 OK

614

-X— Contam

X 62 Contam. Re Inject.

617 0757S

615 (25.0 ppb)

606 0643 R, S,

25.0 ppb (603)

BLANK (602)

EPA 378.14 (601)

100.0 (S)

50.0 (S)

25.0 (S)

BLANK

197

5E

BURN 2

601 → 615

Se
spikes

Found Poor Injection

Se
spikes

627 25 ppb

621 25 ppb

Contam

PERKIN-ELMER CHART NO 050 7300

627 25 ppb
626 Cal Blk
625 BH
624 0801
623 0800
622 0799
621 25 ppb
620 Cal Blk
619 Pace Blk
618 0758
617 0757.5
616 0757
615 75 ppb
614 Cal Blk
613 0756
612 0755
611 0754.2
610 0754
609 0753
608 0752
607 Pace Blk
606 0649.25
605 0649
604 0643
603 25 ppb
602 Cal Blk
601 WS 328 ppb

Yonnt

Se

Formed By: SE
Received: FEBRUARY 10-11, 1987
Performed By: [illegible]

(SEE PAGE 5)

S_1 = 25.0
S_2 = 50.0
S_3 = 100.0

C.L.P FINAL VOLUME = 200 ml.

	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb BURN 1	ppb BURN 2	ppb Avg.	C.V.	10.0 ppb SPIKE	% REC	D.F.	Amt. of SAMPLE (GMS.)	UNITS	FINAL CONC.
	WS378 #14				8.0				17.8	98			µg/L	8.00
	Cal Blank				-0.0				10.2	102			µg/L	< 5.00
	50.0 ppb				50.7				55.7	/			µg/L	50.7
3	0859.04c3				0.5	0.5	0.5	0.00	6.8	68		1.02	mg/kg	< 0.460
	0860.04c3				-0.1	0.1	0.0	/	6.6	66		1.03	↓	< 0.971
	0860.B				-0.4	0.1	-0.1	/	7.3	73		1.03	↓	< 0.971
	0861.04c3				-0.2	0.2	0.0	/	11.3	113		1.03	↓	< 0.971
	0861.S				8.7	8.7	8.7	0.00	18.7	100		1.03	↓	[illegible]
	0862.04c3				0.0	-0.3	-0.2	/	8.3	83		1.05	↓	< 0.952
	0863.04c3				-0.5	-0.2	-0.3	/	9.5	95		1.03	mg/kg	< 0.971
	Cal Blank				0.0	0.1	0.1	/	9.3	93			µg/L	< 5.00
	50.0 ppb				47.8	49.3	48.6	2.76	54.0	/			µg/L	48.6
	0864.04c3				0.6	0.3	0.5	/	-2.1*	/		1.02	mg/kg	/
	0865.04c3				-0.1	0.0	-0.1	/	6.5	65		1.01	↓	< 0.990
	0866.04c3				0.6	0.6	0.6	0.00	9.2	92		1.02	mg/kg	< 0.980
	Prep Blank #07				0.2	0.6	0.4	/	9.5	95			µg/L	< 5.00
	Cal Blank				0.2	0.2	0.2	0.00	10.0	100			µg/L	< 5.00
	50.0 ppb				49.4	47.9	48.6	2.18	56.9	63			µg/L	48.6
	0864.04c3				-0.6	-1.1	-0.9	/	9.1	91	1→10	1.02	mg/kg	< 4.80
	Cal Blank				-0.4				10.1	101			µg/L	< 5.00
	50.0 ppb				49.2				55.0	/			µg/L	49.2

*REPORT DILUTED

4963

HGA FORM #1

ELEMENT: SE, DATE: 2/10-11/87

S_1 = 25.0 PPB., S_2 = 50.0 PPB

S_3 = 100.0 PPB, BOOK NO. 269, Pg 155

	601	WS378 #14	
	X02	Cal Blank	
	X03	50.0 ppb	
	X04	0859.0403	
JOB #:	X05	0860.	
	X06	0860. R1	
	X07	0861.	
	X08	0861. S1	
	X09	0862.	
	X10	0863.	
	X11	Cal Blank	
	X12	50.0 ppb	
	X13	0864.	
	X14	0865.	
	X15	0866.	
	X16	Prep Blank 067	
	X17	Cal Blank	S_2
	X18	50.0 ppb	
	X19		
	X20		
	X21		
	X22		
	X23		
	X24		
	X25		
	X26		
	X27		
	X28		
	X29		
	X30		
	X31		
	X32		
	X33		
	X34		
	X35		S_3

SE SPIKES

601	17.4
602	10.2
603	51.4
603	55.7
604	6.9
605	6.5
606	7.3
607	11.3
608	14.7
609	9.3
610	9.5
611	9.3
612	54.0
613	-1.9
614	5.5
615	3.2
616	9.5
617	16.0
618	53.9
613	-2.1
613	-0.6
613	9.1
617	10.1
618	55.6
613	-1.1
617	-3.4
618	53.2

	-0.140	
	[illegible]	AV
	0.062	
	[illegible]	AV
	[illegible]	CV
	[illegible]	
	[illegible]	
601	8.0	
602	-0.0	
603	50.7	
	0.5	
	0.5	
604	0.5	AV
	0.00	CV
	-0.1	
	0.1	
605	0.0	AV
	[illegible]	CV
	-0.4	
	0.1	
606	-0.1	AV
	[illegible]	CV
	-0.2	
	0.2	
607	0.0	AV
	[illegible]	CV
	8.7	
	8.7	
608	8.7	AV
	0.00	CV
	0.0	
	-1.3	

609	-0.2	AV
	[illegible]	CV
	-0.5	
	-0.2	
610	-0.3	AV
	60.61	CV
	0.0	
	0.1	
611	0.1	AV
	[illegible]	CV
	47.8	
	49.7	
612	48.8	AV
	2.76	CV
	0.6	
	0.3	
613	0.5	AV
	47.14	CV
	-0.1	
	0.0	
614	-0.1	AV
	[illegible]	CV
	0.6	
	0.6	
615	0.6	AV
	0.00	CV
	0.2	
	0.5	
616	0.4	AV
	60.61	CV
	0.2	
	0.2	
617	0.2	AV
	0.00	CV
	49.4	
	47.9	
618	48.6	AV
	2.18	CV

614

0865

613

0864

612 (50.0 ppb

611 (Blank)

610

0863

609

0862

608

0861 S

607

0861

606

0860 R

605

0860

604

0859

50.0ppb(Co3)

Blank (Co2)

WS378-W14 (Co1)

100.0 (S_3)

50.0 (S_2)

25.0 (S_1)

Blank

5E

DEAD CREEK

CHART NO 056-7000

618 (50.0 ppb)

617 (Blank)

616

Prep blk

615

0806

614

613

612 (50.0 ppb

611 (Blank)

610

609

608

607

606

605

50.0 ppb
617 Cal Blk
616 Prep Blk
615 0866
614 0865
613 0864
612 50.0 ppb
611 Cal Blk
610 0863
609 0862
608 0861S
607 0861
606 0860R
605 0860
604 0859
603 50 ppb
602 Cal Blk
601 WS 378 #14
Se
Spiked

PERKIN-ELMER CHART NO. 056-7000

Project No. _____
Book No. _____ TITLE _____

From Page No. __
Performed: SE
Received: February 16-17, 1987
Work Performed By: [illegible]

(See page 5)

S_1 = 25.0
S_2 = 50.0
S_3 = 100.0

CLP Final Volume = 200 ml.

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb Burn 1	ppb Burn 2	ppb Avg	C.V.	10.0 ppb Spike	% Rec	D.F.	Amt. of Sample (Gms.)	Units	Final Conc.	Pre Digest Spike Rec.
	WS 378 #14				8.7				18.6				µg/L	8.70	
	Cal Blank				-0.5	-1.7	-1.1	/	8.1	81			µg/L	< 5.00	
	50.0 ppb				49.3	47.7	48.5	2.33	74.8	/			µg/L	48.5	
4872	PrepBlank 082				6.0	3.7	4.9	/	11.2				µg/L	<5.00	
	0900.0403				-7.7	-8.1	-7.9	/	8.9	89	?	1.02	mg/kg	<0.980	
	0900.R1				-6.0	-6.2	-6.1	/	/	/		1.01	mg/kg	/	
	0900.R1S				2.2	3.0	2.6	/	8.6	86		1.04	mg/kg	<0.962	
	0901.0403				-0.3	0.6	0.2	/	10.4	104		1.04	mg/kg	<0.962	
	Cal Blank				1.1	-0.1	0.5	/	8.4	84			µg/L	<5.00	
	50.0 ppb				55.0	53.6	54.3	1.82	64.3	100			µg/L	54.3	
	0900.R1				2.0	3.0	2.5	/	10.0	100	.1→10	1.01	mg/kg	<4.90	
	Cal Blank				1.1	-0.1	0.5	From Above						<5.00	
	50.0 ppb				55.0	53.6	54.3							54.3	

Check sample and see for spike recovery
JB

To Page No. ____

Witnessed & Understood by me, CL
Date 3/2/87
Invented by [signature]
Date 2/27/87

HGA FORM #1

ELEMENT: Se, DATE: 2/16/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 269, pg 172.

JOB #: C.L.P.

601	WS378 #14
X02	Cal Blank
X03	50.0 ppb
X04	Prep Blank 082 (4872)
X05	0900.0403
X06	0900. R.
X07	0900. RiS.
X08	0901.
X09	Cal Blank
X10	50.0 ppb
X11	
X12	
X13	
X14	
X15	
X16	
X17	, S_2
X18	
X19	
X20	
X21	
X22	
X23	
X24	
X25	
X26	
X27	
X28	
X29	
X30	
X31	
X32	
X33	
X34	
X35	, S_3

Se/spikes.

601	18.6	
602	8.1	
603	74.9	
~~604~~	~~15.0~~	
~~605~~	~~9.1~~	
603	76.5	
604	11.2	
605	8.9	
~~606~~	~~-2.6~~	
606	-0.2	
607	3.0	
608	10.4	
609	9.4	
610	64.3	

DF = 1710

606	10.0	
	2.0	
	3.0	
606	2.5	AV
	28.28	CV

recycled paper

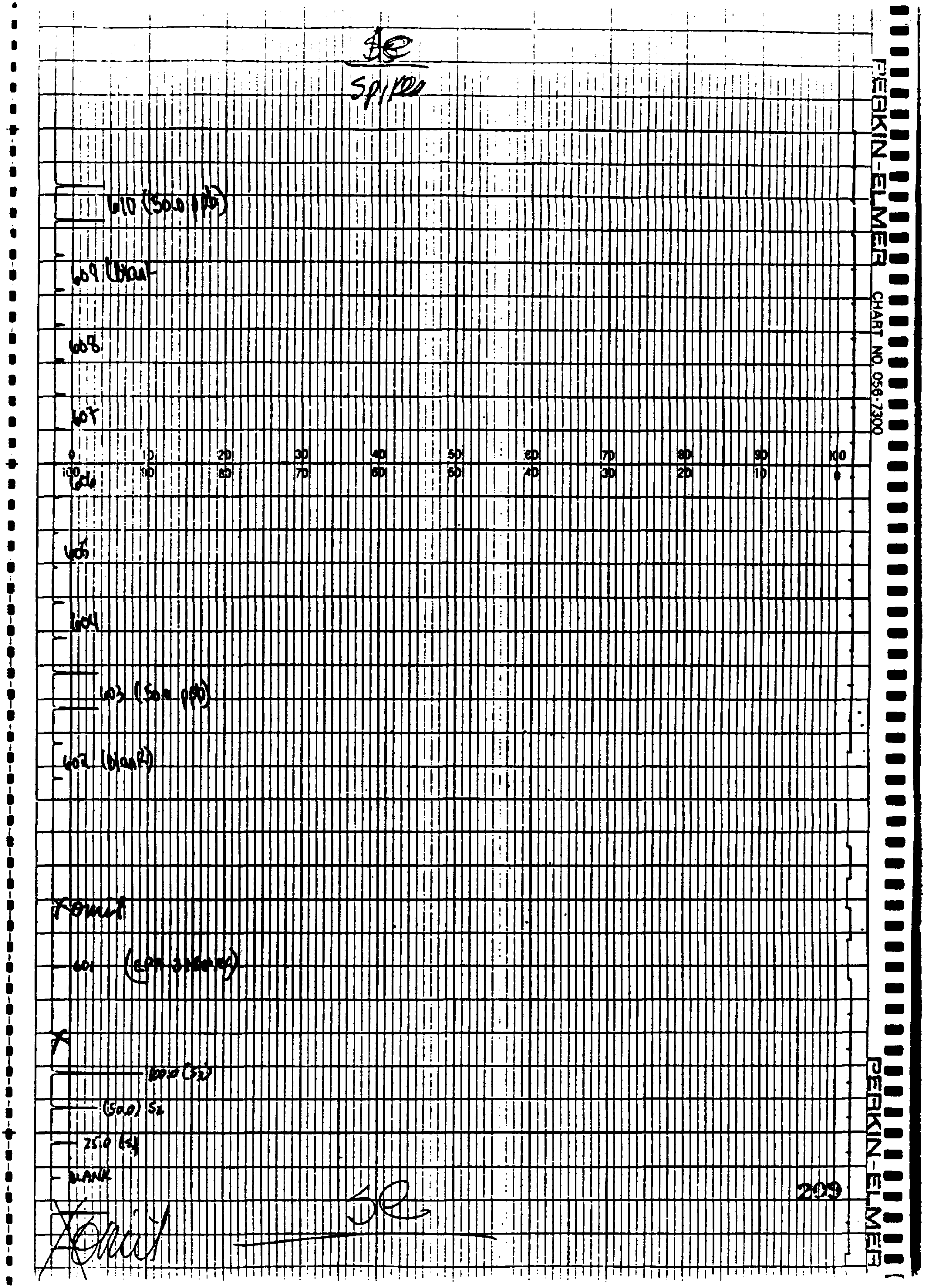
ecology and environment

	-0.141	C
	0.300	AZ
	0.331	C
	25.0	S1
	52.1	C
	-0.133	C
	0.000	AZ
	0.027	C
	25.0	S1
	54.8	C
	50.0	S2
	95.8	C
	100.0	S3

5e

~~601 x~~ contam.

~~601~~	~~15.0~~	
601	8.7	
	-0.5	
	-1.7	
602	-1.1	AV
	77.14	CV
	49.3	
	47.7	
603	48.5	AV
	2.33	CV
	6.0	
	3.7	
604	4.9	AV
	33.53	CV
	-7.7	
	-8.1	
605	-7.9	AV
	3.58	CV
	-6.0	
	-6.2	
606	-6.1	AV
	2.32	CV
	2.2	
	3.0	
607	2.6	AV
	21.76	CV
	-0.3	
	0.6	
608	0.2	AV
	66	CV
	1.1	
	-0.1	
609	0.5	AV
	66	CV
	55.0	
	53.6	
610	54.3	AV
	1.62	CV


Se
Spikes
610 (50.0 ppb)
609 blank
608
607
606
605
604
603 (50.0 ppb)
602 (blank)
601
100.0 (Se)
(50.0) Se
25.0 (Se)
BLANK
209
PERKIN-ELMER CHART NO 056-7300
PERKIN-ELMER

PERKIN-ELMER
CHART NO. 056-7300
PERK
0
10
20
30
40
50
60
70
80
90
100
501
502
503
504
505
506
507
508
509
510
506 (grams)
ΔF = (-)10 (solid)
506 strength

Project No. _____

Book No. _____ TITLE _____

From Page No. _____

Tes. informed: Sn

Date Received: 3/6/31

Work Performed By: J Olka

See pg. 77

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	CV	80.0 ppb Spike	% Rec	DT	Samp Wt. (gms.)	Units	Final Conc
	Cal BLK				-0.3				72.9	91			µg/L	<40.0
	100.0 ppb std				109.1				139.4	100			↓	109
4819	C643.C401				44.9	42.4	43.2	2.02	111.7	86		1.00	mg/kg	8.64
	C643. R1				47.2	51.6	49.4	6.3	119.3	88		1.06	↓	9.32
	C643. R1S1				38.7	41.2	39.9	4.45	99.9	76		1.06	mg/kg	/
	BLK 39				15.3	14.9	15.4	4.15	81.7	91			µg/L	<40.0
4835	0752.0401				15.3	18.2	16.7	12.2	85.5	84		1.08	mg/kg	<7.41
	0753.0401				25.1	24.9	25.0	0.57	91.7	83		1.01	↓	<7.92
	0754.0401				15.0	15.4	15.2	1.86	83.9	86		1.00	↓	<8.00
	0754. R				16.2	17.5	16.9	5.46	85.2	85		1.05	↓	<7.62
	0755.0401				43.1	42.4	42.8	1.16	105.4	/		1.03	↓	8.51
	0756.0401				18.7	19.0	18.7	1.37	85.7	89		1.06	mg/kg	<7.55
	Cal BLK				-2.2	-2.6	-2.4	—	79.0	99			µg/L	<40.0
	100.0 ppb				106.8	105.1	105.9	1.14	194.3	98			µg/L	106
	0757.0401				196.2	205.7	200.0	2.45	273.0	91		1.01	mg/kg	39.6
	0757. S				155.8	154.3	155.1	0.68	288.1	/		1.03	↓	/
	0758.0401				19.7	14.7	17.2	20.6	43.8	46		1.02	↓	/
	BLK 43				33.1	33.9	33.5	1.69	107.7	43			µg/L	<40.0
4846	0799.0401				196.4	201.8 / 154.1	199.1	1.92	276.4	97		1.01	mg/kg	39.4
	0800.0401				17.9	19.6	18.8	6.41	75.4	71		1.03	↓	<7.77
	0801.0401				9.5	9.2	9.3	2.27	85.7	96		1.00	mg/kg	<9.00
	BLK 52				19.7	18.0	18.8	6.55	86.9	85			µg/L	<40.0
	Cal BLK				-1.5				78.9	99			µg/L	<40.0
	100 ppb				101.1				168.5	84			µg/L	101
	C755.0401				27.5	27.3	27.4	0.52	93.9	89		1.03	mg/kg	<7.77
	100 ppb				108.3								µg/L	108
	C643. R1S1				31.0	32.0	31.5	2.25	102	88		1.06	mg/kg	<7.54
	C757. S1				163.9	159.5	161.7	1.92	287.6	/		1.01	↓	/
	C758.0401				18.1	22.6	20.4	15.6	51.4	/		1.02	mg/kg	/

To Page No. _____

Witnessed & Understood by me. | Date | Invented by | Date 3/4/91

Recorded by J. Olka

Project No.

TITLE Book No.

From Page No.

Test Performed: Sn (cont'd)

Date Received: 9/6/81

Work Performed By: LSKD

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave.	CV	50.0 ppb Spike	% Rec	DF	Sample Wgt (gm.)	Units	Final Conc
	0758.0401					8.9	10.6	9.8	12.5	73.8	80	1→2	1.02	mg/kg	<15.7
	Cal Blk					-0.8				74.5	93			µg/L	<40.0
	100ppb					101.2				175.3	93			µg/L	101
	0757.0401 (5)					71.6	74.4	73.0	2.71	146.9	92	1→2	1.01	mg/kg	28.9
	Cal Blank					0.7				73.7	92			µg/L	<40.0
	100.0 ppb					103.4				178.7	94			µg/L	103

To Page No.

Witnessed & understood by me, Date Invented by Date

Witnessed by 9/10/81

HGA FORM #1

ELEMENT: Sn, DATE: 2/6/87.

S_1 = 50.0 PPB., S_2 = 100 PPB.

S_3 = 200 PPB, BOOK NO. 269 pg 148 ff

JOB #:

3_01	CalBlk	
X02	100 ppb	
X03	0643.0401	
X04	0643. R1	
X05	0643.0401 R.S.	
X06	Blk 39	
X07	0752.0401	
X08	0753	
X09	0754	
X10	0754 R1	
X11	0755	
X12	0756	
X13	CalBlk	
X14	100 ppb	
X15	0757.0401	
X16	0757. S	
X17	0758.0401	, S_2
X18	Blk 48	
X19	0799.0401	
X20	0800	
X21	0801	
X22	Blk 52	
X23	CalBlk	
X24	100ppb	
X25		
X26	0758. (1→2)	
X27	CalBlk	
X28	100	
X29		
X30	0757. (1→2)	
X31	CalBlank	
X32	100.0	
X33		
X34		
X35		, S_3

	0.019	
	[illegible]	[illegible]
	0.074	
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	187.7	[illegible]
	[illegible]	[illegible]
301	-0.3	
302	109.1	
	44.0	
	42.4	
303	43.2	AV
	2.62	CV
	47.2	
	51.6	
304	49.4	AV
	6.30	CV
	38.7	
	41.2	
305	39.9	AV
	4.43	CV
	15.8	
	14.9	
306	15.4	AV
	4.15	CV
	15.3	
	18.2	
307	16.7	AV
	12.24	CV
	25.1	
	24.9	
308	25.0	AV
	0.57	CV
	15.0	
	15.4	
309	15.2	AV
	1.86	CV
	16.2	
	17.5	
310	16.9	AV
	5.46	CV
	43.1	
	42.4	
311	42.8	AV
	1.16	CV
	18.5	
	19.0	
312	18.7	A
	1.89	C
	-2.2	
	-2.6	
313	-2.4	A
	11.79	C
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]

recycled paper

ecology and e

	27.5	
	27.3	
311	27.4	AV
	0.52	CV
311	98.9	

324	108.3	

	31.0	
	32.0	
305	31.5	AV
	2.25	CV
305	102.0	
	163.9	
	159.5	
316	161.7	AV
	1.92	CV
	18.1	
	22.6	
317	20.4	AV
	15.64	CV
316	227.6	C
317	51.4	

	8.9	
	10.6	
326	9.8	AV
	12.33	CV
327	-0.8	

328	101.2	

	71.6	
	74.4	
330	73.0	AV
	2.71	CV
331	0.7	
332	103.4	

326	73.8	
327	74.5	
328	175.3	

330	146.9	
331	73.7	
332	173.7	

	196.2	
	203.7	
315	200.0	AV
	2.65	CV
	155.8	
	154.3	
316	155.1	AV
	0.68	CV
	19.7	
	14.7	
317	17.2	AV
	20.56	CV
	33.1	
	33.9	
318	33.5	AV
	1.69	CV
	201.8	
	196.4	
319	199.1	AV
	1.92	CV
	17.9	
	19.6	
320	18.8	AV
	6.41	CV
	9.5	
	9.2	
321	9.3	AV
	2.27	CV
	19.7	
	18.0	
322	18.8	AV
	6.38	CV
323	-1.5	
324	101.1	

301	72.9	
302	189.4	
303	111.7	
304	119.8	
305	99.9	
306	87.9	
307	83.5	
308	91.7	
309	83.9	
310	85.2	
311	105.4	
312	85.1	
313	79.0	
314	184.3	
315	273.0	C
316	222.1	C
317	48.8	
318	107.7	
319	276.4	C
320	75.4	
321	85.7	
322	86.9	
323	78.9	
324	168.5	

302

301

Sn + spike

324

323

322

321

320b

319

318

317

Recalculate

100 ppb

Cal Blk

Blk

0801

0800

0799

Pulp Blk

0758

0757

316

315

0757

314

100 ppb

Cal Blk

313

312

0756

311

0755

310

0754 RE

309

0754

308

0753

307

0752

306

Blk

305

0643 RE

304

0643 RE

303

0643

100ppb

Cal Blk

200

100

50

Blk

Sn

PERKIN-ELMER CHART NO. 056-7300

SPIKED

332 (100.0ppb)

331 (CAL BLANK)

330 DF = 1-92

329

328

327 Cal BLK

326 0758 (1-92)

317 + Spk

316 + Spk

317

316

305 + Spk

305 0645

100 ppb

0755 + Spk

0755

100ppb

323

322

321

320

319 0759

318 BLK

317 0751

316 0755

315 0757

314 100ppb

313 Cal BLK

312 0754

311 0755

310 0754 C

309 0757

308 0753

307 0752

306 Post BLK

305 0645 25

304 0645 32

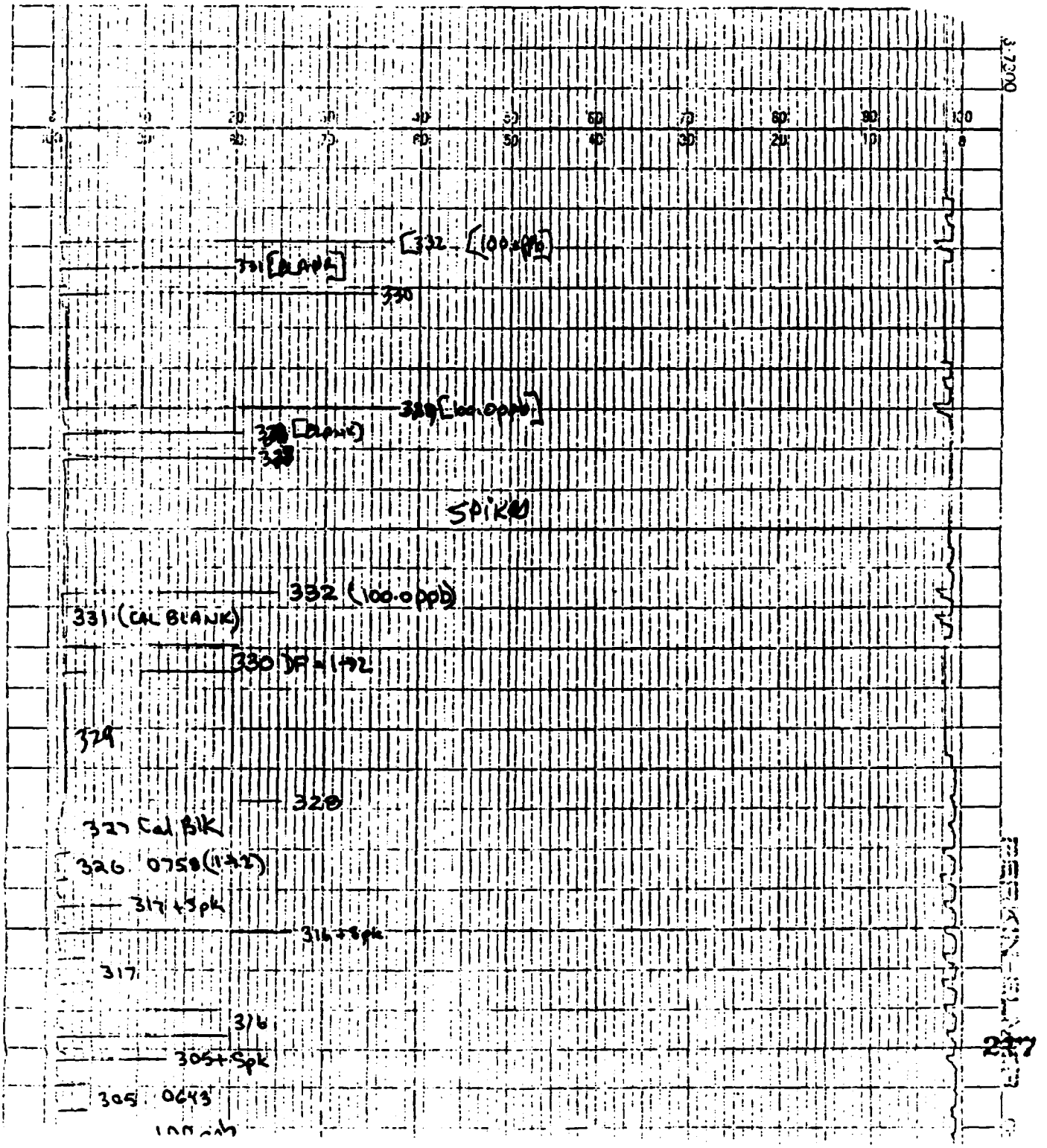
303 0645

302 100ppb

301 CAL BLK

SN + Spike

PERKIN-ELMER CHART NO 056-7700


332 (100.0ppb)
331 [BLANK]
330
329 [100.0ppb]
328 [BLANK]
327
SPIKED
332 (100.0ppb)
331 (CAL BLANK)
330 DF=1/92
329
328
327 Cal BLK
326 0758 (1/92)
317 +Spk
316 +Spk
317
316
305+Spk
305 0643

Project No.
LE Book No. 161

om Page No.
t Performed: Sn
e Received: February 12, 1987
rk Performed By: [illegible]

(SEE page 17)

S_1 = 25.0
S_2 = 50.0
S_3 = 100.0

CLP FINAL VOLUME = 200 ml

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb BURN 1	ppb BURN 2	ppb Avg.	C.V.	80.0 ppb Spike	% Rec	D.F.	Amt. of Sample (gms.)	UNITS	FINAL CONC.
	100.0 ppb				104.7	102.9	103.8	1.23	182.1	98			µg/L	103.8
	Cal Blank				0.5	-0.7	-0.1	/	83.2	104			µg/L	< 40.0
	100.0 ppb				103.3	101.1	102.2	1.52	177.5	94			µg/L	102.2
1863	0859.0401				46.7	46.7	46.7	0.00	116.3	87		1.00	mg/Kg	9.34
	0860.0401				17.9	18.1	18.0	0.79	93.7	95		1.01	↓	3.33
	0860.(R)				19.6	20.3	20.0	2.48	97.5	97		1.01		3.96
	0861.0401				43.5	44.9	44.2	2.21	116.4	90		1.02		8.67
	0861.(S)				29.5	28.2	28.8	3.19	98.4	87		1.01		5.70
	0862.0401				17.3	16.7	17.0	2.50	93.4	96		1.01	↓	3.37
	0863.0401				14.0	13.6	13.8	2.05	96.6	104		1.05	mg/Kg	2.53
	Cal Blank				-1.5	-1.2	-1.4	/	82.9	104			µg/L	< 40.0
	100.0 ppb				100.4	104.5	102.4	2.83	180.6	98			µg/L	102.4
	0864.0401				58.8	57.7	58.3	1.34	120.0	(77)/		1.04	mg/Kg	/
	0865.0401				20.4	20.5	20.5	0.35	102.8	103		1.01	↓	4.06
	0866.0401				8.5	9.6	9.1	8.60	90.9	102		1.07	mg/Kg	1.70
	Prep Blank 066				15.2	15.9	15.5	3.18	97.5	103			µg/L	< 40.0
	Cal Blank				-1.3	-1.5	-1.4	/	85.1	106			µg/L	< 40.0
	100.0 ppb				98.4	97.2	97.8	0.87	179.3	102			µg/L	97.8
	0864.0101				43.2	39.9	41.6	5.62	111.4	87	1→2	1.04	mg/Kg	16.0
	Cal Blank				-0.8				81.4	102			µg/L	< 40.0
	100.0 ppb				98.6				177.5	99			µg/L	98.6

DL = 40.0 µg/l Conc. for most samples should be recorded as < 40

To Page No.

Witnessed & Understood by me. gc

Date 3/2/87

Invented by

Recorded by

Date 2/12/87

HGA. FORM #1 : ELEMENT: Sn , DATE: 2/12/87 .
S_1 = 50.0 PPB., S_2 = 100.0 PPB.
S_3 = 200.0 PPB, BOOK NO. , .

ATTACH

	301	100.0 ppb	
	X02	Cal Blank	
	X03	100.0 ppb	
	X04	0859. 0401	
JOB #:	X05	0860.	
	X06	0860. R1	
	X07	0861.	
	X08	0861. S1	
	X09	0862.	
	X10	0863.	
	X11	Cal Blank	
	X12	100.0 ppb	
	X13	0864.	
	X14	0865.	
	X15	0866.	
	X16	PrepBlank 067	
	X17	Cal Blank , S_2	
	X18	100.0 ppb	
	X19		
	X20		
	X21		
	X22		
	X23		
	X24		
	X25		
	X26		
	X27		
	X28		
	X29		
	X30		
	X31		
	X32		
	X33		
	X34		
	X35	, S_3	

Sn

DF = 1→2

	43.2	
	39.9	
313	41.6	AV
	5.62	CV
317 BLK	-0.5	
318 100 ppb	98.5	

Spiked

313	111.4
317	81.4
318	177.5

recycled paper

ecology and environment

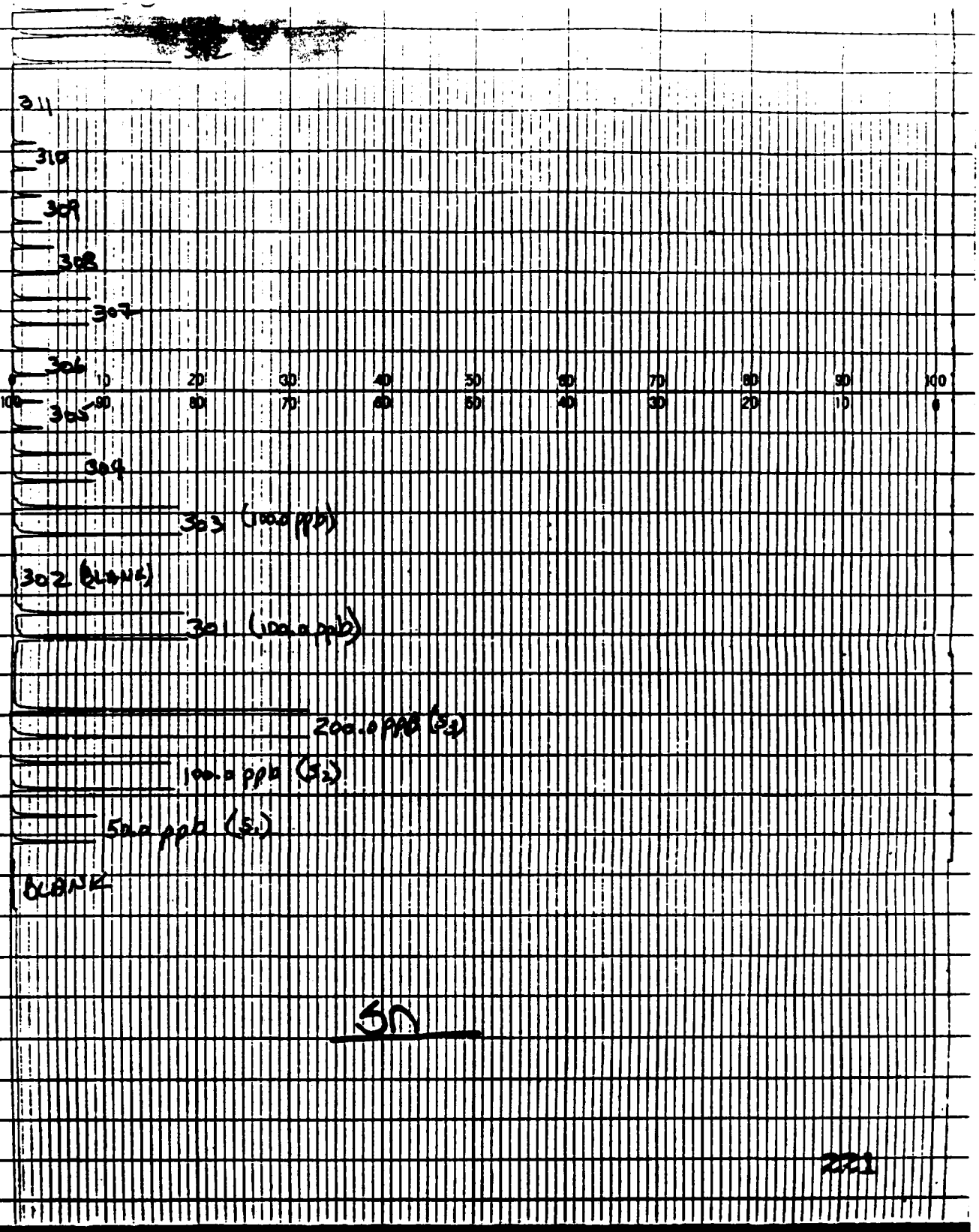
	[illegible]	
	[illegible]	
	0.000	AV
	24.98	CV
	0.000	AZ
	0.134	
	0.134	
	0.134	AV
	0.00	CV
	50.0	S1
	98.2	C
	98.3	C
	98.5	AV
	0.43	CV
	100.0	S2
	191.8	C
	157.6	C
	189.7	AV
	1.57	CV
	200.0	S3
	104.7	
	102.9	
301	103.8	AV
	1.23	CV
	0.5	
	-0.7	
302	-0.1	AV
	.05	ER
	103.3	
	101.1	
303	102.2	AV
	1.52	CV
	46.7	
	46.7	
304	46.7	AV
	0.00	CV
	17.9	
	18.1	
305	18.0	AV
	0.79	CV
	19.6	
	20.3	
306	20.0	AV
	2.48	CV
	43.5	
	44.9	
307	44.2	AV
	2.24	CV
	29.5	
	26.2	
308	28.8	AV
	3.19	CV
	17.3	
	16.7	
309	17.0	AV
	2.58	CV
	14.0	
	13.6	
310	13.8	AV
	2.05	CV
	-1.5	
	-1.2	

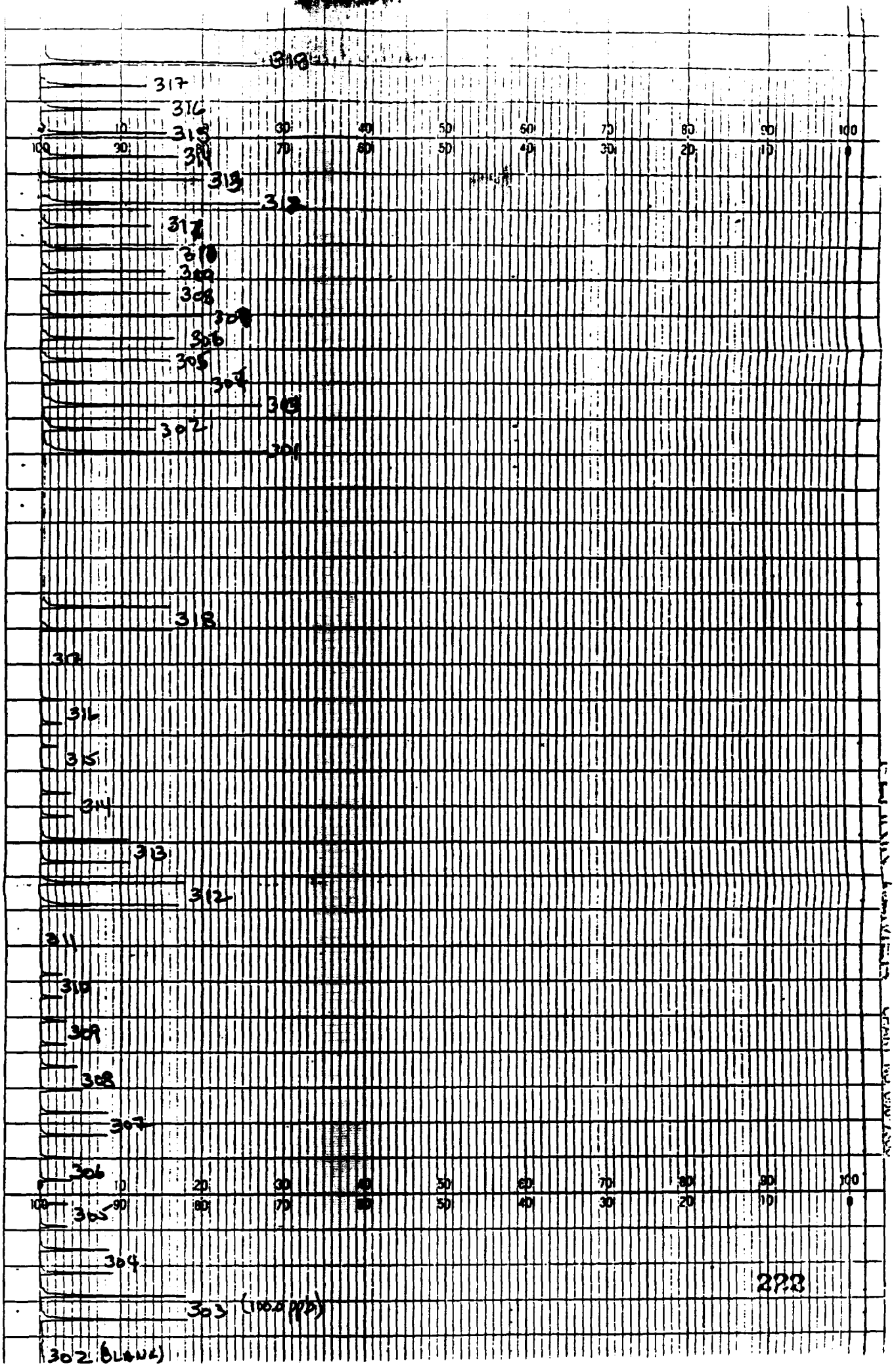
	[illegible]	
	15.71	CV
	100.4	
	104.5	
312	102.4	AV
	2.99	CV
	58.8	
	57.7	
313	58.3	AV
	1.34	CV
	20.4	
	20.5	
314	20.5	AV
	0.35	CV
	8.5	
	9.6	
315	9.1	AV
	8.60	CV
	15.2	
	15.9	
316	15.5	AV
	3.18	CV
	-1.3	
	-1.5	
317	-1.4	AV
	10.10	CV
	98.4	
	97.2	
318	97.8	AV
	0.87	CV

317 SPIKES

301	182.1
302	83.2
303	177.5
304	116.3
305	93.7
306	97.5
307	116.4
308	98.4
309	93.4
310	96.6
311	82.9
312	130.6
313	120.0
314	102.9
315	90.9
316	97.5
317	85.1
318	179.3

Re Run 1-22 D.F.


311
310
309
308
307
306
10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
305
304
303 (100.0 ppb)
302 (BLANK)
301 (100.0 ppb)
200.0 ppb (S2)
100.0 ppb (S2)
50.0 ppb (S1)
BLANK
SO


319
317
316
315
314
313
312
311
310
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308
307
306
305
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303
302
301
318
316
315
314
313
312
311
310
309
308
307
306
305
304
303 (100 ppb)
302 (BLANK)
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0

56-7300
PERKIN

Project No. _____

Book No. _____ TITLE _____

m Page No. ___

t Performed: Cu

te Received: 2/4/91

ork Performed By: [illegible]

λ 324.8 Conc 50.0 ppb See book # 10 for std Curve

Time 5 sec. S2 100

Energy 49 S3 200

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	CV	50.0 ppb Spike	% Rec	DF	Dry wt	Units	Final Conc
	100.0 ppb					102.3				136.4	105			ug/l	102
	Cal Blk					0.4				78.9	99				<40.0
	100.0 ppb					102.5				184.3	103				*103
	Blk 103					21.3	21.5	21.7	1.30	97.3	95			ug/l	<40.0
4906	1032.0405					9.9	7.5	8.7	19.5	80.4	90		1.04	mg/kg	<7.69
	1033.0405					11.9	12.5	12.2	3.43	88.9	96		1.05		<7.62
	1034.0405					6.4	6.7	6.5	3.24	77.0	88		1.00		<8.00
	1035.0405					7.4	7.3	7.4	0.96	80.9	92		1.02		<7.84
	1035 R1					10.8	10.2	10.5	4.04	81.9	89		1.02		<7.84
	1035 R1S1					9.1	8.8	9.0	2.37	79.8	89		1.03		<7.77
	1036.0405					13.3	13.1	13.2	1.07	90.5	97		1.05		<7.62
	1037.0405					15.4	15.3	15.3	0.46	89.6	93		1.00	mg/kg	<8.00
	Cal Blk					0.3	0.1	0.2	-	82.4	103			ug/l	<40.0
	100.0 ppb					97.3	95.7	95.3	0.15	180.8	103			ug/l	95.3
4928	1110.0405A					11.6	11.2	11.4	0.61	86.5	94		1.05	mg/kg	<7.62
	1111.0405A					11.3	10.7	11.4	5.61	88.3	96		1.02		<7.34
	1112.0405A					8.9	8.0	8.4	7.53	84.6	95		1.03		<7.77
	1113.0405A					25.0	23.4	24.2	4.63	91.1	84		1.02		<7.34
	1114.0405A					8.9	8.0	8.5	7.53	86.3	97		1.03		<7.77
	1115.0405A					9.0	9.2	9.1	1.55	87.0*	~~95~~ 97		1.03		<7.77
	1116.0405A					6.8	7.0	6.9	2.95	85.0*	~~105~~ 98		1.01		<7.92
	1117.0405A					10.3	11.0	10.7	4.65	88.~~62.3~~*	~~65~~ 99		1.03	mg/kg	<7.77
	Cal Blk					-1.1	-1.1	-1.1	-	62.3	78*			ug/l	<40.0
	100.0 ppb					105.2	101.4	102.3	1.74	189.6	109				[illegible]
	Blk 37					14.3	14.2	14.3	0.50	92.2	97			ug/l	<40.0
4872	0900.0405					14.2	13.9	14.1	1.31	82.6	86		1.02	mg/kg	<7.84
	0900 R1					22.1	21.9	22.0	0.64	89.9	85		1.01		<7.92
	0900 R1S1					21.1	20.4	20.8	2.59	94.5	80		1.04		<7.67

To Page No. ____

Witnessed & Understood by me. D. Allen Date

Invented by

Recorded by G. Sha

Date 2/4/91

Project No._____

TITLE _____ Book No._____

From Page No.__

Test Performed: Sn

Date Received: 2/4/87

Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From		ppb Burn1	ppb Burn2	ppb Ave	CV	50.0ppb Spk	% Rec.	DF	Samp Wgt	Units	Fin Con
4372	0901-0403					20.0	19.9	20.0	0.35	99.5	99		1.04	mg/kg	<7.6
	Cal Blk					-1.0	-1.1	-1.1	-	77.4	99			µg/L	<40.0
	100.0ppb					102.8	103.5	103.1	0.43	191.5	111			µg/L	103

To Page No.__

Witnessed & Understood by me, | Date | Invented by | Date 2/4/87

Recorded by G. C. [illegible]

HGA FORM #1

ELEMENT: Sn, DATE: 3/4/87.

S_1 = 50.0 PPB., S_2 = 100 PPB.

S_3 = 200 PPB, BOOK NO. 287, 14-15.

JOB #:

301	100.0 ppb
X02	Cal BLK
X03	100.0 ppb
X04	BLK 103
X05	1032.0403
X06	1033
X07	1034
X08	1035
X09	1035 R_1
X10	1035 R_1S_1
X11	1036
X12	1037
X13	Cal BLK
X14	100.0 ppb
X15	1110.0403A
X16	1111
X17	1112, S_2
X18	1113
X19	1114
X20	1115
X21	1116
X22	1117
X23	Cal BLK
X24	100.0 ppb
X25	BLK 87
X26	0900.0403
X27	0900 R_1
X28	0900 R_1S_1
X29	0901
X30	Cal BLK
X31	100.0 ppb
X32	
X33	
X34	
X35	, S_3

ATTACH TAPE

301	166.4
302	78.9
303	194.8
304	97.3
305	80.4
306	88.9
307	77.0
308	80.9
309	81.9
310	79.8
311	90.5
312	89.6
313	82.4
314	180.8
315	86.5
316	88.3
317	84.6
318	91.1
319	86.3
320	87.0
321	85.0
322	89.5
323	62.3
324	189.6
325	92.2
326	82.6
327	89.9
328	84.5
329	99.5
330	79.4
331	191.5

recycled paper

ecology

	-0.007	
	[illegible]	[illegible]
	0.143	
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
301	102.3	
302	0.4	
303	102.5	
	21.9	
	21.5	
304	21.7	AV
	1.30	CV
	9.9	
	7.5	
305	8.7	AV
	19.51	CV
	11.9	
	12.5	
306	12.2	AV
	3.48	CV
	6.4	
	6.7	
307	6.5	AV
	3.24	CV
	7.4	
	7.3	
308	7.4	AV
	0.96	CV
	10.8	
	10.2	
309	10.5	AV
	4.04	CV
	9.1	
	8.8	
310	9.0	AV
	2.37	CV
	13.3	
	13.1	
311	13.2	AV
	1.07	CV
	15.4	
	15.3	
312	15.3	AV
	0.46	CV
	0.3	
	0.1	
313	0.2	AV
	70.71	CV
	~~116.8~~	
	~~111.5~~	
~~314~~	~~111.1~~	AV
	~~0.45~~	CV
Repeat	~~14.6~~	
	97.9	
	98.7	

314	98.3	AV
	0.65	CV
	11.6	
	11.7	
315	11.6	AV
	0.61	CV
	11.8	
	10.9	
316	11.4	AV
	5.61	CV
	8.9	
	8.0	
317	8.4	AV
	7.53	CV
	25.0	
	23.4	
318	24.2	AV
	4.68	CV
	8.9	
	8.0	
319	8.5	AV
	7.53	CV
	9.0	
	9.2	
320	9.1	AV
	1.55	CV
	6.8	
	7.0	
321	6.9	AV
	2.05	CV
	10.3	
	11.0	
322	10.7	AV
	4.65	CV
	-1.1	
	-1.1	
323	-1.1	AV
	0.00	CV
	103.2	
	101.4	
324	102.3	AV
	1.24	CV
	14.3	
	14.2	
325	14.3	AV
	0.50	CV
	14.2	
	13.9	
326	14.1	AV
	1.51	CV
	22.1	
	21.9	
327	22.0	AV
	0.64	CV
	21.1	
	20.4	

328	20.8	AV
	2.39	CV
	20.0	
	19.9	
329	20.0	AV
	0.35	CV
	-1.0	
	-1.1	
330	-1.1	AV
	6.73	CV
	102.8	
	103.5	
331	103.1	AV
	0.48	CV

325 Prep Blk

324 100 ppb

323 Cal Blk

322 1117

321 1116

320 1115

319 1114

318 1113

317 1112

316 1111

315 1110

314 repeated

0 20 30 40 50 60 70 80 90 100

95 90 80 70 60 50 40 30 20 10 0

314 100 ppb 500 ppb

313 Cal Blk

312 1027

311 1026

310 1025

309 1024

308 1023

307 1021

306 1033

305 1032

304 Prep Blk

100 ppb

Blk

100 ppb

200 ppb

100 ppb

50 ppb

Blk

Sn Jobs 4906, 4928, 4872

228

RECORDED CHART NO 09-730

331 100 ppb
330 Cal Blk
329 09001
328 09000 LS
327 09000 R
326 09000
325 Read Blk
324 100 ppb
323 Cal Blk
322 1117
321 1116
320 1115
319 1114
318 1113
317 1112
316 1111
315 1110
314 100 ppb
313 Cal Blk
312 1037
311 1036
310 1035 LS
309 1035
308 1035
307 1034
306 1033
305 1032
304 Read Blk
303 100 ppb
302 Cal Blk
301 100 ppb

Sm Spills

331 100 ppb
330 CM Blk
329 09001
328 09000 LS
327 09000 R
326 09000
325
324
323
322

FERKIN-ELMER CHART NO. 059-7300

Book No.

Page No.

Performed: [redacted] TL

Received: FEBRUARY 5, 1987

Performed By: [redacted]

(SEE page 15)

S_1 = 25.0
S_2 = 50.0
S_3 = 100.0

C.L.P. FINAL VOLUME = 200 ml.

ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From No	C	ppb Burn 1	ppb Burn 2	ppb Avg.	% C.V.	20.0 ppb Spike	% Rec.	D.F.	Amt of Sample (Gms)	Units	Final Conc.
wp1183 (III) ×1					24.6				46.5	110			µg/L	24.6
Cal Blank					0.2				19.3	97			µg/L	<10.0
50.0 ppb					51.3				65.0	69			µg/L	51.3
0643.0403					1.1	1.1	1.1	0.00	20.0	100		1.00	mg/kg	<2.00
0643.R1					0.9	1.3	1.1	/	21.3	107		1.06	↓	<18.9
0643.R1S1					60.0	60.4	60.2	0.47	81.5	107		1.06	mg/kg	115% K.
Prep Blank 040					0.4	0.3	0.4	/	[illegible]	101			µg/L	<10.0
0752.0403					0.6	0.7	0.7	/	[illegible]	105		1.08	mg/kg	<1.85
0753.0403					1.2	1.0	1.1	12.86	[illegible]	109		1.01	↓	<1.93
0754.0403					0.6	0.7	0.6	10.88	[illegible]	104		1.00	↓	<2.00
0754.R2					0.7	0.5	0.6	/	[illegible]	104		1.05	↓	<1.90
0755.0403					0.5	0.4	0.5	/	[illegible]	113		1.03	↓	<1.94
0756.0403					0.6	1.0	0.8	/	[illegible]	113		1.06	mg/kg	<1.89
Cal Blank					0.1	0.1	0.1	0.00	[illegible]	110			µg/L	<10.0
50.0 ppb					48.7	50.1	49.4	2.00	[illegible]	109			µg/L ~~mg/kg~~	49.4
0757.0403					0.7	0.8	0.8	9.43	[illegible]	101		1.01	mg/kg	<1.93
0757.S2					54.0	55.4	54.7	1.81	[illegible]	117		1.03	↓	109% K
0758.0403					0.4	0.6	0.5	/	[illegible]	104		1.02	mg/kg	<1.96
Prep Blank 049					0.4	0.5	0.5	/	[illegible]	95			µg/L	<10.0
Cal Blank					0.1	0.2	0.1	/	[illegible]	110			µg/L	<10.0
50.0 ppb					47.4	48.2	47.8 ~~48.~~	1.18	[illegible]	115			µg/L	47.8
0799.0403					1.1	1.2	1.2	6.15	[illegible]	111		1.01	mg/kg	<1.93
0800.0403					0.3	0.5	0.4	/	[illegible]	104		1.03	↓	<1.94
0801.0403					0.4	0.3	0.3	/	[illegible]	90		1.00	mg/kg	<2.00
Prep Blank 053					0.4	0.1	0.3	/	[illegible]	90			µg/L	<10.0
Cal Blank					0.1	0.5	0.3	/	[illegible]	110			µg/L	<10.0
50.0 ppb					47.4	45.7	47.1	1.05	[illegible]	115			µg/L	47.1

Reviewed by: 90 Date: 2/6/87 Invented by: Date:

Reviewed by:

HGA FORM #1

ELEMENT: Tl , DATE: 2/5/87 .

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. , .

ATTACH TAPE HERE

JOB #:

4_01	WP 1183 (II) #1	
X02	Cal Blank	
X03	50.0 ppb	
X04	0643.0403 (4819)	
X05	0648. (R1)	
X06	0643. (R.S.)	
X07	Prep Blank 040	
X08	0752.0403 (4835)	
X09	0753.	
X10	0754.	
X11	0754. (R2)	
X12	0755.	
X13	0756.	
X14	Cal Blank	
X15	50.0 ppb	
X16	0757.	
X17	0758. (S2)	, S_2
X18	0758.	
X19	Prep Blank 049	
X20	Cal Blank	
X21	50.0 ppb	
X22	0799.0403 (4846)	
X23	0800.	
X24	0801.	
X25	Prep Blank 053	
X26	Cal Blank	
X27	50.0 ppb	
X28		
X29		
X30		
X31		
X32		
X33		
X34		
X35		, S_3

401	46.5
402	19.3
403	65.0
404	20.0
405	21.3
406	81.5
407	20.1
408	21.5
409	21.8
410	20.8
411	20.7
412	22.6
413	22.5
414	22.0
415	71.1
416	20.1
417	78.0
418	20.8
419	19.5
420	21.9
421	70.8
422	22.1
423	20.8
424	17.9
425	15.9
426	221
427	70.8

Tl

	0.026	
	0.000	AZ
	0.088	
	25.0	S1
	46.5	C
	50.0	S2
	110.7	C
	100.0	S3
401	24.6	
402	0.2	
403	51.3	
~~404~~	~~1.7~~	
	1.1	
	1.1	
404	1.1	AV
	0.00	CV
	0.9	
	1.3	
405	1.1	AV
	25.71	CV
	60.0	
	60.4	
406	60.2	AV
	0.47	CV
	0.4	
	0.3	
407	0.4	AV
	20.20	CV
	0.6	
	0.7	
408	0.7	AV
	10.88	CV
	1.2	
	1.0	
409	1.1	AV
	12.86	CV
	0.6	
	0.7	
410	0.6	AV
	10.48	CV
	0.7	
	0.5	
411	0.6	AV
	23.57	CV
	0.5	
	0.4	
412	0.5	AV
	15.71	CV
413	[illegible]	AV
	35.36	CV
	0.1	
	0.1	
414	0.1	AV
	0.00	CV
	48.7	
	50.1	
415	49.4	AV
	2.00	CV
	0.7	
	0.8	
416	0.6	AV
	9.43	CV
	54.0	
	55.4	
417	54.7	AV
	1.81	CV
	0.4	
	0.6	
418	0.5	AV
	28.28	CV
	0.4	
	0.5	
419	0.5	AV
	15.71	CV
	0.1	
	0.2	
420	0.1	AV
	47.14	CV
	47.4	
	48.2	
421	47.8	AV
	1.18	CV
	1.1	
	1.2	
422	1.2	AV
	6.15	CV
	0.3	
	0.5	
423	0.4	AV
	35.36	CV
	0.4	
	0.3	
424	0.3	AV
	20.20	CV
	0.4	
	0.1	
425	0.3	AV
	84.85	CV
	0.1	
	0.5	
426	0.3	AV
	94.28	CV
	47.4	
	46.7	
427	47.1	AV
	1.05	CV

424

423

422 0799

421 50.0 (S)

420 Col BLK

419 BLK 40

418 0756

417 0757 (S)

416 0759

415 50.0 (S)

414 Col BLK

413 0756

412 0755

411 0754K

410 0754

409 0753

408 0752

407 BLK 40

406 0643 K.P.

405 0643K

404 0643

500 ppb (403)

BLANK (402)

EPA (1083) (10 ppb) [S]

100.0 (S)

50.0 (S)

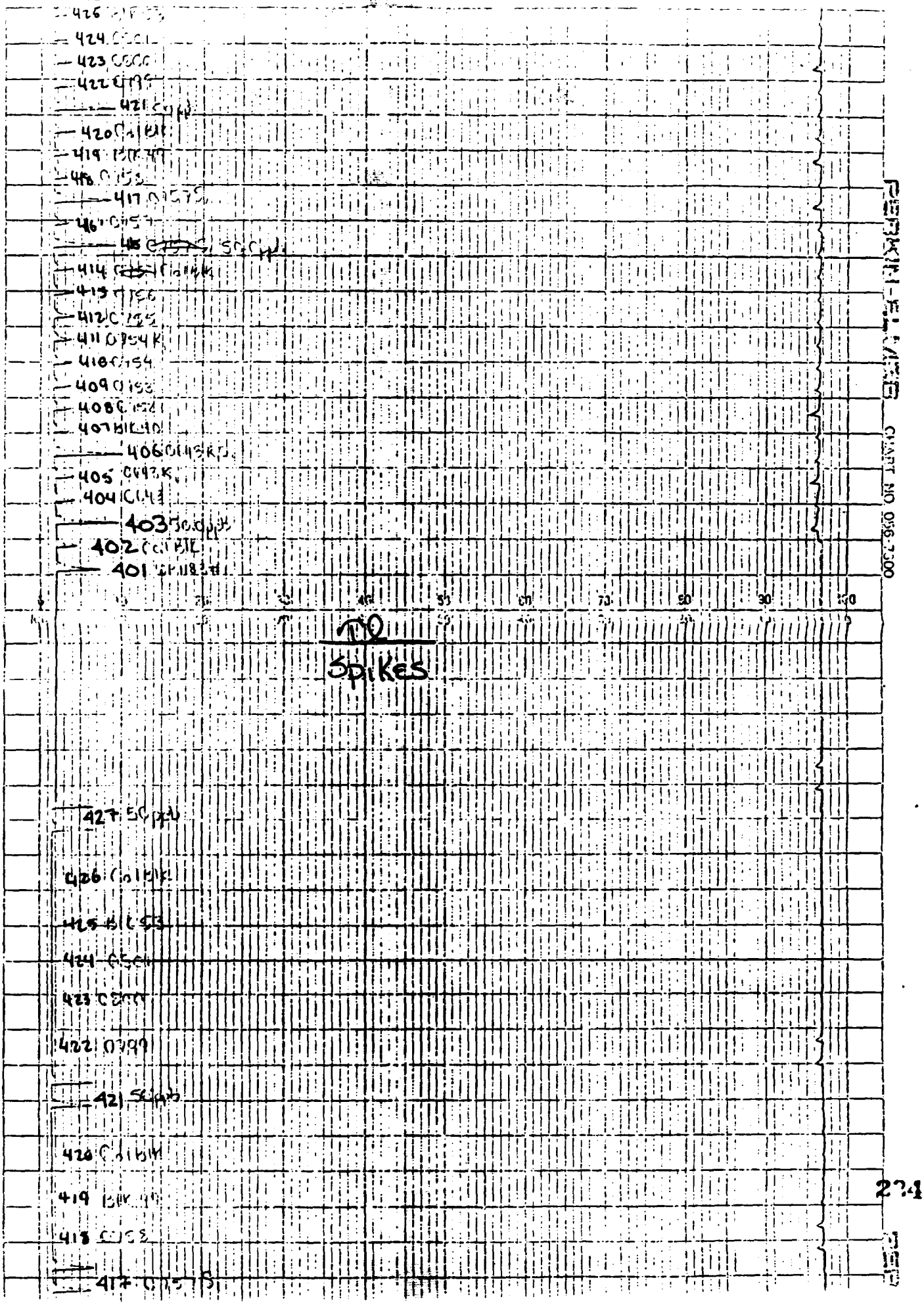
25.0 (S)

Blank

PERKIN-ELMER CHART NO. 056-7300

Jobs: 4819

4935


427
426
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Spikes
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Project No. _____
Book No. _____ TITLE _____

From Page No. — Pl
Test Performed: _____
Date Received: February 11-12, 1987
Work Performed By: _____

(SEE Page 15)

S_1 = 25.0
S_2 = 50.0
S_3 = 100.0

CLP FINAL VOLUME = 200 ml.

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb Burn 1	ppb Burn 2	ppb Avg.	% C.V.	200 ppb Spike	% Rec.	D.F.	Amt. of Sample (Gms.)	Units	Final Conc.
	WPA83(II)#1				24.4	25.1	24.7	2.00	46.0	107			µg/L	24.7
	Cal Blank				0.0	-0.0	-0.0	/	20.1	101			µg/L	<10.0
	50.0 ppb				45.8	46.8	46.3	1.53	67.6	107			µg/L	46.3
	0859.0403				0.2	0.3	0.2	/	20.0	100		1.02	mg/kg	<0.980
4863	0860.0403				1.2	1.2	1.2	0.00	19.9	100		1.03		<0.971
	0860 (B)				1.0	0.9	1.0	7.44	19.4	97		1.03		<0.971
	0861.0403				1.0	1.0	1.0	0.00	18.9	95		1.03		<0.971
	0861 (S)				53.0	52.8	52.9	0.27	73.8	105		1.03		10.27
	0862.0403				0.3	-0.0	0.2	/	18.5	93		1.05		<0.952
	0863.0403				0.3	0.2	0.2	/	19.4	97		1.03	mg/kg	<0.971
	Cal Blank				0.2	0.1	0.1	/	20.6	103			µg/L	<10.0
	50.0 ppb				46.2	45.8	46.0	0.62	68.2	111			µg/L	46.0
	0864.0403				1.3	1.6	1.5	/	19.8	99		1.02	mg/kg	<0.980
	0865.0403				-0.2	0.2	0.0	/	18.4	92		1.01		<0.990
	0866.0403				0.1	0.3	0.2	/	17.9	90		1.02	mg/kg	<0.980
	RepBlank 067				-0.1	-0.4	-0.3	/	18.1	91			µg/L	<10.0
	Cal Blank				-0.1	-0.1	-0.1	0.00	20.0	100			µg/L	<10.0
	50.0 ppb				45.8	45.4	45.6	0.62	68.4	114			µg/L	45.6

To Page No. ____

Witnessed & Understood by me, JO
Date 9/2/87
Invented by [signature]
Date 2/12/87

HGA FORM #1

ELEMENT: Tl, DATE: 2/11/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 269.

Tl

	401	WP1183(II) #1			
	X02	CalBlank			
	X03	50.0 ppb			
	X04	0859.0403			
JOB #:	X05	0860.			
	X06	0860. R1			0.029 C
	X07	0861.			0.029 C
	X08	0861. S1			0.029 AV
	X09	0862.			0.00 CV
	X10	0863.			0.030 AZ
	X11	CalBlank			0.076 C
	X12	50.0 ppb			0.075 C
	X13	0864.			0.076 AV
	X14	0865.			0.94 CV
	X15	0866.			25.0 S1
	X16	PrepBlank 067			46.6 C
	X17	CalBlank, S_2			47.3 C
	X18	50.0 ppb			47.0 AV
	X19				0.75 CV
	X20				50.0 S2
	X21				105.6 C
	X22				107.0 C
	X23				106.6 AV
	X24				1.26 CV
	X25				100.0 S3
	X26				24.4
	X27				25.1
	X28			401	24.7 AV
	X29				2.00 CV
	X30				0.0
	X31				-0.0
	X32			402	-0.0 AV
	X33				0.0 CV
	X34				45.8
	X35	, S_3			46.8
				403	46.3 AV
					1.53 CV
					0.2
					0.3
				404	0.2 AV
					28.28 CV
					1.2
					1.2
				405	1.2 AV
					0.00 CV
					1.0
					0.9

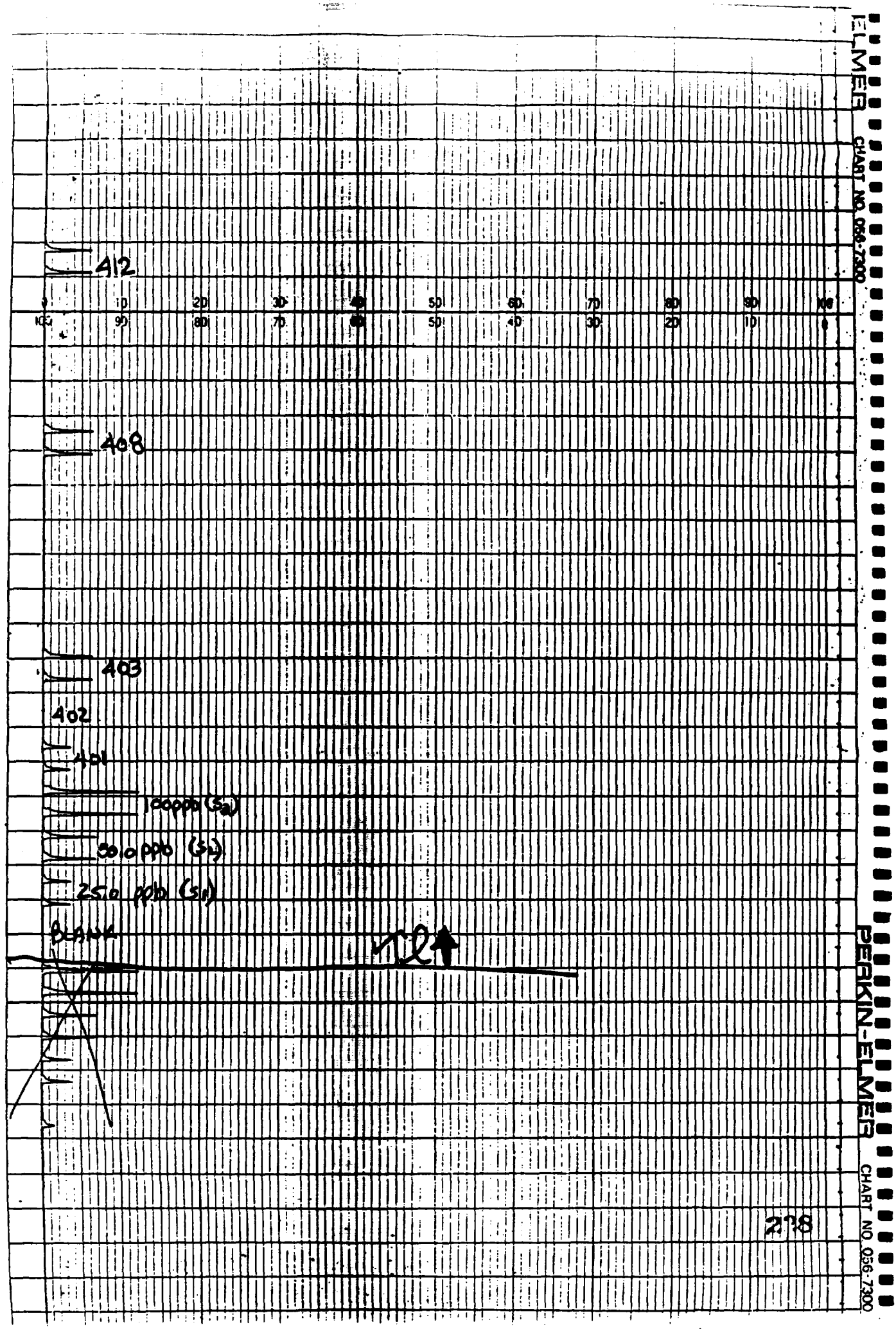
recycled paper

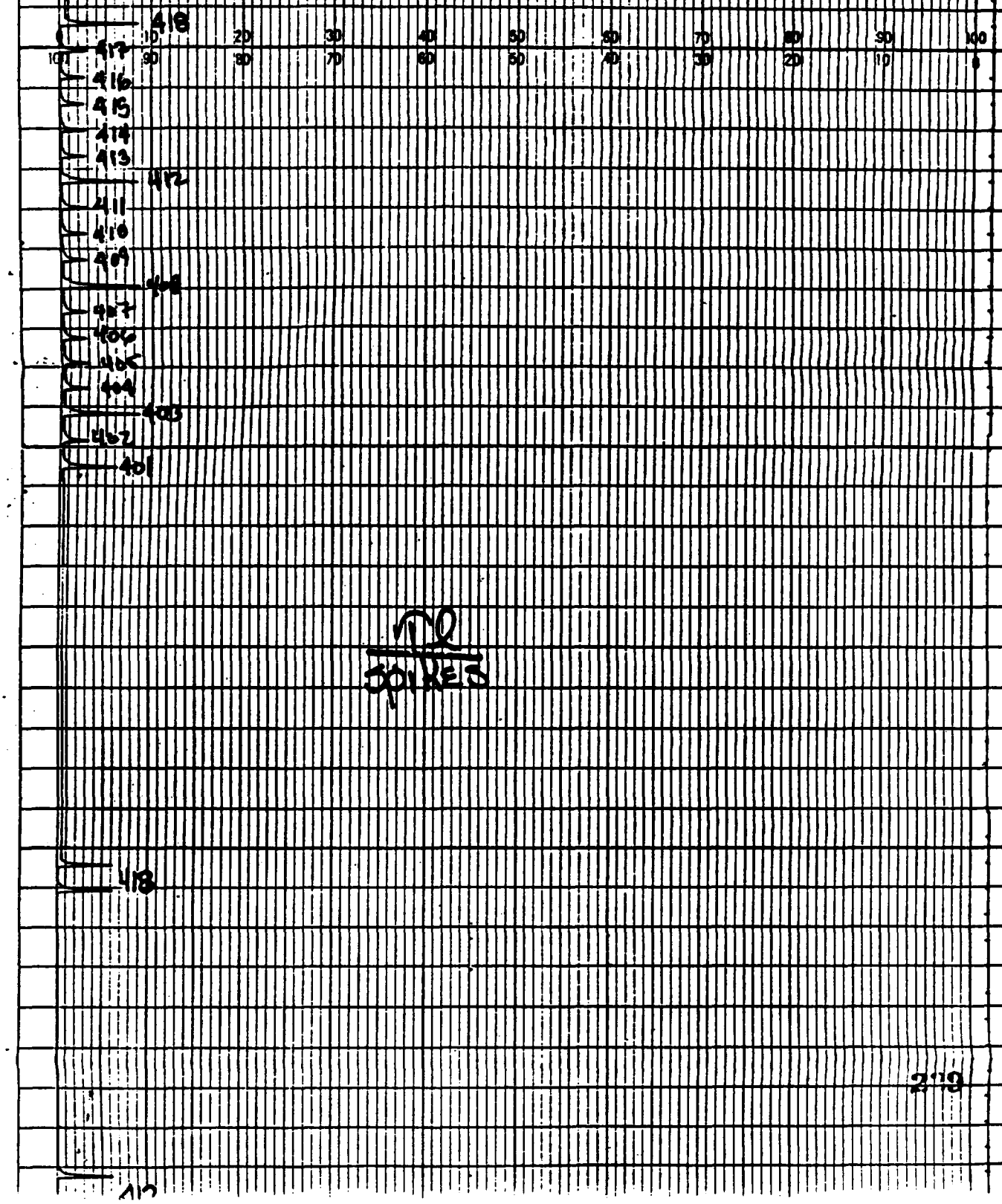
ecology and environment

406	1.0	AV
	7.44	CV
	1.0	
	1.0	
407	1.0	AV
	0.00	CV
	53.0	
	52.8	
408	52.9	AV
	0.27	CV
	0.3	
	-0.0	
409	0.2	AV
	06	ER
	0.3	
	0.2	
410	0.2	AV
	28.28	CV
	0.2	
	0.1	
411	0.1	AV
	47.14	CV
	46.2	
	45.8	
412	46.0	AV
	0.62	CV
	1.3	
	1.6	
413	1.5	AV
	14.63	CV
	-0.2	
	0.2	
414	0.0	AV
	06	ER
	0.1	
	0.3	
415	0.2	AV
	70.71	CV
	-0.1	
	-0.4	
416	-0.3	AV
	84.85	CV
	-0.1	
	-0.1	
417	-0.1	AV
	0.00	CV
	45.8	
	45.4	
418	45.6	AV
	0.62	CV

Id/50Kea

401	46.0
402	20.1
403	67.6
404	20.0
405	19.9
406	19.4
407	18.9
408	73.8
409	18.5
410	19.4
411	20.6
412	68.2
413	19.8
414	18.4
415	17.9
416	18.1
417	20.0
418	68.4


PERKIN-ELMER
CHART NO. 056-7300
10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
412
408
403
402
401
100000 (Sa)
500 ppb (Sb)
250 ppb (Sc)
BLANK
228



$\frac{\sqrt{2}}{\text{SPIKES}}$

Test Performed: Pb
Date Received: MARCH 3, 1987
Work Performed By: [illegible]

λ = 276.8
ENERGY = 59
TIME = 5.0 SEC.

S_1 = 25.0 ppb
S_2 = 50.0 ppb
S_3 = 100.0 ppb

SEE Log book #126 for STD COND

CLP FINAL VOLUME = 200 ml

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb BURN 1	ppb BURN 2	ppb Avg	C.V	20.0 ppb Spike	% Rec	D.F.	Amt of SAMPLE (GMS)	UNITS	FINAL CONC	PRE DIG SPIKE REC
	WP1183(II)#1				24.5	25.2	24.9	1.99	47.2	112			µg/L	24.9	
	Cal Blank				0.1	-0.0	0.0	/	20.2	101			µg/L	<10.0	
	50.0 ppb				52.2	51.0	51.6	1.61	71.9	102			µg/L	51.6	
	PrepBlank 103				-0.2	-0.1	-0.2	/	21.2	106			µg/L	<10.0	
4906	1032.0403				1.7	2.0	1.8	/	20.1	101		1.04	mg/kg	<1.92	
	1033.0403				0.1	0.4	0.2	/	19.3	97		1.05		<1.90	
	1034.0403				0.3	-0.2	0.0	/	20.8	104		1.00		<2.00	
	1035.0403				0.4	0.5	0.5	/	20.2	101		1.02		<1.96	
	1035.0403 R_1				0.2	0.2	0.2	0.00	19.6	98		1.02		<1.96	
	1035. R_1S_1				44.5	44.6	44.6	0.16	70.9	/		1.03		~~<1.94~~ 3.66	89%
	1036.0403				-0.3	0.0	-0.1	/	19.8	99		1.05		<1.90	
	1037.0403				-0.1	0.0	-0.1	/	21.1	106		1.00	mg/kg	<2.00	
	Cal Blank				0.0	-0.6	-0.3	/	20.5	103			µg/L	<10.0	
	50.0 ppb				48.0				72.6	/			µg/L	48.0	
4928	1110.0403				-0.1	0.4	0.2	/	21.2	106		1.05	mg/kg	<1.90	
	1111.0403				0.3	0.0	0.2	/	19.9	100		1.02		<1.96	
	1112.0403				0.4	0.5	0.4	/	20.0	100		1.03		<1.94	
	1113.0403				0.4	0.7	0.6	/	20.4	102		1.02		<1.96	
	1114.0403				0.5	0.6	0.6	/	21.1	106		1.03		<1.94	
	1115.0403				0.2	0.3	0.2	/	21.0	105		1.00		<2.00	
	1116.0403				0.6	0.7	0.7	/	22.1	111		1.01		<1.93	
	1117.0403				0.1	0.1	0.1	0.00	19.6	98		1.03	mg/kg	<1.94	
	Cal Blank				-0.1	-0.1	-0.1	0.00	21.0	105			µg/L	<10.0	
	50.0 ppb				48.1	48.1	48.1	0.00	74.3	/			µg/L	48.1	
	PrepBlank082				-0.1	-0.2	-0.1	/	22.6	113			µg/L	<10.0	
4372	0900.0403				1.0	1.2	1.1	12.86	23.0	115		1.02	mg/kg	<1.96	
	0900. R_2				0.8	0.7	0.8	9.43	19.6	98		1.01		<1.98	
	0900. R_2S_2				52.5	51.9	52.2	0.81	75.7	113		1.04	mg/kg	10.0	104%

13

Witnessed & Understood by me: [illegible] Date: 3/4/87
Invented by
Recorded by: J.O.M.P. 3/4/87

(12)

Test Performed: Tl (CONT'D)
Date Received: MARCH 3, 1987
Work Performed By: JWP

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From NO	C	ppb BURN 1	ppb BURN 2	ppb Avg	C.V.	20.0 ppb SPIKE	% REC	D.F.	Amt of SAMPLE (gms)	UNITS	FINAL CONC
11872	0901.0403				-0.0	-0.3	-0.2	/	19.2	96		1.04	mg/kg	<1.92
	Cal Blank				0.2	-0.2	0.0	/	19.8	99			µg/l	<40.0
	50.0 ppb				48.4	48.3	48.3	0.15	86.1	/			µg/l	48.3

To Page No.

Date | Invented by | Date | 241

Recorded by G.O.M.P. | 3/3-4/87

HGA FORM #1

ELEMENT: Tl, DATE: 3/3/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 287. pg 12-13.

ATTACH TAPE HERE

JOB #:

401	WP 1183 (II) #1
X02	Cal Blank
X03	50.0 ppb
X04	Prep Blank 0103 (4906)
X05	1032.0403
X06	1033.
X07	1034.
X08	1035.
X09	1035. R_1
X10	1035. R_1S_1
X11	1036.
X12	1037.
X13	Cal Blank
X14	50.0 ppb
X15	1110.0403 A (4928)
X16	1111.
X17	1112. , S_2
X18	1113.
X19	1114.
X20	1115.
X21	1116.
X22	1117.
X23	Cal Blank
X24	50.0 ppb
X25	Prep Blank 082 (4872)
X26	0900.0403
X27	0900. R_2
X28	0900. R_2S_1
X29	0901.
X30	Cal Blank
X31	50.0 ppb
X32	
X33	
X34	
X35	, S_3

401	47.2
402	20.2
403	71.9
404	21.2
405	20.1
406	19.3
407	20.8
408	20.2
409	19.6
410	70.9
411	19.8
412	21.1
413	20.5
414	72.6
415	21.2
416	19.9
417	20.0
418	20.4
419	21.1
420	21.0
421	22.1
422	19.6
423	21.0
424	74.2
425	22.6
426	23.0
427	19.6
428	75.7
429	19.2
430	19.3
431	36.1

recycled paper

ecology and environment

	-0.021	
	-0.020	
	-0.021	AV
	3.45	CV
	0.069	AZ
	0.069	
	0.069	
	0.069	AV
	0.00	CV
	25.0	S1
	46.8	C
	45.1	C
	46.5	AV
	1.07	CV
	50.0	S2
	101.8	C
	99.2	C
	100.5	AV
	1.83	CV
	100.0	S3
	24.5	
	25.2	
401	24.9	AV
	1.99	CV
	0.1	
	-0.0	
402	0.0	AV
	06	ER
	52.2	
	51.0	
403	51.6	AV
	1.64	CV
	-0.2	
	-0.1	
404	-0.2	AV
	47.14	CV
	1.7	
	2.0	
405	1.8	AV
	11.47	CV
	0.1	
	0.4	
406	0.2	AV
	84.85	CV
	0.3	
	-0.2	
407	0.0	AV
	06	ER
	0.4	
	0.5	
408	0.5	AV
	15.71	CV
	0.2	
	0.2	

409	0.2	AV
	0.00	CV
	44.5	
	44.6	
410	44.6	AV
	0.16	CV
	-0.3	
	0.0	
411	-0.1	AV
	06	ER
	-0.1	
	0.0	
412	-0.1	AV
	06	ER
	0.0	
	-0.6	
413	-0.3	AV
	06	ER
	[illegible]	
	[illegible]	
	[illegible]	
	0.00	CV
	[illegible]	
	-0.0	
415	0.0	AV
	05	ER
	[illegible]	
	[illegible]	
	[illegible]	
	[illegible]	
414	48.0	
	-0.1	
	0.4	
415	0.2	AV
	06	ER
	0.3	
	0.0	
416	0.2	AV
	06	ER
	0.4	
	0.5	
417	0.4	AV
	15.71	CV
	0.4	
	0.7	
418	0.6	AV
	28.57	CV
	0.5	
	0.6	

419	0.6	AV
	12.86	CV
	0.2	
	0.3	
420	0.2	AV
	28.28	CV
	0.6	
	0.7	
421	0.7	AV
	10.88	CV
	0.1	
	0.1	
422	0.1	AV
	0.00	CV
	-0.1	
	-0.1	
423	-0.1	AV
	0.00	CV
	48.1	
	48.1	
424	48.1	AV
	0.00	CV
	-0.1	
	-0.2	
425	-0.1	AV
	47.14	CV
	1.0	
	1.2	
426	1.1	AV
	12.86	CV
	0.8	
	0.7	
427	0.8	AV
	9.43	CV
	52.5	
	51.9	
428	52.2	AV
	0.81	CV
	-0.0	
	-0.3	
429	-0.2	AV
	06	ER
	0.2	
	-0.2	
430	-0.0	AV
	06	ER
	48.4	
	48.3	
431	48.3	AV
	0.15	CV

415 1110

414 50.0 ppb

X Omit

X 414 Omit

410 1035 S

402 (500 ppb)

402 Cal Blk.

401 (EPA 1530 [illegible])

100.0 ppb (S_2)

50.0 ppb (S_2)

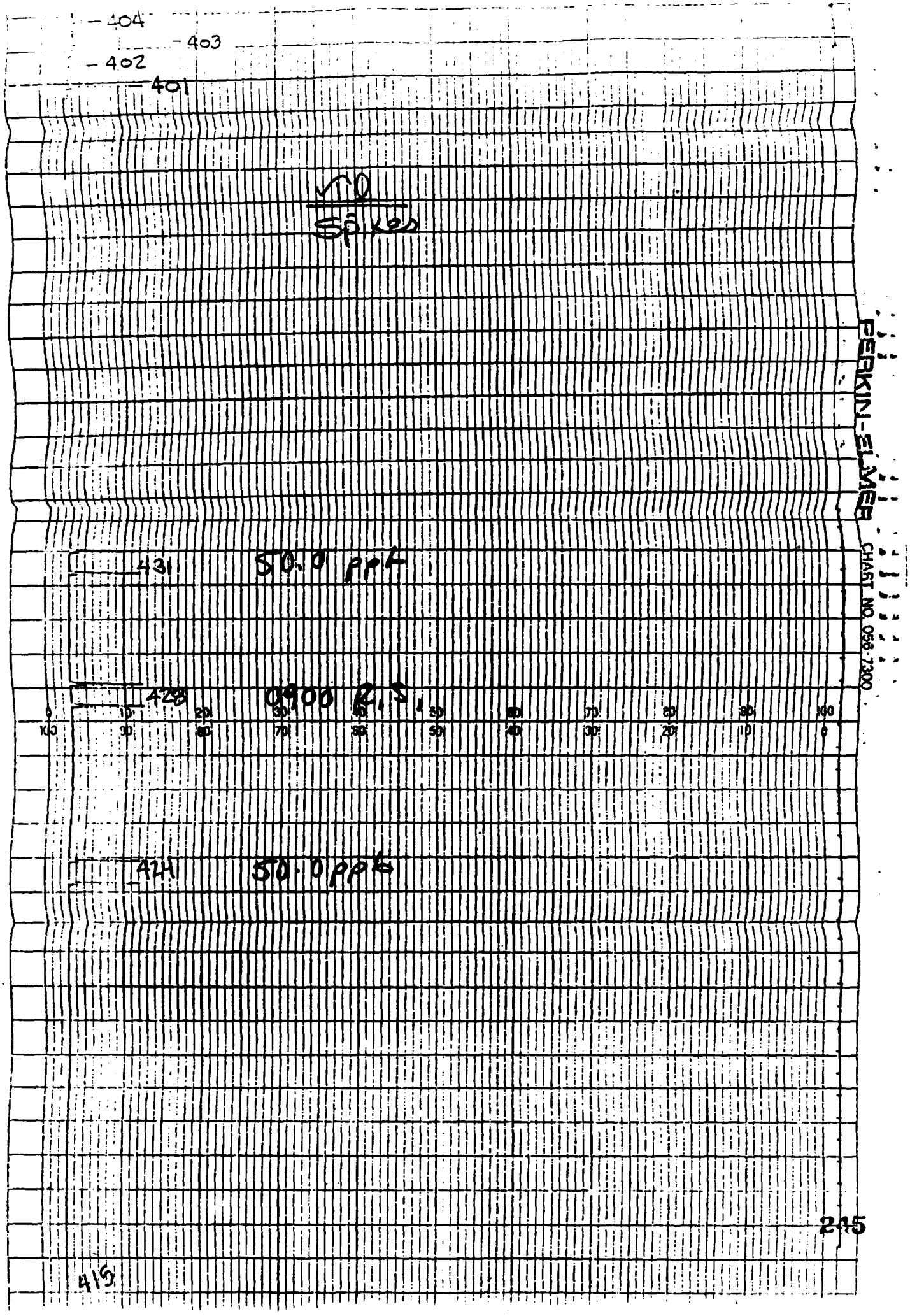
25.0 ppb (S_2)

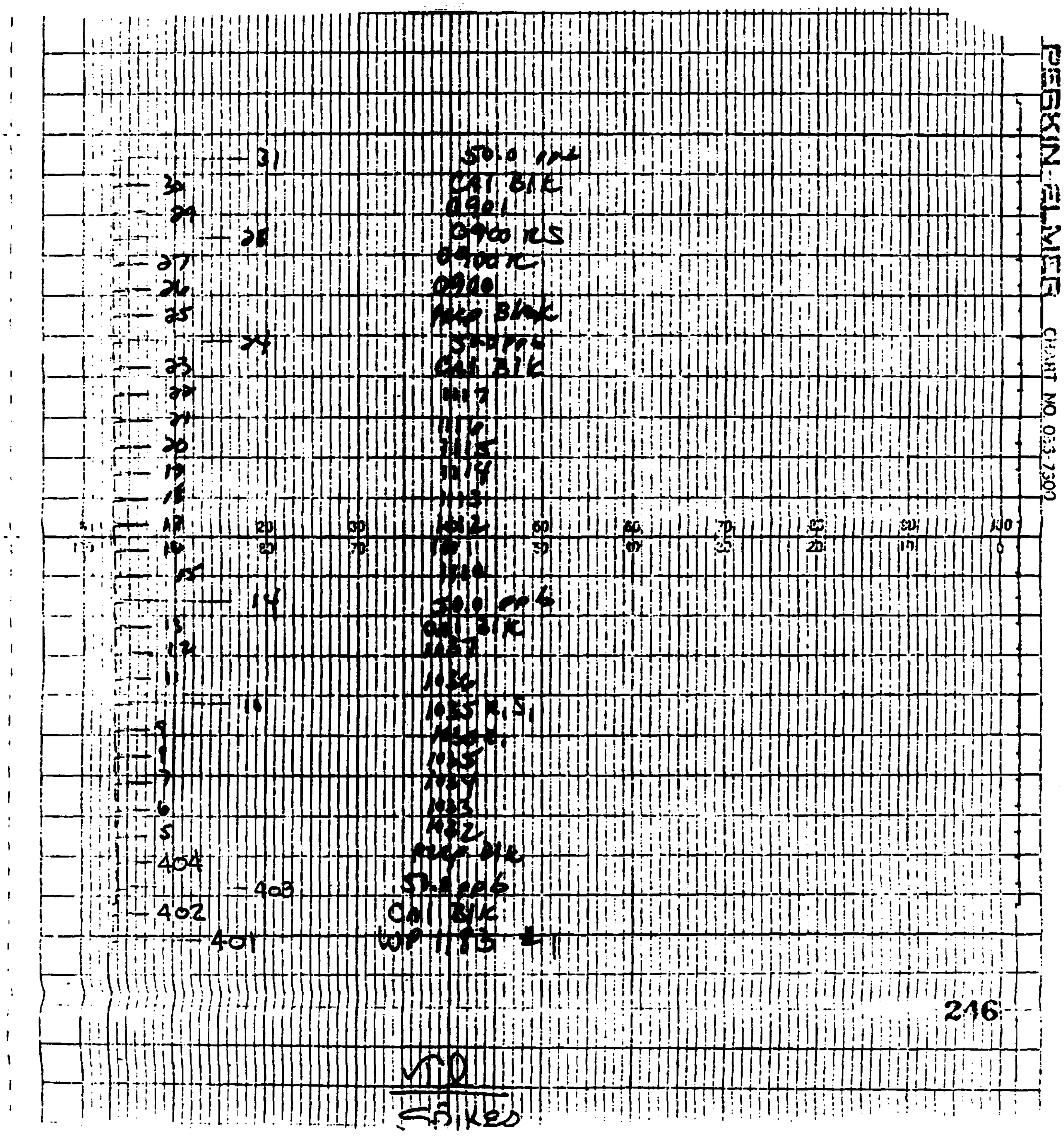
BLANK

TV Jobs 4906, 4928

PERKIN-ELMER CHART NO. 09-7290

214


404
403
402
401
no spikes
431
50.0 ppb
428
0900 R.S.
424
50.0 ppb
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
PERKIN-ELMER
CHART NO. 058-7300
415



PERKIN-ELMER
CHART NO. 033-7300
CAL BLK
WP 1193 #1
401
402
403
404

From Page No.

Method [illegible]
Instrument [illegible]
Stock [illegible]
Prepared [illegible] Book, page [illegible]
Stand. [illegible] Book, page [illegible]
Curve Date [illegible] Expires [illegible]
Other: [illegible]

Test Performed: CN
Date Received: 1-3-[illegible]
Test Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Sample Distilled	Sample Volume	Abs	Weight Curve	Results
	Blank	--		--	500	50	0.000	-0.5	< 0.02
	DI spike	-		-	Sample STDQ/500	50	0.270	44.10	93.1% Rec
4935	0752.04	N		A-25	10.[illegible]g/500	50	0.017	1.48	<1 mg/kg
	0753.04				10.24g/500	50	0.013	0.81	<1
	0754.04				10.04g/500	50	0.001	-1.21	<1
	0755.04				10.55g/500	50	0.000	-1.4	<1
	0756.04				10.03g/500	50	0.009	0.14	<1
	0757.04				10.13g/500	50	0.019	1.32	<1
	0758.04				10.07g/500	50	0.001	-1.2	<1
	0759.04	Dup		A-25	10.24g/500	50	0.018	1.65	<1 0.0RPD
	Undistilled Blank				—	50	[illegible]		

QC
1052 10

To Page No.

Witnessed & Understood by me | Date | Invented by | Date

Recorded by

Method
Instrument
Stock
Prepared Book, page
Stand. Book, page
Curve Date Expires
Other:

Test Performed:
Date Received:
Test Performed By:

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Results
	[illegible]	—	—					500	[illegible]	[illegible]	-0.5	<0.02 [illegible]
	[illegible]	—	—					[illegible]/500	[illegible]	0.[illegible]	47.47	100.2 % Rec
[illegible]	[illegible]	N	[illegible]					[illegible]/500	[illegible]	[illegible]	1.97	<1 mg/kg
[illegible]	[illegible]	N						[illegible]/500	[illegible]	0.[illegible]	[illegible].15	2.0
[illegible]	[illegible]	N						[illegible]/500	[illegible]	0.027	0.14	<1
[illegible]	[illegible]	Y	[illegible]	12	N	N	[illegible]	[illegible]	[illegible]	0.0[illegible]	2.33	[illegible] mg/L
[illegible]	[illegible]	Y	[illegible]	12	N	N	[illegible]/500	10	0.[illegible]	24.34	0.92	
[illegible]	[illegible]	[illegible]	[illegible]	12	N	N	[illegible]	[illegible]	0.516	135.56	0.57 (0.6)	
[illegible]	[illegible]	Y	[illegible]	12	N	N	500	[illegible]	[illegible]	0.64	<0.02	
	[illegible]	Y	[illegible]	[illegible]	N	N	500	[illegible]	[illegible]	1.46	<0.02	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]/500 [illegible]	[illegible]	0.[illegible]	47.51	[illegible]	101.0% Rec
	[illegible]	[illegible]						[illegible]	[illegible]			

To Page No.

Witnessed & [illegible] Date

Invented by Date

Reconciled by

From Page No.__

Method EPA 335.2
Instrument SPEC 88
Stock CN 2.0482N 0.947mg/ml
Prepared 1/6/87 Book, page 25,35
Stand. 1/15/87 Book, page 26,72
Curve Date 1/15/87 Expires 2/13/87
Other: _____

mg/L CN⁻ = A×50 / B×C

STD① 100ml STOCK / 1000
STD② 100ml STD① / 1000

Test Performed: CN⁻
Date Received: 2-10-87
Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Blank distilled	Comb. for dist.	Abs	Diagram value	Result
DI	SPIKE		17.35	5ml STD@1/500	50	1.279	45.62	96.3 % rec
4861	0856.15	Y	A-22	500ml	50	0.007	-0.2	<0.07 "
4863	0859.04	N	A-4	6.510 g/500	50	0.039	5.19	<1.0 "
4863	0860.04	N	A-4	6.463 g/500	50	0.010	0.31	<1.0 "
4863	0861.04	N	A-4	6.478 g/500	50	0.006	-0.4	<1.0 "
4863	0862.04	N	A-4	6.028 g/500	50	0.004	-0.7	<1.0 "
4863	0863.04	N	A-4	6.016 g/500	50	0.007	-0.2	<1.0 "
4863	0864.04	N	A-4	6.235 g/500	50	0.050	7.04	1.13 "
4863	0865.04	N	A-4	6.550 g/500	50	0.004	-0.7	<1.0 "
4863	0866.04	N	A-4	6.166 g/500	50	0.010	0.31	<1.0 "
4863	0866.04	REP	A-4	6.236 g/500	50	0.001	-1.2	<1.0 "

To Pa

Witnessed & Understood by me. Date Invented by Date

Recorded by

Stock
Prepared Book, page
Stand. Book, page
Curve Date Expires
Other:

Test Performed: [illegible]
Date Received: [illegible]
Work Performed by: [illegible]

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	pH	D	R	Sample Volume	Volume Color	Abs.	Analysis Curve	Results
	Blank							500	50	0.000	-1.4	<0.02 mg/l
								[illegible]				
	NT pks							5 [illegible]	[illegible]	0.240	47.47	100.2% Rec
	0551-14	Y		A-[illegible]		N	N	[illegible]				
	0551 14	Y				N	N	[illegible]				
	0550 14	Y				N	N	[illegible]				
1966	0556.[illegible]	Y		A-[illegible]		N	N	500	10	0.501	47.32	0.49 mg/l
1961	0730.01	Y		A-[illegible]		N	N	500	20	0.105	16.31	0.82 mg/l
1965	0516.00	N		A-[illegible]				1.0374	50	0.050	12.10	11.66 mg/kg
1965	0517.00			A-[illegible]				1.0343	[illegible]	0.005	-0.5	<[illegible]
1932	0700.04			A-[illegible]				5.0278	[illegible]	0.005	2.83	<1
1932	0701.04			A-[illegible]				5.1534	[illegible]	0.010	0.51	<1
1965	0571.00	N		A-32				1.0171	[illegible]	0.007	0.14	<[illegible]
1965	0[illegible].32	N		A-32				1.0505	[illegible]	0.005	-0.05	<[illegible]
	0101.04	yes		A-[illegible]				5.0224	[illegible]	0.265	42.92	8.55 70.7% Rec
	Undistilled Blank								50	[illegible]		

*✓ Sample in absorbing tube turned yellow during distillation
Analyst does not know of any problem this caused in the color development

To Page No.

Witnessed & [illegible] Date

Date 250