

Note: This is a reference cited in AP 42, *Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

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**FINAL REPORT
EMISSIONS TESTING OF COMBUSTION STACK AND
PUSHING OPERATIONS AT COKE BATTERY NO. 2 AT
BETHLEHEM STEEL CORPORATION'S
BURNS HARBOR DIVISION
IN CHESTERTON, INDIANA**

**Volume II
Appendix C**

**EPA Contract No. 68-D-98-004
Work Assignment No. 2-01**

Prepared for:

**John C. Bosch Jr. (MD-19)
Work Assignment Manager
SCGA, EMC, EMAD, OAQPS
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711**

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Submitted by:

**PACIFIC ENVIRONMENTAL SERVICES, INC.
5001 S. Miami Blvd., Suite 300
Post Office Box 12077
Research Triangle Park, NC 27709-2077
(919) 941-0333 FAX (919) 941-0234**

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TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1-1
2.0 SUMMARY OF RESULTS	2-1
2.1 EMISSIONS TEST LOG	2-1
2.2 FILTERABLE PARTICULATE MATTER, METHYLENE CHLORIDE EXTRACTABLE MATTER (MCEM), AND METALS	2-1
2.3 POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)	2-22
3.0 PROCESS AND CONTROL EQUIPMENT OPERATION	3-1
3.1 INTRODUCTION	3-1
3.2 PROCESS DESCRIPTION	3-1
3.3 PROCESS AND CONTROL DEVICE MONITORING	3-4
4.0 SAMPLING LOCATIONS	4-1
4.1 COKE OVEN BATTERY NO. 2	4-1
5.0 SAMPLING AND ANALYTICAL PROCEDURES	5-1
5.1 LOCATION OF MEASUREMENT SITES AND SAMPLE/VELOCITY TRAVERSE POINTS	5-1
5.2 DETERMINATION OF STACK GAS VOLUMETRIC FLOW RATE	5-3
5.3 DETERMINATION OF STACK GAS EMISSION RATE CORRECTION FACTORS, DRY MOLECULAR WEIGHT, AND EXCESS AIR	5-3
5.4 DETERMINATION OF STACK GAS MOISTURE CONTENT	5-3
5.5 DETERMINATION OF PARTICULATE MATTER/METHYLENE CHLORIDE EXTRACTABLE MATTER/METALS	5-3
5.6 POLYCYCLIC AROMATIC HYDROCARBONS	5-4

APPENDIX C
ANALYTICAL DATA

Narrative

Site: *Bethlehem Steel*
Prepared for: *Frank Meadows (PES)*
Prepared by: *Linh Nguyen*

Description of Procedures for EPA Method 315 and Observations:

****Note: All extractions were done with toluene as opposed to Methylene Chloride**

Filters -

Procedure:

The filters (including any loose particles) were transferred to a tared amber jar. The amber jars were placed into a desiccator overnight in a temperature controlled environment. The following day, the samples were weighed and initial weights were taken. To ensure that all conditions remained the same, the samples were placed back into the desiccator and allowed to sit overnight and the second weighings were taken at the same time the next day. Once constant weight had been attained, 100 mL of toluene was added to each jar. The jars were placed in a sonicator and allowed to sonicate for 3 minutes. After sonication was complete, the samples were taken out of the sonicator. Each sample was filtered through a buchner funnel reinforced with an additional Whatman 934-AH filter to prevent cross contamination on the buchner funnels. Once the solutions were vacuum filtered, the extract was placed into a triple rinsed beaker (methylene chloride solvent). The beaker containing the extract was placed onto a hotplate at low heat and the solvent was allowed to evaporate. Once the samples almost reached dryness, the samples were taken off the hotplate and poured into a tared aluminum pan. The beakers were triple rinsed with toluene and then the solvent was poured into the aluminum pan. The rinse was performed to ensure that no material remained in the beaker. The aluminum weighing pan was heated to complete dryness, placed into a desiccator and allowed to sit in the desiccator overnight. The following day, the samples were weighed and the weights recorded.

Observations:

The filters had a lot of loose, black particles which were also placed into the jars for PM weights. This was seen mostly on the Inlets.

Acetone Front Half Rinse-

Procedure:

The rinses were taken and poured into tared 400 mL beakers. The beakers were triple rinsed with MeCl_2 . The weights of the beakers including the rinses were taken. This gives an initial and a final weight to which the volumes of the rinses were calculated. A separate sheet is attached explaining how the volumes were calculated. The beakers containing the rinses were allowed to sit overnight in a hood to allow the acetone solvent to evaporate. The next day the beakers, which now contain no solvent, were taken and placed into the dessicator. The beakers were allowed to sit in the dessicator overnight. The next day, initial weighings for the samples were

taken. The samples were then allowed to sit in the dessicator again for 24 hours. The next day at approximately the same time, the samples were weighed again for the second weighings. Once constant weight has been attained, the weights were recorded for the Particulate Mass (PM) portion of the analysis. Next, the beakers were taken and 25 mL of MeCl_2 was added to each beaker. Aluminum foil was placed over the tops of the beakers. The beakers were then placed into a sonicator and allowed to sonicated for 3 minutes. This fraction will be combined with the MeCl_2 Front Half Rinse.

Observations:

No observations out of the ordinary were noted.

Methylene Chloride Front Half Rinse-

Procedure:

The rinses were taken and poured into tared 400 mL beakers. The beakers were triple rinsed with MeCl_2 . The weights of the beakers including the rinses were taken. This gives an initial and a final weight to which the volumes of the rinses were calculated. At this point, the extracts from the Acetone Front Half Rinse were combined with this fraction. The combined fractions were placed onto a hotplate and allowed to heat gently at a low temperature setting. Once the solution has almost reached dryness, the solution was poured into a tared aluminum pan. The pan was then was placed back onto the hotplate and taken to complete dryness. The pans were then transferred to the dessicator and allowed to sit overnight. The following day, the samples were weighed and the weights recorded.

Observations:

No observations out of the ordinary were noted.

Impinger, Back Half Water-

Procedure:

Each sample was then poured into a clean, 1000 mL separatory funnel. Once in the separatory funnel, the amber jars containing the original samples were triple rinsed with toluene and then poured into the separatory funnel. The approximate volume of this rinse is 50 mL. The samples were then shaken for 1 minute. After 1 minute, the bottom water layer was drained into a clean, 1000 mL amber jar. After the water was drained, the remaining toluene layer was emptied into a clean 250 mL beaker. An additional 25 mL of toluene was added. The solution was then shaken for another minute and the bottom water layer was drained into the same 1000 mL amber jar. This was repeated once more. Once the third shake was completed, and the remaining toluene layer was drained into the 250 mL beaker, the beaker was placed onto a hotplate and was gently heated to evaporate the solvent. Once the solution was almost to dryness, the solution was transferred to a tared aluminum pan. The pan was then placed back onto the hotplate and heated to complete dryness. Afterwards, the pans were placed into the dessicator to sit overnight. The following day, the pans were weighed and the weights recorded.

Observations:

No observations out of the ordinary were noted.

Acetone, Back Half Rinse-

Procedure:

The exact same procedure was used for the Back Half Rinse as was used for the Front Half Rinse. The only difference was that since PM analysis was not required, when the solvent dried down in the beaker, constant weight was not taken for these samples. After the solvent had evaporated, 25 mL of toluene was added to each beaker and sonicated for 3 minutes each. The rest of the procedure was the same as that of the Acetone Front Half Rinse.

Observations:

No observations out of the ordinary were noted.

Methylene Chloride, Back Half Rinse-

Procedure:

The solution was poured into a tared beaker. After the solution had been poured into the beaker, another weight was taken to calculate the volume. Once the volume had been determined, the samples were placed onto a hotplate to heat the sample to dryness. Once the sample was dried, 25 mL of toluene was added to the beakers. The beakers were sonicated for 3 minutes. Once sonicated, the samples were filtered through the buchner funnel. The extract was placed into a clean, 250 mL beaker. The beaker containing the rinse was placed onto a hotplate and gently heated almost to dryness. Once the rinse was almost dry, the solution was transferred to a tared aluminum pan. The pans were placed back onto the hotplate and the solution heated to complete dryness. Once the pans were dry, the aluminum pans were transferred to a desiccator and allowed to sit overnight. The following day, the pans were weighed and the weights recorded.

Observations:

No observations out of the ordinary were noted.

Field Reagent Blanks-

Procedure:

The samples were poured into tared beakers. Weights were taken after the reagent blank rinses were poured in. These final weights were used to calculate the volumes of the reagent blanks. The reagent blanks were allowed to sit on a hotplate at low heat. After the solvents had evaporated, the final weights of the beakers with any contents remaining were taken. Particulate Mass was calculated. For the filter blank, 100 mL of methylene chloride was added to the beaker and sonicated for 3 minutes. Afterwards, the methylene chloride was filtered and poured into a clean beaker. The beaker containing the solvent was heated down to near dryness. The solvent was then transferred to a tared aluminum pan. The pan was placed onto the hotplate and reduced to dryness. The pan was desiccated and weights recorded the next day.

Observations:

No observations out of the ordinary were noticed.

Laboratory Reagent Blanks-

Procedure:

The same procedures were used for Laboratory Reagent blanks as for the Field Reagent Blanks. Solvents that were used during the extraction process were tested in the reagent blank. A filter from the same lot that was sent to the field was used to go through the extraction process.

Observations:

No observations out of the ordinary were noticed

Matrix = **FILTERS****Method =** **PM**

Sample ID:	Weight of Petri dish (g)	Filter Pre- weight (g)	Final wt. Of filter+dish (g)	Final weight of filter PM (g)
B-I-M315-1-F (080798-05)	168.7107	0.32825	170.7471	1.7081
B-I-M315-1-F (080798-16)	169.1583	0.32116	170.3306	0.8511
B-I-M315-2-F (080798-04)	162.9469	0.31677	165.0058	1.7421
B-I-M315-2-F (080798-19)	175.7047	0.32332	177.6603	1.6323
B-I-M315-3-F (080798-11)	160.6746	0.32119	162.3930	1.3972
B-I-M315-3-F (080798-15)	163.3534	0.31589	164.9029	1.2336
B-I-M315-FB-F (080798-2)	172.1577	0.32242	172.4818	0.0017
B-O-M315-1-F (080798-06)	172.5921	0.32402	172.9172	0.0011
B-O-M315-2-F (080798-23)	166.2064	0.32027	166.5295	0.0028
B-O-M315-3-F (080798-22)	149.5202	0.31509	149.8357	0.0004
B-O-M315-FB-F (080798-24)	181.8306	0.33064	182.1624	0.0011
B-U-M315-1-F (080798-17)	147.9548	0.31669	148.3507	0.0792
B-U-M315-2-F (080798-12)	166.9930	0.32378	167.4157	0.0989
B-U-M315-3-F (080798-01)	170.3177	0.32254	170.7125	0.0722
B-U-M315-FB-F (080798-07)	168.0875	0.32563	168.4190	0.0058

Method = **MCEM**

Sample ID:		Weight of Alum. pan (g)	Weight after evaporation (g)	Final weight of MCEM (g)
B-I-M315-1-F (080798-05)	10	1.6590	1.6595	0.0005
B-I-M315-1-F (080798-16)	11	1.6590	1.6593	0.0003
B-I-M315-2-F (080798-04)	12	1.6535	1.6535	0.0000
B-I-M315-2-F (080798-19)	13	1.6491	1.6494	0.0003
B-I-M315-3-F (080798-11)	14	1.6367	1.6382	0.0015
B-I-M315-3-F (080798-15)	15	1.6555	1.6560	0.0005
B-I-M315-FB-F (080798-2)	16	1.6450	1.6453	0.0003
B-O-M315-1-F	17	1.6415	1.6418	0.0003
B-O-M315-2-F	18	1.6429	1.6435	0.0006
B-O-M315-3-F	19	1.6427	1.6427	0.0000
B-O-M315-FB-F	20	1.6435	1.6437	0.0002
B-U-M315-1-F	21	1.6332	1.6335	0.0003
B-U-M315-2-F	22	1.6401	1.6402	0.0001
B-U-M315-3-F	23	1.6522	1.6522	0.0000
B-U-M315-FB-F	24	1.6232	1.6232	0.0000

Matrix =

Acetone FHR

Method =

PM

Sample ID:	Volume of liquid (mL)	Weight of beaker (g)	Final weight of rinse (g)	Final weight of filter PM (g)
B-I-M315-1-FH-A	267.4	175.8228	175.9928	0.1700
B-I-M315-2-FH-A	339.2	155.0218	155.3708	0.3489
B-I-M315-3-FH-A	303.2	165.0352	165.1712	0.1360
B-I-M315-FB-FH-A	121.9	178.5494	178.5516	0.0022
B-O-M315-1-FH-A	129.7	179.0007	179.0069	0.0061
B-O-M315-2-FH-A	227.1	166.2611	166.2652	0.0041
B-O-M315-3-FH-A	299.8	179.7362	179.7436	0.0074
B-O-M315-FB-FH-A	149.6	170.3356	170.3371	0.0014
B-U-M315-1-FH-A	229.8	165.7417	165.8741	0.1324
B-U-M315-2-FH-A	236.5	178.6304	178.7571	0.1267
B-U-M315-3-FH-A	201.3	164.5489	164.8105	0.2616
B-U-M315-FB-FH-A	139.0	167.2803	167.2825	0.0022

Matrix =

Methylene Chloride FHR

Method =

MCEM

Sample ID:		Weight of Alum. pan (g)	Weight after evaporation (g)	Final weight of MCEM (g)
B-I-M315-1-FH-M	10	1.6506	1.6528	0.0022
B-I-M315-2-FH-M	11	1.6571	1.6583	0.0012
B-I-M315-3-FH-M	12	1.6543	1.6560	0.0017
B-I-M315-FB-FH-M	13	1.6422	1.6423	0.0001
B-O-M315-1-FH-M	14	1.6212	1.6231	0.0019
B-O-M315-2-FH-M	15	1.6169	1.6178	0.0009
B-O-M315-3-FH-M	16	1.6354	1.6380	0.0026
B-O-M315-FB-FH-M	17	1.6238	1.6247	0.0009
B-U-M315-1-FH-M	18	1.6195	1.6599	0.0404
B-U-M315-2-FH-M	19	1.6472	1.6786	0.0314
B-U-M315-3-FH-M	20	1.6551	1.7924	0.1373
B-U-M315-FB-FH-M	21	1.6451	1.6454	0.0003

Matrix =**Acetone BHR****Method =****MCEM**

Sample ID:		Volume of liquid (mL)	Weight of Alum. pan (g)	Weight after evaporation (g)	Final weight of MCEM (g)
B-I-M315-1-BH-A	1	408.0	1.6436	1.6460	0.0024
B-I-M315-2-BH-A	2	349.1	1.5877	1.5893	0.0016
B-I-M315-3-BH-A	3	348.4	1.6713	1.6726	0.0013
B-I-M315-FB-BH-A	4	263.2	1.6485	1.6485	0.0000
B-O-M315-1-BH-A	5	56.0	1.6396	1.6402	0.0006
B-O-M315-2-BH-A	6	177.9	1.6753	1.6766	0.0013
B-O-M315-3-BH-A	7	263.6	1.6550	1.6558	0.0008
B-O-M315-FB-BH-A	8	190.5	1.0260	1.0260	0.0000
B-U-M315-1-BH-A	9	147.8	1.0324	1.0325	0.0001
B-U-M315-2-BH-A	10	202.8	1.0330	1.0335	0.0005
B-U-M315-3-BH-A	11	165.6	1.0305	1.0310	0.0005
B-U-M315-FB-BH-A	12	120.2	1.0244	1.0244	0.0000

Matrix =**Methylene Chloride BHR****Method =****MCEM**

Sample ID:		Volume of liquid (mL)	Weight of Alum. pan (g)	Weight after evaporation (g)	Final weight of MCEM (g)
B-I-M315-1-BH-M	1	231.2	0.9950	0.9969	0.0019
B-I-M315-2-BH-M	2	244.9	0.9969	1.0013	0.0044
B-I-M315-3-BH-M	3	228.1	0.9985	0.9991	0.0006
B-I-M315-FB-BH-M	4	204.1	0.9953	0.9954	0.0001
B-O-M315-1-BH-M	5	75.4	1.0178	1.0178	0.0000
B-O-M315-2-BH-M	6	199.6	1.0197	1.0199	0.0002
B-O-M315-3-BH-M	7	132.7	1.0176	1.0202	0.0026
B-O-M315-FB-BH-M	8	250.1	1.0163	1.0163	0.0000
B-U-M315-1-BH-M	9	82.5	1.0160	1.0160	0.0000
B-U-M315-2-BH-M	10	143.8	1.0164	1.0168	0.0004
B-U-M315-3-BH-M	11	132.1	1.0257	1.0258	0.0001
B-U-M315-FB-BH-M	12	136.4	1.0150	1.0150	0.0000

Matrix =

H2O Impinger rinses

Method =

MCEM

Sample ID:		Weight of Alum. pan (g)	Weight after evaporation (g)	Final weight of MCEM (g)
B-I-M315-1-IMP H2O	13	<u>1.6011</u>	<u>1.6041</u>	<u>0.0030</u>
B-I-M315-2-IMP H2O	14	<u>1.6170</u>	<u>1.6206</u>	<u>0.0036</u>
B-I-M315-3-IMP H2O	15	<u>1.6060</u>	<u>1.6090</u>	<u>0.0030</u>
B-I-M315-FB-IMP H2O	16	<u>1.6549</u>	<u>1.6565</u>	<u>0.0016</u>
B-O-M315-1-IMP H2O	17	<u>1.6460</u>	<u>1.6486</u>	<u>0.0026</u>
B-O-M315-2-IMP H2O	18	<u>1.6645</u>	<u>1.6673</u>	<u>0.0028</u>
B-O-M315-3-IMP H2O	19	<u>1.6595</u>	<u>1.6599</u>	<u>0.0004</u>
B-O-M315-FB-IMP H2O	20	<u>1.6426</u>	<u>1.6427</u>	<u>0.0001</u>
B-U-M315-1-IMP H2O	21	<u>1.6232</u>	<u>1.6235</u>	<u>0.0003</u>
B-U-M315-2-IMP H2O	22	<u>1.6084</u>	<u>1.6086</u>	<u>0.0002</u>
B-U-M315-3-IMP H2O	23	<u>1.6739</u>	<u>1.6742</u>	<u>0.0003</u>
B-U-M315-FB-IMP H2O	24	<u>1.6291</u>	<u>1.6291</u>	<u>0.0000</u>

Matrix =

Blanks

Method =

PM

Sample ID:	Weight of Petri dish (g)	Final wt. Of filter+dish (g)	Filter Pre-weight (g)	Final weight of filter PM (g)
B-LB-F	<u>171.0074</u>	<u>171.3363</u>	<u>0.32563</u>	<u>0.0032</u>
Sample ID:	Volume of liquid (mL)	Weight of beaker (g)	Final weight of rinse (g)	Final weight of filter PM (g)
B-LB-Acetone	<u>199.6</u>	<u>177.4500</u>	<u>177.4502</u>	<u>0.0002</u>
B-LB-MeCl2	<u>203.1</u>	<u>176.8191</u>	<u>176.8192</u>	<u>0.0000</u>
B-LB-H2O	<u>199.6</u>	<u>175.6222</u>	<u>175.6223</u>	<u>0.0001</u>

Method =

MCEM

Sample ID:	Weight of Alum. pan (g)	Weight after evaporation (g)	Final weight of MCEM (g)
B-LB-F	<u>1.6526</u>	<u>1.6526</u>	<u>0.0000</u>



ANALYTICAL REQUEST AND CHAIN OF CUSTODY

PLANT: <u>Perkley Steel</u>		PROJECT #: <u>5506.000</u>	
RECOVERY PERSON: <u>R. Kelly, R. Dorman</u>			
SAMPLE TECHNICIAN: <u>G. Gatz, J. Conter</u>			
SAMPLE IDENTIFICATION	COLLECTION		NUMBER OF CONTAINERS
	DATE	TIME	
<u>B-I-315-1</u>	<u>8/1/98</u>		<u>7</u>
<u>B-I-315-2</u>	<u>8/2/98</u>		<u>7</u>
<u>B-I-315-3</u>	<u>8/3/98</u>		<u>7</u>
<u>B-I-315-FB</u>	<u>8/14/98</u>		<u>6</u>
<u>B-O-315-1</u>	<u>8/1/98</u>		<u>6</u>
<u>B-O-315-2</u>	<u>8/2/98</u>		<u>6</u>
<u>B-O-315-3</u>	<u>8/7/98</u>		<u>6</u>
<u>B-O-315-FB</u>	<u>8/14/98</u>		<u>6</u>
<u>B-U-315-1</u>	<u>8/11/98</u>		<u>6</u>
<u>B-U-315-2</u>	<u>8/14/98</u>		<u>6</u>
<u>Lab Blank</u>	<u>8/14/98</u>		<u>4</u>

ANALYTICAL REQUEST						COMMENTS (Type of container, special preparation, special handling, etc.)
<u>EPH Metal</u>	<u>For Extreme Analysis</u>	<u>Organic</u>	<u>Metal</u>	<u>also M2</u>	<u>for Metals</u>	
X						<u>ERG for</u>
X						<u>EDM</u>
X						<u>First Analytical</u>
X						<u>for metals</u>
X						<u>analysis</u>
X						
X						
X						
X						
X						
X						

REQUISITIONER'S NAME
Ronald J. Kelly
RECEIVER'S NAME
Robert M. Kelly

DATE/TIME
8/15/98 / 1100
DATE/TIME
8/17/98 3pm

REQUISITIONER'S SIGNATURE
[Signature]
RECEIVER'S SIGNATURE
[Signature]

SHIPPER'S NAME AND ID NUMBER

U.S. EPA - Bethlehem Steel - Chesterton, Indiana - S506.000
Master Sample Log

Sample Run No.	Date/Time	Sample Description	Liquid Level Marked/ Sealed	Being Stored Below 4°C
<i>Bayhwa Inlet</i>		<i>EPA Method 315</i>	<i>✓</i>	<i>N/A</i>
<i>B-I-315-1</i>	<i>8/11/98</i>	<i>Filters ⁰⁸⁰⁷⁹⁸⁻⁰⁵ 080798-16</i>	<i>2 Filters per test</i>	
<i>B-I-315-1</i>		<i>Front 1/2 Acetone Rinse</i>		
<i>"</i>		<i>F.H. MeCl₂ Rinse</i>		
<i>"</i>		<i>Impinger H₂O/H₂O Rinse</i>		
<i>B-I-315-1</i>	<i>↓</i>	<i>Back 1/2 Acetone ^{MeCl₂} Rinse</i>	<i>500 ml bottle - Acetone</i>	
			<i>250 ml bottle - MeCl₂</i>	
<i>B-I-315-2</i>	<i>8/12/98</i>	<i>Filters ⁰⁸⁰⁷⁹⁸⁻⁰⁴ 080798-19</i>	<i>2 Filters per test</i>	
		<i>F.H. Acetone Rinse</i>		
		<i>F.H. MeCl₂ Rinse</i>		
		<i>B.H. Impinger H₂O/H₂O Rinse</i>		
		<i>B.H. Acetone Rinse</i>		
<i>B-I-315-2</i>	<i>↓</i>	<i>B.H. MeCl₂ Rinse</i>		
<i>B-I-315-3</i>	<i>8/13/98</i>	<i>Filters ⁰⁸⁰⁷⁹⁸⁻¹¹ 080798-15</i>	<i>2 Filters per test</i>	
		<i>F.H. Acetone Rinse</i>		
		<i>F.H. MeCl₂ Rinse</i>		
		<i>Impinger H₂O/H₂O Rinse</i>		
		<i>B.H. Acetone Rinse</i>		
<i>B-I-315-3</i>	<i>8/13/98</i>	<i>B.H. MeCl₂ Rinse</i>		
<i>B-I-315-FB</i>	<i>8/14/98</i>	<i>Filter 080798-2</i>		
		<i>F.H. Acetone Rinse</i>		
		<i>F.H. MeCl₂ Rinse</i>		
	<i>↓</i>	<i>Imp. H₂O/H₂O Rinse</i>		

2 WAF

U.S. EPA - Bethlehem Steel - Chesterton, Indiana - S506.000
Master Sample Log

Sample Run No.	Date/Time	Sample Description	Liquid Level Marked/ Sealed	Being Stored Below 4°C
B-I-315-FB	8/14/98	B.H. Acetone Rinse		N/A
		B.H. MeCl ₂ Rinse		
Baghouse Outlet		EPA Method 315	✓	N/A
B-O-315-1	8/11/98	Filter 080798-06		
		F.H. Acetone Rinse		
		F.H. MeCl ₂ Rinse		
		Imp. H ₂ O/H ₂ O Rinse		
		BH Acetone Rinse		
		BH MeCl ₂ Rinse		
B-O-315-2	8/12/98	Filter 080798-23		
		F.H. Acetone Rinse		
		F.H. MeCl ₂ Rinse		
		Imp. H ₂ O/H ₂ O Rinse		
		BH Acetone Rinse		
		BH MeCl ₂ Rinse		
B-O-315-3	8/13/98	Filter 080798-22		
		F.H. Acetone Rinse		
		F.H. MeCl ₂ Rinse		
		Imp. H ₂ O/H ₂ O Rinse		
		BH Acetone Rinse		
		BH MeCl ₂ Rinse		

RM 3

U.S. EPA - Bethlehem Steel - Chesterton, Indiana - S506.000
Master Sample Log

Sample Run No.	Date/Time	Sample Description	Liquid Level Marked/ Sealed	Being Stored Below 4°C
B-0-315-FB	8/14/98	Filter 080798-24		
		F.H. Acetone Rinse		
		FH MeCl ₂ Rinse		
		Imp H ₂ O / H ₂ O Rinse		
		BH Acetone Rinse		
		BH MeCl ₂ Rinse		
Underfine Stack Outlet				
B-U-315-1	8/14/98	Filter 080798-17		
		F.H. Acetone Rinse		
		FH MeCl ₂ Rinse		
		Imp H ₂ O / H ₂ O Rinse		
		BH Acetone Rinse		
		BH MeCl ₂ Rinse		
B-U-315-2	8/14/98	Filter 080798-12		
		F.H. Acetone Rinse		
		FH MeCl ₂ Rinse		
		Imp H ₂ O / H ₂ O Rinse		
		BH Acetone Rinse		
		BH MeCl ₂ Rinse		

4
WFT

Master Sample Log

5 May

First Analytical Laboratories

ANALYSIS REPORT

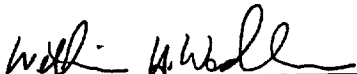
Metals Residues

Project # S511.000
Indiana Coke Oven

Prepared for:

Pacific Environmental Services, Inc.
560 Herndon Parkway; Suite 200
Herndon, VA 20170-5240

Reviewed and Approved by:



William H. Wadlin, Ph. D.
Laboratory Manager

October 26, 1998

First Analytical Laboratories

CASE NARRATIVE

Project #: 81003

Report Date: 26-Oct-98

Client: Pacific Environmental Services, Inc.

Client Project ID: S511.000

Samples:

Twelve sets of samples were submitted for determination of various metals. A blank filter was also provided which required the same analyses. Each set consisted of a filter and several aluminum pans in which extracts of the filters had been dried for a gravimetric measurement already performed by another laboratory. The target elements were antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, phosphorus, selenium, silver, thallium and zinc. All of the samples were hand delivered in good condition, with no apparent damage.

Preparation:

Since there is no standard method for preparation of such samples, some method development effort was required. In particular, we did not initially know how best to remove the residues from the pans quantitatively, without removing any of the base material of the pan itself.

For the initial trials we selected the set identified as B-1-M315-3, as it had visible material in each pan, including a variety of physical appearances. A few milliliters of water were added to each pan and allowed to stand for ten minutes. This had no visible effect on the residues, neither removing or softening any of the residues. Similar treatment with dilute nitric acid had no useful effect either. The residues were probed with a plastic spatula to determine whether it would now come loose from the pan. Most of the residues seemed to be stiff, tacky tars. Since the materials could be smudged and, to some extent, scraped up with the spatula, we decided to use the corresponding filters themselves to wipe up the residues. This was most effective, since the filters were to be combined with the residues anyway. This also avoided the problem of quantitatively cleaning a tarry spatula, (much like the initial problem of cleaning the tarry pan).

The procedure adopted was to wrap a portion of one of the sample filters around the end of a clean spatula, and use this assembly to swab all of the residue

out of all of the corresponding pans of the sample subset. This cleaning was facilitated by the fortuitous finding that the filters were still damp with solvent which appeared to soften the residues. It was then possible to use another filter portion for a second cleaning, taking up any film of desired residue missed by the first swab.

When the pans were cleaned of residue in this way, and all of the residue was on the filters, the filter portions used and any remaining unused were placed in a beaker for digestion. The samples were then prepared according to EPA Method 3050A, which is a nitric acid digestion.

A remaining issue was that one set of pans had been treated with dilute nitric acid in the method development effort, while the others had not been so treated. Thus we treated a blank pan with dilute nitric acid in the same way and used all of the washings so derived to create a blank for this aspect of B-1-M315-3 only. In the report it is the one called "Blank Pan". In the raw data it is called RB-AP for "reagent blank; Acid-washed Pan". It was gratifying to find after the analysis that this special blank did not show any noteworthy hits for the target elements.

Analysis:

Cadmium, manganese, lead (inlets only), and zinc were determined by Direct Aspiration Flame Atomic Absorption Spectrophotometry (FLAA). Antimony, arsenic, beryllium, lead (O, U, and blanks), nickel, selenium, silver and thallium were determined by Graphite Furnace Atomic Absorption Spectrophotometry (GFAA). Barium, chromium, cobalt, copper and phosphorus were determined by Inductively Coupled Plasma - Optical Emission (ICP).

Results:

The results are reported as total micrograms in the whole combination of original samples for each subset. All of the target elements were detected in all of the inlet samples. Antimony, beryllium, chromium, cobalt, mercury and phosphorus were not found on any of the samples other than the inlets. The highest levels were found for lead and zinc.

Quality Control:

Traces of barium, cadmium, manganese, lead and zinc were found in the blank filter. None of these are unusual. They are commonly found on blank filters at these low levels. In all cases, many of the O and U samples are indistinguishable from these blank levels, meaning that after blank correction, we cannot show the presence of such elements in the corresponding residues.

The spike recoveries were all within the normal range of 70% to 130%. The

duplicates were all within the normal limit of 20% for all cases in which the sample level is more than five times the detection limit. If the sample level is lower than this it is not possible to make a meaningful evaluation of the deviation between the duplicates.



First Analytical Laboratories
1126 Burning Tree Dr. Chapel Hill, NC 27514

Tel. (919) 942-8607
FAX (919) 929-8688

ANALYSIS REPORT

Project #: 81003
Client: Pacific Environmental Services
Client Project ID: S511.000

Report Date: 26-Oct-98
Date Received: 06-Oct-98

Total Micrograms in Combined Sample

Sample	μg					
	Sb GFAA	As GFAA	Ba ICP	Be GFAA	Cd FLAA	Cr ICP
B-O-M315-1	< 0.5	< 0.5	1.2	< 0.02	1.8	< 2.5
B-O-M315-2	< 0.5	< 0.5	1.5	< 0.02	1.4	< 2.5
B-O-M315-3	< 0.5	< 0.5	0.8	< 0.02	1.7	< 2.5
B-O-M315-FB	< 0.5	< 0.5	1.1	< 0.02	2.0	< 2.5
B-U-M315-1	< 0.5	4.8	1.2	< 0.02	1.9	< 2.5
B-U-M315-2	< 0.5	4.0	2.6	< 0.02	1.6	< 2.5
B-U-M315-3	< 0.5	5.8	1.3	< 0.02	1.1	< 2.5
B-U-M315-FB	< 0.5	< 0.5	1.4	< 0.02	1.8	< 2.5
B-I-M315-1	4.3	62.9	27.4	0.96	3.0	6.0
B-I-M315-2	3.7	81.8	35.7	1.07	3.8	9.7
B-I-M315-3	3.4	92.3	28.4	1.02	4.3	6.8
B-I-M315-FB	< 0.5	< 0.5	1.6	< 0.02	2.0	< 2.5
BLANK PAN	< 0.5	< 0.5	< 0.2	< 0.02	1.9	< 2.5
BLANK FILTER	< 0.5	< 0.5	0.8	< 0.02	1.7	< 2.5

QC SUMMARY

Spikes						
% Recovery	94%	85%	96%	91%	97%	85%
Duplicates						
%RPD					0.0%	



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 Client Project ID: S511.000

Report Date: 26-Oct-98
 Date Received: 06-Oct-98

Total Micrograms in Combined Sample

Sample	µg					
	Co ICP	Cu ICP	Mn FLAA	Hg CVAA	Pb FLAA/GFAA	Ni GFAA
B-O-M315-1	< 2	< 2	3	< 0.4	0.8	< 0.5
B-O-M315-2	< 2	2	7	< 0.4	0.5	0.9
B-O-M315-3	< 2	< 2	3	< 0.4	0.5	< 0.5
B-O-M315-FB	< 2	< 2	3	< 0.4	0.5	< 0.5
B-U-M315-1	< 2	< 2	3	< 0.4	4.1	< 0.5
B-U-M315-2	< 2	3	3	< 0.4	3.6	< 0.5
B-U-M315-3	< 2	2	1	< 0.4	2.7	< 0.5
B-U-M315-FB	< 2	< 2	2	< 0.4	0.6	< 0.5
B-I-M315-1	3	14	42	0.50	103	87.0
B-I-M315-2	5	21	46	0.60	153	86.5
B-I-M315-3	3	20	44	0.50	128	61.4
B-I-M315-FB	< 2	< 2	3	< 0.4	0.6	< 0.5
BLANK PAN	2	< 2	3	< 0.4	0.3	< 0.5
BLANK FILTER	< 2	< 2	3	< 0.4	0.7	< 0.5

QC SUMMARY

Spikes	88%	89%	95%	95%	98%	86%
% Recovery					98%	
Duplicates			0.0%		2.6%	
%RPD						



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ANALYSIS REPORT

Project #: 81003
Client: Pacific Environmental Services
Client Project ID: S511.000

Report Date: 26-Oct-98
Date Received: 06-Oct-98

Total Micrograms in Combined Sample μg

Sample	P	Se	Ag	Tl	Zn
	ICP	GFAA	GFAA	GFAA	FLAA
B-O-M315-1	< 10	< 0.3	< 0.2	< 0.3	8.3
B-O-M315-2	< 10	0.5	2.1	< 0.3	11.7
B-O-M315-3	< 10	< 0.3	< 0.2	< 0.3	7.8
B-O-M315-FB	< 10	< 0.3	< 0.2	< 0.3	10.0
B-U-M315-1	< 10	2.3	< 0.2	0.9	12.7
B-U-M315-2	< 10	2.0	< 0.2	< 0.3	11.8
B-U-M315-3	< 10	1.0	< 0.2	1.0	10.1
B-U-M315-FB	< 10	< 0.3	< 0.2	< 0.3	10.3
B-I-M315-1	40	14.4	0.3	3.7	178
B-I-M315-2	45	21.1	0.6	4.9	242
B-I-M315-3	43	19.1	0.4	4.6	228
B-I-M315-FB	< 10	< 0.3	< 0.2	< 0.3	13
BLANK PAN	< 10	< 0.3	< 0.2	< 0.3	10.0
BLANK FILTER	< 10	< 0.3	< 0.2	< 0.3	10.9

QC SUMMARY

Spikes					
% Recovery	83%	103%	106%	88%	104%
Duplicates					
%RPD					9.8%

A N T I M O N Y

GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81003
 Date: 26-Oct-98

IDL = 5 µg/L
 Postdig'n spike conc. 100 µg/L

Sample ID Client	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	-2.5	-2.5	100	1			< 0.5
B-O-M315-2	81003.O2	-4.7	-4.7	100	1			< 0.5
B-O-M315-3	81003.O3	3.1	3.1	100	1			< 0.5
B-O-M315-FB	81003.OB	-0.9	-0.9	100	1			< 0.5
B-U-M315-1	81003.U1	-3.5	-3.5	100	1			< 0.5
B-U-M315-2	81003.U2	3.8	3.8	100	1			< 0.5
B-U-M315-3	81003.U3	0.6	0.6	100	1			< 0.5
B-U-M315-FB	81003.UB	-3.5	-3.5	100	1			< 0.5
B-I-M315-1	81003.I1	42.6	42.6	100	1			4.3
B-I-M315-2	81003.I2	37.2	37.2	100	1			3.7
B-I-M315-3	81003.I3	33.7	33.7	100	1			3.4
B-I-M315-FB	81003.IB	-3.7	-3.7	100	1			< 0.5
BLANK PAN	81003.RBAP	-2.4	-2.4	100	1			< 0.5
BLANK FILTER	81003.RBF	-1.2	-1.2	100	1			< 0.5
SPIKE	81003.O1 S	93.9			% REC	93.9%		

ARSENIC

GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81003
 Date: 26-Oct-98

IDL = 5 µg/L
 Postdig'n spike conc. 100 µg/L

Sample ID	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	0.3	0.3	100	1			< 0.5
B-O-M315-2	81003.O2	2.2	2.2	100	1			< 0.5
B-O-M315-3	81003.O3	4.8	4.8	100	1			< 0.5
B-O-M315-FB	81003.OB	1.9	1.9	100	1			< 0.5
B-U-M315-1	81003.U1	47.5	47.5	100	1			4.8
B-U-M315-2	81003.U2	40.3	40.3	100	1			4.0
B-U-M315-3	81003.U3	57.8	57.8	100	1			5.8
B-U-M315-FB	81003.UB	2.1	2.1	100	1			< 0.5
B-I-M315-1	81003.I1	125.7	628.5	100	5			62.9
B-I-M315-2	81003.I2	163.6	818.0	100	5			81.8
B-I-M315-3	81003.I3	184.6	922.8	100	5			92.3
B-I-M315-FB	81003.IB	2.8	2.8	100	1			< 0.5
BLANK PAN	81003.RBAP	1.8	1.8	100	1			< 0.5
BLANK FILTER	81003.RBF	-1.9	-1.9	100	1			< 0.5
SPIKE	81003.O1 S	85.1			% REC	85.1%		

B A R I U M

ICP ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81002
 Date: 26-Oct-98

IDL = 2 µg/L
 Postdig'n spike conc. 1000 µg/L

Sample ID Client	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	12	12	100	1			1.2
B-O-M315-2	81003.O2	15	15	100	1			1.5
B-O-M315-3	81003.O3	8	8	100	1			0.8
B-O-M315-FB	81003.OB	11	11	100	1			1.1
B-U-M315-1	81003.U1	12	12	100	1			1.2
B-U-M315-2	81003.U2	26	26	100	1			2.6
B-U-M315-3	81003.U3	13	13	100	1			1.3
B-U-M315-FB	81003.UB	14	14	100	1			1.4
B-I-M315-1	81003.I1	274	274	100	1			27.4
B-I-M315-2	81003.I2	357	357	100	1			35.7
B-I-M315-3	81003.I3	284	284	100	1			28.4
B-I-M315-FB	81003.IB	16	16	100	1			1.6
BLANK PAN	81003.RBAP	-1	-1	100	1			
BLANK FILTER	81003.RBF	8	8	100	1			
							<	0.2
								0.8
SPIKE	81003.O1 S	968			% REC	95.6%		

BERYLLIUM

GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81003
 Date: 26-Oct-98

IDL = 0.15 µg/L
 Postdig'n spike conc. 5.00 µg/L

Sample ID	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	0.02	0.02	100	1			< 0.02
B-O-M315-2	81003.O2	0.05	0.05	100	1			< 0.02
B-O-M315-3	81003.O3	0.00	0.00	100	1			< 0.02
B-O-M315-FB	81003.OB	-0.03	-0.03	100	1			< 0.02
B-U-M315-1	81003.U1	0.06	0.06	100	1			< 0.02
B-U-M315-2	81003.U2	0.17	0.17	100	1			0.02
B-U-M315-3	81003.U3	0.12	0.12	100	1			< 0.02
B-U-M315-FB	81003.UB	0.02	0.02	100	1			< 0.02
B-I-M315-1	81003.I1	9.57	9.57	100	1			0.96
B-I-M315-2	81003.I2	10.73	10.73	100	1			1.07
B-I-M315-3	81003.I3	10.17	10.17	100	1			1.02
B-I-M315-FB	81003.IB	0.03	0.03	100	1			< 0.02
BLANK PAN	81003.RBAP	-0.02	-0.02	100	1			< 0.02
BLANK FILTER	81003.RBF	-0.01	-0.01	100	1			< 0.02
SPIKE	81003.O1 S	4.56			% REC	91.2%		

C A D M I U M

FLAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81002
 Date: 26-Oct-98

IDL = 5 µg/L
 Postdig'n spike conc. 400 µg/L

Sample ID Client	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	18	18	100	1			1.8
B-O-M315-2	81003.O2	14	14	100	1			1.4
B-O-M315-3	81003.O3	17	17	100	1			1.7
B-O-M315-FB	81003.OB	20	20	100	1			2.0
B-U-M315-1	81003.U1	19	19	100	1			1.9
B-U-M315-2	81003.U2	16	16	100	1			1.6
B-U-M315-3	81003.U3	11	11	100	1			1.1
B-U-M315-FB	81003.UB	18	18	100	1			1.8
B-I-M315-1	81003.I1	30	30	100	1			3.0
B-I-M315-2	81003.I2	38	38	100	1			3.8
B-I-M315-3	81003.I3	43	43	100	1			4.3
B-I-M315-FB	81003.IB	20	20	100	1			2.0
BLANK PAN	81003.RBAP	19	19	100	1			1.9
BLANK FILTER	81003.F	17	17	100	1			1.7
SPIKE	81003.I1 S	418			% REC	97.0%		
DUPLICATE	81003.O2 D	14			%RPD	0.0%		

CHROMIUM

ICP ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81002
 Date: 26-Oct-98

IDL = 25 µg/L
 Postdig'n spike conc. 2000 µg/L

Sample ID	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
Client								
B-O-M315-1	81003.O1	-17	-17	100	1			< 2.5
B-O-M315-2	81003.O2	-4	-4	100	1			< 2.5
B-O-M315-3	81003.O3	-21	-21	100	1			< 2.5
B-O-M315-FB	81003.OB	-32	-32	100	1			< 2.5
B-U-M315-1	81003.U1	-2	-2	100	1			< 2.5
B-U-M315-2	81003.U2	-5	-5	100	1			< 2.5
B-U-M315-3	81003.U3	4	4	100	1			< 2.5
B-U-M315-FB	81003.UB	-25	-25	100	1			< 2.5
B-I-M315-1	81003.I1	60	60	100	1			6.0
B-I-M315-2	81003.I2	97	97	100	1			9.7
B-I-M315-3	81003.I3	68	68	100	1			6.8
B-I-M315-FB	81003.IB	-26	-26	100	1			< 2.5
BLANK PAN	81003.RBAP	-32	-32	100	1			< 2.5
BLANK FILTER	81003.RBF	-32	-32	100	1			< 2.5
SPIKE	81003.O3 S	1761			% REC	85.1%		

C O B A L T

ICP ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81002
 Date: 26-Oct-98

IDL = 20 µg/L
 Postdig'n spike conc. 1000 µg/L

Sample ID		Test	Dig'te		Dil'n	Init.	Vol.	Total
Client	FAL	Sol'n	Conc	FV	Factor	Vol.	Dig'd	µg
		µg/L	µg/L	ml		ml	ml	
B-O-M315-1	81003.O1	3	3	100	1			< 2.0
B-O-M315-2	81003.O2	5	5	100	1			< 2.0
B-O-M315-3	81003.O3	9	9	100	1			< 2.0
B-O-M315-FB	81003.OB	13	13	100	1			< 2.0
B-U-M315-1	81003.U1	7	7	100	1			< 2.0
B-U-M315-2	81003.U2	8	8	100	1			< 2.0
B-U-M315-3	81003.U3	5	5	100	1			< 2.0
B-U-M315-FB	81003.UB	12	12	100	1			< 2.0
B-I-M315-1	81003.I1	34	34	100	1			3.4
B-I-M315-2	81003.I2	45	45	100	1			4.5
B-I-M315-3	81003.I3	31	31	100	1			3.1
B-I-M315-FB	81003.IB	8	8	100	1			< 2.0
BLANK PAN	81003.RBAP	24	24	100	1			2.4
BLANK FILTER	81003.RBF	4	4	100	1			< 2.0
SPIKE	81003.O3 S	881			% REC	88.1%		

COPPER

ICP ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81002
 Date: 26-Oct-98

IDL = 20 µg/L
 Postdig'n spike conc. 2000 µg/L

Sample ID Client	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
								< 2.0
B-O-M315-1	81003.O1	12	12	100	1			2.0
B-O-M315-2	81003.O2	20	20	100	1			< 2.0
B-O-M315-3	81003.O3	9	9	100	1			< 2.0
B-O-M315-FB	81003.OB	7	7	100	1			< 2.0
								< 2.0
B-U-M315-1	81003.U1	19	19	100	1			3.0
B-U-M315-2	81003.U2	30	30	100	1			2.1
B-U-M315-3	81003.U3	21	21	100	1			< 2.0
B-U-M315-FB	81003.UB	10	10	100	1			
								14.3
B-I-M315-1	81003.I1	143	143	100	1			21.2
B-I-M315-2	81003.I2	212	212	100	1			20.3
B-I-M315-3	81003.I3	203	203	100	1			< 2.0
B-I-M315-FB	81003.IB	11	11	100	1			
								< 2.0
BLANK PAN	81003.RBAP	2	2	100	1			< 2.0
BLANK FILTER	81003.RBF	11	11	100	1			
SPIKE	81003.O3 S	1775						% REC 88.8%
DUPLICATE	81003.O2 D							%RPD NA

M A N G A N E S E

FLAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81002
 Date: 26-Oct-98

IDL = 10 µg/L
 Postdig'n spike conc. 400 µg/L

Sample ID Client	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	28	28	100	1			2.8
B-O-M315-2	81003.O2	65	65	100	1			6.5
B-O-M315-3	81003.O3	34	34	100	1			3.4
B-O-M315-FB	81003.OB	26	26	100	1			2.6
B-U-M315-1	81003.U1	29	29	100	1			2.9
B-U-M315-2	81003.U2	31	31	100	1			3.1
B-U-M315-3	81003.U3	14	14	100	1			1.4
B-U-M315-FB	81003.UB	24	24	100	1			2.4
B-I-M315-1	81003.I1	421	421	100	1			42.1
B-I-M315-2	81003.I2	458	458	100	1			45.8
B-I-M315-3	81003.I3	444	444	100	1			44.4
B-I-M315-FB	81003.IB	27	27	100	1			2.7
BLANK PAN	81003.RBAP	27	27	100	1			2.7
BLANK FILTER	81003.RBF	25	25	100	1			2.5
SPIKE	81003.I1 S	800			% REC	94.8%		
DUPLICATE	81003.O2 D	65			%RPD	0.0%		

MERCURY

CVAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81002
 Date: 26-Oct-98

IDL = 0.20 µg/L
 Postdig'n spike conc. 5.00 µg/L

Sample ID	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	0.02	0.02	100	1	100	5 <	0.4
B-O-M315-2	81003.O2	-0.02	-0.02	100	1	100	5 <	0.4
B-O-M315-3	81003.O3	-0.06	-0.06	100	1	100	5 <	0.4
B-O-M315-FB	81003.OB	-0.01	-0.01	100	1	100	5 <	0.4
B-U-M315-1	81003.U1	0.16	0.16	100	1	100	5 <	0.4
B-U-M315-2	81003.U2	-0.01	-0.01	100	1	100	5 <	0.4
B-U-M315-3	81003.U3	0.17	0.17	100	1	100	5 <	0.4
B-U-M315-FB	81003.UB	-0.01	-0.01	100	1	100	5 <	0.4
B-I-M315-1	81003.I1	0.23	0.23	100	1	100	5	0.5
B-I-M315-2	81003.I2	0.30	0.30	100	1	100	5	0.6
B-I-M315-3	81003.I3	0.25	0.25	100	1	100	5	0.5
B-I-M315-FB	81003.IB	0.00	0.00	100	1	100	5 <	0.4
BLANK PAN	81003.RBAP	-0.04	-0.04	100	1	100	5 <	0.4
BLANK FILTER	81003.RBF	0.02	0.02	100	1	100	5 <	0.4
SPIKE	81003.O3 S	4.75			% REC	95.0%		

LEAD

FLAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81002
 Date: 26-Oct-98

IDL = 100 µg/L
 Postdig'n spike conc. 2000 µg/L

Sample ID Client	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1		0	100	1			< 10.0
B-O-M315-2	81003.O2		0	100	1			< 10.0
B-O-M315-3	81003.O3		0	100	1			< 10.0
B-O-M315-FB	81003.OB		0	100	1			< 10.0
B-U-M315-1	81003.U1		0	100	1			< 10.0
B-U-M315-2	81003.U2		0	100	1			< 10.0
B-U-M315-3	81003.U3		0	100	1			< 10.0
B-U-M315-FB	81003.UB		0	100	1			< 10.0
B-I-M315-1	81003.I1	1030	1030	100	1			103.0
B-I-M315-2	81003.I2	1530	1530	100	1			153.0
B-I-M315-3	81003.I3	1280	1280	100	1			128.0
B-I-M315-FB	81003.IB		0	100	1			< 10.0
BLANK PAN	81003.RBAP		0	100	1			< 10.0
BLANK FILTER	81003.F		0	100	1			< 10.0
SPIKE	81003.I1 S	2980			% REC	97.5%		
DUPLICATE	81003.I2 D	1570			%RPD	2.6%		

LEAD

GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81002
 Date: 26-Oct-98

IDL = 3 µg/L
 Postdig'n spike conc. 100 µg/L

Sample ID	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	7.8	7.8	100	1			0.8
B-O-M315-2	81003.O2	5.0	5.0	100	1			0.5
B-O-M315-3	81003.O3	4.6	4.6	100	1			0.5
B-O-M315-FB	81003.OB	4.8	4.8	100	1			0.5
B-U-M315-1	81003.U1	41.4	41.4	100	1			4.1
B-U-M315-2	81003.U2	36.4	36.4	100	1			3.6
B-U-M315-3	81003.U3	27.4	27.4	100	1			2.7
B-U-M315-FB	81003.UB	5.5	5.5	100	1			0.6
B-I-M315-1	81003.I1		0.0	100	1			
B-I-M315-2	81003.I2		0.0	100	1			
B-I-M315-3	81003.I3		0.0	100	1			
B-I-M315-FB	81003.IB	5.7	5.7	100	1			0.6
BLANK PAN	81003.RBAP	3.0	3.0	100	1			0.3
BLANK FILTER	81003.F	7.3	7.3	100	1			0.7
SPIKE	81003.O1 S	105.9			% REC	98.1%		
DUPLICATE	81003.I2 D				%RPD	ERR		

N I C K E L

GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81003
 Date: 26-Oct-98

IDL = 5 µg/L
 Postdig'n spike conc. 100 µg/L

Sample ID Client	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	-13.7	-13.7	100	1		<	0.5
B-O-M315-2	81003.O2	9.2	9.2	100	1			0.9
B-O-M315-3	81003.O3	-7.0	-7.0	100	1		<	0.5
B-O-M315-FB	81003.OB	-2.5	-2.5	100	1		<	0.5
B-U-M315-1	81003.U1	4.9	4.9	100	1		<	0.5
B-U-M315-2	81003.U2	1.3	1.3	100	1		<	0.5
B-U-M315-3	81003.U3	-0.2	-0.2	100	1		<	0.5
B-U-M315-FB	81003.UB	2.7	2.7	100	1		<	0.5
B-I-M315-1	81003.I1	173.9	869.5	100	5			87.0
B-I-M315-2	81003.I2	172.9	864.5	100	5			86.5
B-I-M315-3	81003.I3	122.7	613.5	100	5			61.4
B-I-M315-FB	81003.IB	-2.9	-2.9	100	1		<	0.5
BLANK PAN	81003.RBAP	-3.5	-3.5	100	1		<	0.5
BLANK FILTER	81003.RBF	-1.8	-1.8	100	1		<	0.5
SPIKE	81003.O1 S	86.0			% REC	86.0%		

PHOSPHORUS

ICP ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
Proj. #: 81002
Date: 26-Oct-98

IDL = 100 µg/L
Postdig'n spike conc. 2000 µg/L

Sample ID	FAL	Test Sol'n	Dig'te Conc	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
Client		µg/L	µg/L					
B-O-M315-1	81003.O1	-21	-21	100	1			< 10.0
B-O-M315-2	81003.O2	8	8	100	1			< 10.0
B-O-M315-3	81003.O3	11	11	100	1			< 10.0
B-O-M315-FB	81003.OB	-8	-8	100	1			< 10.0
B-U-M315-1	81003.U1	87	87	100	1			< 10.0
B-U-M315-2	81003.U2	25	25	100	1			< 10.0
B-U-M315-3	81003.U3	69	69	100	1			< 10.0
B-U-M315-FB	81003.UB	-25	-25	100	1			< 10.0
B-I-M315-1	81003.I1	397	397	100	1			39.7
B-I-M315-2	81003.I2	446	446	100	1			44.6
B-I-M315-3	81003.I3	426	426	100	1			42.6
B-I-M315-FB	81003.IB	8	8	100	1			< 10.0
BLANK PAN	81003.RBAP	-77	-77	100	1			< 10.0
BLANK FILTER	81003.RBF	23	23	100	1			< 10.0
SPIKE	81003.O3 S	1661			% REC	83.1%		

S E L E N I U M

GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81003
 Date: 26-Oct-98

IDL = 3 µg/L
 Postdig'n spike conc. 50 µg/L

Sample ID Client	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	0.6	0.6	100	1			< 0.3
B-O-M315-2	81003.O2	4.8	4.8	100	1			0.5
B-O-M315-3	81003.O3	0.6	0.6	100	1			< 0.3
B-O-M315-FB	81003.OB	2.4	2.4	100	1			< 0.3
B-U-M315-1	81003.U1	22.7	22.7	100	1			2.3
B-U-M315-2	81003.U2	19.6	19.6	100	1			2.0
B-U-M315-3	81003.U3	10.3	10.3	100	1			1.0
B-U-M315-FB	81003.UB	-0.2	-0.2	100	1			< 0.3
B-I-M315-1	81003.I1	28.8	144.2	100	5			14.4
B-I-M315-2	81003.I2	42.1	210.7	100	5			21.1
B-I-M315-3	81003.I3	38.3	191.3	100	5			19.1
B-I-M315-FB	81003.IB	0.0	0.0	100	1			< 0.3
BLANK PAN	81003.RBAP	-1.0	-1.0	100	1			< 0.3
BLANK FILTER	81003.RBF	0.4	0.4	100	1			< 0.3
SPIKE	81003.O1 S	51.6			% REC	103.2%		

SILVER

GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81003
 Date: 26-Oct-98

IDL = 2.00 µg/L
 Postdig'n spike conc. 10.00 µg/L

Sample ID	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	1.46	1.46	100	1			< 0.20
B-O-M315-2	81003.O2	20.67	20.67	100	1			2.07
B-O-M315-3	81003.O3	-0.40	-0.40	100	1			< 0.20
B-O-M315-FB	81003.OB	1.49	1.49	100	1			< 0.20
B-U-M315-1	81003.U1	-1.25	-1.25	100	1			< 0.20
B-U-M315-2	81003.U2	-1.59	-1.59	100	1			< 0.20
B-U-M315-3	81003.U3	-1.46	-1.46	100	1			< 0.20
B-U-M315-FB	81003.UB	-0.97	-0.97	100	1			< 0.20
B-I-M315-1	81003.I1	3.08	3.08	100	1			0.31
B-I-M315-2	81003.I2	5.93	5.93	100	1			0.59
B-I-M315-3	81003.I3	4.04	4.04	100	1			0.40
B-I-M315-FB	81003.IB	-1.06	-1.06	100	1			< 0.20
BLANK PAN	81003.RBAP	-1.27	-1.27	100	1			< 0.20
BLANK FILTER	81003.RBF	-1.07	-1.07	100	1			< 0.20
SPIKE	81003.O1 S	10.56			% REC	105.6%		

THALLIUM

GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81003
 Date: 26-Oct-98

IDL = 3 µg/L
 Postdig'n spike conc. 50 µg/L

Sample ID	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
B-O-M315-1	81003.O1	-2.5	-2.5	100	1			< 0.3
B-O-M315-2	81003.O2	1.9	1.9	100	1			< 0.3
B-O-M315-3	81003.O3	0.9	0.9	100	1			< 0.3
B-O-M315-FB	81003.OB	1.5	1.5	100	1			< 0.3
B-U-M315-1	81003.U1	8.6	8.6	100	1			0.9
B-U-M315-2	81003.U2	2.8	2.8	100	1			< 0.3
B-U-M315-3	81003.U3	10.3	10.3	100	1			1.0
B-U-M315-FB	81003.UB	-0.7	-0.7	100	1			< 0.3
B-I-M315-1	81003.I1	36.5	36.5	100	1			3.7
B-I-M315-2	81003.I2	49.3	49.3	100	1			4.9
B-I-M315-3	81003.I3	46.2	46.2	100	1			4.6
B-I-M315-FB	81003.IB	-0.8	-0.8	100	1			< 0.3
BLANK PAN	81003.RBAP	-0.5	-0.5	100	1			< 0.3
BLANK FILTER	81003.RBF	-2.1	-2.1	100	1			< 0.3
SPIKE	81003.O1 S	44.2			% REC	88.4%		

Z I N C

FLAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
 Proj. #: 81002
 Date: 26-Oct-98

IDL = 10 µg/L
 Postdig'n spike conc. 400 µg/L

Sample ID	FAL	Test Sol'n µg/L	Dig'te Conc µg/L	FV ml	Dil'n Factor	Init. Vol. ml	Vol. Dig'd ml	Total µg
Client								
B-O-M315-1	81003.O1	83	83	100	1			8.3
B-O-M315-2	81003.O2	117	117	100	1			11.7
B-O-M315-3	81003.O3	78	78	100	1			7.8
B-O-M315-FB	81003.OB	100	100	100	1			10.0
B-U-M315-1	81003.U1	127	127	100	1			12.7
B-U-M315-2	81003.U2	118	118	100	1			11.8
B-U-M315-3	81003.U3	101	101	100	1			10.1
B-U-M315-FB	81003.UB	103	103	100	1			10.3
B-I-M315-1	81003.I1	356	1780	100	5			178.0
B-I-M315-2	81003.I2	483	2415	100	5			241.5
B-I-M315-3	81003.I3	455	2275	100	5			227.5
B-I-M315-FB	81003.IB	128	128	100	1			12.8
BLANK PAN	81003.RBAP	100	100	100	1			10.0
BLANK FILTER	81003.RBF	109	109	100	1			10.9
SPIKE	81003.I1 S	772			% REC	104.0%		
DUPLICATE	81003.O2 D	129			%RPD	9.8%		

ARSENIC

QUALITY CONTROL DATA

Client: PES
Proj. #: 81003 and 81006
Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0.0
Standard 1	0.028	10.0
Standard 2	0.128	50.0
Standard 3	0.238	100.0
Standard 4	0.441	200.0

Calibration Verifications

ICV = 100	103.1	CCV2 = 100	107.2
ICB = 0	2.1	CCB2 = 0	4.6
CCV1 = 100	110.0	CCV3 = 100	111.2
CCB1 = 0	0.9	CCB3 = 0	2.8

ANTIMONY

QUALITY CONTROL DATA

Client: PES
Proj. #: 81003 and 81006
Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0.0
Standard 1	0.016	10.0
Standard 2	0.081	50.0
Standard 3	0.153	100.0
Standard 4	0.285	200.0

Calibration Verifications

ICV = 100	97.3	CCV2 = 100	104.1
ICB = 0	3.2	CCB2 = 0	-0.8
CCV1 = 100	97.6	CCV3 = 100	111.0
CCB1 = 0	-3.9	CCB3 = 0	-5.7
		CCV4 = 100	101.0
		CCB4 = 0	-5.9

B A R I U M

QUALITY CONTROL DATA

Client: PES

Proj. #: 81002 and 81006

Date: 26-Oct-98

Calibration Data

	Emiss. True conc., $\mu\text{g/L}$	
Blank	32	0
Standard 1	54	20
Standard 2	739	500
Standard 3	1397	1000
Standard 4	2754	2000

Calibration Verifications

ICV = 1000	967	CCV2 = 1000	1116
ICB = 0	0	CCB2 = 0	0
CCV1 = 1000	1057		
CCB1 = 0	1		

BERYLLIUM

QUALITY CONTROL DATA

Client: PES
Proj. #: 81003 and 81006
Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0.0
Standard 1	0.012	0.5
Standard 2	0.043	2.0
Standard 3	0.105	5.0
Standard 4	0.175	10.0

Calibration Verifications

ICV = 5	5.07	CCV2 = 5	5.15
ICB = 0	0.16	CCB2 = 0	0.05
CCV1 = 5	4.83	CCV3 = 5	5.07
CCB1 = 0	-0.01	CCB3 = 0	0.08
		CCV4 = 5	
		CCB4 = 0	

CADMIUM

FLAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
Proj. #: 81002
Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0
Standard 1	0.017	50
Standard 2	0.032	100
Standard 3	0.064	200
Standard 4	0.151	500
Standard 5	0.295	1000

Calibration Verifications

ICV = 500	522	CCV2 = 500	511
ICB = 0	3	CCB2 = 0	3
CCV1 = 500	495		
CCB1 = 0	1		

CHROMIUM

QUALITY CONTROL DATA

Client: PES
Proj. #: 81002 and 81006
Date: 26-Oct-98

Calibration Data

	Emiss. True conc., $\mu\text{g/L}$	
Blank	603	0
Standard 1	758	100
Standard 2	3049	1000
Standard 3	5860	2000
Standard 4	13550	5000

Calibration Verifications

ICV = 2000	1829	CCV2 = 2000	2107
ICB = 0	-14	CCB2 = 0	-14
CCV1 = 2000	2124		
CCB1 = 0	-9		

CHROMIUM

QUALITY CONTROL DATA

Client: PES
Proj. #: 81002 and 81006
Date: 26-Oct-98

Calibration Data

	Emiss.	True conc., $\mu\text{g/L}$
Blank	510	0
Standard 1	679	100
Standard 2	2957	1000
Standard 3	5337	2000
Standard 4	12453	5000

Calibration Verifications

ICV = 2000	1981	CCV2 = 2000	2121
ICB = 0	-20	CCB2 = 0	-25
CCV1 = 2000	1842		
CCB1 = 0	-24		

COBALT

QUALITY CONTROL DATA

Client: PES

Proj. #: 81003 and 81006

Date: 26-Oct-98

Calibration Data

	Emiss. True conc., $\mu\text{g/L}$	
Blank	336	0
Standard 1	375	20
Standard 2	440	50
Standard 3	709	150
Standard 4	1519	500

Calibration Verifications

ICV = 500	500	CCV2 = 500	510
ICB = 0	14	CCB2 = 0	14
CCV1 = 500	493	CCV3 = 500	530
CCB1 = 0	15	CCB3 = 0	10

C O P P E R

QUALITY CONTROL DATA

Client: PES
Proj. #: 81003 and 81006
Date: 26-Oct-98

Calibration Data

	Emiss.	True conc., $\mu\text{g/L}$
Blank	1285	0
Standard 1	2949	100
Standard 2	18473	1000
Standard 3	36484	2000
Standard 4	89349	5000

Calibration Verifications

ICV = 2000	1998	CCV2 = 2000	2248
ICB = 0	8	CCB2 = 0	11
CCV1 = 2000	2127	CCV3 = 2000	2106
CCB1 = 0	13	CCB3 = 0	13
		CCV4 = 2000	2017
		CCB4 = 0	11

LEAD

FLAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
Proj. #: 81002
Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0
Standard 1	0.003	200
Standard 2	0.007	500
Standard 3	0.015	1000
Standard 4	0.029	2000
Standard 5	0.073	5000

Calibration Verifications

ICV = 2000	1950	CCV2 = 2000	1940
ICB = 0	10	CCB2 = 0	-30
CCV1 = 2000	1950	CCV3 = 2000	
CCB1 = 0	-20	CCB3 = 0	

LEAD

FLAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES
Proj. #: 81002
Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0
Standard 1	0.022	10
Standard 2	0.120	50
Standard 3	0.233	100
Standard 4	0.414	200

Calibration Verifications

ICV = 100	101.4	CCV2 = 100	99.4
ICB = 0	1.6	CCB2 = 0	1.1
CCV1 = 100	101.7	CCV3 = 100	107.4
CCB1 = 0	-1.4	CCB3 = 0	5.1

MANGANESE

QUALITY CONTROL DATA

Client: PES
Proj. #: 81002 and 81006
Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0
Standard 1	0.006	50
Standard 2	0.013	100
Standard 3	0.026	200
Standard 4	0.065	500
Standard 5	0.125	1000

Calibration Verifications

ICV = 500	496	CCV2 = 500	497
ICB = 0	0	CCB2 = 0	-7
CCV1 = 500	483		
CCB1 = 0	1		

M E R C U R Y

QUALITY CONTROL DATA

Client: PES

Proj. #: 81003 and 81006

Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$			
Blank	0.000	0.00		
Standard 1	0.010	0.50		
Standard 2	0.025	1.00		
Standard 3	0.042	2.00		
Standard 4	0.125	5.00		
Standard 5	0.278	10.00		
Calibration Verifications				
ICV = 5	4.79	CCV2 = 5	4.76	
ICB = 0	-0.13	CCB2 = 0	-0.06	
CCV1 = 5	4.53	CCV3 = 5	4.42	
CCB1 = 0	-0.18	CCB3 = 0	-0.09	
		CCV4 = 5	4.95	
		CCB4 = 0	-0.09	

NICKEL

QUALITY CONTROL DATA

Client: PES
Proj. #: 81003 and 81006
Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0.0
Standard 1	0.030	20.0
Standard 2	0.082	50.0
Standard 3	0.173	100.0
Standard 4	0.340	200.0

Calibration Verifications

ICV = 100	108.0	CCV2 = 100	89.7
ICB = 0	3.1	CCB2 = 0	-3.3
CCV1 = 100	87.4	CCV3 = 100	88.4
CCB1 = 0	-1.0	CCB3 = 0	-4.2

PHOSPHORUS

QUALITY CONTROL DATA

Client: PES

Proj. #: 81003 and 81006

Date: 26-Oct-98

Calibration Data

	Emiss. True conc., $\mu\text{g/L}$		
Blank	316	0	
Standard 1	369	200	
Standard 2	558	1000	
Standard 3	518	2000	
Standard 4	1567	5000	
Standard 5	6099	20000	
Calibration Verifications			
ICV = 2000	2010	CCV2 = 2000	2043
ICB = 0	21	CCB2 = 0	61
CCV1 = 2000	1934	CCV3 = 2000	2039
CCB1 = 0	99	CCB3 = 0	-56
		CCV4 = 2000	1960
		CCB4 = 0	-43

SELENIUM

QUALITY CONTROL DATA

Client: PES
Proj. #: 81003 and 81006
Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0.0
Standard 1	0.017	10.0
Standard 2	0.049	25.0
Standard 3	0.097	50.0
Standard 4	0.206	100.0

Calibration Verifications

ICV = 50	50.4	CCV2 = 50	53.3
ICB = 0	-4.3	CCB2 = 0	-0.3
CCV1 = 50	51.7	CCV3 = 50	54.1
CCB1 = 0	2.1	CCB3 = 0	6.4

S E L E N I U M

QUALITY CONTROL DATA

Client: PES

Proj. #: 81003 and 81006

Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0.0
Standard 1	0.008	10.0
Standard 2	0.046	25.0
Standard 3	0.086	50.0
Standard 4	0.171	100.0

Calibration Verifications

ICV = 50	50.8	CCV2 = 50
ICB = 0	2.1	CCB2 = 0
CCV1 = 50	50.9	CCV3 = 50
CCB1 = 0	1.7	CCB3 = 0

SILVER

QUALITY CONTROL DATA

Client: PES

Proj. #: 81003 and 81006

Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0.0
Standard 1	0.096	5.0
Standard 2	0.191	10.0
Standard 3	0.383	20.0
Standard 4	0.544	30.0

Calibration Verifications

ICV = 20	20.2	CCV2 = 20	18.6
ICB = 0	-1.0	CCB2 = 0	-1.1
CCV1 = 20	19.5	CCV3 = 20	18.6
CCB1 = 0	-1.1	CCB3 = 0	-1.3

THALLIUM

QUALITY CONTROL DATA

Client: PES

Proj. #: 81003 and 81006

Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0.0
Standard 1	0.017	10.0
Standard 2	0.030	20.0
Standard 3	0.079	50.0
Standard 4	0.149	100.0

Calibration Verifications

ICV = 50	48.9	CCV2 = 50	49.7
ICB = 0	-2.6	CCB2 = 0	-0.5
CCV1 = 50	48.6	CCV3 = 50	46.9
CCB1 = 0	-0.3	CCB3 = 0	-0.3
		CCV4 = 50	54.3
		CCB4 = 0	-2.0

Z I N C

QUALITY CONTROL DATA

Client: PES
Proj. #: 81002 and 81006
Date: 26-Oct-98

Calibration Data

	Abs. True conc., $\mu\text{g/L}$	
Blank	0.000	0
Standard 1	0.035	50
Standard 2	0.056	100
Standard 3	0.091	200
Standard 4	0.205	500
Standard 5	0.367	1000

Calibration Verifications

ICV = 500	488	CCV2 = 500	478
ICB = 0	3	CCB2 = 0	0
CCV1 = 500	501		
CCB1 = 0	-4		

Sample File: PB.GEL
Date: 10/15/98
Data File:
Technique: HGA

Element: Sb
Time: 10:00
ID/Wt File: 81002.IDW
Calib. Type: Linear

Wavelength: 217.6
Slit: 0.7 L
Lamp Current: 0
Energy: 38

1b ID: BLANK

Seq. No.: 00148

A/S Pos.: 0

Date: 10/15/98

Replicate 1

Time: 10:02

Peak Area (A-s): 0.010

Peak Height (A): 0.020

Background Pk Area (A-s): 0.127

Background Pk Height (A): 0.082

Blank Corrected Pk Area (A-s): -0.000

Concentration (ug/L): -0.1

Replicate 2

Time: 10:06

Peak Area (A-s): -0.004

Peak Height (A): 0.018

Background Pk Area (A-s): 0.138

Background Pk Height (A): 0.088

Blank Corrected Pk Area (A-s): -0.014

Concentration (ug/L): -9.1

Mean Conc (ug/L): -4.6

SD: 6.35

RSD(%): 139.0%

Auto-zero performed.

1b ID: 10 PPB

Seq. No.: 00149

A/S Pos.: 1

Date: 10/15/98

Replicate 1

Time: 10:09

Peak Area (A-s): 0.024

Peak Height (A): 0.040

Background Pk Area (A-s): 0.123

Background Pk Height (A): 0.083

Blank Corrected Pk Area (A-s): 0.021

Concentration (ug/L): 12.9

Replicate 2

Time: 10:12

Peak Area (A-s): 0.014

Peak Height (A): 0.035

Background Pk Area (A-s): 0.134

Background Pk Height (A): 0.073

Blank Corrected Pk Area (A-s): 0.011

Concentration (ug/L): 7.0

Mean Conc (ug/L): 9.9

SD: 4.20

RSD(%): 42.30

Standard number 1 applied. [10.0]

Correlation coefficient: 1.00000

Slope: 0.0016

1b ID: 50 PPB

Seq. No.: 00150

A/S Pos.: 2

Date: 10/15/98

Replicate 1

Time: 10:15

Peak Area (A-s): 0.083

Peak Height (A): 0.127

Background Pk Area (A-s): 0.129

Background Pk Height (A): 0.078

Blank Corrected Pk Area (A-s): 0.080

Concentration (ug/L): 50.2

Replicate 2

Time: 10:19

Peak Area (A-s): 0.085

Peak Height (A): 0.130

Background Pk Area (A-s): 0.136

Background Pk Height (A): 0.075

Blank Corrected Pk Area (A-s): 0.081

Concentration (ug/L): 51.2

Mean Conc (ug/L): 50.7 SD: 0.73 RSD(%): 1.44

Standard number 2 applied. [50.0]
Correlation coefficient: 0.99999 Slope: 0.0016

~~~~~  
b ID: 100 PPB Seq. No.: 00151 A/S Pos.: 3 Date: 10/15/98

Replicate 1  
Peak Area (A-s): 0.153 Time: 10:22  
Background Pk Area (A-s): 0.143 Peak Height (A): 0.220  
Blank Corrected Pk Area (A-s): 0.150 Background Pk Height (A): 0.087  
Concentration (ug/L ): 93.2

Replicate 2  
Peak Area (A-s): 0.159 Time: 10:25  
Background Pk Area (A-s): 0.136 Peak Height (A): 0.241  
Blank Corrected Pk Area (A-s): 0.155 Background Pk Height (A): 0.072  
Concentration (ug/L ): 96.4

Mean Conc (ug/L ): 94.8 SD: 2.26 RSD(%): 2.38

Standard number 3 applied. [100.0]  
Correlation coefficient: 0.99925 Slope: 0.0015

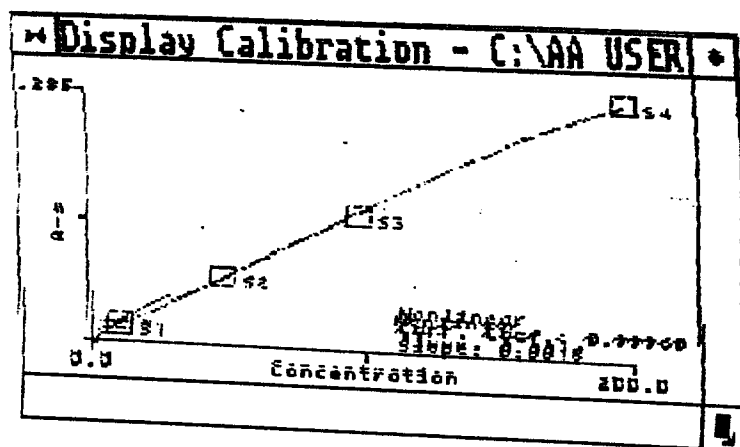
~~~~~  
b ID: 200 PPB Seq. No.: 00152 A/S Pos.: 4 Date: 10/15/98

Replicate 1
Peak Area (A-s): 0.291 Time: 10:28
Background Pk Area (A-s): 0.151 Peak Height (A): 0.396
Blank Corrected Pk Area (A-s): 0.288 Background Pk Height (A): 0.078
Concentration (ug/L): 186.4

Replicate 2
Peak Area (A-s): 0.285 Time: 10:32
Background Pk Area (A-s): 0.152 Peak Height (A): 0.396
Blank Corrected Pk Area (A-s): 0.281 Background Pk Height (A): 0.081
Concentration (ug/L): 182.0

Mean Conc (ug/L): 184.2 SD: 3.07 RSD(%): 1.67

Standard number 4 applied. [200.0]
Correlation coefficient: 0.99817 Slope: 0.0015



~~~~~  
Sb ID: ICV Seq. No.: 00153 A/S Pos.: 5 Date: 10/15/9

Replicate 1 Time: 10:38  
Concentration (ug/L ): 100.5

Replicate 2 Time: 10:41  
Concentration (ug/L ): 94.1

Mean Conc (ug/L ): 97.3 SD: 4.54 RSD(%): 4.67

QC sample is within range 79.5 - 120.49

~~~~~  
Sb ID: ICB Seq. No.: 00154 A/S Pos.: 0 Date: 10/15/9

Replicate 1 Time: 10:45
Concentration (ug/L): 4.6

Replicate 2 Time: 10:48
Concentration (ug/L): 1.8

Mean Conc (ug/L): 3.2 SD: 1.95 RSD(%): 61.00

QC sample is within range -15.49 - 15.49

~~~~~  
Sb ID: B1002.B-1 Seq. No.: 00155 A/S Pos.: 6 Date: 10/15/9

Replicate 1 Time: 10:51  
Concentration (ug/L ): 2.1

Replicate 2 Time: 10:54  
Concentration (ug/L ): -4.1

Mean Conc (ug/L ): -1.0 SD: 4.36 RSD(%): 430.91

~~~~~  
Sb ID: B1002.B-1 Seq. No.: 00156 A/S Pos.: 7 Date: 10/15/9

Replicate 1 Time: 10:58
Concentration (ug/L): -0.3

Replicate 2 Time: 11:01
Concentration (ug/L): 4.8

Mean Conc (ug/L): 2.3 SD: 3.63 RSD(%): 159.00

~~~~~  
Sb ID: B1002.B-1 Seq. No.: 00157 A/S Pos.: 7 Date: 10/15/9

Replicate 1 Time: 11:04  
Concentration (ug/L ): 94.9

Replicate 2 Time: 11:08  
Concentration (ug/L ): 104.6

Mean Conc (ug/L ): 99.7 SD: 6.85 RSD(%): 6.86

Recovery is 97.5%

~~~~~

ib ID: B1002.9-1 Seq. No.: 00158 A/S Pos.: 8 Date: 10/15/9

Replicate 1 Time: 11:11
Concentration (ug/L): 1.9

Replicate 2 Time: 11:14
Concentration (ug/L): 3.0

Mean Conc (ug/L): 2.5 SD: 0.75 RSD(%): 30.68

~~~~~

ib ID: B1002.10-1 Seq. No.: 00159 A/S Pos.: 9 Date: 10/15/9

Replicate 1 Time: 11:17  
Concentration (ug/L ): -1.5

Replicate 2 Time: 11:21  
Concentration (ug/L ): 5.2

Mean Conc (ug/L ): 1.8 SD: 4.72 RSD(%): 258.09

~~~~~

ib ID: B1002.B-2A Seq. No.: 00160 A/S Pos.: 10 Date: 10/15/9

Replicate 1 Time: 11:24
Concentration (ug/L): -2.0

Replicate 2 Time: 11:27
Concentration (ug/L): -4.8

Mean Conc (ug/L): -3.4 SD: 1.99 RSD(%): 58.59

~~~~~

ib ID: B1002.1-2A Seq. No.: 00161 A/S Pos.: 11 Date: 10/15/9

Replicate 1 Time: 11:31  
Concentration (ug/L ): 2.4

Replicate 2 Time: 11:34  
Concentration (ug/L ): -1.7

Mean Conc (ug/L ): 0.4 SD: 2.96 RSD(%): 830.4

~~~~~

ib ID: B1002.1-2A Seq. No.: 00162 A/S Pos.: 11 Date: 10/15/9

Replicate 1 Time: 11:37
Concentration (ug/L): 100.0

Replicate 2 Time: 11:40
Concentration (ug/L): 99.8

Mean Conc (ug/L): 99.9 SD: 0.16 RSD(%): 0.16

Recovery is 99.6%

~~~~~  
3b ID: 81002.2-2A Seq. No.: 00163 A/S Pos.: 12 Date: 10/15/9

Replicate 1 Time: 11:44  
Concentration (ug/L ): -4.6

Replicate 2 Time: 11:47  
Concentration (ug/L ): -1.5

Mean Conc (ug/L ): -3.0 SD: 2.24 RSD(%): 73.75

~~~~~  
3b ID: 81002.3-2A Seq. No.: 00164 A/S Pos.: 13 Date: 10/15/9

Replicate 1 Time: 11:50
Concentration (ug/L): 9.5

Replicate 2 Time: 11:53
Concentration (ug/L): 8.7

Mean Conc (ug/L): 9.1 SD: 0.54 RSD(%): 5.92

~~~~~  
3b ID: CCV Seq. No.: 00165 A/S Pos.: 3 Date: 10/15/9

Replicate 1 Time: 11:56  
Concentration (ug/L ): 93.3

Replicate 2 Time: 12:00  
Concentration (ug/L ): 101.8

Mean Conc (ug/L ): 97.6 SD: 5.99 RSD(%): 6.14

QC sample is within range 79.5 - 120.49

~~~~~  
3b ID: CCB Seq. No.: 00166 A/S Pos.: 0 Date: 10/15/9

Replicate 1 Time: 12:03
Concentration (ug/L): -5.0

Replicate 2 Time: 12:06
Concentration (ug/L): -2.9

Mean Conc (ug/L): -3.9 SD: 1.50 RSD(%): 37.93

QC sample is within range -15.49 - 15.49

~~~~~  
3b ID: 81003.RB-AP Seq. No.: 00167 A/S Pos.: 14 Date: 10/15/9

Replicate 1 Time: 12:09  
Concentration (ug/L ): -4.3

Replicate 2 Time: 12:12  
Concentration (ug/L ): -0.6

Mean Conc (ug/L ): -2.4 SD: 2.64 RSD(%): 108.5

```

~~~~~
Sb ID: 81003.RB-F Seq. No.: 00168 A/S Pos.: 15 Date: 10/15/9
Replicate 1 Time: 12:16
Concentration (ug/L): -1.9

Replicate 2 Time: 12:19
Concentration (ug/L): -0.5

Mean Conc (ug/L): -1.2 SD: 0.97 RSD(%): 79.18
~~~~~
Sb      ID: 81003.OB          Seq. No.: 00169      A/S Pos.: 16      Date: 10/15/9
Replicate 1                      Time: 12:22
Concentration (ug/L ): -3.4

Replicate 2                      Time: 12:25
Concentration (ug/L ): 1.6

Mean Conc (ug/L ):          -0.9          SD: 3.52          RSD(%): 387.8
~~~~~
Sb ID: 81003.UB Seq. No.: 00170 A/S Pos.: 17 Date: 10/15/9
Replicate 1 Time: 12:28
Concentration (ug/L): -3.6

Replicate 2 Time: 12:31
Concentration (ug/L): -3.5
,
Mean Conc (ug/L): -3.5 SD: 0.07 RSD(%): 1.89
~~~~~
Sb      ID: 81003.IB          Seq. No.: 00171      A/S Pos.: 18      Date: 10/15/9
Replicate 1                      Time: 12:34
Concentration (ug/L ): -3.8

Replicate 2                      Time: 12:38
Concentration (ug/L ): -3.5

Mean Conc (ug/L ):          -3.7          SD: 0.20          RSD(%): 5.53
~~~~~
Sb ID: 81003.O1 Seq. No.: 00172 A/S Pos.: 19 Date: 10/15/9
Replicate 1 Time: 12:41
Concentration (ug/L): -1.0

Replicate 2 Time: 12:44
Concentration (ug/L): -4.1

Mean Conc (ug/L): -2.5 SD: 2.22 RSD(%): 87.44
~~~~~
Sb      ID: 81003.O1          Seq. No.: 00173      A/S Pos.: 19      Date: 10/15/9
Replicate 1                      Time: 12:47

```



Concentration (ug/L ): 91.6

Replicate 2

Time: 12:50

Concentration (ug/L ): 96.2

Mean Conc (ug/L ): 93.9

SD: 3.26

RSD(%): 3.47

Recovery is 96.4%

Sh ID: 81003.02

Seq. No.: 00174

A/S Pos.: 20

Date: 10/15/9

Replicate 1

Time: 12:54

Concentration (ug/L ): -8.1

Replicate 2

Time: 12:57

Concentration (ug/L ): -1.3

Mean Conc (ug/L ): -4.7

SD: 4.81

RSD(%): 101.22

Sh ID: 81003.03

Seq. No.: 00175

A/S Pos.: 21

Date: 10/15/9

Replicate 1

Time: 13:00

Concentration (ug/L ): 2.9

Replicate 2

Time: 13:03

Concentration (ug/L ): 3.3

Mean Conc (ug/L ): 3.1

SD: 0.24

RSD(%): 7.55

Sh ID: CCV

Seq. No.: 00176

A/S Pos.: 3

Date: 10/15/9

Replicate 1

Time: 13:06

Concentration (ug/L ): 103.4

Replicate 2

Time: 13:10

Concentration (ug/L ): 104.6

Mean Conc (ug/L ): 104.0

SD: 0.83

RSD(%): 0.80

QC sample is within range 79.5 - 120.49

Sh ID: CCB

Seq. No.: 00177

A/S Pos.: 0

Date: 10/15/9

Replicate 1

Time: 13:13

Concentration (ug/L ): 0.7

Replicate 2

Time: 13:16

Concentration (ug/L ): -2.3

Mean Conc (ug/L ): -0.8

SD: 2.09

RSD(%): 254.4

QC sample is within range -15.49 - 15.49

~~~~~  
Sh ID: 81003.U1 Seq. No.: 00178 A/S Pos.: 22 Date: 10/15/9

Replicate 1 Time: 13:19
Concentration (ug/L): -4.5

Replicate 2 Time: 13:23
Concentration (ug/L): -2.5

Mean Conc (ug/L): -3.5 SD: 1.41 RSD(%): 40.91

~~~~~  
Sh ID: 81003.U1 Seq. No.: 00179 A/S Pos.: 22 Date: 10/15/9

Replicate 1 Time: 13:26  
Concentration (ug/L ): 71.6

Replicate 2 Time: 13:29  
Concentration (ug/L ): 93.5

Mean Conc (ug/L ): 82.5 SD: 15.53 RSD(%): 18.82

Recovery is 85.9%

~~~~~  
Sh ID: 81003.U2 Seq. No.: 00180 A/S Pos.: 23 Date: 10/15/9

Replicate 1 Time: 13:32
Concentration (ug/L): 3.8

Replicate 2 Time: 13:36
Concentration (ug/L): 3.8

Mean Conc (ug/L): 3.8 SD: 0.00 RSD(%): 0.08

~~~~~  
Sh ID: 81003.U3 Seq. No.: 00181 A/S Pos.: 24 Date: 10/15/9

Replicate 1 Time: 13:39  
Concentration (ug/L ): -2.1

Replicate 2 Time: 13:42  
Concentration (ug/L ): 0.9

Mean Conc (ug/L ): -0.6 SD: 2.09 RSD(%): 364.1

~~~~~  
Sh ID: 81003.U1 Seq. No.: 00182 A/S Pos.: 25 Date: 10/15/9

Replicate 1 Time: 13:46
Concentration (ug/L): -4.1

Replicate 2 Time: 13:49
Concentration (ug/L): 38.3

Mean Conc (ug/L): 17.1 SD: 29.99 RSD(%): 174.93

~~~~~  
Sb ID: 81003.I1 Seq. No.: 00183 A/S Pos.: 25 Date: 10/15/9

Replicate 1 Time: 13:54  
Concentration (ug/L ): 46.4

Replicate 2 Time: 13:57  
Concentration (ug/L ): 38.8

Mean Conc (ug/L ): 42.6 SD: 5.39 RSD(%): 12.65

~~~~~  
Sb ID: 81003.I2 Seq. No.: 00184 A/S Pos.: 26 Date: 10/15/9

Replicate 1 Time: 14:01
Concentration (ug/L): 36.0

Replicate 2 Time: 14:04
Concentration (ug/L): 38.3

Mean Conc (ug/L): 37.2 SD: 1.65 RSD(%): 4.44

~~~~~  
Sb ID: 81003.I3 Seq. No.: 00185 A/S Pos.: 27 Date: 10/15/9

Replicate 1 Time: 14:07  
Concentration (ug/L ): 38.1

Replicate 2 Time: 14:10  
Concentration (ug/L ): 29.2

Mean Conc (ug/L ): 33.7 SD: 6.29 RSD(%): 18.69

~~~~~  
Sb ID: CCV Seq. No.: 00186 A/S Pos.: 3 Date: 10/15/9

Replicate 1 Time: 14:14
Concentration (ug/L): 106.3

Replicate 2 Time: 14:17
Concentration (ug/L): 115.8

Mean Conc (ug/L): 111.0 SD: 6.72 RSD(%): 6.05

QC sample is within range 79.5 - 120.49

~~~~~  
Sb ID: CCB Seq. No.: 00187 A/S Pos.: 0 Date: 10/15/9

Replicate 1 Time: 14:20  
Concentration (ug/L ): 0.2

Replicate 2 Time: 14:23  
Concentration (ug/L ): -11.5

Mean Conc (ug/L ): -5.7 SD: 8.29 RSD(%): 146.7

QC sample is within range -15.49 - 15.49

~~~~~

Sb ID: 81006.1 Seq. No.: 00188 A/S Pos.: 28 Date: 10/15/

Replicate 1 Time: 14:26

Concentration (ug/L): 0.4

Replicate 2 Time: 14:30

Concentration (ug/L): 6.0

Mean Conc (ug/L): 3.2 SD: 3.97 RSD(%): 122.5

~~~~~

Sb ID: 81006.1 Seq. No.: 00189 A/S Pos.: 28 Date: 10/15/

Replicate 1 Time: 14:33

Concentration (ug/L ): 100.3

Replicate 2 Time: 14:36

Concentration (ug/L ): 102.8

Mean Conc (ug/L ): 101.5 SD: 1.82 RSD(%): 1.79

Recovery is 98.3%

~~~~~

Sb ID: 81006.2 Seq. No.: 00190 A/S Pos.: 29 Date: 10/15/

Replicate 1 Time: 14:40

Concentration (ug/L): -3.7

Replicate 2 Time: 14:43

Concentration (ug/L): -2.8

Mean Conc (ug/L): -3.2 SD: 0.63 RSD(%): 19.56

~~~~~

Sb ID: 81006.3 Seq. No.: 00191 A/S Pos.: 30 Date: 10/15/

Replicate 1 Time: 14:46

Concentration (ug/L ): 0.7

Replicate 2 Time: 14:49

Concentration (ug/L ): 0.6

Mean Conc (ug/L ): 0.6 SD: 0.08 RSD(%): 13.33

~~~~~

Sb ID: CCV Seq. No.: 00192 A/S Pos.: 3 Date: 10/15/

Replicate 1 Time: 14:52

Concentration (ug/L): 98.8

Replicate 2 Time: 14:56

Concentration (ug/L): 103.1

Mean Conc (ug/L): 101.0 SD: 3.07 RSD(%): 3.04

QC sample is within range 79.5 - 120.49

~~~~~  
Sh ID: CCB Seq. No.: 00193 A/S Pos.: 0 Date: 10/15/9

Replicate 1 Time: 14:59  
Concentration (ug/L ): -6.7

Replicate 2 Time: 15:02  
Concentration (ug/L ): -5.1

Mean Conc (ug/L ): -5.9 SD: 1.12 RSD(%): 18.88

QC sample is within range -15.49 - 15.49

|                      |                       |                   |
|----------------------|-----------------------|-------------------|
| Element File: AS.GEL | Element: As           | Wavelength: 193.7 |
| Date: 10/20/98       | Time: 09:30           | Slit: 0.70 L      |
| Data File:           | ID/Wt File: 81002.IDW | Lamp Current: 0   |
| Technique: HGA       | Calib. Type: Linear   | Energy: 33        |

=====

S ID: BLANK Seq. No.: 00104 A/S Pos.: 0 Date: 10/20/9

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 1                          | Time: 09:30                     |
| Peak Area (A-s): 0.007               | Peak Height (A): 0.040          |
| Background Pk Area (A-s): 0.135      | Background Pk Height (A): 0.149 |
| Blank Corrected Pk Area (A-s): 0.006 |                                 |
| Concentration (ug/L ): 2.60          |                                 |

|                                       |                                 |
|---------------------------------------|---------------------------------|
| Replicate 2                           | Time: 09:33                     |
| Peak Area (A-s): -0.010               | Peak Height (A): 0.039          |
| Background Pk Area (A-s): 0.130       | Background Pk Height (A): 0.119 |
| Blank Corrected Pk Area (A-s): -0.010 |                                 |
| Concentration (ug/L ): -4.07          |                                 |

|                          |           |                |
|--------------------------|-----------|----------------|
| Mean Conc (ug/L ): -0.74 | SD: 4.715 | RSD(%): 639.03 |
|--------------------------|-----------|----------------|

Auto-zero performed.

=====

S ID: 10 PPB AS Seq. No.: 00105 A/S Pos.: 1 Date: 10/20/9

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 1                          | Time: 09:36                     |
| Peak Area (A-s): 0.026               | Peak Height (A): 0.057          |
| Background Pk Area (A-s): 0.129      | Background Pk Height (A): 0.100 |
| Blank Corrected Pk Area (A-s): 0.028 |                                 |
| Concentration (ug/L ): 11.24         |                                 |

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 2                          | Time: 09:40                     |
| Peak Area (A-s): 0.026               | Peak Height (A): 0.047          |
| Background Pk Area (A-s): 0.114      | Background Pk Height (A): 0.096 |
| Blank Corrected Pk Area (A-s): 0.028 |                                 |
| Concentration (ug/L ): 11.26         |                                 |

|                          |           |              |
|--------------------------|-----------|--------------|
| Mean Conc (ug/L ): 11.25 | SD: 0.012 | RSD(%): 0.11 |
|--------------------------|-----------|--------------|

Standard number 1 applied. [10.00]

Correlation coefficient: 1.00000

Slope: 0.0028

=====

S ID: 50 PPB AS Seq. No.: 00106 A/S Pos.: 2 Date: 10/20/9

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 1                          | Time: 09:43                     |
| Peak Area (A-s): 0.118               | Peak Height (A): 0.208          |
| Background Pk Area (A-s): 0.105      | Background Pk Height (A): 0.094 |
| Blank Corrected Pk Area (A-s): 0.119 |                                 |
| Concentration (ug/L ): 42.59         |                                 |

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 2                          | Time: 09:46                     |
| Peak Area (A-s): 0.088               | Peak Height (A): 0.175          |
| Background Pk Area (A-s): 0.119      | Background Pk Height (A): 0.112 |
| Blank Corrected Pk Area (A-s): 0.090 |                                 |
| Concentration (ug/L ): 32.05         |                                 |

Mean Conc (ug/L ): 37.32 SD: 7.451 RSD(%): 19.97

Standard number 2 applied. [50.00]  
Correlation coefficient: 0.99324 Slope: 0.0021

=====

AS ID: 100 PPB AS Seq. No.: 00107 A/S Pos.: 3 Date: 10/20/98

Replicate 1 Time: 09:49  
Peak Area (A-s): 0.232 Peak Height (A): 0.362  
Background Pk Area (A-s): 0.120 Background Pk Height (A): 0.085  
Blank Corrected Pk Area (A-s): 0.234  
Concentration (ug/L ): 109.75

Replicate 2 Time: 09:53  
Peak Area (A-s): 0.239 Peak Height (A): 0.428  
Background Pk Area (A-s): 0.114 Background Pk Height (A): 0.084  
Blank Corrected Pk Area (A-s): 0.241  
Concentration (ug/L ): 113.04

Mean Conc (ug/L ): 111.40 SD: 2.326 RSD(%): 2.09

Standard number 3 applied. [100.00]  
Correlation coefficient: 0.99591 Slope: 0.0023

=====

AS ID: 200 PPB AS Seq. No.: 00108 A/S Pos.: 4 Date: 10/20/98

Replicate 1 Time: 09:56  
Peak Area (A-s): 0.429 Peak Height (A): 0.723  
Background Pk Area (A-s): 0.121 Background Pk Height (A): 0.070  
Blank Corrected Pk Area (A-s): 0.431  
Concentration (ug/L ): 185.23

Replicate 2 Time: 09:59  
Peak Area (A-s): 0.449 Peak Height (A): 0.738  
Background Pk Area (A-s): 0.121 Background Pk Height (A): 0.079  
Blank Corrected Pk Area (A-s): 0.451  
Concentration (ug/L ): 194.04

Mean Conc (ug/L ): 189.64 SD: 6.233 RSD(%): 3.29

Standard number 4 applied. [200.00]  
Correlation coefficient: 0.99849 Slope: 0.0022

=====

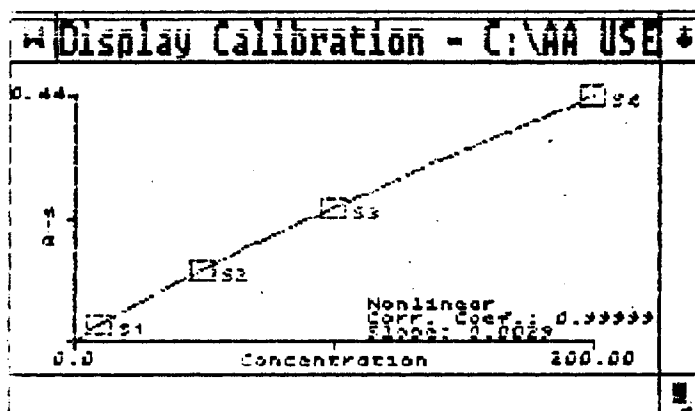
AS ID: 50 PPB AS Seq. No.: 00109 A/S Pos.: 2 Date: 10/20/98

Replicate 1 Time: 10:09  
Peak Area (A-s): 0.138 Peak Height (A): 0.222  
Background Pk Area (A-s): 0.100 Background Pk Height (A): 0.068  
Blank Corrected Pk Area (A-s): 0.139  
Concentration (ug/L ): 56.73

Replicate 2 Time: 10:12  
Peak Area (A-s): 0.115 Peak Height (A): 0.199  
Background Pk Area (A-s): 0.094 Background Pk Height (A): 0.064  
Blank Corrected Pk Area (A-s): 0.117  
Concentration (ug/L ): 47.22

ean Conc (ug/L ): 51.95 SD: 6.724 RSD(%): 12.94

standard number 2 applied. [50.00]  
correlation coefficient: 0.99999 Slope: 0.0029



10:00 Sec. 10:10 ABS Rel.: ? Date: 10/20/97

10:10 Time: 10:10

Concentration ug/L : 104.97

Time: 10:10

Display Data - C:\AA USER\AA FILES\ELEMENT\

 **103.06** ug/L Mean

QC sample is within range 79.50 - 120.49

|                   |                 |        |
|-------------------|-----------------|--------|
| Atomic Signal     | Area: 0.239 A-s | Height |
| Background Signal | Area: 0.103 A-s | Height |

Repl. 2 of 2 Conc. 101.19 ug/L  
Mean: 103.06 SD: 2.646



-----  
As ID: ICB Seq. No.: 00111 A/S Pos.: 0 Date: 10/20/9  
Replicate 1 Time: 10:26  
Concentration (ug/L ): 0.98  
Replicate 2 Time: 10:29  
Concentration (ug/L ): 3.21  
Mean Conc (ug/L ): 2.09 SD: 1.576 RSD(%): 75.35  
QC sample is within range -5.49 - 5.49  
-----  
As ID: 81003.RB-AP Seq. No.: 00112 A/S Pos.: 14 Date: 10/20/9  
Replicate 1 Time: 10:32  
Concentration (ug/L ): 3.39  
Replicate 2 Time: 10:35  
Concentration (ug/L ): 0.24  
Mean Conc (ug/L ): 1.81 SD: 2.234 RSD(%): 123.0  
-----  
As ID: 81003.RB-F Seq. No.: 00113 A/S Pos.: 15 Date: 10/20/9  
Replicate 1 Time: 10:39  
Concentration (ug/L ): -0.48  
Replicate 2 Time: 10:42  
Concentration (ug/L ): -3.37  
Mean Conc (ug/L ): -1.93 SD: 2.048 RSD(%): 106.4  
-----  
As ID: 81003.OB Seq. No.: 00114 A/S Pos.: 16 Date: 10/20/9  
Replicate 1 Time: 10:45  
Concentration (ug/L ): 0.75  
Replicate 2 Time: 10:48  
Concentration (ug/L ): 3.06  
Mean Conc (ug/L ): 1.90 SD: 1.635 RSD(%): 85.93  
-----  
As ID: 81003.UB Seq. No.: 00115 A/S Pos.: 17 Date: 10/20/9  
Replicate 1 Time: 10:51  
Concentration (ug/L ): 3.46  
Replicate 2 Time: 10:54  
Concentration (ug/L ): 0.78  
Mean Conc (ug/L ): 2.11 SD: 1.894 RSD(%): 89.2  
-----

As ID: 81003.1B Seq. No.: 00116 A/S Pos.: 18 Date: 10/20/9

Replicate 1 Time: 10:58  
Concentration (ug/L ): 3.73

Replicate 2 Time: 11:01  
Concentration (ug/L ): 1.80

Mean Conc (ug/L ): 2.76 SD: 1.363 RSD(%): 49.26

As ID: 81003.01 Seq. No.: 00117 A/S Pos.: 19 Date: 10/20/9

Replicate 1 Time: 11:04  
Concentration (ug/L ): -1.40

Replicate 2 Time: 11:07  
Concentration (ug/L ): 1.92

Mean Conc (ug/L ): 0.25 SD: 2.344 RSD(%): 903.4

As ID: 81003.01 Seq. No.: 00118 A/S Pos.: 19 Date: 10/20/9

Replicate 1 Time: 11:10  
Concentration (ug/L ): 83.00

Replicate 2 Time: 11:14  
Concentration (ug/L ): 87.23

Mean Conc (ug/L ): 85.11 SD: 2.991 RSD(%): 3.51

Recovery is 84.9%

As ID: 81003.02 Seq. No.: 00119 A/S Pos.: 20 Date: 10/20/9

Replicate 1 Time: 11:17  
Concentration (ug/L ): 2.85

Replicate 2 Time: 11:20  
Concentration (ug/L ): 1.63

Mean Conc (ug/L ): 2.24 SD: 0.858 RSD(%): 38.32

As ID: 81003.03 Seq. No.: 00120 A/S Pos.: 21 Date: 10/20/9

Replicate 1 Time: 11:23  
Concentration (ug/L ): 5.13

Replicate 2 Time: 11:27  
Concentration (ug/L ): 4.54

Mean Conc (ug/L ): 4.84 SD: 0.419 RSD(%): 8.65

As ID: CCV Seq. No.: 00121 A/S Pos.: 3 Date: 10/20/9

Replicate 1 Time: 11:30  
Concentration (ug/L ): 89.55

Replicate 2 Time: 11:33  
Concentration (ug/L ): 87.92

Mean Conc (ug/L ): 88.73 SD: 1.155 RSD(%): 1.30

QC sample is within range 79.50 - 120.49

*310W 8Wb dndricker*

As ID: CCV Seq. No.: 00122 A/S Pos.: 3 Date: 10/20/9

Replicate 1 Time: 11:38  
Concentration (ug/L ): 104.82

Replicate 2 Time: 11:41  
Concentration (ug/L ): 115.30

Mean Conc (ug/L ): 110.04 SD: 7.407 RSD(%): 6.73

QC sample is within range 79.50 - 120.49

As ID: CCB Seq. No.: 00123 A/S Pos.: 0 Date: 10/20/9

Replicate 1 Time: 11:44  
Concentration (ug/L ): 1.53

Replicate 2 Time: 11:47  
Concentration (ug/L ): 0.17

Mean Conc (ug/L ): 0.85 SD: 0.961 RSD(%): 113.10

QC sample is within range -5.49 - 5.49

As ID: B1003.U1 Seq. No.: 00124 A/S Pos.: 22 Date: 10/20/9

Replicate 1 Time: 11:51  
Concentration (ug/L ): 44.63

Replicate 2 Time: 11:54  
Concentration (ug/L ): 50.43

Mean Conc (ug/L ): 47.52 SD: 4.104 RSD(%): 8.63

As ID: B1003.U2 Seq. No.: 00125 A/S Pos.: 23 Date: 10/20/9

Replicate 1 Time: 11:57

Concentration (ug/L ): 39.36

Replicate 2

Time: 12:00

Concentration (ug/L ): 41.10

Mean Conc (ug/L ): 40.23

SD: 1.232

RSD(%): 3.06

As ID: 81003.U3

Seq. No.: 00126

A/S Pos.: 24

Date: 10/20/9

Replicate 1

Time: 12:04

Concentration (ug/L ): 61.76

Replicate 2

Time: 12:07

Concentration (ug/L ): 53.82

Mean Conc (ug/L ): 57.77

SD: 5.612

RSD(%): 9.71

As ID: 81003.I1

Seq. No.: 00127

A/S Pos.: 25

Date: 10/20/

Sample abs. is greater than that of the largest standard.

Replicate 1

Time: 12:10

Concentration (ug/L ): 556.26

As ID: AS Position 000

Seq. No.: 00128

A/S Pos.: 0

Date: 10/20/

Replicate 1

Time: 12:16

Concentration (ug/L ): 13.54

Replicate 2

Time: 12:19

Concentration (ug/L ): 6.09

Mean Conc (ug/L ): 9.77

SD: 5.267

RSD(%): 53.68

As ID: 81003.I1

Seq. No.: 00129

A/S Pos.: 25

Date: 10/20/

Replicate 1

Time: 12:22

Concentration (ug/L ): 118.67

Replicate 2

Time: 12:25

Concentration (ug/L ): 132.72

Mean Conc (ug/L ): 125.67

SD: 9.939

RSD(%): 7.91

As ID: 81003.I2

Seq. No.: 00130

A/S Pos.: 26

Date: 10/20/9

Replicate 1

Time: 12:29

Concentration (ug/L ): 152.16

Replicate 2

Time: 12:32

Concentration (ug/L ): 220.10

Mean Conc (ug/L ): 185.79

SD: 48.044

RSD(%): 25.81

As ID: 81003.I2 X5 Seq. No.: 00131 A/S Pos.: 26 Date: 10/20/98

Replicate 1 Time: 12:35  
Concentration (ug/L ): 138.93

Replicate 2 Time: 12:39  
Concentration (ug/L ): 188.76

Mean Conc (ug/L ): 163.63 SD: 35.236 RSD(%): 21.51

As ID: 81003.I3x5 Seq. No.: 00132 A/S Pos.: 27 Date: 10/20/98

Replicate 1 Time: 12:42  
Concentration (ug/L ): ~~122.71~~

Replicate 2 Time: 12:45  
Concentration (ug/L ): 183.04 ✓

Mean Conc (ug/L ): ~~152.82~~ SD: 42.660 RSD(%): 27.91

As ID: 81003.I3x5 Seq. No.: 00133 A/S Pos.: 27 Date: 10/20/98

Replicate 1 Time: 12:49  
Concentration (ug/L ): 186.06 ✓

The signal is too large for the range of the electronics.  
Replicate 2 Time: 12:52

Concentration (ug/L ): -----

Mean Conc (ug/L ): ---- SD: ---- RSD(%): ----

As ID: CCV Seq. No.: 00134 A/S Pos.: 3 Date: 10/20/98

Replicate 1 Time: 13:01  
Concentration (ug/L ): 103.60

Replicate 2 Time: 13:04  
Concentration (ug/L ): 110.83

Mean Conc (ug/L ): 107.21 SD: 5.116 RSD(%): 4.77

QC sample is within range 79.50 - 120.49

As ID: CCB Seq. No.: 00135 A/S Pos.: 0 Date: 10/20/98

Replicate 1 Time: 13:07  
Concentration (ug/L ): 7.84

Replicate 2 Time: 13:11  
Concentration (ug/L ): 1.49

Mean Conc (ug/L ): 4.63 SD: 4.488 RSD(%): 96.19

mod File Name: BA  
arks: BA ONLY

Replicates:3

Read Delay: 65  
Data File:

Wt file is 10236

|             |       |    |                   |           |            |
|-------------|-------|----|-------------------|-----------|------------|
| STANDARD #1 | BA455 | EM | REPLICATE #1      | 1108      | 10/15/98   |
|             |       |    | 49                |           |            |
| STANDARD #1 | BA455 | EM | REPLICATE #2      |           |            |
|             |       |    | 53                |           |            |
| STANDARD #1 | BA455 | EM | REPLICATE #3      |           |            |
|             |       |    | 60                |           | peak-noisy |
|             | BA455 | AV | 54.0 SD 5.6 CV    | 10.3 CONC | 0.0200     |
| STANDARD #2 | BA455 | EM | REPLICATE #1      | 1111      | 10/15/98   |
|             |       |    | 788               |           |            |
| STANDARD #2 | BA455 | EM | REPLICATE #2      |           |            |
|             |       |    | 709               |           |            |
| STANDARD #2 | BA455 | EM | REPLICATE #3      |           |            |
|             |       |    | 719               |           |            |
|             | BA455 | AV | 738.7 SD 43.0 CV  | 5.8 CONC  | 0.5000     |
| STANDARD #3 | BA455 | EM | REPLICATE #1      | 1113      | 10/15/98   |
|             |       |    | 1410              |           |            |
| STANDARD #3 | BA455 | EM | REPLICATE #2      |           |            |
|             |       |    | 1360              |           |            |
| STANDARD #3 | BA455 | EM | REPLICATE #3      |           |            |
|             |       |    | 1420              |           |            |
|             | BA455 | AV | 1396.7 SD 32.1 CV | 2.3 CONC  | 1.0000     |
| STANDARD #4 | BA455 | EM | REPLICATE #1      | 1115      | 10/15/98   |
|             |       |    | 2707              |           |            |
| STANDARD #4 | BA455 | EM | REPLICATE #2      |           |            |
|             |       |    | 2803              |           |            |
| STANDARD #4 | BA455 | EM | REPLICATE #3      |           |            |
|             |       |    | 2751              |           |            |
|             | BA455 | AV | 2753.7 SD 48.1 CV | 1.7 CONC  | 2.0000     |
| BLANK       | BA455 | EM | REPLICATE #1      | 1117      | 10/15/98   |
|             |       |    | 36                |           |            |
| BLANK       | BA455 | EM | REPLICATE #2      |           |            |
|             |       |    | 26                |           |            |

|       |    |        |       |           |     |         |             |
|-------|----|--------|-------|-----------|-----|---------|-------------|
| BA455 | EM | 34     |       |           |     |         |             |
| BA455 | AV | 32.0   | SD    | 5.3       | CV  | 16.5    | CONC 0.0000 |
| BA455 | CC | 0.9999 | SLOPE | 1360.5981 | INT | 37.1389 |             |

|           |    |      |                     |               |
|-----------|----|------|---------------------|---------------|
| <b>CV</b> |    |      | <b>REPLICATE #1</b> | 1119 10/15/98 |
| BA455     | EM | 1358 | 0.9708 mg/L         |               |

|           |    |      |                     |  |
|-----------|----|------|---------------------|--|
| <b>CV</b> |    |      | <b>REPLICATE #2</b> |  |
| BA455     | EM | 1360 | 0.9723 mg/L         |  |

|           |    |      |                     |  |
|-----------|----|------|---------------------|--|
| <b>CV</b> |    |      | <b>REPLICATE #3</b> |  |
| BA455     | EM | 1342 | 0.9590 mg/L         |  |

|       |    |        |    |    |     |    |     |
|-------|----|--------|----|----|-----|----|-----|
| BA455 | AV | 1353.3 | EM | SD | 9.9 | CV | 0.7 |
|-------|----|--------|----|----|-----|----|-----|

|       |    |        |      |    |        |    |      |
|-------|----|--------|------|----|--------|----|------|
| BA455 | AV | 0.9674 | mg/L | SD | 0.0073 | CV | 0.75 |
|-------|----|--------|------|----|--------|----|------|

|           |    |    |                     |               |
|-----------|----|----|---------------------|---------------|
| <b>CB</b> |    |    | <b>REPLICATE #1</b> | 1121 10/15/98 |
| BA455     | EM | 39 | 0.0014 mg/L         | peak-noisy    |

|           |    |    |                     |            |
|-----------|----|----|---------------------|------------|
| <b>CB</b> |    |    | <b>REPLICATE #2</b> |            |
| BA455     | EM | 37 | -0.0001 mg/L        | peak-noisy |

|           |    |    |                     |            |
|-----------|----|----|---------------------|------------|
| <b>CB</b> |    |    | <b>REPLICATE #3</b> |            |
| BA455     | EM | 34 | -0.0023 mg/L        | peak-noisy |

|       |    |      |    |    |     |    |     |
|-------|----|------|----|----|-----|----|-----|
| BA455 | AV | 36.7 | EM | SD | 2.5 | CV | 6.9 |
|-------|----|------|----|----|-----|----|-----|

|       |    |         |      |    |        |    |        |
|-------|----|---------|------|----|--------|----|--------|
| BA455 | AV | -0.0003 | mg/L | SD | 0.0018 | CV | 532.91 |
|-------|----|---------|------|----|--------|----|--------|

|                 |    |     |                     |               |
|-----------------|----|-----|---------------------|---------------|
| <b>LOO2-B-1</b> |    |     | <b>REPLICATE #1</b> | 1123 10/15/98 |
| BA455           | EM | 999 | 0.7069 mg/L         |               |

|                 |    |      |                     |  |
|-----------------|----|------|---------------------|--|
| <b>LOO2-B-1</b> |    |      | <b>REPLICATE #2</b> |  |
| BA455           | EM | 1009 | 0.7143 mg/L         |  |

|                 |    |      |                     |  |
|-----------------|----|------|---------------------|--|
| <b>LOO2-B-1</b> |    |      | <b>REPLICATE #3</b> |  |
| BA455           | EM | 1039 | 0.7363 mg/L         |  |

|       |    |        |    |    |      |    |     |
|-------|----|--------|----|----|------|----|-----|
| BA455 | AV | 1015.7 | EM | SD | 20.8 | CV | 2.0 |
|-------|----|--------|----|----|------|----|-----|

|       |    |        |      |    |        |    |      |
|-------|----|--------|------|----|--------|----|------|
| BA455 | AV | 0.7192 | mg/L | SD | 0.0153 | CV | 2.13 |
|-------|----|--------|------|----|--------|----|------|

|             |    |     |                     |               |
|-------------|----|-----|---------------------|---------------|
| <b>-1X2</b> |    |     | <b>REPLICATE #1</b> | 1125 10/15/98 |
| BA455       | EM | 572 | 0.3931 mg/L         |               |

|             |    |     |                     |  |
|-------------|----|-----|---------------------|--|
| <b>-1X2</b> |    |     | <b>REPLICATE #2</b> |  |
| BA455       | EM | 596 | 0.4107 mg/L         |  |

|             |    |     |                     |  |
|-------------|----|-----|---------------------|--|
| <b>-1X2</b> |    |     | <b>REPLICATE #3</b> |  |
| BA455       | EM | 584 | 0.4019 mg/L         |  |

|       |    |       |    |    |      |    |     |
|-------|----|-------|----|----|------|----|-----|
| BA455 | AV | 584.0 | EM | SD | 12.0 | CV | 2.1 |
|-------|----|-------|----|----|------|----|-----|

|       |    |        |      |    |        |    |      |
|-------|----|--------|------|----|--------|----|------|
| BA455 | AV | 0.4019 | mg/L | SD | 0.0088 | CV | 2.19 |
|-------|----|--------|------|----|--------|----|------|

|              |    |      |                     |               |
|--------------|----|------|---------------------|---------------|
| <b>-1X2S</b> |    |      | <b>REPLICATE #1</b> | 1127 10/15/98 |
| BA455        | EM | 1330 | 0.9502 mg/L         |               |

|              |  |  |                     |  |
|--------------|--|--|---------------------|--|
| <b>-1X2S</b> |  |  | <b>REPLICATE #2</b> |  |
|--------------|--|--|---------------------|--|

| -1X2S |       |      | REPLICATE #3               |      |    |        |           |
|-------|-------|------|----------------------------|------|----|--------|-----------|
| BA455 | EM    | 1404 | 1.0046 mg/L                |      |    |        |           |
|       | BA455 | AV   | 1363.7                     | EM   | SD | 37.4   | CV 2.7    |
|       | BA455 | AV   | 0.9750                     | mg/L | SD | 0.0275 | CV 2.82   |
| -1X2  |       |      | REPLICATE #1 1129 10/15/98 |      |    |        |           |
| BA455 | EM    | 615  | 0.4247 mg/L                |      |    |        |           |
| -1X2  |       |      | REPLICATE #2               |      |    |        |           |
| BA455 | EM    | 575  | 0.3953 mg/L                |      |    |        |           |
| -1X2  |       |      | REPLICATE #3               |      |    |        |           |
| BA455 | EM    | 606  | 0.4181 mg/L                |      |    |        |           |
|       | BA455 | AV   | 598.7                      | EM   | SD | 21.0   | CV 3.5    |
|       | BA455 | AV   | 0.4127                     | mg/L | SD | 0.0154 | CV 3.74   |
| -1X2D |       |      | REPLICATE #1 1132 10/15/98 |      |    |        |           |
| BA455 | EM    | 530  | 0.3622 mg/L                |      |    |        |           |
| -1X2D |       |      | REPLICATE #2               |      |    |        |           |
| BA455 | EM    | 581  | 0.3997 mg/L                |      |    |        |           |
| -1X2D |       |      | REPLICATE #3               |      |    |        |           |
| BA455 | EM    | 567  | 0.3894 mg/L                |      |    |        |           |
|       | BA455 | AV   | 559.3                      | EM   | SD | 26.4   | CV 4.7    |
|       | BA455 | AV   | 0.3838                     | mg/L | SD | 0.0194 | CV 5.05   |
| D-1X2 |       |      | REPLICATE #1 1134 10/15/98 |      |    |        |           |
| BA455 | EM    | 569  | 0.3909 mg/L                |      |    |        |           |
| D-1X2 |       |      | REPLICATE #2               |      |    |        |           |
| BA455 | EM    | 556  | 0.3813 mg/L                |      |    |        |           |
| D-1X2 |       |      | REPLICATE #3               |      |    |        |           |
| BA455 | EM    | 567  | 0.3894 mg/L                |      |    |        |           |
|       | BA455 | AV   | 564.0                      | EM   | SD | 7.0    | CV 1.2    |
|       | BA455 | AV   | 0.3872                     | mg/L | SD | 0.0051 | CV 1.33   |
| -2A   |       |      | REPLICATE #1 1136 10/15/98 |      |    |        |           |
| BA455 | EM    | 43   | 0.0043 mg/L peak-noisy     |      |    |        |           |
| -2A   |       |      | REPLICATE #2               |      |    |        |           |
| BA455 | EM    | 37   | -0.0001 mg/L peak-noisy    |      |    |        |           |
| -2A   |       |      | REPLICATE #3               |      |    |        |           |
| BA455 | EM    | 34   | -0.0023 mg/L peak-noisy    |      |    |        |           |
|       | BA455 | AV   | 38.0                       | EM   | SD | 4.6    | CV 12.1   |
|       | BA455 | AV   | 0.0006                     | mg/L | SD | 0.0034 | CV 532.18 |
| -2A   |       |      | REPLICATE #1 1138 10/15/98 |      |    |        |           |
| BA455 | EM    | 43   | 0.0043 mg/L                |      |    |        |           |
| -2A   |       |      | REPLICATE #2               |      |    |        |           |
| BA455 | EM    | 39   | 0.0014 mg/L peak-noisy     |      |    |        |           |



|       |    |        |              |                     |
|-------|----|--------|--------------|---------------------|
| BA455 | EM | 42     | 0.0036 mg/L  | peak-noisy          |
| BA455 | AV | 41.3   | EM           | SD 2.1 CV 5.0       |
| BA455 | AV | 0.0031 | mg/L         | SD 0.0015 CV 49.63  |
| -2AS  |    |        | REPLICATE #1 | 1140 10/15/98       |
| BA455 | EM | 1164   | 0.8282 mg/L  |                     |
| -2AS  |    |        | REPLICATE #2 |                     |
| BA455 | EM | 1115   | 0.7922 mg/L  |                     |
| -2AS  |    |        | REPLICATE #3 |                     |
| BA455 | EM | 1113   | 0.7907 mg/L  |                     |
| BA455 | AV | 1130.7 | EM           | SD 28.9 CV 2.6      |
| BA455 | AV | 0.8037 | mg/L         | SD 0.0212 CV 2.64   |
| JT    |    |        | REPLICATE #1 | 1142 10/15/98       |
| BA455 | EM | 41     | 0.0028 mg/L  | peak-noisy          |
| JT    |    |        | REPLICATE #2 |                     |
| BA455 | EM | 37     | -0.0001 mg/L | peak-noisy          |
| JT    |    |        | REPLICATE #3 |                     |
| BA455 | EM | 42     | 0.0036 mg/L  | peak-noisy          |
| BA455 | AV | 40.0   | EM           | SD 2.6 CV 6.6       |
| BA455 | AV | 0.0021 | mg/L         | SD 0.0019 CV 92.47  |
| CV    |    |        | REPLICATE #1 | 1144 10/15/98       |
| BA455 | EM | 1449   | 1.0377 mg/L  |                     |
| CV    |    |        | REPLICATE #2 |                     |
| BA455 | EM | 1456   | 1.0428 mg/L  |                     |
| CV    |    |        | REPLICATE #3 |                     |
| BA455 | EM | 1521   | 1.0906 mg/L  |                     |
| BA455 | AV | 1475.3 | EM           | SD 39.7 CV 2.7      |
| BA455 | AV | 1.0570 | mg/L         | SD 0.0292 CV 2.76   |
| CB    |    |        | REPLICATE #1 | 1146 10/15/98       |
| BA455 | EM | 38     | 0.0006 mg/L  | peak-noisy          |
| CB    |    |        | REPLICATE #2 |                     |
| BA455 | EM | 40     | 0.0021 mg/L  | peak-noisy          |
| CB    |    |        | REPLICATE #3 |                     |
| BA455 | EM | 36     | -0.0008 mg/L | peak-noisy          |
| BA455 | AV | 38.0   | EM           | SD 2.0 CV 5.3       |
| BA455 | AV | 0.0006 | mg/L         | SD 0.0015 CV 232.26 |
| -2A   |    |        | REPLICATE #1 | 1148 10/15/98       |
| BA455 | EM | 44     | 0.0050 mg/L  | peak-noisy          |
| -2A   |    |        | REPLICATE #2 |                     |

|      |       |    | REPLICATE #3 |              |    |        |            |
|------|-------|----|--------------|--------------|----|--------|------------|
| -2A  | BA455 | EM | 40           | 0.0021 mg/L  |    |        | peak-noisy |
|      | BA455 | AV | 42.3         | EM           | SD | 2.1    | CV 4.9     |
|      | BA455 | AV | 0.0038       | mg/L         | SD | 0.0015 | CV 40.08   |
| 2-2A | BA455 | EM | 36           | REPLICATE #1 |    | 1150   | 10/15/98   |
|      |       |    |              | -0.0008 mg/L |    |        | peak-noisy |
| 2-2A | BA455 | EM | 38           | REPLICATE #2 |    |        |            |
|      |       |    |              | 0.0006 mg/L  |    |        | peak-noisy |
| 2-2A | BA455 | EM | 36           | REPLICATE #3 |    |        |            |
|      |       |    |              | -0.0008 mg/L |    |        | peak-noisy |
|      | BA455 | AV | 36.7         | EM           | SD | 1.2    | CV 3.1     |
|      | BA455 | AV | -0.0003      | mg/L         | SD | 0.0008 | CV 244.52  |
| 3-AP | BA455 | EM | 33           | REPLICATE #1 |    | 1152   | 10/15/98   |
|      |       |    |              | -0.0030 mg/L |    |        | peak-noisy |
| 3-AP | BA455 | EM | 38           | REPLICATE #2 |    |        |            |
|      |       |    |              | 0.0006 mg/L  |    |        | peak-noisy |
| 3-AP | BA455 | EM | 38           | REPLICATE #3 |    |        |            |
|      |       |    |              | 0.0006 mg/L  |    |        | peak-noisy |
|      | BA455 | AV | 36.3         | EM           | SD | 2.9    | CV 7.9     |
|      | BA455 | AV | -0.0006      | mg/L         | SD | 0.0021 | CV 358.35  |
| 3-F  | BA455 | EM | 47           | REPLICATE #1 |    | 1154   | 10/15/98   |
|      |       |    |              | 0.0072 mg/L  |    |        | peak-noisy |
| 3-F  | BA455 | EM | 46           | REPLICATE #2 |    |        |            |
|      |       |    |              | 0.0065 mg/L  |    |        |            |
| 3-F  | BA455 | EM | 49           | REPLICATE #3 |    |        |            |
|      |       |    |              | 0.0087 mg/L  |    |        | peak-noisy |
|      | BA455 | AV | 47.3         | EM           | SD | 1.5    | CV 3.2     |
|      | BA455 | AV | 0.0075       | mg/L         | SD | 0.0011 | CV 14.98   |
| 3    | BA455 | EM | 55           | REPLICATE #1 |    | 1156   | 10/15/98   |
|      |       |    |              | 0.0131 mg/L  |    |        | peak-noisy |
| 3    | BA455 | EM | 53           | REPLICATE #2 |    |        |            |
|      |       |    |              | 0.0117 mg/L  |    |        | peak-noisy |
| 3    | BA455 | EM | 49           | REPLICATE #3 |    |        |            |
|      |       |    |              | 0.0087 mg/L  |    |        | peak-noisy |
|      | BA455 | AV | 52.3         | EM           | SD | 3.1    | CV 5.8     |
|      | BA455 | AV | 0.0112       | mg/L         | SD | 0.0022 | CV 20.11   |
| B    | BA455 | EM | 55           | REPLICATE #1 |    | 1159   | 10/15/98   |
|      |       |    |              | 0.0131 mg/L  |    |        | peak-noisy |
| B    | BA455 | EM | 53           | REPLICATE #2 |    |        |            |
|      |       |    |              | 0.0117 mg/L  |    |        | peak-noisy |

|                                   |    |        |              |                  |
|-----------------------------------|----|--------|--------------|------------------|
| BA455                             | EM | 62     | 0.0183 mg/L  | peak-noisy       |
| BA455                             | AV | 56.7   | EM SD        | 4.7 CV 8.3       |
| BA455                             | AV | 0.0144 | mg/L SD      | 0.0035 CV 24.20  |
| <b>REPLICATE #1 1201 10/15/98</b> |    |        |              |                  |
| BA455                             | EM | 63     | 0.0190 mg/L  | peak-noisy       |
| <b>REPLICATE #2</b>               |    |        |              |                  |
| BA455                             | EM | 58     | 0.0153 mg/L  | peak-noisy       |
| <b>REPLICATE #3</b>               |    |        |              |                  |
| BA455                             | EM | 56     | 0.0139 mg/L  | peak-noisy       |
| BA455                             | AV | 59.0   | EM SD        | 3.6 CV 6.1       |
| BA455                             | AV | 0.0161 | mg/L SD      | 0.0026 CV 16.49  |
| <b>REPLICATE #1 1203 10/15/98</b> |    |        |              |                  |
| BA455                             | EM | 1516   | 1.0869 mg/L  |                  |
| <b>REPLICATE #2</b>               |    |        |              |                  |
| BA455                             | EM | 1590   | 1.1413 mg/L  |                  |
| <b>REPLICATE #3</b>               |    |        |              |                  |
| BA455                             | EM | 1561   | 1.1200 mg/L  |                  |
| BA455                             | AV | 1555.7 | EM SD        | 37.3 CV 2.4      |
| BA455                             | AV | 1.1161 | mg/L SD      | 0.0274 CV 2.46   |
| <b>REPLICATE #1 1205 10/15/98</b> |    |        |              |                  |
| BA455                             | EM | 39     | 0.0014 mg/L  | peak-noisy       |
| <b>REPLICATE #2</b>               |    |        |              |                  |
| BA455                             | EM | 36     | -0.0008 mg/L | peak-noisy       |
| <b>REPLICATE #3</b>               |    |        |              |                  |
| BA455                             | EM | 38     | 0.0006 mg/L  | peak-noisy       |
| BA455                             | AV | 37.7   | EM SD        | 1.5 CV 4.1       |
| BA455                             | AV | 0.0004 | mg/L SD      | 0.0011 CV 289.44 |
| <b>REPLICATE #1 1207 10/15/98</b> |    |        |              |                  |
| BA455                             | EM | 53     | 0.0117 mg/L  | peak-noisy       |
| <b>REPLICATE #2</b>               |    |        |              |                  |
| BA455                             | EM | 58     | 0.0153 mg/L  | peak-noisy       |
| <b>REPLICATE #3</b>               |    |        |              |                  |
| BA455                             | EM | 53     | 0.0117 mg/L  |                  |
| BA455                             | AV | 54.7   | EM SD        | 2.9 CV 5.3       |
| BA455                             | AV | 0.0129 | mg/L SD      | 0.0021 CV 16.47  |
| <b>REPLICATE #1 1209 10/15/98</b> |    |        |              |                  |
| BA455                             | EM | 1342   | 0.9590 mg/L  |                  |
| <b>REPLICATE #2</b>               |    |        |              |                  |

| S     |       |      | REPLICATE #3               |      |    |        |          |
|-------|-------|------|----------------------------|------|----|--------|----------|
| BA455 | EM    | 1364 | 0.9752 mg/L                |      |    |        |          |
|       | BA455 | AV   | 1353.7                     | EM   | SD | 11.1   | CV 0.8   |
|       | BA455 | AV   | 0.9676                     | mg/L | SD | 0.0081 | CV 0.84  |
|       |       |      | REPLICATE #1 1211 10/15/98 |      |    |        |          |
| BA455 | EM    | 57   | 0.0146 mg/L                |      |    |        |          |
|       |       |      | REPLICATE #2               |      |    |        |          |
| BA455 | EM    | 52   | 0.0109 mg/L                |      |    |        |          |
|       |       |      | REPLICATE #3               |      |    |        |          |
| BA455 | EM    | 65   | 0.0205 mg/L peak-noisy     |      |    |        |          |
|       | BA455 | AV   | 58.0                       | EM   | SD | 6.6    | CV 11.3  |
|       | BA455 | AV   | 0.0153                     | mg/L | SD | 0.0048 | CV 31.43 |
|       |       |      | REPLICATE #1 1213 10/15/98 |      |    |        |          |
| BA455 | EM    | 47   | 0.0072 mg/L peak-noisy     |      |    |        |          |
|       |       |      | REPLICATE #2               |      |    |        |          |
| BA455 | EM    | 44   | 0.0050 mg/L peak-noisy     |      |    |        |          |
|       |       |      | REPLICATE #3               |      |    |        |          |
| BA455 | EM    | 52   | 0.0109 mg/L peak-noisy     |      |    |        |          |
|       | BA455 | AV   | 47.7                       | EM   | SD | 4.0    | CV 8.5   |
|       | BA455 | AV   | 0.0077                     | mg/L | SD | 0.0030 | CV 38.39 |
|       |       |      | REPLICATE #1 1215 10/15/98 |      |    |        |          |
| BA455 | EM    | 52   | 0.0109 mg/L                |      |    |        |          |
|       |       |      | REPLICATE #2               |      |    |        |          |
| BA455 | EM    | 50   | 0.0095 mg/L peak-noisy     |      |    |        |          |
|       |       |      | REPLICATE #3               |      |    |        |          |
| BA455 | EM    | 57   | 0.0146 mg/L peak-noisy     |      |    |        |          |
|       | BA455 | AV   | 53.0                       | EM   | SD | 3.6    | CV 6.8   |
|       | BA455 | AV   | 0.0117                     | mg/L | SD | 0.0026 | CV 22.73 |
|       |       |      | REPLICATE #1 1217 10/15/98 |      |    |        |          |
| BA455 | EM    | 69   | 0.0234 mg/L peak-noisy     |      |    |        |          |
|       |       |      | REPLICATE #2               |      |    |        |          |
| BA455 | EM    | 70   | 0.0242 mg/L                |      |    |        |          |
|       |       |      | REPLICATE #3               |      |    |        |          |
| BA455 | EM    | 80   | 0.0315 mg/L peak-noisy     |      |    |        |          |
|       | BA455 | AV   | 73.0                       | EM   | SD | 6.1    | CV 8.3   |
|       | BA455 | AV   | 0.0264                     | mg/L | SD | 0.0045 | CV 16.96 |
|       |       |      | REPLICATE #1 1219 10/15/98 |      |    |        |          |
| BA455 | EM    | 56   | 0.0139 mg/L peak-noisy     |      |    |        |          |
|       |       |      | REPLICATE #2               |      |    |        |          |
| BA455 | EM    | 55   | 0.0131 mg/L peak-noisy     |      |    |        |          |

|                     |    |             |                        |               |
|---------------------|----|-------------|------------------------|---------------|
| BA455               | EM | 54          | 0.0124 mg/L            | peak-noisy    |
| BA455               | AV | 55.0        | EM SD 1.0 CV 1.8       |               |
| BA455               | AV | 0.0131 mg/L | SD 0.0007 CV 5.60      |               |
| <b>REPLICATE #1</b> |    |             |                        | 1221 10/15/98 |
| BA455               | EM | 402         | 0.2682 mg/L            |               |
| <b>REPLICATE #2</b> |    |             |                        |               |
| BA455               | EM | 431         | 0.2895 mg/L            |               |
| <b>REPLICATE #3</b> |    |             |                        |               |
| BA455               | EM | 398         | 0.2652 mg/L            |               |
| BA455               | AV | 410.3       | EM SD 18.0 CV 4.4      |               |
| BA455               | AV | 0.2743 mg/L | SD 0.0132 CV 4.83      |               |
| <b>REPLICATE #1</b> |    |             |                        | 1223 10/15/98 |
| BA455               | EM | 523         | 0.3571 mg/L            |               |
| <b>REPLICATE #2</b> |    |             |                        |               |
| BA455               | EM | 536         | 0.3666 mg/L            |               |
| <b>REPLICATE #3</b> |    |             |                        |               |
| BA455               | EM | 510         | 0.3475 mg/L            |               |
| BA455               | AV | 523.0       | EM SD 13.0 CV 2.5      |               |
| BA455               | AV | 0.3571 mg/L | SD 0.0096 CV 2.68      |               |
| <b>REPLICATE #1</b> |    |             |                        | 1225 10/15/98 |
| BA455               | EM | 408         | 0.2726 mg/L            |               |
| <b>REPLICATE #2</b> |    |             |                        |               |
| BA455               | EM | 455         | 0.3071 mg/L            |               |
| <b>REPLICATE #3</b> |    |             |                        |               |
| BA455               | EM | 406         | 0.2711 mg/L            |               |
| BA455               | AV | 423.0       | EM SD 27.7 CV 6.6      |               |
| BA455               | AV | 0.2836 mg/L | SD 0.0204 CV 7.19      |               |
| <b>REPLICATE #1</b> |    |             |                        | 1227 10/15/98 |
| BA455               | EM | 1515        | 1.0862 mg/L            |               |
| <b>REPLICATE #2</b> |    |             |                        |               |
| BA455               | EM | 1611        | 1.1567 mg/L            |               |
| <b>REPLICATE #3</b> |    |             |                        |               |
| BA455               | EM | 1498        | 1.0737 mg/L            |               |
| BA455               | AV | 1541.3      | EM SD 60.9 CV 4.0      |               |
| BA455               | AV | 1.1055 mg/L | SD 0.0448 CV 4.05      |               |
| <b>REPLICATE #1</b> |    |             |                        | 1230 10/15/98 |
| BA455               | EM | 42          | 0.0036 mg/L peak-noisy |               |
| <b>REPLICATE #2</b> |    |             |                        |               |
| BA455               | EM | 41          | 0.0028 mg/L peak-noisy |               |

| DATE           | EM | SD     | 0.0014 mg/L                        | peak noise           |
|----------------|----|--------|------------------------------------|----------------------|
| BA455          | AV | 40.7   | EM SD 1.5 CV                       | 3.8                  |
| BA455          | AV | 0.0026 | mg/L SD 0.0011 CV                  | 43.30                |
| <b>006 . 1</b> |    |        | <b>REPLICATE #1</b>                | <b>1232 10/15/98</b> |
| BA455          | EM | 813    | 0.5702 mg/L                        |                      |
| <b>006 . 1</b> |    |        | <b>REPLICATE #2</b>                |                      |
| BA455          | EM | 835    | 0.5864 mg/L                        |                      |
| <b>006 . 1</b> |    |        | <b>REPLICATE #3</b>                |                      |
| BA455          | EM | 824    | 0.5783 mg/L                        |                      |
| BA455          | AV | 824.0  | EM SD 11.0 CV                      | 1.3                  |
| BA455          | AV | 0.5783 | mg/L SD 0.0081 CV                  | 1.40                 |
| BA455          | EM | 1841   | <b>REPLICATE #1</b><br>1.3258 mg/L | <b>1234 10/15/98</b> |
| BA455          | EM | 1996   | <b>REPLICATE #2</b><br>1.4397 mg/L |                      |
| BA455          | EM | 1899   | <b>REPLICATE #3</b><br>1.3684 mg/L |                      |
| BA455          | AV | 1912.0 | EM SD 78.3 CV                      | 4.1                  |
| BA455          | AV | 1.3780 | mg/L SD 0.0576 CV                  | 4.18                 |
| BA455          | EM | 1079   | <b>REPLICATE #1</b><br>0.7657 mg/L | <b>1236 10/15/98</b> |
| BA455          | EM | 1024   | <b>REPLICATE #2</b><br>0.7253 mg/L |                      |
| BA455          | EM | 1160   | <b>REPLICATE #3</b><br>0.8253 mg/L |                      |
| BA455          | AV | 1087.7 | EM SD 68.4 CV                      | 6.3                  |
| BA455          | AV | 0.7721 | mg/L SD 0.0503 CV                  | 6.51                 |
| BA455          | EM | 1034   | <b>REPLICATE #1</b><br>0.7327 mg/L | <b>1238 10/15/98</b> |
| BA455          | EM | 1058   | <b>REPLICATE #2</b><br>0.7503 mg/L |                      |
| BA455          | EM | 1038   | <b>REPLICATE #3</b><br>0.7356 mg/L |                      |
| BA455          | AV | 1043.3 | EM SD 12.9 CV                      | 1.2                  |
| BA455          | AV | 0.7395 | mg/L SD 0.0095 CV                  | 1.28                 |
| BA455          | EM | 836    | <b>REPLICATE #1</b><br>0.5871 mg/L | <b>1240 10/15/98</b> |
| BA455          | EM | 853    | <b>REPLICATE #2</b><br>0.5996 mg/L |                      |
|                |    |        | <b>REPLICATE #3</b>                |                      |

BA455 AV 847.3 EM SD 9.8 CV 1.2

BA455 AV 0.5955 mg/L SD 0.0072 CV 1.21

V  
BA455 EM 1508 REPLICATE #1 1242 10/15/98  
1.0810 mg/L

V  
BA455 EM 1531 REPLICATE #2  
1.0979 mg/L

V  
BA455 EM 1501 REPLICATE #3  
1.0759 mg/L

BA455 AV 1513.3 EM SD 15.7 CV 1.0

BA455 AV 1.0850 mg/L SD 0.0115 CV 1.06

B  
BA455 EM 39 REPLICATE #1 1244 10/15/98  
0.0014 mg/L peak-noisy

B  
BA455 EM 41 REPLICATE #2  
0.0028 mg/L peak-noisy

B  
BA455 EM 35 REPLICATE #3  
-0.0016 mg/L peak-noisy

BA455 AV 38.3 EM SD 3.1 CV 8.0

BA455 AV 0.0009 mg/L SD 0.0022 CV 255.78

|                      |                       |                   |
|----------------------|-----------------------|-------------------|
| Element File: BE.GEL | Element: Be           | Wavelength: 234.9 |
| Date: 10/22/98       | Time: 16:30           | Slit: 0.7 L       |
| Data File:           | ID/Wt File: 81013.IDW | Lamp Current: 30  |
| Technique: HGA       | Calib. Type: Linear   | Energy: 65        |

~~~~~

Sample ID: BLANK	Seq. No.: 00050	A/S Pos.: 0	Date: 10/22/98
------------------	-----------------	-------------	----------------

Replicate 1	Time: 16:30
Peak Area (A-s): -0.003	Peak Height (A): 0.003
Background Pk Area (A-s): 0.550	Background Pk Height (A): 0.195
Blank Corrected Pk Area (A-s): -0.006	
Concentration (ug/L): -0.37	

Replicate 2	Time: 16:33
Peak Area (A-s): -0.003	Peak Height (A): 0.002
Background Pk Area (A-s): 0.288	Background Pk Height (A): 0.101
Blank Corrected Pk Area (A-s): -0.006	
Concentration (ug/L): -0.36	

Mean Conc (ug/L): -0.37	SD: 0.005	RSD(%): 1.39
--------------------------	-----------	--------------

Auto-zero performed.

~~~~~

|                    |                 |             |                |
|--------------------|-----------------|-------------|----------------|
| Sample ID: 0.5 PPB | Seq. No.: 00051 | A/S Pos.: 1 | Date: 10/22/98 |
|--------------------|-----------------|-------------|----------------|

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 1                          | Time: 16:36                     |
| Peak Area (A-s): 0.008               | Peak Height (A): 0.023          |
| Background Pk Area (A-s): 0.180      | Background Pk Height (A): 0.122 |
| Blank Corrected Pk Area (A-s): 0.011 |                                 |
| Concentration (ug/L ): 0.68          |                                 |

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 2                          | Time: 16:40                     |
| Peak Area (A-s): 0.010               | Peak Height (A): 0.029          |
| Background Pk Area (A-s): 0.149      | Background Pk Height (A): 0.121 |
| Blank Corrected Pk Area (A-s): 0.013 |                                 |
| Concentration (ug/L ): 0.79          |                                 |

|                         |           |               |
|-------------------------|-----------|---------------|
| Mean Conc (ug/L ): 0.73 | SD: 0.079 | RSD(%): 10.74 |
|-------------------------|-----------|---------------|

Standard number 1 applied. [0.50]

|                                  |               |
|----------------------------------|---------------|
| Correlation coefficient: 1.00000 | Slope: 0.0237 |
|----------------------------------|---------------|

~~~~~

Sample ID: 2 PPB	Seq. No.: 00052	A/S Pos.: 2	Date: 10/22/98
------------------	-----------------	-------------	----------------

Replicate 1	Time: 16:43
Peak Area (A-s): 0.039	Peak Height (A): 0.096
Background Pk Area (A-s): 0.186	Background Pk Height (A): 0.245
Blank Corrected Pk Area (A-s): 0.042	
Concentration (ug/L): 1.76	

Replicate 2	Time: 16:46
Peak Area (A-s): 0.041	Peak Height (A): 0.118
Background Pk Area (A-s): 0.182	Background Pk Height (A): 0.276
Blank Corrected Pk Area (A-s): 0.044	
Concentration (ug/L): 1.87	

Mean Conc (ug/L): 1.81 SD: 0.082 RSD(%): 4.52

Standard number 2 applied. [2.00]
Correlation coefficient: 0.99891 Slope: 0.0216

~~~~~  
3e ID: 5 PPB Seq. No.: 00053 A/S Pos.: 3 Date: 10/22/9

Replicate 1  
Peak Area (A-s): 0.100 Time: 16:49  
Background Pk Area (A-s): 0.305 Peak Height (A): 0.255  
Blank Corrected Pk Area (A-s): 0.103 Background Pk Height (A): 0.632  
Concentration (ug/L ): 4.76

Replicate 2  
Peak Area (A-s): 0.103 Time: 16:52  
Background Pk Area (A-s): 0.297 Peak Height (A): 0.250  
Blank Corrected Pk Area (A-s): 0.106 Background Pk Height (A): 0.630  
Concentration (ug/L ): 4.88

Mean Conc (ug/L ): 4.82 SD: 0.085 RSD(%): 1.77

Standard number 3 applied. [5.00]  
Correlation coefficient: 0.99966 Slope: 0.0210

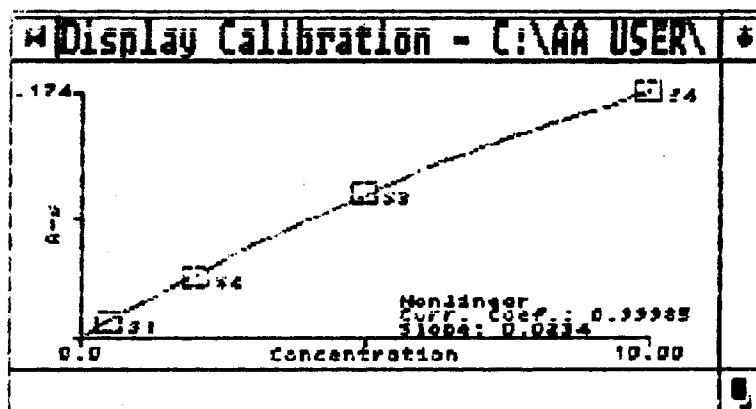
~~~~~  
3e ID: 10 PPB Seq. No.: 00054 A/S Pos.: 4 Date: 10/22/9

Replicate 1
Peak Area (A-s): 0.173 Time: 16:55
Background Pk Area (A-s): 0.505 Peak Height (A): 0.286
Blank Corrected Pk Area (A-s): 0.176 Background Pk Height (A): 1.139
Concentration (ug/L): 8.39

Replicate 2
Peak Area (A-s): 0.170 Time: 16:58
Background Pk Area (A-s): 0.500 Peak Height (A): 0.268
Blank Corrected Pk Area (A-s): 0.173 Background Pk Height (A): 1.194
Concentration (ug/L): 8.23

Mean Conc (ug/L): 8.31 SD: 0.113 RSD(%): 1.36

Standard number 4 applied. [10.00]
Correlation coefficient: 0.99183 Slope: 0.0184



~~~~~

Be ID: ICV Seq. No.: 00055 A/S Pos.: 5 Date: 10/22/9

Replicate 1 Time: 17:05

Concentration (ug/L ): 5.12

Replicate 2 Time: 17:08

Concentration (ug/L ): 5.01

Mean Conc (ug/L ): 5.07 SD: 0.077 RSD(%): 1.51

QC sample is within range 3.5 - 6.49

~~~~~

Be ID: ICB Seq. No.: 00056 A/S Pos.: 0 Date: 10/22/9

Replicate 1 Time: 17:11

Concentration (ug/L): 0.16

Replicate 2 Time: 17:14

Concentration (ug/L): 0.16

Mean Conc (ug/L): 0.16 SD: 0.002 RSD(%): 1.25

QC sample is within range -1.49 - 1.49

Auto-zero performed.

~~~~~

Be ID: 81003.RB-AP Seq. No.: 00057 A/S Pos.: 14 Date: 10/22/9

Replicate 1 Time: 17:17

Concentration (ug/L ): -0.01

Replicate 2 Time: 17:20

Concentration (ug/L ): -0.02

Mean Conc (ug/L ): -0.02 SD: 0.008 RSD(%): 44.50

~~~~~

Be ID: 81003.RB-F Seq. No.: 00058 A/S Pos.: 15 Date: 10/22/9

Replicate 1 Time: 17:24

Concentration (ug/L): 0.01

Replicate 2

Time: 17:27

Concentration (ug/L): -0.03

Mean Conc (ug/L): -0.01

SD: 0.027

RSD(%): 232.31

3e ID: B1003.DB

Seq. No.: 00059

A/S Pos.: 16

Date: 10/22/9

Replicate 1

Time: 17:30

Concentration (ug/L): -0.01

Replicate 2

Time: 17:33

Concentration (ug/L): -0.04

Mean Conc (ug/L): -0.03

SD: 0.020

RSD(%): 74.92

3e ID: B1003.UB

Seq. No.: 00060

A/S Pos.: 17

Date: 10/22/9

Replicate 1

Time: 17:36

Concentration (ug/L): 0.02

Replicate 2

Time: 17:39

Concentration (ug/L): 0.02

Mean Conc (ug/L): 0.02

SD: 0.002

RSD(%): 8.01

3e ID: B1003.IB

Seq. No.: 00061

A/S Pos.: 18

Date: 10/22/9

Replicate 1

Time: 17:43

Concentration (ug/L): 0.02

Replicate 2

Time: 17:46

Concentration (ug/L): 0.03

Mean Conc (ug/L): 0.03

SD: 0.006

RSD(%): 21.15

3e ID: B1003.O1

Seq. No.: 00062

A/S Pos.: 19

Date: 10/22/9

Replicate 1

Time: 17:49

Concentration (ug/L): 0.04

Replicate 2

Time: 17:52

Concentration (ug/L): -0.00

Mean Conc (ug/L): 0.02

SD: 0.028

RSD(%): 163.6

3e ID: B1003.O1

Seq. No.: 00063

A/S Pos.: 19

Date: 10/22/9

Replicate 1

Time: 17:55

Concentration (ug/L): 4.51

Replicate 2

Time: 17:59

Concentration (ug/L): 4.61

Mean Conc (ug/L): 4.56 SD: 0.073 RSD(%): 1.60

Recovery is 90.8%

~~~~~  
Be ID: 81003.02 Seq. No.: 00064 A/S Pos.: 20 Date: 10/22/

Replicate 1 Time: 18:02

Concentration (ug/L ): 0.04

Replicate 2 Time: 18:05

Concentration (ug/L ): 0.05

Mean Conc (ug/L ): 0.05 SD: 0.006 RSD(%): 12.9%

~~~~~  
Be ID: 81003.03 Seq. No.: 00065 A/S Pos.: 21 Date: 10/22/

Replicate 1 Time: 18:08

Concentration (ug/L): 0.01

Replicate 2 Time: 18:11

Concentration (ug/L): -0.02

Mean Conc (ug/L): -0.00 SD: 0.019 RSD(%): 961.6%

~~~~~  
Be ID: CCV Seq. No.: 00066 A/S Pos.: 3 Date: 10/22/

Replicate 1 Time: 18:15

Concentration (ug/L ): 4.81

Replicate 2 Time: 18:18

Concentration (ug/L ): 4.85

Mean Conc (ug/L ): 4.83 SD: 0.028 RSD(%): 0.57

QC sample is within range 3.5 - 6.49

~~~~~  
Be ID: CCB Seq. No.: 00067 A/S Pos.: 0 Date: 10/22/

Replicate 1 Time: 18:21

Concentration (ug/L): -0.01

Replicate 2 Time: 18:24

Concentration (ug/L): -0.02

Mean Conc (ug/L): -0.01 SD: 0.008 RSD(%): 55.9%

QC sample is within range -1.49 - 1.49

~~~~~  
Be ID: 81003.U1 Seq. No.: 00068 A/S Pos.: 22 Date: 10/22/9

Replicate 1 Time: 18:27

Concentration (ug/L ): 0.04

Replicate 2 Time: 18:30

```

-- Concentration (ug/L ): 0.08
-- Mean Conc (ug/L ): 0.06 SD: 0.022 RSD(%): 35.95
-- ~~~~~
3e ID: B1003.U2 Seq. No.: 00069 A/S Pos.: 23 Date: 10/22/9
--
-- Replicate 1 Time: 18:33
-- Concentration (ug/L ): 0.09
--
-- Replicate 2 Time: 18:36
-- Concentration (ug/L ): 0.25
--
-- Mean Conc (ug/L ): 0.17 SD: 0.109 RSD(%): 63.62
-- ~~~~~
3e ID: B1003.U3 Seq. No.: 00070 A/S Pos.: 24 Date: 10/22/9
--
-- Replicate 1 Time: 18:39
-- Concentration (ug/L ): 0.12
--
-- Replicate 2 Time: 18:42
-- Concentration (ug/L ): 0.12
--
-- Mean Conc (ug/L ): 0.12 SD: 0.005 RSD(%): 3.83
-- ~~~~~
3e ID: B1003.I1 Seq. No.: 00071 A/S Pos.: 25 Date: 10/22/9
--
-- Replicate 1 Time: 18:46
-- Concentration (ug/L ): 9.48
--
-- Replicate 2 Time: 18:49
-- Concentration (ug/L ): 9.66
--
-- Mean Conc (ug/L ): 9.57 SD: 0.124 RSD(%): 1.30
-- ~~~~~
3e ID: B1003.I2 Seq. No.: 00072 A/S Pos.: 26 Date: 10/22/9
--
-- Replicate 1 Time: 18:52
-- Concentration (ug/L ): 10.79
--
-- Replicate 2 Time: 18:55
-- Concentration (ug/L ): 10.67
--
-- Mean Conc (ug/L ): 10.73 SD: 0.084 RSD(%): 0.79
-- ~~~~~
3e ID: B1003.I3 Seq. No.: 00073 A/S Pos.: 27 Date: 10/22/9
--
-- Replicate 1 Time: 18:58
-- Concentration (ug/L ): 10.24
--
-- Replicate 2 Time: 19:01
-- Concentration (ug/L ): 10.10
--
-- Mean Conc (ug/L ): 10.17 SD: 0.101 RSD(%): 0.99

```

~~~~~  
Be ID: CCV Seq. No.: 00074 A/S Pos.: 3 Date: 10/22/

Replicate 1 Time: 19:04
Concentration (ug/L): 5.36

Replicate 2 Time: 19:07
Concentration (ug/L): 4.95

Mean Conc (ug/L): 5.15 SD: 0.297 RSD(%): 5.75

QC sample is within range 3.5 - 6.49

~~~~~  
Be ID: CCB Seq. No.: 00075 A/S Pos.: 0 Date: 10/22/

Replicate 1 Time: 19:10  
Concentration (ug/L ): 0.06

Replicate 2 Time: 19:13  
Concentration (ug/L ): 0.03

Mean Conc (ug/L ): 0.05 SD: 0.021 RSD(%): 44.39

QC sample is within range -1.49 - 1.49

~~~~~  
Be ID: B1006.1 Seq. No.: 00076 A/S Pos.: 28 Date: 10/22/

Replicate 1 Time: 19:16
Concentration (ug/L): 6.62

Replicate 2 Time: 19:19
Concentration (ug/L): 7.39

Mean Conc (ug/L): 7.00 SD: 0.546 RSD(%): 7.80

~~~~~  
Be ID: B1006.1 Seq. No.: 00077 A/S Pos.: 28 Date: 10/22/

Replicate 1 Time: 19:22  
Concentration (ug/L ): 9.59

Replicate 2 Time: 19:26  
Concentration (ug/L ): 10.54

Mean Conc (ug/L ): 10.05 SD: 0.671 RSD(%): 6.66

Recovery is 61.1%

~~~~~  
Be ID: B1006.2 Seq. No.: 00078 A/S Pos.: 29 Date: 10/22/

Replicate 1 Time: 19:29
Concentration (ug/L): 7.16

Replicate 2 Time: 19:32
Concentration (ug/L): 7.66

MAIN: 0.001 AA HO 0.001 MAIN: 0.000 AA HO-0.000
CD MEAN: 0.000 SD: 0.000 RSD: 80.4 AUTOZERO 0.000

MAIN: 0.017 AA HO 0.017 MAIN: 0.016 AA HO 0.016
CD MEAN: 0.016 SD: 0.000 RSD: 2.6 1.STANDARD 0.050 MG/L

MAIN: 0.097 MG/L AA HO 0.032 MAIN: 0.098 MG/L AA HO 0.032
CD MEAN: 0.098 MG/L SD: 0.001 RSD: 1.0 2.STANDARD 0.100 MG/L

MAIN: 0.197 MG/L AA HO 0.063 MAIN: 0.199 MG/L AA HO 0.064
CD MEAN: 0.198 MG/L SD: 0.002 RSD: 0.8 3.STANDARD 0.200 MG/L

MAIN: 0.477 MG/L AA HO 0.152 MAIN: 0.471 MG/L AA HO 0.150
CD MEAN: 0.474 MG/L SD: 0.005 RSD: 1.0 4.STANDARD 0.495 MG/L

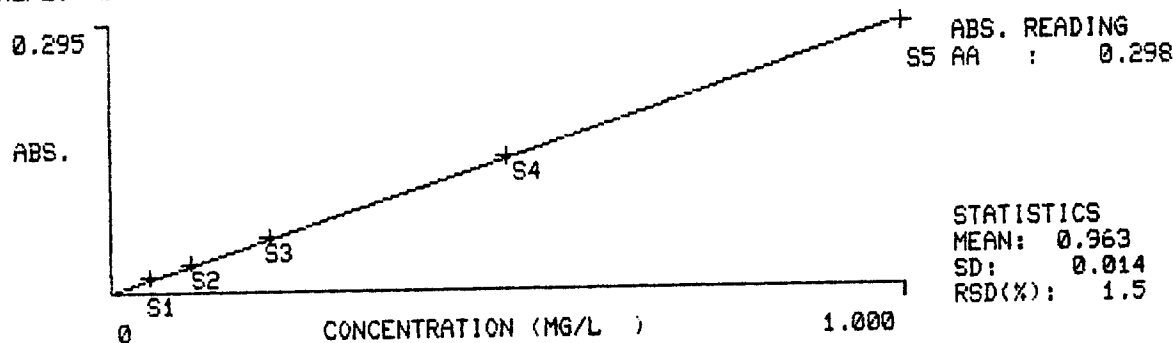
MAIN: 0.953 MG/L AA HO 0.291 MAIN: 0.974 MG/L AA HO 0.298
CD MEAN: 0.963 MG/L SD: 0.014 RSD: 1.5 5.STANDARD 0.991 MG/L

FLAME DISPLAY CALIBRATION MODE
ELEMENT: CD

PRINTER: ON
BG CORR: OFF
UNITS : MG/L

0.991

REPL. 0 OF 2



C2H2: 2.5 L/MIN OXIDANT: 8.0 L/MIN FLAME: C2H2-AIR

MAIN: 0.008 MG/L AA HO 0.000 MAIN: 0.008 MG/L AA HO 0.000
CD MEAN: 0.008 MG/L SD: 0.000 RSD: 1.5 AUTOZERO 0.000

AA
MAIN: 0.520 MG/L HD 0.155

AA
MAIN: 0.524 MG/L HD 0.156

CD *ICV* MEAN: 0.522 MG/L SD: 0.002 RSD: 0.5

AA
MAIN: 0.003 MG/L HD 0.001

AA
MAIN: 0.003 MG/L HD 0.001

CD *ICB* MEAN: 0.003 MG/L SD: 0.001 RSD: 22.1

AA
MAIN: 0.004 MG/L HD 0.001

AA
MAIN: 0.003 MG/L HD 0.001

CD *setp* MEAN: 0.004 MG/L SD: 0.001 RSD: 18.5 AUTOZERO 0.000

AA
MAIN: 0.020 MG/L HD 0.006

AA
MAIN: 0.019 MG/L HD 0.006

1002 CD *B-1* MEAN: 0.020 MG/L SD: 0.001 RSD: 3.6

AA
MAIN: 0.012 MG/L HD 0.004

AA
MAIN: 0.013 MG/L HD 0.004

CD *8-1* MEAN: 0.013 MG/L SD: 0.001 RSD: 6.0

AA
MAIN: 0.414 MG/L HD 0.123

AA
MAIN: 0.418 MG/L HD 0.124

CD *8-15* MEAN: 0.416 MG/L SD: 0.003 RSD: 0.6

AA
MAIN: 0.017 MG/L HD 0.005

AA
MAIN: 0.018 MG/L HD 0.005

CD *9-1* MEAN: 0.017 MG/L SD: 0.000 RSD: 2.8

AA
MAIN: 0.018 MG/L HD 0.005

AA
MAIN: 0.017 MG/L HD 0.005

CD *9-10* MEAN: 0.017 MG/L SD: 0.000 RSD: 2.6

AA
MAIN: 0.021 MG/L HD 0.006

AA
MAIN: 0.021 MG/L HD 0.006

CD *10-1* MEAN: 0.021 MG/L SD: 0.000 RSD: 2.3

AA
MAIN: 0.024 MG/L HD 0.007

AA
MAIN: 0.026 MG/L HD 0.008

CD *B-2A* MEAN: 0.025 MG/L SD: 0.001 RSD: 3.9

MAIN: 0.029 MG/L HD 0.009 AA
MAIN: 0.029 MG/L HD 0.009 AA

CD ~~8-2A~~ MEAN: 0.029 MG/L SD: 0.000 RSD: 1.4

MAIN: 0.387 MG/L HD 0.115 AA
MAIN: 0.389 MG/L HD 0.116 AA

CD ~~8-2A~~ MEAN: 0.388 MG/L SD: 0.001 RSD: 0.3

MAIN: 0.502 MG/L HD 0.149 AA
MAIN: 0.488 MG/L HD 0.145 AA

CD ~~8-2A~~ MEAN: 0.495 MG/L SD: 0.009 RSD: 1.9

MAIN: 0.002 MG/L HD 0.001 AA
MAIN: 0.001 MG/L HD 0.000 AA

CD ~~8-2A~~ MEAN: 0.001 MG/L SD: 0.000 RSD: 29.9

MAIN: 0.029 MG/L HD 0.009 AA
MAIN: 0.031 MG/L HD 0.009 AA

CD ~~8-2A~~ MEAN: 0.030 MG/L SD: 0.002 RSD: 5.4

MAIN: 0.026 MG/L HD 0.008 AA
MAIN: 0.030 MG/L HD 0.009 AA

CD ~~8-2A~~ MEAN: 0.028 MG/L SD: 0.003 RSD: 10.2

MAIN: 0.027 MG/L HD 0.008 AA
MAIN: 0.029 MG/L HD 0.009 AA

CD ~~10-2A~~ MEAN: 0.028 MG/L SD: 0.001 RSD: 3.2

MAIN: 0.020 MG/L HD 0.006 AA
MAIN: 0.018 MG/L HD 0.005 AA

CD ~~12-1P~~ MEAN: 0.019 MG/L SD: 0.002 RSD: 10.0

MAIN: 0.017 MG/L HD 0.005 AA
MAIN: 0.017 MG/L HD 0.005 AA

CD ~~12-1P~~ MEAN: 0.017 MG/L SD: 0.000 RSD: 2.1

MAIN: 0.020 MG/L HD 0.006 AA
MAIN: 0.019 MG/L HD 0.006 AA

CD ~~03~~ MEAN: 0.020 MG/L SD: 0.001 RSD: 3.8

AA
MAIN: 0.018 MG/L HD 0.005

AA
MAIN: 0.017 MG/L HD 0.005

CD *uB* MEAN: 0.018 MG/L SD: 0.001 RSD: 3.0

AA
MAIN: 0.022 MG/L HD 0.006

AA
MAIN: 0.019 MG/L HD 0.006

CD *IB* MEAN: 0.020 MG/L SD: 0.002 RSD: 9.6

AA
MAIN: 0.503 MG/L HD 0.149

AA
MAIN: 0.519 MG/L HD 0.154

CD *ccv* MEAN: 0.511 MG/L SD: 0.011 RSD: 2.2

AA
MAIN: 0.003 MG/L HD 0.001

AA
MAIN: 0.003 MG/L HD 0.001

CD *ccB* MEAN: 0.003 MG/L SD: 0.000 RSD: 3.6

AA
MAIN: 0.003 MG/L HD 0.001

AA
MAIN: 0.001 MG/L HD 0.000

CD *stp* MEAN: 0.002 MG/L SD: 0.002 RSD: 97.5 AUTOZERO 0.000

AA
MAIN: 0.016 MG/L HD 0.005

AA
MAIN: 0.019 MG/L HD 0.006

CD *01* MEAN: 0.018 MG/L SD: 0.003 RSD: 15.3

AA
MAIN: 0.013 MG/L HD 0.004

AA
MAIN: 0.014 MG/L HD 0.004

CD *02* MEAN: 0.014 MG/L SD: 0.001 RSD: 4.9

AA
MAIN: 0.014 MG/L HD 0.004

AA
MAIN: 0.013 MG/L HD 0.004

CD *02D* MEAN: 0.014 MG/L SD: 0.000 RSD: 2.0

AA
MAIN: 0.017 MG/L HD 0.005

AA
MAIN: 0.017 MG/L HD 0.005

CD *03* MEAN: 0.017 MG/L SD: 0.000 RSD: 1.1

AA
MAIN: 0.020 MG/L HD 0.006

AA
MAIN: 0.019 MG/L HD 0.006

CD *u1* MEAN: 0.019 MG/L SD: 0.001 RSD: 5.8

AA
MAIN: 0.016 MG/L HD 0.005 MAIN: 0.017 MG/L HD 0.005

CD 42 MEAN: 0.016 MG/L SD: 0.001 RSD: 7.0

AA
MAIN: 0.011 MG/L HD 0.003 MAIN: 0.012 MG/L HD 0.003

CD 43 MEAN: 0.011 MG/L SD: 0.001 RSD: 5.9

AA
MAIN: 0.499 MG/L HD 0.148 MAIN: 0.500 MG/L HD 0.149

CD CCV MEAN: 0.500 MG/L SD: 0.001 RSD: 0.2

AA
MAIN: 0.001 MG/L HD 0.000 MAIN: 0.002 MG/L HD 0.001

CD CCB MEAN: 0.002 MG/L SD: 0.001 RSD: 35.5

AA
MAIN: 0.030 MG/L HD 0.009 MAIN: 0.030 MG/L HD 0.009

CD 41 MEAN: 0.030 MG/L SD: 0.000 RSD: 0.6

AA
MAIN: 0.415 MG/L HD 0.123 MAIN: 0.421 MG/L HD 0.125

CD 45 MEAN: 0.418 MG/L SD: 0.004 RSD: 0.9

AA
MAIN: 0.038 MG/L HD 0.011 MAIN: 0.038 MG/L HD 0.011

CD 42 MEAN: 0.038 MG/L SD: 0.000 RSD: 0.9

AA
MAIN: 0.041 MG/L HD 0.012 MAIN: 0.044 MG/L HD 0.013

CD 43 MEAN: 0.043 MG/L SD: 0.002 RSD: 5.3

AA
MAIN: 0.024 MG/L HD 0.007 MAIN: 0.026 MG/L HD 0.008

06
CD 1 MEAN: 0.025 MG/L SD: 0.001 RSD: 5.8

AA
MAIN: 0.412 MG/L HD 0.122 MAIN: 0.406 MG/L HD 0.121

CD 15 MEAN: 0.409 MG/L SD: 0.005 RSD: 1.1

AA
MAIN: 0.020 MG/L HD 0.006

AA
MAIN: 0.020 MG/L HD 0.006

CD 2 MEAN: 0.020 MG/L SD: 0.000 RSD: 0.1

AA
MAIN: 0.018 MG/L HD 0.005

AA
MAIN: 0.018 MG/L HD 0.005

CD 2D MEAN: 0.018 MG/L SD: 0.000 RSD: 0.8

AA
MAIN: 0.025 MG/L HD 0.007

AA
MAIN: 0.025 MG/L HD 0.007

CD 3 MEAN: 0.025 MG/L SD: 0.000 RSD: 0.1

AA
MAIN: 0.511 MG/L HD 0.152

AA
MAIN: 0.514 MG/L HD 0.153

CD CCV MEAN: 0.513 MG/L SD: 0.002 RSD: 0.5

AA
MAIN: 0.005 MG/L HD 0.002

AA
MAIN: 0.005 MG/L HD 0.001

CD CCB MEAN: 0.005 MG/L SD: 0.000 RSD: 7.0

hod File Name: CR
arks: CR ONLY

Replicates:4

Read Delay: 65
Data File:

Wt file is 10236

STANDARD #1	REPLICATE #1	1506 10/16/98
cr267 EM 683		
STANDARD #1	REPLICATE #2	
cr267 EM 667		
STANDARD #1	REPLICATE #3	
cr267 EM 679		
STANDARD #1	REPLICATE #4	
cr267 EM 685		
cr267 AV 678.5 SD 8.1 CV 1.2 CONC 0.1000		
STANDARD #2	REPLICATE #1	1508 10/16/98
cr267 EM 2848		
STANDARD #2	REPLICATE #2	
cr267 EM 2825		
STANDARD #2	REPLICATE #3	
cr267 EM 3371		
STANDARD #2	REPLICATE #4	
cr267 EM 2785		
cr267 AV 2957.3 SD 277.1 CV 9.4 CONC 1.0000		
STANDARD #3	REPLICATE #1	1510 10/16/98
cr267 EM 5289		
STANDARD #3	REPLICATE #2	
cr267 EM 5592		
STANDARD #3	REPLICATE #3	
cr267 EM 5139		
STANDARD #3	REPLICATE #4	
cr267 EM 5327		
cr267 AV 5336.8 SD 188.5 CV 3.5 CONC 2.0000		
STANDARD #4	REPLICATE #1	1512 10/16/98
cr267 EM 12473		
STANDARD #4	REPLICATE #2	
cr267 EM 12358		
STANDARD #4	REPLICATE #3	
cr267 EM 12505		

STANDARD #4			REPLICATE #4					
	cr267	EM	12446					
	cr267	AV	12453.0	SD	73.5	CV	0.6	CONC 5.0000
ANK	cr267	EM	514	REPLICATE #1 1514 10/16/98				
ANK	cr267	EM	506	REPLICATE #2				
ANK	cr267	EM	489	REPLICATE #3				
ANK	cr267	EM	529	REPLICATE #4				
	cr267	AV	509.5	SD	16.7	CV	3.3	CONC 0.0000
	cr267	CC	0.9999	SLOPE	2393.9426	INT	508.8128	
CV	cr267	EM	5005	REPLICATE #1 1516 10/16/98				
				1.8782 mg/L				
CV	cr267	EM	5164	REPLICATE #2				
				1.9446 mg/L				
CV	cr267	EM	5113	REPLICATE #3				
				1.9233 mg/L				
CV	cr267	EM	5724	REPLICATE #4				
				2.1785 mg/L				
	cr267	AV	5251.5	EM	SD	321.9	CV	6.1
	cr267	AV	1.9811	mg/L	SD	0.1345	CV	6.79
CB	cr267	EM	477	REPLICATE #1 1518 10/16/98				
				-0.0133 mg/L peak-noisy				
CB	cr267	EM	437	REPLICATE #2				
				-0.0300 mg/L window-edge				
CB	cr267	EM	434	REPLICATE #3				
				-0.0313 mg/L window-edge				
CB	cr267	EM	496	REPLICATE #4				
				-0.0054 mg/L window-edge				
	cr267	AV	461.0	EM	SD	30.5	CV	6.6
	cr267	AV	-0.0200	mg/L	SD	0.0127	CV	63.74
LOO2.B-1	cr267	EM	446	REPLICATE #1 1520 10/16/98				
				-0.0262 mg/L peak-noisy				
LOO2.B-1	cr267	EM	490	REPLICATE #2				
				-0.0079 mg/L				
LOO2.B-1	cr267	EM	475	REPLICATE #3				
				-0.0141 mg/L				
LOO2.B-1	cr267	EM	464	REPLICATE #4				
				-0.0187 mg/L peak-noisy				

cr267 AV 468.8 EM SD 18.3 CV 4.0

cr267 AV -0.0167 mg/L SD 0.0077 CV 46.27

-1 REPLICATE #1 1522 10/16/98

cr267 EM 4119 1.5081 mg/L

-1 REPLICATE #2

cr267 EM 3947 1.4362 mg/L

-1 REPLICATE #3

cr267 EM 4154 1.5227 mg/L

-1 REPLICATE #4

cr267 EM 4042 1.4759 mg/L

cr267 AV 4065.5 EM SD 91.8 CV 2.3

cr267 AV 1.4857 mg/L SD 0.0384 CV 2.58

-1 REPLICATE #1 1524 10/16/98

cr267 EM 3568 1.2779 mg/L

-1 REPLICATE #2

cr267 EM 3640 1.3080 mg/L

-1 REPLICATE #3

cr267 EM 3540 1.2662 mg/L

-1 REPLICATE #4

cr267 EM 3524 1.2595 mg/L

cr267 AV 3568.0 EM SD 51.3 CV 1.4

cr267 AV 1.2779 mg/L SD 0.0214 CV 1.68

-1D REPLICATE #1 1526 10/16/98

cr267 EM 3476 1.2395 mg/L

-1D REPLICATE #2

cr267 EM 3637 1.3067 mg/L

-1D REPLICATE #3

cr267 EM 3613 1.2967 mg/L

-1D REPLICATE #4

cr267 EM 3455 1.2307 mg/L

cr267 AV 3545.3 EM SD 93.0 CV 2.6

cr267 AV 1.2684 mg/L SD 0.0388 CV 3.06

>-1 REPLICATE #1 1528 10/16/98

cr267 EM 3937 1.4320 mg/L

>-1 REPLICATE #2

cr267 EM 3902 1.4174 mg/L

>-1 REPLICATE #3

cr267 EM 3938 1.4324 mg/L

>-1 REPLICATE #4

cr267 EM 4404 1.6271 mg/L

cr267 AV 4045.3 EM SD 239.8 CV 5.9

-1S			REPLICATE #1	1530 10/16/98
cr267	EM	7274	2.8260 mg/L	
-1S			REPLICATE #2	
cr267	EM	7597	2.9609 mg/L	
-1S			REPLICATE #3	
cr267	EM	7233	2.8088 mg/L	
-1S			REPLICATE #4	
cr267	EM	7530	2.9329 mg/L	
	cr267	AV	7408.5 EM	SD 181.8 CV 2.5
	cr267	AV	2.8821 mg/L	SD 0.0760 CV 2.64
-2A			REPLICATE #1	1531 10/16/98
cr267	EM	442	-0.0279 mg/L	peak-noisy
-2A			REPLICATE #2	
cr267	EM	427	-0.0342 mg/L	
-2A			REPLICATE #3	
cr267	EM	443	-0.0275 mg/L	window-edge
-2A			REPLICATE #4	
cr267	EM	429	-0.0333 mg/L	window-edge
	cr267	AV	435.3 EM	SD 8.4 CV 1.9
	cr267	AV	-0.0307 mg/L	SD 0.0035 CV 11.45
-2A			REPLICATE #1	1533 10/16/98
cr267	EM	686	0.0740 mg/L	
-2A			REPLICATE #2	
cr267	EM	716	0.0865 mg/L	peak-noisy
-2A			REPLICATE #3	
cr267	EM	703	0.0811 mg/L	
-2A			REPLICATE #4	
cr267	EM	724	0.0899 mg/L	
	cr267	AV	707.3 EM	SD 16.6 CV 2.3
	cr267	AV	0.0829 mg/L	SD 0.0069 CV 8.37
-2A			REPLICATE #1	1535 10/16/98
cr267	EM	538	0.0122 mg/L	peak-noisy
-2A			REPLICATE #2	
cr267	EM	533	0.0101 mg/L	
-2A			REPLICATE #3	
cr267	EM	557	0.0201 mg/L	peak-noisy
-2A			REPLICATE #4	
cr267	EM	567	0.0243 mg/L	peak-noisy
	cr267	AV	548.8 EM	SD 16.0 CV 2.9

—	JT			REPLICATE #1	1537 10/16/98
	cr267	EM	488	-0.0087 mg/L	
—	JT			REPLICATE #2	
	cr267	EM	456	-0.0221 mg/L	peak-noisy
—	JT			REPLICATE #3	
	cr267	EM	449	-0.0250 mg/L	peak-noisy
—	JT			REPLICATE #4	
	cr267	EM	446	-0.0262 mg/L	peak-noisy

	cr267	AV	459.8	EM	SD	19.3	CV	4.2
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	cr267	AV	-0.0205	mg/L	SD	0.0081	CV	39.32
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—	UV			REPLICATE #1	1539 10/16/98
	cr267	EM	4703	1.7520 mg/L	

—	UV			REPLICATE #2	
	cr267	EM	5274	1.9905 mg/L	

—	UV			REPLICATE #3	
	cr267	EM	4799	1.7921 mg/L	

—	UV			REPLICATE #4	
	cr267	EM	4899	1.8339 mg/L	

	cr267	AV	4918.8	EM	SD	250.0	CV	5.1
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	cr267	AV	1.8421	mg/L	SD	0.1044	CV	5.67
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—	VB			REPLICATE #1	1541 10/16/98
	cr267	EM	453	-0.0233 mg/L	peak-noisy

—	VB			REPLICATE #2	
	cr267	EM	460	-0.0204 mg/L	peak-noisy

—	VB			REPLICATE #3	
	cr267	EM	441	-0.0283 mg/L	peak-noisy

—	VB			REPLICATE #4	
	cr267	EM	455	-0.0225 mg/L	peak-noisy

	cr267	AV	452.3	EM	SD	8.1	CV	1.8
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	cr267	AV	-0.0236	mg/L	SD	0.0034	CV	14.24
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>-2A			REPLICATE	#1	1543 10/16/98
cr267	EM	413	-0.0400 mg/L	peak-noisy	
>-2A			REPLICATE	#2	
cr267	EM	437	-0.0300 mg/L	peak-noisy	
>-2A			REPLICATE	#3	
cr267	EM	424	-0.0354 mg/L	peak-noisy	
>-2A			REPLICATE	#4	
cr267	EM	415	-0.0392 mg/L	window-edge	
cr267	AV	422.3	EM	SD	10.9 CV 2.6
cr267	AV	-0.0362	mg/L	SD	0.0046 CV 12.63
>-2AS			REPLICATE	#1	1545 10/16/98
cr267	EM	3832	1.3882 mg/L		
>-2AS			REPLICATE	#2	
cr267	EM	3978	1.4492 mg/L		
>-2AS			REPLICATE	#3	
cr267	EM	4248	1.5619 mg/L		
>-2AS			REPLICATE	#4	
cr267	EM	4013	1.4638 mg/L		
cr267	AV	4017.8	EM	SD	172.4 CV 4.3
cr267	AV	1.4658	mg/L	SD	0.0720 CV 4.91
3-AP			REPLICATE	#1	1547 10/16/98
cr267	EM	415	-0.0392 mg/L	peak-noisy	
3-AP			REPLICATE	#2	
cr267	EM	447	-0.0258 mg/L	peak-noisy	
3-AP			REPLICATE	#3	
cr267	EM	432	-0.0321 mg/L	peak-noisy	
3-AP			REPLICATE	#4	
cr267	EM	434	-0.0313 mg/L	window-edge	
cr267	AV	432.0	EM	SD	13.1 CV 3.0
cr267	AV	-0.0321	mg/L	SD	0.0055 CV 17.11
3-F			REPLICATE	#1	1549 10/16/98
cr267	EM	413	-0.0400 mg/L	peak-noisy	
3-F			REPLICATE	#2	
cr267	EM	468	-0.0170 mg/L	peak-noisy	
3-F			REPLICATE	#3	
cr267	EM	455	-0.0225 mg/L	peak-noisy	
3-F			REPLICATE	#4	
cr267	EM	439	-0.0292 mg/L		
cr267	AV	443.8	EM	SD	23.7 CV 5.3

3	cr267	EM	419	REPLICATE #1	1551 10/16/98	-0.0375 mg/L	window-edge
3	cr267	EM	419	REPLICATE #2		-0.0375 mg/L	peak-noisy
3	cr267	EM	433	REPLICATE #3		-0.0317 mg/L	peak-noisy
3	cr267	EM	461	REPLICATE #4		-0.0200 mg/L	peak-noisy
	cr267	AV	433.0	EM	SD	19.8	CV 4.6
	cr267	AV	-0.0317	mg/L	SD	0.0083	CV 26.12
3	cr267	EM	446	REPLICATE #1	1553 10/16/98	-0.0262 mg/L	peak-noisy
3	cr267	EM	452	REPLICATE #2		-0.0237 mg/L	
3	cr267	EM	453	REPLICATE #3		-0.0233 mg/L	peak-noisy
3	cr267	EM	444	REPLICATE #4		-0.0271 mg/L	peak-noisy
	cr267	AV	448.8	EM	SD	4.4	CV 1.0
	cr267	AV	-0.0251	mg/L	SD	0.0018	CV 7.37
3	cr267	EM	443	REPLICATE #1	1555 10/16/98	-0.0275 mg/L	
3	cr267	EM	444	REPLICATE #2		-0.0271 mg/L	peak-noisy
3	cr267	EM	452	REPLICATE #3		-0.0237 mg/L	peak-noisy
3	cr267	EM	444	REPLICATE #4		-0.0271 mg/L	peak-noisy
	cr267	AV	445.8	EM	SD	4.2	CV 0.9
	cr267	AV	-0.0263	mg/L	SD	0.0018	CV 6.65
CV	cr267	EM	5520	REPLICATE #1	1556 10/16/98	2.0933 mg/L	
CV	cr267	EM	5588	REPLICATE #2		2.1217 mg/L	
CV	cr267	EM	5657	REPLICATE #3		2.1505 mg/L	
CV	cr267	EM	5580	REPLICATE #4		2.1183 mg/L	
	cr267	AV	5586.3	EM	SD	56.1	CV 1.0
	cr267	AV	2.1210	mg/L	SD	0.0234	CV 1.10
CV	cr267	EM	5580	REPLICATE #1	1558 10/16/98	2.1183 mg/L	

cr267	EM	471	REPLICATE #2	-0.0158 mg/L	peak-noisy
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cr267	EM	437	REPLICATE #3	-0.0300 mg/L	
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cr267	EM	437	REPLICATE #4	-0.0300 mg/L	
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cr267	AV	448.0	EM	SD	16.0	CV	3.6
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cr267	AV	-0.0254	mg/L	SD	0.0067	CV	26.38
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L	cr267	EM	432	REPLICATE #1	1600	10/16/98
				-0.0321 mg/L	peak-noisy	

L	cr267	EM	443	REPLICATE #2		
				-0.0275 mg/L	peak-noisy	

L	cr267	EM	436	REPLICATE #3		
				-0.0304 mg/L	peak-noisy	

L	cr267	EM	439	REPLICATE #4		
				-0.0292 mg/L	peak-noisy	

cr267	AV	437.5	EM	SD	4.7	CV	1.1
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cr267	AV	-0.0298	mg/L	SD	0.0019	CV	6.53
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sd File Name: CR	Replicates:4	Read Delay: 65
ks: CR ONLY		Data File:

t file is 1036

ANDARD #1		REPLICATE #1	1437 10/19/98
cr267	EM	819	
ANDARD #1		REPLICATE #2	
cr267	EM	733	
ANDARD #1		REPLICATE #3	
cr267	EM	738	
ANDARD #1		REPLICATE #4	
cr267	EM	742	peak-noisy
cr267	AV	758.0 SD 40.8 CV	5.4 CONC 0.1000
ANDARD #2		REPLICATE #1	1439 10/19/98
cr267	EM	3063	
ANDARD #2		REPLICATE #2	
cr267	EM	3043	
ANDARD #2		REPLICATE #3	
cr267	EM	2965	
ANDARD #2		REPLICATE #4	
cr267	EM	3123	
cr267	AV	3048.5 SD 65.2 CV	2.1 CONC 1.0000
ANDARD #3		REPLICATE #1	1441 10/19/98
cr267	EM	6422	
ANDARD #3		REPLICATE #2	
cr267	EM	5739	
ANDARD #3		REPLICATE #3	
cr267	EM	5782	
ANDARD #3		REPLICATE #4	
cr267	EM	5498	
cr267	AV	5860.3 SD 394.8 CV	6.7 CONC 2.0000
ANDARD #4		REPLICATE #1	1443 10/19/98
cr267	EM	13437	
ANDARD #4		REPLICATE #2	
cr267	EM	13568	
ANDARD #4		REPLICATE #3	

ANDARD	#4	REPLICATE	#4
cr267	EM	13968	
cr267	AV	13549.8 SD 312.4 CV 2.3 CONC 5.0000	
ANK		REPLICATE #1	1445 10/19/98
cr267	EM	587	
ANK		REPLICATE #2	
cr267	EM	694	
ANK		REPLICATE #3	
cr267	EM	580	
ANK		REPLICATE #4	
cr267	EM	552	
cr267	AV	603.3 SD 62.4 CV 10.3 CONC 0.0000	
cr267	CC	0.9999 SLOPE 2605.7290 INT 542.6687	
V		REPLICATE #1	1447 10/19/98
cr267	EM	5227 1.7977 mg/L	
V		REPLICATE #2	
cr267	EM	5265 1.8123 mg/L	
V		REPLICATE #3	
cr267	EM	5353 1.8461 mg/L	
V		REPLICATE #4	
cr267	EM	5384 1.8580 mg/L	
cr267	AV	5307.3 EM SD 73.5 CV 1.4	
cr267	AV	1.8285 mg/L SD 0.0282 CV 1.54	
B		REPLICATE #1	1449 10/19/98
cr267	EM	493 -0.0191 mg/L peak-noisy	
B		REPLICATE #2	
cr267	EM	493 -0.0191 mg/L peak-noisy	
B		REPLICATE #3	
cr267	EM	482 -0.0233 mg/L peak-noisy	
B		REPLICATE #4	
cr267	EM	560 0.0067 mg/L peak-noisy	
cr267	AV	507.0 EM SD 35.7 CV 7.0	
cr267	AV	-0.0137 mg/L SD 0.0137 CV 100.12	
003.01		REPLICATE #1	1451 10/19/98
cr267	EM	479 -0.0244 mg/L peak-noisy	
003.01		REPLICATE #2	
cr267	EM	497 -0.0175 mg/L peak-noisy	
003.01		REPLICATE #3	
cr267	EM	521 -0.0083 mg/L	

cr267 AV 498.8 EM SD 17.2 CV 3.5

cr267 AV -0.0169 mg/L SD 0.0066 CV 39.19

S
cr267 EM 514 **REPLICATE #1** 1453 10/19/98
-0.0110 mg/L peak-noisy

S
cr267 EM 530 **REPLICATE #2**
-0.0049 mg/L

S
cr267 EM 546 **REPLICATE #3**
0.0013 mg/L

S
cr267 EM 542 **REPLICATE #4**
-0.0003 mg/L peak-noisy

cr267 AV 533.0 EM SD 14.4 CV 2.7

cr267 AV -0.0037 mg/L SD 0.0055 CV 148.68

cr267 EM 493 **REPLICATE #1** 1455 10/19/98
-0.0191 mg/L peak-noisy

cr267 EM 487 **REPLICATE #2**
-0.0214 mg/L peak-noisy

cr267 EM 496 **REPLICATE #3**
-0.0179 mg/L peak-noisy

cr267 EM 474 **REPLICATE #4**
-0.0264 mg/L window-edge

cr267 AV 487.5 EM SD 9.7 CV 2.0

cr267 AV -0.0212 mg/L SD 0.0037 CV 17.67

cr267 EM 5726 **REPLICATE #1** 1457 10/19/98
1.9892 mg/L

cr267 EM 4687 **REPLICATE #2**
1.5905 mg/L

cr267 EM 4787 **REPLICATE #3**
1.6288 mg/L

cr267 EM 5325 **REPLICATE #4**
1.8353 mg/L

cr267 AV 5131.3 EM SD 485.5 CV 9.5

cr267 AV 1.7610 mg/L SD 0.1863 CV 10.58

cr267 EM 517 **REPLICATE #1** 1459 10/19/98
-0.0099 mg/L peak-noisy

cr267 EM 541 **REPLICATE #2**
-0.0006 mg/L

cr267 EM 554 **REPLICATE #3**
0.0043 mg/L peak-noisy

cr267 EM 534 **REPLICATE #4**
-0.0033 mg/L peak-noisy

cr267	AV	529.5	EM	SD	22.2	CV	4.2
cr267	AV	-0.0024	mg/L	SD	0.0059	CV	249.91
cr267	EM	501					
				REPLICATE #1	1500	10/19/98	
				-0.0160	mg/L	peak-noisy	
cr267	EM	550					
				REPLICATE #2			
				0.0028	mg/L	peak-noisy	
cr267	EM	544					
				REPLICATE #3			
				0.0005	mg/L	peak-noisy	
cr267	EM	523					
				REPLICATE #4			
				-0.0075	mg/L	peak-noisy	
cr267	AV	529.5	EM	SD	22.2	CV	4.2
cr267	AV	-0.0051	mg/L	SD	0.0085	CV	168.95
cr267	EM	535					
				REPLICATE #1	1502	10/19/98	
				-0.0029	mg/L		
cr267	EM	578					
				REPLICATE #2			
				0.0136	mg/L	peak-noisy	
cr267	EM	561					
				REPLICATE #3			
				0.0070	mg/L	peak-noisy	
cr267	EM	533					
				REPLICATE #4			
				-0.0037	mg/L	peak-noisy	
cr267	AV	551.8	EM	SD	21.7	CV	3.9
cr267	AV	0.0035	mg/L	SD	0.0083	CV	238.45
cr267	EM	706					
				REPLICATE #1	1504	10/19/98	
				0.0627	mg/L		
cr267	EM	700					
				REPLICATE #2			
				0.0604	mg/L		
cr267	EM	679					
				REPLICATE #3			
				0.0523	mg/L		
cr267	EM	715					
				REPLICATE #4			
				0.0661	mg/L		
cr267	AV	700.0	EM	SD	15.3	CV	2.2
cr267	AV	0.0604	mg/L	SD	0.0059	CV	9.72
cr267	EM	799					
				REPLICATE #1	1506	10/19/98	
				0.0984	mg/L		
cr267	EM	769					
				REPLICATE #2			
				0.0869	mg/L		
cr267	EM	828					
				REPLICATE #3			
				0.1095	mg/L		
cr267	EM	784					
				REPLICATE #4			
				0.0926	mg/L		
cr267	AV	795.0	EM	SD	25.2	CV	3.2

1508 10/19/98

REPLICATE #1

cr267 EM 692

0.0573 mg/L

REPLICATE #2

cr267 EM 724

0.0696 mg/L

REPLICATE #3

cr267 EM 687

0.0554 mg/L

REPLICATE #4

cr267 EM 780

0.0911 mg/L

cr267 AV 720.8 EM SD 42.8 CV 5.9

cr267 AV 0.0683 mg/L SD 0.0164 CV 24.01

1510 10/19/98

REPLICATE #1

V cr267 EM 6026

2.1043 mg/L

REPLICATE #2

V cr267 EM 6188

2.1665 mg/L

REPLICATE #3

V cr267 EM 6083

2.1262 mg/L

REPLICATE #4

V cr267 EM 6012

2.0990 mg/L

cr267 AV 6077.3 EM SD 80.0 CV 1.3

cr267 AV 2.1240 mg/L SD 0.0307 CV 1.44

1512 10/19/98

REPLICATE #1

B cr267 EM 546

0.0013 mg/L

REPLICATE #2

B cr267 EM 516

-0.0102 mg/L

REPLICATE #3

B cr267 EM 516

-0.0102 mg/L

peak-noisy

REPLICATE #4

B cr267 EM 495

-0.0183 mg/L

peak-noisy

cr267 AV 518.3 EM SD 21.0 CV 4.0

cr267 AV -0.0094 mg/L SD 0.0081 CV 85.93

1514 10/19/98

REPLICATE #1

.006.1 cr267 EM 1414

0.3344 mg/L

REPLICATE #2

.006.1 cr267 EM 1402

0.3298 mg/L

REPLICATE #3

.006.1 cr267 EM 1396

0.3275 mg/L

REPLICATE #4

.006.1 cr267 EM 1508

0.3705 mg/L

cr267 AV 1430.0 EM SD 52.5 CV 3.7

It file is 10236

STANDARD #1			REPLICATE #1	1615 10/22/98
C0228	EM	378		
STANDARD #1			REPLICATE #2	
C0228	EM	379	peak-noisy	
STANDARD #1			REPLICATE #3	
C0228	EM	369	peak-noisy	
C0228	AV	375.3 SD 5.5 CV	1.5 CONC	0.0200
STANDARD #2			REPLICATE #1	1617 10/22/98
C0228	EM	444		
STANDARD #2			REPLICATE #2	
C0228	EM	430		
STANDARD #2			REPLICATE #3	
C0228	EM	446		
C0228	AV	440.0 SD 8.7 CV	2.0 CONC	0.0500
STANDARD #3			REPLICATE #1	1618 10/22/98
C0228	EM	683		
STANDARD #3			REPLICATE #2	
C0228	EM	739		
STANDARD #3			REPLICATE #3	
C0228	EM	705		
C0228	AV	709.0 SD 28.2 CV	4.0 CONC	0.1500
STANDARD #4			REPLICATE #1	1620 10/22/98
C0228	EM	1538		
STANDARD #4			REPLICATE #2	
C0228	EM	1482		
STANDARD #4			REPLICATE #3	
C0228	EM	1537		
C0228	AV	1519.0 SD 32.0 CV	2.1 CONC	0.5000
BLANK			REPLICATE #1	1622 10/22/98
C0228	EM	328		
BLANK			REPLICATE #2	
C0228	EM	344		
BLANK			REPLICATE #3	
C0228	EM	337		
C0228	AV	336.3 SD 8.0 CV	2.4 CONC	0.0000
C0228 CC		0.9997 SLOPE 2379.9478 INT	333.2209	
CV			REPLICATE #1	1624 10/22/98
C0228	EM	1481	0.4823 mg/L	

	C0228	EM	1536	0.5054 mg/L					
				REPLICATE #3					
	C0228	EM	1552	0.5121 mg/L					
		C0228	AV	1523.0	EM	SD	37.2	CV 2.4	
		C0228	AV	0.4999	mg/L	SD	0.0156	CV 3.13	
				REPLICATE #1 1625 10/22/98					
	C0228	EM	356	0.0096	mg/L			peak-noisy	
				REPLICATE #2					
	C0228	EM	373	0.0167	mg/L			peak-noisy	
				REPLICATE #3					
	C0228	EM	368	0.0146	mg/L			peak-noisy	
		C0228	AV	365.7	EM	SD	8.7	CV 2.4	
		C0228	AV	0.0136	mg/L	SD	0.0037	CV 26.93	
				REPLICATE #1 1627 10/22/98					
	C0228	EM	375	0.0176	mg/L			peak-noisy	
				REPLICATE #2					
	C0228	EM	404	0.0297	mg/L				
				REPLICATE #3					
	C0228	EM	387	0.0226	mg/L			window-edge	
		C0228	AV	388.7	EM	SD	14.6	CV 3.7	
		C0228	AV	0.0233	mg/L	SD	0.0061	CV 26.28	
				REPLICATE #1 1629 10/22/98					
	C0228	EM	395	0.0260	mg/L			peak-noisy	
				REPLICATE #2					
	C0228	EM	397	0.0268	mg/L			peak-noisy	
				REPLICATE #3					
	C0228	EM	379	0.0192	mg/L			peak-noisy	
		C0228	AV	390.3	EM	SD	9.9	CV 2.5	
		C0228	AV	0.0240	mg/L	SD	0.0041	CV 17.27	
				REPLICATE #1 1631 10/22/98					
	C0228	EM	386	0.0222	mg/L				
				REPLICATE #2					
	C0228	EM	406	0.0306	mg/L			peak-noisy	
				REPLICATE #3					
	C0228	EM	385	0.0218	mg/L			peak-noisy	
		C0228	AV	392.3	EM	SD	11.8	CV 3.0	
		C0228	AV	0.0248	mg/L	SD	0.0050	CV 20.04	
				REPLICATE #1 1632 10/22/98					
	C0228	EM	392	0.0247	mg/L			peak-noisy	
				REPLICATE #2					

Sample ID	Method	Concentration (mg/L)	Replicate	Mean	SD	CV	Other
-1D			REPLICATE #3				
C0228	EM	406	0.0306 mg/L				peak-noisy
	C0228	AV	401.3	EM	SD	8.1	CV 2.0
	C0228	AV	0.0286	mg/L	SD	0.0034	CV 11.87
-1			REPLICATE #1				1634 10/22/98
C0228	EM	402	0.0289 mg/L				peak-noisy
-1			REPLICATE #2				
C0228	EM	382	0.0205 mg/L				window-edge
-1			REPLICATE #3				
C0228	EM	385	0.0218 mg/L				peak-noisy
	C0228	AV	389.7	EM	SD	10.8	CV 2.8
	C0228	AV	0.0237	mg/L	SD	0.0045	CV 19.11
-1S			REPLICATE #1				1636 10/22/98
C0228	EM	2719	1.0025 mg/L				
-1S			REPLICATE #2				
C0228	EM	2657	0.9764 mg/L				
-1S			REPLICATE #3				
C0228	EM	2574	0.9415 mg/L				
	C0228	AV	2650.0	EM	SD	72.8	CV 2.7
	C0228	AV	0.9735	mg/L	SD	0.0306	CV 3.14
-2A			REPLICATE #1				1638 10/22/98
C0228	EM	347	0.0058 mg/L				peak-noisy
-2A			REPLICATE #2				
C0228	EM	359	0.0108 mg/L				
-2A			REPLICATE #3				
C0228	EM	397	0.0268 mg/L				peak-noisy
	C0228	AV	367.7	EM	SD	26.1	CV 7.1
	C0228	AV	0.0145	mg/L	SD	0.0110	CV 75.78
-2A			REPLICATE #1				1640 10/22/98
C0228	EM	358	0.0104 mg/L				peak-noisy
-2A			REPLICATE #2				
C0228	EM	381	0.0201 mg/L				
-2A			REPLICATE #3				
C0228	EM	344	0.0045 mg/L				peak-noisy
	C0228	AV	361.0	EM	SD	18.7	CV 5.2
	C0228	AV	0.0117	mg/L	SD	0.0078	CV 67.25
-2A			REPLICATE #1				1641 10/22/98
C0228	EM	340	0.0028 mg/L				window-edge
-2A			REPLICATE #2				

-2A			REPLICATE #3				
	C0228	EM	336	0.0012 mg/L		peak-noisy	
	C0228	AV	342.7	EM	SD	8.3	CV 2.4
	C0228	AV	0.0040	mg/L	SD	0.0035	CV 88.15
	JT			REPLICATE #1			1643 10/22/98
	C0228	EM	370	0.0155 mg/L			
	JT			REPLICATE #2			
	C0228	EM	404	0.0297 mg/L		peak-noisy	
	JT			REPLICATE #3			
	C0228	EM	378	0.0188 mg/L		peak-noisy	
	C0228	AV	384.0	EM	SD	17.8	CV 4.6
	C0228	AV	0.0213	mg/L	SD	0.0075	CV 35.01
	CV			REPLICATE #1			1645 10/22/98
	C0228	EM	1518	0.4978 mg/L			
	CV			REPLICATE #2			
	C0228	EM	1484	0.4835 mg/L			
	CV			REPLICATE #3			
	C0228	EM	1516	0.4970 mg/L			
	C0228	AV	1506.0	EM	SD	19.1	CV 1.3
	C0228	AV	0.4928	mg/L	SD	0.0080	CV 1.63
	CB			REPLICATE #1			1646 10/22/98
	C0228	EM	377	0.0184 mg/L		peak-noisy	
	CB			REPLICATE #2			
	C0228	EM	367	0.0142 mg/L		window-edge	
	CB			REPLICATE #3			
	C0228	EM	361	0.0117 mg/L		peak-noisy	
	C0228	AV	368.3	EM	SD	8.1	CV 2.2
	C0228	AV	0.0148	mg/L	SD	0.0034	CV 23.02
	O-2A			REPLICATE #1			1648 10/22/98
	C0228	EM	328	-0.0022 mg/L		peak-noisy	
	O-2A			REPLICATE #2			
	C0228	EM	333	-0.0001 mg/L		peak-noisy	
	O-2A			REPLICATE #3			
	C0228	EM	338	0.0020 mg/L		peak-noisy	
	C0228	AV	333.0	EM	SD	5.0	CV 1.5
	C0228	AV	-0.0001	mg/L	SD	0.0021	CV 2263.92
	O-2AS			REPLICATE #1			1650 10/22/98
	C0228	EM	3107	0.7152 mg/L			

Sample ID	Method	Concentration (mg/L)	Replicate	Notes	Date
1-2AS	EM	2131	0.7554		
1-2AS	EM	2069	0.7293		
C0228	AV	2102.3	EM	SD 31.3 CV 1.5	
C0228	AV	0.7433	mg/L	SD 0.0131 CV 1.77	
1-AP	EM	371	0.0159	peak-noisy	1652 10/22/98
1-AP	EM	433	0.0419	peak-noisy	
1-AP	EM	368	0.0146	peak-noisy	
C0228	AV	390.7	EM	SD 36.7 CV 9.4	
C0228	AV	0.0241	mg/L	SD 0.0154 CV 63.87	
3-F	EM	343	0.0041	peak-noisy	1653 10/22/98
3-F	EM	327	-0.0026	peak-noisy	
3-F	EM	356	0.0096	peak-noisy	
C0228	AV	342.0	EM	SD 14.5 CV 4.2	
C0228	AV	0.0037	mg/L	SD 0.0061 CV 165.46	
3	EM	353	0.0083	peak-noisy	1655 10/22/98
3	EM	353	0.0083	peak-noisy	
3	EM	386	0.0222	peak-noisy	
C0228	AV	364.0	EM	SD 19.1 CV 5.2	
C0228	AV	0.0129	mg/L	SD 0.0080 CV 61.90	
3	EM	347	0.0058	peak-noisy	1657 10/22/98
3	EM	381	0.0201	peak-noisy	
3	EM	358	0.0104	peak-noisy	
C0228	AV	362.0	EM	SD 17.3 CV 4.8	
C0228	AV	0.0121	mg/L	SD 0.0073 CV 60.28	
3	EM	350	0.0071	peak-noisy	1659 10/22/98

	C0228	EM	358	0.0104 mg/L	peak-noisy
	REPLICATE #3				
	C0228	EM	350	0.0071 mg/L	peak-noisy
	C0228	AV	352.7	EM	SD 4.6 CV 1.3
	C0228	AV	0.0082	mg/L	SD 0.0019 CV 23.75
	REPLICATE #1 1701 10/22/98				
	C0228	EM	1527	0.5016 mg/L	
	REPLICATE #2				
	C0228	EM	1526	0.5012 mg/L	
	REPLICATE #3				
	C0228	EM	1587	0.5268 mg/L	
	C0228	AV	1546.7	EM	SD 34.9 CV 2.3
	C0228	AV	0.5099	mg/L	SD 0.0147 CV 2.88
	REPLICATE #1 1702 10/22/98				
	C0228	EM	362	0.0121 mg/L	peak-noisy
	REPLICATE #2				
	C0228	EM	365	0.0134 mg/L	peak-noisy
	REPLICATE #3				
	C0228	EM	374	0.0171 mg/L	window-edge
	C0228	AV	367.0	EM	SD 6.2 CV 1.7
	C0228	AV	0.0142	mg/L	SD 0.0026 CV 18.49
	REPLICATE #1 1704 10/22/98				
	C0228	EM	336	0.0012 mg/L	window-edge
	REPLICATE #2				
	C0228	EM	347	0.0058 mg/L	peak-noisy
	REPLICATE #3				
	C0228	EM	338	0.0020 mg/L	peak-noisy
	C0228	AV	340.3	EM	SD 5.9 CV 1.7
	C0228	AV	0.0030	mg/L	SD 0.0025 CV 82.38
	REPLICATE #1 1706 10/22/98				
	C0228	EM	347	0.0058 mg/L	peak-noisy
	REPLICATE #2				
	C0228	EM	346	0.0054 mg/L	peak-noisy
	REPLICATE #3				
	C0228	EM	343	0.0041 mg/L	peak-noisy
	C0228	AV	345.3	EM	SD 2.1 CV 0.6
	C0228	AV	0.0051	mg/L	SD 0.0009 CV 17.19
	REPLICATE #1 1708 10/22/98				
	C0228	EM	353	0.0083 mg/L	peak-noisy

			0.0100 mg/L						
			REPLICATE #3						
	C0228	EM	354	0.0087 mg/L			peak-noisy		
		C0228	AV	354.7	EM	SD	2.1	CV 0.6	
		C0228	AV	0.0090	mg/L	SD	0.0009	CV 9.71	
IS				REPLICATE #1					1709 10/22/98
	C0228	EM	2414	0.8743	mg/L				
IS				REPLICATE #2					
	C0228	EM	2464	0.8953	mg/L				
IS				REPLICATE #3					
	C0228	EM	2412	0.8735	mg/L				
		C0228	AV	2430.0	EM	SD	29.5	CV 1.2	
		C0228	AV	0.8810	mg/L	SD	0.0124	CV 1.41	
				REPLICATE #1					1711 10/22/98
	C0228	EM	338	0.0020	mg/L			peak-noisy	
				REPLICATE #2					
	C0228	EM	356	0.0096	mg/L			peak-noisy	
				REPLICATE #3					
	C0228	EM	355	0.0092	mg/L			peak-noisy	
		C0228	AV	349.7	EM	SD	10.1	CV 2.9	
		C0228	AV	0.0069	mg/L	SD	0.0043	CV 61.51	
2				REPLICATE #1					1713 10/22/98
	C0228	EM	354	0.0087	mg/L			window-edge	
2				REPLICATE #2					
	C0228	EM	352	0.0079	mg/L			window-edge	
2				REPLICATE #3					
	C0228	EM	347	0.0058	mg/L			peak-noisy	
		C0228	AV	351.0	EM	SD	3.6	CV 1.0	
		C0228	AV	0.0075	mg/L	SD	0.0015	CV 20.28	
3				REPLICATE #1					1714 10/22/98
	C0228	EM	339	0.0024	mg/L			peak-noisy	
3				REPLICATE #2					
	C0228	EM	340	0.0028	mg/L			peak-noisy	
3				REPLICATE #3					
	C0228	EM	354	0.0087	mg/L			window-edge	
		C0228	AV	344.3	EM	SD	8.4	CV 2.4	
		C0228	AV	0.0047	mg/L	SD	0.0035	CV 75.47	
L				REPLICATE #1					1716 10/22/98
	C0228	EM	409	0.0318	mg/L			peak-noisy	
L				REPLICATE #2					

	CO228	EM	412	0.0331 mg/L			peak-noisy	
		CO228	AV	414.7 EM	SD	7.4	CV	1.8
		CO228	AV	0.0342 mg/L	SD	0.0031	CV	9.05
2				REPLICATE #1				1718 10/22/98
	CO228	EM	448	0.0482 mg/L			peak-noisy	
2				REPLICATE #2				
	CO228	EM	413	0.0335 mg/L				
2				REPLICATE #3				
	CO228	EM	462	0.0541 mg/L			peak-noisy	
		CO228	AV	441.0 EM	SD	25.2	CV	5.7
		CO228	AV	0.0453 mg/L	SD	0.0106	CV	23.42
3				REPLICATE #1				1720 10/22/98
	CO228	EM	416	0.0348 mg/L			peak-noisy	
3				REPLICATE #2				
	CO228	EM	396	0.0264 mg/L			peak-noisy	
3				REPLICATE #3				
	CO228	EM	410	0.0323 mg/L			peak-noisy	
		CO228	AV	407.3 EM	SD	10.3	CV	2.5
		CO228	AV	0.0311 mg/L	SD	0.0043	CV	13.85
CV				REPLICATE #1				1721 10/22/98
	CO228	EM	1564	0.5171 mg/L				
CV				REPLICATE #2				
	CO228	EM	1570	0.5197 mg/L				
CV				REPLICATE #3				
	CO228	EM	1646	0.5516 mg/L				
		CO228	AV	1593.3 EM	SD	45.7	CV	2.9
		CO228	AV	0.5295 mg/L	SD	0.0192	CV	3.63
CB				REPLICATE #1				1723 10/22/98
	CO228	EM	352	0.0079 mg/L				
CB				REPLICATE #2				
	CO228	EM	366	0.0138 mg/L			window-edge	
CB				REPLICATE #3				
	CO228	EM	350	0.0071 mg/L			peak-noisy	
		CO228	AV	356.0 EM	SD	8.7	CV	2.4
		CO228	AV	0.0096 mg/L	SD	0.0037	CV	38.27

od File Name: CU
rks: CU ONLY

Replicates:3

Read Delay: 60
Data File:

t file is 10236

ANDARD #1	REPLICATE #1	1455 10/15/98
CU324 EM 2893		
ANDARD #1	REPLICATE #2	
CU324 EM 2922		
ANDARD #1	REPLICATE #3	
CU324 EM 3032		
CU324 AV 2949.0 SD 73.3 CV 2.5 CONC 0.1000		
ANDARD #2	REPLICATE #1	1457 10/15/98
CU324 EM 18716		
ANDARD #2	REPLICATE #2	
CU324 EM 18102		
ANDARD #2	REPLICATE #3	
CU324 EM 18600		
CU324 AV 18472.7 SD 326.2 CV 1.8 CONC 1.0000		
ANDARD #3	REPLICATE #1	1459 10/15/98
CU324 EM 36619		
ANDARD #3	REPLICATE #2	
CU324 EM 36754		
ANDARD #3	REPLICATE #3	
CU324 EM 36078		
CU324 AV 36483.7 SD 357.7 CV 1.0 CONC 2.0000		
ANDARD #4	REPLICATE #1	1501 10/15/98
CU324 EM 87901		
ANDARD #4	REPLICATE #2	
CU324 EM 89983		
ANDARD #4	REPLICATE #3	
CU324 EM 90163		
CU324 AV 89349.0 SD 1257.2 CV 1.4 CONC 5.0000		
ANK	REPLICATE #1	1502 10/15/98
CU324 EM 1381		
ANK	REPLICATE #2	
CU324 EM 1310		

CU324	EM	1164						
CU324	AV	1285.0	SD	110.6	CV	8.6	CONC	0.0000
CU324	CC	1.0000	SLOPE	17636.554	INT	1136.6479		

✓				REPLICATE #1		1504	10/15/98
CU324	EM	36059		1.9801 mg/L			
✓				REPLICATE #2			
CU324	EM	36151		1.9853 mg/L			
✓				REPLICATE #3			
CU324	EM	36900		2.0278 mg/L			
CU324	AV	36370.0	EM	SD	461.3	CV	1.3
CU324	AV	1.9977	mg/L	SD	0.0262	CV	1.31

B				REPLICATE #1		1506	10/15/98
CU324	EM	1289		0.0086 mg/L		peak-noisy	
B				REPLICATE #2			
CU324	EM	1294		0.0089 mg/L		peak-noisy	
B				REPLICATE #3			
CU324	EM	1229		0.0052 mg/L		peak-noisy	
CU324	AV	1270.7	EM	SD	36.2	CV	2.8
CU324	AV	0.0076	mg/L	SD	0.0021	CV	26.99

002.B-1				REPLICATE #1		1508	10/15/98
CU324	EM	1792		0.0372 mg/L			
002.B-1				REPLICATE #2			
CU324	EM	1852		0.0406 mg/L			
002.B-1				REPLICATE #3			
CU324	EM	1842		0.0400 mg/L			
CU324	AV	1828.7	EM	SD	32.1	CV	1.8
CU324	AV	0.0392	mg/L	SD	0.0018	CV	4.65

1				REPLICATE #1		1509	10/15/98
CU324	EM	3593		0.1393 mg/L			
1				REPLICATE #2			
CU324	EM	3780		0.1499 mg/L			
1				REPLICATE #3			
CU324	EM	3746		0.1480 mg/L			
CU324	AV	3706.3	EM	SD	99.6	CV	2.7
CU324	AV	0.1457	mg/L	SD	0.0056	CV	3.88

1				REPLICATE #1		1511	10/15/98
CU324	EM	3459		0.1317 mg/L			

1	CU324	EM	3534	REPLICATE #2				
				0.1359 mg/L				
1	CU324	EM	3570	REPLICATE #3				
				0.1380 mg/L				
	CU324	AV	3521.0	EM	SD	56.6	CV	1.6
	CU324	AV	0.1352	mg/L	SD	0.0032	CV	2.38
1D	CU324	EM	3456	REPLICATE #1				1513 10/15/98
				0.1315 mg/L				
1D	CU324	EM	3471	REPLICATE #2				
				0.1324 mg/L				
1D	CU324	EM	3445	REPLICATE #3				
				0.1309 mg/L				
	CU324	AV	3457.3	EM	SD	13.1	CV	0.4
	CU324	AV	0.1316	mg/L	SD	0.0007	CV	0.56
-1	CU324	EM	3627	REPLICATE #1				1515 10/15/98
				0.1412 mg/L				
-1	CU324	EM	3410	REPLICATE #2				
				0.1289 mg/L				
-1	CU324	EM	3373	REPLICATE #3				
				0.1268 mg/L				
	CU324	AV	3470.0	EM	SD	137.2	CV	4.0
	CU324	AV	0.1323	mg/L	SD	0.0078	CV	5.88
-1S	CU324	EM	36048	REPLICATE #1				1517 10/15/98
				1.9795 mg/L				
-1S	CU324	EM	36402	REPLICATE #2				
				1.9996 mg/L				
-1S	CU324	EM	36139	REPLICATE #3				
				1.9846 mg/L				
	CU324	AV	36196.3	EM	SD	183.8	CV	0.5
	CU324	AV	1.9879	mg/L	SD	0.0104	CV	0.52
-2A	CU324	EM	1197	REPLICATE #1				1518 10/15/98
				0.0034 mg/L				peak-noisy
-2A	CU324	EM	1191	REPLICATE #2				
				0.0031 mg/L				
-2A	CU324	EM	1194	REPLICATE #3				
				0.0033 mg/L				peak-noisy
	CU324	AV	1194.0	EM	SD	3.0	CV	0.3
	CU324	AV	0.0033	mg/L	SD	0.0002	CV	5.23
-2A	CU324	EM	1416	REPLICATE #1				1520 10/15/98
				0.0158 mg/L				

			REPLICATE #3						
2A	CU324	EM	1379	0.0137 mg/L					
	CU324	AV	1404.0	EM	SD	21.7	CV	1.5	
	CU324	AV	0.0152	mg/L		SD	0.0012	CV	8.10
			REPLICATE #1					1522 10/15/98	
2A	CU324	EM	1361	0.0127 mg/L					
			REPLICATE #2						
2A	CU324	EM	1280	0.0081 mg/L					
			REPLICATE #3						
2A	CU324	EM	1334	0.0112 mg/L					
	CU324	AV	1325.0	EM	SD	41.2	CV	3.1	
	CU324	AV	0.0107	mg/L		SD	0.0023	CV	21.90
			REPLICATE #1					1523 10/15/98	
T	CU324	EM	1243	0.0060 mg/L					
			REPLICATE #2						
T	CU324	EM	1235	0.0056 mg/L window-edge					
			REPLICATE #3						
T	CU324	EM	1283	0.0083 mg/L peak-noisy					
	CU324	AV	1253.7	EM	SD	25.7	CV	2.1	
	CU324	AV	0.0066	mg/L		SD	0.0015	CV	21.98
			REPLICATE #1					1525 10/15/98	
V	CU324	EM	38542	2.1209 mg/L					
			REPLICATE #2						
V	CU324	EM	38326	2.1087 mg/L					
			REPLICATE #3						
V	CU324	EM	39057	2.1501 mg/L					
	CU324	AV	38641.7	EM	SD	375.6	CV	1.0	
	CU324	AV	2.1266	mg/L		SD	0.0213	CV	1.00
			REPLICATE #1					1527 10/15/98	
B	CU324	EM	1367	0.0131 mg/L peak-noisy					
			REPLICATE #2						
B	CU324	EM	1356	0.0124 mg/L peak-noisy					
			REPLICATE #3						
B	CU324	EM	1380	0.0138 mg/L					
	CU324	AV	1367.7	EM	SD	12.0	CV	0.9	
	CU324	AV	0.0131	mg/L		SD	0.0007	CV	5.20
			REPLICATE #1					1529 10/15/98	
2A	CU324	EM	1376	0.0136 mg/L					

CU324	EM	1376	0.0136 mg/L	peak-noisy
-2A				
CU324	EM	1410	0.0155 mg/L	
CU324	AV	1387.3	EM	SD 19.6 CV 1.4
CU324	AV	0.0142	mg/L	SD 0.0011 CV 7.83
-2AS				
CU324	EM	30235	1.6499 mg/L	1531 10/15/98
-2AS				
CU324	EM	29750	1.6224 mg/L	
-2AS				
CU324	EM	31039	1.6955 mg/L	
CU324	AV	30341.3	EM	SD 651.0 CV 2.1
CU324	AV	1.6559	mg/L	SD 0.0369 CV 2.23
-AP				
CU324	EM	1178	0.0023 mg/L	1532 10/15/98 peak-noisy
-AP				
CU324	EM	1181	0.0025 mg/L	peak-noisy
-AP				
CU324	EM	1170	0.0019 mg/L	peak-noisy
CU324	AV	1176.3	EM	SD 5.7 CV 0.5
CU324	AV	0.0023	mg/L	SD 0.0003 CV 14.33
-F				
CU324	EM	1340	0.0115 mg/L	1534 10/15/98
-F				
CU324	EM	1317	0.0102 mg/L	
-F				
CU324	EM	1329	0.0109 mg/L	
CU324	AV	1328.7	EM	SD 11.5 CV 0.9
CU324	AV	0.0109	mg/L	SD 0.0007 CV 5.99
CU324	EM	1260	0.0070 mg/L	1536 10/15/98
CU324	EM	1234	0.0055 mg/L	
CU324	EM	1273	0.0077 mg/L	
CU324	AV	1255.7	EM	SD 19.9 CV 1.6
CU324	AV	0.0067	mg/L	SD 0.0011 CV 16.68
CU324	EM	1288	0.0086 mg/L	1538 10/15/98
REPLICATE #2				

REPLICATE #3							
CU324	EM	1318	0.0103 mg/L			peak-noisy	
	CU324	AV	1304.7	EM	SD	15.3	CV 1.2
	CU324	AV	0.0095	mg/L	SD	0.0009	CV 9.09
REPLICATE #1							
CU324	EM	1304	0.0095	mg/L			1539 10/15/98
REPLICATE #2							
CU324	EM	1334	0.0112	mg/L			
REPLICATE #3							
CU324	EM	1332	0.0111	mg/L			
	CU324	AV	1323.3	EM	SD	16.8	CV 1.3
	CU324	AV	0.0106	mg/L	SD	0.0010	CV 8.98
REPLICATE #1							
V	CU324	EM	41066	2.2640	mg/L		1541 10/15/98
REPLICATE #2							
V	CU324	EM	40184	2.2140	mg/L		
REPLICATE #3							
V	CU324	EM	41089	2.2653	mg/L		
	CU324	AV	40779.7	EM	SD	516.0	CV 1.3
	CU324	AV	2.2478	mg/L	SD	0.0293	CV 1.30
REPLICATE #1							
B	CU324	EM	1273	0.0077	mg/L		1543 10/15/98
REPLICATE #2							
B	CU324	EM	1426	0.0164	mg/L		peak-noisy
REPLICATE #3							
B	CU324	EM	1272	0.0077	mg/L		
	CU324	AV	1323.7	EM	SD	88.6	CV 6.7
	CU324	AV	0.0106	mg/L	SD	0.0050	CV 47.39
REPLICATE #1							
CU324	EM	1327	0.0108	mg/L			1545 10/15/98
REPLICATE #2							
CU324	EM	1366	0.0130	mg/L			
REPLICATE #3							
CU324	EM	1331	0.0110	mg/L			
	CU324	AV	1341.3	EM	SD	21.5	CV 1.6
	CU324	AV	0.0116	mg/L	SD	0.0012	CV 10.48
REPLICATE #1							
CU324	EM	1465	0.0186	mg/L			1547 10/15/98
REPLICATE #2							
CU324	EM	1407	0.0109	mg/L			

				REPLICATE #3				
CU324	EM	1519	0.0217 mg/L					
	CU324	AV	1490.3	EM	SD	27.2	CV 1.8	
	CU324	AV	0.0201	mg/L	SD	0.0015	CV 7.68	
		REPLICATE #1				1548 10/15/98		
CU324	EM	1304	0.0095 mg/L					
		REPLICATE #2						
CU324	EM	1299	0.0092 mg/L					
		REPLICATE #3						
CU324	EM	1295	0.0090 mg/L					
	CU324	AV	1299.3	EM	SD	4.5	CV 0.3	
	CU324	AV	0.0092	mg/L	SD	0.0003	CV 2.77	
S			REPLICATE #1				1550 10/15/98	
CU324	EM	32616	1.7849 mg/L					
S			REPLICATE #2					
CU324	EM	32426	1.7741 mg/L					
S			REPLICATE #3					
CU324	EM	32303	1.7671 mg/L					
	CU324	AV	32448.3	EM	SD	157.7	CV 0.5	
	CU324	AV	1.7754	mg/L	SD	0.0089	CV 0.50	
		REPLICATE #1				1552 10/15/98		
CU324	EM	1459	0.0183 mg/L					
		REPLICATE #2						
CU324	EM	1442	0.0173 mg/L					
		REPLICATE #3						
CU324	EM	1493	0.0202 mg/L					
	CU324	AV	1464.7	EM	SD	26.0	CV 1.8	
	CU324	AV	0.0186	mg/L	SD	0.0015	CV 7.92	
		REPLICATE #1				1553 10/15/98		
CU324	EM	1647	0.0289 mg/L					
		REPLICATE #2						
CU324	EM	1674	0.0305 mg/L					
		REPLICATE #3						
CU324	EM	1697	0.0318 mg/L				peak-noisy	
	CU324	AV	1672.7	EM	SD	25.0	CV 1.5	
	CU324	AV	0.0304	mg/L	SD	0.0014	CV 4.67	
		REPLICATE #1				1555 10/15/98		
CU324	EM	1529	0.0222 mg/L					
		REPLICATE #2						
CU324	EM	1531	0.0224 mg/L				peak-noisy	

VERBODEN

Abstract

1998

2024/04/04

— 125 —

1. *Journal of Management Education* 34(1): 10-12

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CU324	EM	1516	0.0192 mg/L	peak 1517			
CU324	AV	1363.7	EM	SD	68.4	CV	5.0
CU324	AV	0.0129	mg/L	SD	0.0039	CV	30.12
006 . 1			REPLICATE #1				1606 10/15/98
CU324	EM	5058	0.2223	mg/L			
006 . 1			REPLICATE #2				
CU324	EM	4994	0.2187	mg/L			
006 . 1			REPLICATE #3				
CU324	EM	5053	0.2221	mg/L			
CU324	AV	5035.0	EM	SD	35.6	CV	0.7
CU324	AV	0.2210	mg/L	SD	0.0020	CV	0.91
			REPLICATE #1				1608 10/15/98
CU324	EM	4587	0.1956	mg/L			
			REPLICATE #2				
CU324	EM	4592	0.1959	mg/L			
			REPLICATE #3				
CU324	EM	4651	0.1993	mg/L			
CU324	AV	4610.0	EM	SD	35.6	CV	0.8
CU324	AV	0.1969	mg/L	SD	0.0020	CV	1.02
			REPLICATE #1				1609 10/15/98
CU324	EM	4625	0.1978	mg/L			
			REPLICATE #2				
CU324	EM	4659	0.1997	mg/L			
			REPLICATE #3				
CU324	EM	4633	0.1982	mg/L			
CU324	AV	4639.0	EM	SD	17.8	CV	0.4
CU324	AV	0.1986	mg/L	SD	0.0010	CV	0.51
			REPLICATE #1				1611 10/15/98
CU324	EM	4718	0.2031	mg/L			
			REPLICATE #2				
CU324	EM	4626	0.1978	mg/L			
			REPLICATE #3				
CU324	EM	4785	0.2069	mg/L			
CU324	AV	4709.7	EM	SD	79.8	CV	1.7
CU324	AV	0.2026	mg/L	SD	0.0045	CV	2.23
			REPLICATE #1				1613 10/15/98
CU324	EM	34111	1.8697	mg/L			
			REPLICATE #2				
CU324	EM	35403	1.9429	mg/L			
			REPLICATE #3				

CU324 AV 34303.3 EM SD 1017.2 CV 3.0

CU324 AV 1.8806 mg/L SD 0.0577 CV 3.07

V
CU324 EM 35849 REPLICATE #1 1615 10/15/98
1.9682 mg/L

V
CU324 EM 37568 REPLICATE #2
2.0657 mg/L

V
CU324 EM 36700 REPLICATE #3
2.0165 mg/L

CU324 AV 36705.7 EM SD 859.5 CV 2.3

CU324 AV 2.0168 mg/L SD 0.0487 CV 2.42

B
CU324 EM 1441 REPLICATE #1 1616 10/15/98
0.0173 mg/L peak-noisy

B
CU324 EM 1263 REPLICATE #2
0.0072 mg/L peak-noisy

B
CU324 EM 1276 REPLICATE #3
0.0079 mg/L

CU324 AV 1326.7 EM SD 99.2 CV 7.5

CU324 AV 0.0108 mg/L SD 0.0056 CV 52.22

MPLE #43
CU324 EM 1369 REPLICATE #1 1618 10/15/98
0.0132 mg/L

MPLE #43
CU324 EM 1337 REPLICATE #2
0.0114 mg/L

Element File: PB.GEL	Element: Pb	Wavelength: 283.3
Date: 10/14/98	Time: 15:32	Slit: 0.7 L
Data File:	ID/Wt File: 81002.IDW	Lamp Current: 10
Technique: HGA	Calib. Type: Nonlinear	Energy: 46

~~~~~

Pb ID: BLANK Seq. No.: 00094 A/S Pos.: 0 Date: 10/14/98

|                                       |                                 |
|---------------------------------------|---------------------------------|
| Replicate 1                           | Time: 15:32                     |
| Peak Area (A-s): -0.001               | Peak Height (A): 0.011          |
| Background Pk Area (A-s): 0.030       | Background Pk Height (A): 0.046 |
| Blank Corrected Pk Area (A-s): -0.002 |                                 |
| Concentration (ug/L ): -0.6           |                                 |

|                                       |                                 |
|---------------------------------------|---------------------------------|
| Replicate 2                           | Time: 15:35                     |
| Peak Area (A-s): -0.001               | Peak Height (A): 0.014          |
| Background Pk Area (A-s): 0.025       | Background Pk Height (A): 0.041 |
| Blank Corrected Pk Area (A-s): -0.002 |                                 |
| Concentration (ug/L ): -0.5           |                                 |

Mean Conc (ug/L ): -0.6 SD: 0.02 RSD(%): 4.31

Auto-zero performed.

~~~~~

Pb ID: 10 PPB PB Seq. No.: 00095 A/S Pos.: 1 Date: 10/14/98

Replicate 1	Time: 15:39
Peak Area (A-s): 0.020	Peak Height (A): 0.056
Background Pk Area (A-s): 0.033	Background Pk Height (A): 0.049
Blank Corrected Pk Area (A-s): 0.021	
Concentration (ug/L): 5.6	

Replicate 2	Time: 15:42
Peak Area (A-s): 0.023	Peak Height (A): 0.053
Background Pk Area (A-s): 0.034	Background Pk Height (A): 0.044
Blank Corrected Pk Area (A-s): 0.023	
Concentration (ug/L): 6.3	

Mean Conc (ug/L): 6.0 SD: 0.47 RSD(%): 7.93

Standard number 1 applied. [10.0]

Correlation coefficient: 1.00000 Slope: 0.0022

~~~~~

Pb ID: 50 PPB PB Seq. No.: 00096 A/S Pos.: 2 Date: 10/14/98

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 1                          | Time: 15:45                     |
| Peak Area (A-s): 0.117               | Peak Height (A): 0.248          |
| Background Pk Area (A-s): 0.051      | Background Pk Height (A): 0.056 |
| Blank Corrected Pk Area (A-s): 0.118 |                                 |
| Concentration (ug/L ): 53.2          |                                 |

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 2                          | Time: 15:49                     |
| Peak Area (A-s): 0.120               | Peak Height (A): 0.253          |
| Background Pk Area (A-s): 0.053      | Background Pk Height (A): 0.055 |
| Blank Corrected Pk Area (A-s): 0.121 |                                 |
| Concentration (ug/L ): 54.6          |                                 |

Mean Conc (ug/L ): 53.9 SD: 0.97 RSD(%): 1.80

Standard number 2 applied. [50.0]  
Correlation coefficient: 1.00000 Slope: 0.0022

~~~~~  
b ID: 100 PPB PB Seq. No.: 00097 A/S Pos.: 3 Date: 10/14/98

Replicate 1 Time: 15:52
Peak Area (A-s): 0.234 Peak Height (A): 0.451
Background Pk Area (A-s): 0.077 Background Pk Height (A): 0.106
Blank Corrected Pk Area (A-s): 0.234
Concentration (ug/L): 90.5

Replicate 2 Time: 15:55
Peak Area (A-s): 0.230 Peak Height (A): 0.445
Background Pk Area (A-s): 0.075 Background Pk Height (A): 0.103
Blank Corrected Pk Area (A-s): 0.231
Concentration (ug/L): 89.4

Mean Conc (ug/L): 90.0 SD: 0.83 RSD(%): 0.92

S-shaped calibration curve detected. 2-coef. equation used.
Standard number 3 applied. [100.0]
Correlation coefficient: 0.99936 Slope: 0.0023

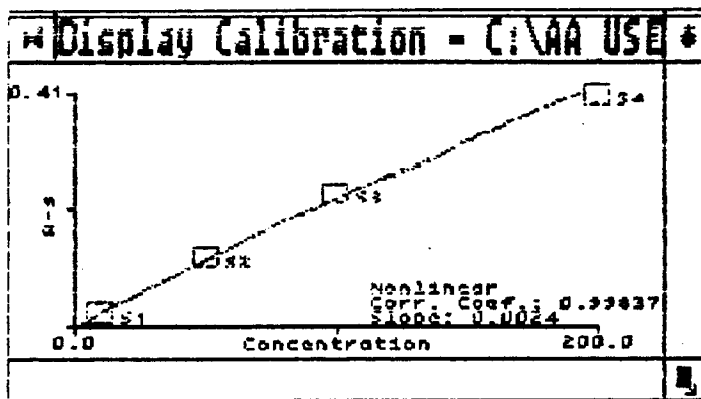
~~~~~  
b ID: 200 PPB PB Seq. No.: 00098 A/S Pos.: 4 Date: 10/14/98

Replicate 1 Time: 15:59  
Peak Area (A-s): 0.419 Peak Height (A): 0.754  
Background Pk Area (A-s): 0.129 Background Pk Height (A): 0.213  
Blank Corrected Pk Area (A-s): 0.419  
Concentration (ug/L ): 171.2

Replicate 2 Time: 16:02  
Peak Area (A-s): 0.407 Peak Height (A): 0.743  
Background Pk Area (A-s): 0.124 Background Pk Height (A): 0.198  
Blank Corrected Pk Area (A-s): 0.408  
Concentration (ug/L ): 166.8

Mean Conc (ug/L ): 169.0 SD: 3.07 RSD(%): 1.82

S-shaped calibration curve detected. 2-coef. equation used.  
Standard number 4 applied. [200.0]  
Correlation coefficient: 0.99837 Slope: 0.0024



~~~~~  
b ID: ICV Seq. No.: 00099 A/S Pos.: 5 Date: 10/14/9

Replicate 1 Time: 16:07
Concentration (ug/L): 100.1

Replicate 2 Time: 16:10
Concentration (ug/L): 102.7

Mean Conc (ug/L): 101.4 SD: 1.83 RSD(%): 1.80

C sample is within range 79.5 - 120.49

~~~~~  
b ID: ICB Seq. No.: 00100 A/S Pos.: 0 Date: 10/14/9

Replicate 1 Time: 16:14  
Concentration (ug/L ): 1.6

Replicate 2 Time: 16:17  
Concentration (ug/L ): 1.7

Mean Conc (ug/L ): 1.6 SD: 0.10 RSD(%): 6.16

IC sample is within range -5.49 - 5.49

~~~~~  
b ID: 81002.8-1 Seq. No.: 00101 A/S Pos.: 6 Date: 10/14/9

Replicate 1 Time: 16:20
Concentration (ug/L): 19.5

Replicate 2 Time: 16:23
Concentration (ug/L): 19.1

Mean Conc (ug/L): 19.3 SD: 0.26 RSD(%): 1.33

~~~~~  
b ID: 81002.8-1 Seq. No.: 00102 A/S Pos.: 7 Date: 10/14/9

Replicate 1 Time: 16:26  
Concentration (ug/L ): 24.4

Replicate 1  
Concentration (ug/L ): 22.5  
Time: 16:33  
SD: 1.39  
RSD(%): 5.91  
~~~~~  
h ID: 81002.8-1 Seq. No.: 00103 A/S Pos.: 7 Date: 10/14/98
Replicate 1
Concentration (ug/L): 114.4
Time: 16:33
Replicate 2
Concentration (ug/L): 114.1
Time: 16:36
Mean Conc (ug/L): 114.3 SD: 0.21 RSD(%): 0.18
Recovery is 90.8%
~~~~~  
h ID: 81002.9-1 Seq. No.: 00104 A/S Pos.: 8 Date: 10/14/98  
Replicate 1  
Concentration (ug/L ): 22.5  
Time: 16:40  
Replicate 2  
Concentration (ug/L ): 19.1  
Time: 16:43  
Mean Conc (ug/L ): 20.8 SD: 2.40 RSD(%): 11.55  
~~~~~  
h ID: 81002.10-1 Seq. No.: 00105 A/S Pos.: 9 Date: 10/14/98
Replicate 1
Concentration (ug/L): 26.4
Time: 16:46
Replicate 2
Concentration (ug/L): 25.4
Time: 16:49
Mean Conc (ug/L): 25.9 SD: 0.73 RSD(%): 2.81
~~~~~  
h ID: 81002.B-2A Seq. No.: 00106 A/S Pos.: 10 Date: 10/14/98  
Replicate 1  
Concentration (ug/L ): 2.9  
Time: 16:53  
Replicate 2  
Concentration (ug/L ): 5.1  
Time: 16:56  
Mean Conc (ug/L ): 4.0 SD: 1.51 RSD(%): 37.85  
~~~~~  
h ID: 81002.1-2A Seq. No.: 00107 A/S Pos.: 11 Date: 10/14/98
Replicate 1
Concentration (ug/L): 18.4
Time: 16:59
Replicate 2
Concentration (ug/L): 18.5
Time: 17:02

ean Conc (ug/L): 18.5 SD: 0.05 RSD(%): 0.29

~~~~~  
h ID: 81002.1-2A Seq. No.: 00108 A/S Pos.: 11 Date: 10/14/98

eplicate 1 Time: 17:05  
oncentration (ug/L ): 115.8

eplicate 2 Time: 17:09  
oncentration (ug/L ): 115.2

ean Conc (ug/L ): 115.5 SD: 0.42 RSD(%): 0.36

ecovery is 97.1%

~~~~~  
h ID: 81002.2-2A Seq. No.: 00109 A/S Pos.: 12 Date: 10/14/98

eplicate 1 Time: 17:12
oncentration (ug/L): 12.7

eplicate 2 Time: 17:15
oncentration (ug/L): 14.3

ean Conc (ug/L): 13.5 SD: 1.13 RSD(%): 8.36

~~~~~  
h ID: 81002.3-2A Seq. No.: 00110 A/S Pos.: 13 Date: 10/14/98

eplicate 1 Time: 17:18  
oncentration (ug/L ): 15.9

eplicate 2 Time: 17:21  
oncentration (ug/L ): 17.2

ean Conc (ug/L ): 16.6 SD: 0.88 RSD(%): 5.34

~~~~~  
h ID: CCV Seq. No.: 00111 A/S Pos.: 3 Date: 10/14/98

eplicate 1 Time: 17:25
oncentration (ug/L): 104.3

eplicate 2 Time: 17:28
oncentration (ug/L): 99.2

ean Conc (ug/L): 101.7 SD: 3.57 RSD(%): 3.51

QC sample is within range 79.5 - 120.49

~~~~~  
h ID: CCB Seq. No.: 00112 A/S Pos.: 0 Date: 10/14/98

eplicate 1 Time: 17:31  
oncentration (ug/L ): 0.4

eplicate 2 Time: 17:34  
oncentration (ug/L ): -1.4



Mean Conc (ug/L ): -0.5 SD: 1.24 RSD(%): 237.88  
C sample is within range -5.49 - 5.49  
~~~~~  
ID: 81003.02 Seq. No.: 00113 A/S Pos.: 20 Date: 10/14/9
Replicate 1 Time: 17:39
Concentration (ug/L): 5.1
Replicate 2 Time: 17:42
Concentration (ug/L): 5.0
Mean Conc (ug/L): 5.0 SD: 0.06 RSD(%): 1.19
~~~~~  
ID: 81003. Seq. No.: 00114 A/S Pos.: 26 Date: 10/14/9  
Sample abs. is greater than that of the largest standard.  
Replicate 1 Time: 17:45  
Concentration (ug/L ): 633.0  
~~~~~  
ID: AS Position 000 Seq. No.: 00115 A/S Pos.: 0 Date: 10/14/9
Replicate 1 Time: 17:49
Concentration (ug/L): 9.6
~~~~~  
ID: 81003.02 Seq. No.: 00116 A/S Pos.: 23 Date: 10/14/9  
Replicate 1 Time: 17:53  
Concentration (ug/L ): 39.2  
~~~~~  
ID: 81005.1-1 Seq. No.: 00117 A/S Pos.: 32 Date: 10/14/9
Replicate 1 Time: 17:56
Concentration (ug/L): 42.0
~~~~~  
ID: 81003.RB-AP Seq. No.: 00118 A/S Pos.: 14 Date: 10/14/9  
Replicate 1 Time: 18:04  
Concentration (ug/L ): 2.8  
Replicate 2 Time: 18:07  
Concentration (ug/L ): 3.3  
Mean Conc (ug/L ): 3.0 SD: 0.34 RSD(%): 11.25  
~~~~~  
ID: 81003.RB-F Seq. No.: 00119 A/S Pos.: 15 Date: 10/14/9
Replicate 1 Time: 18:10
Concentration (ug/L): 7.5
Replicate 2 Time: 18:14
Concentration (ug/L): 7.1

recovery is 80.0%

~~~~~

h ID: 81003.U2 Seq. No.: 00130 A/S Pos.: 23 Date: 10/14/9

Replicate 1 Time: 19:23  
Concentration (ug/L ): 36.9

Replicate 2 Time: 19:26  
Concentration (ug/L ): 35.8

Mean Conc (ug/L ): 36.4 SD: 0.76 RSD(%): 2.10

~~~~~  
h ID: 81003.U3 Seq. No.: 00131 A/S Pos.: 24 Date: 10/14/9

Replicate 1 Time: 19:29
Concentration (ug/L): 27.7

Replicate 2 Time: 19:32
Concentration (ug/L): 27.1

Mean Conc (ug/L): 27.4 SD: 0.45 RSD(%): 1.63

~~~~~  
h ID: CCV Seq. No.: 00132 A/S Pos.: 3 Date: 10/14/9

Replicate 1 Time: 19:36  
Concentration (ug/L ): 106.4

Replicate 2 Time: 19:39  
Concentration (ug/L ): 108.4

Mean Conc (ug/L ): 107.4 SD: 1.44 RSD(%): 1.34

QC sample is within range 79.5 - 120.49

~~~~~  
h ID: CCB Seq. No.: 00133 A/S Pos.: 0 Date: 10/14/9

Replicate 1 Time: 19:42
Concentration (ug/L): 5.1

Replicate 2 Time: 19:46
Concentration (ug/L): 5.1

Mean Conc (ug/L): 5.1 SD: 0.06 RSD(%): 1.17

QC sample is within range -5.49 - 5.49

~~~~~  
h ID: 81005.B-1 Seq. No.: 00134 A/S Pos.: 31 Date: 10/14/9

Replicate 1 Time: 19:49  
Concentration (ug/L ): 11.1

Replicate 2 Time: 19:52  
Concentration (ug/L ): 10.9

```

mean Conc (ug/L ):      11.0      SD: 0.11      RSD(%): 1.01
~~~~~
Ph ID: 81005.1-1 Seq. No.: 00135 A/S Pos.: 32 Date: 10/14/9
Replicate 1 Time: 19:55
Concentration (ug/L): 39.6
Replicate 2 Time: 19:58
Concentration (ug/L): 38.8
mean Conc (ug/L): 39.2 SD: 0.61 RSD(%): 1.57
~~~~~
Ph ID: 81005.1-1      Seq. No.: 00136      A/S Pos.: 32      Date: 10/14/9
Replicate 1      Time: 20:02
Concentration (ug/L ): 138.7
Replicate 2      Time: 20:05
Concentration (ug/L ): 136.9
mean Conc (ug/L ):      137.8      SD: 1.28      RSD(%): 0.93
Recovery is 98.6%
~~~~~
Ph ID: 81005.2-1 Seq. No.: 00137 A/S Pos.: 33 Date: 10/14/9
Replicate 1 Time: 20:08
Concentration (ug/L): 28.0
Replicate 2 Time: 20:11
Concentration (ug/L): 25.2
mean Conc (ug/L): 26.6 SD: 2.02 RSD(%): 7.59
~~~~~
Ph ID: 81005.B-2A      Seq. No.: 00138      A/S Pos.: 34      Date: 10/14/9
Replicate 1      Time: 20:15
Concentration (ug/L ): 10.1
Replicate 2      Time: 20:18
Concentration (ug/L ): 8.5
mean Conc (ug/L ):      9.3      SD: 1.12      RSD(%): 12.01
~~~~~
Ph ID: 81005.1-2A Seq. No.: 00139 A/S Pos.: 35 Date: 10/14/9
Replicate 1 Time: 20:21
Concentration (ug/L): 18.8
Replicate 2 Time: 20:24
Concentration (ug/L): 19.5
mean Conc (ug/L): 19.1 SD: 0.45 RSD(%): 2.37

```

~~~~~  
ID: 81005.1-2A                      Seq. No.: 00140      A/S Pos.: 35      Date: 10/14/

Replicate 1                                      Time: 20:28

Concentration (ug/L ): 122.1

Replicate 2                                      Time: 20:31

Concentration (ug/L ): 121.4

Mean Conc (ug/L ):              121.8              SD: 0.50              RSD(%): 0.41

Recovery is 102.6%

~~~~~  
ID: 81005.2-2A                      Seq. No.: 00141      A/S Pos.: 36      Date: 10/14/

Replicate 1                                      Time: 20:35

Concentration (ug/L ): 40.0

Replicate 2                                      Time: 20:38

Concentration (ug/L ): 39.5

Mean Conc (ug/L ):              39.8              SD: 0.37              RSD(%): 0.94

~~~~~  
ID: CCV                              Seq. No.: 00142      A/S Pos.: 3      Date: 10/14/

Replicate 1                                      Time: 20:41

Concentration (ug/L ): 114.1

Replicate 2                                      Time: 20:44

Concentration (ug/L ): 109.9

Mean Conc (ug/L ):              112.0              SD: 2.96              RSD(%): 2.65

QC sample is within range 79.5 - 120.49

~~~~~  
ID: CCB                              Seq. No.: 00143      A/S Pos.: 0      Date: 10/14/

Replicate 1                                      Time: 20:48

Concentration (ug/L ): 3.8

Replicate 2                                      Time: 20:51

Concentration (ug/L ): 1.5

Mean Conc (ug/L ):              2.7              SD: 1.64              RSD(%): 61.05

QC sample is within range -5.49 - 5.49

AA  
MAIN: -0.000 HD-0.000 MAIN: -0.000 HD 0.000

PB MEAN: -0.000 SD: 0.000 RSD: 99.9 AUTOZERO 0.000

AA  
MAIN: 0.003 HD 0.003 MAIN: 0.003 HD 0.003

PB MEAN: 0.003 SD: 0.000 RSD: 2.2 1.STANDARD 0.20 MG/L

AA  
MAIN: 0.48 MG/L HD 0.007 MAIN: 0.48 MG/L HD 0.007

PB MEAN: 0.48 MG/L SD: 0.001 RSD: 0.3 2.STANDARD 0.50 MG/L

AA  
MAIN: 0.98 MG/L HD 0.014 MAIN: 1.00 MG/L HD 0.015

PB MEAN: 0.99 MG/L SD: 0.017 RSD: 1.7 3.STANDARD 1.00 MG/L

AA  
MAIN: 1.97 MG/L HD 0.029 MAIN: 1.95 MG/L HD 0.029

PB MEAN: 1.96 MG/L SD: 0.015 RSD: 0.8 4.STANDARD 1.99 MG/L

AA  
MAIN: 5.00 MG/L HD 0.072 MAIN: 5.01 MG/L HD 0.073

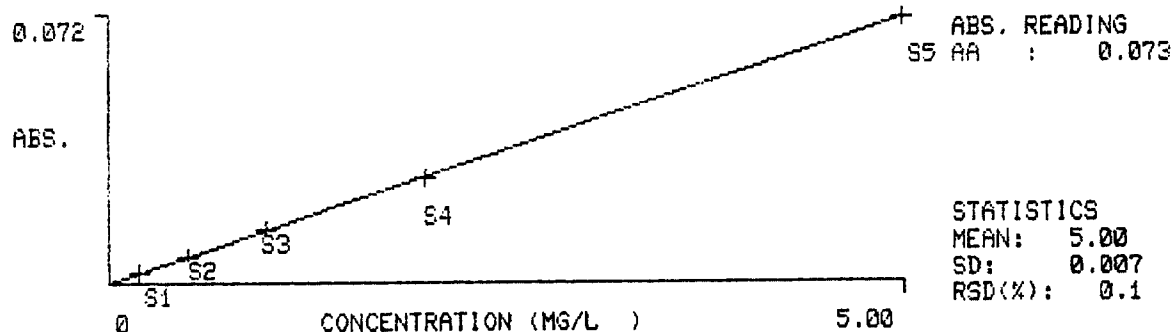
PB MEAN: 5.00 MG/L SD: 0.007 RSD: 0.1 5.STANDARD 5.00 MG/L

FLAME DISPLAY CALIBRATION MODE  
ELEMENT: PB

PRINTER: ON  
BG CORR: OFF  
UNITS : MG/L

REPL. 0 OF 2

5.00



C2H2: 2.5 L/MIN OXIDANT: 8.0 L/MIN FLAME: C2H2-AIR

AA  
MAIN: -0.01 MG/L HD-0.000 MAIN: 0.02 MG/L HD 0.000

PB MEAN: 0.01 MG/L SD: 0.026 RSD: 99.9 AUTOZERO 0.00

AA  
MAIN: 1.98 MG/L HD 0.029      MAIN: 1.92 MG/L HD 0.028

PB *11V* MEAN: 1.95 MG/L SD: 0.039 RSD: 2.0

AA  
MAIN: 0.01 MG/L HD 0.000      MAIN: 0.00 MG/L HD 0.000

PB *11B* MEAN: 0.01 MG/L SD: 0.007 RSD: 99.9

AA  
MAIN: 1.02 MG/L HD 0.015      MAIN: 1.04 MG/L HD 0.015

*1003* PB *11* MEAN: 1.03 MG/L SD: 0.018 RSD: 1.7

AA  
MAIN: 3.00 MG/L HD 0.044      MAIN: 2.95 MG/L HD 0.043

PB *11S* MEAN: 2.98 MG/L SD: 0.036 RSD: 1.2

AA  
MAIN: 1.54 MG/L HD 0.022      MAIN: 1.53 MG/L HD 0.022

PB *12* MEAN: 1.53 MG/L SD: 0.010 RSD: 0.6

AA  
MAIN: 1.55 MG/L HD 0.022      MAIN: 1.60 MG/L HD 0.023

PB *12D* MEAN: 1.57 MG/L SD: 0.038 RSD: 2.4

AA  
MAIN: 1.28 MG/L HD 0.019      MAIN: 1.28 MG/L HD 0.017

PB *13* MEAN: 1.28 MG/L SD: 0.001 RSD: 0.1

AA  
MAIN: 1.98 MG/L HD 0.029      MAIN: 1.93 MG/L HD 0.028

PB *11V* MEAN: 1.95 MG/L SD: 0.039 RSD: 2.0

AA  
MAIN: -0.02 MG/L HD -0.000      MAIN: -0.01 MG/L HD -0.000

PB *1003* MEAN: -0.02 MG/L SD: 0.009 RSD: 55.4

*1006* AA  
MAIN: 0.46 MG/L HD 0.007      MAIN: 0.41 MG/L HD 0.006

PB *1* MEAN: 0.43 MG/L SD: 0.036 RSD: 8.2

AA  
MAIN: 2.41 MG/L HQ 0.035

AA  
MAIN: 2.36 MG/L HQ 0.034

PB 15 MEAN: 2.38 MG/L SD: 0.034 RSD: 1.4

AA  
MAIN: 0.33 MG/L HQ 0.005

AA  
MAIN: 0.36 MG/L HQ 0.005

PB 2 MEAN: 0.34 MG/L SD: 0.021 RSD: 6.1

AA  
MAIN: 0.35 MG/L HQ 0.005

AA  
MAIN: 0.30 MG/L HQ 0.004

PB 20 MEAN: 0.32 MG/L SD: 0.037 RSD: 11.4

AA  
MAIN: 0.33 MG/L HQ 0.005

AA  
MAIN: 0.38 MG/L HQ 0.005

PB 3 MEAN: 0.35 MG/L SD: 0.036 RSD: 10.1

AA  
MAIN: 1.94 MG/L HQ 0.028

AA  
MAIN: 1.94 MG/L HQ 0.028

PB cv MEAN: 1.94 MG/L SD: 0.005 RSD: 0.3

AA  
MAIN: -0.02 MG/L HQ-0.000

AA  
MAIN: -0.05 MG/L HQ-0.001

PB CC3 MEAN: -0.03 MG/L SD: 0.023 RSD: 69.5

|              |          |              |          |
|--------------|----------|--------------|----------|
|              | AA       |              | AA       |
| MAIN: -0.000 | HO-0.000 | MAIN: -0.000 | HO 0.000 |

|    |              |           |           |          |       |
|----|--------------|-----------|-----------|----------|-------|
| MN | MEAN: -0.000 | SD: 0.000 | RSD: 52.8 | AUTOZERO | 0.000 |
|----|--------------|-----------|-----------|----------|-------|

|             |          |             |          |
|-------------|----------|-------------|----------|
|             | AA       |             | AA       |
| MAIN: 0.006 | HO 0.006 | MAIN: 0.006 | HO 0.006 |

|    |             |           |          |             |       |      |
|----|-------------|-----------|----------|-------------|-------|------|
| MN | MEAN: 0.006 | SD: 0.000 | RSD: 1.1 | 1. STANDARD | 0.050 | MG/L |
|----|-------------|-----------|----------|-------------|-------|------|

|                  |          |                  |          |
|------------------|----------|------------------|----------|
|                  | AA       |                  | AA       |
| MAIN: 0.101 MG/L | HO 0.013 | MAIN: 0.102 MG/L | HO 0.013 |

|    |                  |           |          |             |       |      |
|----|------------------|-----------|----------|-------------|-------|------|
| MN | MEAN: 0.101 MG/L | SD: 0.000 | RSD: 0.3 | 2. STANDARD | 0.100 | MG/L |
|----|------------------|-----------|----------|-------------|-------|------|

|                  |          |                  |          |
|------------------|----------|------------------|----------|
|                  | AA       |                  | AA       |
| MAIN: 0.194 MG/L | HO 0.025 | MAIN: 0.200 MG/L | HO 0.026 |

|    |                  |           |          |             |       |      |
|----|------------------|-----------|----------|-------------|-------|------|
| MN | MEAN: 0.197 MG/L | SD: 0.005 | RSD: 2.3 | 3. STANDARD | 0.199 | MG/L |
|----|------------------|-----------|----------|-------------|-------|------|

|                  |          |                  |          |
|------------------|----------|------------------|----------|
|                  | AA       |                  | AA       |
| MAIN: 0.516 MG/L | HO 0.065 | MAIN: 0.514 MG/L | HO 0.065 |

|    |                  |           |          |             |       |      |
|----|------------------|-----------|----------|-------------|-------|------|
| MN | MEAN: 0.515 MG/L | SD: 0.002 | RSD: 0.3 | 4. STANDARD | 0.503 | MG/L |
|----|------------------|-----------|----------|-------------|-------|------|

|                  |          |                  |          |
|------------------|----------|------------------|----------|
|                  | AA       |                  | AA       |
| MAIN: 0.943 MG/L | HO 0.122 | MAIN: 0.950 MG/L | HO 0.123 |

|    |                  |           |          |             |       |      |
|----|------------------|-----------|----------|-------------|-------|------|
| MN | MEAN: 0.947 MG/L | SD: 0.005 | RSD: 0.6 | 5. STANDARD | 0.987 | MG/L |
|----|------------------|-----------|----------|-------------|-------|------|

|                  |          |                  |          |
|------------------|----------|------------------|----------|
|                  | AA       |                  | AA       |
| MAIN: 1.015 MG/L | HO 0.126 | MAIN: 0.988 MG/L | HO 0.123 |

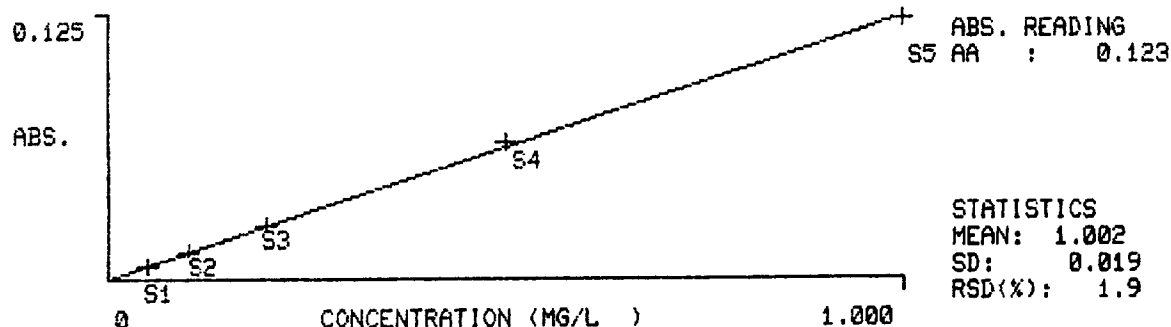
|    |                  |           |          |             |       |      |
|----|------------------|-----------|----------|-------------|-------|------|
| MN | MEAN: 1.002 MG/L | SD: 0.019 | RSD: 1.9 | 5. STANDARD | 0.990 | MG/L |
|----|------------------|-----------|----------|-------------|-------|------|

FLAME DISPLAY CALIBRATION MODE  
ELEMENT: MN

PRINTER: ON  
BG CORR: OFF  
UNITS : MG/L

0.990

REPL. 0 OF 2



C2H2: 2.5 L/MIN

OXIDANT: 8.0 L/MIN

FLAME: C2H2-AIR



AA  
MAIN: 0.005 MG/L HD-0.000

AA  
MAIN: 0.004 MG/L HD-0.000

MN MEAN: 0.005 MG/L SD: 0.001 RSD: 18.9 AUTOZERO 0.000

AA  
MAIN: 0.494 MG/L HD 0.062

AA  
MAIN: 0.499 MG/L HD 0.063

MN *12V* MEAN: 0.496 MG/L SD: 0.004 RSD: 0.7

AA  
MAIN: 0.001 MG/L HD 0.000

AA  
MAIN: -0.001 MG/L HD-0.000

MN *12B* MEAN: -0.000 MG/L SD: 0.002 RSD: 99.9

AA  
MAIN: 0.050 MG/L HD 0.006

AA  
MAIN: 0.057 MG/L HD 0.007

*002* MN *B-1* MEAN: 0.053 MG/L SD: 0.005 RSD: 9.9

AA  
MAIN: 4.074 MG/L HD 0.513

E61 Sample concentration greater than highest standard

AA  
MAIN: 4.113 MG/L HD 0.518

E61 Sample concentration greater than highest standard

MN *8-1* MEAN: 4.094 MG/L SD: 0.027 RSD: 0.7

AA  
MAIN: 0.004 MG/L HD 0.001

AA  
MAIN: 0.005 MG/L HD 0.000

MN *setp* MEAN: 0.005 MG/L SD: 0.001 RSD: 19.8 AUTOZERO 0.000

AA  
MAIN: 0.352 MG/L HD 0.044

AA  
MAIN: 0.360 MG/L HD 0.045

MN *8-1x10* MEAN: 0.356 MG/L SD: 0.006 RSD: 1.6

AA  
MAIN: 0.848 MG/L HD 0.107

AA  
MAIN: 0.845 MG/L HD 0.106

MN *8-15* MEAN: 0.847 MG/L SD: 0.002 RSD: 0.3

*(400)*

AA  
MAIN: 0.680 MG/L HD 0.086

AA  
MAIN: 0.687 MG/L HD 0.087

MN *8-1x5* MEAN: 0.684 MG/L SD: 0.005 RSD: 0.8

AA  
MAIN: 0.684 MG/L HD 0.086

AA  
MAIN: 0.685 MG/L HD 0.086

02  
MN 8-15D MEAN: 0.684 MG/L SD: 0.001 RSD: 0.1

AA  
MAIN: 0.186 MG/L HD 0.023

AA  
MAIN: 0.195 MG/L HD 0.024

MN 10-1x20 MEAN: 0.190 MG/L SD: 0.006 RSD: 3.1

AA  
MAIN: 0.058 MG/L HD 0.007

AA  
MAIN: 0.063 MG/L HD 0.008

MN 8-24 MEAN: 0.061 MG/L SD: 0.003 RSD: 5.0

AA  
MAIN: 0.061 MG/L HD 0.008

AA  
MAIN: 0.061 MG/L HD 0.008

MN 8-2A MEAN: 0.061 MG/L SD: 0.000 RSD: 0.2

AA  
MAIN: 0.428 MG/L HD 0.054

AA  
MAIN: 0.445 MG/L HD 0.056

MN 8-2AS MEAN: 0.436 MG/L SD: 0.012 RSD: 2.7

AA  
MAIN: 0.480 MG/L HD 0.060

AA  
MAIN: 0.486 MG/L HD 0.061

MN CCV MEAN: 0.483 MG/L SD: 0.004 RSD: 0.9

AA  
MAIN: 0.001 MG/L HD 0.000

AA  
MAIN: 0.001 MG/L HD 0.000

MN CCB MEAN: 0.001 MG/L SD: 0.000 RSD: 32.8

AA  
MAIN: 0.167 MG/L HD 0.021

AA  
MAIN: 0.166 MG/L HD 0.021

MN 8-4 MEAN: 0.167 MG/L SD: 0.001 RSD: 0.5

AA  
MAIN: 0.168 MG/L HD 0.021

AA  
MAIN: 0.148 MG/L HD 0.019

MN 9-4D MEAN: 0.158 MG/L SD: 0.015 RSD: 9.2

AA  
MAIN: 0.067 MG/L HD 0.008

AA  
MAIN: 0.065 MG/L HD 0.008

MN 10-4 MEAN: 0.066 MG/L SD: 0.001 RSD: 1.8

AA  
MAIN: 0.028 MG/L HD 0.004

AA  
MAIN: 0.026 MG/L HD 0.003

103 MN *RB-P* MEAN: 0.027 MG/L SD: 0.001 RSD: 4.9

AA  
MAIN: 0.026 MG/L HD 0.003

AA  
MAIN: 0.024 MG/L HD 0.003

MN *RB-F* MEAN: 0.025 MG/L SD: 0.002 RSD: 7.4

AA  
MAIN: 0.025 MG/L HD 0.003

AA  
MAIN: 0.027 MG/L HD 0.003

MN MEAN: 0.026 MG/L SD: 0.001 RSD: 5.2

AA  
MAIN: -0.015 MG/L HD -0.002

AA  
MAIN: -0.014 MG/L HD 0.000

MN *OB* MEAN: -0.014 MG/L SD: 0.001 RSD: 3.6 AUTOZERO 0.000

AA  
MAIN: 0.025 MG/L HD 0.003

AA  
MAIN: 0.022 MG/L HD 0.003

MN *UB* MEAN: 0.024 MG/L SD: 0.002 RSD: 7.7

AA  
MAIN: 0.027 MG/L HD 0.004

AA  
MAIN: 0.025 MG/L HD 0.003

MN *IB* MEAN: 0.027 MG/L SD: 0.003 RSD: 11.0

AA  
MAIN: 0.497 MG/L HD 0.063

AA  
MAIN: 0.497 MG/L HD 0.063

MN *CU* MEAN: 0.497 MG/L SD: 0.000 RSD: 0.1

AA  
MAIN: -0.006 MG/L HD -0.001

AA  
MAIN: -0.008 MG/L HD -0.001

MN *CB* MEAN: -0.007 MG/L SD: 0.001 RSD: 12.5

AA  
MAIN: -0.006 MG/L HD -0.001

AA  
MAIN: -0.009 MG/L HD -0.001

MN *setp* MEAN: -0.007 MG/L SD: 0.002 RSD: 26.1 AUTOZERO 0.000

AA  
MAIN: 0.029 MG/L HD 0.004

AA  
MAIN: 0.028 MG/L HD 0.004

MN *GI* MEAN: 0.028 MG/L SD: 0.001 RSD: 2.4

AA  
MAIN: 0.064 MG/L HD 0.008      MAIN: 0.067 MG/L HD 0.008

MN 02 MEAN: 0.065 MG/L SD: 0.003 RSD: 3.9

AA  
MAIN: 0.062 MG/L HD 0.008      MAIN: 0.067 MG/L HD 0.008

MN 02D MEAN: 0.065 MG/L SD: 0.004 RSD: 6.2

AA  
MAIN: 0.033 MG/L HD 0.004      MAIN: 0.034 MG/L HD 0.004

MN 03 MEAN: 0.034 MG/L SD: 0.000 RSD: 1.4

AA  
MAIN: 0.027 MG/L HD 0.003      MAIN: 0.031 MG/L HD 0.004

MN 41 MEAN: 0.029 MG/L SD: 0.003 RSD: 10.8

AA  
MAIN: 0.032 MG/L HD 0.004      MAIN: 0.029 MG/L HD 0.004

MN 42 MEAN: 0.031 MG/L SD: 0.002 RSD: 5.6

AA  
MAIN: 0.014 MG/L HD 0.002      MAIN: 0.013 MG/L HD 0.002

MN 43 MEAN: 0.014 MG/L SD: 0.001 RSD: 6.5

AA  
MAIN: 0.489 MG/L HD 0.062      MAIN: 0.480 MG/L HD 0.060

MN CCV MEAN: 0.484 MG/L SD: 0.007 RSD: 1.4

AA  
MAIN: -0.007 MG/L HD-0.001      MAIN: -0.008 MG/L HD-0.001

MN CCB MEAN: -0.008 MG/L SD: 0.000 RSD: 5.1

AA  
MAIN: 0.416 MG/L HD 0.052      MAIN: 0.427 MG/L HD 0.054

MN II MEAN: 0.421 MG/L SD: 0.008 RSD: 1.9

AA  
MAIN: 0.800 MG/L HD 0.101      MAIN: 0.799 MG/L HD 0.101

MN IIS MEAN: 0.800 MG/L SD: 0.001 RSD: 0.1

AA  
MAIN: 0.451 MG/L HD 0.057

AA  
MAIN: 0.465 MG/L HD 0.059

MN 12 MEAN: 0.458 MG/L SD: 0.010 RSD: 2.2

AA  
MAIN: 0.446 MG/L HD 0.056

AA  
MAIN: 0.442 MG/L HD 0.056

MN 13 MEAN: 0.444 MG/L SD: 0.003 RSD: 0.6

AA  
MAIN: 0.494 MG/L HD 0.062

AA  
MAIN: 0.516 MG/L HD 0.065

066 MN 1 MEAN: 0.505 MG/L SD: 0.016 RSD: 3.1

AA  
MAIN: 0.879 MG/L HD 0.111

AA  
MAIN: 0.885 MG/L HD 0.111

MN 15 MEAN: 0.882 MG/L SD: 0.004 RSD: 0.5

AA  
MAIN: 0.345 MG/L HD 0.043

AA  
MAIN: 0.322 MG/L HD 0.041

MN 2 MEAN: 0.334 MG/L SD: 0.017 RSD: 5.0

AA  
MAIN: 0.333 MG/L HD 0.042

AA  
MAIN: 0.336 MG/L HD 0.042

MN 2D MEAN: 0.334 MG/L SD: 0.002 RSD: 0.6

AA  
MAIN: 0.359 MG/L HD 0.045

AA  
MAIN: 0.356 MG/L HD 0.045

MN 3 MEAN: 0.358 MG/L SD: 0.003 RSD: 0.7

AA  
MAIN: 0.473 MG/L HD 0.060

AA  
MAIN: 0.475 MG/L HD 0.060

MN CCV MEAN: 0.474 MG/L SD: 0.001 RSD: 0.2

AA  
MAIN: -0.016 MG/L HD-0.002

AA  
MAIN: -0.020 MG/L HD-0.003

MN CCB MEAN: 0.018 MG/L SD: 0.003 RSD: 17.7

=====

| HG    |       | AA-BG    | BG    |
|-------|-------|----------|-------|
| MAIN: | 0.001 | PA 0.030 | 0.005 |
|       |       | PH 0.001 | 0.000 |

=====

0.000      AUTOZERO

=====

=====

| HG    |       | AA-BG    | BG    |
|-------|-------|----------|-------|
| MAIN: | 0.010 | PA 0.141 | 0.018 |
|       |       | PH 0.010 | 0.000 |

=====

0.50      1. STANDARD

=====

=====

| HG    |           | AA-BG    | BG     |
|-------|-----------|----------|--------|
| MAIN: | 1.21 UG/L | PA 0.428 | -0.040 |
|       |           | PH 0.025 | -0.001 |

=====

E61 Sample concentration greater than highest standard

=====

1.03      2. STANDARD

=====

=====

| HG    |           | AA-BG    | BG     |
|-------|-----------|----------|--------|
| MAIN: | 1.70 UG/L | PA 0.657 | -0.025 |
|       |           | PH 0.042 | -0.001 |

=====

E61 Sample concentration greater than highest standard

=====

1.91      3. STANDARD

=====

=====

| HG    |           | AA-BG    | BG    |
|-------|-----------|----------|-------|
| MAIN: | 5.75 UG/L | PA 2.020 | 0.024 |
|       |           | PH 0.125 | 0.002 |

=====

E61 Sample concentration greater than highest standard

=====

5.10      4. STANDARD

=====

=====

| HG    |            | AA-BG    | BG    |
|-------|------------|----------|-------|
| MAIN: | 11.31 UG/L | PA 4.198 | 0.021 |
|       |            | PH 0.278 | 0.003 |

=====

E61 Sample concentration greater than highest standard

=====

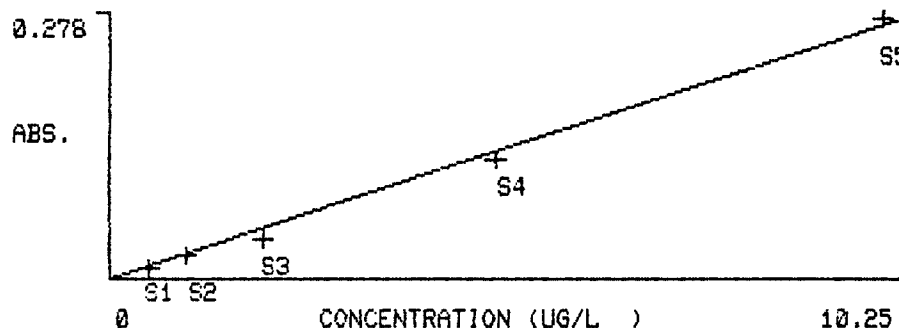
10.25      5. STANDARD

=====

HGA DISPLAY CALIBRATION MODE  
ELEMENT: HG - PEAK HEIGHT

PRINTER: ON  
BG CORR: ON  
UNITS : UG/L  
CH.MASS:

# 10.25



READ  
PEAK AREA (A-S)  
AA-BG: 4.198  
BG: 0.021

PEAK HEIGHT (A)  
AA-BG: 0.278  
BG: 0.003

|                  |          |        |                  |          |        |
|------------------|----------|--------|------------------|----------|--------|
| HG <i>ICV</i>    | AA-BG    | BG     | HG <i>ICB</i>    | AA-BG    | BG     |
| MAIN: 4.79 UG/L  | PA 2.088 | 0.011  | MAIN: -0.13 UG/L | PA-0.098 | -0.000 |
|                  | PH 0.130 | 0.001  |                  | PH-0.004 | -0.000 |
| HG <i>RB AP</i>  | AA-BG    | BG     | HG               | AA-BG    | BG     |
| MAIN: -0.07 UG/L | PA-0.033 | -0.021 | MAIN: -0.01 UG/L | PA-0.004 | -0.024 |
|                  | PH-0.002 | -0.002 |                  | PH-0.000 | -0.001 |
| HG <i>RB-F</i>   | AA-BG    | BG     | HG               | AA-BG    | BG     |
| MAIN: 0.00 UG/L  | PA-0.005 | -0.041 | MAIN: 0.03 UG/L  | PA-0.019 | -0.040 |
|                  | PH 0.000 | -0.002 |                  | PH 0.001 | -0.001 |
| HG <i>OB</i>     | AA-BG    | BG     | HG               | AA-BG    | BG     |
| MAIN: -0.04 UG/L | PA-0.026 | -0.044 | MAIN: 0.03 UG/L  | PA-0.019 | -0.018 |
|                  | PH-0.001 | -0.002 |                  | PH 0.001 | -0.001 |
| HG <i>UB</i>     | AA-BG    | BG     | HG               | AA-BG    | BG     |
| MAIN: -0.03 UG/L | PA-0.014 | -0.011 | MAIN: 0.01 UG/L  | PA-0.029 | -0.015 |
|                  | PH-0.001 | 0.000  |                  | PH 0.000 | -0.002 |
| HG <i>IB</i>     | AA-BG    | BG     | HG               | AA-BG    | BG     |
| MAIN: 0.04 UG/L  | PA 0.014 | -0.007 | MAIN: -0.04 UG/L | PA-0.011 | -0.029 |
|                  | PH 0.001 | -0.001 |                  | PH-0.001 | -0.002 |
| HG <i>01</i>     | AA-BG    | BG     | HG               | AA-BG    | BG     |
| MAIN: 0.01 UG/L  | PA 0.017 | -0.017 | MAIN: 0.03 UG/L  | PA 0.007 | -0.016 |
|                  | PH 0.000 | 0.000  |                  | PH 0.001 | -0.000 |
| HG <i>01S</i>    | AA-BG    | BG     | HG               | AA-BG    | BG     |
| MAIN: 4.43 UG/L  | PA 1.985 | -0.011 | MAIN: 5.04 UG/L  | PA 2.323 | 0.008  |
|                  | PH 0.120 | -0.000 |                  | PH 0.136 | 0.000  |
| HG <i>02ccv</i>  | AA-BG    | BG     | HG <i>02B</i>    | AA-BG    | BG     |
| MAIN: 4.53 UG/L  | PA 2.022 | -0.010 | MAIN: -0.18 UG/L | PA-0.104 | -0.012 |
|                  | PH 0.123 | 0.000  |                  | PH-0.005 | -0.001 |
| HG <i>02</i>     | AA-BG    | BG     | HG               | AA-BG    | BG     |
| MAIN: -0.03 UG/L | PA-0.031 | -0.020 | MAIN: -0.01 UG/L | PA-0.032 | -0.020 |
|                  | PH-0.001 | -0.001 |                  | PH-0.000 | 0.000  |

|                                                     |                               |                        |                                       |                               |                        |
|-----------------------------------------------------|-------------------------------|------------------------|---------------------------------------|-------------------------------|------------------------|
| ml<br>HG<br>MAIN: <sup>03</sup> -0.06 UG/L          | AA-BG<br>PA-0.008<br>PH-0.002 | BG<br>-0.029<br>-0.000 | HG<br>MAIN: -0.06 UG/L                | AA-BG<br>PA-0.022<br>PH-0.002 | BG<br>-0.003<br>0.001  |
| HG<br>MAIN: <sup>u1</sup> 0.19 UG/L                 | AA-BG<br>PA 0.023<br>PH 0.005 | BG<br>-0.012<br>-0.000 | HG<br>MAIN: 0.12 UG/L                 | AA-BG<br>PA 0.048<br>PH 0.003 | BG<br>0.000<br>0.000   |
| HG<br>MAIN: <sup>u2</sup> 0.00 UG/L                 | AA-BG<br>PA 0.005<br>PH 0.000 | BG<br>-0.010<br>0.001  | HG<br>MAIN: -0.01 UG/L                | AA-BG<br>PA-0.006<br>PH-0.000 | BG<br>-0.010<br>-0.001 |
| HG<br>MAIN: <sup>u3</sup> 0.19 UG/L                 | AA-BG<br>PA 0.101<br>PH 0.005 | BG<br>-0.004<br>0.002  | HG<br>MAIN: 0.15 UG/L                 | AA-BG<br>PA 0.080<br>PH 0.004 | BG<br>0.006<br>0.000   |
| HG<br>MAIN: <sup>I1</sup> 0.22 UG/L                 | AA-BG<br>PA 0.089<br>PH 0.006 | BG<br>-0.013<br>-0.001 | HG<br>MAIN: 0.24 UG/L                 | AA-BG<br>PA 0.121<br>PH 0.006 | BG<br>-0.007<br>0.000  |
| HG<br>MAIN: <sup>I2</sup> 0.27 UG/L                 | AA-BG<br>PA 0.124<br>PH 0.007 | BG<br>0.020<br>0.002   | HG<br>MAIN: 0.32 UG/L                 | AA-BG<br>PA 0.128<br>PH 0.009 | BG<br>-0.002<br>-0.001 |
| HG<br>MAIN: <sup>ccv</sup> 4.76 UG/L ✓              | AA-BG<br>PA 2.145<br>PH 0.129 | BG<br>0.012<br>0.001   | HG<br>MAIN: <sup>ccB</sup> -0.06 UG/L | AA-BG<br>PA-0.052<br>PH-0.002 | BG<br>-0.008<br>0.001  |
| 06<br>HG<br>MAIN: <sup>1</sup> 0.03 UG/L            | AA-BG<br>PA 0.003<br>PH 0.001 | BG<br>-0.002<br>-0.001 | HG<br>MAIN: 0.09 UG/L                 | AA-BG<br>PA 0.026<br>PH 0.002 | BG<br>0.005<br>-0.000  |
| HG<br>MAIN: <sup>2</sup> 0.01 UG/L                  | AA-BG<br>PA 0.024<br>PH 0.000 | BG<br>-0.003<br>0.001  | HG<br>MAIN: 0.12 UG/L                 | AA-BG<br>PA 0.026<br>PH 0.003 | BG<br>-0.016<br>-0.000 |
| HG<br>MAIN: <sup>3</sup> 0.09 UG/L                  | AA-BG<br>PA 0.039<br>PH 0.002 | BG<br>-0.012<br>-0.000 | HG<br>MAIN: -0.01 UG/L                | AA-BG<br>PA-0.004<br>PH-0.000 | BG<br>0.010<br>0.000   |
| 11<br>5ml<br>HG<br>MAIN: <sup>B-2B</sup> -0.04 UG/L | AA-BG<br>PA-0.019<br>PH-0.001 | BG<br>0.018<br>0.000   | HG<br>MAIN: 0.07 UG/L                 | AA-BG<br>PA-0.016<br>PH 0.002 | BG<br>0.004<br>-0.000  |
| 5ml<br>HG<br>MAIN: <sup>11-2B</sup> 3.01 UG/L       | AA-BG<br>PA 1.295<br>PH 0.082 | BG<br>0.049<br>0.003   | HG<br>MAIN: 3.13 UG/L                 | AA-BG<br>PA 1.365<br>PH 0.085 | BG<br>-0.006<br>-0.000 |
| HG<br>MAIN: <sup>11-2BS</sup> 7.39 UG/L             | AA-BG<br>PA 3.307<br>PH 0.200 | BG<br>0.008<br>0.001   | HG<br>MAIN: 7.34 UG/L                 | AA-BG<br>PA 3.355<br>PH 0.199 | BG<br>0.050<br>0.002   |
| HG<br>MAIN: <sup>12-2B</sup> 2.19 UG/L              | AA-BG<br>PA 0.935<br>PH 0.059 | BG<br>0.021<br>0.002   | HG<br>MAIN: 2.29 UG/L                 | AA-BG<br>PA 0.951<br>PH 0.062 | BG<br>0.011<br>0.002   |
| HG<br>MAIN: <sup>ccv</sup> 4.42 UG/L                | AA-BG<br>PA 2.141<br>PH 0.120 | BG<br>0.007<br>0.002   | HG<br>MAIN: <sup>ccB</sup> -0.09 UG/L | AA-BG<br>PA-0.066<br>PH-0.002 | BG<br>-0.009<br>-0.001 |



|       |           |          |        |       |            |                 |        |
|-------|-----------|----------|--------|-------|------------|-----------------|--------|
| HG    | 13-2B     | AA-BG    | BG     | HG    | AA-BG      | BG              |        |
| MAIN: | 2.38 UG/L | PA 1.083 | 0.007  | MAIN: | 2.17 UG/L  | PA 0.993 0.026  |        |
|       |           | PH 0.064 | 0.000  |       |            | PH 0.059 0.004  |        |
| HG    | 21-2B     | AA-BG    | BG     | HG    | AA-BG      | BG              |        |
| MAIN: | 1.27 UG/L | PA 0.542 | -0.012 | MAIN: | 1.37 UG/L  | PA 0.579 0.024  |        |
|       |           | PH 0.034 | 0.000  |       |            | PH 0.037 0.002  |        |
| HG    | 22-2B     | AA-BG    | BG     | HG    | AA-BG      | BG              |        |
| MAIN: | 1.30 UG/L | PA 0.603 | 0.009  | MAIN: | 1.24 UG/L  | PA 0.575 0.020  |        |
|       |           | PH 0.035 | 0.000  |       |            | PH 0.034 0.002  |        |
| HG    | 23-2B     | AA-BG    | BG     | HG    | AA-BG      | BG              |        |
| MAIN: | 1.08 UG/L | PA 0.493 | -0.015 | MAIN: | 1.24 UG/L  | PA 0.538 0.002  |        |
|       |           | PH 0.029 | 0.000  |       |            | PH 0.034 -0.000 |        |
| HG    | ccv       | AA-BG    | BG     | HG    | ccB        | AA-BG           | BG     |
| MAIN: | 4.95 UG/L | PA 2.283 | 0.000  | MAIN: | -0.09 UG/L | PA-0.085        | -0.016 |
|       |           | PH 0.134 | 0.000  |       |            | PH-0.002        | -0.001 |

|                      |                       |                   |
|----------------------|-----------------------|-------------------|
| Element File: NI.GEL | Element: Ni           | Wavelength: 232.0 |
| Date: 10/19/98       | Time: 10:09           | Slit: 0.20 L      |
| Data File:           | ID/Wt File: B1002.IDW | Lamp Current: 25  |
| Technique: HGA       | Calib. Type: Linear   | Energy: 47        |

~~~~~

Li ID: BLANK Seq. No.: 00001 A/S Pos.: 0 Date: 10/19/98

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 1                          | Time: 10:09                     |
| Peak Area (A-s): 0.041               | Peak Height (A): 0.048          |
| Background Pk Area (A-s): 0.096      | Background Pk Height (A): 0.045 |
| Blank Corrected Pk Area (A-s): 0.041 |                                 |

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 2                          | Time: 10:12                     |
| Peak Area (A-s): 0.019               | Peak Height (A): 0.026          |
| Background Pk Area (A-s): 0.069      | Background Pk Height (A): 0.029 |
| Blank Corrected Pk Area (A-s): 0.019 |                                 |

|                     |       |            |               |
|---------------------|-------|------------|---------------|
| Mean Pk Area (A-s): | 0.030 | SD: 0.0160 | RSD(%): 53.40 |
|---------------------|-------|------------|---------------|

Auto-zero performed.

~~~~~

Li ID: BLANK Seq. No.: 00002 A/S Pos.: 0 Date: 10/19/98

|                                       |                                 |
|---------------------------------------|---------------------------------|
| Replicate 1                           | Time: 10:15                     |
| Peak Area (A-s): 0.016                | Peak Height (A): 0.020          |
| Background Pk Area (A-s): 0.063       | Background Pk Height (A): 0.026 |
| Blank Corrected Pk Area (A-s): -0.014 |                                 |

|                                       |                                 |
|---------------------------------------|---------------------------------|
| Replicate 2                           | Time: 10:19                     |
| Peak Area (A-s): 0.020                | Peak Height (A): 0.022          |
| Background Pk Area (A-s): 0.060       | Background Pk Height (A): 0.027 |
| Blank Corrected Pk Area (A-s): -0.009 |                                 |

|                     |        |            |               |
|---------------------|--------|------------|---------------|
| Mean Pk Area (A-s): | -0.012 | SD: 0.0030 | RSD(%): 25.81 |
|---------------------|--------|------------|---------------|

Auto-zero performed.

~~~~~

Li ID: 20 PPB NI Seq. No.: 00003 A/S Pos.: 1 Date: 10/19/98

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 1                          | Time: 10:22                     |
| Peak Area (A-s): 0.047               | Peak Height (A): 0.032          |
| Background Pk Area (A-s): 0.074      | Background Pk Height (A): 0.030 |
| Blank Corrected Pk Area (A-s): 0.028 |                                 |

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Replicate 2                          | Time: 10:25                     |
| Peak Area (A-s): 0.050               | Peak Height (A): 0.037          |
| Background Pk Area (A-s): 0.078      | Background Pk Height (A): 0.035 |
| Blank Corrected Pk Area (A-s): 0.032 |                                 |

|                     |       |            |              |
|---------------------|-------|------------|--------------|
| Mean Pk Area (A-s): | 0.030 | SD: 0.0026 | RSD(%): 8.71 |
|---------------------|-------|------------|--------------|

Standard number 1 applied. [20.0]  
Correlation coefficient: 1.00000

Slope: 0.0015

~~~~~  
#1 ID: 50 PPB NI Seq. No.: 00004 A/S Pos.: 2 Date: 10/19/9

Replicate 1 Time: 10:28  
Peak Area (A-s): 0.103 Peak Height (A): 0.056  
Background Pk Area (A-s): 0.093 Background Pk Height (A): 0.037  
Blank Corrected Pk Area (A-s): 0.085  
Concentration (ug/L ): 56.3

Replicate 2 Time: 10:32  
Peak Area (A-s): 0.097 Peak Height (A): 0.054  
Background Pk Area (A-s): 0.102 Background Pk Height (A): 0.041  
Blank Corrected Pk Area (A-s): 0.079  
Concentration (ug/L ): 52.6

Mean Conc (ug/L ): 54.4 SD: 2.62 RSD(%): 4.82

Standard number 2 applied. [50.0]  
Correlation coefficient: 0.99739 Slope: 0.0016

~~~~~  
#1 ID: 100 PPB NI Seq. No.: 00005 A/S Pos.: 3 Date: 10/19/9

Replicate 1 Time: 10:35  
Peak Area (A-s): 0.190 Peak Height (A): 0.097  
Background Pk Area (A-s): 0.125 Background Pk Height (A): 0.046  
Blank Corrected Pk Area (A-s): 0.172  
Concentration (ug/L ): 106.0

Replicate 2 Time: 10:38  
Peak Area (A-s): 0.191 Peak Height (A): 0.100  
Background Pk Area (A-s): 0.133 Background Pk Height (A): 0.048  
Blank Corrected Pk Area (A-s): 0.173  
Concentration (ug/L ): 106.5

Mean Conc (ug/L ): 106.3 SD: 0.37 RSD(%): 0.35

Standard number 3 applied. [100.0]  
Correlation coefficient: 0.99841 Slope: 0.0017

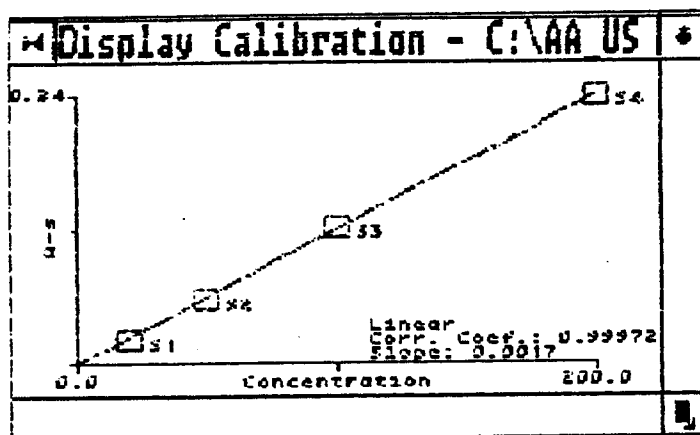
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#1 ID: 200 PPB NI Seq. No.: 00006 A/S Pos.: 4 Date: 10/19/9

Replicate 1 Time: 10:41  
Peak Area (A-s): 0.350 Peak Height (A): 0.171  
Background Pk Area (A-s): 0.171 Background Pk Height (A): 0.066  
Blank Corrected Pk Area (A-s): 0.332  
Concentration (ug/L ): 195.0

Replicate 2 Time: 10:44  
Peak Area (A-s): 0.366 Peak Height (A): 0.176  
Background Pk Area (A-s): 0.133 Background Pk Height (A): 0.054  
Blank Corrected Pk Area (A-s): 0.348  
Concentration (ug/L ): 204.6

Mean Conc (ug/L ): 199.8 SD: 6.78 RSD(%): 3.39

Standard number 4 applied. [200.0]  
Correlation coefficient: 0.99972 Slope: 0.0017



~~~~~  
 Ni ID: ICV Seq. No.: 00007 A/S Pos.: 5 Date: 10/19/9

Replicate 1 Time: 10:51  
 Concentration (ug/L ): 106.1

Replicate 2 Time: 10:54  
 Concentration (ug/L ): 109.8

Mean Conc (ug/L ): 108.0 SD: 2.62 RSD(%): 2.42

QC sample is within range 79.5 - 120.49

~~~~~  
 Ni ID: ICB Seq. No.: 00008 A/S Pos.: 0 Date: 10/19/9

Replicate 1 Time: 10:58  
 Concentration (ug/L ): 3.6

Replicate 2 Time: 11:01  
 Concentration (ug/L ): 2.6

Mean Conc (ug/L ): 3.1 SD: 0.69 RSD(%): 22.15

QC sample is within range -15.49 - 15.49

~~~~~  
 Ni ID: 81003.RB-AP Seq. No.: 00009 A/S Pos.: 14 Date: 10/19/9

Replicate 1 Time: 11:04  
 Concentration (ug/L ): -0.8

Replicate 2 Time: 11:07  
 Concentration (ug/L ): -6.1

Mean Conc (ug/L ): -3.5 SD: 3.71 RSD(%): 107.4

~~~~~  
 Ni ID: 81003.RB-F Seq. No.: 00010 A/S Pos.: 15 Date: 10/19/9

Replicate 1 Time: 11:10  
 Concentration (ug/L ): -0.5

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- Replicate 2 Time: 11:14
Concentration (ug/L): -3.1

- Mean Conc (ug/L): -1.3 SD: 1.66 RSD(%): 102.91
~~~~~
- ID: 81003.05                               Seq. No.: 00011                A/S Pos.: 16                Date: 10/19/9

- Replicate 1                               Time: 11:17
Concentration (ug/L ): -2.4

- Replicate 2                               Time: 11:20
Concentration (ug/L ): -2.7

- Mean Conc (ug/L ): -2.5                    SD: 0.24                    RSD(%): 9.34
~~~~~
- ID: 81003.UB Seq. No.: 00012 A/S Pos.: 17 Date: 10/19/9

- Replicate 1 Time: 11:23
Concentration (ug/L): -1.1

- Replicate 2 Time: 11:27
Concentration (ug/L): 6.4

- Mean Conc (ug/L): 2.7 SD: 5.27 RSD(%): 197.86
~~~~~
- ID: 81003.IB                               Seq. No.: 00013                A/S Pos.: 18                Date: 10/19/9

- Replicate 1                               Time: 11:30
Concentration (ug/L ): 17.0

- Replicate 2                               Time: 11:33
Concentration (ug/L ): 24.9

- Mean Conc (ug/L ): 20.9                    SD: 5.61                    RSD(%): 26.77
~~~~~
- ID: 81003.IB Seq. No.: 00014 A/S Pos.: 18 Date: 10/19/9

- Replicate 1 Time: 11:37
Concentration (ug/L): -1.2

- Replicate 2 Time: 11:40
Concentration (ug/L): -4.6

- Mean Conc (ug/L): -2.9 SD: 2.36 RSD(%): 80.95
~~~~~
- ID: 81003.01                               Seq. No.: 00015                A/S Pos.: 19                Date: 10/19/9

- Replicate 1                               Time: 11:43
Concentration (ug/L ): -11.0

- Replicate 2                               Time: 11:47
Concentration (ug/L ): -16.5

- Mean Conc (ug/L ): -13.7                    SD: 3.91                    RSD(%): 28.45

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~~~~~  
Vi ID: 81003.01 Seq. No.: 00016 A/S Pos.: 19 Date: 10/19/9

Replicate 1 Time: 11:50
Concentration (ug/L): 85.3

Replicate 2 Time: 11:53
Concentration (ug/L): 86.8

Mean Conc (ug/L): 86.0 SD: 1.11 RSD(%): 1.28

Recovery is 99.8%

~~~~~  
Vi ID: 81003.02 Seq. No.: 00017 A/S Pos.: 20 Date: 10/19/9

Replicate 1 Time: 11:56  
Concentration (ug/L ): 13.1

Replicate 2 Time: 12:00  
Concentration (ug/L ): 5.3

Mean Conc (ug/L ): 9.2 SD: 5.50 RSD(%): 59.87

~~~~~  
Vi ID: 81003.03 Seq. No.: 00018 A/S Pos.: 21 Date: 10/19/9

Replicate 1 Time: 12:03
Concentration (ug/L): -7.2

Replicate 2 Time: 12:06
Concentration (ug/L): -6.8

Mean Conc (ug/L): -7.0 SD: 0.29 RSD(%): 4.13

~~~~~  
Vi ID: CCV Seq. No.: 00019 A/S Pos.: 3 Date: 10/19/9

Replicate 1 Time: 12:09  
Concentration (ug/L ): 88.3

Replicate 2 Time: 12:13  
Concentration (ug/L ): 86.4

Mean Conc (ug/L ): 87.4 SD: 1.36 RSD(%): 1.56

QC sample is within range 79.5 - 120.49

~~~~~  
Vi ID: CCB Seq. No.: 00020 A/S Pos.: 0 Date: 10/19/9

Replicate 1 Time: 12:16
Concentration (ug/L): -13.5

Replicate 2 Time: 12:19
Concentration (ug/L): -12.1

Mean Conc (ug/L): -12.8 SD: 0.96 RSD(%): 7.52

~~~~~  
Ni ID: ICB Seq. No.: 00026 A/S Pos.: 0 Date: 10/19/9

Replicate 1 Time: 13:09

Concentration (ug/L ): -1.9

Replicate 2 Time: 13:12

Concentration (ug/L ): -0.1

Mean Conc (ug/L ): -1.0 SD: 1.33

RSD(%): 131.48

QC sample is within range -15.49 - 15.49

~~~~~  
Ni ID: B1003.U1 Seq. No.: 00027 A/S Pos.: 22 Date: 10/19/9

Replicate 1 Time: 13:15

Concentration (ug/L): 5.1

Replicate 2 Time: 13:18

Concentration (ug/L): 4.7

Mean Conc (ug/L): 4.9 SD: 0.30

RSD(%): 6.17

~~~~~  
Ni ID: B1003.U2 Seq. No.: 00028 A/S Pos.: 23 Date: 10/19/9

Replicate 1 Time: 13:22

Concentration (ug/L ): 2.1

Replicate 2 Time: 13:25

Concentration (ug/L ): 0.6

Mean Conc (ug/L ): 1.3 SD: 1.02

RSD(%): 76.76

~~~~~  
Ni ID: B1003.U3 Seq. No.: 00029 A/S Pos.: 24 Date: 10/19/9

Replicate 1 Time: 13:28

Concentration (ug/L): 0.5

Replicate 2 Time: 13:31

Concentration (ug/L): -0.9

Mean Conc (ug/L): -0.2 SD: 0.95

RSD(%): 518.54

~~~~~  
Ni ID: B1003.I1 Seq. No.: 00030 A/S Pos.: 25 Date: 10/19/9

Replicate 1 Time: 13:34

Concentration (ug/L ): 179.4

Replicate 2 Time: 13:38

Concentration (ug/L ): 168.5

Mean Conc (ug/L ): 173.9 SD: 7.69

RSD(%): 4.42

~~~~~  
Ni ID: 81003.I2 Seq. No.: 00031 A/S Pos.: 26 Date: 10/19/9

Replicate 1 Time: 13:41
Concentration (ug/L): 178.5

Replicate 2 Time: 13:44
Concentration (ug/L): 167.4

Mean Conc (ug/L): 172.9 SD: 7.88 RSD(%): 4.56

~~~~~  
Ni ID: 81003.I3 Seq. No.: 00032 A/S Pos.: 27 Date: 10/19/9

Replicate 1 Time: 13:47  
Concentration (ug/L ): 122.9

Replicate 2 Time: 13:50  
Concentration (ug/L ): 122.4

Mean Conc (ug/L ): 122.7 SD: 0.36 RSD(%): 0.30

~~~~~  
Ni ID: CCV Seq. No.: 00033 A/S Pos.: 3 Date: 10/19/9

Replicate 1 Time: 13:53
Concentration (ug/L): 89.2

Replicate 2 Time: 13:57
Concentration (ug/L): 90.1

Mean Conc (ug/L): 89.7 SD: 0.70 RSD(%): 0.78

QC sample is within range 79.5 - 120.49

~~~~~  
Ni ID: CCB Seq. No.: 00034 A/S Pos.: 0 Date: 10/19/9

Replicate 1 Time: 14:00  
Concentration (ug/L ): -2.8

Replicate 2 Time: 14:03  
Concentration (ug/L ): -3.8

Mean Conc (ug/L ): -3.3 SD: 0.74 RSD(%): 22.59

QC sample is within range -15.49 - 15.49

~~~~~  
Ni ID: B1006.1 Seq. No.: 00035 A/S Pos.: 28 Date: 10/19/9

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 14:06
Concentration (ug/L): 377.4

Sample abs. is greater than that of the largest standard.
Replicate 2 Time: 14:09
Concentration (ug/L): 391.2

hod File Name: P
 arks:

Replicates:3

Read Delay: 65
 Data File:

Wt file is 10236

STANDARD #1	REPLICATE #1	1327 10/22/98
P214 EM	368	peak-noisy
STANDARD #1	REPLICATE #2	
P214 EM	369	peak-noisy
STANDARD #1	REPLICATE #3	
P214 EM	370	peak-noisy
P214 AV	369.0 SD 1.0 CV	0.3 CONC 0.2000
STANDARD #2	REPLICATE #1	1329 10/22/98
P214 EM	550	
STANDARD #2	REPLICATE #2	
P214 EM	563	
STANDARD #2	REPLICATE #3	
P214 EM	562	
P214 AV	558.3 SD 7.2 CV	1.3 CONC 1.0000
STANDARD #3	REPLICATE #1	1331 10/22/98
P214 EM	798	
STANDARD #3	REPLICATE #2	
P214 EM	816	
STANDARD #3	REPLICATE #3	
P214 EM	838	
P214 AV	817.3 SD 20.0 CV	2.5 CONC 2.0000
STANDARD #4	REPLICATE #1	1333 10/22/98
P214 EM	1550	
STANDARD #4	REPLICATE #2	
P214 EM	1570	
STANDARD #4	REPLICATE #3	
P214 EM	1581	
P214 AV	1567.0 SD 15.7 CV	1.0 CONC 5.0000
BLANK	REPLICATE #1	1335 10/22/98
P214 EM	323	
BLANK	REPLICATE #2	
P214 EM	312	

Sample ID	Method	Parameter	Value	Unit	SD	CV	Conc	Date	
P214	EM		312						
P214	AV		315.7	SD	6.4	CV	2.0 CONC	0.0000	
P214	CC		1.0000	SLOPE	250.2997	INT	314.9751		
CV			REPLICATE #1						1337 10/22/98
P214	EM	787	1.8858 mg/L						
CV			REPLICATE #2						
P214	EM	851	2.1415 mg/L						
CV			REPLICATE #3						
P214	EM	816	2.0017 mg/L						
P214	AV	818.0	EM	SD	32.0	CV	3.9		
P214	AV	2.0097	mg/L	SD	0.1280	CV	6.37		
CB			REPLICATE #1						1339 10/22/98
P214	EM	318	0.0121 mg/L peak-noisy						
CB			REPLICATE #2						
P214	EM	316	0.0041 mg/L peak-noisy						
CB			REPLICATE #3						
P214	EM	327	0.0480 mg/L peak-noisy						
P214	AV	320.3	EM	SD	5.9	CV	1.8		
P214	AV	0.0214	mg/L	SD	0.0234	CV	109.35		
1002.B-1			REPLICATE #1						1341 10/22/98
P214	EM	478	0.6513 mg/L						
1002.B-1			REPLICATE #2						
P214	EM	498	0.7312 mg/L						
1002.B-1			REPLICATE #3						
P214	EM	494	0.7152 mg/L						
P214	AV	490.0	EM	SD	10.6	CV	2.2		
P214	AV	0.6993	mg/L	SD	0.0423	CV	6.05		
-1			REPLICATE #1						1343 10/22/98
P214	EM	5019	18.7936 mg/L						
-1			REPLICATE #2						
P214	EM	5017	18.7856 mg/L						
-1			REPLICATE #3						
P214	EM	5349	20.1120 mg/L						
P214	AV	5128.3	EM	SD	191.1	CV	3.7		
P214	AV	19.2304	mg/L	SD	0.7635	CV	3.97		
-1			REPLICATE #1						1345 10/22/98
P214	EM	4266	15.7852 mg/L						
-1			REPLICATE #2						
P214	EM	4548	16.9118 mg/L						
-1			REPLICATE #3						

	P214	AV	4368.7	EM	SD	155.9	CV	3.6
	P214	AV	16.1953	mg/L	SD	0.6227	CV	3.84
-1D					REPLICATE #1			1347 10/22/98
P214	EM	4297	15.9090	mg/L				
-1D					REPLICATE #2			
P214	EM	4272	15.8091	mg/L				
-1D					REPLICATE #3			
P214	EM	4396	16.3046	mg/L				
	P214	AV	4321.7	EM	SD	65.6	CV	1.5
	P214	AV	16.0076	mg/L	SD	0.2620	CV	1.64
-1					REPLICATE #1			1349 10/22/98
P214	EM	4895	18.2982	mg/L				
-1					REPLICATE #2			
P214	EM	4854	18.1344	mg/L				
-1					REPLICATE #3			
P214	EM	4920	18.3980	mg/L				
	P214	AV	4889.7	EM	SD	33.3	CV	0.7
	P214	AV	18.2769	mg/L	SD	0.1331	CV	0.73
-1S					REPLICATE #1			1351 10/22/98
P214	EM	5287	19.8643	mg/L				
-1S					REPLICATE #2			
P214	EM	5298	19.9082	mg/L				
-1S					REPLICATE #3			
P214	EM	5314	19.9722	mg/L				
	P214	AV	5299.7	EM	SD	13.6	CV	0.3
	P214	AV	19.9149	mg/L	SD	0.0542	CV	0.27
-2A					REPLICATE #1			1353 10/22/98
P214	EM	336	0.0840	mg/L			peak-noisy	
-2A					REPLICATE #2			
P214	EM	330	0.0600	mg/L			peak-noisy	
-2A					REPLICATE #3			
P214	EM	330	0.0600	mg/L			peak-noisy	
	P214	AV	332.0	EM	SD	3.5	CV	1.0
	P214	AV	0.0680	mg/L	SD	0.0138	CV	20.35
-2A					REPLICATE #1			1355 10/22/98
P214	EM	343	0.1120	mg/L			peak-noisy	
-2A					REPLICATE #2			
P214	EM	333	0.0720	mg/L				
-2A					REPLICATE #3			

P214	AV	340.3	EM	SD	6.4	CV	1.9
P214	AV	0.1013	mg/L	SD	0.0257	CV	25.35
-2A				REPLICATE #1			1357 10/22/98
P214	EM	343		0.1120	mg/L	peak-noisy	
-2A				REPLICATE #2			
P214	EM	343		0.1120	mg/L		
-2A				REPLICATE #3			
P214	EM	339		0.0960	mg/L	peak-noisy	
P214	AV	341.7	EM	SD	2.3	CV	0.7
P214	AV	0.1066	mg/L	SD	0.0092	CV	8.65
JT				REPLICATE #1			1359 10/22/98
P214	EM	323		0.0321	mg/L	window-edge	
JT				REPLICATE #2			
P214	EM	328		0.0520	mg/L	peak-noisy	
JT				REPLICATE #3			
P214	EM	311		-0.0159	mg/L	peak-noisy	
P214	AV	320.7	EM	SD	8.7	CV	2.7
P214	AV	0.0227	mg/L	SD	0.0349	CV	153.51
CV				REPLICATE #1			1401 10/22/98
P214	EM	804		1.9538	mg/L		
CV				REPLICATE #2			
P214	EM	790		1.8978	mg/L		
CV				REPLICATE #3			
P214	EM	803		1.9498	mg/L		
P214	AV	799.0	EM	SD	7.8	CV	1.0
P214	AV	1.9338	mg/L	SD	0.0312	CV	1.61
CB				REPLICATE #1			1403 10/22/98
P214	EM	330		0.0600	mg/L	window-edge	
CB				REPLICATE #2			
P214	EM	320		0.0201	mg/L	peak-noisy	
CB				REPLICATE #3			
P214	EM	369		0.2158	mg/L		
P214	AV	339.7	EM	SD	25.9	CV	7.6
P214	AV	0.0986	mg/L	SD	0.1034	CV	104.86
O-2A				REPLICATE #1			1405 10/22/98
P214	EM	324		0.0361	mg/L		
O-2A				REPLICATE #2			
P214	EM	324		0.0361	mg/L		

1-2A			REPLICATE #3				
P214	EM	323	0.0321 mg/L peak-noisy				
	P214	AV	326.0	EM	SD	4.4	CV 1.3
	P214	AV	0.0440	mg/L	SD	0.0174	CV 39.54
1-2AS			REPLICATE #1 1407 10/22/98				
P214	EM	698	1.5303 mg/L				
1-2AS			REPLICATE #2				
P214	EM	718	1.6102 mg/L				
1-2AS			REPLICATE #3				
P214	EM	735	1.6781 mg/L				
	P214	AV	717.0	EM	SD	18.5	CV 2.6
	P214	AV	1.6062	mg/L	SD	0.0740	CV 4.61
1-2A P=20 SD			REPLICATE #1 1409 10/22/98				
P214	EM	6135	23.2522 mg/L				
3-AP			REPLICATE #2				
P214	EM	6025	22.8127 mg/L				
3-AP			REPLICATE #3				
P214	EM	6138	23.2642 mg/L				
	P214	AV	6099.3	EM	SD	64.4	CV 1.1
	P214	AV	23.1097	mg/L	SD	0.2573	CV 1.11
3-F			REPLICATE #1 1411 10/22/98				
P214	EM	315	0.0001 mg/L peak-noisy				
3-F			REPLICATE #2				
P214	EM	344	0.1160 mg/L peak-noisy				
3-F			REPLICATE #3				
P214	EM	303	-0.0478 mg/L				
	P214	AV	320.7	EM	SD	21.1	CV 6.6
	P214	AV	0.0227	mg/L	SD	0.0842	CV 370.36
3			REPLICATE #1 1413 10/22/98				
P214	EM	313	-0.0079 mg/L window-edge				
3			REPLICATE #2				
P214	EM	333	0.0720 mg/L window-edge				
3			REPLICATE #3				
P214	EM	313	-0.0079 mg/L peak-noisy				
	P214	AV	319.7	EM	SD	11.5	CV 3.6
	P214	AV	0.0187	mg/L	SD	0.0461	CV 246.12
3			REPLICATE #1 1415 10/22/98				
P214	EM	304	-0.0438 mg/L peak-noisy				

	P214	EM	314	-0.0039 mg/L	SD	5.0	CV	1.6	1417 10/22/98
3	P214	EM	308	-0.0279 mg/L	SD	5.0	CV	1.6	1417 10/22/98
	P214	AV	308.7	EM	SD	5.0	CV	1.6	1417 10/22/98
	P214	AV	-0.0252	mg/L	SD	0.0201	CV	79.79	1417 10/22/98
3	P214	EM	313	-0.0079 mg/L	SD	5.0	CV	1.6	1417 10/22/98
3	P214	EM	322	0.0281 mg/L	SD	5.0	CV	1.6	1417 10/22/98
3	P214	EM	316	0.0041 mg/L	SD	5.0	CV	1.6	1417 10/22/98
	P214	AV	317.0	EM	SD	4.6	CV	1.4	1417 10/22/98
	P214	AV	0.0081	mg/L	SD	0.0183	CV	226.31	1417 10/22/98
CV	P214	EM	822	2.0257 mg/L	SD	5.9	CV	0.7	1419 10/22/98
CV	P214	EM	833	2.0696 mg/L	SD	5.9	CV	0.7	1419 10/22/98
CV	P214	EM	824	2.0337 mg/L	SD	5.9	CV	0.7	1419 10/22/98
	P214	AV	826.3	EM	SD	5.9	CV	0.7	1419 10/22/98
	P214	AV	2.0430	mg/L	SD	0.0234	CV	1.15	1419 10/22/98
CB	P214	EM	345	0.1200 mg/L	SD	23.7	CV	7.2	1421 10/22/98
CB	P214	EM	303	-0.0478 mg/L	SD	23.7	CV	7.2	1421 10/22/98
CB	P214	EM	343	0.1120 mg/L	SD	23.7	CV	7.2	1421 10/22/98
	P214	AV	330.3	EM	SD	23.7	CV	7.2	1421 10/22/98
	P214	AV	0.0614	mg/L	SD	0.0947	CV	154.27	1421 10/22/98
1	P214	EM	300	-0.0598 mg/L	SD	9.1	CV	2.9	1423 10/22/98
1	P214	EM	311	-0.0159 mg/L	SD	9.1	CV	2.9	1423 10/22/98
1	P214	EM	318	0.0121 mg/L	SD	9.1	CV	2.9	1423 10/22/98
	P214	AV	309.7	EM	SD	9.1	CV	2.9	1423 10/22/98
	P214	AV	-0.0212	mg/L	SD	0.0363	CV	170.93	1423 10/22/98
2	P214	EM	322	0.0281 mg/L	SD	9.1	CV	2.9	1425 10/22/98
2	P214	EM	322	0.0281 mg/L	SD	9.1	CV	2.9	1425 10/22/98

				REPLICATE #3				
	P214	EM	320	0.0201 mg/L				peak-noisy
		P214	AV	317.0	EM	SD	7.0	CV 2.2
		P214	AV	0.0081 mg/L		SD	0.0280	CV 345.70
				REPLICATE #1				1427 10/22/98
	P214	EM	305	-0.0399 mg/L				peak-noisy
				REPLICATE #2				
	P214	EM	345	0.1200 mg/L				peak-noisy
				REPLICATE #3				
	P214	EM	303	-0.0478 mg/L				peak-noisy
		P214	AV	317.7	EM	SD	23.7	CV 7.5
		P214	AV	0.0108 mg/L		SD	0.0947	CV 880.25
				REPLICATE #1				1429 10/22/98
	P214	EM	734	1.6741 mg/L				
				REPLICATE #2				
	P214	EM	729	1.6541 mg/L				
				REPLICATE #3				
	P214	EM	729	1.6541 mg/L				
		P214	AV	730.7	EM	SD	2.9	CV 0.4
		P214	AV	1.6608 mg/L		SD	0.0115	CV 0.69
				REPLICATE #1				1431 10/22/98
	P214	EM	353	0.1519 mg/L				peak-noisy
				REPLICATE #2				
	P214	EM	330	0.0600 mg/L				peak-noisy
				REPLICATE #3				
	P214	EM	327	0.0480 mg/L				peak-noisy
		P214	AV	336.7	EM	SD	14.2	CV 4.2
		P214	AV	0.0867 mg/L		SD	0.0568	CV 65.58
				REPLICATE #1				1433 10/22/98
	P214	EM	319	0.0161 mg/L				peak-noisy
				REPLICATE #2				
	P214	EM	323	0.0321 mg/L				
				REPLICATE #3				
	P214	EM	322	0.0281 mg/L				peak-noisy
		P214	AV	321.3	EM	SD	2.1	CV 0.6
		P214	AV	0.0254 mg/L		SD	0.0083	CV 32.74
				REPLICATE #1				1435 10/22/98
	P214	EM	331	0.0640 mg/L				peak-noisy
				REPLICATE #2				
	P214	EM	334	0.0760 mg/L				peak-noisy

	P214	EM	332	0.0680 mg/L	peak-noisy		
	P214	AV	332.3	EM	SD	1.5	CV 0.5
	P214	AV	0.0693	mg/L	SD	0.0061	CV 8.80
				REPLICATE #1		1437	10/22/98
	P214	EM	438	0.4915 mg/L	peak-noisy		
				REPLICATE #2			
	P214	EM	404	0.3557 mg/L			
				REPLICATE #3			
	P214	EM	401	0.3437 mg/L	peak-noisy		
	P214	AV	414.3	EM	SD	20.6	CV 5.0
	P214	AV	0.3970	mg/L	SD	0.0821	CV 20.68
				REPLICATE #1		1439	10/22/98
	P214	EM	432	0.4675 mg/L			
				REPLICATE #2			
	P214	EM	435	0.4795 mg/L			
				REPLICATE #3			
	P214	EM	413	0.3916 mg/L			
	P214	AV	426.7	EM	SD	11.9	CV 2.8
	P214	AV	0.4462	mg/L	SD	0.0477	CV 10.68
				REPLICATE #1		1441	10/22/98
	P214	EM	423	0.4316 mg/L			
				REPLICATE #2			
	P214	EM	433	0.4715 mg/L			
				REPLICATE #3			
	P214	EM	409	0.3756 mg/L			
	P214	AV	421.7	EM	SD	12.1	CV 2.9
	P214	AV	0.4263	mg/L	SD	0.0482	CV 11.30
				REPLICATE #1		1443	10/22/98
	P214	EM	834	2.0736 mg/L			
				REPLICATE #2			
	P214	EM	824	2.0337 mg/L			
				REPLICATE #3			
	P214	EM	818	2.0097 mg/L			
	P214	AV	825.3	EM	SD	8.1	CV 1.0
	P214	AV	2.0390	mg/L	SD	0.0323	CV 1.58
				REPLICATE #1		1445	10/22/98
	P214	EM	296	-0.0758 mg/L	window-edge		
				REPLICATE #2			
	P214	EM	297	-0.0718 mg/L	peak-noisy		
				REPLICATE #3			

	P214	AV	301.0	EM	SD	7.8	CV	2.6
	P214	AV	-0.0558	mg/L	SD	0.0312	CV	55.89
	006 - 1				REPLICATE #1			1447 10/22/98
	P214	EM	521		0.8231	mg/L		
	006 - 1				REPLICATE #2			
	P214	EM	518		0.8111	mg/L		
	006 - 1				REPLICATE #3			
	P214	EM	518		0.8111	mg/L		
	P214	AV	519.0	EM	SD	1.7	CV	0.3
	P214	AV	0.8151	mg/L	SD	0.0069	CV	0.85
					REPLICATE #1			1449 10/22/98
	P214	EM	543		0.9110	mg/L	peak-noisy	
					REPLICATE #2			
	P214	EM	528		0.8511	mg/L		
					REPLICATE #3			
	P214	EM	519		0.8151	mg/L		
	P214	AV	530.0	EM	SD	12.1	CV	2.3
	P214	AV	0.8591	mg/L	SD	0.0484	CV	5.64
					REPLICATE #1			1451 10/22/98
	P214	EM	514		0.7951	mg/L		
					REPLICATE #2			
	P214	EM	526		0.8431	mg/L		
					REPLICATE #3			
	P214	EM	578		1.0508	mg/L		
	P214	AV	539.3	EM	SD	34.0	CV	6.3
	P214	AV	0.8964	mg/L	SD	0.1359	CV	15.16
					REPLICATE #1			1453 10/22/98
	P214	EM	499		0.7352	mg/L		
					REPLICATE #2			
	P214	EM	506		0.7632	mg/L		
					REPLICATE #3			
	P214	EM	525		0.8391	mg/L		
	P214	AV	510.0	EM	SD	13.5	CV	2.6
	P214	AV	0.7792	mg/L	SD	0.0538	CV	6.90
					REPLICATE #1			1455 10/22/98
	P214	EM	914		2.3932	mg/L		
					REPLICATE #2			
	P214	EM	918		2.4092	mg/L		
					REPLICATE #3			

	P214	AV	914.3 EM	SD	3.5	CV	0.4
	P214	AV	2.3946 mg/L	SD	0.0140	CV	0.59
CV			REPLICATE #1				1457 10/22/98
	P214	EM	821		2.0217 mg/L		
CV			REPLICATE #2				
	P214	EM	791		1.9018 mg/L		
CV			REPLICATE #3				
	P214	EM	805		1.9578 mg/L		
	P214	AV	805.7 EM	SD	15.0	CV	1.9
	P214	AV	1.9604 mg/L	SD	0.0600	CV	3.06
CB			REPLICATE #1				1459 10/22/98
	P214	EM	301		-0.0558 mg/L		window-edge
CB			REPLICATE #2				
	P214	EM	293		-0.0878 mg/L		peak-noisy
CB			REPLICATE #3				
	P214	EM	319		0.0161 mg/L		peak-noisy
	P214	AV	304.3 EM	SD	13.3	CV	4.4
	P214	AV	-0.0425 mg/L	SD	0.0532	CV	125.14
AMPLE #43			REPLICATE #1				1501 10/22/98
	P214	EM	288		-0.1078 mg/L		window-edge
AMPLE #43			REPLICATE #2				
	P214	EM	302		-0.0518 mg/L		
AMPLE #43			REPLICATE #3				
	P214	EM	297		-0.0718 mg/L		peak-noisy
	P214	AV	295.7 EM	SD	7.1	CV	2.4
	P214	AV	-0.0771 mg/L	SD	0.0283	CV	36.74
AMPLE #44			REPLICATE #1				1503 10/22/98
	P214	EM	313		-0.0079 mg/L		peak-noisy
AMPLE #44			REPLICATE #2				
	P214	EM	312		-0.0119 mg/L		
AMPLE #44			REPLICATE #3				
	P214	EM	319		0.0161 mg/L		peak-noisy
	P214	AV	314.7 EM	SD	3.8	CV	1.2
	P214	AV	-0.0012 mg/L	SD	0.0151	CV	1227.44
AMPLE #45			REPLICATE #1				1505 10/22/98
	P214	EM	314		-0.0039 mg/L		peak-noisy
AMPLE #45			REPLICATE #2				
	P214	EM	309		-0.0239 mg/L		peak-noisy
AMPLE #45			REPLICATE #3				
	P214	EM	308		-0.0279 mg/L		peak-noisy

Element File: SE.GEL Element: Se Wavelength: 196.0
Date: 10/16/98 Time: 12:42 Slit: 2.00 L
Data File: ID/Wt File: 81002.IDW Lamp Current: 0
Technique: HGA Calib. Type: Linear Energy: 38

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Se      ID: 0 PPB                      Seq. No.: 00237      A/S Pos.: 0      Date: 10/16/9

Replicate 1                      Time: 12:42  
Peak Area (A-s): 0.006                      Peak Height (A): 0.037  
Background Pk Area (A-s): 0.183                      Background Pk Height (A): 0.084  
Blank Corrected Pk Area (A-s): 0.010  
Concentration (ug/L ): 5.34

Replicate 2                      Time: 12:45  
Peak Area (A-s): 0.011                      Peak Height (A): 0.028  
Background Pk Area (A-s): 0.192                      Background Pk Height (A): 0.082  
Blank Corrected Pk Area (A-s): 0.015  
Concentration (ug/L ): 8.28

Mean Conc (ug/L ):                      6.81                      SD: 2.081                      RSD(%): 30.56

Auto-zero performed.

~~~~~  
Se ID: 10 PPB Seq. No.: 00238 A/S Pos.: 1 Date: 10/16/9

Replicate 1 Time: 12:49
Peak Area (A-s): 0.024 Peak Height (A): 0.046
Background Pk Area (A-s): 0.184 Background Pk Height (A): 0.072
Blank Corrected Pk Area (A-s): 0.015
Concentration (ug/L): 8.27

Replicate 2 Time: 12:52
Peak Area (A-s): 0.028 Peak Height (A): 0.050
Background Pk Area (A-s): 0.181 Background Pk Height (A): 0.072
Blank Corrected Pk Area (A-s): 0.019
Concentration (ug/L): 10.35

Mean Conc (ug/L): 9.31 SD: 1.469 RSD(%): 15.77

Standard number 1 applied. [10.00]
Correlation coefficient: 1.00000 Slope: 0.0017

~~~~~  
Se      ID: 25 PPB                      Seq. No.: 00239      A/S Pos.: 2      Date: 10/16/9

Replicate 1                      Time: 12:55  
Peak Area (A-s): 0.059                      Peak Height (A): 0.087  
Background Pk Area (A-s): 0.183                      Background Pk Height (A): 0.087  
Blank Corrected Pk Area (A-s): 0.050  
Concentration (ug/L ): 29.03

Replicate 2                      Time: 12:59  
Peak Area (A-s): 0.056                      Peak Height (A): 0.099  
Background Pk Area (A-s): 0.173                      Background Pk Height (A): 0.080  
Blank Corrected Pk Area (A-s): 0.048  
Concentration (ug/L ): 27.69

Mean Conc (ug/L ): 28.36 SD: 0.950 RSD(%): 3.35

Standard number 2 applied. [25.00]  
Correlation coefficient: 0.99443 Slope: 0.0019

~~~~~  
Se ID: 50 PPB Seq. No.: 00240 A/S Pos.: 3 Date: 10/16/

Replicate 1 Time: 13:02
Peak Area (A-s): 0.106 Peak Height (A): 0.169
Background Pk Area (A-s): 0.174 Background Pk Height (A): 0.091
Blank Corrected Pk Area (A-s): 0.097
Concentration (ug/L): 50.42

Replicate 2 Time: 13:05
Peak Area (A-s): 0.105 Peak Height (A): 0.152
Background Pk Area (A-s): 0.178 Background Pk Height (A): 0.101
Blank Corrected Pk Area (A-s): 0.096
Concentration (ug/L): 49.81

Mean Conc (ug/L): 50.12 SD: 0.432 RSD(%): 0.86

Standard number 3 applied. [50.00]
Correlation coefficient: 0.99923 Slope: 0.0019

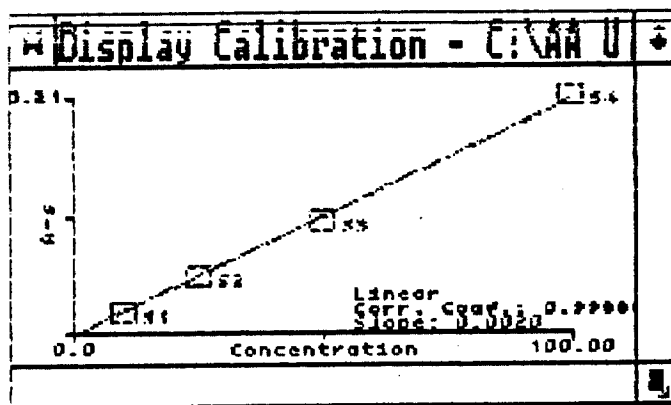
~~~~~  
Se ID: 100 PPB Seq. No.: 00241 A/S Pos.: 4 Date: 10/16/

Replicate 1 Time: 13:09  
Peak Area (A-s): 0.212 Peak Height (A): 0.297  
Background Pk Area (A-s): 0.193 Background Pk Height (A): 0.109  
Blank Corrected Pk Area (A-s): 0.204  
Concentration (ug/L ): 105.48

Replicate 2 Time: 13:12  
Peak Area (A-s): 0.216 Peak Height (A): 0.341  
Background Pk Area (A-s): 0.191 Background Pk Height (A): 0.119  
Blank Corrected Pk Area (A-s): 0.208  
Concentration (ug/L ): 107.39

Mean Conc (ug/L ): 106.43 SD: 1.354 RSD(%): 1.27

Standard number 4 applied. [100.00]  
Correlation coefficient: 0.99888 Slope: 0.0020



~~~~~  
 Se ID: ICV Seq. No.: 00242 A/S Pos.: 5 Date: 10/16/

Replicate 1 Time: 13:23
 Concentration (ug/L): 49.40

Replicate 2 Time: 13:26
 Concentration (ug/L): 51.48

Mean Conc (ug/L): 50.44 SD: 1.466 RSD(%): 2.91

QC sample is within range

~~~~~  
 Se ID: ICB Seq. No.: 00243 A/S Pos.: 0 Date: 10/16/

Replicate 1 Time: 13:29  
 Concentration (ug/L ): -5.35

Replicate 2 Time: 13:33  
 Concentration (ug/L ): -3.31

Mean Conc (ug/L ): -4.33 SD: 1.438 RSD(%): 33.22

QC sample is within range

Auto-zero performed.

~~~~~  
 Se ID: 81002.B-1 Seq. No.: 00244 A/S Pos.: 6 Date: 10/16/

Replicate 1 Time: 13:37
 Concentration (ug/L): -1.13

Replicate 2 Time: 13:41
 Concentration (ug/L): 1.78

Mean Conc (ug/L): 0.32 SD: 2.058 RSD(%): 633.8

~~~~~  
 Se ID: 81002.B-1 Seq. No.: 00245 A/S Pos.: 7 Date: 10/16/

Replicate 2 Time: 14:22  
Concentration (ug/L ): 0.48

Mean Conc (ug/L ): -0.48 SD: 1.354 RSD(%): 284.3

~~~~~  
Se ID: 81002.1-2A Seq. No.: 00251 A/S Pos.: 11 Date: 10/16/

Replicate 1 Time: 14:25
Concentration (ug/L): 53.41

Replicate 2 Time: 14:29
Concentration (ug/L): 52.13

Mean Conc (ug/L): 52.77 SD: 0.902 RSD(%): 1.71

Recovery is 106.5%

~~~~~  
Se ID: 81002.2-2A Seq. No.: 00252 A/S Pos.: 12 Date: 10/16/

Replicate 1 Time: 14:32  
Concentration (ug/L ): -0.62

Replicate 2 Time: 14:35  
Concentration (ug/L ): 1.87

Mean Conc (ug/L ): 0.62 SD: 1.763 RSD(%): 282.6

~~~~~  
Se ID: 81002.3-2A Seq. No.: 00253 A/S Pos.: 13 Date: 10/16/

Replicate 1 Time: 14:39
Concentration (ug/L): 1.39

Replicate 2 Time: 14:42
Concentration (ug/L): -0.43

Mean Conc (ug/L): 0.48 SD: 1.289 RSD(%): 269.6

~~~~~  
Se ID: CCV Seq. No.: 00254 A/S Pos.: 3 Date: 10/16/

Replicate 1 Time: 14:45  
Concentration (ug/L ): 53.60

Replicate 2 Time: 14:49  
Concentration (ug/L ): 49.74

Mean Conc (ug/L ): 51.67 SD: 2.725 RSD(%): 5.27

QC sample is within range

~~~~~  
Se ID: CCB Seq. No.: 00255 A/S Pos.: 0 Date: 10/16/

Replicate 1 Time: 14:52
Concentration (ug/L): 2.08

Replicate 2
Concentration (ug/L): 0.95

Time: 14:55

Mean Conc (ug/L): 1.52

SD: 0.796

RSD(%): 52.47

QC sample is within range

Se ID: 81003.RB-AP

Seq. No.: 00256

A/S Pos.: 14

Date: 10/16/0

Replicate 1
Concentration (ug/L): -2.62

Time: 14:58

Replicate 2
Concentration (ug/L): 0.55

Time: 15:02

Mean Conc (ug/L): -1.03

SD: 2.240

RSD(%): 216.70

Se ID: 81003.RB-F

Seq. No.: 00257

A/S Pos.: 15

Date: 10/16/0

Replicate 1
Concentration (ug/L): 1.34

Time: 15:05

Replicate 2
Concentration (ug/L): -0.56

Time: 15:08

Mean Conc (ug/L): 0.39

SD: 1.340

RSD(%): 341.60

Se ID: 81003.RB

Seq. No.: 00258

A/S Pos.: 16

Date: 10/16/0

Replicate 1
Concentration (ug/L): 3.56

Time: 15:11

Replicate 2
Concentration (ug/L): 1.17

Time: 15:15

Mean Conc (ug/L): 2.37

SD: 1.686

RSD(%): 71.23

Se ID: 81003.UB

Seq. No.: 00259

A/S Pos.: 17

Date: 10/16/0

Replicate 1
Concentration (ug/L): -0.35

Time: 15:18

Replicate 2
Concentration (ug/L): -0.06

Time: 15:21

Mean Conc (ug/L): -0.21

SD: 0.209

RSD(%): 100.80

Se ID: 81003.IB

Seq. No.: 00260

A/S Pos.: 18

Date: 10/16/0

Replicate 1
Concentration (ug/L): 1.07

Time: 15:24

Replicate 2
Concentration (ug/L): -1.02

Time: 15:28

Mean Conc (ug/L): 0.02 SD: 1.477 RSD(%): 6404.

~~~~~  
Se ID: 81003.01 Seq. No.: 00261 A/S Pos.: 19 Date: 10/16/

Replicate 1 Time: 15:31  
Concentration (ug/L ): -1.69

Replicate 2 Time: 15:34  
Concentration (ug/L ): 2.89

Mean Conc (ug/L ): 0.60 SD: 3.236 RSD(%): 541.69

~~~~~  
Se ID: 81003.01 Seq. No.: 00262 A/S Pos.: 19 Date: 10/16/

Replicate 1 Time: 15:38
Concentration (ug/L): 47.19

Replicate 2 Time: 15:41
Concentration (ug/L): 56.00

Mean Conc (ug/L): 51.60 SD: 6.230 RSD(%): 12.08

Recovery is 102.0%

~~~~~  
Se ID: 81003.02 Seq. No.: 00263 A/S Pos.: 20 Date: 10/16/

Replicate 1 Time: 15:44  
Concentration (ug/L ): 2.42

Replicate 2 Time: 15:48  
Concentration (ug/L ): 7.09

Mean Conc (ug/L ): 4.75 SD: 3.303 RSD(%): 69.47

~~~~~  
Se ID: 81003.03 Seq. No.: 00264 A/S Pos.: 21 Date: 10/16/

Replicate 1 Time: 15:51
Concentration (ug/L): -1.81

Replicate 2 Time: 15:54
Concentration (ug/L): 3.03

Mean Conc (ug/L): 0.61 SD: 3.422 RSD(%): 560.53

~~~~~  
Se ID: CCV Seq. No.: 00265 A/S Pos.: 3 Date: 10/16/

Replicate 1 Time: 15:58  
Concentration (ug/L ): 49.74

Replicate 2 Time: 16:01  
Concentration (ug/L ): 57.36

Mean Conc (ug/L ): 53.55 SD: 5.386 RSD(%): 10.0



QC sample is within range

~~~~~  
Se ID: CCB Seq. No.: 00266 A/S Pos.: 0 Date: 10/16/9

Replicate 1 Time: 16:04
Concentration (ug/L): -1.58

Replicate 2 Time: 16:08
Concentration (ug/L): 1.02

Mean Conc (ug/L): -0.28 SD: 1.839 RSD(%): 660.25

QC sample is within range

~~~~~  
Se ID: B1003.U1 Seq. No.: 00267 A/S Pos.: 22 Date: 10/16/9

Replicate 1 Time: 16:11  
Concentration (ug/L ): 19.79

Replicate 2 Time: 16:14  
Concentration (ug/L ): 25.53

Mean Conc (ug/L ): 22.66 SD: 4.064 RSD(%): 17.94

~~~~~  
Se ID: B1003.U2 Seq. No.: 00268 A/S Pos.: 23 Date: 10/16/9

Replicate 1 Time: 16:18
Concentration (ug/L): 20.92

Replicate 2 Time: 16:21
Concentration (ug/L): 18.30

Mean Conc (ug/L): 19.61 SD: 1.854 RSD(%): 9.45

~~~~~  
Se ID: B1003.U3 Seq. No.: 00269 A/S Pos.: 24 Date: 10/16/9

Replicate 1 Time: 16:24  
Concentration (ug/L ): 13.20

Replicate 2 Time: 16:28  
Concentration (ug/L ): 7.45

Mean Conc (ug/L ): 10.32 SD: 4.067 RSD(%): 39.40

~~~~~  
Se ID: B1003.I1 Seq. No.: 00270 A/S Pos.: 25 Date: 10/16/9

Sample abs. is greater than that of the largest standard.

Replicate 1 Time: 16:31
Concentration (ug/L): 129.36

Sample abs. is greater than that of the largest standard.

Replicate 2 Time: 16:35
Concentration (ug/L): 122.13

Sample abs. is greater than that of the largest standard.

Mean Conc (ug/L): 125.74 SD: 5.114 RSD(%): 4.07

~~~~~  
Se ID: 81003.I2 Seq. No.: 00271 A/S Pos.: 26 Date: 10/16/9

Sample abs. is greater than that of the largest standard.

Replicate 1 Time: 16:38

Concentration (ug/L ): 195.59

Sample abs. is greater than that of the largest standard.

Replicate 2 Time: 16:42

Concentration (ug/L ): 193.25

Sample abs. is greater than that of the largest standard.

Mean Conc (ug/L ): 194.42 SD: 1.650 RSD(%): 0.85

~~~~~  
Se ID: 81003.I3 Seq. No.: 00272 A/S Pos.: 27 Date: 10/16/9

Sample abs. is greater than that of the largest standard.

Replicate 1 Time: 16:45

Concentration (ug/L): 175.49

Sample abs. is greater than that of the largest standard.

Replicate 2 Time: 16:48

Concentration (ug/L): 182.48

Sample abs. is greater than that of the largest standard.

Mean Conc (ug/L): 178.99 SD: 4.945 RSD(%): 2.76

~~~~~  
Se ID: CCV Seq. No.: 00273 A/S Pos.: 3 Date: 10/16/9

Replicate 1 Time: 16:52

Concentration (ug/L ): 54.81

Replicate 2 Time: 16:55

Concentration (ug/L ): 53.45

Mean Conc (ug/L ): 54.13 SD: 0.965 RSD(%): 1.78

QC sample is within range

~~~~~  
Se ID: CCB Seq. No.: 00274 A/S Pos.: 0 Date: 10/16/9

Replicate 1 Time: 16:59

Concentration (ug/L): 7.29

Replicate 2 Time: 17:02

Concentration (ug/L): 5.46

Mean Conc (ug/L): 6.37 SD: 1.293 RSD(%): 20.30

QC sample is within range

Element File: SE.GEL Element: Se Wavelength: 196.0
Date: 10/19/98 Time: 15:35 Slit: 2.00 L
Data File: ID/Wt File: 81002.IDW Lamp Current: 0
Technique: HGA Calib. Type: Linear Energy: 36

~~~~~  
Se      ID: 0 PPB                      Seq. No.: 00044      A/S Pos.: 0      Date: 10/19/9

Replicate 1                      Time: 15:35  
Peak Area (A-s): -0.003                      Peak Height (A): 0.030  
Background Pk Area (A-s): 0.159                      Background Pk Height (A): 0.082  
Blank Corrected Pk Area (A-s): -0.002  
Concentration (ug/L ): -1.22

Replicate 2                      Time: 15:38  
Peak Area (A-s): 0.008                      Peak Height (A): 0.028  
Background Pk Area (A-s): 0.134                      Background Pk Height (A): 0.072  
Blank Corrected Pk Area (A-s): 0.008  
Concentration (ug/L ): 4.03

Mean Conc (ug/L ):      1.40                      SD: 3.716                      RSD(%): 264.51

Auto-zero performed.

~~~~~  
Se ID: 10 PPB Seq. No.: 00045 A/S Pos.: 1 Date: 10/19/9

Replicate 1 Time: 15:42
Peak Area (A-s): 0.010 Peak Height (A): 0.040
Background Pk Area (A-s): 0.148 Background Pk Height (A): 0.090
Blank Corrected Pk Area (A-s): 0.007
Concentration (ug/L): 3.60

Replicate 2 Time: 15:45
Peak Area (A-s): 0.012 Peak Height (A): 0.047
Background Pk Area (A-s): 0.132 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.009
Concentration (ug/L): 4.55

Mean Conc (ug/L): 4.08 SD: 0.671 RSD(%): 16.47

Expansion >100 is not allowed. No calibration has occurred.

~~~~~  
Se      ID: 25 PPB                      Seq. No.: 00046      A/S Pos.: 2      Date: 10/19/9

Replicate 1                      Time: 15:48  
Peak Area (A-s): 0.036                      Peak Height (A): 0.080  
Background Pk Area (A-s): 0.133                      Background Pk Height (A): 0.078  
Blank Corrected Pk Area (A-s): 0.034

Replicate 2                      Time: 15:52  
Peak Area (A-s): 0.048                      Peak Height (A): 0.076  
Background Pk Area (A-s): 0.116                      Background Pk Height (A): 0.065  
Blank Corrected Pk Area (A-s): 0.046

Mean Pk Area (A-s):      0.040                      SD: 0.0086                      RSD(%): 21.63

~~~~~  
ID: 25 PPB Seq. No.: 00047 A/S Pos.: 2 Date: 10/19/9

Replicate 1 Time: 15:55
Peak Area (A-s): 0.050 Peak Height (A): 0.082
Background Pk Area (A-s): 0.116 Background Pk Height (A): 0.058
Blank Corrected Pk Area (A-s): 0.048

Characteristic Mass = 22.9 ug/0.0044 A-s

Replicate 2 Time: 15:59
Peak Area (A-s): 0.046 Peak Height (A): 0.087
Background Pk Area (A-s): 0.115 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.044

Mean Pk Area (A-s): 0.046 SD: 0.0031 RSD(%): 6.80

Standard number 2 applied. [25.00]
Correlation coefficient: 1.00000 Slope: 0.0018

~~~~~  
ID: 50 PPB                      Seq. No.: 00048      A/S Pos.: 3      Date: 10/19/9

Replicate 1                      Time: 16:02  
Peak Area (A-s): 0.089              Peak Height (A): 0.158  
Background Pk Area (A-s): 0.124      Background Pk Height (A): 0.059  
Blank Corrected Pk Area (A-s): 0.086  
Concentration (ug/L ): 47.04

Replicate 2                      Time: 16:05  
Peak Area (A-s): 0.089              Peak Height (A): 0.156  
Background Pk Area (A-s): 0.117      Background Pk Height (A): 0.056  
Blank Corrected Pk Area (A-s): 0.086  
Concentration (ug/L ): 47.28

Mean Conc (ug/L ):              47.16              SD: 0.165              RSD(%): 0.35

Standard number 3 applied. [50.00]  
Correlation coefficient: 0.99717      Slope: 0.0017

~~~~~  
ID: 100 PPB Seq. No.: 00049 A/S Pos.: 4 Date: 10/19/9

Replicate 1 Time: 16:09
Peak Area (A-s): 0.182 Peak Height (A): 0.320
Background Pk Area (A-s): 0.133 Background Pk Height (A): 0.086
Blank Corrected Pk Area (A-s): 0.180
Concentration (ug/L): 102.88

Replicate 2 Time: 16:12
Peak Area (A-s): 0.165 Peak Height (A): 0.295
Background Pk Area (A-s): 0.124 Background Pk Height (A): 0.082
Blank Corrected Pk Area (A-s): 0.162
Concentration (ug/L): 92.84

Mean Conc (ug/L): 97.86 SD: 7.101 RSD(%): 7.26

Standard number 4 applied. [100.00]

Correlation coefficient: 0.99950 Slope: 0.0017

Se ID: 10 PPB

Seq. No.: 00050

A/S Pos.: 1

Date: 10/19/9

Replicate 1

Time: 16:26

Peak Area (A-s): 0.014

Peak Height (A): 0.050

Background Pk Area (A-s): 0.107

Background Pk Height (A): 0.058

Blank Corrected Pk Area (A-s): 0.011

Concentration (ug/L): 6.46

Replicate 2

Time: 16:30

Peak Area (A-s): 0.015

Peak Height (A): 0.048

Background Pk Area (A-s): 0.104

Background Pk Height (A): 0.050

Blank Corrected Pk Area (A-s): 0.012

Concentration (ug/L): 7.12

Mean Conc (ug/L): 6.79

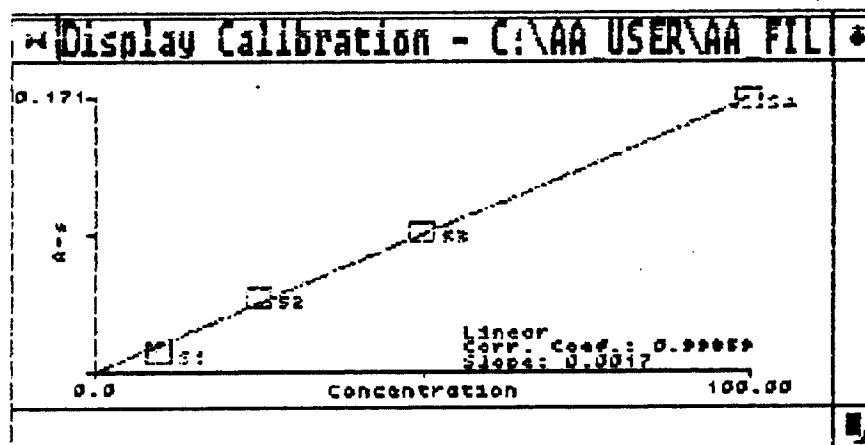
SD: 0.468

RSD(%): 6.89

Standard number 1 applied. [10.00]

Correlation coefficient: 0.99859

Slope: 0.0017



Se ID: ICV

Seq. No.: 00051

A/S Pos.: 5

Date: 10/19/9

Replicate 1

Time: 16:36

Concentration (ug/L): 53.35

Replicate 2

Time: 16:39

Concentration (ug/L): 53.72

Mean Conc (ug/L): 53.53

SD: 0.265

RSD(%): 0.49

QC sample is within range

Se ID: ICB

Seq. No.: 00052

A/S Pos.: 0

Date: 10/19/9

Replicate 1

Time: 16:42

Concentration (ug/L): -7.95

Replicate 2

Time: 16:46

Concentration (ug/L): -5.38

Mean Conc (ug/L): -6.66 SD: 1.815 RSD(%): 27.23

QC sample is within range

~~~~~  
Se ID: 81003.I1x5 Seq. No.: 00053 A/S Pos.: 25 Date: 10/19/

Replicate 1 Time: 16:49  
Concentration (ug/L ): 18.77 Corrected Conc (ug/L ): 93.8

Replicate 2 Time: 16:52  
Concentration (ug/L ): 24.12 Corrected Conc (ug/L ): 120.6

Mean Conc (ug/L ): 21.44 SD: 3.784 RSD(%): 17.65  
Corrected Conc (ug/L ): 107.2

~~~~~  
Se ID: CCV Seq. No.: 00054 A/S Pos.: 3 Date: 10/19/

Replicate 1 Time: 17:07
Concentration (ug/L): 50.46

Replicate 2 Time: 17:11
Concentration (ug/L): 51.16

Mean Conc (ug/L): 50.81 SD: 0.499 RSD(%): 0.98

QC sample is within range

~~~~~  
Se ID: CCB Seq. No.: 00055 A/S Pos.: 0 Date: 10/19/

Replicate 1 Time: 17:14  
Concentration (ug/L ): 2.52

Replicate 2 Time: 17:17  
Concentration (ug/L ): 1.67

Mean Conc (ug/L ): 2.10 SD: 0.601 RSD(%): 28.61

QC sample is within range

~~~~~  
Se ID: 81003.I1x5 Seq. No.: 00056 A/S Pos.: 25 Date: 10/19/

Replicate 1 Time: 17:21
Concentration (ug/L): 30.03 Corrected Conc (ug/L): 150.2

Replicate 2 Time: 17:24
Concentration (ug/L): 27.64 Corrected Conc (ug/L): 138.2

Mean Conc (ug/L): 28.84 SD: 1.688 RSD(%): 5.85
Corrected Conc (ug/L): 144.2

~~~~~  
Se ID: 81003.I2x5 Seq. No.: 00057 A/S Pos.: 26 Date: 10/19/

Replicate 1  
Concentration (ug/L ): 44.82

Time: 17:27  
Corrected Conc (ug/L ): 224.1

Replicate 2  
Concentration (ug/L ): 39.44

Time: 17:31  
Corrected Conc (ug/L ): 197.2

Mean Conc (ug/L ): 42.13  
Corrected Conc (ug/L ): 210.6

SD: 3.803

RSD(%): 9.03

~~~~~  
Se ID: B1003.I3x5

Seq. No.: 00058

A/S Pos.: 27

Date: 10/19/9

Replicate 1
Concentration (ug/L): 36.09

Time: 17:34
Corrected Conc (ug/L): 180.4

Replicate 2
Concentration (ug/L): 40.43

Time: 17:38
Corrected Conc (ug/L): 202.2

Mean Conc (ug/L): 38.26
Corrected Conc (ug/L): 191.3

SD: 3.073

RSD(%): 8.03

~~~~~  
Se ID: CCB

Seq. No.: 00059

A/S Pos.: 3

Date: 10/19/9

Replicate 1  
Concentration (ug/L ): 48.18

Time: 17:41

Replicate 2  
Concentration (ug/L ): 53.63

Time: 17:44

Mean Conc (ug/L ): 50.90

SD: 3.849

RSD(%): 7.56

QC sample is within range

~~~~~  
Se ID: CCB

Seq. No.: 00060

A/S Pos.: 0

Date: 10/19/9

Replicate 1
Concentration (ug/L): 2.65

Time: 17:48

Replicate 2
Concentration (ug/L): 0.78

Time: 17:51

Mean Conc (ug/L): 1.72

SD: 1.321

RSD(%): 76.97

QC sample is within range

Element File: AG.GEL Element: Ag Wavelength: 328.1
Date: 10/15/98 Time: 16:02 Slit: 0.7 L
Data File: ID/Wt File: 81002.IDW Lamp Current: 10
Technique: HGA Calib. Type: Linear Energy: 55

~~~~~  
Ag      ID: BLANK                      Seq. No.: 00195                      A/S Pos.: 0                      Date: 10/15/98

Replicate 1                      Time: 16:02  
Peak Area (A-s): 0.102                      Peak Height (A): 0.158  
Background Pk Area (A-s): 0.150                      Background Pk Height (A): 0.062  
Blank Corrected Pk Area (A-s): 0.007  
Concentration (ug/L ): 0.10

Replicate 2                      Time: 16:05  
Peak Area (A-s): 0.088                      Peak Height (A): 0.139  
Background Pk Area (A-s): 0.133                      Background Pk Height (A): 0.061  
Blank Corrected Pk Area (A-s): -0.007  
Concentration (ug/L ): -0.71

Mean Conc (ug/L ):                      -0.30                      SD: 0.568                      RSD(%): 186.8

Auto-zero performed.

~~~~~  
Ag ID: 5 PPB AG Seq. No.: 00196 A/S Pos.: 1 Date: 10/15/98

Replicate 1 Time: 16:08
Peak Area (A-s): 0.194 Peak Height (A): 0.290
Background Pk Area (A-s): 0.136 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.099
Concentration (ug/L): 5.37

Replicate 2 Time: 16:12
Peak Area (A-s): 0.187 Peak Height (A): 0.283
Background Pk Area (A-s): 0.129 Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.092
Concentration (ug/L): 5.01

Mean Conc (ug/L): 5.19 SD: 0.254 RSD(%): 4.90

Standard number 1 applied. [5.00]
Correlation coefficient: 1.00000 Slope: 0.0191 Int: 0.000

~~~~~  
Ag      ID: 10 PPB AG                      Seq. No.: 00197                      A/S Pos.: 2                      Date: 10/15/98

Replicate 1                      Time: 16:15  
Peak Area (A-s): 0.282                      Peak Height (A): 0.428  
Background Pk Area (A-s): 0.143                      Background Pk Height (A): 0.062  
Blank Corrected Pk Area (A-s): 0.187  
Concentration (ug/L ): 9.79

Replicate 2                      Time: 16:18  
Peak Area (A-s): 0.288                      Peak Height (A): 0.435  
Background Pk Area (A-s): 0.148                      Background Pk Height (A): 0.065  
Blank Corrected Pk Area (A-s): 0.194  
Concentration (ug/L ): 10.13



Mean Conc (ug/L ): 9.96 SD: 0.244 RSD(%): 2.45

Standard number 2 applied. [10.00]  
Correlation coefficient: 1.00000 Slope: 0.0190 Int: 0.000

~~~~~  
Ag ID: 20 PPB AG Seq. No.: 00198 A/S Pos.: 3 Date: 10/15/9

Replicate 1 Time: 16:21
Peak Area (A-s): 0.482 Peak Height (A): 0.724
Background Pk Area (A-s): 0.152 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.387
Concentration (ug/L): 20.33

Replicate 2 Time: 16:24
Peak Area (A-s): 0.471 Peak Height (A): 0.721
Background Pk Area (A-s): 0.159 Background Pk Height (A): 0.067
Blank Corrected Pk Area (A-s): 0.376
Concentration (ug/L): 19.76

Mean Conc (ug/L): 20.04 SD: 0.402 RSD(%): 2.01

Standard number 3 applied. [20.00]
Correlation coefficient: 1.00000 Slope: 0.0191 Int: -0.000

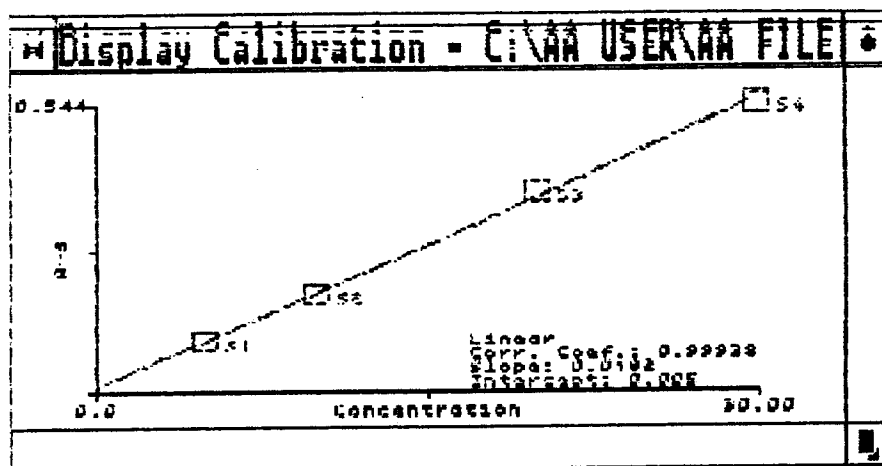
~~~~~  
Ag ID: 30 PPB AG Seq. No.: 00199 A/S Pos.: 4 Date: 10/15/9

Replicate 1 Time: 16:28  
Peak Area (A-s): 0.641 Peak Height (A): 0.955  
Background Pk Area (A-s): 0.168 Background Pk Height (A): 0.085  
Blank Corrected Pk Area (A-s): 0.546  
Concentration (ug/L ): 28.65

Replicate 2 Time: 16:31  
Peak Area (A-s): 0.636 Peak Height (A): 0.947  
Background Pk Area (A-s): 0.162 Background Pk Height (A): 0.086  
Blank Corrected Pk Area (A-s): 0.541  
Concentration (ug/L ): 28.39

Mean Conc (ug/L ): 28.52 SD: 0.184 RSD(%): 0.64

Standard number 4 applied. [30.00]  
Correlation coefficient: 0.99938 Slope: 0.0182 Int: 0.005



~~~~~  
 Ag ID: ICV Seq. No.: 00200 A/S Pos.: 5 Date: 10/15/

Replicate 1 Time: 16:35
 Concentration (ug/L): 20.25

Replicate 2 Time: 16:39
 Concentration (ug/L): 20.13

Mean Conc (ug/L): 20.19 SD: 0.083 RSD(%): 0.41

QC sample is within range 15.5 - 24.49

~~~~~  
 Ag ID: ICB Seq. No.: 00201 A/S Pos.: 0 Date: 10/15/

Replicate 1 Time: 16:45  
 Concentration (ug/L ): -0.95

Replicate 2 Time: 16:48  
 Concentration (ug/L ): -1.04

Mean Conc (ug/L ): -1.00 SD: 0.061 RSD(%): 6.11

QC sample is within range -5.49 - 5.49

~~~~~  
 Ag ID: 81002.B-1 Seq. No.: 00202 A/S Pos.: 6 Date: 10/15/

Replicate 1 Time: 16:51
 Concentration (ug/L): -0.19

Replicate 2 Time: 16:55
 Concentration (ug/L): -0.21

Mean Conc (ug/L): -0.20 SD: 0.020 RSD(%): 10.0

~~~~~  
 Ag ID: 81002.B-1 Seq. No.: 00203 A/S Pos.: 7 Date: 10/15/

Replicate 1 Time: 16:58

Time: 17:34

SD: 0.163

10 ID: 81002.1-2A

Seq. No.: 00209

A/S Pos.: 11

Date: 10/15/9

Time: 17:37

Time: 17:40

SD: 0.195

RSD(%): 2.37

19 ID: 81002.2-2A

Seq. No.: 00210

A/S Pos.: 12

Date: 10/15/90

Time: 17:43

Time: 17:47

SD: 0.105

RSD(%): 11.41

10 ID: 81002.3-2A

Seq. No.: 00211

A/S Pos.: 13

Date: 10/15/98

Time: 17:50

Time: 17:53

SD: 0.123

RSD(%): 13.01

AG TD: CCV

Seq. No.: 00212

A/S Pos.: 3

Date: 10/15/98

Time: 17:56

Time: 17:59

SD: 0.274

RSD(%): 1.41

MC sample is within range 15.5 - 24.49

77 ID: CCB

Seq. No.: 00213

A/S Pos.: 0

Date: 10/15/98

Time: 18:03

Replicate 2  
 Concentration (ug/L ): -1.05  
 Time: 18:06  
 Mean Conc (ug/L ): -1.09 SD: 0.058 RSD(%): 5.36  
 IC sample is within range -5.49 - 5.49  
 ~~~~~  
 An ID: 81003.RB-AP Seq. No.: 00214 A/S Pos.: 14 Date: 10/15/9
 Replicate 1
 Concentration (ug/L): -1.21
 Time: 18:09
 Replicate 2
 Concentration (ug/L): -1.32
 Time: 18:12
 Mean Conc (ug/L): -1.27 SD: 0.072 RSD(%): 5.68
 ~~~~~  
 An ID: 81003.RB-F Seq. No.: 00215 A/S Pos.: 15 Date: 10/15/9  
 Replicate 1  
 Concentration (ug/L ): -1.06  
 Time: 18:15  
 Replicate 2  
 Concentration (ug/L ): -1.08  
 Time: 18:18  
 Mean Conc (ug/L ): -1.07 SD: 0.012 RSD(%): 1.14  
 ~~~~~  
 An ID: 81003.OB Seq. No.: 00216 A/S Pos.: 16 Date: 10/15/9
 Replicate 1
 Concentration (ug/L): 1.51
 Time: 18:21
 Replicate 2
 Concentration (ug/L): 1.47
 Time: 18:24
 Mean Conc (ug/L): 1.49 SD: 0.030 RSD(%): 2.05
 ~~~~~  
 An ID: 81003.UB Seq. No.: 00217 A/S Pos.: 17 Date: 10/15/9  
 Replicate 1  
 Concentration (ug/L ): -1.01  
 Time: 18:28  
 Replicate 2  
 Concentration (ug/L ): -0.93  
 Time: 18:31  
 Mean Conc (ug/L ): -0.97 SD: 0.057 RSD(%): 5.82  
 ~~~~~  
 An ID: 81003.IB Seq. No.: 00218 A/S Pos.: 18 Date: 10/15/9
 Replicate 1
 Concentration (ug/L): -1.07
 Time: 18:34
 Replicate 2
 Concentration (ug/L): -1.04
 Time: 18:37

```

Mean Conc (ug/L ):      -1.06          SD: 0.025          RSD(%): 2.38
~~~~~
In      ID: 81003.01          Seq. No.: 00219      A/S Pos.: 19      Date: 10/15/9
Replicate 1                      Time: 18:40
Concentration (ug/L ): 1.34
Replicate 2                      Time: 18:43
Concentration (ug/L ): 1.59
Mean Conc (ug/L ):      1.46          SD: 0.179          RSD(%): 12.25
~~~~~
In      ID: 81003.01          Seq. No.: 00220      A/S Pos.: 19      Date: 10/15/9
Replicate 1                      Time: 18:46
Concentration (ug/L ): 10.71
Replicate 2                      Time: 18:50
Concentration (ug/L ): 10.42
Mean Conc (ug/L ):      10.56          SD: 0.203          RSD(%): 1.92
Recovery is 91.0%
~~~~~
In      ID: 81003.02          Seq. No.: 00221      A/S Pos.: 20      Date: 10/15/9
Replicate 1                      Time: 18:53
Concentration (ug/L ): 20.44
Replicate 2                      Time: 18:56
Concentration (ug/L ): 20.91
Mean Conc (ug/L ):      20.67          SD: 0.333          RSD(%): 1.61
~~~~~
In      ID: 81003.03          Seq. No.: 00222      A/S Pos.: 21      Date: 10/15/9
Replicate 1                      Time: 18:59
Concentration (ug/L ): -0.43
Replicate 2                      Time: 19:02
Concentration (ug/L ): -0.37
Mean Conc (ug/L ):      -0.40          SD: 0.145          RSD(%): 11.34
~~~~~
In      ID: 81003.04          Seq. No.: 00223      A/S Pos.: 22      Date: 10/15/9
Replicate 1                      Time: 19:05
Concentration (ug/L ): -1.08,
Replicate 2                      Time: 19:09
Concentration (ug/L ): -1.42
Mean Conc (ug/L ):      -1.25          SD: 0.240          RSD(%): 19.13

```

~~~~~  
An ID: CCB Seq. No.: 00224 A/S Pos.: 3 Date: 10/15/9

Replicate 1 Time: 19:12  
Concentration (ug/L ): 19.12

Replicate 2 Time: 19:15  
Concentration (ug/L ): 18.08

Mean Conc (ug/L ): 18.60 SD: 0.738 RSD(%): 3.97

QC sample is within range 15.5 - 24.49

~~~~~  
An ID: CCB Seq. No.: 00225 A/S Pos.: 0 Date: 10/15/

Replicate 1 Time: 19:18
Concentration (ug/L): -1.13

Replicate 2 Time: 19:21
Concentration (ug/L): -1.06

Mean Conc (ug/L): -1.10 SD: 0.046 RSD(%): 4.23

QC sample is within range -5.49 - 5.49

~~~~~  
An ID: 81003.U2 Seq. No.: 00226 A/S Pos.: 23 Date: 10/15/

Replicate 1 Time: 19:24  
Concentration (ug/L ): -1.63

Replicate 2 Time: 19:28  
Concentration (ug/L ): -1.54

Mean Conc (ug/L ): -1.59 SD: 0.064 RSD(%): 4.04

~~~~~  
An ID: 81003.U3 Seq. No.: 00227 A/S Pos.: 24 Date: 10/15/

Replicate 1 Time: 19:31
Concentration (ug/L): -1.53

Replicate 2 Time: 19:34
Concentration (ug/L): -1.38

Mean Conc (ug/L): -1.46 SD: 0.100 RSD(%): 6.88

~~~~~  
An ID: 81003.I1 Seq. No.: 00228 A/S Pos.: 25 Date: 10/15/

Replicate 1 Time: 19:38  
Concentration (ug/L ): 3.11

Replicate 2 Time: 19:41  
Concentration (ug/L ): 3.04

Mean Conc (ug/L ): 3.08 SD: 0.049 RSD(%): 1.59

Element File: TL.GEL                      Element: T1                      Wavelength: 276.8  
Date: 10/19/98                      Time: 18:11                      Slit: 2.00 H  
Data File:                      ID/Wt File: 81002.IDW                      Lamp Current: 7  
Technique: HGA                      Calib. Type: Nonlinear                      Energy: 45

1 ID: BLANK                      Seq. No.: 00061                      A/S Pos.: 0                      Date: 10/19/98

Replicate 1                      Time: 18:11  
Peak Area (A-s): 0.003                      Peak Height (A): 0.015  
Background Pk Area (A-s): 0.013                      Background Pk Height (A): 0.012  
Blank Corrected Pk Area (A-s): 0.003

Replicate 2                      Time: 18:14  
Peak Area (A-s): -0.000                      Peak Height (A): 0.016  
Background Pk Area (A-s): 0.022                      Background Pk Height (A): 0.015  
Blank Corrected Pk Area (A-s): -0.000

Mean Pk Area (A-s): 0.002                      SD: 0.0022                      RSD(%): 142.94

Auto-zero performed.

1 ID: 10 PPB TL                      Seq. No.: 00062                      A/S Pos.: 1                      Date: 10/19/98

Replicate 1                      Time: 18:17  
Peak Area (A-s): 0.016                      Peak Height (A): 0.026  
Background Pk Area (A-s): 0.039                      Background Pk Height (A): 0.021  
Blank Corrected Pk Area (A-s): 0.015

Characteristic Mass = 29.8 pg/0.0044 A-s

Replicate 2                      Time: 18:21  
Peak Area (A-s): 0.021                      Peak Height (A): 0.027  
Background Pk Area (A-s): 0.037                      Background Pk Height (A): 0.023  
Blank Corrected Pk Area (A-s): 0.019

Mean Pk Area (A-s): 0.017                      SD: 0.0033                      RSD(%): 19.47

Standard number 1 applied. [10.00]  
Correlation coefficient: 1.00000                      Slope: 0.0017

Characteristic Mass = 22.6 pg/0.0044 A-s

1 ID: 20 PPB TL                      Seq. No.: 00063                      A/S Pos.: 2                      Date: 10/19/98

Replicate 1                      Time: 18:24  
Peak Area (A-s): 0.033                      Peak Height (A): 0.034  
Background Pk Area (A-s): 0.055                      Background Pk Height (A): 0.031  
Blank Corrected Pk Area (A-s): 0.031  
Concentration (ug/L ): 18.34

Replicate 2                      Time: 18:27  
Peak Area (A-s): 0.030                      Peak Height (A): 0.040  
Background Pk Area (A-s): 0.059                      Background Pk Height (A): 0.032

Blank Corrected Pk Area (A-s): 0.028  
Concentration (ug/L ): 16.61

Mean Conc (ug/L ): 17.47 SD: 1.226 RSD(%): 7.02

Standard number 2 applied. [20.00]  
Correlation coefficient: 1.00000 Slope: 0.0020

~~~~~  
T1 ID: 50 PPB TL Seq. No.: 00064 A/S Pos.: 3 Date: 10/19/7

Replicate 1 Time: 18:30
Peak Area (A-s): 0.080 Peak Height (A): 0.080
Background Pk Area (A-s): 0.093 Background Pk Height (A): 0.056
Blank Corrected Pk Area (A-s): 0.078
Concentration (ug/L): 115.22

Replicate 2 Time: 18:34
Peak Area (A-s): 0.082 Peak Height (A): 0.081
Background Pk Area (A-s): 0.093 Background Pk Height (A): 0.061
Blank Corrected Pk Area (A-s): 0.080
Concentration (ug/L): 123.13

Mean Conc (ug/L): 119.09 SD: 5.597 RSD(%): 4.70

S-shaped calibration curve detected. 2-coef. equation used.
Standard number 3 applied. [50.00]
Correlation coefficient: 0.99809 Slope: 0.0017

~~~~~  
T1 ID: 100 PPB TL Seq. No.: 00065 A/S Pos.: 4 Date: 10/19/7

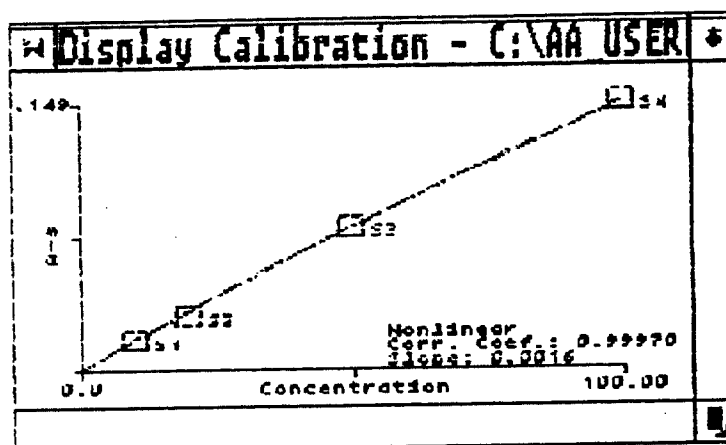
Replicate 1 Time: 18:37  
Peak Area (A-s): 0.153 Peak Height (A): 0.147  
Background Pk Area (A-s): 0.146 Background Pk Height (A): 0.114  
Blank Corrected Pk Area (A-s): 0.151  
Concentration (ug/L ): 103.58

Replicate 2 Time: 18:40  
Peak Area (A-s): 0.148 Peak Height (A): 0.131  
Background Pk Area (A-s): 0.147 Background Pk Height (A): 0.104  
Blank Corrected Pk Area (A-s): 0.146  
Concentration (ug/L ): 99.58

Mean Conc (ug/L ): 101.57 SD: 2.829 RSD(%): 2.79

S-shaped calibration curve detected. 2-coef. equation used.  
Standard number 4 applied. [100.00]  
Correlation coefficient: 0.99970 Slope: 0.0016





~~~~~  
T1 ID: ICV Seq. No.: 00066 A/S Pos.: 5 Date: 10/19/9

Replicate 1 Time: 18:44
Concentration (ug/L): 51.09

Replicate 2 Time: 18:47
Concentration (ug/L): 46.76

Mean Conc (ug/L): 48.92 SD: 3.058 RSD(%): 6.25

QC sample is within range

~~~~~  
T1 ID: ICB Seq. No.: 00067 A/S Pos.: 0 Date: 10/19/9

Replicate 1 Time: 18:51  
Concentration (ug/L ): -2.91

Replicate 2 Time: 18:54  
Concentration (ug/L ): -2.21

Mean Conc (ug/L ): -2.56 SD: 0.495 RSD(%): 19.35

QC sample is within range

~~~~~  
T1 ID: 81003.RB-AP Seq. No.: 00068 A/S Pos.: 14 Date: 10/19/9

Replicate 1 Time: 18:57
Concentration (ug/L): 0.19

Replicate 2 Time: 19:00
Concentration (ug/L): -1.09

Mean Conc (ug/L): -0.45 SD: 0.911 RSD(%): 202.6

~~~~~  
T1 ID: 81003.RB-F Seq. No.: 00069 A/S Pos.: 15 Date: 10/19/9

Replicate 1 Time: 19:03  
Concentration (ug/L ): -2.47

```

Replicate 2                               Time: 19:06
Concentration (ug/L ): -1.71

Mean Conc (ug/L ):      -2.09           SD: 0.543           RSD(%): 25.95
~~~~~
T1 ID: 81003.0B Seq. No.: 00070 A/S Pos.: 16 Date: 10/19/

Replicate 1 Time: 19:09
Concentration (ug/L): 0.64

Replicate 2 Time: 19:12
Concentration (ug/L): 2.29

Mean Conc (ug/L): 1.47 SD: 1.164 RSD(%): 79.37
~~~~~
T1      ID: 81003.UB                      Seq. No.: 00071      A/S Pos.: 17      Date: 10/19/

Replicate 1                               Time: 19:15
Concentration (ug/L ): -2.01

Replicate 2                               Time: 19:19
Concentration (ug/L ): 0.54

Mean Conc (ug/L ):      -0.74           SD: 1.809           RSD(%): 246.00
~~~~~
T1 ID: 81003.1B Seq. No.: 00072 A/S Pos.: 18 Date: 10/19/

Replicate 1 Time: 19:22
Concentration (ug/L): -0.15

Replicate 2 Time: 19:25
Concentration (ug/L): -1.40

Mean Conc (ug/L): -0.77 SD: 0.885 RSD(%): 114.30
~~~~~
T1      ID: 81003.01                      Seq. No.: 00073      A/S Pos.: 19      Date: 10/19/

Replicate 1                               Time: 19:28
Concentration (ug/L ): -1.04

Replicate 2                               Time: 19:31
Concentration (ug/L ): -3.98

Mean Conc (ug/L ):      -2.52           SD: 2.078           RSD(%): 82.70
~~~~~
T1 ID: 81003.01 Seq. No.: 00074 A/S Pos.: 19 Date: 10/19/

Replicate 1 Time: 19:34
Concentration (ug/L): 44.50

Replicate 2 Time: 19:37
Concentration (ug/L): 43.88

Mean Conc (ug/L): 44.19 SD: 0.442 RSD(%): 1.00

```

Recovery is 93.4%

~~~~~  
T1 ID: 81003.02 Seq. No.: 00075 A/S Pos.: 20 Date: 10/19/9

Replicate 1 Time: 19:41  
Concentration (ug/L ): 0.03

Replicate 2 Time: 19:44  
Concentration (ug/L ): 3.76

Mean Conc (ug/L ): 1.89 SD: 2.634 RSD(%): 138.85

~~~~~  
T1 ID: 81003.03 Seq. No.: 00076 A/S Pos.: 21 Date: 10/19/9

Replicate 1 Time: 19:47  
Concentration (ug/L ): 2.10

Replicate 2 Time: 19:50  
Concentration (ug/L ): -0.39

Mean Conc (ug/L ): 0.85 SD: 1.757 RSD(%): 205.9

~~~~~  
T1 ID: CCB Seq. No.: 00077 A/S Pos.: 3 Date: 10/19/9

Replicate 1 Time: 19:53  
Concentration (ug/L ): 50.65

Replicate 2 Time: 19:57  
Concentration (ug/L ): 46.54

Mean Conc (ug/L ): 48.59 SD: 2.904 RSD(%): 5.98

QC sample is within range

~~~~~  
T1 ID: CCB Seq. No.: 00078 A/S Pos.: 0 Date: 10/19/9

Replicate 1 Time: 20:00  
Concentration (ug/L ): -1.27

Replicate 2 Time: 20:03  
Concentration (ug/L ): 0.77

Mean Conc (ug/L ): -0.25 SD: 1.442 RSD(%): 571.5

QC sample is within range

~~~~~  
T1 ID: 81003.U1 Seq. No.: 00079 A/S Pos.: 22 Date: 10/19/9

Replicate 1 Time: 20:06  
Concentration (ug/L ): 4.79

Replicate 2 Time: 20:09  
Concentration (ug/L ): 12.49

```

Mean Conc (ug/L): 8.62 SD: 5.441 RSD(%): 62.98
~~~~~
T1      ID: 81003.U2      Seq. No.: 00080      A/S Pos.: 23      Date: 10/19/
Replicate 1      Time: 20:12
Concentration (ug/L ): 2.75
Replicate 2      Time: 20:16
Concentration (ug/L ): 2.78
Mean Conc (ug/L ):      2.77      SD: 0.025      RSD(%): 0.89
~~~~~
T1 ID: 81003.U3 Seq. No.: 00081 A/S Pos.: 24 Date: 10/19/
Replicate 1 Time: 20:19
Concentration (ug/L): 8.87
Replicate 2 Time: 20:22
Concentration (ug/L): 11.73
Mean Conc (ug/L): 10.30 SD: 2.027 RSD(%): 19.68
~~~~~
T1      ID: 81003.I1x5      Seq. No.: 00082      A/S Pos.: 25      Date: 10/19/
Replicate 1      Time: 20:25
Concentration (ug/L ): 7.88      Corrected Conc (ug/L ): 39.4
Replicate 2      Time: 20:29
Concentration (ug/L ): 10.56      Corrected Conc (ug/L ): 52.8
Mean Conc (ug/L ):      9.22      SD: 1.892      RSD(%): 20.51
Corrected Conc (ug/L ): 46.1
~~~~~
T1 ID: 81003.I2x5 Seq. No.: 00083 A/S Pos.: 26 Date: 10/19/
Replicate 1 Time: 20:32
Concentration (ug/L): 8.93 Corrected Conc (ug/L): 44.6
Replicate 2 Time: 20:35
Concentration (ug/L): 10.22 Corrected Conc (ug/L): 51.1
Mean Conc (ug/L): 9.57 SD: 0.915 RSD(%): 9.56
Corrected Conc (ug/L): 47.9
~~~~~
T1      ID: 81003.I3x5      Seq. No.: 00084      A/S Pos.: 27      Date: 10/19/
Replicate 1      Time: 20:39
Concentration (ug/L ): 15.15      Corrected Conc (ug/L ): 75.7
Replicate 2      Time: 20:42
Concentration (ug/L ): 11.72      Corrected Conc (ug/L ): 58.6
Mean Conc (ug/L ):      13.43      SD: 2.422      RSD(%): 18.01
Corrected Conc (ug/L ): 67.2

```

~~~~~  
T1 ID: CCV Seq. No.: 00085 A/S Pos.: 3 Date: 10/19/

Replicate 1 Time: 20:45
Concentration (ug/L): 44.91

Replicate 2 Time: 20:48
Concentration (ug/L): 46.38

Mean Conc (ug/L): 45.64 SD: 1.038 RSD(%): 2.27

QC sample is within range

~~~~~  
T1 ID: CCB Seq. No.: 00086 A/S Pos.: 0 Date: 10/19/

Replicate 1 Time: 20:51  
Concentration (ug/L ): 1.10

Replicate 2 Time: 20:55  
Concentration (ug/L ): -0.06

Mean Conc (ug/L ): 0.52 SD: 0.821 RSD(%): 156.7

QC sample is within range

~~~~~  
T1 ID: 81006.1x5 Seq. No.: 00087 A/S Pos.: 28 Date: 10/19/

Replicate 1 Time: 20:58
Concentration (ug/L): 0.53 Corrected Conc (ug/L): 2.6

Replicate 2 Time: 21:01
Concentration (ug/L): 3.14 Corrected Conc (ug/L): 15.7

Mean Conc (ug/L): 1.83 SD: 1.848 RSD(%): 100.7
Corrected Conc (ug/L): 9.2

~~~~~  
T1 ID: 81006.1x5 Seq. No.: 00088 A/S Pos.: 28 Date: 10/19/

Replicate 1 Time: 21:04  
Concentration (ug/L ): 51.97 Corrected Conc (ug/L ): 259.84

Replicate 2 Time: 21:08  
Concentration (ug/L ): 48.19 Corrected Conc (ug/L ): 241.0

Mean Conc (ug/L ): 50.08 SD: 2.671 RSD(%): 5.33  
Corrected Conc (ug/L ): 250.4

Recovery is 96.5%

~~~~~  
T1 ID: 81006.2x5 Seq. No.: 00089 A/S Pos.: 29 Date: 10/19/

Replicate 1 Time: 21:11
Concentration (ug/L): 3.17 Corrected Conc (ug/L): 15.9

Replicate 2 Time: 21:14

Concentration (ug/L): 3.90 Corrected Conc (ug/L): 19.5
Mean Conc (ug/L): 3.54 SD: 0.513 RSD(%): 14.51
Corrected Conc (ug/L): 17.7

~~~~~  
T1      ID: 81006.3x5                      Seq. No.: 00090      A/S Pos.: 30      Date: 10/19/

Replicate 1                      Time: 21:17  
Concentration (ug/L ): 5.05                      Corrected Conc (ug/L ): 25.2

Replicate 2                      Time: 21:20  
Concentration (ug/L ): 4.46                      Corrected Conc (ug/L ): 22.3

Mean Conc (ug/L ): 4.75                      SD: 0.412                      RSD(%): 8.66  
Corrected Conc (ug/L ): 23.8

~~~~~  
T1 ID: CCV Seq. No.: 00091 A/S Pos.: 3 Date: 10/19/9

Replicate 1 Time: 21:23
Concentration (ug/L): 49.51

Replicate 2 Time: 21:27
Concentration (ug/L): 49.92

Mean Conc (ug/L): 49.71 SD: 0.287 RSD(%): 0.58

QC sample is within range

~~~~~  
T1      ID: CCB                      Seq. No.: 00092      A/S Pos.: 0      Date: 10/19/

Replicate 1                      Time: 21:30  
Concentration (ug/L ): -2.06

Replicate 2                      Time: 21:33  
Concentration (ug/L ): 0.99

Mean Conc (ug/L ): -0.54                      SD: 2.163                      RSD(%): 404.62

QC sample is within range

~~~~~  
T1 ID: CCV Seq. No.: 00093 A/S Pos.: 3 Date: 10/20/4

Replicate 1 Time: 08:01
Concentration (ug/L): 48.50

Replicate 2 Time: 08:04
Concentration (ug/L): 45.22

Mean Conc (ug/L): 46.85 SD: 2.318 RSD(%): 4.95

QC sample is within range


~~~~~  
T1 ID: 81006.1 Seq. No.: 00099 A/S Pos.: 28 Date: 10/20/9

Replicate 1 Time: 08:40  
Concentration (ug/L ): 56.27

Replicate 2 Time: 08:43  
Concentration (ug/L ): 56.46

Mean Conc (ug/L ): 56.37 SD: 0.139 RSD(%): 0.25

Recovery is 77.6%

~~~~~  
T1 ID: 81006.2 Seq. No.: 00100 A/S Pos.: 29 Date: 10/20/

Replicate 1 Time: 08:46
Concentration (ug/L): 13.37

Replicate 2 Time: 08:50
Concentration (ug/L): 16.79

Mean Conc (ug/L): 15.08 SD: 2.419 RSD(%): 16.04

~~~~~  
T1 ID: 81006.3 Seq. No.: 00101 A/S Pos.: 30 Date: 10/20/9

Replicate 1 Time: 08:53  
Concentration (ug/L ): 15.00

Replicate 2 Time: 08:56  
Concentration (ug/L ): 11.38

Mean Conc (ug/L ): 13.18 SD: 2.561 RSD(%): 19.42

~~~~~  
T1 ID: CCV Seq. No.: 00102 A/S Pos.: 3 Date: 10/20/9

Replicate 1 Time: 08:59
Concentration (ug/L): 54.96

Replicate 2 Time: 09:02
Concentration (ug/L): 53.69

Mean Conc (ug/L): 54.32 SD: 0.899 RSD(%): 1.65

QC sample is within range

~~~~~  
T1 ID: CCB Seq. No.: 00103 A/S Pos.: 0 Date: 10/20/9

Replicate 1 Time: 09:06  
Concentration (ug/L ): -3.09

Replicate 2 Time: 09:09  
Concentration (ug/L ): -0.94

Mean Conc (ug/L ): -2.02 SD: 1.525 RSD(%): 75.70



AA  
MAIN: 0.003 MG/L HD 0.001      MAIN: 0.002 MG/L HD 0.001  
-----  
ZN      MEAN: 0.002 MG/L      SD: 0.001 RSD: 21.8 AUTOZERO      0.000  
-----

AA  
MAIN: 0.098 MG/L HD 0.039      MAIN: 0.082 MG/L HD 0.032  
-----  
ZN      MEAN: 0.090 MG/L      SD: 0.012 RSD: 12.8 1.STANDARD 0.090 MG/L  
-----

AA  
MAIN: 0.145 MG/L HD 0.057      MAIN: 0.137 MG/L HD 0.054  
-----  
ZN      MEAN: 0.141 MG/L      SD: 0.006 RSD: 4.1 2.STANDARD 0.140 MG/L  
-----

AA  
MAIN: 0.220 MG/L HD 0.088      MAIN: 0.235 MG/L HD 0.093  
-----  
ZN      MEAN: 0.228 MG/L      SD: 0.010 RSD: 4.6 3.STANDARD 0.227 MG/L  
-----

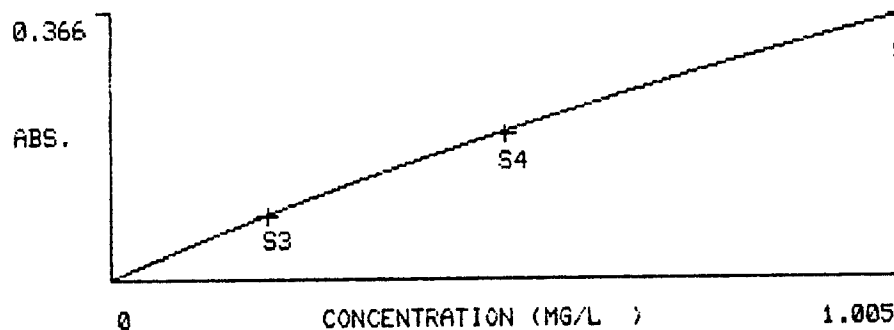
AA  
MAIN: 0.516 MG/L HD 0.206      MAIN: 0.512 MG/L HD 0.204  
-----  
ZN      MEAN: 0.514 MG/L      SD: 0.003 RSD: 0.6 4.STANDARD 0.513 MG/L  
-----

AA  
MAIN: 0.919 MG/L HD 0.368      MAIN: 0.910 MG/L HD 0.365  
-----  
ZN      MEAN: 0.915 MG/L      SD: 0.006 RSD: 0.7 5.STANDARD 0.959 MG/L  
-----

FLAME DISPLAY CALIBRATION MODE  
ELEMENT: ZN

PRINTER: ON  
BG CORR: OFF  
UNITS : MG/L

REPL. 0 OF 2



0.959

READ  
ABS. READING  
S5 AA : 0.365

STATISTICS  
MEAN: 0.915  
SD: 0.006  
RSD(%): 0.7

C2H2: 2.5 L/MIN      OXIDANT: 8.0 L/MIN      FLAME: C2H2-AIR

AA  
MAIN: 0.001 MG/L HD 0.001      MAIN: -0.001 MG/L HD -0.000  
-----  
ZN      MEAN: 0.000 MG/L      SD: 0.001 RSD: 99.9 AUTOZERO      0.000  
-----

AA  
MAIN: 0.500 MG/L HD 0.207

AA  
MAIN: 0.475 MG/L HD 0.198

ZN *ICV* MEAN: 0.488 MG/L SD: 0.018 RSD: 3.6

AA  
MAIN: 0.005 MG/L HD 0.002

AA  
MAIN: 0.001 MG/L HD 0.001

ZN *ICB* MEAN: 0.003 MG/L SD: 0.002 RSD: 86.6

AA  
MAIN: 0.380 MG/L HD 0.163

AA  
MAIN: 0.400 MG/L HD 0.170

*02* ZN *B-1* MEAN: 0.390 MG/L SD: 0.014 RSD: 3.6

AA  
MAIN: 0.272 MG/L HD 0.120

AA  
MAIN: 0.263 MG/L HD 0.116

ZN *8-1* MEAN: 0.267 MG/L SD: 0.006 RSD: 2.4

AA  
MAIN: 0.654 MG/L HD 0.260

AA  
MAIN: 0.679 MG/L HD 0.268

ZN *8-1S* MEAN: 0.666 MG/L SD: 0.018 RSD: 2.7

AA  
MAIN: 0.358 MG/L HD 0.154

AA  
MAIN: 0.384 MG/L HD 0.164

ZN *9-1* MEAN: 0.371 MG/L SD: 0.018 RSD: 4.9

AA  
MAIN: 0.360 MG/L HD 0.155

AA  
MAIN: 0.353 MG/L HD 0.152

ZN *9-1D* MEAN: 0.356 MG/L SD: 0.006 RSD: 1.6

AA  
MAIN: 0.426 MG/L HD 0.180

AA  
MAIN: 0.439 MG/L HD 0.135

ZN *10-1* MEAN: 0.433 MG/L SD: 0.009 RSD: 2.2

AA  
MAIN: 0.013 MG/L HD 0.006

AA  
MAIN: 0.014 MG/L HD 0.007

ZN *2-10* MEAN: 0.013 MG/L SD: 0.000 RSD: 2.3 AUTOZERO 0.000

AA  
MAIN: 0.115 MG/L HD 0.053

AA  
MAIN: 0.114 MG/L HD 0.053

ZN *B-2A* MEAN: 0.115 MG/L SD: 0.001 RSD: 0.6

AA  
MAIN: 0.170 MG/L HD 0.077

AA  
MAIN: 0.170 MG/L HD 0.077

ZN 8-2A MEAN: 0.170 MG/L SD: 0.000 RSD: 0.1

AA  
MAIN: 0.519 MG/L HD 0.214

AA  
MAIN: 0.557 MG/L HD 0.227

ZN 8-2AS MEAN: 0.538 MG/L SD: 0.026 RSD: 4.9

AA  
MAIN: 0.489 MG/L HD 0.203

AA  
MAIN: 0.513 MG/L HD 0.212

ZN 9-2A MEAN: 0.501 MG/L SD: 0.016 RSD: 3.3

AA  
MAIN: -0.004 MG/L HD -0.002

AA  
MAIN: -0.005 MG/L HD -0.002

ZN 9-2B MEAN: -0.004 MG/L SD: 0.001 RSD: 16.8

AA  
MAIN: 0.180 MG/L HD 0.082

AA  
MAIN: 0.172 MG/L HD 0.078

ZN 9-2F MEAN: 0.176 MG/L SD: 0.006 RSD: 3.3

AA  
MAIN: 0.164 MG/L HD 0.074

AA  
MAIN: 0.170 MG/L HD 0.077

ZN 9-2G MEAN: 0.167 MG/L SD: 0.004 RSD: 2.6

AA  
MAIN: 0.220 MG/L HD 0.098

AA  
MAIN: 0.218 MG/L HD 0.098

ZN 10-2A MEAN: 0.219 MG/L SD: 0.001 RSD: 0.5

1003 AA  
MAIN: 0.106 MG/L HD 0.049

AA  
MAIN: 0.093 MG/L HD 0.043

ZN 12B-A MEAN: 0.100 MG/L SD: 0.009 RSD: 9.4

AA  
MAIN: 0.108 MG/L HD 0.050

AA  
MAIN: 0.111 MG/L HD 0.051

ZN 12B-F MEAN: 0.109 MG/L SD: 0.002 RSD: 2.2

AA  
MAIN: 0.107 MG/L HD 0.049

AA  
MAIN: 0.094 MG/L HD 0.044

ZN 03 MEAN: 0.100 MG/L SD: 0.009 RSD: 8.8

AA  
MAIN: 0.092 MG/L HD 0.043      MAIN: 0.114 MG/L HD 0.053

ZN *uB* MEAN: 0.103 MG/L SD: 0.015 RSD: 14.8

AA  
MAIN: 0.135 MG/L HD 0.062      MAIN: 0.121 MG/L HD 0.056

ZN *tB* MEAN: 0.128 MG/L SD: 0.009 RSD: 7.3

AA  
MAIN: 0.467 MG/L HD 0.195      MAIN: 0.489 MG/L HD 0.203

ZN *ccv* MEAN: 0.478 MG/L SD: 0.015 RSD: 3.2

AA  
MAIN: 0.005 MG/L HD 0.003      MAIN: -0.005 MG/L HD -0.002

ZN *αB* MEAN: 0.000 MG/L SD: 0.007 RSD: 99.9

AA  
MAIN: 0.085 MG/L HD 0.040      MAIN: 0.081 MG/L HD 0.038

ZN *01* MEAN: 0.083 MG/L SD: 0.003 RSD: 4.0

AA  
MAIN: 0.124 MG/L HD 0.057      MAIN: 0.111 MG/L HD 0.052

ZN *02* MEAN: 0.117 MG/L SD: 0.009 RSD: 7.2

AA  
MAIN: 0.079 MG/L HD 0.037      MAIN: 0.077 MG/L HD 0.036

ZN *03* MEAN: 0.078 MG/L SD: 0.001 RSD: 1.8

AA  
MAIN: 0.130 MG/L HD 0.060      MAIN: 0.129 MG/L HD 0.059

ZN *020* MEAN: 0.129 MG/L SD: 0.001 RSD: 0.7

AA  
MAIN: 0.122 MG/L HD 0.056      MAIN: 0.133 MG/L HD 0.061

ZN *u1* MEAN: 0.127 MG/L SD: 0.008 RSD: 6.0

AA  
MAIN: 0.131 MG/L HD 0.060      MAIN: 0.105 MG/L HD 0.049

ZN *u2* MEAN: 0.118 MG/L SD: 0.018 RSD: 15.6

AA  
MAIN: 0.104 MG/L HD 0.048

AA  
MAIN: 0.099 MG/L HD 0.046

ZN 43 MEAN: 0.101 MG/L SD: 0.003 RSD: 3.2

AA  
MAIN: 0.480 MG/L HD 0.200

AA  
MAIN: 0.477 MG/L HD 0.199

ZN CLV MEAN: 0.479 MG/L SD: 0.002 RSD: 0.5

AA  
MAIN: 0.000 MG/L HD 0.000

AA  
MAIN: -0.001 MG/L HD -0.000

ZN CCB MEAN: -0.000 MG/L SD: 0.001 RSD: 99.9

AA  
MAIN: 0.357 MG/L HD 0.154

AA  
MAIN: 0.356 MG/L HD 0.153

ZN DLX MEAN: 0.356 MG/L SD: 0.001 RSD: 0.2

AA  
MAIN: 0.774 MG/L HD 0.299

AA  
MAIN: 0.770 MG/L HD 0.297

ZN DLX5 MEAN: 0.772 MG/L SD: 0.003 RSD: 0.4

AA  
MAIN: 0.490 MG/L HD 0.204

AA  
MAIN: 0.476 MG/L HD 0.198

ZN DLX5 MEAN: 0.483 MG/L SD: 0.010 RSD: 2.1

AA  
MAIN: 0.455 MG/L HD 0.191

AA  
MAIN: 0.454 MG/L HD 0.191

ZN DLX5 MEAN: 0.455 MG/L SD: 0.000 RSD: 0.1

AA  
MAIN: 0.209 MG/L HD 0.094

AA  
MAIN: 0.209 MG/L HD 0.094

206 ZN DLX5 MEAN: 0.209 MG/L SD: 0.000 RSD: 0.0

AA  
MAIN: 0.593 MG/L HD 0.240

AA  
MAIN: 0.607 MG/L HD 0.244

ZN DLX5 MEAN: 0.600 MG/L SD: 0.010 RSD: 1.7

AA  
MAIN: 0.139 MG/L HD 0.064

AA  
MAIN: 0.138 MG/L HD 0.063

ZN DLX5 MEAN: 0.138 MG/L SD: 0.001 RSD: 0.6

AA  
MAIN: 0.139 MG/L HO 0.064

AA  
MAIN: 0.136 MG/L HO 0.062

ZN *2x5D* MEAN: 0.137 MG/L SD: 0.002 RSD: 1.5

AA  
MAIN: 0.153 MG/L HO 0.070

AA  
MAIN: 0.146 MG/L HO 0.067

ZN *3x5* MEAN: 0.149 MG/L SD: 0.005 RSD: 3.1

AA  
MAIN: 0.507 MG/L HO 0.210

AA  
MAIN: 0.515 MG/L HO 0.212

ZN *ccv* MEAN: 0.511 MG/L SD: 0.005 RSD: 1.0

AA  
MAIN: -0.004 MG/L HO -0.002

AA  
MAIN: -0.003 MG/L HO -0.002

ZN *ccB* MEAN: -0.003 MG/L SD: 0.000 RSD: 7.9



EASTERN RESEARCH GROUP, INC.

# Eastern Research Group Sample Chain of Custody

**Matrix = Filters**

**Contents in Amber Jars**  
**represent samples taken from filters**

B-I-M315-1-F (080798-05)  
B-I-M315-1-F (080798-16)  
B-I-M315-2-F (080798-04)  
B-I-M315-2-F (080798-19)  
B-I-M315-3-F (080798-11)  
B-I-M315-3-F (080798-15)  
B-I-M315-FB-F (080798-2)  
B-O-M315-1-F  
B-O-M315-2-F  
B-O-M315-3-F  
B-O-M315-FB-F  
B-U-M315-1-F  
B-U-M315-2-F  
B-U-M315-3-F  
B-U-M315-FB-F

**Contents in Aluminum Pans for "FILTERS"**  
**represent MCEM from the filter Matrix**

| <u>Sample ID</u>         | <u>Aluminum Pan #</u> |
|--------------------------|-----------------------|
| B-I-M315-1-F (080798-05) | 10                    |
| B-I-M315-1-F (080798-16) | 11                    |
| B-I-M315-2-F (080798-04) | 12                    |
| B-I-M315-2-F (080798-19) | 13                    |
| B-I-M315-3-F (080798-11) | 14                    |
| B-I-M315-3-F (080798-15) | 15                    |
| B-I-M315-FB-F (080798-2) | 16                    |
| B-O-M315-1-F             | 17                    |
| B-O-M315-2-F             | 18                    |
| B-O-M315-3-F             | 19                    |
| B-O-M315-FB-F            | 20                    |
| B-U-M315-1-F             | 21                    |
| B-U-M315-2-F             | 22                    |
| B-U-M315-3-F             | 23                    |
| B-U-M315-FB-F            | 24                    |

**Contents in Aluminum Pans for MeCl<sub>2</sub> FHR**  
**represent MCEM from the MeCl<sub>2</sub> Matrix**

**Matrix = Methylene Chloride FHR**

| <u>Sample ID</u> | <u>Aluminum Pan #</u> |
|------------------|-----------------------|
| B-I-M315-1-FH-M  | 10                    |
| B-I-M315-2-FH-M  | 11                    |
| B-I-M315-3-FH-M  | 12                    |
| B-I-M315-FB-FH-M | 13                    |
| B-O-M315-1-FH-M  | 14                    |
| B-O-M315-2-FH-M  | 15                    |
| B-O-M315-3-FH-M  | 16                    |
| B-O-M315-FB-FH-M | 17                    |
| B-U-M315-1-FH-M  | 18                    |
| B-U-M315-2-FH-M  | 19                    |
| B-U-M315-3-FH-M  | 20                    |
| B-U-M315-FB-FH-M | 21                    |

**Contents in Aluminum Pans for H<sub>2</sub>O Imp Rinses**  
**represent MCEM from the H<sub>2</sub>O Imp Rinse Matrix**

**Matrix = H<sub>2</sub>O Impinger Rinses**

| <u>Sample ID</u>                 | <u>Aluminum Pan #</u> |
|----------------------------------|-----------------------|
| B-I-M315-1-IMP H <sub>2</sub> O  | 13                    |
| B-I-M315-2-IMP H <sub>2</sub> O  | 14                    |
| B-I-M315-3-IMP H <sub>2</sub> O  | 15                    |
| B-I-M315-FB-IMP H <sub>2</sub> O | 16                    |
| B-O-M315-1-IMP H <sub>2</sub> O  | 17                    |
| B-O-M315-2-IMP H <sub>2</sub> O  | 18                    |
| B-O-M315-3-IMP H <sub>2</sub> O  | 19                    |
| B-O-M315-FB-IMP H <sub>2</sub> O | 20                    |
| B-U-M315-1-IMP H <sub>2</sub> O  | 21                    |
| B-U-M315-2-IMP H <sub>2</sub> O  | 22                    |
| B-U-M315-3-IMP H <sub>2</sub> O  | 23                    |
| B-U-M315-FB-IMP H <sub>2</sub> O | 24                    |

Relinquished by: *Paul A. Jordan*  
10/6/98

Received for FAL:  
10/6/98 *W. W. W. W.*

Relinquished by:

Received by:

Date:

Date:



EASTERN RESEARCH GROUP, INC.

# Eastern Research Group Sample Chain of Custody

Contents in Aluminum Pans for "Acetone BHR"  
represent MCEM from the Acetone BHR Matrix

Matrix = Acetone BHR

| <u>Sample ID</u> | <u>Aluminum Pan #</u> |
|------------------|-----------------------|
| B-I-M315-1-BH-A  | 1                     |
| B-I-M315-2-BH-A  | 2                     |
| B-I-M315-3-BH-A  | 3                     |
| B-I-M315-FB-BH-A | 4                     |
| B-O-M315-1-BH-A  | 5                     |
| B-O-M315-2-BH-A  | 6                     |
| B-O-M315-3-BH-A  | 7                     |
| B-O-M315-FB-BH-A | 8                     |
| B-U-M315-1-BH-A  | 9                     |
| B-U-M315-2-BH-A  | 10                    |
| B-U-M315-3-BH-A  | 11                    |
| B-U-M315-FB-BH-A | 12                    |

Contents in Aluminum Pans for MeCl<sub>2</sub> BHR  
represent MCEM from the MeCl<sub>2</sub> BHR Matrix

Matrix = Methylene Chloride BHR

| <u>Sample ID</u> | <u>Aluminum Pan #</u> |
|------------------|-----------------------|
| B-I-M315-1-BH-M  | 1                     |
| B-I-M315-2-BH-M  | 2                     |
| B-I-M315-3-BH-M  | 3                     |
| B-I-M315-FB-BH-M | 4                     |
| B-O-M315-1-BH-M  | 5                     |
| B-O-M315-2-BH-M  | 6                     |
| B-O-M315-3-BH-M  | 7                     |
| B-O-M315-FB-BH-M | 8                     |
| B-U-M315-1-BH-M  | 9                     |
| B-U-M315-2-BH-M  | 10                    |
| B-U-M315-3-BH-M  | 11                    |
| B-U-M315-FB-BH-M | 12                    |

Relinquished by: *Franklin Meadon*  
10/6/98

Received by: *FAZ*  
10/6/98 *W. Whelan*

Relinquished by: *[Signature]*

Received by: *[Signature]*

Date: 10/5/98

Date: 10/5/98



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Quanterra Incorporated  
880 Riverside Parkway  
West Sacramento, California 95605

916 373-5600 Telephone  
916 372-1059 Fax

September 17, 1998  
QUANTERRA INCORPORATED PROJECT NUMBER: 301036  
PO/CONTRACT: CLC-950302

Ron Kolde  
Pacific Environmental Services  
4700 Duke Drive  
Suite 150  
Mason, OH 45040

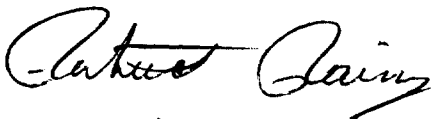
Dear Mr. Kolde:

This report contains the analytical results for the thirteen samples which were received under chain of custody by Quanterra Incorporated on 18 August 1998. This sample set is associated with your "S506.000" project.

The case narrative is an integral part of this report.

If you have any questions, please feel free to call.

Sincerely,



Patrick Rainey  
Project Manager  
Advanced Technology

PR/tr

## TABLE OF CONTENTS

### QUANTERRA INCORPORATED PROJECT NUMBER 301036

Case Narrative

Quanterra's Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

**Polynuclear Aromatic Hydrocarbons - Method HRGC/HRMS**

Includes Sample(s): 1 through 13

Method Blank Sheets

Sample Data Sheets

Laboratory Control Sample

## **CASE NARRATIVE**

### **QUANTERRA INCORPORATED PROJECT NUMBER 301036**

One cooler containing 1-L AGB's was received at 9 degrees. Sample B-8-M429-1 container 6 had some volume lost due to leaking in transit. Sample B-I-M429-3 had water leak into the ziploc and the petri dish containing the filter.

Sample trains were prepared and analyzed by a modified CARB 429 procedure. All fractions of each train were combined for a single extract which was analyzed by HRGC/HRMS.

Detection limits for PAHs are reported on a sample specific basis and all results are recovery corrected per the isotope dilution technique. For an analyte reported as 'Not Detected' the associated detection limit represents its maximum possible concentration.

Results above the reporting limits for Naphthalene, 2-Methylnaphthalene, and Phenanthrene were detected in the laboratory method blank associated with your samples. These analytes are common artifacts of XAD-2 resin and ubiquitous ambient levels. As the observed concentrations may be due to laboratory artifact, these results should be reviewed for significance. Positive concentrations detected for these analytes in your samples are qualified with a "B" footnote on the data sheets.

All reported results for samples "B-I-429-1", "B-I-429-2", and "B-I-429-3" are from analysis of extracts diluted 10X due to high analyte levels and/or matrix interferences observed in the analysis of the undiluted extract. The concentrations reported for Naphthalene and 2-Methylnaphthalene in samples "B-U-429-2" and "B-U-429-3" are from analysis of extracts diluted 10X due to concentrations in excess of the method calibration range for these analytes. All other results are reported from analysis of undiluted extracts. There are some analytes in all samples that exceed the upper method calibration range, however, in most cases the concentration of these analytes are within the linear response range of the detector, and data quality is not adversely affected. The affected analytes are qualified with an "E" footnote on the data sheets.

## QUANTERRA INCORPORATED QUALITY CONTROL PROGRAM

Quanterra has implemented an extensive Quality Control (QC) program to ensure the production of scientifically sound, legally defensible data of known documentable quality. This QC program is based upon requirements in "Test Methods for Evaluating Solid Waste", USEPA SW-846, Third Edition. It applies whenever SW-846 analytical methods are used. It also applies in whole or in part whenever project requirements fail to specify some aspect of QC practices described here. It does not apply when other well defined QC programs (e.g. CLP or CLP-like) are specified. This is Quanterra's base QC program for environmental analysis.

### Definitions:

**Quality Control Batch.** The quality control (QC) batch is a set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.

**Surrogate.** A surrogate (or internal standard) is an organic compound similar in chemical behavior to the target analyte, but not normally found in environmental samples. Surrogates (or IS) are added to all samples in a batch to monitor the effects of both the matrix and the analytical process on accuracy.

**Method Blank.** A method blank (MB) is a control sample prepared using the same reagents used for the samples. As part of the QC batch, it accompanies the samples through all steps of the sample extraction and cleanup procedure. The method blank is used to monitor the level of contamination introduced to a batch of samples as a result of processing in the laboratory.

**Laboratory Control Sample.** A laboratory control sample (LCS) is prepared using a well characterized matrix (e.g., reagent water or Ottawa sand) that is spiked with known amounts of representative analytes. Alternate matrices (e.g., glass beads) may be used for soil analyses when Ottawa sand is not appropriate. As part of a QC batch, it accompanies the samples through all steps of the sample extraction and cleanup process. The LCS is used to monitor the accuracy of the analytical process independent of possible interference effects due to sample matrix.

**Duplicate Control Sample.** A duplicate laboratory control sample (DCS) consists of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects.

**SAMPLE DESCRIPTION INFORMATION**  
for  
**Pacific Environmental Services**

| Lab ID         | Client ID    | Matrix   | Sampled<br>Date      Time | Received<br>Date |
|----------------|--------------|----------|---------------------------|------------------|
| 301036-0001-SA | B-I-429-1    | AIRTRAIN | 11 AUG 98                 | 18 AUG 98        |
| 301036-0001-MB | Method Blank | AIRTRAIN | 11 AUG 98                 | 18 AUG 98        |
| 301036-0002-SA | B-I-429-2    | AIRTRAIN | 12 AUG 98                 | 18 AUG 98        |
| 301036-0003-SA | B-I-429-3    | AIRTRAIN | 13 AUG 98                 | 18 AUG 98        |
| 301036-0004-SA | B-O-429-1    | AIRTRAIN | 11 AUG 98                 | 18 AUG 98        |
| 301036-0005-SA | B-O-429-2    | AIRTRAIN | 12 AUG 98                 | 18 AUG 98        |
| 301036-0006-SA | B-O-429-3    | AIRTRAIN | 13 AUG 98                 | 18 AUG 98        |
| 301036-0007-SA | B-U-429-1    | AIRTRAIN | 14 AUG 98                 | 18 AUG 98        |
| 301036-0008-SA | B-U-429-2    | AIRTRAIN | 14 AUG 98                 | 18 AUG 98        |
| 301036-0009-SA | B-U-429-3    | AIRTRAIN | 15 AUG 98                 | 18 AUG 98        |
| 301036-0010-SA | B-I-429-FB   | AIRTRAIN | 14 AUG 98                 | 18 AUG 98        |
| 301036-0011-SA | B-O-429-FB   | AIRTRAIN | 14 AUG 98                 | 18 AUG 98        |
| 301036-0012-SA | B-U-429-FB   | AIRTRAIN | 15 AUG 98                 | 18 AUG 98        |
| 301036-0013-SA | B-BLANKS-LAB | AIRTRAIN | 15 AUG 98                 | 18 AUG 98        |

22

| RECEIVER'S NAME | DATE/TIME | RECEIVER'S SIGNATURE              |
|-----------------|-----------|-----------------------------------|
| Container No. 4 |           | It leaked it the cooler.          |
|                 |           | Receiver's signature: [Signature] |



# Bottle Order and Chain of Custody

Quanterra Incorporated  
1721 South Grand Avenue  
Santa Ana, California 92705  
714 258-8610 Direct  
714 258-0921 Fax

Quanterra Incorporated  
880 Riverside Parkway  
West Sacramento, California 95605  
916 373-5600 Direct  
916 372-1059 Fax



-3021-A

|                                     |                                                                                                                                                               |                                |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| To: <b>ATT: Ron Kolbe</b>           | Requested By: <b>Pat Rainey</b>                                                                                                                               | Date: <b>7.29.98</b>           |
| <b>PES</b>                          | "Must Arrive By" Date: <b>8.7.98</b>                                                                                                                          | Shipped By: <b>B. Thompson</b> |
| <b>1700 Duke dr, Suite 150</b>      | Ship By: <input type="checkbox"/> Lab Courier <input checked="" type="checkbox"/> Fed-Ex <input type="checkbox"/> UPS <input type="checkbox"/> Client Pick-up | Date: <b>8.6.98</b>            |
| <b>MASON OH 45040</b>               | Cooler ID Number(s)                                                                                                                                           |                                |
| Phone Number: <b>(513) 398-2556</b> |                                                                                                                                                               |                                |

|                                                                               |                                                                                                                                          |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| In <input checked="" type="checkbox"/> Ice Chest <input type="checkbox"/> Box | Include <input checked="" type="checkbox"/> Blue Ice <input checked="" type="checkbox"/> Chain of Custody <input type="checkbox"/> Seals |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|

| Container/Preservative  | Bottle Lot Numbers | No. of Containers Requested | Analysis |
|-------------------------|--------------------|-----------------------------|----------|
| ml VOA                  |                    |                             |          |
| ml VOA/HCl              |                    |                             |          |
| 1 ml Amber Glass Bottle |                    |                             |          |
| 1 ml Amber Glass/H2SO4  |                    |                             |          |
| 1 ml Amber Glass/HNO3   |                    |                             |          |
| 1 ml Amber Glass/NaOH   |                    |                             |          |
| Amber Glass Bottle      |                    |                             |          |
| Amber Glass/H2SO4       |                    |                             |          |
| 1 ml Poly               |                    |                             |          |
| 1 ml Poly/HNO3          |                    |                             |          |
| 1 ml Poly               |                    |                             |          |
| 1 ml P/HNO3             |                    |                             |          |
| 1 ml P/NaOH             |                    |                             |          |
| 1 ml P/ZnAc/NaOH        |                    |                             |          |
| Poly                    |                    |                             |          |
| P/HNO3                  |                    |                             |          |
| z Glass Jar             |                    |                             |          |
| z Glass Jar             |                    |                             |          |
| oz Glass Jar            |                    |                             |          |
| Blank                   |                    |                             |          |
| sti Bottle/Sterile      |                    |                             |          |
| lipore H2O              |                    |                             |          |
| Traps (XAD)             |                    | 20                          | HR. PAH  |

TRAPS ID# = PES 080698-1-20

| Relinquished By (Signature) | Received By (Signature) | Date          | Time |
|-----------------------------|-------------------------|---------------|------|
| <i>[Signature]</i>          | <i>Fed Ex</i>           | <i>8/6/98</i> |      |

DISTRIBUTION: WHITE - Client; CANARY - Bottle Prep; PINK - Client Folder

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: Method Blank

Lab ID: 301036-0001-MB

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: NA

Prepared: 19 AUG 98

Received: NA

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting Limit |   |
|------------------------|--------|-----------|-----------------|---|
| Naphthalene            | 520    | ng/sample | --              | E |
| 2-Methylnaphthalene    | 14     | ng/sample | --              |   |
| Acenaphthylene         | ND     | ng/sample | 0.46            |   |
| Acenaphthene           | ND     | ng/sample | 7.6             |   |
| Fluorene               | ND     | ng/sample | 6.5             |   |
| Phenanthrene           | 24     | ng/sample | --              |   |
| Anthracene             | ND     | ng/sample | 1.4             |   |
| Fluoranthene           | ND     | ng/sample | 6.4             |   |
| Pyrene                 | ND     | ng/sample | 3.1             |   |
| Benzo(a)anthracene     | ND     | ng/sample | 0.17            |   |
| Chrysene               | ND     | ng/sample | 0.53            |   |
| Benzo(b)fluoranthene   | ND     | ng/sample | 0.30            |   |
| Benzo(k)fluoranthene   | ND     | ng/sample | 0.14            |   |
| Benzo(e)pyrene         | ND     | ng/sample | 0.19            |   |
| Benzo(a)pyrene         | ND     | ng/sample | 0.12            |   |
| Perylene               | ND     | ng/sample | 0.079           |   |
| Indeno(1,2,3-cd)pyrene | ND     | ng/sample | 0.31            |   |
| Dibenz(a,h)anthracene  | ND     | ng/sample | 0.13            |   |
| Benzo(g,h,i)perylene   | ND     | ng/sample | 0.37            |   |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 80       | % |
| Naphthalene-d8            | 80       | % |
| Acenaphthylene-d8         | 76       | % |
| Acenaphthene-d10          | 81       | % |
| Fluorene-d10              | 74       | % |
| Phenanthrene-d10          | 80       | % |
| Fluoranthene-d10          | 82       | % |
| Pyrene-d10                | 82       | % |
| Benzo(a)anthracene-d12    | 91       | % |
| Perylene-d12              | 90       | % |
| Indeno(123-cd)pyrene-d12  | 92       | % |
| Chrysene-d12              | 93       | % |
| Benzo(b)fluoranthene-d12  | 94       | % |
| Benzo(k)fluoranthene-d12  | 90       | % |
| Benzo(a)pyrene-d12        | 85       | % |
| Dibenz(a,h)anthracene-d14 | 88       | % |
| Benzo(g,h,i)perylene-d12  | 91       | % |

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: Method Blank

Lab ID: 301036-0001-MB

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: NA

Prepared: 19 AUG 98

Received: NA

Analyzed: 26 AUG 98

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

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POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-I-429-1

Lab ID: 301036-0001-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 11 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting<br>Limit |    |
|------------------------|--------|-----------|--------------------|----|
| Naphthalene            | 27000  | ng/sample | --                 | BE |
| 2-Methylnaphthalene    | 7900   | ng/sample | --                 | BE |
| Acenaphthylene         | 5500   | ng/sample | --                 | E  |
| Acenaphthene           | 690    | ng/sample | --                 |    |
| Fluorene               | 2200   | ng/sample | --                 |    |
| Phenanthrene           | 20000  | ng/sample | --                 | BE |
| Anthracene             | 730    | ng/sample | --                 |    |
| Fluoranthene           | 14000  | ng/sample | --                 | E  |
| Pyrene                 | 2200   | ng/sample | --                 |    |
| Benzo(a)anthracene     | 910    | ng/sample | --                 |    |
| Chrysene               | 5500   | ng/sample | --                 | E  |
| Benzo(b)fluoranthene   | 7500   | ng/sample | --                 | E  |
| Benzo(k)fluoranthene   | 3000   | ng/sample | --                 |    |
| Benzo(e)pyrene         | 2000   | ng/sample | --                 |    |
| Benzo(a)pyrene         | 620    | ng/sample | --                 |    |
| Perylene               | 100    | ng/sample | --                 |    |
| Indeno(1,2,3-cd)pyrene | 2700   | ng/sample | --                 |    |
| Dibenz(a,h)anthracene  | 1100   | ng/sample | --                 |    |
| Benzo(g,h,i)perylene   | 2200   | ng/sample | --                 |    |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 87       | % |
| Naphthalene-d8            | 90       | % |
| Acenaphthylene-d8         | 69       | % |
| Acenaphthene-d10          | 85       | % |
| Fluorene-d10              | 84       | % |
| Phenanthrene-d10          | 96       | % |
| Fluoranthene-d10          | 109      | % |
| Pyrene-d10                | 107      | % |
| Benzo(a)anthracene-d12    | 105      | % |
| Perylene-d12              | 90       | % |
| Indeno(123-cd)pyrene-d12  | 93       | % |
| Chrysene-d12              | 101      | % |
| Benzo(b)fluoranthene-d12  | 104      | % |
| Benzo(k)fluoranthene-d12  | 99       | % |
| Benzo(a)pyrene-d12        | 90       | % |
| Dibenz(a,h)anthracene-d14 | 90       | % |
| Benzo(g,h,i)perylene-d12  | 91       | % |

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

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Environmental  
Services

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-I-429-1

Lab ID: 301036-0001-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 11 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

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POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-I-429-2

Lab ID: 301036-0002-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 12 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting<br>Limit |    |
|------------------------|--------|-----------|--------------------|----|
| Naphthalene            | 35000  | ng/sample | --                 | BE |
| 2-Methylnaphthalene    | 6800   | ng/sample | --                 | BE |
| Acenaphthylene         | 5900   | ng/sample | --                 | E  |
| Acenaphthene           | 470    | ng/sample | --                 |    |
| Fluorene               | 1800   | ng/sample | --                 |    |
| Phenanthrene           | 25000  | ng/sample | --                 | BE |
| Anthracene             | 690    | ng/sample | --                 |    |
| Fluoranthene           | 18000  | ng/sample | --                 | E  |
| Pyrene                 | 2500   | ng/sample | --                 |    |
| Benzo(a)anthracene     | 770    | ng/sample | --                 |    |
| Chrysene               | 6000   | ng/sample | --                 | E  |
| Benzo(b)fluoranthene   | 8200   | ng/sample | --                 | E  |
| Benzo(k)fluoranthene   | 3100   | ng/sample | --                 |    |
| Benzo(e)pyrene         | 1900   | ng/sample | --                 |    |
| Benzo(a)pyrene         | 430    | ng/sample | --                 |    |
| Perylene               | ND     | ng/sample | 60                 |    |
| Indeno(1,2,3-cd)pyrene | 2700   | ng/sample | --                 |    |
| Dibenz(a,h)anthracene  | 1100   | ng/sample | --                 |    |
| Benzo(g,h,i)perylene   | 2200   | ng/sample | --                 |    |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 90       | % |
| Naphthalene-d8            | 69       | % |
| Acenaphthylene-d8         | 57       | % |
| Acenaphthene-d10          | 72       | % |
| Fluorene-d10              | 67       | % |
| Phenanthrene-d10          | 87       | % |
| Fluoranthene-d10          | 93       | % |
| Pyrene-d10                | 90       | % |
| Benzo(a)anthracene-d12    | 98       | % |
| Perylene-d12              | 81       | % |
| Indeno(123-cd)pyrene-d12  | 82       | % |
| Chrysene-d12              | 92       | % |
| Benzo(b)fluoranthene-d12  | 100      | % |
| Benzo(k)fluoranthene-d12  | 87       | % |
| Benzo(a)pyrene-d12        | 82       | % |
| Dibenz(a,h)anthracene-d14 | 81       | % |
| Benzo(g,h,i)perylene-d12  | 83       | % |

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ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

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*Environmental  
Services*

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-I-429-2

Lab ID: 301036-0002-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 12 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

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POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-I-429-3

Lab ID: 301036-0003-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 13 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting<br>Limit |    |
|------------------------|--------|-----------|--------------------|----|
| Naphthalene            | 29000  | ng/sample | --                 | BE |
| 2-Methylnaphthalene    | 3000   | ng/sample | --                 | B  |
| Acenaphthylene         | 2600   | ng/sample | --                 |    |
| Acenaphthene           | 530    | ng/sample | --                 |    |
| Fluorene               | 1300   | ng/sample | --                 |    |
| Phenanthrene           | 20000  | ng/sample | --                 | BE |
| Anthracene             | 640    | ng/sample | --                 |    |
| Fluoranthene           | 6600   | ng/sample | --                 | E  |
| Pyrene                 | 380    | ng/sample | --                 |    |
| Benzo(a)anthracene     | 130    | ng/sample | --                 |    |
| Chrysene               | 1900   | ng/sample | --                 |    |
| Benzo(b)fluoranthene   | 2900   | ng/sample | --                 |    |
| Benzo(k)fluoranthene   | 830    | ng/sample | --                 |    |
| Benzo(e)pyrene         | 390    | ng/sample | --                 |    |
| Benzo(a)pyrene         | 130    | ng/sample | --                 |    |
| Perylene               | ND     | ng/sample | 22                 |    |
| Indeno(1,2,3-cd)pyrene | 450    | ng/sample | --                 |    |
| Dibenz(a,h)anthracene  | 240    | ng/sample | --                 |    |
| Benzo(g,h,i)perylene   | 320    | ng/sample | --                 |    |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 82       | % |
| Naphthalene-d8            | 82       | % |
| Acenaphthylene-d8         | 63       | % |
| Acenaphthene-d10          | 76       | % |
| Fluorene-d10              | 76       | % |
| Phenanthrene-d10          | 91       | % |
| Fluoranthene-d10          | 94       | % |
| Pyrene-d10                | 93       | % |
| Benzo(a)anthracene-d12    | 105      | % |
| Perylene-d12              | 88       | % |
| Indeno(123-cd)pyrene-d12  | 94       | % |
| Chrysene-d12              | 110      | % |
| Benzo(b)fluoranthene-d12  | 98       | % |
| Benzo(k)fluoranthene-d12  | 96       | % |
| Benzo(a)pyrene-d12        | 87       | % |
| Dibenz(a,h)anthracene-d14 | 92       | % |
| Benzo(g,h,i)perylene-d12  | 96       | % |

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ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

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POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-I-429-3

Lab ID: 301036-0003-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 13 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

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POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-0-429-1

Lab ID: 301036-0004-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 11 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting<br>Limit |    |
|------------------------|--------|-----------|--------------------|----|
| Naphthalene            | 7800   | ng/sample | --                 | BE |
| 2-Methylnaphthalene    | 1600   | ng/sample | --                 | BE |
| Acenaphthylene         | 300    | ng/sample | --                 |    |
| Acenaphthene           | 140    | ng/sample | --                 |    |
| Fluorene               | 300    | ng/sample | --                 |    |
| Phenanthrene           | 1200   | ng/sample | --                 | BE |
| Anthracene             | 84     | ng/sample | --                 |    |
| Fluoranthene           | 480    | ng/sample | --                 |    |
| Pyrene                 | 280    | ng/sample | --                 |    |
| Benzo(a)anthracene     | 55     | ng/sample | --                 |    |
| Chrysene               | 110    | ng/sample | --                 |    |
| Benzo(b)fluoranthene   | 73     | ng/sample | --                 |    |
| Benzo(k)fluoranthene   | 68     | ng/sample | --                 |    |
| Benzo(e)pyrene         | 48     | ng/sample | --                 |    |
| Benzo(a)pyrene         | 48     | ng/sample | --                 |    |
| Perylene               | 11     | ng/sample | --                 |    |
| Indeno(1,2,3-cd)pyrene | 63     | ng/sample | --                 |    |
| Dibenz(a,h)anthracene  | 14     | ng/sample | --                 |    |
| Benzo(g,h,i)perylene   | 140    | ng/sample | --                 |    |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 83       | % |
| Naphthalene-d8            | 67       | % |
| Acenaphthylene-d8         | 73       | % |
| Acenaphthene-d10          | 79       | % |
| Fluorene-d10              | 70       | % |
| Phenanthrene-d10          | 78       | % |
| Fluoranthene-d10          | 81       | % |
| Pyrene-d10                | 81       | % |
| Benzo(a)anthracene-d12    | 87       | % |
| Perylene-d12              | 85       | % |
| Indeno(123-cd)pyrene-d12  | 99       | % |
| Chrysene-d12              | 74       | % |
| Benzo(b)fluoranthene-d12  | 107      | % |
| Benzo(k)fluoranthene-d12  | 84       | % |
| Benzo(a)pyrene-d12        | 93       | % |
| Dibenz(a,h)anthracene-d14 | 103      | % |
| Benzo(g,h,i)perylene-d12  | 91       | % |

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

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POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-0-429-1

Lab ID: 301036-0004-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 11 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.  
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-0-429-2

Lab ID: 301036-0005-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 12 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting Limit |    |
|------------------------|--------|-----------|-----------------|----|
| Naphthalene            | 9300   | ng/sample | --              | BE |
| 2-Methylnaphthalene    | 2500   | ng/sample | --              | BE |
| Acenaphthylene         | 280    | ng/sample | --              |    |
| Acenaphthene           | 120    | ng/sample | --              |    |
| Fluorene               | 270    | ng/sample | --              |    |
| Phenanthrene           | 970    | ng/sample | --              | BE |
| Anthracene             | 38     | ng/sample | --              |    |
| Fluoranthene           | 240    | ng/sample | --              |    |
| Pyrene                 | 180    | ng/sample | --              |    |
| Benzo(a)anthracene     | 43     | ng/sample | --              |    |
| Chrysene               | 140    | ng/sample | --              |    |
| Benzo(b)fluoranthene   | 63     | ng/sample | --              |    |
| Benzo(k)fluoranthene   | 32     | ng/sample | --              |    |
| Benzo(e)pyrene         | 33     | ng/sample | --              |    |
| Benzo(a)pyrene         | 27     | ng/sample | --              |    |
| Perylene               | 13     | ng/sample | --              |    |
| Indeno(1,2,3-cd)pyrene | 30     | ng/sample | --              |    |
| Dibenz(a,h)anthracene  | ND     | ng/sample | 7.5             |    |
| Benzo(g,h,i)perylene   | 45     | ng/sample | --              |    |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 81       | % |
| Naphthalene-d8            | 65       | % |
| Acenaphthylene-d8         | 73       | % |
| Acenaphthene-d10          | 76       | % |
| Fluorene-d10              | 79       | % |
| Phenanthrene-d10          | 84       | % |
| Fluoranthene-d10          | 85       | % |
| Pyrene-d10                | 86       | % |
| Benzo(a)anthracene-d12    | 93       | % |
| Perylene-d12              | 86       | % |
| Indeno(123-cd)pyrene-d12  | 103      | % |
| Chrysene-d12              | 79       | % |
| Benzo(b)fluoranthene-d12  | 104      | % |
| Benzo(k)fluoranthene-d12  | 91       | % |
| Benzo(a)pyrene-d12        | 97       | % |
| Dibenz(a,h)anthracene-d14 | 104      | % |
| Benzo(g,h,i)perylene-d12  | 93       | % |

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-0-429-2

Lab ID: 301036-0005-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 12 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.  
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-0-429-3

Lab ID: 301036-0006-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 13 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting<br>Limit |    |
|------------------------|--------|-----------|--------------------|----|
| Naphthalene            | 9700   | ng/sample | --                 | BE |
| 2-Methylnaphthalene    | 1700   | ng/sample | --                 | BE |
| Acenaphthylene         | 340    | ng/sample | --                 |    |
| Acenaphthene           | 97     | ng/sample | --                 |    |
| Fluorene               | 200    | ng/sample | --                 |    |
| Phenanthrene           | 630    | ng/sample | --                 | BE |
| Anthracene             | 20     | ng/sample | --                 |    |
| Fluoranthene           | 150    | ng/sample | --                 |    |
| Pyrene                 | 96     | ng/sample | --                 |    |
| Benzo(a)anthracene     | 23     | ng/sample | --                 |    |
| Chrysene               | 63     | ng/sample | --                 |    |
| Benzo(b)fluoranthene   | 38     | ng/sample | --                 |    |
| Benzo(k)fluoranthene   | 25     | ng/sample | --                 |    |
| Benzo(e)pyrene         | 24     | ng/sample | --                 |    |
| Benzo(a)pyrene         | 20     | ng/sample | --                 |    |
| Perylene               | ND     | ng/sample | 6.5                |    |
| Indeno(1,2,3-cd)pyrene | 25     | ng/sample | --                 |    |
| Dibenz(a,h)anthracene  | ND     | ng/sample | 5.1                |    |
| Benzo(g,h,i)perylene   | 64     | ng/sample | --                 |    |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 80       | % |
| Naphthalene-d8            | 58       | % |
| Acenaphthylene-d8         | 76       | % |
| Acenaphthene-d10          | 83       | % |
| Fluorene-d10              | 78       | % |
| Phenanthrene-d10          | 86       | % |
| Fluoranthene-d10          | 82       | % |
| Pyrene-d10                | 83       | % |
| Benzo(a)anthracene-d12    | 99       | % |
| Perylene-d12              | 84       | % |
| Indeno(123-cd)pyrene-d12  | 104      | % |
| Chrysene-d12              | 89       | % |
| Benzo(b)fluoranthene-d12  | 111      | % |
| Benzo(k)fluoranthene-d12  | 93       | % |
| Benzo(a)pyrene-d12        | 96       | % |
| Dibenz(a,h)anthracene-d14 | 105      | % |
| Benzo(g,h,i)perylene-d12  | 95       | % |

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ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

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Rev 230787



*Environmental  
Services*

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-0-429-3

Lab ID: 301036-0006-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 13 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-U-429-1

Lab ID: 301036-0007-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 14 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting<br>Limit |    |
|------------------------|--------|-----------|--------------------|----|
| Naphthalene            | 11000  | ng/sample | --                 | BE |
| 2-Methylnaphthalene    | 5800   | ng/sample | --                 | BE |
| Acenaphthylene         | 950    | ng/sample | --                 | E  |
| Acenaphthene           | 190    | ng/sample | --                 |    |
| Fluorene               | 810    | ng/sample | --                 | E  |
| Phenanthrene           | 1600   | ng/sample | --                 | BE |
| Anthracene             | 51     | ng/sample | --                 |    |
| Fluoranthene           | 430    | ng/sample | --                 |    |
| Pyrene                 | 170    | ng/sample | --                 |    |
| Benzo(a)anthracene     | 45     | ng/sample | --                 |    |
| Chrysene               | 120    | ng/sample | --                 |    |
| Benzo(b)fluoranthene   | 76     | ng/sample | --                 |    |
| Benzo(k)fluoranthene   | 50     | ng/sample | --                 |    |
| Benzo(e)pyrene         | 42     | ng/sample | --                 |    |
| Benzo(a)pyrene         | 47     | ng/sample | --                 |    |
| Perylene               | 12     | ng/sample | --                 |    |
| Indeno(1,2,3-cd)pyrene | 44     | ng/sample | --                 |    |
| Dibenz(a,h)anthracene  | 12     | ng/sample | --                 |    |
| Benzo(g,h,i)perylene   | 81     | ng/sample | --                 |    |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 105      | % |
| Naphthalene-d8            | 64       | % |
| Acenaphthylene-d8         | 68       | % |
| Acenaphthene-d10          | 77       | % |
| Fluorene-d10              | 70       | % |
| Phenanthrene-d10          | 75       | % |
| Fluoranthene-d10          | 72       | % |
| Pyrene-d10                | 68       | % |
| Benzo(a)anthracene-d12    | 78       | % |
| Perylene-d12              | 68       | % |
| Indeno(123-cd)pyrene-d12  | 77       | % |
| Chrysene-d12              | 71       | % |
| Benzo(b)fluoranthene-d12  | 88       | % |
| Benzo(k)fluoranthene-d12  | 86       | % |
| Benzo(a)pyrene-d12        | 73       | % |
| Dibenz(a,h)anthracene-d14 | 80       | % |
| Benzo(g,h,i)perylene-d12  | 70       | % |

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ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

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Rev 230787





Environmental  
Services

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-U-429-1

Lab ID: 301036-0007-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 14 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

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POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-U-429-2

Lab ID: 301036-0008-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 14 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting<br>Limit |     |
|------------------------|--------|-----------|--------------------|-----|
| Naphthalene            | 31000  | ng/sample | --                 | BED |
| 2-Methylnaphthalene    | 2000   | ng/sample | --                 | BD  |
| Acenaphthylene         | 290    | ng/sample | --                 |     |
| Acenaphthene           | 110    | ng/sample | --                 |     |
| Fluorene               | 230    | ng/sample | --                 |     |
| Phenanthrene           | 730    | ng/sample | --                 | BE  |
| Anthracene             | 20     | ng/sample | --                 |     |
| Fluoranthene           | 220    | ng/sample | --                 |     |
| Pyrene                 | 80     | ng/sample | --                 |     |
| Benzo(a)anthracene     | 25     | ng/sample | --                 |     |
| Chrysene               | 59     | ng/sample | --                 |     |
| Benzo(b)fluoranthene   | 45     | ng/sample | --                 |     |
| Benzo(k)fluoranthene   | 31     | ng/sample | --                 |     |
| Benzo(e)pyrene         | 32     | ng/sample | --                 |     |
| Benzo(a)pyrene         | 24     | ng/sample | --                 |     |
| Perylene               | ND     | ng/sample | 7.1                |     |
| Indeno(1,2,3-cd)pyrene | 32     | ng/sample | --                 |     |
| Dibenz(a,h)anthracene  | ND     | ng/sample | 7.2                |     |
| Benzo(g,h,i)perylene   | 78     | ng/sample | --                 |     |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 96       | % |
| Naphthalene-d8            | 94       | % |
| Acenaphthylene-d8         | 57       | % |
| Acenaphthene-d10          | 60       | % |
| Fluorene-d10              | 75       | % |
| Phenanthrene-d10          | 85       | % |
| Fluoranthene-d10          | 84       | % |
| Pyrene-d10                | 75       | % |
| Benzo(a)anthracene-d12    | 75       | % |
| Perylene-d12              | 58       | % |
| Indeno(123-cd)pyrene-d12  | 81       | % |
| Chrysene-d12              | 78       | % |
| Benzo(b)fluoranthene-d12  | 92       | % |
| Benzo(k)fluoranthene-d12  | 94       | % |
| Benzo(a)pyrene-d12        | 67       | % |
| Dibenz(a,h)anthracene-d14 | 88       | % |
| Benzo(g,h,i)perylene-d12  | 76       | % |

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.  
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-U-429-2

Lab ID: 301036-0008-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 14 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

Note D : Compound quantitated using a secondary dilution.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.  
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-U-429-3

Lab ID: 301036-0009-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 15 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting Limit |     |
|------------------------|--------|-----------|-----------------|-----|
| Naphthalene            | 180000 | ng/sample | --              | BED |
| 2-Methylnaphthalene    | 8200   | ng/sample | --              | BED |
| Acenaphthylene         | 2600   | ng/sample | --              | E   |
| Acenaphthene           | 450    | ng/sample | --              | E   |
| Fluorene               | 1300   | ng/sample | --              | E   |
| Phenanthrene           | 1700   | ng/sample | --              | BE  |
| Anthracene             | 86     | ng/sample | --              |     |
| Fluoranthene           | 620    | ng/sample | --              | E   |
| Pyrene                 | 220    | ng/sample | --              |     |
| Benzo(a)anthracene     | 72     | ng/sample | --              |     |
| Chrysene               | 160    | ng/sample | --              |     |
| Benzo(b)fluoranthene   | 64     | ng/sample | --              |     |
| Benzo(k)fluoranthene   | 39     | ng/sample | --              |     |
| Benzo(e)pyrene         | 34     | ng/sample | --              |     |
| Benzo(a)pyrene         | 32     | ng/sample | --              |     |
| Perylene               | ND     | ng/sample | 9.7             |     |
| Indeno(1,2,3-cd)pyrene | 35     | ng/sample | --              |     |
| Dibenz(a,h)anthracene  | ND     | ng/sample | 8.6             |     |
| Benzo(g,h,i)perylene   | 63     | ng/sample | --              |     |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 93       | % |
| Naphthalene-d8            | 121      | % |
| Acenaphthylene-d8         | 60       | % |
| Acenaphthene-d10          | 44       | % |
| Fluorene-d10              | 74       | % |
| Phenanthrene-d10          | 83       | % |
| Fluoranthene-d10          | 85       | % |
| Pyrene-d10                | 78       | % |
| Benzo(a)anthracene-d12    | 82       | % |
| Perylene-d12              | 64       | % |
| Indeno(123-cd)pyrene-d12  | 79       | % |
| Chrysene-d12              | 76       | % |
| Benzo(b)fluoranthene-d12  | 95       | % |
| Benzo(k)fluoranthene-d12  | 91       | % |
| Benzo(a)pyrene-d12        | 75       | % |
| Dibenz(a,h)anthracene-d14 | 88       | % |
| Benzo(g,h,i)perylene-d12  | 74       | % |

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ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

Rev 230787



Environmental  
Services

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-U-429-3

Lab ID: 301036-0009-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 15 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

Note D : Compound quantitated using a secondary dilution.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-I-429-FB

Lab ID: 301036-0010-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 14 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting Limit |    |
|------------------------|--------|-----------|-----------------|----|
| Naphthalene            | 1100   | ng/sample | --              | BE |
| 2-Methylnaphthalene    | 89     | ng/sample | --              | B  |
| Acenaphthylene         | 27     | ng/sample | --              |    |
| Acenaphthene           | 14     | ng/sample | --              |    |
| Fluorene               | 22     | ng/sample | --              |    |
| Phenanthrene           | 160    | ng/sample | --              | BE |
| Anthracene             | ND     | ng/sample | 10              |    |
| Fluoranthene           | 78     | ng/sample | --              |    |
| Pyrene                 | 29     | ng/sample | --              |    |
| Benzo(a)anthracene     | 13     | ng/sample | --              |    |
| Chrysene               | 23     | ng/sample | --              |    |
| Benzo(b)fluoranthene   | 18     | ng/sample | --              |    |
| Benzo(k)fluoranthene   | 15     | ng/sample | --              |    |
| Benzo(e)pyrene         | 13     | ng/sample | --              |    |
| Benzo(a)pyrene         | 14     | ng/sample | --              |    |
| Perylene               | ND     | ng/sample | 3.6             |    |
| Indeno(1,2,3-cd)pyrene | 15     | ng/sample | --              |    |
| Dibenz(a,h)anthracene  | ND     | ng/sample | 3.0             |    |
| Benzo(g,h,i)perylene   | 41     | ng/sample | --              |    |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 94       | % |
| Naphthalene-d8            | 85       | % |
| Acenaphthylene-d8         | 65       | % |
| Acenaphthene-d10          | 74       | % |
| Fluorene-d10              | 72       | % |
| Phenanthrene-d10          | 81       | % |
| Fluoranthene-d10          | 95       | % |
| Pyrene-d10                | 97       | % |
| Benzo(a)anthracene-d12    | 99       | % |
| Perylene-d12              | 86       | % |
| Indeno(123-cd)pyrene-d12  | 92       | % |
| Chrysene-d12              | 99       | % |
| Benzo(b)fluoranthene-d12  | 104      | % |
| Benzo(k)fluoranthene-d12  | 94       | % |
| Benzo(a)pyrene-d12        | 81       | % |
| Dibenz(a,h)anthracene-d14 | 99       | % |
| Benzo(g,h,i)perylene-d12  | 89       | % |

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-I-429-FB

Lab ID: 301036-0010-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 14 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.  
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-0-429-FB

Lab ID: 301036-0011-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 14 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting Limit |    |
|------------------------|--------|-----------|-----------------|----|
| Naphthalene            | 620    | ng/sample | --              | BE |
| 2-Methylnaphthalene    | 76     | ng/sample | --              | B  |
| Acenaphthylene         | ND     | ng/sample | 9.2             |    |
| Acenaphthene           | 41     | ng/sample | --              |    |
| Fluorene               | 22     | ng/sample | --              |    |
| Phenanthrene           | 130    | ng/sample | --              | B  |
| Anthracene             | ND     | ng/sample | 7.9             |    |
| Fluoranthene           | 44     | ng/sample | --              |    |
| Pyrene                 | 54     | ng/sample | --              |    |
| Benzo(a)anthracene     | 11     | ng/sample | --              |    |
| Chrysene               | 17     | ng/sample | --              |    |
| Benzo(b)fluoranthene   | 15     | ng/sample | --              |    |
| Benzo(k)fluoranthene   | 12     | ng/sample | --              |    |
| Benzo(e)pyrene         | 11     | ng/sample | --              |    |
| Benzo(a)pyrene         | 12     | ng/sample | --              |    |
| Perylene               | ND     | ng/sample | 2.8             |    |
| Indeno(1,2,3-cd)pyrene | 12     | ng/sample | --              |    |
| Dibenz(a,h)anthracene  | ND     | ng/sample | 2.5             |    |
| Benzo(g,h,i)perylene   | 37     | ng/sample | --              |    |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 94       | % |
| Naphthalene-d8            | 83       | % |
| Acenaphthylene-d8         | 66       | % |
| Acenaphthene-d10          | 73       | % |
| Fluorene-d10              | 75       | % |
| Phenanthrene-d10          | 81       | % |
| Fluoranthene-d10          | 92       | % |
| Pyrene-d10                | 93       | % |
| Benzo(a)anthracene-d12    | 90       | % |
| Perylene-d12              | 86       | % |
| Indeno(123-cd)pyrene-d12  | 96       | % |
| Chrysene-d12              | 89       | % |
| Benzo(b)fluoranthene-d12  | 96       | % |
| Benzo(k)fluoranthene-d12  | 99       | % |
| Benzo(a)pyrene-d12        | 84       | % |
| Dibenz(a,h)anthracene-d14 | 102      | % |
| Benzo(g,h,i)perylene-d12  | 93       | % |

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ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

Rev 230787



POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-0-429-FB

Lab ID: 301036-0011-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 14 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.  
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-U-429-FB

Lab ID: 301036-0012-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 15 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting Limit |    |
|------------------------|--------|-----------|-----------------|----|
| Naphthalene            | 2900   | ng/sample | --              | BE |
| 2-Methylnaphthalene    | 840    | ng/sample | --              | BE |
| Acenaphthylene         | 280    | ng/sample | --              |    |
| Acenaphthene           | 97     | ng/sample | --              |    |
| Fluorene               | 140    | ng/sample | --              |    |
| Phenanthrene           | 370    | ng/sample | --              | BE |
| Anthracene             | 25     | ng/sample | --              |    |
| Fluoranthene           | 97     | ng/sample | --              |    |
| Pyrene                 | 58     | ng/sample | --              |    |
| Benzo(a)anthracene     | 18     | ng/sample | --              |    |
| Chrysene               | 30     | ng/sample | --              |    |
| Benzo(b)fluoranthene   | 21     | ng/sample | --              |    |
| Benzo(k)fluoranthene   | 15     | ng/sample | --              |    |
| Benzo(e)pyrene         | 12     | ng/sample | --              |    |
| Benzo(a)pyrene         | 13     | ng/sample | --              |    |
| Perylene               | ND     | ng/sample | 2.6             |    |
| Indeno(1,2,3-cd)pyrene | 13     | ng/sample | --              |    |
| Dibenz(a,h)anthracene  | ND     | ng/sample | 2.9             |    |
| Benzo(g,h,i)perylene   | 32     | ng/sample | --              |    |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 93       | % |
| Naphthalene-d8            | 74       | % |
| Acenaphthylene-d8         | 69       | % |
| Acenaphthene-d10          | 74       | % |
| Fluorene-d10              | 74       | % |
| Phenanthrene-d10          | 83       | % |
| Fluoranthene-d10          | 96       | % |
| Pyrene-d10                | 97       | % |
| Benzo(a)anthracene-d12    | 93       | % |
| Perylene-d12              | 87       | % |
| Indeno(123-cd)pyrene-d12  | 91       | % |
| Chrysene-d12              | 92       | % |
| Benzo(b)fluoranthene-d12  | 93       | % |
| Benzo(k)fluoranthene-d12  | 101      | % |
| Benzo(a)pyrene-d12        | 83       | % |
| Dibenz(a,h)anthracene-d14 | 91       | % |
| Benzo(g,h,i)perylene-d12  | 86       | % |

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

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*Environmental  
Services*

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-U-429-FB

Lab ID: 301036-0012-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 15 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.  
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-BLANKS-LAB

Lab ID: 301036-0013-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 15 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

| Parameter              | Result | Units     | Reporting Limit |    |
|------------------------|--------|-----------|-----------------|----|
| Naphthalene            | 650    | ng/sample | --              | BE |
| 2-Methylnaphthalene    | 230    | ng/sample | --              | B  |
| Acenaphthylene         | ND     | ng/sample | 9.2             |    |
| Acenaphthene           | 79     | ng/sample | --              |    |
| Fluorene               | 73     | ng/sample | --              |    |
| Phenanthrene           | 380    | ng/sample | --              | B  |
| Anthracene             | 21     | ng/sample | --              |    |
| Fluoranthene           | 44     | ng/sample | --              |    |
| Pyrene                 | 21     | ng/sample | --              |    |
| Benzo(a)anthracene     | ND     | ng/sample | 1.4             |    |
| Chrysene               | ND     | ng/sample | 4.3             |    |
| Benzo(b)fluoranthene   | ND     | ng/sample | 2.8             |    |
| Benzo(k)fluoranthene   | ND     | ng/sample | 1.8             |    |
| Benzo(e)pyrene         | ND     | ng/sample | 1.6             |    |
| Benzo(a)pyrene         | ND     | ng/sample | 1.2             |    |
| Perylene               | ND     | ng/sample | 0.26            |    |
| Indeno(1,2,3-cd)pyrene | ND     | ng/sample | 1.3             |    |
| Dibenz(a,h)anthracene  | ND     | ng/sample | 0.26            |    |
| Benzo(g,h,i)perylene   | ND     | ng/sample | 2.5             |    |

| Surrogate                 | Recovery |   |
|---------------------------|----------|---|
| 13C-Fluorene              | 108      | % |
| Naphthalene-d8            | 59       | % |
| Acenaphthylene-d8         | 57       | % |
| Acenaphthene-d10          | 64       | % |
| Fluorene-d10              | 60       | % |
| Phenanthrene-d10          | 64       | % |
| Fluoranthene-d10          | 65       | % |
| Pyrene-d10                | 67       | % |
| Benzo(a)anthracene-d12    | 66       | % |
| Perylene-d12              | 66       | % |
| Indeno(123-cd)pyrene-d12  | 67       | % |
| Chrysene-d12              | 68       | % |
| Benzo(b)fluoranthene-d12  | 69       | % |
| Benzo(k)fluoranthene-d12  | 74       | % |
| Benzo(a)pyrene-d12        | 66       | % |
| Dibenz(a,h)anthracene-d14 | 68       | % |
| Benzo(g,h,i)perylene-d12  | 64       | % |

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

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Environmental  
Services

POLYNUCLEAR AROMATIC HYDROCARBONS  
HIGH RESOLUTION GC/MS (CONT.)  
Method HRGC/HRMS

Client Name: Pacific Environmental Services

Client ID: B-BLANKS-LAB

Lab ID: 301036-0013-SA

Matrix: AIRTRAIN

Authorized: 18 AUG 98

Sampled: 15 AUG 98

Prepared: 19 AUG 98

Received: 18 AUG 98

Analyzed: 26 AUG 98

Note B : Compound is also detected in the blank.

Note E : Concentration exceeds calibration range. Value is  
estimated.

ND = Not detected

NA = Not applicable

Reported By: Clark Pickell

Approved By: Mike Flournoy

The cover letter is an integral part of this report.

Rev 230787

LABORATORY CONTROL SAMPLE REPORT  
Advanced Technology Group - High Resolution  
Project: 301036

Category: PAH-HR-AIR PAH by HRGC/HRMS  
Test: PAH-HR-AIR  
Matrix: AIR  
C Lot: 19 AUG 98-B  
Concentration Units: ng/sample

QC Run: 26 AUG 98-A

| Analyte                  | Concentration |          | Accuracy(%) |        |
|--------------------------|---------------|----------|-------------|--------|
|                          | Spiked        | Measured | LCS         | Limits |
| aphthalene               | 100           | 110      | 107         | 50-150 |
| -Methylnaphthalene       | 100           | 100      | 102         | 50-150 |
| cenaphthylene            | 100           | 110      | 114         | 50-150 |
| cenaphthene              | 100           | 110      | 112         | 50-150 |
| luorene                  | 100           | 120      | 117         | 50-150 |
| henanthrene              | 100           | 110      | 110         | 50-150 |
| anthracene               | 100           | 110      | 113         | 50-150 |
| fluoranthene             | 100           | 110      | 115         | 50-150 |
| pyrene                   | 100           | 110      | 113         | 50-150 |
| benzo(a)anthracene       | 100           | 100      | 103         | 50-150 |
| benz(a)pyrene            | 100           | 100      | 102         | 50-150 |
| benzo(b)fluoranthene     | 100           | 110      | 108         | 50-150 |
| benzo(k)fluoranthene     | 100           | 110      | 111         | 50-150 |
| benzo(e)pyrene           | 100           | 120      | 124         | 50-150 |
| benzo(a)pyrene           | 100           | 100      | 104         | 50-150 |
| benzofluorene            | 100           | 87       | 87          | 50-150 |
| benzo(1,2,3-cd)pyrene    | 100           | 99       | 99          | 50-150 |
| benz(a,h)anthracene      | 100           | 110      | 111         | 50-150 |
| benzo(g,h,i)perylene     | 100           | 100      | 104         | 50-150 |
| aphthalene-d8            | 50            | 33       | 67          | 50-150 |
| cenaphthylene-d8         | 50            | 31       | 61          | 50-150 |
| cenaphthene-d10          | 50            | 33       | 66          | 50-150 |
| luorene-d10              | 50            | 31       | 62          | 50-150 |
| henanthrene-d10          | 50            | 33       | 65          | 50-150 |
| fluoranthene-d10         | 50            | 38       | 76          | 50-150 |
| pyrene-d10               | 50            | 39       | 79          | 50-150 |
| benzo(a)anthracene-d12   | 50            | 46       | 92          | 50-150 |
| benzofluorene-d12        | 50            | 51       | 102         | 50-150 |
| benzo(b)fluoranthene-d12 | 50            | 48       | 95          | 50-150 |
| benzo(k)fluoranthene-d12 | 50            | 45       | 91          | 50-150 |
| benzo(a)pyrene-d12       | 50            | 42       | 83          | 50-150 |
| benzofluorene-d12        | 50            | 41       | 83          | 50-150 |
| benzo(123-cd)pyrene-d12  | 50            | 48       | 96          | 50-150 |
| benz(a,h)anthracene-d14  | 50            | 45       | 91          | 50-150 |
| benzo(g,h,i)perylene-d12 | 50            | 49       | 97          | 50-150 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

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Group No. C236091  
Account No. 34419005  
Report Date: 08/31/98

KOLDE  
IFIC ENVIRONMENTAL SERVICES  
SCHEFFEL  
3 DUKE DRIVE SUITE 150  
CN, OH 45040

# Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Subject: EPA COKE-BTHLHM ST PO Number: 103-99-322

## Physical Results

| Client ID    | Parameter           | Volume | Amount   | Concentration |
|--------------|---------------------|--------|----------|---------------|
| 1 B-I-5506-1 | Samp Date: 08/11/98 | XAD-2  |          |               |
|              | Acnaph-Front        |        | < 5.0 ug |               |
|              | Acnaph-Rear         |        | ND       |               |
|              | Acnaph-Tot          | NVG    | < 5.0 ug | -- --         |
|              | Acnth-Front         |        | < 5.0 ug |               |
|              | Acnth-Rear          |        | ND       |               |
|              | Acnth-Tot           | NVG    | < 5.0 ug | -- --         |
|              | Anthr-Front         |        | < 1.0 ug |               |
|              | Anthr-Rear          |        | ND       |               |
|              | Anthr-Tot           | NVG    | < 1.0 ug | -- --         |
|              | Bz(a)ant-Front      |        | < 1.0 ug |               |
|              | Bz(a)ant-Rear       |        | ND       |               |
|              | Bz(a)ant-Tot        | NVG    | < 1.0 ug | -- --         |
|              | Bz(a)pyr-Front      |        | < 1.0 ug |               |
|              | Bz(a)pyr-Rear       |        | ND       |               |
|              | Bz(a)pyr-Tot        | NVG    | < 1.0 ug | -- --         |
|              | Bz(b)fnt-Front      |        | < 1.0 ug |               |
|              | Bz(b)fnt-Rear       |        | ND       |               |
|              | Bz(b)fnt-Tot        | NVG    | < 1.0 ug | -- --         |
|              | Bzper-Front         |        | < 1.0 ug |               |
|              | Bzper-Rear          |        | ND       |               |
|              | Bzper-Tot           | NVG    | < 1.0 ug | -- --         |
|              | Bz(k)fnt-Front      |        | < 1.0 ug |               |
|              | Bz(k)fnt-Rear       |        | ND       |               |
|              | Bz(k)fnt-Tot        | NVG    | < 1.0 ug | -- --         |
|              | Chy-Front           |        | < 1.0 ug |               |

*fus*



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Report Date: 08/31/98

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FIC ENVIRONMENTAL SERVICES  
SCHEFFEL  
DUKE DRIVE SUITE 150  
N, OH 45040

### Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

### Physical Results

| Client ID | Parameter      | Volume | Amount   | Concentration |
|-----------|----------------|--------|----------|---------------|
|           | Chy-Rear       |        | ND       |               |
|           | Chy-Total      | NVG    | < 1.0 ug | -- --         |
|           | Dbzanthr-Front |        | < 1.0 ug |               |
|           | Dbzanthr-Rear  |        | ND       |               |
|           | Dbzanthr-Total | NVG    | < 1.0 ug | -- --         |
|           | Flanthr-Front  |        | < 5.0 ug |               |
|           | Flanthr-Rear   |        | ND       |               |
|           | Flanthr-Total  | NVG    | < 5.0 ug | -- --         |
|           | Fluorene-Front |        | < 5.0 ug |               |
|           | Fluorene-Rear  |        | ND       |               |
|           | Fluorene-Total | NVG    | < 5.0 ug | -- --         |
|           | Indpyene-Front |        | < 1.0 ug |               |
|           | Indpyene-Rear  |        | ND       |               |
|           | Indpyene-Total | NVG    | < 1.0 ug | -- --         |
|           | Napth-Front    |        | < 5.0 ug |               |
|           | Napth-Rear     |        | ND       |               |
|           | Napth-Total    | NVG    | < 5.0 ug | -- --         |
|           | Panthr-Front   |        | 1.88 ug  |               |
|           | Panthr-Rear    |        | ND       |               |
|           | Panthr-Total   | NVG    | 1.88 ug  | -- --         |
|           | Pyrene-Front   |        | < 1.0 ug |               |
|           | Pyrene-Rear    |        | ND       |               |
|           | Pyrene-Total   | NVG    | < 1.0 ug | -- --         |

2 B-I-5506-2 Samp Date: 08/12/98 XAD-2  
Acnapth-Front < 5.0 ug  
Acnapth-Rear ND



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Account No. 34419005  
Report Date: 08/31/98

KOLDE  
FIC ENVIRONMENTAL SERVICES  
SCHEFFEL  
DUKE DRIVE SUITE 150  
ON, OH 45040

# Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLMH ST PO Number: 103-99-322

## lytical Results

| Client ID | Parameter      | Volume | Amount   | Concentration |
|-----------|----------------|--------|----------|---------------|
|           | Acnapht-Total  | NVG    | < 5.0 ug | -- --         |
|           | Acnthy-Front   |        | < 5.0 ug |               |
|           | Acnthy-Rear    |        | ND       |               |
|           | Acnthy-Total   | NVG    | < 5.0 ug | -- --         |
|           | Anthr-Front    |        | < 1.0 ug |               |
|           | Anthr-Rear     |        | ND       |               |
|           | Anthr-Total    | NVG    | < 1.0 ug | -- --         |
|           | Bz(a)ant-Front |        | < 1.0 ug |               |
|           | Bz(a)ant-Rear  |        | ND       |               |
|           | Bz(a)ant-Total | NVG    | < 1.0 ug | -- --         |
|           | Bz(a)pyr-Front |        | < 1.0 ug |               |
|           | Bz(a)pyr-Rear  |        | ND       |               |
|           | Bz(a)pyr-Total | NVG    | < 1.0 ug | -- --         |
|           | Bz(b)fnt-Front |        | < 1.0 ug |               |
|           | Bz(b)fnt-Rear  |        | ND       |               |
|           | Bz(b)fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Bzpery-Front   |        | < 1.0 ug |               |
|           | Bzpery-Rear    |        | ND       |               |
|           | Bzpery-Total   | NVG    | < 1.0 ug | -- --         |
|           | Bz(k)fnt-Front |        | < 1.0 ug |               |
|           | Bz(k)fnt-Rear  |        | ND       |               |
|           | Bz(k)fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Chy-Front      |        | < 1.0 ug |               |
|           | Chy-Rear       |        | ND       |               |
|           | Chy-Total      | NVG    | < 1.0 ug | -- --         |
|           | Dbzanthr-Front |        | < 1.0 ug |               |
|           | Dbzanthr-Rear  |        | ND       |               |



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Account No. 34419005  
Report Date: 08/31/98

KOLDE  
FIC ENVIRONMENTAL SERVICES  
SCHEFFEL  
DUKE DRIVE SUITE 150  
N, OH 45040

### Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

### Physical Results

| Client ID    | Parameter           | Volume | Amount   | Concentration |
|--------------|---------------------|--------|----------|---------------|
|              | Dbzanthr-Total      | NVG    | < 1.0 ug | -- --         |
|              | Flanthr-Front       |        | < 5.0 ug |               |
|              | Flanthr-Rear        |        | ND       |               |
|              | Flanthr-Total       | NVG    | < 5.0 ug | -- --         |
|              | Fluorene-Front      |        | < 5.0 ug |               |
|              | Fluorene-Rear       |        | ND       |               |
|              | Fluorene-Total      | NVG    | < 5.0 ug | -- --         |
|              | Indpyene-Front      |        | < 1.0 ug |               |
|              | Indpyene-Rear       |        | ND       |               |
|              | Indpyene-Total      | NVG    | < 1.0 ug | -- --         |
|              | Napth-Front         |        | 6.01 ug  |               |
|              | Napth-Rear          |        | ND       |               |
|              | Napth-Total         | NVG    | 6.01 ug  | -- --         |
|              | Panthr-Front        |        | 3.15 ug  |               |
|              | Panthr-Rear         |        | ND       |               |
|              | Panthr-Total        | NVG    | 3.15 ug  | -- --         |
|              | Pyrene-Front        |        | < 1.0 ug |               |
|              | Pyrene-Rear         |        | ND       |               |
|              | Pyrene-Total        | NVG    | < 1.0 ug | -- --         |
| 3 B-I-5506-3 | Samp Date: 08/13/98 | XAD-2  |          |               |
|              | Acnapth-Front       |        | < 5.0 ug |               |
|              | Acnapth-Rear        |        | ND       |               |
|              | Acnapht-Total       | NVG    | < 5.0 ug | -- --         |
|              | Acnthy-Front        |        | < 5.0 ug |               |
|              | Acnthy-Rear         |        | ND       |               |
|              | Acnthy-Total        | NVG    | < 5.0 ug | -- --         |

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Group No. C236091  
Account No. 34419005  
Report Date: 08/31/98

KOLDE  
FIC ENVIRONMENTAL SERVICES  
SCHEFFEL  
DUKE DRIVE SUITE 150  
N, OH 45040

### Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

### Physical Results

| Client ID | Parameter      | Volume | Amount   | Concentration |
|-----------|----------------|--------|----------|---------------|
|           | Anthr-Front    |        | < 1.0 ug |               |
|           | Anthr-Rear     |        | ND       |               |
|           | Anthr-Total    | NVG    | < 1.0 ug | -- --         |
|           | Bz(a)ant-Front |        | < 1.0 ug |               |
|           | Bz(a)ant-Rear  |        | ND       |               |
|           | Bz(a)ant-Total | NVG    | < 1.0 ug | -- --         |
|           | Bz(a)pyr-Front |        | < 1.0 ug |               |
|           | Bz(a)pyr-Rear  |        | ND       |               |
|           | Bz(a)pyr-Total | NVG    | < 1.0 ug | -- --         |
|           | Bz(b)fnt-Front |        | < 1.0 ug |               |
|           | Bz(b)fnt-Rear  |        | ND       |               |
|           | Bz(b)fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Bzperyl-Front  |        | < 1.0 ug |               |
|           | Bzperyl-Rear   |        | ND       |               |
|           | Bzperyl-Total  | NVG    | < 1.0 ug | -- --         |
|           | Bz(k)fnt-Front |        | < 1.0 ug |               |
|           | Bz(k)fnt-Rear  |        | ND       |               |
|           | Bz(k)fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Chy-Front      |        | < 1.0 ug |               |
|           | Chy-Rear       |        | ND       |               |
|           | Chy-Total      | NVG    | < 1.0 ug | -- --         |
|           | Dbzanthr-Front |        | < 1.0 ug |               |
|           | Dbzanthr-Rear  |        | ND       |               |
|           | Dbzanthr-Total | NVG    | < 1.0 ug | -- --         |
|           | Flanthr-Front  |        | < 5.0 ug |               |
|           | Flanthr-Rear   |        | ND       |               |
|           | Flanthr-Total  | NVG    | < 5.0 ug | -- --         |



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Group No. C236091  
Account No. 34419005  
Report Date: 08/31/98

KOLDE  
FIC ENVIRONMENTAL SERVICES  
SCHEFFEL  
DUKE DRIVE SUITE 150  
N, OH 45040

### Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

### Analytical Results

| Client ID    | Parameter                 | Volume | Amount   | Concentration |
|--------------|---------------------------|--------|----------|---------------|
| 4 B-O-5506-1 | Fluorene-Front            |        | < 5.0 ug |               |
|              | Fluorene-Rear             |        | ND       |               |
|              | Fluorene-Total            | NVG    | < 5.0 ug | -- --         |
|              | Indpyene-Front            |        | < 1.0 ug |               |
|              | Indpyene-Rear             |        | ND       |               |
|              | Indpyene-Total            | NVG    | < 1.0 ug | -- --         |
|              | Napth-Front               |        | < 5.0 ug |               |
|              | Napth-Rear                |        | ND       |               |
|              | Napth-Total               | NVG    | < 5.0 ug | -- --         |
|              | Panthr-Front              |        | < 1.0 ug |               |
|              | Panthr-Rear               |        | ND       |               |
|              | Panthr-Total              | NVG    | < 1.0 ug | -- --         |
|              | Pyrene-Front              |        | < 1.0 ug |               |
|              | Pyrene-Rear               |        | ND       |               |
|              | Pyrene-Total              | NVG    | < 1.0 ug | -- --         |
| 4 B-O-5506-1 | Samp Date: 08/11/98 XAD-2 |        |          |               |
|              | Acnapth-Front             |        | < 5.0 ug |               |
|              | Acnapth-Rear              |        | ND       |               |
|              | Acnapht-Total             | NVG    | < 5.0 ug | -- --         |
|              | Acnthy-Front              |        | < 5.0 ug |               |
|              | Acnthy-Rear               |        | ND       |               |
|              | Acnthy-Total              | NVG    | < 5.0 ug | -- --         |
|              | Anthr-Front               |        | < 1.0 ug |               |
| 4 B-O-5506-1 | Anthr-Rear                |        | ND       |               |
|              | Anthr-Total               | NVG    | < 1.0 ug | -- --         |
|              | Bz(a)ant-Front            |        | < 1.0 ug |               |



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Group No. C236091  
Account No. 34419005  
Report Date: 08/31/98

KOLDE  
FIC ENVIRONMENTAL SERVICES  
SCHEFFEL  
DUKE DRIVE SUITE 150  
N, OH 45040

Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

Analytical Results

| Client ID | Parameter        | Volume | Amount   | Concentration |
|-----------|------------------|--------|----------|---------------|
|           | Bz (a) ant-Rear  |        | ND       |               |
|           | Bz (a) ant-Total | NVG    | < 1.0 ug | -- --         |
|           | Bz (a) pyr-Front |        | < 1.0 ug |               |
|           | Bz (a) pyr-Rear  |        | ND       |               |
|           | Bz (a) pyr-Total | NVG    | < 1.0 ug | -- --         |
|           | Bz (b) fnt-Front |        | < 1.0 ug |               |
|           | Bz (b) fnt-Rear  |        | ND       |               |
|           | Bz (b) fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Bzpery-Front     |        | < 1.0 ug |               |
|           | Bzpery-Rear      |        | ND       |               |
|           | Bzpery-Total     | NVG    | < 1.0 ug | -- --         |
|           | Bz (k) fnt-Front |        | < 1.0 ug |               |
|           | Bz (k) fnt-Rear  |        | ND       |               |
|           | Bz (k) fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Chy-Front        |        | < 1.0 ug |               |
|           | Chy-Rear         |        | ND       |               |
|           | Chy-Total        | NVG    | < 1.0 ug | -- --         |
|           | Dbzanthr-Front   |        | < 1.0 ug |               |
|           | Dbzanthr-Rear    |        | ND       |               |
|           | Dbzanthr-Total   | NVG    | < 1.0 ug | -- --         |
|           | Flanthr-Front    |        | < 5.0 ug |               |
|           | Flanthr-Rear     |        | ND       |               |
|           | Flanthr-Total    | NVG    | < 5.0 ug | -- --         |
|           | Fluorene-Front   |        | < 5.0 ug |               |
|           | Fluorene-Rear    |        | ND       |               |
|           | Fluorene-Total   | NVG    | < 5.0 ug | -- --         |
|           | Indpyene-Front   |        | < 1.0 ug |               |



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Report Date: 08/31/98

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SCHEFFEL  
DUKE DRIVE SUITE 150  
OH, OH 45040

### Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

### Analytical Results

| Client ID    | Parameter                 | Volume | Amount   | Concentration |
|--------------|---------------------------|--------|----------|---------------|
| 5 B-O-5506-2 | Indpyene-Rear             |        | ND       |               |
|              | Indpyene-Total            | NVG    | < 1.0 ug | -- --         |
|              | Napth-Front               |        | < 5.0 ug |               |
|              | Napth-Rear                |        | ND       |               |
|              | Napth-Total               | NVG    | < 5.0 ug | -- --         |
|              | Panthr-Front              |        | < 1.0 ug |               |
|              | Panthr-Rear               |        | ND       |               |
|              | Panthr-Total              | NVG    | < 1.0 ug | -- --         |
|              | Pyrene-Front              |        | < 1.0 ug |               |
|              | Pyrene-Rear               |        | ND       |               |
|              | Pyrene-Total              | NVG    | < 1.0 ug | ** ug/M3      |
|              | Samp Date: 08/12/98 XAD-2 |        |          |               |
| 5 B-O-5506-2 | Acnapth-Front             |        | < 5.0 ug |               |
|              | Acnapth-Rear              |        | ND       |               |
|              | Acnapht-Total             | NVG    | < 5.0 ug | -- --         |
|              | Acnthy-Front              |        | < 5.0 ug |               |
|              | Acnthy-Rear               |        | ND       |               |
|              | Acnthy-Total              | NVG    | < 5.0 ug | -- --         |
|              | Anthr-Front               |        | < 1.0 ug |               |
|              | Anthr-Rear                |        | ND       |               |
|              | Anthr-Total               | NVG    | < 1.0 ug | -- --         |
|              | Bz(a)ant-Front            |        | < 1.0 ug |               |
|              | Bz(a)ant-Rear             |        | ND       |               |
|              | Bz(a)ant-Total            | NVG    | < 1.0 ug | -- --         |
|              | Bz(a)pyr-Front            |        | < 1.0 ug |               |
|              | Bz(a)pyr-Rear             |        | ND       |               |





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DUKE DRIVE SUITE 150  
ON, OH 45040

### Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

### Analytical Results

| Client ID | Parameter        | Volume | Amount   | Concentration |
|-----------|------------------|--------|----------|---------------|
|           | Bz (a)pyr-Total  | NVG    | < 1.0 ug | -- --         |
|           | Bz (b) fnt-Front |        | < 1.0 ug |               |
|           | Bz (b) fnt-Rear  |        | ND       |               |
|           | Bz (b) fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Bzpery-Front     |        | < 1.0 ug |               |
|           | Bzpery-Rear      |        | ND       |               |
|           | Bzpery-Total     | NVG    | < 1.0 ug | -- --         |
|           | Bz (k) fnt-Front |        | < 1.0 ug |               |
|           | Bz (k) fnt-Rear  |        | ND       |               |
|           | Bz (k) fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Chy-Front        |        | < 1.0 ug |               |
|           | Chy-Rear         |        | ND       |               |
|           | Chy-Total        | NVG    | < 1.0 ug | -- --         |
|           | Dbzanthr-Front   |        | < 1.0 ug |               |
|           | Dbzanthr-Rear    |        | ND       |               |
|           | Dbzanthr-Total   | NVG    | < 1.0 ug | -- --         |
|           | Flanthr-Front    |        | < 5.0 ug |               |
|           | Flanthr-Rear     |        | ND       |               |
|           | Flanthr-Total    | NVG    | < 5.0 ug | -- --         |
|           | Fluorene-Front   |        | < 5.0 ug |               |
|           | Fluorene-Rear    |        | ND       |               |
|           | Fluorene-Total   | NVG    | < 5.0 ug | -- --         |
|           | Indpyene-Front   |        | < 1.0 ug |               |
|           | Indpyene-Rear    |        | ND       |               |
|           | Indpyene-Total   | NVG    | < 1.0 ug | -- --         |
|           | Napth-Front      |        | < 5.0 ug |               |
|           | Napth-Rear       |        | ND       |               |



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N, OH 45040

### Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

### Physical Results

| Client ID                              | Parameter      | Volume | Amount   | Concentration |
|----------------------------------------|----------------|--------|----------|---------------|
|                                        | Napth-Total    | NVG    | < 5.0 ug | -- --         |
|                                        | Panthr-Front   |        | < 1.0 ug |               |
|                                        | Panthr-Rear    |        | ND       |               |
|                                        | Panthr-Total   | NVG    | < 1.0 ug | -- --         |
|                                        | Pyrene-Front   |        | < 1.0 ug |               |
|                                        | Pyrene-Rear    |        | ND       |               |
|                                        | Pyrene-Total   | NVG    | < 1.0 ug | ** ug/M3      |
| ; B-O-5506-3 Samp Date: 08/13/98 XAD-2 |                |        |          |               |
|                                        | Acnapth-Front  |        | < 5.0 ug |               |
|                                        | Acnapth-Rear   |        | ND       |               |
|                                        | Acnapht-Total  | NVG    | < 5.0 ug | -- --         |
|                                        | Acnthy-Front   |        | < 5.0 ug |               |
|                                        | Acnthy-Rear    |        | ND       |               |
|                                        | Acnthy-Total   | NVG    | < 5.0 ug | -- --         |
|                                        | Anthr-Front    |        | < 1.0 ug |               |
|                                        | Anthr-Rear     |        | ND       |               |
|                                        | Anthr-Total    | NVG    | < 1.0 ug | -- --         |
|                                        | Bz(a)ant-Front |        | < 1.0 ug |               |
|                                        | Bz(a)ant-Rear  |        | ND       |               |
|                                        | Bz(a)ant-Total | NVG    | < 1.0 ug | -- --         |
|                                        | Bz(a)pyr-Front |        | < 1.0 ug |               |
|                                        | Bz(a)pyr-Rear  |        | ND       |               |
|                                        | Bz(a)pyr-Total | NVG    | < 1.0 ug | -- --         |
|                                        | Bz(b)fnt-Front |        | < 1.0 ug |               |
|                                        | Bz(b)fnt-Rear  |        | ND       |               |
|                                        | Bz(b)fnt-Total | NVG    | < 1.0 ug | -- --         |

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### Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

### Analytical Results

| Client ID | Parameter       | Volume | Amount   | Concentration |
|-----------|-----------------|--------|----------|---------------|
|           | Bzpery-Front    |        | < 1.0 ug |               |
|           | Bzpery-Rear     |        | ND       |               |
|           | Bzpery-Total    | NVG    | < 1.0 ug | -- --         |
|           | Bz(k) fnt-Front |        | < 1.0 ug |               |
|           | Bz(k) fnt-Rear  |        | ND       |               |
|           | Bz(k) fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Chy-Front       |        | < 1.0 ug |               |
|           | Chy-Rear        |        | ND       |               |
|           | Chy-Total       | NVG    | < 1.0 ug | -- --         |
|           | Dbzanthr-Front  |        | < 1.0 ug |               |
|           | Dbzanthr-Rear   |        | ND       |               |
|           | Dbzanthr-Total  | NVG    | < 1.0 ug | -- --         |
|           | Flanthr-Front   |        | < 5.0 ug |               |
|           | Flanthr-Rear    |        | ND       |               |
|           | Flanthr-Total   | NVG    | < 5.0 ug | -- --         |
|           | Fluorene-Front  |        | < 5.0 ug |               |
|           | Fluorene-Rear   |        | ND       |               |
|           | Fluorene-Total  | NVG    | < 5.0 ug | -- --         |
|           | Indpyene-Front  |        | < 1.0 ug |               |
|           | Indpyene-Rear   |        | ND       |               |
|           | Indpyene-Total  | NVG    | < 1.0 ug | -- --         |
|           | Napth-Front     |        | < 5.0 ug |               |
|           | Napth-Rear      |        | ND       |               |
|           | Napth-Total     | NVG    | < 5.0 ug | -- --         |
|           | Panthr-Front    |        | < 1.0 ug |               |
|           | Panthr-Rear     |        | ND       |               |
|           | Panthr-Total    | NVG    | < 1.0 ug | -- --         |

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# Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

## Physical Results

| Client ID    | Parameter           | Volume | Amount   | Concentration |
|--------------|---------------------|--------|----------|---------------|
|              | Pyrene-Front        |        | < 1.0 ug |               |
|              | Pyrene-Rear         |        | ND       |               |
|              | Pyrene-Total        | NVG    | < 1.0 ug | ** ug/M3      |
| 7 B-V-5506-1 | Samp Date: 08/14/98 | XAD-2  |          |               |
|              | Acnaphth-Front      |        | < 5.0 ug |               |
|              | Acnaphth-Rear       |        | ND       |               |
|              | Acnaphth-Total      | NVG    | < 5.0 ug | -- --         |
|              | Acnthy-Front        |        | < 5.0 ug |               |
|              | Acnthy-Rear         |        | ND       |               |
|              | Acnthy-Total        | NVG    | < 5.0 ug | -- --         |
|              | Anthr-Front         |        | < 1.0 ug |               |
|              | Anthr-Rear          |        | ND       |               |
|              | Anthr-Total         | NVG    | < 1.0 ug | -- --         |
|              | Bz(a)ant-Front      |        | < 1.0 ug |               |
|              | Bz(a)ant-Rear       |        | ND       |               |
|              | Bz(a)ant-Total      | NVG    | < 1.0 ug | -- --         |
|              | Bz(a)pyr-Front      |        | < 1.0 ug |               |
|              | Bz(a)pyr-Rear       |        | ND       |               |
|              | Bz(a)pyr-Total      | NVG    | < 1.0 ug | -- --         |
|              | Bz(b)fnt-Front      |        | < 1.0 ug |               |
|              | Bz(b)fnt-Rear       |        | ND       |               |
|              | Bz(b)fnt-Total      | NVG    | < 1.0 ug | -- --         |
|              | Bzpery-Front        |        | < 1.0 ug |               |
|              | Bzpery-Rear         |        | ND       |               |
|              | Bzpery-Total        | NVG    | < 1.0 ug | -- --         |
|              | Bz(k)fnt-Front      |        | < 1.0 ug |               |

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Report Date: 08/31/98

KOLDE  
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SCHEFFEL  
DUKE DRIVE SUITE 150  
N, OH 45040

Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

Physical Results

| Client ID | Parameter        | Volume | Amount   | Concentration |
|-----------|------------------|--------|----------|---------------|
|           | Bz (k) fnt-Rear  |        | ND       |               |
|           | Bz (k) fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Chy-Front        |        | < 1.0 ug |               |
|           | Chy-Rear         |        | ND       |               |
|           | Chy-Total        | NVG    | < 1.0 ug | -- --         |
|           | Dbzanthr-Front   |        | < 1.0 ug |               |
|           | Dbzanthr-Rear    |        | ND       |               |
|           | Dbzanthr-Total   | NVG    | < 1.0 ug | -- --         |
|           | Flanthr-Front    |        | < 5.0 ug |               |
|           | Flanthr-Rear     |        | ND       |               |
|           | Flanthr-Total    | NVG    | < 5.0 ug | -- --         |
|           | Fluorene-Front   |        | < 5.0 ug |               |
|           | Fluorene-Rear    |        | ND       |               |
|           | Fluorene-Total   | NVG    | < 5.0 ug | -- --         |
|           | Indpyene-Front   |        | < 1.0 ug |               |
|           | Indpyene-Rear    |        | ND       |               |
|           | Indpyene-Total   | NVG    | < 1.0 ug | -- --         |
|           | Napth-Front      |        | < 5.0 ug |               |
|           | Napth-Rear       |        | ND       |               |
|           | Napth-Total      | NVG    | < 5.0 ug | -- --         |
|           | Panthr-Front     |        | < 1.0 ug |               |
|           | Panthr-Rear      |        | ND       |               |
|           | Panthr-Total     | NVG    | < 1.0 ug | -- --         |
|           | Pyrene-Front     |        | < 1.0 ug |               |
|           | Pyrene-Rear      |        | ND       |               |
|           | Pyrene-Total     | NVG    | < 1.0 ug | -- --         |



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SCHEFFEL  
DUKE DRIVE SUITE 150  
ON, OH 45040

# Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

## Analytical Results

| Client ID    | Parameter           | Volume | Amount   | Concentration |
|--------------|---------------------|--------|----------|---------------|
| 3 B-V-5506-2 | Samp Date: 08/14/98 | XAD-2  |          |               |
|              | Acnaphth-Front      |        | < 5.0 ug |               |
|              | Acnaphth-Rear       |        | ND       |               |
|              | Acnaphth-Total      | NVG    | < 5.0 ug | -- --         |
|              | Acnthy-Front        |        | < 5.0 ug |               |
|              | Acnthy-Rear         |        | ND       |               |
|              | Acnthy-Total        | NVG    | < 5.0 ug | -- --         |
|              | Anthr-Front         |        | < 1.0 ug |               |
|              | Anthr-Rear          |        | ND       |               |
|              | Anthr-Total         | NVG    | < 1.0 ug | -- --         |
|              | Bz(a)ant-Front      |        | < 1.0 ug |               |
|              | Bz(a)ant-Rear       |        | ND       |               |
|              | Bz(a)ant-Total      | NVG    | < 1.0 ug | -- --         |
|              | Bz(a)pyr-Front      |        | < 1.0 ug |               |
|              | Bz(a)pyr-Rear       |        | ND       |               |
|              | Bz(a)pyr-Total      | NVG    | < 1.0 ug | -- --         |
|              | Bz(b)fnt-Front      |        | < 1.0 ug |               |
|              | Bz(b)fnt-Rear       |        | ND       |               |
|              | Bz(b)fnt-Total      | NVG    | < 1.0 ug | -- --         |
|              | Bzpery-Front        |        | < 1.0 ug |               |
|              | Bzpery-Rear         |        | ND       |               |
|              | Bzpery-Total        | NVG    | < 1.0 ug | -- --         |
|              | Bz(k)fnt-Front      |        | < 1.0 ug |               |
|              | Bz(k)fnt-Rear       |        | ND       |               |
|              | Bz(k)fnt-Total      | NVG    | < 1.0 ug | -- --         |
|              | Chy-Front           |        | < 1.0 ug |               |
|              | Chy-Rear            |        | ND       |               |



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# Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

## Physical Results

| Client ID    | Parameter                 | Volume | Amount   | Concentration |
|--------------|---------------------------|--------|----------|---------------|
| 9 B-V-5506-3 | Chy-Total                 | NVG    | < 1.0 ug | -- --         |
|              | Dbzanthr-Front            |        | < 1.0 ug |               |
|              | Dbzanthr-Rear             |        | ND       |               |
|              | Dbzanthr-Total            | NVG    | < 1.0 ug | -- --         |
|              | Flanthr-Front             |        | < 5.0 ug |               |
|              | Flanthr-Rear              |        | ND       |               |
|              | Flanthr-Total             | NVG    | < 5.0 ug | -- --         |
|              | Fluorene-Front            |        | < 5.0 ug |               |
|              | Fluorene-Rear             |        | ND       |               |
|              | Fluorene-Total            | NVG    | < 5.0 ug | -- --         |
|              | Indpyene-Front            |        | < 1.0 ug |               |
|              | Indpyene-Rear             |        | ND       |               |
|              | Indpyene-Total            | NVG    | < 1.0 ug | -- --         |
|              | Napth-Front               |        | < 5.0 ug |               |
|              | Napth-Rear                |        | ND       |               |
|              | Napth-Total               | NVG    | < 5.0 ug | -- --         |
|              | Panthr-Front              |        | < 1.0 ug |               |
|              | Panthr-Rear               |        | ND       |               |
|              | Panthr-Total              | NVG    | < 1.0 ug | -- --         |
|              | Pyrene-Front              |        | < 1.0 ug |               |
|              | Pyrene-Rear               |        | ND       |               |
|              | Pyrene-Total              | NVG    | < 1.0 ug | -- --         |
| 9 B-V-5506-3 | Samp Date: 08/15/98 XAD-2 |        |          |               |
|              | Acnapth-Front             |        | < 5.0 ug |               |
|              | Acnapth-Rear              |        | ND       |               |
|              | Acnapht-Total             | NVG    | < 5.0 ug | -- --         |

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# Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

## Analytical Results

| Client ID | Parameter      | Volume | Amount   | Concentration |
|-----------|----------------|--------|----------|---------------|
|           | Acnthy-Front   |        | < 5.0 ug |               |
|           | Acnthy-Rear    |        | ND       |               |
|           | Acnthy-Total   | NVG    | < 5.0 ug | -- --         |
|           | Anthr-Front    |        | < 1.0 ug |               |
|           | Anthr-Rear     |        | ND       |               |
|           | Anthr-Total    | NVG    | < 1.0 ug | -- --         |
|           | Bz(a)ant-Front |        | < 1.0 ug |               |
|           | Bz(a)ant-Rear  |        | ND       |               |
|           | Bz(a)ant-Total | NVG    | < 1.0 ug | -- --         |
|           | Bz(a)pyr-Front |        | < 1.0 ug |               |
|           | Bz(a)pyr-Rear  |        | ND       |               |
|           | Bz(a)pyr-Total | NVG    | < 1.0 ug | -- --         |
|           | Bz(b)fnt-Front |        | < 1.0 ug |               |
|           | Bz(b)fnt-Rear  |        | ND       |               |
|           | Bz(b)fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Bzpery-Front   |        | < 1.0 ug |               |
|           | Bzpery-Rear    |        | ND       |               |
|           | Bzpery-Total   | NVG    | < 1.0 ug | -- --         |
|           | Bz(k)fnt-Front |        | < 1.0 ug |               |
|           | Bz(k)fnt-Rear  |        | ND       |               |
|           | Bz(k)fnt-Total | NVG    | < 1.0 ug | -- --         |
|           | Chy-Front      |        | < 1.0 ug |               |
|           | Chy-Rear       |        | ND       |               |
|           | Chy-Total      | NVG    | < 1.0 ug | -- --         |
|           | Dbzanthr-Front |        | < 1.0 ug |               |
|           | Dbzanthr-Rear  |        | ND       |               |
|           | Dbzanthr-Total | NVG    | < 1.0 ug | -- --         |





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Account No. 34419005

Report Date: 08/31/98

KOLDE

FIC ENVIRONMENTAL SERVICES

SCHEFFEL

DUKE DRIVE SUITE 150

ON, OH 45040

Final Report

Received: 08/24/98

Sample Type: 14 - Air Sample(s)

Project: EPA COKE-BTHLHM ST

PO Number: 103-99-322

### Physical Results

| Client ID     | Parameter           | Volume | Amount   | Concentration |
|---------------|---------------------|--------|----------|---------------|
|               | Flanthr-Front       |        | < 5.0 ug |               |
|               | Flanthr-Rear        |        | ND       |               |
|               | Flanthr-Total       | NVG    | < 5.0 ug | -- --         |
|               | Fluorene-Front      |        | < 5.0 ug |               |
|               | Fluorene-Rear       |        | ND       |               |
|               | Fluorene-Total      | NVG    | < 5.0 ug | -- --         |
|               | Indpyene-Front      |        | < 1.0 ug |               |
|               | Indpyene-Rear       |        | ND       |               |
|               | Indpyene-Total      | NVG    | < 1.0 ug | -- --         |
|               | Napth-Front         |        | 6.70 ug  |               |
|               | Napth-Rear          |        | ND       |               |
|               | Napth-Total         | NVG    | 6.70 ug  | -- --         |
|               | Panthr-Front        |        | 3.27 ug  |               |
|               | Panthr-Rear         |        | ND       |               |
|               | Panthr-Total        | NVG    | 3.27 ug  | -- --         |
|               | Pyrene-Front        |        | < 1.0 ug |               |
|               | Pyrene-Rear         |        | ND       |               |
|               | Pyrene-Total        | NVG    | < 1.0 ug | -- --         |
| 0 B-V-5506-FB | Samp Date: 08/15/98 | FB     | XAD-2    |               |
|               | Acnapth-Front       |        | < 5.0 ug |               |
|               | Acnapth-Rear        |        | ND       |               |
|               | Acnapht-Total       | 0      | < 5.0 ug | --            |
|               | Acnthy-Front        |        | < 5.0 ug |               |
|               | Acnthy-Rear         |        | ND       |               |
|               | Acnthy-Total        | 0      | < 5.0 ug | --            |
|               | Anthr-Front         |        | < 1.0 ug |               |

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N, OH 45040

# Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

## Physical Results

| Client ID | Parameter      | Volume | Amount   | Concentration |
|-----------|----------------|--------|----------|---------------|
|           | Anthr-Rear     |        | ND       |               |
|           | Anthr-Total    | 0      | < 1.0 ug | --            |
|           | Bz(a)ant-Front |        | < 1.0 ug |               |
|           | Bz(a)ant-Rear  |        | ND       |               |
|           | Bz(a)ant-Total | 0      | < 1.0 ug | --            |
|           | Bz(a)pyr-Front |        | < 1.0 ug |               |
|           | Bz(a)pyr-Rear  |        | ND       |               |
|           | Bz(a)pyr-Total | 0      | < 1.0 ug | --            |
|           | Bz(b)fnt-Front |        | < 1.0 ug |               |
|           | Bz(b)fnt-Rear  |        | ND       |               |
|           | Bz(b)fnt-Total | 0      | < 1.0 ug | --            |
|           | Bzpery-Front   |        | < 1.0 ug |               |
|           | Bzpery-Rear    |        | ND       |               |
|           | Bzpery-Total   | 0      | < 1.0 ug | --            |
|           | Bz(k)fnt-Front |        | < 1.0 ug |               |
|           | Bz(k)fnt-Rear  |        | ND       |               |
|           | Bz(k)fnt-Total | 0      | < 1.0 ug | --            |
|           | Chy-Front      |        | < 1.0 ug |               |
|           | Chy-Rear       |        | ND       |               |
|           | Chy-Total      | 0      | < 1.0 ug | --            |
|           | Dbzanthr-Front |        | < 1.0 ug |               |
|           | Dbzanthr-Rear  |        | ND       |               |
|           | Dbzanthr-Total | 0      | < 1.0 ug | --            |
|           | Flanthr-Front  |        | < 5.0 ug |               |
|           | Flanthr-Rear   |        | ND       |               |
|           | Flanthr-Total  | 0      | < 5.0 ug | --            |
|           | Fluorene-Front |        | < 5.0 ug |               |

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# Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

## Analytical Results

| Client ID    | Parameter        | Volume | Amount   | Concentration |
|--------------|------------------|--------|----------|---------------|
|              | Fluorene-Rear    |        | ND       |               |
|              | Fluorene-Total   | 0      | < 5.0 ug | --            |
|              | Indpyene-Front   |        | < 1.0 ug |               |
|              | Indpyene-Rear    |        | ND       |               |
|              | Indpyene-Total   | 0      | < 1.0 ug | --            |
|              | Napth-Front      |        | < 5.0 ug |               |
|              | Napth-Rear       |        | ND       |               |
|              | Napth-Total      | 0      | < 5.0 ug | --            |
|              | Panthr-Front     |        | < 1.0 ug |               |
|              | Panthr-Rear      |        | ND       |               |
|              | Panthr-Total     | 0      | < 1.0 ug | --            |
|              | Pyrene-Front     |        | < 1.0 ug |               |
|              | Pyrene-Rear      |        | ND       |               |
|              | Pyrene-Total     | 0      | < 1.0 ug | --            |
| 11 LAB BLANK | BLANK XAD-2      |        |          |               |
|              | Acnapth-Front    |        | < 5.0 ug |               |
|              | Acnapth-Rear     |        | ND       |               |
|              | Acnapht-Total    | 0      | < 5.0 ug | --            |
|              | Acnthy-Front     |        | < 5.0 ug |               |
|              | Acnthy-Rear      |        | ND       |               |
|              | Acnthy-Total     | 0      | < 5.0 ug | --            |
|              | Anthr-Front      |        | < 1.0 ug |               |
|              | Anthr-Rear       |        | ND       |               |
|              | Anthr-Total      | 0      | < 1.0 ug | --            |
|              | Bz (a) ant-Front |        | < 1.0 ug |               |
|              | Bz (a) ant-Rear  |        | ND       |               |



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# Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

## Physical Results

| Client ID | Parameter        | Volume | Amount   | Concentration |
|-----------|------------------|--------|----------|---------------|
|           | Bz (a) ant-Total | 0      | < 1.0 ug | --            |
|           | Bz (a) pyr-Front |        | < 1.0 ug |               |
|           | Bz (a) pyr-Rear  |        | ND       |               |
|           | Bz (a) pyr-Total | 0      | < 1.0 ug | --            |
|           | Bz (b) fnt-Front |        | < 1.0 ug |               |
|           | Bz (b) fnt-Rear  |        | ND       |               |
|           | Bz (b) fnt-Total | 0      | < 1.0 ug | --            |
|           | Bzpery-Front     |        | < 1.0 ug |               |
|           | Bzpery-Rear      |        | ND       |               |
|           | Bzpery-Total     | 0      | < 1.0 ug | --            |
|           | Bz (k) fnt-Front |        | < 1.0 ug |               |
|           | Bz (k) fnt-Rear  |        | ND       |               |
|           | Bz (k) fnt-Total | 0      | < 1.0 ug | --            |
|           | Chy-Front        |        | < 1.0 ug |               |
|           | Chy-Rear         |        | ND       |               |
|           | Chy-Total        | 0      | < 1.0 ug | --            |
|           | Dbzanthr-Front   |        | < 1.0 ug |               |
|           | Dbzanthr-Rear    |        | ND       |               |
|           | Dbzanthr-Total   | 0      | < 1.0 ug | --            |
|           | Flanthr-Front    |        | < 5.0 ug |               |
|           | Flanthr-Rear     |        | ND       |               |
|           | Flanthr-Total    | 0      | < 5.0 ug | --            |
|           | Fluorene-Front   |        | < 5.0 ug |               |
|           | Fluorene-Rear    |        | ND       |               |
|           | Fluorene-Total   | 0      | < 5.0 ug | --            |
|           | Indpyene-Front   |        | < 1.0 ug |               |
|           | Indpyene-Rear    |        | ND       |               |



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# Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

## Analytical Results

| Client ID    | Parameter      | Volume | Amount   | Concentration |
|--------------|----------------|--------|----------|---------------|
| 12 LAB BLANK | Indpyene-Total | 0      | < 1.0 ug | --            |
|              | Napth-Front    |        | < 5.0 ug |               |
|              | Napth-Rear     |        | ND       |               |
|              | Napth-Total    | 0      | < 5.0 ug | --            |
|              | Panthr-Front   |        | < 1.0 ug |               |
|              | Panthr-Rear    |        | ND       |               |
|              | Panthr-Total   | 0      | < 1.0 ug | --            |
|              | Pyrene-Front   |        | < 1.0 ug |               |
|              | Pyrene-Rear    |        | ND       |               |
|              | Pyrene-Total   | 0      | < 1.0 ug | --            |
|              | BLANK          |        |          |               |
|              | XAD-2          |        |          |               |
|              | Acnapth-Front  |        | < 5.0 ug |               |
|              | Acnapth-Rear   |        | ND       |               |
| 12 LAB BLANK | Acnapht-Total  | 0      | < 5.0 ug | --            |
|              | Acnthy-Front   |        | < 5.0 ug |               |
|              | Acnthy-Rear    |        | ND       |               |
|              | Acnthy-Total   | 0      | < 5.0 ug | --            |
|              | Anthr-Front    |        | < 1.0 ug |               |
|              | Anthr-Rear     |        | ND       |               |
|              | Anthr-Total    | 0      | < 1.0 ug | --            |
|              | Bz(a)ant-Front |        | < 1.0 ug |               |
|              | Bz(a)ant-Rear  |        | ND       |               |
|              | Bz(a)ant-Total | 0      | < 1.0 ug | --            |
|              | Bz(a)pyr-Front |        | < 1.0 ug |               |
|              | Bz(a)pyr-Rear  |        | ND       |               |
|              | Bz(a)pyr-Total | 0      | < 1.0 ug | --            |



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### Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

### Physical Results

| Client ID | Parameter       | Volume | Amount   | Concentration |
|-----------|-----------------|--------|----------|---------------|
|           | Bz(b) fnt-Front |        | < 1.0 ug |               |
|           | Bz(b) fnt-Rear  |        | ND       |               |
|           | Bz(b) fnt-Total | 0      | < 1.0 ug | --            |
|           | Bzpery-Front    |        | < 1.0 ug |               |
|           | Bzpery-Rear     |        | ND       |               |
|           | Bzpery-Total    | 0      | < 1.0 ug | --            |
|           | Bz(k) fnt-Front |        | < 1.0 ug |               |
|           | Bz(k) fnt-Rear  |        | ND       |               |
|           | Bz(k) fnt-Total | 0      | < 1.0 ug | --            |
|           | Chy-Front       |        | < 1.0 ug |               |
|           | Chy-Rear        |        | ND       |               |
|           | Chy-Total       | 0      | < 1.0 ug | --            |
|           | Dbzanthr-Front  |        | < 1.0 ug |               |
|           | Dbzanthr-Rear   |        | ND       |               |
|           | Dbzanthr-Total  | 0      | < 1.0 ug | --            |
|           | Flanthr-Front   |        | < 5.0 ug |               |
|           | Flanthr-Rear    |        | ND       |               |
|           | Flanthr-Total   | 0      | < 5.0 ug | --            |
|           | Fluorene-Front  |        | < 5.0 ug |               |
|           | Fluorene-Rear   |        | ND       |               |
|           | Fluorene-Total  | 0      | < 5.0 ug | --            |
|           | Indpyene-Front  |        | < 1.0 ug |               |
|           | Indpyene-Rear   |        | ND       |               |
|           | Indpyene-Total  | 0      | < 1.0 ug | --            |
|           | Napth-Front     |        | < 5.0 ug |               |
|           | Napth-Rear      |        | ND       |               |
|           | Napth-Total     | 0      | < 5.0 ug | --            |



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Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

Physical Results

| Client ID            | Parameter      | Volume | Amount   | Concentration |
|----------------------|----------------|--------|----------|---------------|
| 13 SPIKE XAD-2       | Panthr-Front   |        | < 1.0 ug |               |
|                      | Panthr-Rear    |        | ND       |               |
|                      | Panthr-Total   | 0      | < 1.0 ug | --            |
|                      | Pyrene-Front   |        | < 1.0 ug |               |
|                      | Pyrene-Rear    |        | ND       |               |
|                      | Pyrene-Total   | 0      | < 1.0 ug | --            |
| Spike level - 10 ug  | Acnaphth-Front |        | 6.14 ug  |               |
|                      | Acnaphth-Total | 0      | 6.14 ug  | --            |
| Spike level - 10 ug  | Acnthy-Front   |        | 7.95 ug  |               |
|                      | Acnthy-Total   | 0      | 7.95 ug  | --            |
| Spike level - 0.5 ug | Anthr-Front    |        | 0.466 ug |               |
|                      | Anthr-Total    | 0      | 0.466 ug | --            |
| Spike level - 1.0 ug | Bz(a)ant-Front |        | 0.65 ug  |               |
|                      | Bz(a)ant-Total | 0      | 0.65 ug  | --            |
| Spike level - 0.5 ug | Bz(a)pyr-Front |        | 0.256 ug |               |
|                      | Bz(a)pyr-Total | 0      | 0.256 ug | --            |
| Spike level - 0.5 ug | Bz(b)fnt-Front |        | 0.381 ug |               |
|                      | Bz(b)fnt-Total | 0      | 0.381 ug | --            |
|                      | Bzpery-Front   |        | 0.263 ug |               |

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### Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

### Analytical Results

| Client ID                | Parameter        | Volume | Amount   | Concentration |
|--------------------------|------------------|--------|----------|---------------|
| Filtering level - 0.5 ug | Bzperylene-Total | 0      | 0.263 ug | --            |
| Filtering level - 0.5 ug | Bz(k) fnt-Front  |        | 0.514 ug |               |
| Filtering level - 0.5 ug | Bz(k) fnt-Total  | 0      | 0.514 ug | --            |
| Filtering level - 0.5 ug | Chy-Front        |        | 0.398 ug |               |
| Filtering level - 0.5 ug | Chy-Total        | 0      | 0.398 ug | --            |
| Filtering level - 0.5 ug | Dbzanthr-Front   |        | 0.398 ug |               |
| Filtering level - 0.5 ug | Dbzanthr-Total   | 0      | 0.398 ug | --            |
| Filtering level - 0.5 ug | Flanthr-Front    |        | 5.01 ug  |               |
| Filtering level - 0.5 ug | Flanthr-Total    | 0      | 5.01 ug  | --            |
| Filtering level - 5.0 ug | Fluorene-Front   |        | 6.67 ug  |               |
| Filtering level - 10 ug  | Fluorene-Total   | 0      | 6.67 ug  | --            |
| Filtering level - 0.5 ug | Indpyene-Front   |        | 0.366 ug |               |
| Filtering level - 0.5 ug | Indpyene-Total   | 0      | 0.366 ug | --            |
| Filtering level - 10 ug  | Napth-Front      |        | 6.23 ug  |               |
| Filtering level - 10 ug  | Napth-Total      | 0      | 6.23 ug  | --            |
| Filtering level - 0.5 ug | Panthr-Front     |        | 0.477 ug |               |
| Filtering level - 0.5 ug | Panthr-Total     | 0      | 0.477 ug | --            |
|                          | Pyrene-Front     |        | 0.473 ug |               |





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# Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

## Analytical Results

| Client ID               | Parameter      | Volume | Amount   | Concentration |
|-------------------------|----------------|--------|----------|---------------|
| Sampling level - 0.5 ug | Pyrene-Total   | 0      | 0.473 ug | --            |
| 14 DESORPTION XAD-2     |                |        |          |               |
| Sampling level - 10 ug  | Acnaphth-Front |        | 9.38 ug  |               |
|                         | Acnaphth-Total | 0      | 9.38 ug  | --            |
| Sampling level - 10 ug  | Acnthy-Front   |        | 12.2 ug  |               |
|                         | Acnthy-Total   | 0      | 12.2 ug  | --            |
| Sampling level - 0.5 ug | Anthr-Front    |        | 0.540 ug |               |
|                         | Anthr-Total    | 0      | 0.540 ug | --            |
| Sampling level - 1.0 ug | Bz(a)ant-Front |        | 0.780 ug |               |
|                         | Bz(a)ant-Total | 0      | 0.780 ug | --            |
| Sampling level - 0.5    | Bz(a)pyr-Front |        | 0.324 ug |               |
|                         | Bz(a)pyr-Total | 0      | 0.324 ug | --            |
| Sampling level - 0.5 ug | Bz(b)fnt-Front |        | 0.519 ug |               |
|                         | Bz(b)fnt-Total | 0      | 0.519 ug | --            |
| Sampling level - 0.5 ug | Bzpery-Front   |        | 0.306 ug |               |
|                         | Bzpery-Total   | 0      | 0.306 ug | --            |
| Sampling level - 0.5 ug | Bz(k)fnt-Front |        | 0.645 ug |               |
|                         | Bz(k)fnt-Total | 0      | 0.645 ug | --            |

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### Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Project: EPA COKE-BTHLHM ST PO Number: 103-99-322

### Analytical Results

| Client ID                | Parameter      | Volume | Amount   | Concentration |
|--------------------------|----------------|--------|----------|---------------|
| Filtering level - 1.0 ug | Chy-Front      |        | 0.474 ug |               |
|                          | Chy-Total      | 0      | 0.474 ug | --            |
| Filtering level - 0.5 ug | Dbzanthr-Front |        | 0.431 ug |               |
|                          | Dbzanthr-Total | 0      | 0.431 ug | --            |
| Filtering level - 0.5 ug | Flanthr-Front  |        | 6.49 ug  |               |
|                          | Flanthr-Total  | 0      | 6.49 ug  | --            |
| Filtering level 5.0 ug   | Fluorene-Front |        | 8.43 ug  |               |
|                          | Fluorene-Total | 0      | 8.43 ug  | --            |
| Filtering level - 10 ug  | Indpyene-Front |        | 0.573 ug |               |
|                          | Indpyene-Total | 0      | 0.573 ug | --            |
| Filtering level - 1.0 ug | Napth-Front    |        | 8.01 ug  |               |
|                          | Napth-Total    | 0      | 8.01 ug  | --            |
| Filtering level - 10 ug  | Panthr-Front   |        | 0.542 ug |               |
|                          | Panthr-Total   | 0      | 0.542 ug | --            |
| Filtering level - 0.5 ug | Pyrene-Front   |        | 0.522 ug |               |
|                          | Pyrene-Total   | 0      | 0.522 ug | --            |
| Filtering level - 0.5 ug |                |        |          |               |

Abbreviations: ug = micrograms, mg = milligrams, mg/M3 = milligrams per cubic meter of air, g = grams, ug/M3 = micrograms per cubic meter of air, L = liters, w/w = percent weight basis, all Volumes given in liters, ppm = parts per million, ppb = parts per billion, Areas given in square feet; ND = Not Detected.

### Summary of Analytical Methods

| Compound Name | Analytical Method | Abbreviation |
|---------------|-------------------|--------------|
| naphthene     | NIOSH 5506        | Acnapht      |



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Final Report

Received: 08/24/98  
Sample Type: 14 - Air Sample(s)  
Subject: EPA COKE-BTHLHM ST PO Number: 103-99-322

Analytical Method - continued

|                     |            |          |
|---------------------|------------|----------|
| naphthylene         | NIOSH 5506 | Acnthy   |
| iracene             | NIOSH 5506 | Anthr    |
| z(a)anthracene      | NIOSH 5506 | Bz(a)ant |
| zo(a)pyrene         | NIOSH 5506 | Bz(a)pyr |
| zo(b)fluoranthene   | NIOSH 5506 | Bz(b)fnt |
| zo(ghi)perylene     | NIOSH 5506 | Bzpery   |
| zo(k)fluoranthene   | NIOSH 5506 | Bz(k)fnt |
| rsene               | NIOSH 5506 | Chy      |
| enz(a,h)anthracene  | NIOSH 5506 | Dbzanthr |
| ranthene            | NIOSH 5506 | Flanthr  |
| rene                | NIOSH 5506 | ----     |
| eno(1,2,3-cd)pyrene | NIOSH 5506 | Indpyene |
| thalene             | NIOSH 5506 | Napth    |
| anthrene            | NIOSH 5506 | Panthr   |
| ne                  | NIOSH 5506 | ----     |

PS

Attached are the results we obtained on the analysis of your samples. Any Chains-of-Custody associated with this sample group are also enclosed. Air concentrations are calculated as a convenience to the client and the overall accuracy of this result depends on both the accuracy of the air volume and the amount found by analysis. Theoretical Air Volumes for passive monitors are calculated using the sampling time submitted and the manufacturer's listed sampling rate for each compound.

We appreciate your confidence in allowing Analytics to be your testing laboratory. Any questions regarding this report can be addressed by calling our client services department (800-888-8061).

*A. Sue E. Salpin, CIH*  
James A. Calpin, CIH  
Laboratory Director

# ANALYTICAL REQUEST AND CHAIN OF CUSTODY

EPA Coke Ovens

PLANT: Bethlehem Steel - Ind. PROJECT #: S506.000

RECOVERY PERSON: R. Kalle / D. Schittel

SAMPLE TECHNICIAN: J. Centers, T. Abernathy

SAMPLE IDENTIFICATION

COLLECTION DATE

TIME

SAMPLE NAME

NUMBER OF CONTAINERS

ANALYTICAL REQUEST

5506 for  
NOSH Method  
PAH's

COMMENTS  
(Type of container,  
special preparation,  
special handling, etc.)

|             |         |  |      |   |   |  |  |  |  |  |  |  |  |  |  |  |  |                   |
|-------------|---------|--|------|---|---|--|--|--|--|--|--|--|--|--|--|--|--|-------------------|
| B-I-5506-1  | 8/11/98 |  | same | 3 | X |  |  |  |  |  |  |  |  |  |  |  |  | Please for        |
| B-I-5506-2  | 8/12/98 |  | same | 3 | X |  |  |  |  |  |  |  |  |  |  |  |  | results to        |
| B-I-5506-3  | 8/13/98 |  | same | 3 | X |  |  |  |  |  |  |  |  |  |  |  |  | Don Schittel at   |
| B-O-5506-1  | 8/11/98 |  | same | 3 | X |  |  |  |  |  |  |  |  |  |  |  |  | Ron Kalle         |
| B-O-5506-2  | 8/12/98 |  | same | 3 | X |  |  |  |  |  |  |  |  |  |  |  |  |                   |
| B-O-5506-3  | 8/13/98 |  | same | 3 | X |  |  |  |  |  |  |  |  |  |  |  |  | HPLC analysis -   |
| B-U-5506-1  | 8/14/98 |  | same | 3 | X |  |  |  |  |  |  |  |  |  |  |  |  | fluorescence / UV |
| B-U-5506-2  | 8/14/98 |  | same | 3 | X |  |  |  |  |  |  |  |  |  |  |  |  | detoxin           |
| B-U-5506-3  | 8/15/98 |  | same | 3 | X |  |  |  |  |  |  |  |  |  |  |  |  | 17 PAH's          |
| B-U-5506-FB | 8/15/98 |  | same | 3 | X |  |  |  |  |  |  |  |  |  |  |  |  | per analysis      |
| Lol Blank   |         |  | same | 4 | X |  |  |  |  |  |  |  |  |  |  |  |  |                   |

\* 5 pure tubes also

included for spiking - description of containers. (2)

RELINQUISHER'S NAME

RECEIVER'S NAME

DATE/TIME

DATE/TIME

RELINQUISHER'S SIGNATURE

RECEIVER'S SIGNATURE

SHIPPER'S NAME AND ID NUMBER

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10/10/10

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# First Analytical Laboratories

## ANALYSIS REPORT

Metals in Dust

**Project # S506.000**

Prepared for:

Pacific Environmental Services, Inc.  
7209 E. Kemper Road  
Cincinnati, OH 45249

Reviewed and Approved by:

  
\_\_\_\_\_  
William H. Wadlin, Ph. D.  
Laboratory Manager

October 5, 1998

# First Analytical Laboratories

## CASE NARRATIVE

Project #: 80915

Report Date: 05-Oct-98

Client: Pacific Environmental Services, Inc.

Client Project ID: S506.000

### Samples:

Three samples of dust were submitted. The target elements were antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, manganese, mercury, nickel, phosphorus, selenium, silver, thallium and zinc. All of the samples were received in good condition, with no apparent leakage or damage.

### Preparation:

The samples were prepared according to EPA Method 3050A, which is a nitric acid digestion.

### Analysis:

Cadmium, lead and zinc were determined by Direct Aspiration Flame Atomic Absorption Spectrophotometry (FLAA). Antimony, arsenic, beryllium, selenium, silver and thallium were determined by Graphite Furnace Atomic Absorption Spectrophotometry (GFAA). Barium, chromium, copper, nickel and phosphorus were determined by Inductively Coupled Plasma - Optical Emission (ICP).

### Results:

The results are reported as concentration in the original sample, in micrograms of element per gram of sample ( $\mu\text{g/g}$ ), which is equivalent to parts per million by weight (ppm). All of the target elements were detected in all of the samples, except for silver in sample #2. The highest levels were found for manganese, phosphorus and zinc. These three elements were in the range of about 40 ppm, 50 ppm, and 70 ppm respectively.

### Quality Control:

Traces of cadmium and zinc were found in the blanks. The cadmium blank is about half of the sample levels, so these results should be blank corrected. The zinc blank is only about ten percent of the sample values. The spike recoveries were



all within the normal range of 70% to 130%. The duplicates were all within the normal limit of 20% for all cases in which the sample level is more than five times the detection limit.



**First Analytical Laboratories**  
1126 Burning Tree Dr. Chapel Hill, NC 27514

Tel. (919) 942-8607  
FAX (919) 929-8688

## ANALYSIS REPORT

Project #: 80915  
Client: Pacific Environmental  
Client Project ID: # S506.000

Report Date: 05-Oct-98  
Date Received: 21-Sep-98

### Parts per million in original sample

| Element    | $\mu\text{g/g}$            |                            |                            | QUALITY CONTROL DATA |                    |                     |
|------------|----------------------------|----------------------------|----------------------------|----------------------|--------------------|---------------------|
|            | BD-BS-1<br>$\mu\text{g/g}$ | BD-BS-2<br>$\mu\text{g/g}$ | BD-BS-3<br>$\mu\text{g/g}$ | Lab<br>Blank         | Spike<br>%Recovery | Duplicate<br>%Diff. |
| Antimony   | 0.33                       | 0.52                       | 0.36                       | < 0.25               | 74%                | NA                  |
| Arsenic    | 10.7                       | 10.5                       | 11.0                       | < 0.25               | 82%                | 2.2%                |
| Barium     | 9.21                       | 9.32                       | 8.62                       | < 0.20               |                    | 2.9%                |
| Beryllium  | 0.42                       | 0.33                       | 0.29                       | < 0.005              | 93%                | 15.9%               |
| Cadmium    | 1.64                       | 1.50                       | 1.80                       | 0.75                 | 94%                | 18.7%               |
| Chromium   | 7.42                       | 8.33                       | 6.39                       | < 1.25               | 104%               | 1.9%                |
| Copper     | 7.7                        | 8.1                        | 6.5                        | < 1.5                | 108%               |                     |
| Lead       | 35.8                       | 36.4                       | 38.9                       | < 5.0                | 101%               | 4.5%                |
| Manganese  | 67.5                       | 70.2                       | 66.2                       | < 2.0                | 97%                | 1.9%                |
| Mercury    | 0.20                       | 0.15                       | 0.18                       | < 0.07               | 105%               | NA                  |
| Nickel     | 7.0                        | 7.8                        | 6.7                        | < 2.5                | 96%                | NA                  |
| Phosphorus | 44.7                       | 50.4                       | 43.5                       | < 1.0                |                    | 6.8%                |
| Selenium   | 3.8                        | 3.5                        | 3.2                        | < 0.2                | 76%                | 13.0%               |
| Silver     | 0.05                       | < 0.02                     | 0.06                       | < 0.03               | 87%                | NA                  |
| Thallium   | 0.77                       | 0.88                       | 0.72                       | < 0.15               | 100%               | 13.7%               |
| Zinc       | 37.5                       | 36.1                       | 39.7                       | 4.7                  |                    | 4.8%                |

# ANTIMONY

## GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES

Proj. #: 80915

Date: 05-Oct-98

IDL = 5 µg/L

Spike Conc. = 100 µg/L

| Sample ID      | FAL      | Test Sol'n µg/L | Dig'te Conc µg/L | FV ml | Dil'n Factor | Sample Weight g | Conc. in original Sample µg/g (ppm) |
|----------------|----------|-----------------|------------------|-------|--------------|-----------------|-------------------------------------|
| BD-BS-1        | 80915.1  | 6.6             | 6.6              | 100   | 1            | 2.0084          | 0.33                                |
| BD-BS-1        | 80915.2  | 10.5            | 10.5             | 100   | 1            | 2.0053          | 0.52                                |
| BD-BS-1        | 80915.3  | 7.3             | 7.3              | 100   | 1            | 2.0040          | 0.36                                |
| Lab Blank      | 80915.LB | 0.0             | 0.0              | 100   | 1            | 2.0000          | < 0.25                              |
| Duplicate      | 80915.2D | 4.5             | 4.5              | 100   | 1            | 1.9956          | < 0.25                              |
| % Difference = |          |                 |                  |       |              |                 | NA                                  |
| Spike          | 80915.1S | 80.6            |                  |       |              | 1.9929          | %Recovery = 74.0%                   |

## QUALITY CONTROL DATA

| Calibration Data | Abs. True conc., µg/L |     |
|------------------|-----------------------|-----|
| Blank            | 0.000                 | 0   |
| Standard 1       | 0.020                 | 10  |
| Standard 2       | 0.088                 | 50  |
| Standard 3       | 0.175                 | 100 |
| Standard 4       | 0.310                 | 200 |

### Calibration Verifications, µg/L

|            |      |            |      |
|------------|------|------------|------|
| ICV = 100  | 99.6 | CCV2 = 100 | 87.9 |
| ICB = 0    | 0.5  | CCB2 = 0   | 0.4  |
| CCV1 = 100 | 95.4 | CCV3 = 100 | 88.5 |
| CCB1 = 0   | 2.2  | CCB3 = 0   | 1.6  |

# ARSENIC

## GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES  
 Proj. #: 80915  
 Date: 05-Oct-98

IDL = 5 µg/L  
 Spike Conc. = 100 µg/L

| Sample ID      | FAL      | Test Sol'n µg/L | Dig'te Conc µg/L | FV ml | Dil'n Factor | Sample Weight g | Conc. in original Sample µg/g (ppm) |
|----------------|----------|-----------------|------------------|-------|--------------|-----------------|-------------------------------------|
| BD-BS-1        | 80915.1  | 21.7            | 216.5            | 100   | 10           | 2.0084          | 10.78                               |
| BD-BS-1        | 80915.2  | 105.6           | 211.2            | 100   | 2            | 2.0053          | 10.53                               |
| BD-BS-1        | 80915.3  | 110.5           | 221.0            | 100   | 2            | 2.0040          | 11.03                               |
| Lab Blank      | 80915.LB | 2.4             | 2.4              | 100   | 1            | 2.0000          | < 0.25                              |
| Duplicate      | 80915.2D | 102.8           | 205.6            | 100   | 2            | 1.9956          | 10.30                               |
| % Difference = |          |                 |                  |       |              |                 | 2.2%                                |
| Post-spike     | 80915.1  | 111.7           |                  |       | 10           |                 | %Recovery = 90.1%                   |
| Pre-spike      | 80915.1S | 206.81          |                  |       | 5            | 1.9929          | %Recovery = 81.8%                   |

## QUALITY CONTROL DATA

### Calibration Data

Abs. True conc., µg/L

|            |       |     |
|------------|-------|-----|
| Blank      | 0.000 | 0   |
| Standard 1 | 0.039 | 10  |
| Standard 2 | 0.148 | 50  |
| Standard 3 | 0.305 | 100 |
| Standard 4 | 0.620 | 200 |

### Calibration Verifications, µg/L

|            |       |            |      |
|------------|-------|------------|------|
| ICV = 100  | 104.8 | CCV2 = 100 | 95.9 |
| ICB = 0    | 5.4   | CCB2 = 0   | 2.7  |
| CCV1 = 100 | 99.4  | CCV3 = 100 | 97.8 |
| CCB1 = 0   | 7.0   | CCB3 = 0   | 5.2  |
|            |       | CCV4 = 100 | 95.8 |
|            |       | CCB4 = 0   | 1.5  |

# BAR I U M

## ICP ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

**Client: PES**

**IDL = 4  $\mu\text{g/L}$**

**Proj. #: 80915**

**Spike Conc. = 100  $\mu\text{g/L}$**

**Date: 05-Oct-98**

| Sample ID |          | Test  | Dig'te |     | Dil'n  | Sample         | Conc.       |
|-----------|----------|-------|--------|-----|--------|----------------|-------------|
| Client    | FAL      | Sol'n | Conc   | FV  | Factor | Weight         | in original |
|           |          | µg/L  | µg/L   | ml  |        | g              | Sample      |
|           |          |       |        |     |        |                | µg/g (ppm)  |
| BD-BS-1   | 80915.1  | 184.9 | 184.9  | 100 | 1      | 2.0084         | 9.21        |
| BD-BS-1   | 80915.2  | 186.8 | 186.8  | 100 | 1      | 2.0053         | 9.32        |
| BD-BS-1   | 80915.3  | 172.8 | 172.8  | 100 | 1      | 2.0040         | 8.62        |
| Lab Blank | 80915.LB | 2.0   | 2.0    | 100 | 1      | 2.0000         | < 0.20      |
| Duplicate | 80915.2D | 180.6 | 180.6  | 100 | 1      | 1.9956         | 9.05        |
|           |          |       |        |     |        | % Difference = | 2.9%        |

## QUALITY CONTROL DATA

| Calibration Data | Emissio | True conc., µg/L |
|------------------|---------|------------------|
| Blank            | 76      | 0                |
| Standard 1       | 171     | 100              |
| Standard 2       | 517     | 500              |
| Standard 3       | 949     | 1000             |
| Standard 4       | 1788    | 2000             |

### Calibration Verifications, $\mu\text{g/L}$

|            |      |             |
|------------|------|-------------|
| ICV = 1000 | 1010 | CCV2 = 1000 |
| ICB = 0    | 1    | CCB2 = 0    |
| CCV1 = 100 | 1018 | CCV3 = 1000 |
| CCB1 = 0   | 0    | CCB3 = 0    |

# BERYLLIUM

## GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES  
 Proj. #: 80915  
 Date: 05-Oct-98

IDL = 0.10 µg/L  
 Spike Conc. = 5.00 µg/L

| Sample ID  | FAL      | Test Sol'n µg/L | Dig'te Conc µg/L | FV ml | Dil'n Factor | Sample Weight g | Conc. in original Sample µg/g (ppm) |
|------------|----------|-----------------|------------------|-------|--------------|-----------------|-------------------------------------|
| BD-BS-1    | 80915.1  | 0.84            | 8.40             | 100   | 10           | 2.0084          | 0.418                               |
| BD-BS-1    | 80915.2  | 0.66            | 6.60             | 100   | 10           | 2.0053          | 0.329                               |
| BD-BS-1    | 80915.3  | 0.59            | 5.90             | 100   | 10           | 2.0040          | 0.294                               |
| Lab Blank  | 80915.LB | -0.05           | -0.05            | 100   | 1            | 2.0000          | < 0.005                             |
| Duplicate  | 80915.2D | 0.56            | 5.60             | 100   | 10           | 1.9956          | 0.281                               |
|            |          |                 |                  |       |              | % Difference =  | 15.9%                               |
| Post-spike | 80915.1  | 5.51            |                  |       | 10           |                 | %Recovery = 93.4%                   |

## QUALITY CONTROL DATA

| Calibration Data                | Abs. True conc., µg/L |                |
|---------------------------------|-----------------------|----------------|
| Blank                           | 0.000                 | 0.00           |
| Standard 1                      | 0.011                 | 0.10           |
| Standard 2                      | 0.042                 | 2.00           |
| Standard 3                      | 0.098                 | 5.00           |
| Standard 4                      | 0.169                 | 10.00          |
| Calibration Verifications, µg/L |                       |                |
| ICV = 5                         | 5.25                  | CCV2 = 5 4.84  |
| ICB = 0                         | 0.04                  | CCB2 = 0 -0.01 |
| CCV1 = 5                        | 5.26                  | CCV3 = 5 4.94  |
| CCB1 = 0                        | 0.07                  | CCB3 = 0 0.02  |

**FLAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET**

IDL = 5  $\mu\text{g/L}$   
Spike Conc. = 400  $\mu\text{g/L}$

## QUALITY CONTROL DATA

**Abs. True conc.,  $\mu\text{g/L}$**

### Calibration Verifications, $\mu\text{g/L}$

|           |     |            |     |
|-----------|-----|------------|-----|
| ICV = 500 | 476 | CCV2 = 500 | 498 |
| ICB = 0   | 2   | CCB2 = 0   | 0   |
| CCV1 = 50 | 489 | CCV3 = 500 | 503 |
| CCB1 = 0  | 1   | CCB3 = 0   | 1   |

# CHROMIUM

## ICP ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES

IDL = 25 µg/L

Proj. #: 80915

Spike Conc. = 2000 µg/L

Date: 05-Oct-98

| Sample ID      | FAL      | Test Sol'n<br>µg/L | Dig'te Conc<br>µg/L | FV ml | Dil'n Factor | Sample Weight g | Conc. in original Sample<br>µg/g (ppm) |
|----------------|----------|--------------------|---------------------|-------|--------------|-----------------|----------------------------------------|
| BD-BS-1        | 80915.1  | 149                | 149                 | 100   | 1            | 2.0084          | 7.419                                  |
| BD-BS-1        | 80915.2  | 167                | 167                 | 100   | 1            | 2.0053          | 8.328                                  |
| BD-BS-1        | 80915.3  | 128                | 128                 | 100   | 1            | 2.0040          | 6.387                                  |
| Lab Blank      | 80915.LB | 7                  | 7                   | 100   | 1            | 2.0000          | < 1.250                                |
| Duplicate      | 80915.2D | 163                | 163                 | 100   | 1            | 1.9956          | 8.168                                  |
| % Difference = |          |                    |                     |       |              |                 | 1.9%                                   |
| Pre-spike      | 80915.1S | 2220               |                     |       | 1            | 1.9929          | %Recovery = 103.6%                     |

## QUALITY CONTROL DATA

| Calibration Data | Emissio | True conc., µg/L |
|------------------|---------|------------------|
| Blank            | 488     | 0                |
| Standard 1       | 580     | 100              |
| Standard 2       | 1146    | 500              |
| Standard 3       | 1752    | 1000             |
| Standard 4       | 3108    | 2000             |

### Calibration Verifications, µg/L

|             |      |             |      |
|-------------|------|-------------|------|
| ICV = 1000  | 1025 | CCV2 = 1000 | 1017 |
| ICB = 0     | 7    | CCB2 = 0    | 17   |
| CCV1 = 1000 | 1051 | CCV3 = 1000 |      |
| CCB1 = 0    | -1   | CCB3 = 0    |      |



# C O P P E R

## ICP ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES

IDL = 30 µg/L

Proj. #: 80915

Spike Conc. = 2000 µg/L

Date: 05-Oct-98

| Sample ID | FAL      | Test Sol'n | Dig'te Conc | FV  | Dil'n Factor | Sample Weight | Conc. in original Sample |
|-----------|----------|------------|-------------|-----|--------------|---------------|--------------------------|
| Client    |          | µg/L       | µg/L        | ml  |              | g             | µg/g (ppm)               |
| BD-BS-1   | 80915.1  | 156        | 156         | 100 | 1            | 2.0084        | 7.767                    |
| BD-BS-1   | 80915.2  | 163        | 163         | 100 | 1            | 2.0053        | 8.128                    |
| BD-BS-1   | 80915.3  | 130        | 130         | 100 | 1            | 2.0040        | 6.487                    |
| Lab Blank | 80915.LB | 19         | 19          | 100 | 1            | 2.0000        | < 1.500                  |

Pre-spike 80915.1S 2319 1 1.9929 %Recovery = 108.2%

## QUALITY CONTROL DATA

| Calibration Data | Emissio | True conc., µg/L |
|------------------|---------|------------------|
| Blank            | 1712    | 0                |
| Standard 1       | 2222    | 100              |
| Standard 2       | 6842    | 500              |
| Standard 3       | 12301   | 1000             |
| Standard 4       | 24207   | 2000             |

### Calibration Verifications, µg/L

|            |      |             |      |
|------------|------|-------------|------|
| ICV = 1000 | 1019 | CCV2 = 1000 | 1166 |
| ICB = 0    | 20   | CCB2 = 0    | 27   |
| CCV1 = 10  | 1094 | CCV3 = 1000 |      |
| CCB1 = 0   | 23   | CCB3 = 0    |      |

## LEAD

## FLAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

**IDL = 100  $\mu\text{g/L}$**

**Spike Conc. = 2000  $\mu\text{g/L}$**

**Date: 05-Oct-98**

| Sample ID |          | Test  | Dig'te |     | Dil'n  | Sample |                | Conc.       |
|-----------|----------|-------|--------|-----|--------|--------|----------------|-------------|
| Client    | FAL      | Sol'n | Conc   | FV  | Factor | Weight |                | in original |
|           |          | µg/L  | µg/L   | ml  |        | g      |                | Sample      |
|           |          |       |        |     |        |        |                | µg/g (ppm)  |
| BD-BS-1   | 80915.1  | 720   | 720    | 100 | 1      | 2.0084 |                | 35.849      |
| BD-BS-1   | 80915.2  | 730   | 730    | 100 | 1      | 2.0053 |                | 36.404      |
| BD-BS-1   | 80915.3  | 780   | 780    | 100 | 1      | 2.0040 |                | 38.922      |
| Lab Blank | 80915.LB | 70    | 70     | 100 | 1      | 2.0000 | <              | 5.000       |
| Duplicate | 80915.2D | 760   | 760    | 100 | 1      | 1.9956 |                | 38.084      |
|           |          |       |        |     |        |        | % Difference = | 4.5%        |
| Pre-spike | 80915.1S | 2740  |        |     | 1      | 1.9929 | %Recovery =    | 101.0%      |

## QUALITY CONTROL DATA

## Calibration Data

**Abs. True conc.,  $\mu\text{g/L}$**

|            |       |       |
|------------|-------|-------|
| Blank      | 0.000 | 0     |
| Standard 1 | 0.004 | 200   |
| Standard 2 | 0.009 | 500   |
| Standard 3 | 0.017 | 1000  |
| Standard 4 | 0.032 | 2000  |
| Standard 5 | 0.080 | 5000  |
| Standard 6 | 0.159 | 10000 |

### Calibration Verifications, $\mu\text{g/L}$

|            |      |             |      |
|------------|------|-------------|------|
| ICV = 5000 | 4940 | CCV2 = 5000 | 4870 |
| ICB = 0    | 20   | CCB2 = 0    | 10   |
| CCV1 = 500 | 4930 | CCV3 = 5000 | 5130 |
| CCB1 = 0   | -10  | CCB3 = 0    | -10  |

# M A N G A N E S E

## FLAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES  
 Proj. #: 80915  
 Date: 05-Oct-98

IDL = 40 µg/L  
 Spike Conc. = 400 µg/L

| Sample ID | FAL      | Test Sol'n<br>µg/L | Dig'te Conc<br>µg/L | FV ml | Dil'n Factor | Sample Weight g | Conc. in original Sample<br>µg/g (ppm) |
|-----------|----------|--------------------|---------------------|-------|--------------|-----------------|----------------------------------------|
| BD-BS-1   | 80915.1  | 1355               | 1355                | 100   | 1            | 2.0084          | 67.467                                 |
| BD-BS-1   | 80915.2  | 1407               | 1407                | 100   | 1            | 2.0053          | 70.164                                 |
| BD-BS-1   | 80915.3  | 1326               | 1326                | 100   | 1            | 2.0040          | 66.168                                 |
| Lab Blank | 80915.LB | 32                 | 32                  | 100   | 1            | 2.0000          | < 2.000                                |
| Duplicate | 80915.2D | 1374               | 1374                | 100   | 1            | 1.9956          | 68.851                                 |
|           |          |                    |                     |       |              | % Difference =  | 1.9%                                   |
| Pre-spike | 80915.1S | 1744               |                     |       | 1            | 1.9929          | %Recovery = 97.3%                      |

## QUALITY CONTROL DATA

| Calibration Data | Abs. True conc., µg/L |      |
|------------------|-----------------------|------|
| Blank            | 0.000                 | 0    |
| Standard 1       | 0.030                 | 200  |
| Standard 2       | 0.075                 | 500  |
| Standard 3       | 0.142                 | 1000 |
| Standard 4       | 0.271                 | 2000 |

### Calibration Verifications, µg/L

|            |      |            |
|------------|------|------------|
| ICV = 500  | 980  | CCV2 = 500 |
| ICB = 0    | 6    | CCB2 = 0   |
| CCV1 = 500 | 1025 | CCV3 = 500 |
| CCB1 = 0   | 31   | CCB3 = 0   |

# M E R C U R Y

## CVAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES  
Proj. #: 80915  
Date: 05-Oct-98

IDL = 0.20 µg/L  
Spike Conc. = 5.00 µg/L

| Sample ID<br>Client | FAL      | Test<br>Sol'n<br>µg/L | Dig'te<br>Conc<br>µg/L | FV<br>ml | Dil'n<br>Factor | Sample<br>Weight<br>g | Conc.<br>in original<br>Sample<br>µg/g (ppm) |
|---------------------|----------|-----------------------|------------------------|----------|-----------------|-----------------------|----------------------------------------------|
| BD-BS-1             | 80915.1  | 0.55                  | 0.55                   | 100      | 1               | 0.2981                | 0.185                                        |
|                     | 80915.1  | 0.65                  | 0.65                   | 100      | 1               | 0.2996                | 0.217                                        |
|                     |          |                       |                        |          |                 |                       | Avg. = 0.201                                 |
| BD-BS-2             | 80915.2  | 0.30                  | 0.30                   | 100      | 1               | 0.3004                | 0.100                                        |
|                     | 80915.2  | 0.61                  | 0.61                   | 100      | 1               | 0.3034                | 0.201                                        |
|                     |          |                       |                        |          |                 |                       | Avg. = 0.150                                 |
| BD-BS-3             | 80915.3  | 0.50                  | 0.50                   | 100      | 1               | 0.2955                | 0.169                                        |
|                     | 80915.3  | 0.56                  | 0.56                   | 100      | 1               | 0.3013                | 0.186                                        |
|                     |          |                       |                        |          |                 |                       | Avg. = 0.178                                 |
| Pre-spike           | 80915.1S | 5.79                  |                        |          | 1               | 0.3010                | %Recovery = 104.8%                           |

## QUALITY CONTROL DATA

| Calibration Data | Abs. True conc., µg/L |       |
|------------------|-----------------------|-------|
| Blank            | 0.000                 | 0.00  |
| Standard 1       | 0.010                 | 0.50  |
| Standard 2       | 0.026                 | 1.00  |
| Standard 3       | 0.044                 | 2.00  |
| Standard 4       | 0.119                 | 5.00  |
| Standard 5       | 0.242                 | 10.00 |

### Calibration Verifications, µg/L

|          |       |          |       |
|----------|-------|----------|-------|
| ICV = 5  | 5.08  | CCV3 = 5 | 4.83  |
| ICB = 0  | 0.02  | CCB3 = 0 | -0.03 |
| CCV1 = 5 | 4.91  | CCV4 = 5 | 4.51  |
| CCB1 = 0 | -0.10 | CCB4 = 0 | -0.03 |
| CCV2 = 5 | 4.90  | CCV5 = 5 |       |
| CCB2 = 0 | 0.00  | CCB5 = 0 |       |

# N I C K E L

## ICP ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES  
 Proj. #: 80915  
 Date: 05-Oct-98

IDL = 50 µg/L  
 Spike Conc. = 2000 µg/L

| Sample ID | FAL      | Test Sol'n<br>µg/L | Dig'te Conc<br>µg/L | FV ml | Dil'n Factor | Sample Weight g | Conc. in original Sample<br>µg/g (ppm) |
|-----------|----------|--------------------|---------------------|-------|--------------|-----------------|----------------------------------------|
| BD-BS-1   | 80915.1  | 140                | 140                 | 100   | 1            | 2.0084          | 6.971                                  |
| BD-BS-2   | 80915.2  | 157                | 157                 | 100   | 1            | 2.0053          | 7.829                                  |
| BD-BS-3   | 80915.3  | 134                | 134                 | 100   | 1            | 2.0040          | 6.687                                  |
| Lab Blank | 80915.LB | 8                  | 8                   | 100   | 1            | 2.0000          | < 2.500                                |
| Duplicate | 80915.2D | 120                | 120                 | 100   | 1            | 1.9956          | 6.013                                  |
|           |          |                    |                     |       |              | % Difference =  | 26.2%                                  |
| Pre-spike | 80915.1S | 2064               |                     |       | 1            | 1.9929          | %Recovery = 96.2%                      |

## QUALITY CONTROL DATA

| Calibration Data | Emissio | True conc., µg/L |
|------------------|---------|------------------|
| Blank            | 615     | 0                |
| Standard 1       | 692     | 100              |
| Standard 2       | 1228    | 500              |
| Standard 3       | 1857    | 1000             |
| Standard 4       | 3229    | 2000             |

### Calibration Verifications, µg/L

|            |      |             |      |
|------------|------|-------------|------|
| ICV = 1000 | 956  | CCV2 = 1000 | 1021 |
| ICB = 0    | 16   | CCB2 = 0    | 23   |
| CCV1 = 100 | 1195 | CCV3 = 1000 |      |
| CCB1 = 0   | 40   | CCB3 = 0    |      |

# PHOSPHORUS

## ICP ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES  
Proj. #: 80915  
Date: 05-Oct-98

IDL = 20 µg/L

| Sample ID | FAL      | Test Sol'n<br>µg/L | Dig'te Conc<br>µg/L | FV ml | Dil'n Factor | Sample Weight g | Conc. in original Sample<br>µg/g (ppm) |
|-----------|----------|--------------------|---------------------|-------|--------------|-----------------|----------------------------------------|
| BD-BS-1   | 80915.1  | 898                | 898                 | 100   | 1            | 2.0084          | 44.712                                 |
| BD-BS-2   | 80915.2  | 1011               | 1011                | 100   | 1            | 2.0053          | 50.416                                 |
| BD-BS-3   | 80915.3  | 871                | 871                 | 100   | 1            | 2.0040          | 43.463                                 |
| Lab Blank | 80915.LB | 8                  | 8                   | 100   | 1            | 2.0000          | < 1.000                                |
| Duplicate | 80915.2D | 940                | 940                 | 100   | 1            | 1.9956          | 47.104                                 |
|           |          |                    |                     |       |              | % Difference    | 6.8%                                   |

## QUALITY CONTROL DATA

| Calibration Data | Emissio | True conc., µg/L |
|------------------|---------|------------------|
| Blank            | 414     | 0                |
| Standard 1       | 444     | 200              |
| Standard 2       | 626     | 1000             |
| Standard 3       | 859     | 2000             |
| Standard 4       | 1590    | 5000             |

| Calibration Verifications, µg/L |      |             |
|---------------------------------|------|-------------|
| ICV = 2000                      | 2109 | CCV2 = 2000 |
| ICB = 0                         | -2   | CCB2 = 0    |
| CCV1 = 200                      | 2342 | CCV3 = 2000 |
| CCB1 = 0                        | 18   | CCB3 = 0    |

# S E L E N I U M

## GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES

Proj. #: 80915

Date: 05-Oct-98

IDL = 3 µg/L

Spike Conc. = 50 µg/L

| Sample ID<br>Client | FAL      | Test<br>Sol'n<br>µg/L | Dig'te<br>Conc<br>µg/L | FV<br>ml | Dil'n<br>Factor | Sample<br>Weight<br>g | Conc.<br>in original<br>Sample<br>µg/g (ppm) |
|---------------------|----------|-----------------------|------------------------|----------|-----------------|-----------------------|----------------------------------------------|
| BD-BS-1             | 80915.1  | 75.7                  | 75.7                   | 100      | 1               | 2.0084                | 3.77                                         |
| BD-BS-1             | 80915.2  | 69.2                  | 69.2                   | 100      | 1               | 2.0053                | 3.45                                         |
| BD-BS-1             | 80915.3  | 65.0                  | 65.0                   | 100      | 1               | 2.0040                | 3.24                                         |
| Lab Blank           | 80915.LB | 1.8                   | 1.8                    | 100      | 1               | 2.0000                | < 0.15                                       |
| Duplicate           | 80915.2D | 60.4                  | 60.4                   | 100      | 1               | 1.9956                | 3.03                                         |
| % Difference =      |          |                       |                        |          |                 |                       | 13.1%                                        |
| Post-spike          | 80915.1  | 113.6                 |                        |          | 1               |                       | %Recovery = 75.7%                            |

## QUALITY CONTROL DATA

### Calibration Data

Abs. True conc., µg/L

|            |       |     |
|------------|-------|-----|
| Blank      | 0.000 | 0   |
| Standard 1 | 0.022 | 10  |
| Standard 2 | 0.049 | 25  |
| Standard 3 | 0.098 | 50  |
| Standard 4 | 0.182 | 100 |

### Calibration Verifications, µg/L

|           |      |           |
|-----------|------|-----------|
| ICV = 50  | 48.7 | CCV2 = 50 |
| ICB = 0   | 2.9  | CCB2 = 0  |
| CCV1 = 50 | 48.4 | CCV3 = 50 |
| CCB1 = 0  | 1.8  | CCB3 = 0  |

# SILVER

## GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES

Proj. #: 80915

Date: 05-Oct-98

IDL = 0.5 µg/L

Spike Conc. = 10.0 µg/L

| Sample ID      | FAL      | Test Sol'n | Dig'te Conc | FV ml | Dil'n Factor | Sample Weight g | Conc. in original Sample µg/g (ppm) |
|----------------|----------|------------|-------------|-------|--------------|-----------------|-------------------------------------|
| BD-BS-1        | 80915.1  | 1.0        | 1.0         | 100   | 1            | 2.0084          | 0.05                                |
| BD-BS-1        | 80915.2  | 0.2        | 0.2         | 100   | 1            | 2.0053          | < 0.02                              |
| BD-BS-1        | 80915.3  | 1.1        | 1.1         | 100   | 1            | 2.0040          | 0.06                                |
| Lab Blank      | 80915.LB | -0.4       | -0.4        | 100   | 1            | 2.0000          | < 0.03                              |
| Duplicate      | 80915.2D | 1.0        | 1.0         | 100   | 1            | 1.9956          | 0.05                                |
| % Difference = |          |            |             |       |              |                 | NA                                  |
| Post-spike     | 80915.1  | 9.7        |             |       | 1            |                 | %Recovery = 86.9%                   |

## QUALITY CONTROL DATA

### Calibration Data

Abs. True conc., µg/L

|            |       |    |
|------------|-------|----|
| Blank      | 0.000 | 0  |
| Standard 1 | 0.094 | 5  |
| Standard 2 | 0.185 | 10 |
| Standard 3 | 0.356 | 20 |
| Standard 4 | 0.526 | 30 |

### Calibration Verifications, µg/L

|           |      |           |
|-----------|------|-----------|
| ICV = 20  | 20.7 | CCV2 = 20 |
| ICB = 0   | 0.0  | CCB2 = 0  |
| CCV1 = 20 | 20.8 | CCV3 = 20 |
| CCB1 = 0  | -0.1 | CCB3 = 0  |



# THALLIUM

## GFAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES  
 Proj. #: 80915  
 Date: 05-Oct-98

IDL = 3 µg/L  
 Spike Conc. = 50 µg/L

| Sample ID      | FAL      | Test Sol'n<br>µg/L | Dig'te Conc<br>µg/L | FV ml | Dil'n Factor | Sample Weight g | Conc. in original Sample<br>µg/g (ppm) |
|----------------|----------|--------------------|---------------------|-------|--------------|-----------------|----------------------------------------|
| BD-BS-1        | 80915.1  | 15.4               | 15.4                | 100   | 1            | 2.0084          | 0.77                                   |
| BD-BS-2        | 80915.2  | 17.6               | 17.6                | 100   | 1            | 2.0053          | 0.88                                   |
| BD-BS-3        | 80915.3  | 14.4               | 14.4                | 100   | 1            | 2.0040          | 0.72                                   |
| Lab Blank      | 80915.LB | 0.8                | 0.8                 | 100   | 1            | 2.0000          | < 0.15                                 |
| Duplicate      | 80915.2D | 15.3               | 15.3                | 100   | 1            | 1.9956          | 0.77                                   |
| % Difference = |          |                    |                     |       |              |                 | 13.7%                                  |
| Post-spike     | 80915.1  | 65.3               |                     |       | 1            |                 | %Recovery = 99.9%                      |

## QUALITY CONTROL DATA

### Calibration Data

Abs. True conc., µg/L

|            |       |     |
|------------|-------|-----|
| Blank      | 0.000 | 0   |
| Standard 1 | 0.019 | 10  |
| Standard 2 | 0.042 | 20  |
| Standard 3 | 0.099 | 50  |
| Standard 4 | 0.188 | 100 |

### Calibration Verifications, µg/L

|           |      |           |
|-----------|------|-----------|
| ICV = 50  | 50.5 | CCV2 = 50 |
| ICB = 0   | 1.8  | CCB2 = 0  |
| CCV1 = 50 | 49.3 | CCV3 = 50 |
| CCB1 = 0  | 0.0  | CCB3 = 0  |

# Z I N C

## FLAA ANALYSIS RUN SUMMARY AND CALCULATION WORKSHEET

Client: PES  
 Proj. #: 80915  
 Date: 05-Oct-98

IDL = 20 µg/L  
 Spike Conc. = 400 µg/L

| Sample ID<br>Client | FAL      | Test<br>Sol'n<br>µg/L | Dig'te<br>Conc<br>µg/L | FV<br>ml | Dil'n<br>Factor | Sample<br>Weight<br>g | Conc.<br>in original<br>Sample<br>µg/g (ppm) |
|---------------------|----------|-----------------------|------------------------|----------|-----------------|-----------------------|----------------------------------------------|
| BD-BS-1             | 80915.1  | 753                   | 753                    | 100      | 1               | 2.0084                | 37.493                                       |
| BD-BS-2             | 80915.2  | 724                   | 724                    | 100      | 1               | 2.0053                | 36.104                                       |
| BD-BS-3             | 80915.3  | 796                   | 796                    | 100      | 1               | 2.0040                | 39.721                                       |
| Lab Blank           | 80915.LB | 94                    | 94                     | 100      | 1               | 2.0000                | 4.700                                        |
| Duplicate           | 80915.2D | 756                   | 756                    | 100      | 1               | 1.9956                | 37.883                                       |
| % Difference =      |          |                       |                        |          |                 |                       | 4.8%                                         |

## QUALITY CONTROL DATA

### Calibration Data

|            | Abs. True conc., µg/L |      |
|------------|-----------------------|------|
| Blank      | 0.000                 | 0    |
| Standard 1 | 0.019                 | 50   |
| Standard 2 | 0.041                 | 100  |
| Standard 3 | 0.085                 | 200  |
| Standard 4 | 0.204                 | 500  |
| Standard 5 | 0.397                 | 1000 |

### Calibration Verifications, µg/L

|           |     |            |     |
|-----------|-----|------------|-----|
| ICV = 500 | 507 | CCV2 = 500 | 527 |
| ICB = 0   | 0   | CCB2 = 0   | 17  |
| CCV1 = 50 | 496 | CCV3 = 500 | 507 |
| CCB1 = 0  | -2  | CCB3 = 0   | -8  |



**Mason, UT 42040  
(513) 398-2556  
FAX: (513) 398-3342**

## Chain of Custody Record

|                              |  |                                          |  |                                  |  |                              |   |                                                                                                                                                                               |                          |
|------------------------------|--|------------------------------------------|--|----------------------------------|--|------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Project Number: S506.000     |  | Project Name: EPA Coke - Bethlehem Steel |  | Analysis Requested               |  | Comments                     |   |                                                                                                                                                                               |                          |
| Samplers: D. Schuffel        |  | Purchase Order No.: 103-99-345           |  | Metals by ICAP                   |  |                              |   |                                                                                                                                                                               |                          |
| PES Field Sample ID          |  | Date                                     |  | Time                             |  |                              |   |                                                                                                                                                                               |                          |
| BD-BS-1                      |  | 8/11/98                                  |  | Baghouse Dust - Run 1            |  | 1                            | x | If greater sensitivity is required, GFAAS will be used for the following metals: antimony, arsenic, beryllium, cadmium, chromium, lead and selenium. Mercury will be by CVAAS |                          |
| BD-BS-2                      |  | 8/12/98                                  |  | Baghouse Dust - Run 2            |  | 1                            | x |                                                                                                                                                                               |                          |
| BD-BS-3                      |  | 8/13/98                                  |  | Baghouse Dust - Run 3            |  | 1                            | x |                                                                                                                                                                               |                          |
|                              |  |                                          |  |                                  |  |                              |   |                                                                                                                                                                               |                          |
|                              |  |                                          |  |                                  |  |                              |   |                                                                                                                                                                               |                          |
|                              |  |                                          |  |                                  |  |                              |   |                                                                                                                                                                               |                          |
|                              |  |                                          |  |                                  |  |                              |   |                                                                                                                                                                               |                          |
|                              |  |                                          |  |                                  |  |                              |   |                                                                                                                                                                               |                          |
|                              |  |                                          |  |                                  |  |                              |   |                                                                                                                                                                               |                          |
|                              |  |                                          |  |                                  |  |                              |   |                                                                                                                                                                               |                          |
| Relinquished by: (Signature) |  | Date/Time                                |  | Received by: (Signature)         |  | Relinquished by: (Signature) |   | Date/Time                                                                                                                                                                     | Received by: (Signature) |
| DAG/MLL                      |  | 9/4/98                                   |  |                                  |  |                              |   |                                                                                                                                                                               |                          |
| Relinquished by: (Signature) |  | Date/Time                                |  | Received for lab by: (Signature) |  | REMARKS                      |   |                                                                                                                                                                               |                          |
| DAG/MLL                      |  | 9/4/98                                   |  | M. K. K. 9/21/98                 |  |                              |   |                                                                                                                                                                               |                          |

Page: 1 of 1

# FedEx USA Airbill

FedEx Tracking Number

806170928670

5413

From LO No.

0210

Recipient's Copy

1 From

Address 4700 DUKE DR STE 150

City MASON State OH ZIP 45040

Company PACIFIC ENVIRONMENTAL

Address 4700 DUKE DR STE 150

City MASON State OH ZIP 45040

Company PACIFIC ENVIRONMENTAL

Address 4700 DUKE DR STE 150

City MASON State OH ZIP 45040

Company PACIFIC ENVIRONMENTAL

Address 4700 DUKE DR STE 150

City MASON State OH ZIP 45040

Company PACIFIC ENVIRONMENTAL

Address 4700 DUKE DR STE 150

City MASON State OH ZIP 45040

Company PACIFIC ENVIRONMENTAL

4a Express Package Service Packages under 150 lbs. Delivery commitment may be later in some areas.

☐ FedEx Priority Overnight (Next business morning)

☐ FedEx First Overnight (Earliest next business morning delivery to select locations) (Higher rates apply.)

☐ FedEx 2Day (Second business day)

☐ FedEx Express Saver (Third business day)

☐ FedEx Extra Day Service (Fourth business day)

☐ FedEx International Economy (Second business day)

☐ FedEx International Priority (Second business day)

☐ FedEx International First (Second business day)

☐ FedEx International Economy (Second business day)

☐ FedEx International Priority (Second business day)

☐ FedEx International First (Second business day)

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☐ FedEx International First (Second business day)

☐ FedEx International Economy (Second business day)

☐ FedEx International Priority (Second business day)

☐ FedEx International First (Second business day)

☐ FedEx International Economy (Second business day)

4b Express Freight Service Packages over 150 lbs. Delivery commitment may be later in some areas.

☐ FedEx Overnight Freight (Second business day)

☐ FedEx 2Day Freight (Second business day)

☐ FedEx Express Saver Freight (Third business day)

☐ FedEx Extra Day Service Freight (Fourth business day)

☐ FedEx International Economy Freight (Second business day)

☐ FedEx International Priority Freight (Second business day)

☐ FedEx International First Freight (Second business day)

☐ FedEx International Economy Freight (Second business day)

☐ FedEx International Priority Freight (Second business day)

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☐ FedEx International Priority Freight (Second business day)

☐ FedEx International First Freight (Second business day)

☐ FedEx International Economy Freight (Second business day)

☐ FedEx International Priority Freight (Second business day)

4c Special Handling

☐ Fragile (No box must be checked)

☐ Dry Ice (No box must be checked)

☐ Live Animals (No box must be checked)

☐ Perishable (No box must be checked)

☐ High Value (No box must be checked)

☐ Hazardous (No box must be checked)

☐ Other (No box must be checked)

☐ Signature Required (No box must be checked)

☐ Restricted (No box must be checked)

☐ Insurance (No box must be checked)

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☐ Insurance (No box must be checked)

☐ Signature Required (No box must be checked)

☐ Restricted (No box must be checked)

4d Payment

☐ Sender (Account No. in Section 1 will be billed)

☐ Recipient (Enter FedEx Account No. or Credit Card No. below)

☐ Third Party (Enter FedEx Account No. or Credit Card No. below)

☐ Credit Card

☐ Cash

☐ Other (Specify)

☐ Signature Required (No box must be checked)

☐ Restricted (No box must be checked)

☐ Insurance (No box must be checked)

☐ Signature Required (No box must be checked)

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4e Release Signature

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4f Questions?

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☐ Insurance (No box must be checked)

Element File: SB.GEL  
Date: 09/30/98  
Time: 10:02  
Wavelength: 217.6  
Silt: 0.7 L  
Lamp Current: 0  
Energy: 39  
ID/Wt File: B0911.IDW  
Calib. Type: Nonlinear

Seq. No.: 00002 A/S Pos.: 0 Date: 09/30/98

Injectate 1  
Peak Area (A-S): -0.005  
Background Pk Area (A-S): 0.161  
Peak Height (A): 0.020  
Background Pk Height (A): 0.079  
Time: 10:05

Injectate 2  
Peak Area (A-S): -0.000  
Background Pk Area (A-S): 0.161  
Peak Height (A): 0.021  
Background Pk Height (A): 0.078  
Time: 10:08

Mean Conc (ug/L): -1.6  
SD: 1.70  
RSD(%): 102.96  
Auto-zero performed.

Seq. No.: 00003 A/S Pos.: 1 Date: 09/30/98

Injectate 1  
Peak Area (A-S): 0.021  
Background Pk Area (A-S): 0.183  
Peak Height (A): 0.041  
Background Pk Height (A): 0.086  
Time: 10:11

Injectate 2  
Peak Area (A-S): 0.014  
Background Pk Area (A-S): 0.182  
Peak Height (A): 0.036  
Background Pk Height (A): 0.080  
Time: 10:15

Mean Conc (ug/L): 10.5  
SD: 2.85  
RSD(%): 27.25  
Standard number 1 applied. [10.0]  
Correlation coefficient: 1.00000  
Slope: 0.0020

Seq. No.: 00004 A/S Pos.: 2 Date: 09/30/98

Injectate 1  
Peak Area (A-S): 0.085  
Background Pk Area (A-S): 0.184  
Peak Height (A): 0.127  
Background Pk Height (A): 0.082  
Time: 10:18

Injectate 2  
Peak Area (A-S): 0.085  
Background Pk Area (A-S): 0.184  
Peak Height (A): 0.126  
Background Pk Height (A): 0.078  
Time: 10:21

ean Conc (ug/L) : 43.5 SD: 0.19 RSD(%): 0.44  
standard number 2 applied. [50.0]  
correlation coefficient: 1.00000  
Slope: 0.0021

~~~~~  
b ID: 100 PPB Seq. No.: 00005 A/S Pos.: 3 Date: 09/30/97

eplicate 1
Peak Area (A-s): 0.178
ackground Pk Area (A-s): 0.184
Blank Corrected Pk Area (A-s): 0.181
concentration (ug/L) : 130.0

eplicate 2
Peak Area (A-s): 0.165
ackground Pk Area (A-s): 0.185
Blank Corrected Pk Area (A-s): 0.168
concentration (ug/L) : 116.4

ean Conc (ug/L) : 123.1 SD: 9.60 RSD(%): 7.79
-shaded calibration curve detected. 2-coef. equation used.
standard number 3 applied. [100.0]
correlation coefficient: 0.99833
Slope: 0.0020

~~~~~  
b ID: 200 PPB Seq. No.: 00006 A/S Pos.: 4 Date: 09/30/97

eplicate 1  
Peak Area (A-s): 0.304  
ackground Pk Area (A-s): 0.197  
Blank Corrected Pk Area (A-s): 0.307  
concentration (ug/L) : 208.4

eplicate 2  
Peak Area (A-s): 0.310  
ackground Pk Area (A-s): 0.192  
Blank Corrected Pk Area (A-s): 0.313  
concentration (ug/L) : 213.9

ean Conc (ug/L) : 211.1 SD: 3.90 RSD(%): 1.85  
standard number 4 applied. [200.0]  
correlation coefficient: 0.99976  
Slope: 0.0020

~~~~~ ID: 80911.FB-1 Seq. No.: 00010 A/S Pos.: 7 Date: 09/30/98 ~~~~~

Mean Conc (ug/L) : 2.2 SD: 2.32 RSD(%): 103.57

Replicate 2 Concentration (ug/L) : 0.6 Time: 11:10

Replicate 1 Concentration (ug/L) : 3.9 Time: 11:06

OTHER
REJECT

~~~~~ ID: 80911.RB-1 Seq. No.: 00009 A/S Pos.: 6 Date: 09/30/98 ~~~~~

QC sample is within range -15.49 - 15.49

Mean Conc (ug/L) : 0.5 SD: 1.22 RSD(%): 227.70

Replicate 2 Concentration (ug/L) : 1.4 Time: 11:03

Replicate 1 Concentration (ug/L) : -0.3 Time: 11:00

~~~~~ ID: ICB Seq. No.: 00008 A/S Pos.: 0 Date: 09/30/98 ~~~~~

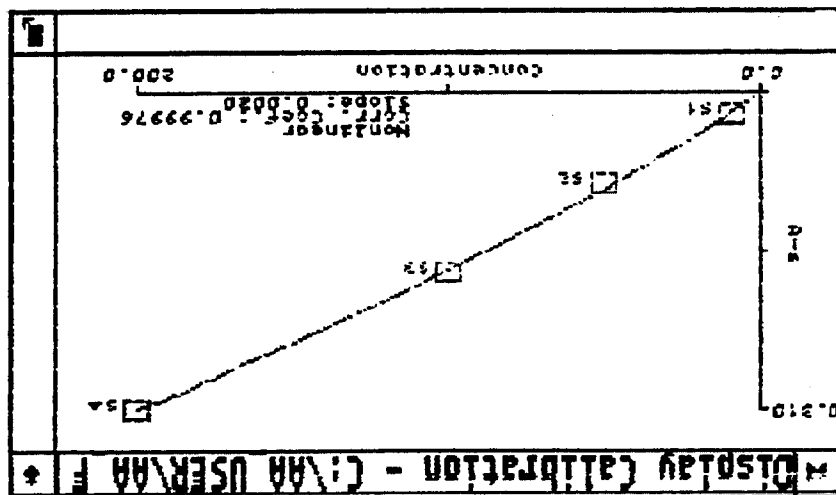
QC sample is within range 79.5 - 120.49

Mean Conc (ug/L) : 99.6 SD: 0.47 RSD(%): 0.47

Replicate 2 Concentration (ug/L) : 99.3 Time: 10:57

Replicate 1 Concentration (ug/L) : 99.9 Time: 10:53

~~~~~ ID: ICV Seq. No.: 00007 A/S Pos.: 5 Date: 09/30/98 ~~~~~



~~~~~ SB ID: 80911.11-2A x20 Seq. No.: 00031 A/S Pos.: 19 Date: 09/30/98

Replicate 1 Concentration (ug/L) : 12.9
Time: 13:52 Corrected Conc (ug/L) : 258.

Replicate 2 Concentration (ug/L) : 7.7
Time: 13:55 Corrected Conc (ug/L) : 153.

Mean Conc (ug/L) : 10.3
SD: 3.71
RSD(%) : 36.09

Corrected Conc (ug/L) : 205.

~~~~~ SB ID: 80911.12-2A x20 Seq. No.: 00032 A/S Pos.: 20 Date: 09/30/98

Replicate 1 Concentration (ug/L) : 34.6  
Time: 13:58 Corrected Conc (ug/L) : 693.

Replicate 2 Concentration (ug/L) : 39.1  
Time: 14:02 Corrected Conc (ug/L) : 781.

Mean Conc (ug/L) : 36.8  
SD: 3.13  
RSD(%) : 8.48

Corrected Conc (ug/L) : 737.

~~~~~ SB ID: 80911.13-2A x20 Seq. No.: 00033 A/S Pos.: 21 Date: 09/30/98

Replicate 1 Concentration (ug/L) : 19.5
Time: 14:05 Corrected Conc (ug/L) : 391.

Replicate 2 Concentration (ug/L) : 20.6
Time: 14:08 Corrected Conc (ug/L) : 412.

Mean Conc (ug/L) : 20.1
SD: 0.73
RSD(%) : 3.66

Corrected Conc (ug/L) : 401.

~~~~~ SB ID: CCV Seq. No.: 00034 A/S Pos.: 3 Date: 09/30/98

Replicate 1 Concentration (ug/L) : 88.7  
Time: 14:11

Replicate 2 Concentration (ug/L) : 87.2  
Time: 14:14

Mean Conc (ug/L) : 87.9  
SD: 1.02  
RSD(%) : 1.17

QC sample is within range 79.5 - 120.49

~~~~~ SB ID: CCB Seq. No.: 00035 A/S Pos.: 0 Date: 09/30/98

Replicate 1 Concentration (ug/L) : -1.3
Time: 14:18

Replicate 2 Concentration (ug/L) : 2.2
Time: 14:21

Mean Conc (ug/L) : 0.4
SD: 2.48
RSD(%) : 609.0

QC sample is within range -15.49 - 15.49

~~~~~  
5B ID: 80915.LB Seq. No.: 00036 A/S Pos.: 22 Date: 09/30/98  
~~~~~  
Replicate 1
Concentration (ug/L) : -3.2
Time: 14:24
Replicate 2
Concentration (ug/L) : 3.3
Time: 14:27
Mean Conc (ug/L) : -0.0 SD: 4.60
RSD(%): 22636.7

~~~~~  
5B ID: 80915.1X10 ~~WRDIL~~ Seq. No.: 00037 A/S Pos.: 23 Date: 09/30/98  
~~~~~  
Replicate 1
Concentration (ug/L) : 3.7
Time: 14:30
Replicate 2
Concentration (ug/L) : 9.6
Time: 14:34
Mean Conc (ug/L) : 6.6 SD: 4.20
RSD(%): 62.97
Corrected Conc (ug/L) : 96.

~~~~~  
5B ID: 80915.1X11 Seq. No.: 00038 A/S Pos.: 23 Date: 09/30/98  
~~~~~  
Replicate 1
Concentration (ug/L) : 81.2
Time: 14:37
Replicate 2
Concentration (ug/L) : 80.0
Time: 14:40
Mean Conc (ug/L) : 80.6 SD: 0.87
RSD(%): 1.08
Corrected Conc (ug/L) : 800.

~~~~~  
5B ID: 80915.15X5 Seq. No.: 00039 A/S Pos.: 24 Date: 09/30/98  
~~~~~  
Sample abs. is greater than that of the largest standard.
Time: 14:44
Concentration (ug/L) : 554.5
Corrected Conc (ug/L) : 2772.
~~~~~  
5B ID: 80915.2 Seq. No.: 00041 A/S Pos.: 25 Date: 09/30/98  
~~~~~  
Replicate 1
Concentration (ug/L) : 14.2
Time: 14:50
Replicate 2
Concentration (ug/L) : 6.9
Time: 14:53
Mean Conc (ug/L) : 10.5 SD: 5.18
RSD(%): 49.13

~~~~~ ID: B0915.2D Seq. No.: 00042 A/S Pos.: 26 Date: 09/30/98

Replicate 1 Time: 14:56

Concentration (ug/L) : 5.8

Replicate 2 Time: 15:00

Concentration (ug/L) : 3.1

Mean Conc (ug/L) : 4.5 SD: 1.93 RSD(%): 42.98

~~~~~ ID: B0915.3 Seq. No.: 00043 A/S Pos.: 27 Date: 09/30/98

Replicate 1 Time: 15:03

Concentration (ug/L) : 6.9

Replicate 2 Time: 15:06

Concentration (ug/L) : 7.7

Mean Conc (ug/L) : 7.3 SD: 0.55 RSD(%): 7.57

~~~~~ ID: CCV Seq. No.: 00044 A/S Pos.: 3 Date: 09/30/98

Replicate 1 Time: 15:09

Concentration (ug/L) : 87.7

Replicate 2 Time: 15:13

Concentration (ug/L) : 89.2

Mean Conc (ug/L) : 88.5 SD: 1.10 RSD(%): 1.24

~~~~~ JC sample is within range 79.5 - 120.49

~~~~~ ID: CCB Seq. No.: 00045 A/S Pos.: 0 Date: 09/30/98

Replicate 1 Time: 15:16

Concentration (ug/L) : 1.2

Replicate 2 Time: 15:19

Concentration (ug/L) : 2.0

Mean Conc (ug/L) : 1.6 SD: 0.59 RSD(%): 36.25

~~~~~ JC sample is within range -15.49 - 15.49

```

~~~~~
as ID: 50 PPB AS Seq. No.: 00072 A/S Pos.: 2 Date: 09/29/99
~~~~~
Standard number 1 applied. [10.00]
Correlation coefficient: 1.00000
Slope: 0.0039

Mean Conc (ug/L) : 15.63 SD: 1.930 RSD(%): 12.35

Replicate 1
Peak Area (A-S): 0.154
Background Pk Area (A-S): 0.150
Blank Corrected Pk Area (A-S): 0.153
Concentration (ug/L) : 39.66

Replicate 2
Peak Area (A-S): 0.142
Background Pk Area (A-S): 0.156
Blank Corrected Pk Area (A-S): 0.142
Concentration (ug/L) : 36.68

Time: 10:42
Peak Height (A): 0.228
Background Pk Height (A): 0.081

SD: 2.107 RSD(%): 5.52
Slope: 0.0042

as ID: 100 PPB AS Seq. No.: 00073 A/S Pos.: 3 Date: 09/29/98
~~~~~
Standard number 2 applied. [50.00]
Correlation coefficient: 1.00000
Slope: 0.0042

Mean Conc (ug/L) : 38.17 SD: 2.107 RSD(%): 5.52

Replicate 1
Peak Area (A-S): 0.291
Background Pk Area (A-S): 0.158
Blank Corrected Pk Area (A-S): 0.291
Concentration (ug/L) : 165.79

Replicate 2
Peak Area (A-S): 0.320
Background Pk Area (A-S): 0.153
Blank Corrected Pk Area (A-S): 0.319
Concentration (ug/L) : 210.73

SD: 31.776 RSD(%): 16.88
Slope: 0.0038

3-shaded calibration curve detected. 2-coef. equation used.
Standard number 3 applied. [100.00]
Correlation coefficient: 0.99089
Slope: 0.0038

as ID: 200 PPB AS Seq. No.: 00074 A/S Pos.: 4 Date: 09/29/98
~~~~~
Replicate 1
Peak Area (A-S): 0.632
Background Pk Area (A-S): 0.166
Blank Corrected Pk Area (A-S): 0.631
Concentration (ug/L) : 338.50

Replicate 2
Peak Area (A-S): 0.634
Background Pk Height (A): 0.091
Time: 10:56

```

Element File: AS.GEL
Date: 09/29/98
Data File: 80911CUN.DAT
Technique: HGA
Calib. Type: Nonlinear
ID/Wt File: 80911.IDW
Energy: 34
Wavelength: 193.7
Slit: 0.70 L
Lamp Current: 0

As ID: BLANK Seq. No.: 00071 A/S Pos.: 0 Date: 09/29/98

Replicate 1
Peak Area (A-S): 0.010
Background Pk Area (A-S): 0.133
Blank Corrected Pk Area (A-S): 0.014
Concentration (ug/L): 5.46

Replicate 2
Peak Area (A-S): 0.019
Background Pk Area (A-S): 0.123
Blank Corrected Pk Area (A-S): 0.022
Concentration (ug/L): 8.81

Mean Conc (ug/L): 7.14 SD: 2.368 RSD(%): 33.18

Auto-zero performed.

As ID: BLANK Seq. No.: 00070 A/S Pos.: 0 Date: 09/29/98

Replicate 1
Peak Area (A-S): 0.007
Background Pk Area (A-S): 0.133
Blank Corrected Pk Area (A-S): -0.007
Concentration (ug/L): -3.01

Replicate 2
Peak Area (A-S): -0.006
Background Pk Area (A-S): 0.148
Blank Corrected Pk Area (A-S): -0.021
Concentration (ug/L): -8.39

Mean Conc (ug/L): -5.70 SD: 3.805 RSD(%): 66.75

Auto-zero performed.

As ID: 10 PPB AS Seq. No.: 00071 A/S Pos.: 1 Date: 09/29/98

Replicate 1
Peak Area (A-S): 0.036
Background Pk Area (A-S): 0.137
Blank Corrected Pk Area (A-S): 0.035
Concentration (ug/L): 14.27

Replicate 2
Peak Area (A-S): 0.043
Background Pk Area (A-S): 0.136
Blank Corrected Pk Area (A-S): 0.042
Concentration (ug/L): 17.00

~~~~~  
SB ID: 80915.2D Seq. No.: 00042 A/S Pos.: 26 Date: 09/30/98  
Replicate 1 Concentration (ug/L) : 5.8  
Time: 14:56  
Replicate 2 Concentration (ug/L) : 3.1  
Time: 15:00  
Mean Conc (ug/L) : 4.5 SD: 1.93 RSD(%): 42.98  
~~~~~  
SB ID: 80915.3 Seq. No.: 00043 A/S Pos.: 27 Date: 09/30/98
Replicate 1 Concentration (ug/L) : 6.9
Time: 15:03
Replicate 2 Concentration (ug/L) : 7.7
Time: 15:06
Mean Conc (ug/L) : 7.3 SD: 0.55 RSD(%): 7.57
~~~~~  
SB ID: CCV Seq. No.: 00044 A/S Pos.: 3 Date: 09/30/98  
Replicate 1 Concentration (ug/L) : 87.7  
Time: 15:09  
Replicate 2 Concentration (ug/L) : 89.2  
Time: 15:13  
Mean Conc (ug/L) : 88.5 SD: 1.10 RSD(%): 1.24  
~~~~~  
SB ID: CCB Seq. No.: 00045 A/S Pos.: 0 Date: 09/30/98
Replicate 1 Concentration (ug/L) : 1.2
Time: 15:16
Replicate 2 Concentration (ug/L) : 2.0
Time: 15:19
Mean Conc (ug/L) : 1.6 SD: 0.59 RSD(%): 36.25
~~~~~  
3C sample is within range -15.49 - 15.49

3C sample is within range -15.49 - 15.49

~~~~~  
ID: 80915.LB Seq. No.: 00036 A/S Pos.: 22 Date: 09/30/98
~~~~~  
Replicate 1 Concentration (ug/L) : -3.2  
Time: 14:24  
Replicate 2 Concentration (ug/L) : 3.3  
Time: 14:27  
Mean Conc (ug/L) : -0.0 SD: 4.60  
RSD(%): 22636.7  
~~~~~  
ID: 80915.1X10 Seq. No.: 00037 A/S Pos.: 23 Date: 09/30/98
~~~~~  
Replicate 1 Concentration (ug/L) : 3.7  
Time: 14:30  
Replicate 2 Concentration (ug/L) : 9.6  
Time: 14:34  
Mean Conc (ug/L) : 6.6 SD: 4.20  
RSD(%): 62.97  
~~~~~  
ID: 80915.1X11 Seq. No.: 00038 A/S Pos.: 23 Date: 09/30/98
~~~~~  
Replicate 1 Concentration (ug/L) : 81.2  
Time: 14:37  
Replicate 2 Concentration (ug/L) : 80.0  
Time: 14:40  
Mean Conc (ug/L) : 80.6 SD: 0.87  
RSD(%): 1.08  
~~~~~  
ID: 80915.15X5 Seq. No.: 00039 A/S Pos.: 24 Date: 09/30/98
~~~~~  
Sample abs. is greater than that of the largest standard.  
Time: 14:44  
Concentration (ug/L) : 554.5  
Corrected Conc (ug/L) : 2772.  
~~~~~  
ID: 80915.2 Seq. No.: 00041 A/S Pos.: 25 Date: 09/30/98
~~~~~  
Replicate 1 Concentration (ug/L) : 14.2  
Time: 14:50  
Replicate 2 Concentration (ug/L) : 6.9  
Time: 14:53  
Mean Conc (ug/L) : 10.5 SD: 5.18  
RSD(%): 49.13

SB ID: 80911.11-2A x20 Seq. No.: 00031 A/S Pos.: 19 Date: 09/30/98

Replicate 1 Concentration (ug/L) : 12.9  
Time: 13:52 Corrected Conc (ug/L) : 258.

Replicate 2 Concentration (ug/L) : 7.7  
Time: 13:55 Corrected Conc (ug/L) : 153.

Mean Conc (ug/L) : 10.3  
SD: 3.71 RSD(%) : 36.09  
Corrected Conc (ug/L) : 205.

SB ID: 80911.12-2A x20 Seq. No.: 00032 A/S Pos.: 20 Date: 09/30/98

Replicate 1 Concentration (ug/L) : 34.6  
Time: 13:58 Corrected Conc (ug/L) : 693.

Replicate 2 Concentration (ug/L) : 39.1  
Time: 14:02 Corrected Conc (ug/L) : 781.

Mean Conc (ug/L) : 36.8  
SD: 3.13 RSD(%) : 8.48  
Corrected Conc (ug/L) : 737.

SB ID: 80911.13-2A x20 Seq. No.: 00033 A/S Pos.: 21 Date: 09/30/98

Replicate 1 Concentration (ug/L) : 19.5  
Time: 14:05 Corrected Conc (ug/L) : 391.

Replicate 2 Concentration (ug/L) : 20.6  
Time: 14:08 Corrected Conc (ug/L) : 412.

Mean Conc (ug/L) : 20.1  
SD: 0.73 RSD(%) : 3.66  
Corrected Conc (ug/L) : 401.

SB ID: CCV Seq. No.: 00034 A/S Pos.: 3 Date: 09/30/98

Replicate 1 Concentration (ug/L) : 88.7  
Time: 14:11

Replicate 2 Concentration (ug/L) : 87.2  
Time: 14:14

Mean Conc (ug/L) : 87.9  
SD: 1.02 RSD(%) : 1.17

QC sample is within range 79.5 - 120.49

SB ID: CCB Seq. No.: 00035 A/S Pos.: 0 Date: 09/30/98

Replicate 1 Concentration (ug/L) : -1.3  
Time: 14:18

Replicate 2 Concentration (ug/L) : 2.2  
Time: 14:21

Mean Conc (ug/L) : 0.4  
SD: 2.48 RSD(%) : 609.0

~~~~~ ID: B0911.FB-1 Seq. No.: 00010 A/S Pos.: 7 Date: 09/30/98 ~~~~~

Mean Conc (ug/L) : 2.2 SD: 2.32 RSD(%): 103.57
 Replicate 1 Concentration (ug/L) : 3.9 Time: 11:06
 Replicate 2 Concentration (ug/L) : 0.6 Time: 11:10

OTHER
 REJECT

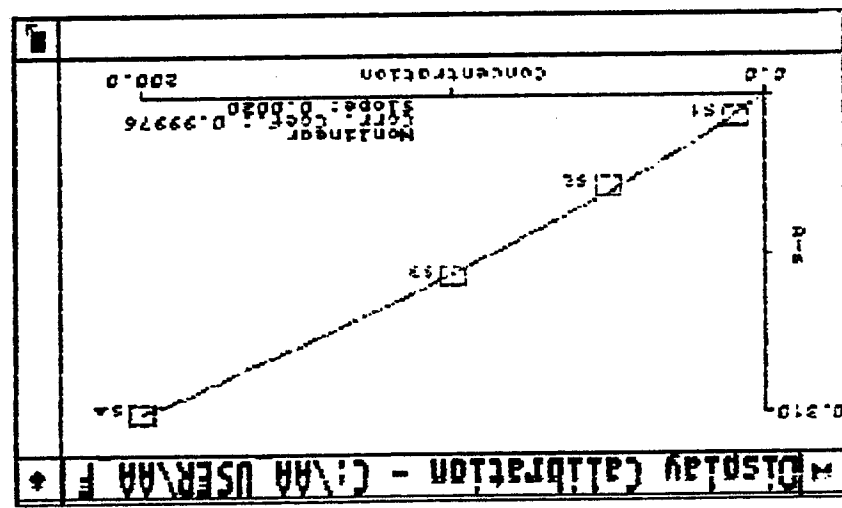
~~~~~ ID: B0911.RB-1 Seq. No.: 00009 A/S Pos.: 6 Date: 09/30/98 ~~~~~

QC sample is within range -15.49 - 15.49  
 Mean Conc (ug/L) : 0.5 SD: 1.22 RSD(%): 227.70  
 Replicate 1 Concentration (ug/L) : -0.3 Time: 11:00  
 Replicate 2 Concentration (ug/L) : 1.4 Time: 11:03

~~~~~ ID: ICB Seq. No.: 00008 A/S Pos.: 0 Date: 09/30/98 ~~~~~

QC sample is within range 79.5 - 120.49
 Mean Conc (ug/L) : 99.6 SD: 0.47 RSD(%): 0.47
 Replicate 1 Concentration (ug/L) : 99.9 Time: 10:53
 Replicate 2 Concentration (ug/L) : 99.3 Time: 10:57

~~~~~ ID: ICV Seq. No.: 00007 A/S Pos.: 5 Date: 09/30/98 ~~~~~





ean Conc (ug/L) : 43.5 SD: 0.19 RSD(%): 0.44

tandard number 2 applied. [50.0]  
orrelation coefficient: 1.00000

Slope: 0.0021

b ID: 100 PPB Seq. No.: 00005 A/S Pos.: 3 Date: 09/30/97

edicate 1  
eak Area (A-s): 0.178  
ackround Pk Area (A-s): 0.184  
ank Corrected Pk Area (A-s): 0.181  
ncentration (ug/L) : 130.0

edicate 2  
eak Area (A-s): 0.165  
ackround Pk Area (A-s): 0.185  
ank Corrected Pk Area (A-s): 0.168  
ncentration (ug/L) : 116.4

ean Conc (ug/L) : 123.1 SD: 9.60 RSD(%): 7.79

-shaded calibration curve detected. 2-coef. equation used.  
tandard number 3 applied. [100.0]  
orrelation coefficient: 0.99833

Slope: 0.0020

b ID: 200 PPB Seq. No.: 00006 A/S Pos.: 4 Date: 09/30/97

edicate 1  
eak Area (A-s): 0.304  
ackround Pk Area (A-s): 0.197  
ank Corrected Pk Area (A-s): 0.307  
ncentration (ug/L) : 208.4

edicate 2  
eak Area (A-s): 0.310  
ackround Pk Area (A-s): 0.192  
ank Corrected Pk Area (A-s): 0.313  
ncentration (ug/L) : 213.9

ean Conc (ug/L) : 211.1 SD: 3.90 RSD(%): 1.85

tandard number 4 applied. [200.0]  
orrelation coefficient: 0.99976

Slope: 0.0020

b ID: 100 PPB Seq. No.: 00006 A/S Pos.: 4 Date: 09/30/97

Element File: SB.GEL  
Date: 09/30/98  
Time: 10:02  
ID/Wt File: 80911.IDW  
Calib. Type: Nonlinear  
Wavelength: 217.6  
Silt: 0.7 L  
Lamp Current: 0  
Energy: 39

Seq. No.: 00002 A/S Pos.: 0 Date: 09/30/98

Replicate 1  
Peak Area (A-S): -0.005  
Background Pk Area (A-S): 0.161  
Blank Corrected Pk Area (A-S): -0.006  
Concentration (ug/L): -2.8

Time: 10:05  
Peak Height (A): 0.020  
Background Pk Height (A): 0.079

Replicate 2  
Peak Area (A-S): -0.000  
Background Pk Area (A-S): 0.161  
Blank Corrected Pk Area (A-S): -0.001  
Concentration (ug/L): -0.4

Time: 10:08  
Peak Height (A): 0.021  
Background Pk Height (A): 0.078

Mean Conc (ug/L): -1.6  
SD: 1.70  
RSD(%): 102.96

Auto-zero performed.

Seq. No.: 00003 A/S Pos.: 1 Date: 09/30/98

Replicate 1  
Peak Area (A-S): 0.021  
Background Pk Area (A-S): 0.183  
Blank Corrected Pk Area (A-S): 0.024  
Concentration (ug/L): 12.5

Time: 10:11  
Peak Height (A): 0.041  
Background Pk Height (A): 0.086

Replicate 2  
Peak Area (A-S): 0.014  
Background Pk Area (A-S): 0.182  
Blank Corrected Pk Area (A-S): 0.016  
Concentration (ug/L): 8.4

Time: 10:15  
Peak Height (A): 0.036  
Background Pk Height (A): 0.080

Mean Conc (ug/L): 10.5  
SD: 2.85  
RSD(%): 27.25

Standard number 1 applied. [10.0]  
Correlation coefficient: 1.00000  
Slope: 0.0020

Seq. No.: 00004 A/S Pos.: 2 Date: 09/30/98

Replicate 1  
Peak Area (A-S): 0.085  
Background Pk Area (A-S): 0.184  
Blank Corrected Pk Area (A-S): 0.088  
Concentration (ug/L): 43.7

Time: 10:18  
Peak Height (A): 0.127  
Background Pk Height (A): 0.082

Replicate 2  
Peak Area (A-S): 0.085  
Background Pk Area (A-S): 0.184  
Blank Corrected Pk Area (A-S): 0.087  
Concentration (ug/L): 43.4

Time: 10:21  
Peak Height (A): 0.126  
Background Pk Height (A): 0.078

**FedEx** USA Airbill Tracking Number **806170928670**

Form ID No. **0210**

Recipients Copy

From

Sender's Name

Company **PACIFIC ENVIRONMENTAL**

Address **4700 DUKE DR STE 150**

City **MASON** State **OH** ZIP **45040**

2 Your Internal Billing Reference Information **0625-103 SSK.000**

3 To Recipient's Name **Bill Madhwa** Phone **(919) 942-8607**

Company **Enviro-Analytical Laboratories**

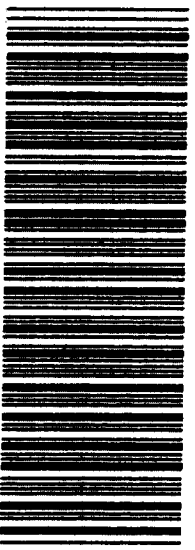
Address **3 Mount Pleasant** Dept./Floor/Suite/Room

City **Charlotte** State **NC** ZIP **27514**

For HOLD at FedEx Location check here ☐ Hold Monday ☐ Hold Saturday (Not available at all locations)

For WEEKEND Delivery check here ☐ Saturday Delivery (Available for FedEx Priority Overnight and FedEx 2Day only)

☐ NEW Sunday Delivery (Available at all locations for FedEx Express Street)



806170928670

4a Express Package Service Packages under 150 lbs. Delivery commitment may be later in some areas.

☐ FedEx Priority Overnight ☒ FedEx Standard Overnight (Next business morning)

☐ FedEx First Overnight (Earliest next business morning delivery to select locations) (Higher rates apply)

☐ FedEx 2Day (Second business day)

☐ FedEx Express Saver (Third business day)

☐ FedEx Letter (Not available. Minimum charge: One pound rate.)

4b Express Freight Service Packages over 150 lbs. Delivery commitment may be later in some areas.

☐ FedEx Overnight Freight ☐ FedEx 2Day Freight (Next business day)

☐ FedEx Express Saver Freight (Up to 3 business days)

(Call for delivery schedule. See back for detailed descriptions of freight services.)

5 Packaging ☐ FedEx Letter ☐ FedEx Pak ☐ FedEx Box ☐ FedEx Tube ☒ Other

6 Special Handling Does this shipment contain dangerous goods? ☒ No ☐ Yes (Dry Ice, UN 1845, etc.)

7 Payment ☐ Sender ☐ Recipient ☒ Third Party ☐ Credit Card ☐ Cash ☐ Check

8 Release Signature

| Total Packages | Total Weight | Total Declared Value* | Total Charges |
|----------------|--------------|-----------------------|---------------|
| 1              | 1.0          | \$ .00                | \$ .00        |

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

Questions? Call 1-800-Go-FedEx (800) 463-3339

WCS, CSR  
Fax: 1-800-1234  
Fax: 1-800-1234  
Printed in U.S.A.

321

005700634 1



**Mason, UT 42040  
(513) 398-2556  
FAX: (513) 398-3342**

[illegible]

Peak Area (A-s): 0.609  
Background Pk Area (A-s): 0.170  
Blank Corrected Pk Area (A-s): 0.609  
Concentration (ug/L ): 314.84

Peak Height (A): 0.811  
Background Pk Height (A): 0.094

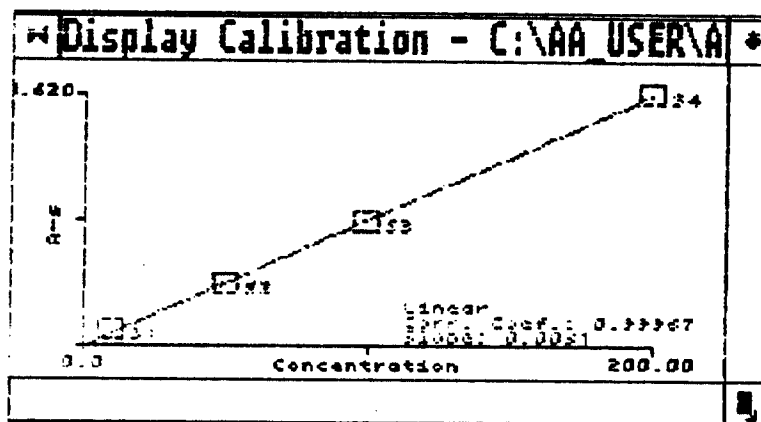
Mean Conc (ug/L ): 326.46

SD: 16.732

RSD(%): 5.12

3-shaped calibration curve detected. 2-coef. equation used.  
Standard number 4 applied. [200.00]  
Correlation coefficient: 0.99417

Slope: 0.0036



As ID: ICV

Seq. No.: 00075

A/S Pos.: 5

Date: 09/29/9

Replicate 1

Time: 11:02

Concentration (ug/L ): 110.56

Replicate 2

Time: 11:05

Concentration (ug/L ): 99.06

Mean Conc (ug/L ): 104.81

SD: 8.131

RSD(%): 7.76

QC sample is within range 79.50 - 120.49

As ID: ICB

Seq. No.: 00076

A/S Pos.: 0

Date: 09/29/9

Replicate 1

Time: 11:09

Concentration (ug/L ): 6.75

Replicate 2

Time: 11:12

Concentration (ug/L ): 4.11

Mean Conc (ug/L ): 5.43

SD: 1.867

RSD(%): 34.39

QC sample is within range -5.49 - 5.49

As ID: 80911.RB-1

Seq. No.: 00077

A/S Pos.: 6

Date: 09/29/98

Replicate 1

Time: 11:15

Concentration (ug/L ): 4.54

~~~~~  
s ID: 80911.01-2A Seq. No.: 00098 A/S Pos.: 16 Date: 09/29/9

eplicate 1 Time: 14:00
oncentration (ug/L): 87.25

eplicate 2 Time: 14:03
oncentration (ug/L): 89.73

ean Conc (ug/L): 88.49 SD: 1.753 RSD(%): 1.98
ecovery is 85.8%

~~~~~  
s ID: 80911.02-2A Seq. No.: 00099 A/S Pos.: 17 Date: 09/29/9

eplicate 1 Time: 14:06  
oncentration (ug/L ): 5.39

eplicate 2 Time: 14:09  
oncentration (ug/L ): 4.87

ean Conc (ug/L ): 5.13 SD: 0.373 RSD(%): 7.27

~~~~~  
s ID: 80911.03-2A Seq. No.: 00100 A/S Pos.: 18 Date: 09/29/9

eplicate 1 Time: 14:13
oncentration (ug/L): 1.13

eplicate 2 Time: 14:16
oncentration (ug/L): 6.45

lean Conc (ug/L): 3.79 SD: 3.761 RSD(%): 99.16

~~~~~  
s ID: 80911.11-2A Seq. No.: 00101 A/S Pos.: 19 Date: 09/29/9

eplicate 1 Time: 14:19  
oncentration (ug/L ): 5.28

eplicate 2 Time: 14:22  
oncentration (ug/L ): 9.31

lean Conc (ug/L ): 7.29 SD: 2.851 RSD(%): 39.09

~~~~~  
s ID: CCV Seq. No.: 00102 A/S Pos.: 3 Date: 09/29/9

eplicate 1 Time: 14:25
oncentration (ug/L): 97.77

eplicate 2 Time: 14:29
oncentration (ug/L): 94.01

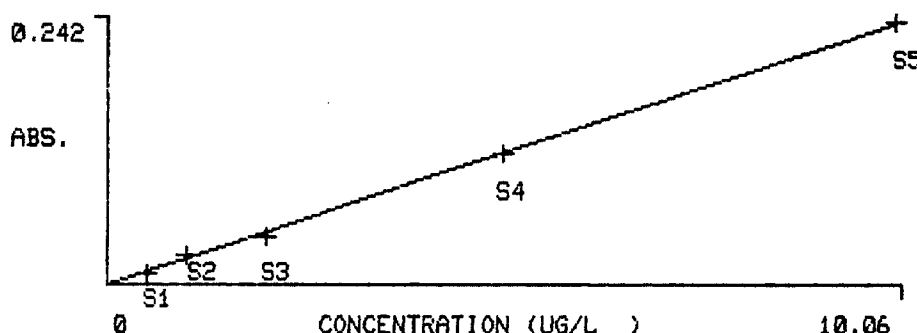
lean Conc (ug/L): 95.89 SD: 2.654 RSD(%): 2.77

IC sample is within range 79.50 - 120.49

HGA DISPLAY CALIBRATION MODE
ELEMENT: HG - PEAK HEIGHT

PRINTER: ON
BG CORR: ON
UNITS : UG/L
CH.MASS:

10.06



PEAK AREA (A-S)
AA-BG: 3.965
BG: 0.008

PEAK HEIGHT (A)
AA-BG: 0.242
BG: -0.001

HG *ICV*
MAIN: 5.08 UG/L

AA-BG BG
PA 1.877 -0.014
PH 0.122 -0.002

HG *ICB*
MAIN: 0.02 UG/L
AA-BG BG
PA -0.070 -0.035
PH 0.000 -0.004

HG *RB-2B*
MAIN: -0.10 UG/L

AA-BG BG
PA -0.031 0.008
PH -0.002 -0.002

HG
MAIN: -0.07 UG/L
AA-BG BG
PA -0.009 -0.017
PH -0.002 -0.001

HG *FB-2B*
MAIN: 0.07 UG/L

AA-BG BG
PA 0.020 0.022
PH 0.002 -0.000

HG
MAIN: 0.03 UG/L
AA-BG BG
PA 0.012 -0.034
PH 0.001 -0.003

HG *06-2B error*
MAIN: 0.00 UG/L

AA-BG BG
PA 0.010 0.008
PH 0.000 -0.002

HG *01-2B*
MAIN: 4.98 UG/L
AA-BG BG
PA 1.900 -0.000
PH 0.120 0.001

HG *01-2B*
MAIN: 4.71 UG/L

AA-BG BG
PA 1.755 -0.005
PH 0.114 -0.004

HG *01-2BS*
MAIN: 9.91 UG/L
AA-BG BG
PA 3.814 0.012
PH 0.239 -0.002

HG *02-2B*
MAIN: 11.47 UG/L

AA-BG BG
PA 4.268 -0.011
PH 0.276 -0.002

E61 Sample concentration greater than highest standard

HG *02-2B*
MAIN: 11.02 UG/L

AA-BG BG
PA 4.104 -0.007
PH 0.266 -0.002

E61 Sample concentration greater than highest standard

HG *03-2B*
MAIN: 5.21 UG/L

AA-BG BG
PA 1.906 0.018
PH 0.126 -0.002

HG
MAIN: 4.98 UG/L
AA-BG BG
PA 1.789 0.011
PH 0.120 -0.002

ml
HG 03-3B
MAIN: 0.00 UG/L PA 0.001 -0.010 PH 0.000 -0.002
AA-BG BG
HG 0.05 UG/L PA 0.046 0.004
PH 0.001 -0.001

HG 11-3B
MAIN: 0.96 UG/L PA 0.420 -0.001 PH 0.023 -0.003
AA-BG BG
HG 0.80 UG/L PA 0.390 -0.039
PH 0.019 -0.002

HG 12-3B
MAIN: 0.13 UG/L PA 0.060 0.004 PH 0.003 -0.001
AA-BG BG
HG 0.13 UG/L PA 0.073 -0.008
PH 0.003 -0.001

HG 13-3B
MAIN: 0.02 UG/L PA 0.045 0.002 PH 0.000 -0.002
AA-BG BG
HG CCV 4.83 UG/L PA 2.081 0.012
PH 0.116 -0.001

HG CCB
MAIN: -0.03 UG/L PA -0.039 0.004 PH -0.001 -0.001
AA-BG BG
HG 13-3B 0.08 UG/L PA 0.029 -0.006
PH 0.002 -0.002

HG FB-3B
MAIN: 0.03 UG/L PA -0.000 -0.034 PH 0.001 -0.003
AA-BG BG
HG 0.03 UG/L PA -0.014 -0.009
PH 0.001 -0.001

HG RB-3B
MAIN: 0.05 UG/L PA 0.022 -0.009 PH 0.001 -0.002
AA-BG BG
HG 0.07 UG/L PA 0.003 -0.006
PH 0.002 -0.000

HG #1
MAIN: 0.55 UG/L PA 0.248 -0.006 PH 0.013 -0.002
AA-BG BG
HG 10 0.65 UG/L PA 0.288 0.006
PH 0.016 -0.000

HG 1T
MAIN: 0.61 UG/L PA 0.237 -0.029 PH 0.015 -0.003
AA-BG BG
HG 15 5.79 UG/L PA 2.503 0.016
PH 0.140 -0.001

HG 2
MAIN: 0.30 UG/L PA 0.162 0.021 PH 0.007 0.001
AA-BG BG
HG 20 0.61 UG/L PA 0.228 -0.007
PH 0.015 -0.002

HG 3
MAIN: 0.50 UG/L PA 0.241 0.012 PH 0.012 -0.001
AA-BG BG
HG 30 0.56 UG/L PA 0.281 -0.020
PH 0.014 -0.002

HG CCV
MAIN: 4.51 UG/L PA 2.010 0.060 PH 0.109 0.002
AA-BG BG
HG CCB -0.03 UG/L PA -0.049 -0.036
PH -0.001 -0.004

Mod File Name: NI
arks: NI ONLY

Replicates:4

Read Delay: 65
Data File:

At file is 80911

STANDARD #1	ni231	EM	REPLICATE #1	692	1537 9/29/98
STANDARD #1	ni231	EM	REPLICATE #2	691	
STANDARD #1	ni231	EM	REPLICATE #3	689	peak-noisy
STANDARD #1	ni231	EM	REPLICATE #4	694	
	ni231	AV	691.5 SD	2.1 CV	0.3 CONC 0.1000
STANDARD #2	ni231	EM	REPLICATE #1	1185	1539 9/29/98
STANDARD #2	ni231	EM	REPLICATE #2	1200	
STANDARD #2	ni231	EM	REPLICATE #3	1240	
STANDARD #2	ni231	EM	REPLICATE #4	1286	
	ni231	AV	1227.8 SD	45.2 CV	3.7 CONC 0.5000
STANDARD #3	ni231	EM	REPLICATE #1	1855	1541 9/29/98
STANDARD #3	ni231	EM	REPLICATE #2	1823	
STANDARD #3	ni231	EM	REPLICATE #3	1873	
STANDARD #3	ni231	EM	REPLICATE #4	1878	
	ni231	AV	1857.3 SD	24.9 CV	1.3 CONC 1.0000
STANDARD #4	ni231	EM	REPLICATE #1	3069	1543 9/29/98
STANDARD #4	ni231	EM	REPLICATE #2	3181	
STANDARD #4			REPLICATE #3		

STANDARD #4			REPLICATE #4				
	ni231	EM	3604				
	ni231	AV	3228.5	SD	256.3	CV	7.9 CONC 2.0000
ANK			REPLICATE #1				1545 9/29/98
	ni231	EM	592				
ANK			REPLICATE #2				
	ni231	EM	601				
ANK			REPLICATE #3				
	ni231	EM	583				
ANK			REPLICATE #4				
	ni231	EM	685				
	ni231	AV	615.3	SD	47.1	CV	7.7 CONC 0.0000
	ni231	CC	0.9996	SLOPE	1315.8527	INT	576.6360

W			REPLICATE #1				1547 9/29/98
	ni231	EM	1833				0.9548 mg/L
W			REPLICATE #2				
	ni231	EM	1828				0.9510 mg/L
W			REPLICATE #3				
	ni231	EM	1823				0.9472 mg/L
W			REPLICATE #4				
	ni231	EM	1854				0.9707 mg/L
	ni231	AV	1834.5	EM	SD	13.6	CV 0.7
	ni231	AV	0.9559	mg/L	SD	0.0104	CV 1.08

B			REPLICATE #1				1549 9/29/98
	ni231	EM	593				0.0124 mg/L peak-noisy
B			REPLICATE #2				
	ni231	EM	600				0.0178 mg/L peak-noisy
B			REPLICATE #3				
	ni231	EM	601				0.0185 mg/L peak-noisy
B			REPLICATE #4				
	ni231	EM	597				0.0155 mg/L peak-noisy
	ni231	AV	597.8	EM	SD	3.6	CV 0.6
	ni231	AV	0.0160	mg/L	SD	0.0027	CV 17.02

3-1			REPLICATE #1				1551 9/29/98
	ni231	EM	594				0.0132 mg/L peak-noisy
3-1			REPLICATE #2				
	ni231	EM	601				0.0185 mg/L

3-2A	ni231	EM	590	REPLICATE #2	0.0102 mg/L	peak-noisy	
3-2A	ni231	EM	591	REPLICATE #3	0.0109 mg/L	peak-noisy	
3-2A	ni231	EM	609	REPLICATE #4	0.0246 mg/L	peak-noisy	
	ni231	AV	605.8	EM	SD	20.2	CV 3.3
	ni231	AV	0.0221	mg/L	SD	0.0153	CV 69.23
3V	ni231	EM	1963	REPLICATE #1	1.0536 mg/L		1633 9/29/98
3V	ni231	EM	1830	REPLICATE #2	0.9525 mg/L		
3V	ni231	EM	1987	REPLICATE #3	1.0718 mg/L		
3V	ni231	EM	1899	REPLICATE #4	1.0049 mg/L		
	ni231	AV	1919.8	EM	SD	70.4	CV 3.7
	ni231	AV	1.0207	mg/L	SD	0.0535	CV 5.24
3B	ni231	EM	609	REPLICATE #1	0.0246 mg/L	peak-noisy	1635 9/29/98
3B	ni231	EM	612	REPLICATE #2	0.0269 mg/L	peak-noisy	
3B	ni231	EM	598	REPLICATE #3	0.0162 mg/L	peak-noisy	
3B	ni231	EM	607	REPLICATE #4	0.0231 mg/L	peak-noisy	
	ni231	AV	606.5	EM	SD	6.0	CV 1.0
	ni231	AV	0.0227	mg/L	SD	0.0046	CV 20.18
915.LB	ni231	EM	603	REPLICATE #1	0.0200 mg/L	peak-noisy	1637 9/29/98
915.LB	ni231	EM	582	REPLICATE #2	0.0041 mg/L	peak-noisy	
915.LB	ni231	EM	573	REPLICATE #3	-0.0028 mg/L	peak-noisy	
915.LB	ni231	EM	592	REPLICATE #4	0.0117 mg/L	peak-noisy	
	ni231	AV	587.5	EM	SD	12.9	CV 2.2
	ni231	AV	0.0083	mg/L	SD	0.0098	CV 118.95
915.1	ni231	EM	768	REPLICATE #1	0.1454 mg/L		1639 9/29/98

ni231	EM	768	0.1454 mg/L				
			REPLICATE #3				
ni231	EM	771	0.1477 mg/L			peak-noisy	
			REPLICATE #4				
ni231	EM	737	0.1219 mg/L			peak-noisy	
ni231	AV	761.0	EM	SD	16.1	CV	2.1
ni231	AV	0.1401	mg/L	SD	0.0122	CV	8.71
			REPLICATE #1				1641 9/29/98
ni231	EM	3241	2.0248 mg/L				
			REPLICATE #2				
ni231	EM	3139	1.9473 mg/L				
			REPLICATE #3				
ni231	EM	3479	2.2057 mg/L				
			REPLICATE #4				
ni231	EM	3310	2.0773 mg/L				
ni231	AV	3292.3	EM	SD	142.9	CV	4.3
ni231	AV	2.0638	mg/L	SD	0.1086	CV	5.26
			REPLICATE #1				1643 9/29/98
ni231	EM	806	0.1743 mg/L			peak-noisy	
			REPLICATE #2				
ni231	EM	760	0.1393 mg/L				
			REPLICATE #3				
ni231	EM	788	0.1606 mg/L				
			REPLICATE #4				
ni231	EM	780	0.1545 mg/L				
ni231	AV	783.5	EM	SD	19.1	CV	2.4
ni231	AV	0.1572	mg/L	SD	0.0145	CV	9.22
			REPLICATE #1				1644 9/29/98
ni231	EM	703	0.0960 mg/L				
			REPLICATE #2				
ni231	EM	744	0.1272 mg/L			peak-noisy	
			REPLICATE #3				
ni231	EM	746	0.1287 mg/L			peak-noisy	
			REPLICATE #4				
ni231	EM	746	0.1287 mg/L			peak-noisy	
ni231	AV	734.8	EM	SD	21.2	CV	2.9
ni231	AV	0.1202	mg/L	SD	0.0161	CV	13.40
			REPLICATE #1				1646 9/29/98
ni231	EM	728	0.1150 mg/L			peak-noisy	
			REPLICATE #2				

>915.3**REPLICATE #3**

ni231 EM

765

0.1431 mg/L

peak-noisy

>915.3**REPLICATE #4**

ni231 EM

762

0.1409 mg/L

peak-noisy

ni231

AV

753.0 EM

SD

17.0 CV

2.3

ni231

AV

0.1340 mg/L

SD

0.0129 CV

9.63

>CV**REPLICATE #1**

1648 9/29/98

ni231 EM

1813

0.9396 mg/L

>CV**REPLICATE #2**

ni231 EM

1738

0.8826 mg/L

>CV**REPLICATE #3**

ni231 EM

1786

0.9191 mg/L

>CV**REPLICATE #4**

ni231 EM

1763

0.9016 mg/L

ni231

AV

1775.0 EM

SD

32.0 CV

1.8

ni231

AV

0.9107 mg/L

SD

0.0243 CV

2.67

>CB**REPLICATE #1**

1650 9/29/98

ni231 EM

587

0.0079 mg/L

peak-noisy

>CB**REPLICATE #2**

ni231 EM

632

0.0421 mg/L

peak-noisy

>CB**REPLICATE #3**

ni231 EM

584

0.0056 mg/L

peak-noisy

>CB**REPLICATE #4**

ni231 EM

583

0.0048 mg/L

peak-noisy

ni231

AV

596.5 EM

SD

23.7 CV

4.0

ni231

AV

0.0151 mg/L

SD

0.0180 CV

119.45

hod File Name: P	Replicates:3	Read Delay: 65
arks:		Data File:

Wt file is 80915

STANDARD #1	REPLICATE #1	1348 9/30/98
P214 EM	449	peak-noisy
STANDARD #1	REPLICATE #2	
P214 EM	444	peak-noisy
STANDARD #1	REPLICATE #3	
P214 EM	440	
P214 AV	444.3 SD 4.5 CV	1.0 CONC 0.2000
STANDARD #2	REPLICATE #1	1350 9/30/98
P214 EM	630	
STANDARD #2	REPLICATE #2	
P214 EM	633	
STANDARD #2	REPLICATE #3	
P214 EM	616	
P214 AV	626.3 SD 9.1 CV	1.4 CONC 1.0000
STANDARD #3	REPLICATE #1	1352 9/30/98
P214 EM	859	
STANDARD #3	REPLICATE #2	
P214 EM	867	
STANDARD #3	REPLICATE #3	
P214 EM	851	
P214 AV	859.0 SD 8.0 CV	0.9 CONC 2.0000
STANDARD #4	REPLICATE #1	1354 9/30/98
P214 EM	1563	
STANDARD #4	REPLICATE #2	
P214 EM	1594	
STANDARD #4	REPLICATE #3	
P214 EM	1614	
P214 AV	1590.3 SD 25.7 CV	1.6 CONC 5.0000
ANK	REPLICATE #1	1356 9/30/98
P214 EM	418	
ANK	REPLICATE #2	
P214 EM	406	

P214	EM	419				
P214	AV	414.3	SD	7.2	CV	1.7 CONC 0.0000
P214	CC	0.9997	SLOPE	237.0154	INT	398.1614

			REPLICATE #1	1358 9/30/98
P214	EM	863	1.9612 mg/L	

			REPLICATE #2	
P214	EM	863	1.9612 mg/L	

			REPLICATE #3	
P214	EM	968	2.4042 mg/L	

P214	AV	898.0	EM	SD	60.6	CV	6.8
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P214	AV	2.1089	mg/L	SD	0.2558	CV	12.13
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			REPLICATE #1	1400 9/30/98
P214	EM	398	-0.0007 mg/L	peak-noisy

			REPLICATE #2	
P214	EM	400	0.0078 mg/L	peak-noisy

			REPLICATE #3	
P214	EM	395	-0.0133 mg/L	peak-noisy

P214	AV	397.7	EM	SD	2.5	CV	0.6
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P214	AV	-0.0021	mg/L	SD	0.0106	CV	508.66
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			REPLICATE #1	1402 9/30/98
P214	EM	401	0.0120 mg/L	peak-noisy

			REPLICATE #2	
P214	EM	401	0.0120 mg/L	peak-noisy

			REPLICATE #3	
P214	EM	398	-0.0007 mg/L	window-edge

P214	AV	400.0	EM	SD	1.7	CV	0.4
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P214	AV	0.0078	mg/L	SD	0.0073	CV	94.21
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			REPLICATE #1	1404 9/30/98
P214	EM	608	0.8853 mg/L	peak-noisy

			REPLICATE #2	
P214	EM	612	0.9022 mg/L	

			REPLICATE #3	
P214	EM	613	0.9064 mg/L	

P214	AV	611.0	EM	SD	2.6	CV	0.4
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P214	AV	0.8980	mg/L	SD	0.0112	CV	1.24
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			REPLICATE #1	1406 9/30/98
P214	EM	646	1.0457 mg/L	peak-noisy

			REPLICATE #2	
P214	EM	635	0.9993 mg/L	peak-noisy

TEST	UNIT	CONC	0.9800 mg/L	peak-noisy
P214	AV	637.7 EM	SD	7.4 CV 1.2
P214	AV	1.0105 mg/L	SD	0.0311 CV 3.08
915.2D			REPLICATE #1	1408 9/30/98
P214	EM	603	0.8642 mg/L	
915.2D			REPLICATE #2	
P214	EM	587	0.7967 mg/L	
915.2D			REPLICATE #3	
P214	EM	673	1.1596 mg/L	peak-noisy
P214	AV	621.0 EM	SD	45.7 CV 7.4
P214	AV	0.9402 mg/L	SD	0.1930 CV 20.53
915.3			REPLICATE #1	1410 9/30/98
P214	EM	601	0.8558 mg/L	
915.3			REPLICATE #2	
P214	EM	603	0.8642 mg/L	
915.3			REPLICATE #3	
P214	EM	610	0.8938 mg/L	
P214	AV	604.7 EM	SD	4.7 CV 0.8
P214	AV	0.8713 mg/L	SD	0.0199 CV 2.29
915.3			REPLICATE #1	1412 9/30/98
P214	EM	948	2.3198 mg/L	
915.3			REPLICATE #2	
P214	EM	954	2.3452 mg/L	
915.3			REPLICATE #3	
P214	EM	958	2.3620 mg/L	
P214	AV	953.3 EM	SD	5.0 CV 0.5
P214	AV	2.3423 mg/L	SD	0.0212 CV 0.91
915.3			REPLICATE #1	1414 9/30/98
P214	EM	400	0.0078 mg/L	peak-noisy
915.3			REPLICATE #2	
P214	EM	402	0.0162 mg/L	peak-noisy
915.3			REPLICATE #3	
P214	EM	405	0.0289 mg/L	peak-noisy
P214	AV	402.3 EM	SD	2.5 CV 0.6
P214	AV	0.0176 mg/L	SD	0.0106 CV 60.32

Element File: SE.GEL
Date: 10/01/98
Data File:
Technique: HGA

Element: Se
Time: 14:44
ID/Wt File: 80911.IDW
Calib. Type: Linear

Wavelength: 196.0
Slit: 2.00 L
Lamp Current: 0
Energy: 36

Sample ID: 0 PPB

Seq. No.: 00108

A/S Pos.: 0

Date: 10/01/98

Replicate 1
Peak Area (A-s): -0.006
Background Pk Area (A-s): 0.146
Blank Corrected Pk Area (A-s): -0.006

Time: 14:44
Peak Height (A): 0.023
Background Pk Height (A): 0.094

Replicate 2
Peak Area (A-s): -0.002
Background Pk Area (A-s): 0.153
Blank Corrected Pk Area (A-s): -0.002

Time: 14:47
Peak Height (A): 0.034
Background Pk Height (A): 0.085

Mean Pk Area (A-s): -0.004

SD: 0.0028

RSD(%): 66.33

Auto-zero performed.

Sample ID: 10 PPB

Seq. No.: 00109

A/S Pos.: 1

Date: 10/01/98

Replicate 1
Peak Area (A-s): 0.018
Background Pk Area (A-s): 0.150
Blank Corrected Pk Area (A-s): 0.022

Time: 14:50
Peak Height (A): 0.041
Background Pk Height (A): 0.081

Replicate 2
Peak Area (A-s): 0.017
Background Pk Area (A-s): 0.157
Blank Corrected Pk Area (A-s): 0.021

Time: 14:53
Peak Height (A): 0.044
Background Pk Height (A): 0.086

Mean Pk Area (A-s): 0.022

SD: 0.0007

RSD(%): 3.36

Standard number 1 applied. [10.00]
Correlation coefficient: 1.00000

Slope: 0.0022

Sample ID: 25 PPB

Seq. No.: 00110

A/S Pos.: 2

Date: 10/01/98

Replicate 1
Peak Area (A-s): 0.043
Background Pk Area (A-s): 0.160
Blank Corrected Pk Area (A-s): 0.047
Concentration (ug/L): 21.66

Time: 14:57
Peak Height (A): 0.070
Background Pk Height (A): 0.081

Replicate 2
Peak Area (A-s): 0.046
Background Pk Area (A-s): 0.173
Blank Corrected Pk Area (A-s): 0.050
Concentration (ug/L): 23.09

Time: 15:00
Peak Height (A): 0.074
Background Pk Height (A): 0.083

Mean Conc (ug/L): 22.38

SD: 1.008

RSD(%): 4.51

Standard number 2 applied. [25.00]

correlation coefficient: 0.99489

Slope: 0.0020

=====

e ID: 50 PPB

Seq. No.: 00111

A/S Pos.: 3

Date: 10/01/00

replicate 1

Peak Area (A-s): 0.093

Background Pk Area (A-s): 0.177

Blank Corrected Pk Area (A-s): 0.097

Concentration (ug/L): 49.12

Time: 15:03

Peak Height (A): 0.128

Background Pk Height (A): 0.085

replicate 2

Peak Area (A-s): 0.094

Background Pk Area (A-s): 0.175

Blank Corrected Pk Area (A-s): 0.098

Concentration (ug/L): 49.52

Time: 15:07

Peak Height (A): 0.127

Background Pk Height (A): 0.080

Mean Conc (ug/L): 49.32

SD: 0.287

RSD(%): 0.58

Standard number 3 applied. [50.00]

Correlation coefficient: 0.99923

Slope: 0.0020

=====

e ID: 100 PPB

Seq. No.: 00112

A/S Pos.: 4

Date: 10/01/00

replicate 1

Peak Area (A-s): 0.187

Background Pk Area (A-s): 0.190

Blank Corrected Pk Area (A-s): 0.192

Concentration (ug/L): 97.81

Time: 15:10

Peak Height (A): 0.236

Background Pk Height (A): 0.097

replicate 2

Peak Area (A-s): 0.168

Background Pk Area (A-s): 0.197

Blank Corrected Pk Area (A-s): 0.172

Concentration (ug/L): 87.71

Time: 15:13

Peak Height (A): 0.212

Background Pk Height (A): 0.096

Mean Conc (ug/L): 92.76

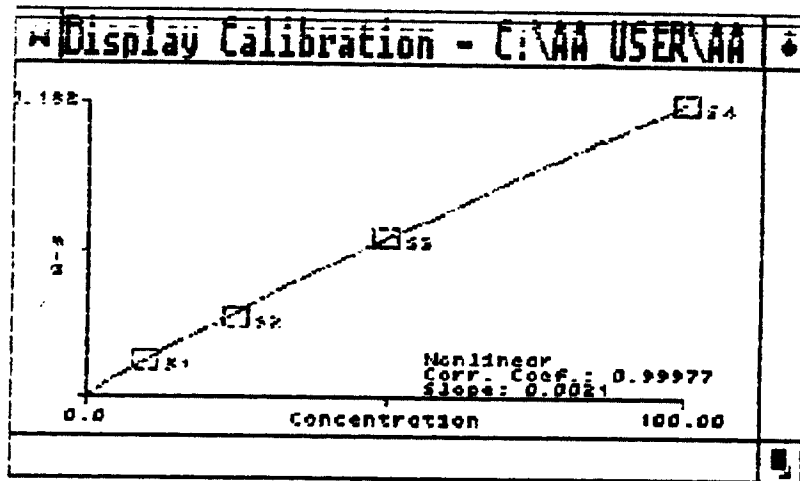
SD: 7.137

RSD(%): 7.69

Standard number 4 applied. [100.00]

Correlation coefficient: 0.99833

Slope: 0.0019



~~~~~  
Se ID: ICV Seq. No.: 00113 A/S Pos.: 5 Date: 10/01/9

Replicate 1 Time: 15:21

Concentration (ug/L ): 50.05

Replicate 2 Time: 15:24

Concentration (ug/L ): 47.30

Mean Conc (ug/L ): 48.67 SD: 1.946 RSD(%): 4.00

QC sample is within range

~~~~~  
Se ID: ICB Seq. No.: 00114 A/S Pos.: 0 Date: 10/01/9

Replicate 1 Time: 15:28

Concentration (ug/L): 4.83

Replicate 2 Time: 15:31

Concentration (ug/L): 0.95

Mean Conc (ug/L): 2.88 SD: 2.746 RSD(%): 94.91

QC sample is within range

~~~~~  
Se ID: 80915.LB Seq. No.: 00115 A/S Pos.: 22 Date: 10/01/9

Replicate 1 Time: 15:34

Concentration (ug/L ): 3.02

Replicate 2 Time: 15:37

Concentration (ug/L ): 0.60

Mean Conc (ug/L ): 1.81 SD: 1.710 RSD(%): 94.51

~~~~~  
Se ID: 80915.1 Seq. No.: 00116 A/S Pos.: 23 Date: 10/01/98

Replicate 1 Time: 15:41

oncentration (ug/L): 78.10

eplicate 2

Time: 15:44

oncentration (ug/L): 73.35

ean Conc (ug/L): 75.72

SD: 3.361

RSD(%): 4.44

~~~~~  
e ID: 80915.1

Seq. No.: 00117

A/S Pos.: 23

Date: 10/01/9

ample abs. is greater than that of the largest standard.

eplicate 1

Time: 15:47

oncentration (ug/L ): 116.21

eplicate 2

Time: 15:50

oncentration (ug/L ): 110.95

ample abs. is greater than that of the largest standard.

ean Conc (ug/L ): 113.57

SD: 3.719

RSD(%): 3.27

recovery is 75.7%

~~~~~  
e ID: 80915.2

Seq. No.: 00118

A/S Pos.: 25

Date: 10/01/9

eplicate 1

Time: 15:54

oncentration (ug/L): 67.63

eplicate 2

Time: 15:57

oncentration (ug/L): 70.86

ean Conc (ug/L): 69.24

SD: 2.286

RSD(%): 3.30

~~~~~  
e ID: 80915.2D

Seq. No.: 00119

A/S Pos.: 26

Date: 10/01/9

eplicate 1

Time: 16:00

oncentration (ug/L ): 62.25

eplicate 2

Time: 16:03

oncentration (ug/L ): 58.62

ean Conc (ug/L ): 60.43

SD: 2.565

RSD(%): 4.25

~~~~~  
e ID: 80915.3

Seq. No.: 00120

A/S Pos.: 27

Date: 10/01/9

eplicate 1

Time: 16:07

oncentration (ug/L): 63.69

eplicate 2

Time: 16:10

oncentration (ug/L): 66.33

ean Conc (ug/L): 65.01

SD: 1.868

RSD(%): 2.87

~~~~~  
e ID: CCV

Seq. No.: 00121

A/S Pos.: 3

Date: 10/01/9

eplicate 1

Time: 16:13

concentration (ug/L ): 46.68

Replicate 2  
concentration (ug/L ): 50.03

Time: 16:17

Mean Conc (ug/L ): 48.35

SD: 2.369

RSD(%): 4.90

QC sample is within range

Sample ID: CCB

Seq. No.: 00122

A/S Pos.: 0

Date: 10/01/9

Replicate 1  
Concentration (ug/L ): 3.55

Time: 16:20

Replicate 2  
Concentration (ug/L ): 0.12

Time: 16:23

Mean Conc (ug/L ): 1.82

SD: 2.424

RSD(%): 132.40

QC sample is within range

Element File: AG.GEL      Element: Ag      Wavelength: 328.1  
Date: 10/02/98      Time: 10:28      Slit: 0.7 L  
Data File:      ID/Wt File: 80911.IDW      Lamp Current: 10  
Technique: HGA      Calib. Type: Linear      Energy: 56

Seq. No.: 00002      A/S Pos.: 0      Date: 10/02/98  
ID: BLANK

Replicate 1      Time: 10:28  
Peak Area (A-s): 0.094      Peak Height (A): 0.084  
Background Pk Area (A-s): 0.026      Background Pk Height (A): 0.025  
Blank Corrected Pk Area (A-s): 0.094

Replicate 2      Time: 10:31  
Peak Area (A-s): 0.096      Peak Height (A): 0.088  
Background Pk Area (A-s): 0.045      Background Pk Height (A): 0.031  
Blank Corrected Pk Area (A-s): 0.096

Mean Pk Area (A-s): 0.095      SD: 0.0011      RSD(%): 1.16

Auto-zero performed.

Seq. No.: 00003      A/S Pos.: 0      Date: 10/02/98  
ID: BLANK

Replicate 1      Time: 10:34  
Peak Area (A-s): 0.094      Peak Height (A): 0.083  
Background Pk Area (A-s): 0.044      Background Pk Height (A): 0.029  
Blank Corrected Pk Area (A-s): -0.001

Replicate 2      Time: 10:37  
Peak Area (A-s): 0.096      Peak Height (A): 0.086  
Background Pk Area (A-s): 0.046      Background Pk Height (A): 0.030  
Blank Corrected Pk Area (A-s): 0.001

Mean Pk Area (A-s): 0.000      SD: 0.0016      RSD(%): 411.24

Auto-zero performed.

Seq. No.: 00004      A/S Pos.: 1      Date: 10/02/98  
ID: 5 PPB AG

Replicate 1      Time: 10:40  
Peak Area (A-s): 0.187      Peak Height (A): 0.163  
Background Pk Area (A-s): 0.054      Background Pk Height (A): 0.032  
Blank Corrected Pk Area (A-s): 0.092

Replicate 2      Time: 10:43  
Peak Area (A-s): 0.190      Peak Height (A): 0.166  
Background Pk Area (A-s): 0.053      Background Pk Height (A): 0.033  
Blank Corrected Pk Area (A-s): 0.095

Mean Pk Area (A-s): 0.093      SD: 0.0020      RSD(%): 2.19

Standard number 1 applied. [5.001  
Correlation coefficient: 1.00000      Slope: 0.0187      Int: 0.000

~~~~~  
Ag ID: 10 PPB AG Seq. No.: 00005 A/S Pos.: 2 Date: 10/02/9

Replicate 1 Time: 10:47
Peak Area (A-s): 0.278 Peak Height (A): 0.245
Background Pk Area (A-s): 0.057 Background Pk Height (A): 0.032
Blank Corrected Pk Area (A-s): 0.183
Concentration (ug/L): 9.77

Replicate 2 Time: 10:50
Peak Area (A-s): 0.282 Peak Height (A): 0.245
Background Pk Area (A-s): 0.060 Background Pk Height (A): 0.035
Blank Corrected Pk Area (A-s): 0.187
Concentration (ug/L): 10.01

Mean Conc (ug/L): 9.89 SD: 0.167 RSD(%): 1.69

Standard number 2 applied. [10.00]
Correlation coefficient: 0.99998 Slope: 0.0185 Int: 0.000

~~~~~  
Ag ID: 20 PPB AG Seq. No.: 00006 A/S Pos.: 3 Date: 10/02/9

Replicate 1 Time: 10:53  
Peak Area (A-s): 0.455 Peak Height (A): 0.399  
Background Pk Area (A-s): 0.071 Background Pk Height (A): 0.043  
Blank Corrected Pk Area (A-s): 0.360  
Concentration (ug/L ): 19.46

Replicate 2 Time: 10:56  
Peak Area (A-s): 0.447 Peak Height (A): 0.395  
Background Pk Area (A-s): 0.071 Background Pk Height (A): 0.043  
Blank Corrected Pk Area (A-s): 0.351  
Concentration (ug/L ): 19.00

Mean Conc (ug/L ): 19.23 SD: 0.328 RSD(%): 1.70

Standard number 3 applied. [20.00]  
Correlation coefficient: 0.99974 Slope: 0.0177 Int: 0.003

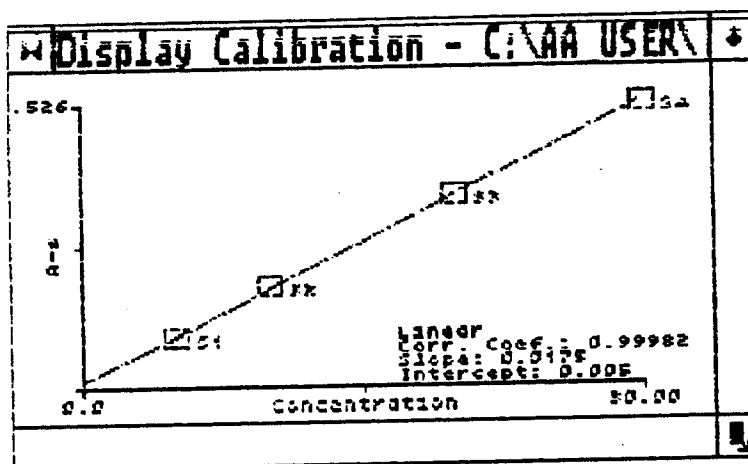
~~~~~  
Ag ID: 30 PPB AG Seq. No.: 00007 A/S Pos.: 4 Date: 10/02/9

Replicate 1 Time: 10:59
Peak Area (A-s): 0.629 Peak Height (A): 0.541
Background Pk Area (A-s): 0.084 Background Pk Height (A): 0.053
Blank Corrected Pk Area (A-s): 0.533
Concentration (ug/L): 29.88

Replicate 2 Time: 11:02
Peak Area (A-s): 0.614 Peak Height (A): 0.528
Background Pk Area (A-s): 0.085 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.519
Concentration (ug/L): 29.06

Mean Conc (ug/L): 29.47 SD: 0.575 RSD(%): 1.95

Standard number 4 applied. [30.00]
Correlation coefficient: 0.99982 Slope: 0.0175 Int: 0.005



~~~~~  
ID: ICV                      Seq. No.: 00008                      A/S Pos.: 5                      Date: 10/02/'

Time: 11:08

Concentration (ug/L ): 20.77

replicate 2 Time: 11:11

Concentration (ug/L ): 20.72

lean Conc (ug/L ): 20.74 SD: 0.037 RSD(%): 0.18

IC sample is within range 15.5 - 24.49

```
~~~~~
ID: ICB Seq. No.: 00009 A/S Pos.: 0 Date: 10/02/9
~~~~~
```

```

replicate 1                                Time: 11:14

```

Concentration (ug/L ): 0.13

Replicate 2 Time: 11:17

Concentration (ug/L): -0.04

Mean Conc (ug/L ): 0.04 SD: 0.117 RSD(%): 267.4

QC sample is within range -5.49 - 5.49

~~~~~  
ID: B0915.LB Seq. No.: 00010 A/S Pos.: 22 Date: 10/02/9

```

replicate 1                                Time: 11:21

```

Concentration (ug/L): -0.42

replicate 2 Time: 11:24

Concentration (ug/L): -0.30

Mean Conc (ug/L): -0.36 SD: 0.084 RSD(%): 23.48

30 ID: 80915.1 Seq. No.: 00011 A/S Pos.: 23 Date: 10/02/

replicate 1 Time: 11:27

Concentration (ug/L): 1.00

Replicate 2

Time: 11:30

Concentration (ug/L): 0.92

Mean Conc (ug/L): 0.96

SD: 0.056

RSD(%): 5.83

An ID: 80915.1

Seq. No.: 00012

A/S Pos.: 23

Date: 10/02/9

Replicate 1

Time: 11:33

Concentration (ug/L): 9.53

Replicate 2

Time: 11:36

Concentration (ug/L): 9.78

Mean Conc (ug/L): 9.65

SD: 0.174

RSD(%): 1.81

Recovery is 87.0%

An ID: 80915.2

Seq. No.: 00013

A/S Pos.: 25

Date: 10/02/9

Replicate 1

Time: 11:39

Concentration (ug/L): 0.49

Replicate 2

Time: 11:42

Concentration (ug/L): 0.61

Mean Conc (ug/L): 0.55

SD: 0.085

RSD(%): 15.46

An ID: 80915.2D

Seq. No.: 00014

A/S Pos.: 26

Date: 10/02/9

Replicate 1

Time: 11:46

Concentration (ug/L): 1.08

Replicate 2

Time: 11:49

Concentration (ug/L): 0.91

Mean Conc (ug/L): 1.00

SD: 0.112

RSD(%): 11.26

An ID: 80915.7

Seq. No.: 00015

A/S Pos.: 27

Date: 10/02/9

Replicate 1

Time: 11:52

Concentration (ug/L): 1.14

Replicate 2

Time: 11:55

Concentration (ug/L): 1.09

Mean Conc (ug/L): 1.11

SD: 0.032

RSD(%): 2.92

An ID: CCV

Seq. No.: 00016

A/S Pos.: 3

Date: 10/02/9

Replicate 1

Time: 11:58

Concentration (ug/L): 20.83

Replicate 2
Concentration (ug/L): 20.68
Time: 12:01
Mean Conc (ug/L): 20.76 SD: 0.106 RSD(%): 0.51
QC sample is within range 15.5 - 24.49
~~~~~  
Ag ID: CCB Seq. No.: 00017 A/S Pos.: 0 Date: 10/02/

Replicate 1  
Concentration (ug/L ): -0.07  
Time: 12:04  
Replicate 2  
Concentration (ug/L ): -0.18  
Time: 12:07  
Mean Conc (ug/L ): -0.13 SD: 0.072 RSD(%): 57.37  
QC sample is within range -5.49 - 5.49

-----  
Element File: TL.GEL                      Element: Tl                      Wavelength: 276.8  
Date: 10/01/98                      Time: 12:29                      Slit: 2.00 H  
Data File:                      ID/Wt File: 80911.IDW                      Lamp Current: 7  
Technique: HGA                      Calib. Type: Linear                      Energy: 45  
-----

~~~~~  
1 ID: BLANK Seq. No.: 00092 A/S Pos.: 0 Date: 10/01/98

Replicate 1 Time: 12:29
Peak Area (A-s): 0.001 Peak Height (A): 0.015
Background Pk Area (A-s): 0.004 Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): 0.001

Replicate 2 Time: 12:32
Peak Area (A-s): 0.000 Peak Height (A): 0.013
Background Pk Area (A-s): -0.001 Background Pk Height (A): 0.013
Blank Corrected Pk Area (A-s): 0.000

Mean Pk Area (A-s): 0.001 SD: 0.0007 RSD(%): 120.06

Auto-zero performed.

~~~~~  
1      ID: 10 PPB TL                      Seq. No.: 00093                      A/S Pos.: 1                      Date: 10/01/98

Replicate 1                      Time: 12:35  
Peak Area (A-s): 0.015                      Peak Height (A): 0.024  
Background Pk Area (A-s): 0.018                      Background Pk Height (A): 0.018  
Blank Corrected Pk Area (A-s): 0.015

Replicate 2                      Time: 12:38  
Peak Area (A-s): 0.024                      Peak Height (A): 0.025  
Background Pk Area (A-s): 0.017                      Background Pk Height (A): 0.021  
Blank Corrected Pk Area (A-s): 0.023

Mean Pk Area (A-s):              0.019                      SD: 0.0061                      RSD(%): 32.22

Standard number 1 applied. [10.00]  
Correlation coefficient: 1.00000                      Slope: 0.0019                      Int: 0.000

~~~~~  
1 ID: 20 PPB TL Seq. No.: 00094 A/S Pos.: 2 Date: 10/01/98

Replicate 1 Time: 12:41
Peak Area (A-s): 0.042 Peak Height (A): 0.043
Background Pk Area (A-s): 0.031 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.041
Concentration (ug/L): 21.54

Replicate 2 Time: 12:45
Peak Area (A-s): 0.042 Peak Height (A): 0.038
Background Pk Area (A-s): 0.032 Background Pk Height (A): 0.034
Blank Corrected Pk Area (A-s): 0.042
Concentration (ug/L): 21.85

Mean Conc (ug/L): 21.70 SD: 0.224 RSD(%): 1.03

Standard number 2 applied. [20.00]

Correlation coefficient: 0.99898

Slope: 0.0021

Int: -0.001

~~~~~  
T1 ID: 50 PPB TL

Seq. No.: 00095

A/S Pos.: 3

Date: 10/01/9

Replicate 1

Peak Area (A-s): 0.100

Background Pk Area (A-s): 0.073

Blank Corrected Pk Area (A-s): 0.100

Concentration (ug/L ): 48.58

Time: 12:48

Peak Height (A): 0.089

Background Pk Height (A): 0.063

Characteristic Mass = 22.1 pg/0.0044 A-s

Replicate 2

Peak Area (A-s): 0.098

Background Pk Area (A-s): 0.071

Blank Corrected Pk Area (A-s): 0.098

Concentration (ug/L ): 47.52

Time: 12:51

Peak Height (A): 0.088

Background Pk Height (A): 0.060

Mean Conc (ug/L ): 48.05

SD: 0.747

RSD(%): 1.55

Standard number 3 applied. [50.00]

Correlation coefficient: 0.99968

Slope: 0.0020

Int: 0.000

~~~~~  
T1 ID: 100 PPB TL

Seq. No.: 00096

A/S Pos.: 4

Date: 10/01/9

Replicate 1

Peak Area (A-s): 0.190

Background Pk Area (A-s): 0.136

Blank Corrected Pk Area (A-s): 0.189

Concentration (ug/L): 95.55

Time: 12:54

Peak Height (A): 0.172

Background Pk Height (A): 0.126

Replicate 2

Peak Area (A-s): 0.186

Background Pk Area (A-s): 0.139

Blank Corrected Pk Area (A-s): 0.186

Concentration (ug/L): 93.76

Time: 12:58

Peak Height (A): 0.160

Background Pk Height (A): 0.116

Mean Conc (ug/L): 94.65

SD: 1.267

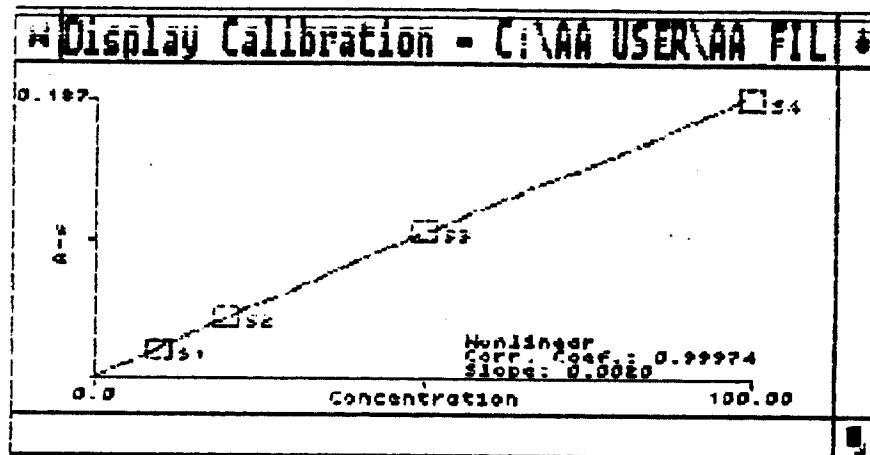
RSD(%): 1.34

Standard number 4 applied. [100.00]

Correlation coefficient: 0.99950

Slope: 0.0019

Int: 0.002



~~~~~

1 ID: ICV Seq. No.: 00097 A/S Pos.: 5 Date: 10/01/98

Replicate 1 Time: 13:03  
Concentration (ug/L ): 49.88

Replicate 2 Time: 13:06  
Concentration (ug/L ): 51.07

Mean Conc (ug/L ): 50.47 SD: 0.845 RSD(%): 1.67

C sample is within range

~~~~~

1 ID: ICB Seq. No.: 00098 A/S Pos.: 0 Date: 10/01/98

Replicate 1 Time: 13:09
Concentration (ug/L): 2.33

Replicate 2 Time: 13:12
Concentration (ug/L): 1.22

Mean Conc (ug/L): 1.78 SD: 0.786 RSD(%): 44.28

IC sample is within range

~~~~~

1 ID: 80915.LB Seq. No.: 00099 A/S Pos.: 22 Date: 10/01/98

Replicate 1 Time: 13:15  
Concentration (ug/L ): 0.66

Replicate 2 Time: 13:18  
Concentration (ug/L ): 0.83

Mean Conc (ug/L ): 0.75 SD: 0.116 RSD(%): 15.49

~~~~~

1 ID: 80915.1 Seq. No.: 00100 A/S Pos.: 23 Date: 10/01/98

Replicate 1 Time: 13:22
Concentration (ug/L): 15.19

Replicate 2
 Concentration (ug/L): 15.59
 Time: 13:25
 Mean Conc (ug/L): 15.39 SD: 0.284 RSD(%): 1.85
 ~~~~~  
 T1 ID: 80915.1 Seq. No.: 00101 A/S Pos.: 23 Date: 10/01/9

Replicate 1  
 Concentration (ug/L ): 64.93  
 Time: 13:28  
 Replicate 2  
 Concentration (ug/L ): 65.71  
 Time: 13:31  
 Mean Conc (ug/L ): 65.32 SD: 0.554 RSD(%): 0.85  
 Recovery is 99.9%

~~~~~  
 T1 ID: 80915.19 Seq. No.: 00102 A/S Pos.: 24 Date: 10/01/9

Replicate 1
 Concentration (ug/L): 18.01
 Time: 13:35
 Replicate 2
 Concentration (ug/L): 17.21
 Time: 13:38
 Mean Conc (ug/L): 17.61 SD: 0.565 RSD(%): 3.21

~~~~~  
 T1 ID: 80915.2 Seq. No.: 00103 A/S Pos.: 25 Date: 10/01/9

Replicate 1  
 Concentration (ug/L ): 17.57  
 Time: 13:41  
 Replicate 2  
 Concentration (ug/L ): 17.70  
 Time: 13:44  
 Mean Conc (ug/L ): 17.63 SD: 0.095 RSD(%): 0.54

~~~~~  
 T1 ID: 80915.2D Seq. No.: 00104 A/S Pos.: 26 Date: 10/01/9

Replicate 1
 Concentration (ug/L): 14.73
 Time: 13:48
 Replicate 2
 Concentration (ug/L): 15.85
 Time: 13:51
 Mean Conc (ug/L): 15.29 SD: 0.792 RSD(%): 5.18

~~~~~  
 T1 ID: 80915.3 Seq. No.: 00105 A/S Pos.: 27 Date: 10/01/9

Replicate 1  
 Concentration (ug/L ): 14.22  
 Time: 13:54  
 Replicate 2  
 Concentration (ug/L ): 14.63  
 Time: 13:57

ean Conc (ug/L ): 14.42 SD: 0.290 RSD(%): 2.01

~~~~~  
1 ID: CCV Seq. No.: 00106 A/S Pos.: 3 Date: 10/01/9

eplicate 1 Time: 14:01
oncentration (ug/L): 50.55

eplicate 2 Time: 14:04
oncentration (ug/L): 48.05

ean Conc (ug/L): 49.30 SD: 1.766 RSD(%): 3.58

C sample is within range

~~~~~  
1 ID: CCB Seq. No.: 00107 A/S Pos.: 0 Date: 10/01/9

eplicate 1 Time: 14:07  
oncentration (ug/L ): -1.92

eplicate 2 Time: 14:10  
oncentration (ug/L ): 1.95

ean Conc (ug/L ): 0.01 SD: 2.733 RSD(%): 20939.0

C sample is within range

AA  
MAIN: -0.001 MG/L HD-0.000      MAIN: -0.003 MG/L HD-0.001

ZN      MEAN: -0.002 MG/L      SD: 0.001 RSD: 54.4 AUTOZERO      0.000

AA  
MAIN: 0.051 MG/L HD 0.018      MAIN: 0.053 MG/L HD 0.019

ZN      MEAN: 0.052 MG/L      SD: 0.002 RSD: 3.3 1. STANDARD 0.052 MG/L

AA  
MAIN: 0.116 MG/L HD 0.041      MAIN: 0.115 MG/L HD 0.041

ZN      MEAN: 0.115 MG/L      SD: 0.001 RSD: 0.9 2. STANDARD 0.115 MG/L

AA  
MAIN: 0.235 MG/L HD 0.084      MAIN: 0.238 MG/L HD 0.085

ZN      MEAN: 0.237 MG/L      SD: 0.002 RSD: 0.7 3. STANDARD 0.235 MG/L

AA  
MAIN: 0.562 MG/L HD 0.202      MAIN: 0.573 MG/L HD 0.205

ZN      MEAN: 0.568 MG/L      SD: 0.008 RSD: 1.4 4. STANDARD 0.552 MG/L

AA  
MAIN: 1.077 MG/L HD 0.397      MAIN: 1.076 MG/L HD 0.397

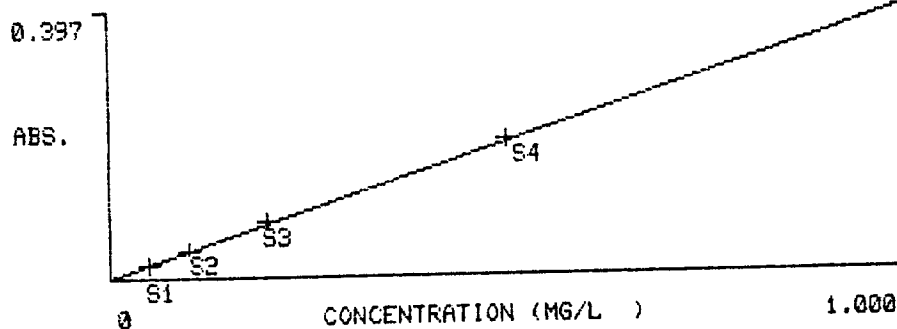
ZN      MEAN: 1.076 MG/L      SD: 0.001 RSD: 0.1 5. STANDARD 0.993 MG/L

FLAME DISPLAY CALIBRATION MODE  
ELEMENT: ZN

PRINTER: ON  
BG CORR: OFF  
UNITS : MG/L

0.993

REPL. 0 OF 2



READ  
ABS. READING  
S5 AA : 0.397

STATISTICS  
MEAN: 1.076  
SD: 0.001  
RSD(%): 0.1

C2H2: 2.5 L/MIN      OXIDANT: 8.0 L/MIN      FLAME: C2H2-AIR

AA  
MAIN: 0.004 MG/L HD 0.000      MAIN: 0.004 MG/L HD 0.000



AA  
MAIN: 0.505 MG/L HD 0.202

AA  
MAIN: 0.510 MG/L HD 0.204

ZN *ICV* MEAN: 0.507 MG/L SD: 0.003 RSD: 0.7

AA  
MAIN: 0.001 MG/L HD 0.000

AA  
MAIN: -0.000 MG/L HD -0.000

ZN *ICB* MEAN: 0.000 MG/L SD: 0.001 RSD: 99.9

AA  
MAIN: 0.119 MG/L HD 0.048

AA  
MAIN: 0.086 MG/L HD 0.035

ZN *RB-1* MEAN: 0.103 MG/L SD: 0.023 RSD: 22.7

AA  
MAIN: 0.094 MG/L HD 0.038

AA  
MAIN: 0.093 MG/L HD 0.037

ZN *RB-1* MEAN: 0.094 MG/L SD: 0.001 RSD: 0.7

AA  
MAIN: 0.136 MG/L HD 0.055

AA  
MAIN: 0.131 MG/L HD 0.052

ZN *RB-1* MEAN: 0.134 MG/L SD: 0.004 RSD: 2.7

AA  
MAIN: 0.339 MG/L HD 0.136

AA  
MAIN: 0.336 MG/L HD 0.134

ZN *01-1x40* MEAN: 0.338 MG/L SD: 0.002 RSD: 0.6

AA  
MAIN: 0.687 MG/L HD 0.274

AA  
MAIN: 0.700 MG/L HD 0.280

ZN *01-1x40S* MEAN: 0.693 MG/L SD: 0.009 RSD: 1.4

AA  
MAIN: 0.767 MG/L HD 0.307

AA  
MAIN: 0.773 MG/L HD 0.309

ZN *02-1x20* MEAN: 0.770 MG/L SD: 0.004 RSD: 0.5

AA  
MAIN: 0.780 MG/L HD 0.312

AA  
MAIN: 0.778 MG/L HD 0.311

ZN *03-1x20 DAPL* MEAN: 0.779 MG/L SD: 0.001 RSD: 0.2

AA  
MAIN: 0.956 MG/L HD 0.382

AA  
MAIN: 0.946 MG/L HD 0.378

ZN *03-1x20* MEAN: 0.951 MG/L SD: 0.007 RSD: 0.7

AA  
MAIN: 0.204 MG/L HD 0.081      MAIN: 0.233 MG/L HD 0.093

ZN 02-2A MEAN: 0.218 MG/L SD: 0.020 RSD: 9.4

AA  
MAIN: 0.218 MG/L HD 0.087      MAIN: 0.187 MG/L HD 0.075

ZN 02-2A MEAN: 0.202 MG/L SD: 0.021 RSD: 10.6

AA  
MAIN: 0.155 MG/L HD 0.062      MAIN: 0.140 MG/L HD 0.056

ZN 03-2A MEAN: 0.147 MG/L SD: 0.011 RSD: 7.3

AA  
MAIN: 0.225 MG/L HD 0.090      MAIN: 0.241 MG/L HD 0.096

ZN 11-2A MEAN: 0.233 MG/L SD: 0.011 RSD: 4.9

AA  
MAIN: 0.175 MG/L HD 0.070      MAIN: 0.177 MG/L HD 0.071

ZN 12-2A MEAN: 0.176 MG/L SD: 0.001 RSD: 0.7

AA  
MAIN: 0.204 MG/L HD 0.081      MAIN: 0.183 MG/L HD 0.073

ZN 13-2A MEAN: 0.193 MG/L SD: 0.015 RSD: 7.6

AA  
MAIN: 0.523 MG/L HD 0.209      MAIN: 0.532 MG/L HD 0.213

ZN CCV MEAN: 0.527 MG/L SD: 0.007 RSD: 1.3

AA  
MAIN: 0.017 MG/L HD 0.007      MAIN: 0.016 MG/L HD 0.007

ZN CC8 MEAN: 0.017 MG/L SD: 0.000 RSD: 2.3

AA  
MAIN: 0.014 MG/L HD 0.006      MAIN: 0.021 MG/L HD 0.008

ZN CC3 MEAN: 0.018 MG/L SD: 0.005 RSD: 26.0

AA  
MAIN: 0.010 MG/L HD 0.004      MAIN: 0.009 MG/L HD 0.000

ZN CC8 MEAN: 0.009 MG/L SD: 0.000 RSD: 1.8 AUTOZERO 0.000

80815  
MAIN: 0.101 MG/L HO 0.040

AA  
MAIN: 0.088 MG/L HO 0.035

ZN LB MEAN: 0.094 MG/L SD: 0.009 RSD: 9.9

AA  
MAIN: 0.747 MG/L HO 0.299

AA  
MAIN: 0.758 MG/L HO 0.303

ZN 1 MEAN: 0.753 MG/L SD: 0.008 RSD: 1.0

AA  
MAIN: 0.724 MG/L HO 0.289

AA  
MAIN: 0.725 MG/L HO 0.290

ZN 2 MEAN: 0.724 MG/L SD: 0.001 RSD: 0.1

AA  
MAIN: 0.772 MG/L HO 0.308

AA  
MAIN: 0.741 MG/L HO 0.296

ZN 2D MEAN: 0.756 MG/L SD: 0.003 RSD: 0.0

AA  
MAIN: 0.768 MG/L HO 0.307

AA  
MAIN: 0.825 MG/L HO 0.330

1 ZN 3 MEAN: 0.796 MG/L SD: 0.040 RSD: 5.0

AA  
MAIN: 0.511 MG/L HO 0.204

AA  
MAIN: 0.504 MG/L HO 0.201

ZN CW MEAN: 0.507 MG/L SD: 0.005 RSD: 1.0

AA  
MAIN: -0.009 MG/L HO -0.004

AA  
MAIN: -0.006 MG/L HO -0.003

ZN CC3 MEAN: -0.008 MG/L SD: 0.002 RSD: 22.4

```

~~~~~
s ID: CCB Seq. No.: 00103 A/S Pos.: 0 Date: 09/29/9
replicate 1 Time: 14:32
concentration (ug/L): 3.71

replicate 2 Time: 14:35
concentration (ug/L): 1.69

mean Conc (ug/L): 2.70 SD: 1.432 RSD(%): 53.06

C sample is within range -5.49 - 5.49
~~~~~
s      ID: 80911.I2-2A              Seq. No.: 00104      A/S Pos.: 20      Date: 09/29/9
replicate 1                          Time: 14:38
concentration (ug/L ): 17.43

replicate 2                          Time: 14:42
concentration (ug/L ): 18.54

mean Conc (ug/L ): 17.99            SD: 0.791              RSD(%): 4.40
~~~~~
s ID: 80911.I3-2A Seq. No.: 00105 A/S Pos.: 21 Date: 09/29/9
replicate 1 Time: 14:55
concentration (ug/L): 17.77

replicate 2 Time: 14:59
concentration (ug/L): 18.05

mean Conc (ug/L): 17.91 SD: 0.200 RSD(%): 1.12
~~~~~
s      ID: 80915.LB                  Seq. No.: 00106      A/S Pos.: 22      Date: 09/29/9
replicate 1                          Time: 15:02
concentration (ug/L ): 2.82

replicate 2                          Time: 15:05
concentration (ug/L ): 1.99

mean Conc (ug/L ): 2.40              SD: 0.585              RSD(%): 24.36
~~~~~
s ID: 80915.1X10 Seq. No.: 00107 A/S Pos.: 23 Date: 09/29/9
replicate 1 Time: 15:09
concentration (ug/L): 21.87 Corrected Conc (ug/L): 218.7

replicate 2 Time: 15:12
concentration (ug/L): 21.43 Corrected Conc (ug/L): 214.3

mean Conc (ug/L): 21.65 SD: 0.309 RSD(%): 1.43
Corrected Conc (ug/L): 216.5

```

As ID: 80915.1X10 Seq. No.: 00108 A/S Pos.: 23 Date: 09/29/9

Replicate 1 Time: 15:15  
Concentration (ug/L ): 111.15 Corrected Conc (ug/L ): 1111.5

Replicate 2 Time: 15:18  
Concentration (ug/L ): 112.27 Corrected Conc (ug/L ): 1122.7

Mean Conc (ug/L ): 111.71 SD: 0.792 RSD(%): 0.71  
Corrected Conc (ug/L ): 1117.1

Recovery is 90.1%

As ID: CCV Seq. No.: 00109 A/S Pos.: 3 Date: 09/29/9

Replicate 1 Time: 15:22  
Concentration (ug/L ): 97.14

Replicate 2 Time: 15:25  
Concentration (ug/L ): 98.41

Mean Conc (ug/L ): 97.77 SD: 0.897 RSD(%): 0.92

QC sample is within range 79.50 - 120.49

As ID: CCB Seq. No.: 00110 A/S Pos.: 0 Date: 09/29/9

Replicate 1 Time: 15:28  
Concentration (ug/L ): 8.61

Replicate 2 Time: 15:31  
Concentration (ug/L ): 1.78

Mean Conc (ug/L ): 5.20 SD: 4.825 RSD(%): 92.86

QC sample is within range -5.49 - 5.49

As ID: 80915.1SX5 Seq. No.: 00111 A/S Pos.: 24 Date: 09/29/9

Replicate 1 Time: 15:58  
Concentration (ug/L ): 206.84 Corrected Conc (ug/L ): 1034.2

Replicate 2 Time: 16:01  
Concentration (ug/L ): 206.78 Corrected Conc (ug/L ): 1033.9

Mean Conc (ug/L ): 206.81 SD: 0.041 RSD(%): 0.02  
Corrected Conc (ug/L ): 1034.0

As ID: 80915.2X2 Seq. No.: 00112 A/S Pos.: 25 Date: 09/29/9

Replicate 1 Time: 16:04  
Concentration (ug/L ): 112.49 Corrected Conc (ug/L ): 224.98

Replicate 2 Time: 16:08

Concentration (ug/L ): 105.60      Corrected Conc (ug/L ): 211.21  
Mean Conc (ug/L ): 109.05      SD: 4.871      RSD(%): 4.47  
Corrected Conc (ug/L ): 218.10

~~~~~  
As ID: 80915.2DX2      Seq. No.: 00113      A/S Pos.: 26      Date: 09/29/99

Replicate 1      Time: 16:11  
Concentration (ug/L ): 98.49      Corrected Conc (ug/L ): 196.97  
  
Replicate 2      Time: 16:14  
Concentration (ug/L ): 107.08      Corrected Conc (ug/L ): 214.16  
  
Mean Conc (ug/L ): 102.78      SD: 6.075      RSD(%): 5.91  
Corrected Conc (ug/L ): 205.57

~~~~~  
As ID: 80915.3X2      Seq. No.: 00114      A/S Pos.: 27      Date: 09/29/99

Replicate 1      Time: 16:18  
Concentration (ug/L ): 108.69      Corrected Conc (ug/L ): 217.37  
  
Replicate 2      Time: 16:21  
Concentration (ug/L ): 112.27      Corrected Conc (ug/L ): 224.54  
  
Mean Conc (ug/L ): 110.48      SD: 2.536      RSD(%): 2.30  
Corrected Conc (ug/L ): 220.96

~~~~~  
As ID: CCV      Seq. No.: 00115      A/S Pos.: 3      Date: 09/29/99

Replicate 1      Time: 16:24  
Concentration (ug/L ): 95.87  
  
Replicate 2      Time: 16:28  
Concentration (ug/L ): 95.68  
  
Mean Conc (ug/L ): 95.77      SD: 0.136      RSD(%): 0.14

QC sample is within range 79.50 - 120.49

~~~~~  
As ID: CCB      Seq. No.: 00116      A/S Pos.: 0      Date: 09/29/99

Replicate 1      Time: 16:31  
Concentration (ug/L ): 2.38  
  
Replicate 2      Time: 16:34  
Concentration (ug/L ): 0.63  
  
Mean Conc (ug/L ): 1.51      SD: 1.237      RSD(%): 82.11

QC sample is within range -5.49 - 5.49

hod File Name: BA  
arks: BA ONLY

Replicates:3

Read Delay: 65  
Data File:

Wt file is 80915

|            |       |    |                   |          |            |
|------------|-------|----|-------------------|----------|------------|
| TANDARD #1 | BA455 | EM | REPLICATE #1      | 1306     | 9/30/98    |
|            |       |    | 163               |          |            |
| TANDARD #1 | BA455 | EM | REPLICATE #2      | 166      | peak-noisy |
| TANDARD #1 | BA455 | EM | REPLICATE #3      | 184      |            |
|            | BA455 | AV | 171.0 SD 11.4 CV  | 6.6 CONC | 0.1000     |
| TANDARD #2 | BA455 | EM | REPLICATE #1      | 1308     | 9/30/98    |
|            |       |    | 490               |          |            |
| TANDARD #2 | BA455 | EM | REPLICATE #2      | 517      |            |
| TANDARD #2 | BA455 | EM | REPLICATE #3      | 545      |            |
|            | BA455 | AV | 517.3 SD 27.5 CV  | 5.3 CONC | 0.5000     |
| TANDARD #3 | BA455 | EM | REPLICATE #1      | 1310     | 9/30/98    |
|            |       |    | 939               |          |            |
| TANDARD #3 | BA455 | EM | REPLICATE #2      | 951      |            |
| TANDARD #3 | BA455 | EM | REPLICATE #3      | 957      |            |
|            | BA455 | AV | 949.0 SD 9.2 CV   | 1.0 CONC | 1.0000     |
| TANDARD #4 | BA455 | EM | REPLICATE #1      | 1313     | 9/30/98    |
|            |       |    | 1771              |          |            |
| TANDARD #4 | BA455 | EM | REPLICATE #2      | 1769     |            |
| TANDARD #4 | BA455 | EM | REPLICATE #3      | 1824     |            |
|            | BA455 | AV | 1788.0 SD 31.2 CV | 1.7 CONC | 2.0000     |
| LAN K      | BA455 | EM | REPLICATE #1      | 1315     | 9/30/98    |
|            |       |    | 75                |          |            |
| LAN K      | BA455 | EM | REPLICATE #2      | 78       |            |

|       |    |        |       |          |     |         |             |
|-------|----|--------|-------|----------|-----|---------|-------------|
| BA455 | EM | 75     |       |          |     |         |             |
| BA455 | AV | 76.0   | SD    | 1.7      | CV  | 2.3     | CONC 0.0000 |
| BA455 | CC | 0.9999 | SLOPE | 854.5002 | INT | 85.0266 |             |

|       |    |     |  |              |              |
|-------|----|-----|--|--------------|--------------|
| CV    |    |     |  | REPLICATE #1 | 1317 9/30/98 |
| BA455 | EM | 933 |  | 0.9924 mg/L  |              |

|       |    |     |  |              |  |
|-------|----|-----|--|--------------|--|
| CV    |    |     |  | REPLICATE #2 |  |
| BA455 | EM | 937 |  | 0.9970 mg/L  |  |

|       |    |     |  |              |  |
|-------|----|-----|--|--------------|--|
| CV    |    |     |  | REPLICATE #3 |  |
| BA455 | EM | 975 |  | 1.0415 mg/L  |  |

|       |    |       |    |    |      |    |     |
|-------|----|-------|----|----|------|----|-----|
| BA455 | AV | 948.3 | EM | SD | 23.2 | CV | 2.4 |
|-------|----|-------|----|----|------|----|-----|

|       |    |        |      |    |        |    |      |
|-------|----|--------|------|----|--------|----|------|
| BA455 | AV | 1.0103 | mg/L | SD | 0.0271 | CV | 2.69 |
|-------|----|--------|------|----|--------|----|------|

|       |    |    |  |              |              |
|-------|----|----|--|--------------|--------------|
| CB    |    |    |  | REPLICATE #1 | 1319 9/30/98 |
| BA455 | EM | 86 |  | 0.0011 mg/L  | peak-noisy   |

|       |    |    |  |              |            |
|-------|----|----|--|--------------|------------|
| CB    |    |    |  | REPLICATE #2 |            |
| BA455 | EM | 90 |  | 0.0058 mg/L  | peak-noisy |

|       |    |    |  |              |            |
|-------|----|----|--|--------------|------------|
| CB    |    |    |  | REPLICATE #3 |            |
| BA455 | EM | 82 |  | -0.0035 mg/L | peak-noisy |

|       |    |      |    |    |     |    |     |
|-------|----|------|----|----|-----|----|-----|
| BA455 | AV | 86.0 | EM | SD | 4.0 | CV | 4.7 |
|-------|----|------|----|----|-----|----|-----|

|       |    |        |      |    |        |    |        |
|-------|----|--------|------|----|--------|----|--------|
| BA455 | AV | 0.0011 | mg/L | SD | 0.0047 | CV | 410.91 |
|-------|----|--------|------|----|--------|----|--------|

|        |    |    |  |              |              |
|--------|----|----|--|--------------|--------------|
| 0915.1 |    |    |  | REPLICATE #1 | 1321 9/30/98 |
| BA455  | EM | 91 |  | 0.0070 mg/L  | peak-noisy   |

|        |    |    |  |              |            |
|--------|----|----|--|--------------|------------|
| 0915.1 |    |    |  | REPLICATE #2 |            |
| BA455  | EM | 83 |  | -0.0024 mg/L | peak-noisy |

|        |    |    |  |              |            |
|--------|----|----|--|--------------|------------|
| 0915.1 |    |    |  | REPLICATE #3 |            |
| BA455  | EM | 85 |  | -0.0000 mg/L | peak-noisy |

|       |    |      |    |    |     |    |     |
|-------|----|------|----|----|-----|----|-----|
| BA455 | AV | 86.3 | EM | SD | 4.2 | CV | 4.8 |
|-------|----|------|----|----|-----|----|-----|

|       |    |        |      |    |        |    |        |
|-------|----|--------|------|----|--------|----|--------|
| BA455 | AV | 0.0015 | mg/L | SD | 0.0049 | CV | 318.60 |
|-------|----|--------|------|----|--------|----|--------|

|        |    |     |  |              |              |
|--------|----|-----|--|--------------|--------------|
| 0915.1 |    |     |  | REPLICATE #1 | 1323 9/30/98 |
| BA455  | EM | 240 |  | 0.1814 mg/L  |              |

|        |    |     |  |              |  |
|--------|----|-----|--|--------------|--|
| 0915.1 |    |     |  | REPLICATE #2 |  |
| BA455  | EM | 244 |  | 0.1860 mg/L  |  |

|        |    |     |  |              |  |
|--------|----|-----|--|--------------|--|
| 0915.1 |    |     |  | REPLICATE #3 |  |
| BA455  | EM | 245 |  | 0.1872 mg/L  |  |

|       |    |       |    |    |     |    |     |
|-------|----|-------|----|----|-----|----|-----|
| BA455 | AV | 243.0 | EM | SD | 2.6 | CV | 1.1 |
|-------|----|-------|----|----|-----|----|-----|

|       |    |        |      |    |        |    |      |
|-------|----|--------|------|----|--------|----|------|
| BA455 | AV | 0.1849 | mg/L | SD | 0.0031 | CV | 1.67 |
|-------|----|--------|------|----|--------|----|------|

|        |    |     |  |              |              |
|--------|----|-----|--|--------------|--------------|
| 0915.2 |    |     |  | REPLICATE #1 | 1325 9/30/98 |
| BA455  | EM | 257 |  | 0.2013 mg/L  |              |

|        |  |  |  |              |  |
|--------|--|--|--|--------------|--|
| 0915.2 |  |  |  | REPLICATE #2 |  |
|--------|--|--|--|--------------|--|



0915.1

BA455

EM

274

REPLICATE #3

0.2212 mg/L

peak-noisy

BA455

AV

261.0 EM

SD

11.5 CV

4.4

BA455

AV

0.2059 mg/L

SD

0.0135 CV

6.55

0915.2

BA455

EM

244

REPLICATE #1

0.1860 mg/L

1327 9/30/98

0915.2

BA455

EM

243

REPLICATE #2

0.1849 mg/L

0915.2

BA455

EM

247

REPLICATE #3

0.1896 mg/L

BA455

AV

244.7 EM

SD

2.1 CV

0.9

BA455

AV

0.1868 mg/L

SD

0.0024 CV

1.30

0915.3

BA455

EM

234

REPLICATE #1

0.1743 mg/L

1329 9/30/98

0915.3

BA455

EM

244

REPLICATE #2

0.1860 mg/L

0915.3

BA455

EM

240

REPLICATE #3

0.1814 mg/L

BA455

AV

239.3 EM

SD

5.0 CV

2.1

BA455

AV

0.1806 mg/L

SD

0.0059 CV

3.26

0915.3

BA455

EM

229

REPLICATE #1

0.1685 mg/L

1331 9/30/98

0915.3

BA455

EM

235

REPLICATE #2

0.1755 mg/L

0915.3

BA455

EM

234

REPLICATE #3

0.1743 mg/L

BA455

AV

232.7 EM

SD

3.2 CV

1.4

BA455

AV

0.1728 mg/L

SD

0.0038 CV

2.18

0915.3

BA455

EM

945

REPLICATE #1

1.0064 mg/L

1333 9/30/98

0915.3

BA455

EM

961

REPLICATE #2

1.0251 mg/L

0915.3

BA455

EM

958

REPLICATE #3

1.0216 mg/L

BA455

AV

954.7 EM

SD

8.5 CV

0.9

BA455

AV

1.0177 mg/L

SD

0.0100 CV

0.98

AMPLE #10

BA455

EM

85

REPLICATE #1

-0.0000 mg/L

peak-noisy

AMPLE #10

BA455

EM

83

REPLICATE #2

-0.0024 mg/L

peak-noisy

|       |    |              |             |            |        |
|-------|----|--------------|-------------|------------|--------|
| BA455 | EM | 86           | 0.0011 mg/L | peak-noisy |        |
| BA455 | AV | 84.7 EM      | SD          | 1.5 CV     | 1.8    |
| BA455 | AV | -0.0004 mg/L | SD          | 0.0018 CV  | 424.44 |

-----  
Element File: BE.GEL                      Element: Be                      Wavelength: 234.9  
Date: 09/28/98                      Time: 12:28                      Slit: 0.7 L  
Data File: 80911BE.DAT                      ID/Wt File: 80911.IDW                      Lamp Current: 30  
Technique: HGA                      Calib. Type: Linear                      Energy: 66  
-----

~~~~~  
Be      ID: BLANK                      Seq. No.: 00001                      A/S Pos.: 0                      Date: 09/28/98

Replicate 1                      Time: 12:28  
Peak Area (A-s): -0.002                      Peak Height (A): 0.002  
Background Pk Area (A-s): 0.321                      Background Pk Height (A): 0.175  
Blank Corrected Pk Area (A-s): -0.002

Replicate 2                      Time: 12:31  
Peak Area (A-s): -0.002                      Peak Height (A): 0.003  
Background Pk Area (A-s): 0.167                      Background Pk Height (A): 0.103  
Blank Corrected Pk Area (A-s): -0.002

Mean Pk Area (A-s):                      -0.002                      SD: 0.0004                      RSD(%): 19.92

Auto-zero performed.

~~~~~  
Be      ID: 0.5 PPB                      Seq. No.: 00002                      A/S Pos.: 1                      Date: 09/28/98

Replicate 1                      Time: 12:34  
Peak Area (A-s): 0.009                      Peak Height (A): 0.025  
Background Pk Area (A-s): 0.124                      Background Pk Height (A): 0.134  
Blank Corrected Pk Area (A-s): 0.011

Replicate 2                      Time: 12:37  
Peak Area (A-s): 0.009                      Peak Height (A): 0.027  
Background Pk Area (A-s): 0.107                      Background Pk Height (A): 0.132  
Blank Corrected Pk Area (A-s): 0.011

Mean Pk Area (A-s):                      0.011                      SD: 0.0003                      RSD(%): 2.52

Standard number 1 applied. [0.50]  
Correlation coefficient: 1.00000                      Slope: 0.0222                      Int: 0.000

~~~~~  
Be      ID: 2 PPB                      Seq. No.: 00003                      A/S Pos.: 2                      Date: 09/28/98

Replicate 1                      Time: 12:40  
Peak Area (A-s): 0.039                      Peak Height (A): 0.118  
Background Pk Area (A-s): 0.171                      Background Pk Height (A): 0.317  
Blank Corrected Pk Area (A-s): 0.041  
Concentration (ug/L ): 1.87

Replicate 2                      Time: 12:43  
Peak Area (A-s): 0.041                      Peak Height (A): 0.120  
Background Pk Area (A-s): 0.165                      Background Pk Height (A): 0.322  
Blank Corrected Pk Area (A-s): 0.043  
Concentration (ug/L ): 1.95

Mean Conc (ug/L ):                      1.91                      SD: 0.056                      RSD(%): 2.93

Standard number 2 applied. [2.00]

Correlation coefficient: 0.99992

Slope: 0.0211

Int: 0.000

~~~~~  
ID: 5 PPB

Seq. No.: 00004

A/S Pos.: 3

Date: 09/28/7

Replicate 1

Peak Area (A-s): 0.096

Background Pk Area (A-s): 0.296

Blank Corrected Pk Area (A-s): 0.098

Concentration (ug/L ): 4.64

Time: 12:47

Peak Height (A): 0.224

Background Pk Height (A): 0.644

Replicate 2

Peak Area (A-s): 0.096

Background Pk Area (A-s): 0.295

Blank Corrected Pk Area (A-s): 0.098

Concentration (ug/L ): 4.65

Time: 12:50

Peak Height (A): 0.230

Background Pk Height (A): 0.681

Mean Conc (ug/L ): 4.64

SD: 0.011

RSD(%): 0.24

Standard number 3 applied. [5.00]

Correlation coefficient: 0.99947

Slope: 0.0195

Int: 0.001

~~~~~  
ID: 10 PPB

Seq. No.: 00005

A/S Pos.: 4

Date: 09/28/7

Replicate 1

Peak Area (A-s): 0.162

Background Pk Area (A-s): 0.515

Blank Corrected Pk Area (A-s): 0.164

Concentration (ug/L ): 8.34

Time: 12:53

Peak Height (A): 0.275

Background Pk Height (A): 1.199

Replicate 2

Peak Area (A-s): 0.172

Background Pk Area (A-s): 0.554

Blank Corrected Pk Area (A-s): 0.174

Concentration (ug/L ): 8.83

Time: 12:56

Peak Height (A): 0.259

Background Pk Height (A): 1.254

Mean Conc (ug/L ): 8.58

SD: 0.344

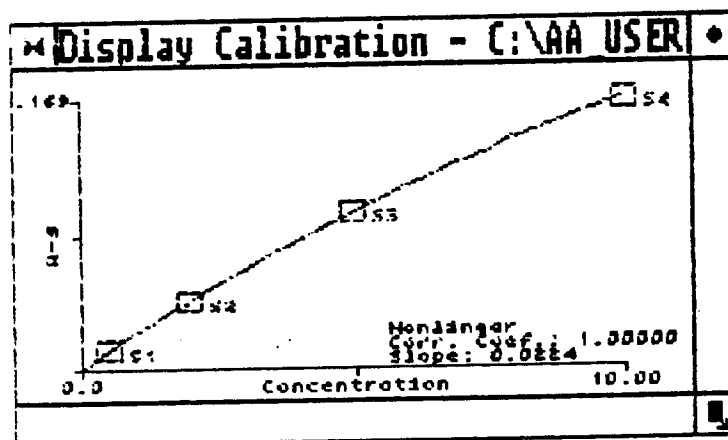
RSD(%): 4.01

Standard number 4 applied. [10.00]

Correlation coefficient: 0.99634

Slope: 0.0169

Int: 0.005



~~~~~  
Be ID: ICV Seq. No.: 00006 A/S Pos.: 5 Date: 09/28/9

Replicate 1 Time: 13:05  
Concentration (ug/L ): 5.17

Replicate 2 Time: 13:08  
Concentration (ug/L ): 5.33

Mean Conc (ug/L ): 5.25 SD: 0.109 RSD(%): 2.08

QC sample is within range 3.5 - 6.49

~~~~~  
Be ID: ICB Seq. No.: 00007 A/S Pos.: 0 Date: 09/28/9

Replicate 1 Time: 13:11  
Concentration (ug/L ): 0.04

Replicate 2 Time: 13:14  
Concentration (ug/L ): 0.03

Mean Conc (ug/L ): 0.04 SD: 0.011 RSD(%): 31.49

QC sample is within range -1.49 - 1.49

~~~~~  
Be ID: AS Position 006 Seq. No.: 00008 A/S Pos.: 6 Date: 09/28/9

Replicate 1 Time: 13:17  
Concentration (ug/L ): 0.05

~~~~~  
Be ID: 80911.RB-1 Seq. No.: 00010 A/S Pos.: 6 Date: 09/28/9

Replicate 1 Time: 13:23  
Concentration (ug/L ): -0.01

Replicate 2 Time: 13:26  
Concentration (ug/L ): 0.03

Mean Conc (ug/L ): 0.01 SD: 0.030 RSD(%): 226.63

~~~~~  
Be ID: 80911.FB-1 Seq. No.: 00011 A/S Pos.: 7 Date: 09/28/9

Replicate 1 Time: 13:29  
Concentration (ug/L ): -0.02

Replicate 2 Time: 13:32  
Concentration (ug/L ): -0.05

Mean Conc (ug/L ): -0.04 SD: 0.020 RSD(%): 54.92

~~~~~  
Be ID: 80911.D1-1 Seq. No.: 00012 A/S Pos.: 8 Date: 09/28/9

Replicate 1 Time: 13:35  
Concentration (ug/L ): 0.03

Replicate 2  
 Concentration (ug/L ): 0.04  
 Time: 15:22  
 Mean Conc (ug/L ): 0.04 SD: 0.000 RSD(%): 0.60  
 ~~~~~  
 Re ID: 80911.03-2A Seq. No.: 00028 A/S Pos.: 18 Date: 09/28/00  
 Replicate 1  
 Concentration (ug/L ): -0.00  
 Time: 15:25  
 Replicate 2  
 Concentration (ug/L ): -0.04  
 Time: 15:28  
 Mean Conc (ug/L ): -0.02 SD: 0.031 RSD(%): 134.90  
 ~~~~~  
 Re ID: 80911.11-2A Seq. No.: 00029 A/S Pos.: 19 Date: 09/28/00  
 Replicate 1  
 Concentration (ug/L ): -0.03  
 Time: 15:31  
 Replicate 2  
 Concentration (ug/L ): 0.02  
 Time: 15:35  
 Mean Conc (ug/L ): -0.00 SD: 0.030 RSD(%): 624.50  
 ~~~~~  
 Re ID: 80911.12-2A Seq. No.: 00030 A/S Pos.: 20 Date: 09/28/00  
 Replicate 1  
 Concentration (ug/L ): -0.01  
 Time: 15:38  
 Replicate 2  
 Concentration (ug/L ): 0.02  
 Time: 15:41  
 Mean Conc (ug/L ): 0.00 SD: 0.024 RSD(%): 945.69  
 ~~~~~  
 Re ID: 80911.13-2A Seq. No.: 00031 A/S Pos.: 21 Date: 09/28/00  
 Replicate 1  
 Concentration (ug/L ): -0.02  
 Time: 15:44  
 Replicate 2  
 Concentration (ug/L ): 0.01  
 Time: 15:47  
 Mean Conc (ug/L ): -0.01 SD: 0.021 RSD(%): 263.17  
 ~~~~~  
 Re ID: CCV Seq. No.: 00032 A/S Pos.: 3 Date: 09/28/00  
 Replicate 1  
 Concentration (ug/L ): 4.74  
 Time: 15:50  
 Replicate 2  
 Concentration (ug/L ): 4.95  
 Time: 15:54  
 Mean Conc (ug/L ): 4.84 SD: 0.147 RSD(%): 3.04

QC sample is within range 3.5 - 6.49

~~~~~  
Re ID: CCB Seq. No.: 00033 A/S Pos.: 0 Date: 09/28/

Replicate 1 Time: 15:57

Concentration (ug/L ): 0.03

Replicate 2 Time: 16:00

Concentration (ug/L ): -0.05

Mean Conc (ug/L ): -0.01 SD: 0.059 RSD(%): 586.8

QC sample is within range -1.49 - 1.49

~~~~~  
Re ID: 80915.LB Seq. No.: 00034 A/S Pos.: 22 Date: 09/28/

Replicate 1 Time: 16:03

Concentration (ug/L ): -0.08

Replicate 2 Time: 16:06

Concentration (ug/L ): -0.02

Mean Conc (ug/L ): -0.05 SD: 0.040 RSD(%): 84.88

~~~~~  
Re ID: 80915.1 Seq. No.: 00035 A/S Pos.: 23 Date: 09/28/

Replicate 1 Time: 16:09

Concentration (ug/L ): 5.55

Replicate 2 Time: 16:12

Concentration (ug/L ): 5.65

Mean Conc (ug/L ): 5.60 SD: 0.069 RSD(%): 1.24

~~~~~  
Re ID: 80915.1 Seq. No.: 00036 A/S Pos.: 23 Date: 09/28/

Replicate 1 Time: 16:15

Concentration (ug/L ): 6.62

Replicate 2 Time: 16:18

Concentration (ug/L ): 6.69

Mean Conc (ug/L ): 6.65 SD: 0.047 RSD(%): 0.71

Recovery is 21.1%

~~~~~  
Re ID: 80915.1S Seq. No.: 00037 A/S Pos.: 24 Date: 09/28/

Replicate 1 Time: 16:21

Concentration (ug/L ): 7.17

Replicate 2 Time: 16:25

Concentration (ug/L ): 6.94

Mean Conc (ug/L ): 7.06 SD: 0.161 RSD(%): 2.29  
 ~~~~~  
 Re ID: 80915.1X10 Seq. No.: 00038 A/S Pos.: 23 Date: 09/28/7  
 Replicate 1 Time: 16:30  
 Concentration (ug/L ): 0.99 Corrected Conc (ug/L ): 9.9  
 Replicate 2 Time: 16:33  
 Concentration (ug/L ): 0.70 Corrected Conc (ug/L ): 7.0  
 Mean Conc (ug/L ): 0.84 SD: 0.201 RSD(%): 23.83  
 Corrected Conc (ug/L ): 8.4  
 ~~~~~  
 Re ID: 80915.1X10 Seq. No.: 00039 A/S Pos.: 23 Date: 09/28/7  
 Replicate 1 Time: 16:36  
 Concentration (ug/L ): 5.50 Corrected Conc (ug/L ): 55.0  
 Replicate 2 Time: 16:39  
 Concentration (ug/L ): 5.52 Corrected Conc (ug/L ): 55.2  
 Mean Conc (ug/L ): 5.51 SD: 0.013 RSD(%): 0.24  
 Corrected Conc (ug/L ): 55.1  
 Recovery is 93.3%  
 ~~~~~  
 Re ID: 80915.2X10 Seq. No.: 00040 A/S Pos.: 25 Date: 09/28/7  
 Replicate 1 Time: 16:43  
 Concentration (ug/L ): 0.75 Corrected Conc (ug/L ): 7.5  
 Replicate 2 Time: 16:46  
 Concentration (ug/L ): 0.58 Corrected Conc (ug/L ): 5.8  
 Mean Conc (ug/L ): 0.66 SD: 0.121 RSD(%): 18.31  
 Corrected Conc (ug/L ): 6.6  
 ~~~~~  
 Re ID: 80915.2DX10 Seq. No.: 00041 A/S Pos.: 26 Date: 09/28/7  
 Replicate 1 Time: 16:49  
 Concentration (ug/L ): 0.55 Corrected Conc (ug/L ): 5.5  
 Replicate 2 Time: 16:52  
 Concentration (ug/L ): 0.57 Corrected Conc (ug/L ): 5.7  
 Mean Conc (ug/L ): 0.56 SD: 0.016 RSD(%): 2.93  
 Corrected Conc (ug/L ): 5.6  
 ~~~~~  
 Re ID: 80915.3X10 Seq. No.: 00042 A/S Pos.: 27 Date: 09/28/7  
 Replicate 1 Time: 16:55  
 Concentration (ug/L ): 0.57 Corrected Conc (ug/L ): 5.7  
 Replicate 2 Time: 16:58



Concentration (ug/L ): 0.62

Corrected Conc (ug/L ): 6.2

Mean Conc (ug/L ): 0.59

SD: 0.033

RSD(%): 5.63

Corrected Conc (ug/L ): 5.9

Re ID: CCV

Seq. No.: 00043

A/S Pos.: 3

Date: 09/28/9

Replicate 1

Time: 17:01

Concentration (ug/L ): 4.88

Replicate 2

Time: 17:04

Concentration (ug/L ): 5.01

Mean Conc (ug/L ): 4.94

SD: 0.091

RSD(%): 1.84

QC sample is within range 3.5 - 6.49

Re ID: CCB

Seq. No.: 00044

A/S Pos.: 0

Date: 09/28/9

Replicate 1

Time: 17:07

Concentration (ug/L ): 0.06

Replicate 2

Time: 17:10

Concentration (ug/L ): -0.02

Mean Conc (ug/L ): 0.02

SD: 0.053

RSD(%): 250.46

QC sample is within range -1.49 - 1.49

AA  
MAIN: -0.002 MG/L HD-0.001

AA  
MAIN: -0.001 MG/L HD-0.001

CD MEAN: -0.002 MG/L SD: 0.001 RSD: 11.4 AUTOZERO 0.000

AA  
MAIN: 0.053 MG/L HD 0.020

AA  
MAIN: 0.055 MG/L HD 0.021

CD MEAN: 0.054 MG/L SD: 0.001 RSD: 2.1 1.STANDARD 0.054 MG/L

AA  
MAIN: 0.107 MG/L HD 0.040

AA  
MAIN: 0.105 MG/L HD 0.039

CD MEAN: 0.106 MG/L SD: 0.002 RSD: 1.8 2.STANDARD 0.106 MG/L

AA  
MAIN: 0.213 MG/L HD 0.080

AA  
MAIN: 0.212 MG/L HD 0.080

CD MEAN: 0.213 MG/L SD: 0.001 RSD: 0.3 3.STANDARD 0.212 MG/L

AA  
MAIN: 0.518 MG/L HD 0.195

AA  
MAIN: 0.506 MG/L HD 0.191

CD MEAN: 0.512 MG/L SD: 0.009 RSD: 1.7 4.STANDARD 0.510 MG/L

AA  
MAIN: 0.955 MG/L HD 0.362

AA  
MAIN: 0.943 MG/L HD 0.357

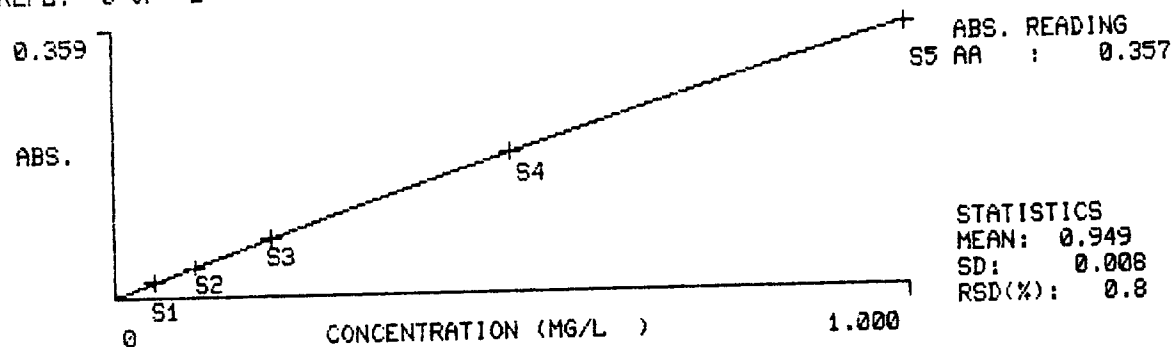
CD MEAN: 0.949 MG/L SD: 0.008 RSD: 0.8 5.STANDARD 0.980 MG/L

FLAME DISPLAY CALIBRATION MODE  
ELEMENT: CD

PRINTER: ON  
BG CORR: OFF  
UNITS : MG/L

0.980

REPL. 0 OF 2



C2H2: 2.5 L/MIN

OXIDANT: 8.0 L/MIN

FLAME: C2H2-AIR

AA  
MAIN: -0.000 MG/L HD-0.000

AA  
MAIN: 0.002 MG/L HD 0.001

AA  
MAIN: 0.473 MG/L HD 0.182

AA  
MAIN: 0.480 MG/L HD 0.184

CD *SCV* MEAN: 0.476 MG/L SD: 0.004 RSD: 0.9

AA  
MAIN: 0.002 MG/L HD 0.001

AA  
MAIN: 0.001 MG/L HD 0.001

CD *SCB* MEAN: 0.002 MG/L SD: 0.001 RSD: 39.5

AA  
MAIN: 0.014 MG/L HD 0.006

AA  
MAIN: 0.013 MG/L HD 0.005

CD *RS-1* MEAN: 0.014 MG/L SD: 0.001 RSD: 4.0

AA  
MAIN: 0.011 MG/L HD 0.005

AA  
MAIN: 0.012 MG/L HD 0.005

CD *FB-1* MEAN: 0.012 MG/L SD: 0.001 RSD: 6.9

AA  
MAIN: 0.297 MG/L HD 0.117

AA  
MAIN: 0.300 MG/L HD 0.118

CD *61-1* MEAN: 0.298 MG/L SD: 0.002 RSD: 0.8

AA  
MAIN: 0.713 MG/L HD 0.266

AA  
MAIN: 0.693 MG/L HD 0.259

CD *61-1S* MEAN: 0.703 MG/L SD: 0.014 RSD: 2.0  
*(+400)*

AA  
MAIN: 0.343 MG/L HD 0.134

AA  
MAIN: 0.353 MG/L HD 0.138

CD *02-1* MEAN: 0.348 MG/L SD: 0.007 RSD: 2.0

AA  
MAIN: 0.333 MG/L HD 0.130

AA  
MAIN: 0.341 MG/L HD 0.133

CD *02D* MEAN: 0.337 MG/L SD: 0.006 RSD: 1.8

AA  
MAIN: 0.424 MG/L HD 0.164

AA  
MAIN: 0.432 MG/L HD 0.167

CD *03-1* MEAN: 0.428 MG/L SD: 0.006 RSD: 1.3

AA  
MAIN: 0.353 MG/L HD 0.138

AA  
MAIN: 0.350 MG/L HD 0.137

CD *IL-1x100* MEAN: 0.352 MG/L SD: 0.002 RSD: 0.6

AA  
MAIN: 0.019 MG/L HD 0.008      MAIN: 0.021 MG/L HD 0.009

CD 63-2A MEAN: 0.020 MG/L      SD: 0.001 RSD: 6.9

AA  
MAIN: 0.026 MG/L HD 0.010      MAIN: 0.025 MG/L HD 0.010

CD 11-2A MEAN: 0.026 MG/L      SD: 0.000 RSD: 1.3

AA  
MAIN: 0.025 MG/L HD 0.010      MAIN: 0.026 MG/L HD 0.011

CD 12-2A MEAN: 0.026 MG/L      SD: 0.000 RSD: 1.9

AA  
MAIN: 0.022 MG/L HD 0.009      MAIN: 0.023 MG/L HD 0.009

CD 13-2A MEAN: 0.022 MG/L      SD: 0.001 RSD: 2.8

AA  
MAIN: 0.503 MG/L HD 0.192      MAIN: 0.494 MG/L HD 0.189

CD ccV MEAN: 0.498 MG/L      SD: 0.006 RSD: 1.2

AA  
MAIN: 0.001 MG/L HD 0.000      MAIN: -0.000 MG/L HD -0.000

CD ccB MEAN: 0.000 MG/L      SD: 0.001 RSD: 99.9

315 AA  
MAIN: 0.016 MG/L HD 0.007      MAIN: 0.014 MG/L HD 0.006

CD LB MEAN: 0.015 MG/L      SD: 0.002 RSD: 11.4

AA  
MAIN: 0.032 MG/L HD 0.013      MAIN: 0.034 MG/L HD 0.014

CD 1 MEAN: 0.033 MG/L      SD: 0.001 RSD: 3.1

AA  
MAIN: 0.403 MG/L HD 0.156      MAIN: 0.414 MG/L HD 0.160

CD 1S MEAN: 0.408 MG/L      SD: 0.007 RSD: 1.8

AA  
MAIN: 0.029 MG/L HD 0.012      MAIN: 0.030 MG/L HD 0.012

CD 2 MEAN: 0.030 MG/L      SD: 0.001 RSD: 2.7

MAIN: 0.014 MG/L HD 0.006

AA

MAIN: 0.013 MG/L HD 0.005

AA

CD MEAN: 0.014 MG/L SD: 0.001 RSD: 6.6

MAIN: 0.036 MG/L HD 0.015

AA

MAIN: 0.036 MG/L HD 0.015

AA

CD 2D MEAN: 0.036 MG/L SD: 0.000 RSD: 0.6

MAIN: 0.035 MG/L HD 0.014

AA

MAIN: 0.038 MG/L HD 0.015

AA

CD 3 MEAN: 0.036 MG/L SD: 0.002 RSD: 6.0

MAIN: 0.503 MG/L HD 0.193

AA

MAIN: 0.503 MG/L HD 0.193

AA

CD 4✓ MEAN: 0.503 MG/L SD: 0.000 RSD: 0.1

MAIN: 0.001 MG/L HD 0.000

AA

MAIN: 0.002 MG/L HD 0.001

AA

CD CCB MEAN: 0.001 MG/L SD: 0.001 RSD: 72.1

Mod File Name: CR  
 Marks: CR ONLY

Replicates:4

Read Delay: 65  
 Data File: 911CR

At file is 80911

| STANDARD             | REPLICATE            | DATE                              |
|----------------------|----------------------|-----------------------------------|
| STANDARD #1<br>cr267 | REPLICATE #1<br>565  | 0837 9/30/98                      |
| STANDARD #1<br>cr267 | REPLICATE #2<br>564  | peak-noisy                        |
| STANDARD #1<br>cr267 | REPLICATE #3<br>596  | peak-noisy                        |
| STANDARD #1<br>cr267 | REPLICATE #4<br>596  | peak-noisy                        |
| cr267                | AV                   | 580.3 SD 18.2 CV 3.1 CONC 0.1000  |
| STANDARD #2<br>cr267 | REPLICATE #1<br>1122 | 0839 9/30/98                      |
| STANDARD #2<br>cr267 | REPLICATE #2<br>1218 |                                   |
| STANDARD #2<br>cr267 | REPLICATE #3<br>1110 |                                   |
| STANDARD #2<br>cr267 | REPLICATE #4<br>1135 |                                   |
| cr267                | AV                   | 1146.3 SD 48.9 CV 4.3 CONC 0.5000 |
| STANDARD #3<br>cr267 | REPLICATE #1<br>1781 | 0841 9/30/98                      |
| STANDARD #3<br>cr267 | REPLICATE #2<br>1735 |                                   |
| STANDARD #3<br>cr267 | REPLICATE #3<br>1795 |                                   |
| STANDARD #3<br>cr267 | REPLICATE #4<br>1699 |                                   |
| cr267                | AV                   | 1752.5 SD 43.9 CV 2.5 CONC 1.0000 |
| STANDARD #4<br>cr267 | REPLICATE #1<br>3118 | 0843 9/30/98                      |
| STANDARD #4<br>cr267 | REPLICATE #2<br>3153 |                                   |
| STANDARD #4          | REPLICATE #3         |                                   |

| ANDARD #4 |       |    |        | REPLICATE #4              |           |        |          |                         |
|-----------|-------|----|--------|---------------------------|-----------|--------|----------|-------------------------|
|           | cr267 | EM | 3139   |                           |           |        |          |                         |
|           | cr267 | AV | 3107.8 | SD                        | 59.6      | CV     | 1.9      | CONC 2.0000             |
| ANK       |       |    |        | REPLICATE #1 0845 9/30/98 |           |        |          |                         |
|           | cr267 | EM | 475    |                           |           |        |          |                         |
| ANK       |       |    |        | REPLICATE #2              |           |        |          |                         |
|           | cr267 | EM | 467    |                           |           |        |          |                         |
| ANK       |       |    |        | REPLICATE #3              |           |        |          |                         |
|           | cr267 | EM | 492    |                           |           |        |          |                         |
| ANK       |       |    |        | REPLICATE #4              |           |        |          |                         |
|           | cr267 | EM | 519    |                           |           |        |          |                         |
|           | cr267 | AV | 488.3  | SD                        | 23.0      | CV     | 4.7      | CONC 0.0000             |
|           | cr267 | CC | 0.9998 | SLOPE                     | 1313.7744 | INT    | 469.0825 |                         |
| V         |       |    |        | REPLICATE #1 0847 9/30/98 |           |        |          |                         |
|           | cr267 | EM | 1810   |                           |           |        |          | 1.0207 mg/L             |
| V         |       |    |        | REPLICATE #2              |           |        |          |                         |
|           | cr267 | EM | 1811   |                           |           |        |          | 1.0214 mg/L             |
| V         |       |    |        | REPLICATE #3              |           |        |          |                         |
|           | cr267 | EM | 1817   |                           |           |        |          | 1.0260 mg/L             |
| V         |       |    |        | REPLICATE #4              |           |        |          |                         |
|           | cr267 | EM | 1823   |                           |           |        |          | 1.0306 mg/L             |
|           | cr267 | AV | 1815.3 | EM                        | SD        | 6.0    | CV       | 0.3                     |
|           | cr267 | AV | 1.0247 | mg/L                      | SD        | 0.0046 | CV       | 0.45                    |
| B         |       |    |        | REPLICATE #1 0849 9/30/98 |           |        |          |                         |
|           | cr267 | EM | 489    |                           |           |        |          | 0.0152 mg/L peak-noisy  |
| B         |       |    |        | REPLICATE #2              |           |        |          |                         |
|           | cr267 | EM | 473    |                           |           |        |          | 0.0030 mg/L             |
| B         |       |    |        | REPLICATE #3              |           |        |          |                         |
|           | cr267 | EM | 474    |                           |           |        |          | 0.0037 mg/L peak-noisy  |
| B         |       |    |        | REPLICATE #4              |           |        |          |                         |
|           | cr267 | EM | 477    |                           |           |        |          | 0.0060 mg/L             |
|           | cr267 | AV | 478.3  | EM                        | SD        | 7.4    | CV       | 1.5                     |
|           | cr267 | AV | 0.0070 | mg/L                      | SD        | 0.0056 | CV       | 80.34                   |
| -1        |       |    |        | REPLICATE #1 0851 9/30/98 |           |        |          |                         |
|           | cr267 | EM | 471    |                           |           |        |          | 0.0015 mg/L window-edge |
| -1        |       |    |        | REPLICATE #2              |           |        |          |                         |
|           | cr267 | EM | 455    |                           |           |        |          | -0.0107 mg/L peak-noisy |
| -1        |       |    |        | REPLICATE #3              |           |        |          |                         |
|           | cr267 | EM | 466    |                           |           |        |          | -0.0023 mg/L peak-noisy |
| -1        |       |    |        | REPLICATE #4              |           |        |          |                         |
|           | cr267 | EM | 459    |                           |           |        |          | -0.0077 mg/L peak-noisy |

|                                  |    |        |                          |            |
|----------------------------------|----|--------|--------------------------|------------|
| cr267                            | EM | 460    | -0.0069 mg/L             | peak-noisy |
| <b>3-2A</b>                      |    |        |                          |            |
| cr267                            | EM | 480    | 0.0083 mg/L              | peak-noisy |
| cr267                            | AV | 476.8  | EM SD 12.1 CV 2.5        |            |
| cr267                            | AV | 0.0058 | mg/L SD 0.0092 CV 158.44 |            |
| <b>REPLICATE #1 0933 9/30/98</b> |    |        |                          |            |
| cr267                            | EM | 1865   | 1.0625 mg/L              |            |
| <b>REPLICATE #2</b>              |    |        |                          |            |
| cr267                            | EM | 1825   | 1.0321 mg/L              |            |
| <b>REPLICATE #3</b>              |    |        |                          |            |
| cr267                            | EM | 1764   | 0.9856 mg/L              |            |
| <b>REPLICATE #4</b>              |    |        |                          |            |
| cr267                            | EM | 1768   | 0.9887 mg/L              |            |
| cr267                            | AV | 1805.5 | EM SD 48.5 CV 2.7        |            |
| cr267                            | AV | 1.0172 | mg/L SD 0.0369 CV 3.63   |            |
| <b>REPLICATE #1 0935 9/30/98</b> |    |        |                          |            |
| cr267                            | EM | 506    | 0.0281 mg/L              |            |
| <b>REPLICATE #2</b>              |    |        |                          |            |
| cr267                            | EM | 489    | 0.0152 mg/L peak-noisy   |            |
| <b>REPLICATE #3</b>              |    |        |                          |            |
| cr267                            | EM | 488    | 0.0144 mg/L peak-noisy   |            |
| <b>REPLICATE #4</b>              |    |        |                          |            |
| cr267                            | EM | 481    | 0.0091 mg/L peak-noisy   |            |
| cr267                            | AV | 491.0  | EM SD 10.6 CV 2.2        |            |
| cr267                            | AV | 0.0167 | mg/L SD 0.0081 CV 48.43  |            |
| <b>REPLICATE #1 0937 9/30/98</b> |    |        |                          |            |
| cr267                            | EM | 501    | 0.0243 mg/L peak-noisy   |            |
| <b>REPLICATE #2</b>              |    |        |                          |            |
| cr267                            | EM | 489    | 0.0152 mg/L peak-noisy   |            |
| <b>REPLICATE #3</b>              |    |        |                          |            |
| cr267                            | EM | 457    | -0.0092 mg/L peak-noisy  |            |
| <b>REPLICATE #4</b>              |    |        |                          |            |
| cr267                            | EM | 466    | -0.0023 mg/L peak-noisy  |            |
| cr267                            | AV | 478.3  | EM SD 20.3 CV 4.2        |            |
| cr267                            | AV | 0.0070 | mg/L SD 0.0154 CV 221.30 |            |
| <b>REPLICATE #1 0939 9/30/98</b> |    |        |                          |            |
| cr267                            | EM | 713    | 0.1857 mg/L              |            |
| <b>REPLICATE #2</b>              |    |        |                          |            |
| cr267                            | EM | 641    | 0.1309 mg/L              |            |
| <b>REPLICATE #3</b>              |    |        |                          |            |



915.1

cr267 EM

654

REPLICATE #4

0.1408 mg/L

cr267

AV

664.8 EM

SD

32.6 CV

4.9

cr267

AV

0.1489 mg/L

SD

0.0248 CV

16.68

915.1S

cr267 EM

3351

REPLICATE #1

2.1936 mg/L

0941 9/30/98

915.1S

cr267 EM

3408

REPLICATE #2

2.2370 mg/L

915.1S

cr267 EM

3443

REPLICATE #3

2.2636 mg/L

915.1S

cr267 EM

3340

REPLICATE #4

2.1852 mg/L

cr267

AV

3385.5 EM

SD

48.6 CV

1.4

cr267

AV

2.2199 mg/L

SD

0.0370 CV

1.66

915.2

cr267 EM

751

REPLICATE #1

0.2146 mg/L

0943 9/30/98

915.2

cr267 EM

670

REPLICATE #2

0.1529 mg/L

915.2

cr267 EM

665

REPLICATE #3

0.1491 mg/L

915.2

cr267 EM

669

REPLICATE #4

0.1522 mg/L

cr267

AV

688.8 EM

SD

41.6 CV

6.0

cr267

AV

0.1672 mg/L

SD

0.0316 CV

18.92

915.2D

cr267 EM

649

REPLICATE #1

0.1369 mg/L

0945 9/30/98

peak-noisy

915.2D

cr267 EM

655

REPLICATE #2

0.1415 mg/L

peak-noisy

915.2D

cr267 EM

798

REPLICATE #3

0.2504 mg/L

peak-noisy

915.2D

cr267 EM

632

REPLICATE #4

0.1240 mg/L

cr267

AV

683.5 EM

SD

77.0 CV

11.3

cr267

AV

0.1632 mg/L

SD

0.0586 CV

35.89

915.3

cr267 EM

628

REPLICATE #1

0.1210 mg/L

0947 9/30/98

915.3

cr267 EM

661

REPLICATE #2

0.1461 mg/L

peak-noisy

915.3

cr267 EM

623

REPLICATE #3

0.1172 mg/L

|       |       |             |              |           |              |
|-------|-------|-------------|--------------|-----------|--------------|
| cr267 | AV    | 637.3 EM    | SD           | 16.9 CV   | 2.6          |
| cr267 | AV    | 0.1280 mg/L | SD           | 0.0128 CV | 10.03        |
| cr267 | EM    | 2010        | REPLICATE #1 |           | 0949 9/30/98 |
|       |       |             | 1.1729 mg/L  |           |              |
| cr267 | EM    | 1838        | REPLICATE #2 |           |              |
|       |       |             | 1.0420 mg/L  |           |              |
| cr267 | EM    | 1882        | REPLICATE #3 |           |              |
|       |       |             | 1.0755 mg/L  |           |              |
| cr267 | EM    | 1877        | REPLICATE #4 |           |              |
|       |       |             | 1.0717 mg/L  |           |              |
| cr267 | AV    | 1901.8 EM   | SD           | 74.8 CV   | 3.9          |
| cr267 | AV    | 1.0905 mg/L | SD           | 0.0569 CV | 5.22         |
| cr267 | EM    | 490         | REPLICATE #1 |           | 0951 9/30/98 |
|       |       |             | 0.0159 mg/L  |           | peak-noisy   |
| cr267 | EM    | 496         | REPLICATE #2 |           |              |
|       |       |             | 0.0205 mg/L  |           | peak-noisy   |
| cr267 | EM    | 494         | REPLICATE #3 |           |              |
|       |       |             | 0.0190 mg/L  |           | peak-noisy   |
| cr267 | EM    | 499         | REPLICATE #4 |           |              |
|       |       |             | 0.0228 mg/L  |           | peak-noisy   |
| cr267 | AV    | 494.8 EM    | SD           | 3.8 CV    | 0.8          |
| cr267 | AV    | 0.0195 mg/L | SD           | 0.0029 CV | 14.71        |
| cr267 | POS'N | 1865        | REPLICATE #1 |           | 0953 9/30/98 |
|       |       |             | 1.0625 mg/L  |           |              |
| cr267 | POS'N | 1730        | REPLICATE #2 |           |              |
|       |       |             | 0.9598 mg/L  |           |              |
| cr267 | POS'N | 1781        | REPLICATE #3 |           |              |
|       |       |             | 0.9986 mg/L  |           |              |
| cr267 | POS'N | 1830        | REPLICATE #4 |           |              |
|       |       |             | 1.0359 mg/L  |           |              |
| cr267 | AV    | 1801.5 EM   | SD           | 58.8 CV   | 3.3          |
| cr267 | AV    | 1.0142 mg/L | SD           | 0.0448 CV | 4.41         |
| cr267 | EM    | 1316        | REPLICATE #1 |           | 0954 9/30/98 |
|       |       |             | 0.6446 mg/L  |           |              |
| cr267 | EM    | 1346        | REPLICATE #2 |           |              |
|       |       |             | 0.6675 mg/L  |           |              |
| cr267 | EM    | 1321        | REPLICATE #3 |           |              |
|       |       |             | 0.6485 mg/L  |           |              |
| cr267 | EM    | 1347        | REPLICATE #4 |           |              |
|       |       |             | 0.6682 mg/L  |           |              |

80911 + 80915

SMA 400 Analysis Ver. 4.10 Tue 09/29/98 - 13:22:07

hod File Name: CU  
arks: CU ONLY

Replicates:3

Read Delay: 60  
Data File:

Wt file is 80911

|                                              |              |              |
|----------------------------------------------|--------------|--------------|
| STANDARD #1                                  | REPLICATE #1 | 1326 9/29/98 |
| CU324 EM 2203                                |              |              |
| STANDARD #1                                  | REPLICATE #2 |              |
| CU324 EM 2206                                |              |              |
| STANDARD #1                                  | REPLICATE #3 |              |
| CU324 EM 2256                                |              |              |
| CU324 AV 2221.7 SD 29.8 CV 1.3 CONC 0.1000   |              |              |
| STANDARD #2                                  | REPLICATE #1 | 1327 9/29/98 |
| CU324 EM 7020                                |              |              |
| STANDARD #2                                  | REPLICATE #2 |              |
| CU324 EM 6757                                |              |              |
| STANDARD #2                                  | REPLICATE #3 |              |
| CU324 EM 6749                                |              |              |
| CU324 AV 6842.0 SD 154.2 CV 2.3 CONC 0.5000  |              |              |
| STANDARD #3                                  | REPLICATE #1 | 1329 9/29/98 |
| CU324 EM 12159                               |              |              |
| STANDARD #3                                  | REPLICATE #2 |              |
| CU324 EM 12295                               |              |              |
| STANDARD #3                                  | REPLICATE #3 |              |
| CU324 EM 12450                               |              |              |
| CU324 AV 12301.3 SD 145.6 CV 1.2 CONC 1.0000 |              |              |
| STANDARD #4                                  | REPLICATE #1 | 1331 9/29/98 |
| CU324 EM 24616                               |              |              |
| STANDARD #4                                  | REPLICATE #2 |              |
| CU324 EM 24309                               |              |              |
| STANDARD #4                                  | REPLICATE #3 |              |
| CU324 EM 23697                               |              |              |
| CU324 AV 24207.3 SD 467.9 CV 1.9 CONC 2.0000 |              |              |
| BLANK                                        | REPLICATE #1 | 1333 9/29/98 |
| CU324 EM 1765                                |              |              |
| BLANK                                        | REPLICATE #2 |              |
| CU324 EM 1674                                |              |              |

|       |    |        |       |           |     |           |      |        |
|-------|----|--------|-------|-----------|-----|-----------|------|--------|
| CU324 | EM | 1696   |       |           |     |           |      |        |
| CU324 | AV | 1711.7 | SD    | 47.5      | CV  | 2.8       | CONC | 0.0000 |
| CU324 | CC | 0.9994 | SLOPE | 11362.325 | INT | 1275.9258 |      |        |

|       |    |       |  |                     |  |      |         |
|-------|----|-------|--|---------------------|--|------|---------|
|       |    |       |  | <b>REPLICATE #1</b> |  | 1335 | 9/29/98 |
| CU324 | EM | 12987 |  | 1.0307 mg/L         |  |      |         |

|       |    |       |  |                     |  |  |  |
|-------|----|-------|--|---------------------|--|--|--|
|       |    |       |  | <b>REPLICATE #2</b> |  |  |  |
| CU324 | EM | 12769 |  | 1.0115 mg/L         |  |  |  |

|       |    |       |  |                     |  |  |  |
|-------|----|-------|--|---------------------|--|--|--|
|       |    |       |  | <b>REPLICATE #3</b> |  |  |  |
| CU324 | EM | 12796 |  | 1.0139 mg/L         |  |  |  |

|       |    |         |      |    |        |    |      |
|-------|----|---------|------|----|--------|----|------|
| CU324 | AV | 12850.7 | EM   | SD | 118.8  | CV | 0.9  |
| CU324 | AV | 1.0187  | mg/L | SD | 0.0105 | CV | 1.03 |

|       |    |      |  |                     |  |            |         |
|-------|----|------|--|---------------------|--|------------|---------|
|       |    |      |  | <b>REPLICATE #1</b> |  | 1336       | 9/29/98 |
| CU324 | EM | 1476 |  | 0.0176 mg/L         |  | peak-noisy |         |

|       |    |      |  |                     |  |             |  |
|-------|----|------|--|---------------------|--|-------------|--|
|       |    |      |  | <b>REPLICATE #2</b> |  |             |  |
| CU324 | EM | 1528 |  | 0.0222 mg/L         |  | window-edge |  |

|       |    |      |  |                     |  |  |  |
|-------|----|------|--|---------------------|--|--|--|
|       |    |      |  | <b>REPLICATE #3</b> |  |  |  |
| CU324 | EM | 1496 |  | 0.0194 mg/L         |  |  |  |

|       |    |        |      |    |        |    |       |
|-------|----|--------|------|----|--------|----|-------|
| CU324 | AV | 1500.0 | EM   | SD | 26.2   | CV | 1.7   |
| CU324 | AV | 0.0197 | mg/L | SD | 0.0023 | CV | 11.71 |

|       |    |      |  |                     |  |             |         |
|-------|----|------|--|---------------------|--|-------------|---------|
|       |    |      |  | <b>REPLICATE #1</b> |  | 1338        | 9/29/98 |
| CU324 | EM | 1469 |  | 0.0170 mg/L         |  | window-edge |         |

|       |    |      |  |                     |  |            |  |
|-------|----|------|--|---------------------|--|------------|--|
|       |    |      |  | <b>REPLICATE #2</b> |  |            |  |
| CU324 | EM | 1458 |  | 0.0160 mg/L         |  | peak-noisy |  |

|       |    |      |  |                     |  |  |  |
|-------|----|------|--|---------------------|--|--|--|
|       |    |      |  | <b>REPLICATE #3</b> |  |  |  |
| CU324 | EM | 1457 |  | 0.0159 mg/L         |  |  |  |

|       |    |        |      |    |        |    |      |
|-------|----|--------|------|----|--------|----|------|
| CU324 | AV | 1461.3 | EM   | SD | 6.7    | CV | 0.5  |
| CU324 | AV | 0.0163 | mg/L | SD | 0.0006 | CV | 3.59 |

|       |    |      |  |                     |  |      |         |
|-------|----|------|--|---------------------|--|------|---------|
|       |    |      |  | <b>REPLICATE #1</b> |  | 1340 | 9/29/98 |
| CU324 | EM | 1521 |  | 0.0216 mg/L         |  |      |         |

|       |    |      |  |                     |  |  |  |
|-------|----|------|--|---------------------|--|--|--|
|       |    |      |  | <b>REPLICATE #2</b> |  |  |  |
| CU324 | EM | 1531 |  | 0.0224 mg/L         |  |  |  |

|       |    |      |  |                     |  |            |  |
|-------|----|------|--|---------------------|--|------------|--|
|       |    |      |  | <b>REPLICATE #3</b> |  |            |  |
| CU324 | EM | 1526 |  | 0.0220 mg/L         |  | peak-noisy |  |

|       |    |        |      |    |        |    |      |
|-------|----|--------|------|----|--------|----|------|
| CU324 | AV | 1526.0 | EM   | SD | 5.0    | CV | 0.3  |
| CU324 | AV | 0.0220 | mg/L | SD | 0.0004 | CV | 2.00 |

|       |    |      |  |                     |  |      |         |
|-------|----|------|--|---------------------|--|------|---------|
|       |    |      |  | <b>REPLICATE #1</b> |  | 1342 | 9/29/98 |
| CU324 | EM | 9654 |  | 0.7374 mg/L         |  |      |         |

|  |  |  |  |                     |  |  |  |
|--|--|--|--|---------------------|--|--|--|
|  |  |  |  | <b>REPLICATE #2</b> |  |  |  |
|--|--|--|--|---------------------|--|--|--|

|       |    |         |             |              |        |            |         |
|-------|----|---------|-------------|--------------|--------|------------|---------|
| CU324 | EM | 12233   | 0.9643 mg/L |              |        |            |         |
| CU324 | AV | 12208.0 | EM          | SD           | 66.1   | CV         | 0.5     |
| CU324 | AV | 0.9621  | mg/L        | SD           | 0.0058 | CV         | 0.61    |
| 3-2A  |    |         |             | REPLICATE #1 |        | 1410       | 9/29/98 |
| CU324 | EM | 1552    | 0.0243 mg/L |              |        | peak-noisy |         |
| 3-2A  |    |         |             | REPLICATE #2 |        |            |         |
| CU324 | EM | 1530    | 0.0224 mg/L |              |        | peak-noisy |         |
| 3-2A  |    |         |             | REPLICATE #3 |        |            |         |
| CU324 | EM | 1593    | 0.0279 mg/L |              |        | peak-noisy |         |
| CU324 | AV | 1558.3  | EM          | SD           | 32.0   | CV         | 2.1     |
| CU324 | AV | 0.0249  | mg/L        | SD           | 0.0028 | CV         | 11.32   |
| 1-2A  |    |         |             | REPLICATE #1 |        | 1412       | 9/29/98 |
| CU324 | EM | 1659    | 0.0337 mg/L |              |        |            |         |
| 1-2A  |    |         |             | REPLICATE #2 |        |            |         |
| CU324 | EM | 1638    | 0.0319 mg/L |              |        |            |         |
| 1-2A  |    |         |             | REPLICATE #3 |        |            |         |
| CU324 | EM | 1685    | 0.0360 mg/L |              |        | peak-noisy |         |
| CU324 | AV | 1660.7  | EM          | SD           | 23.5   | CV         | 1.4     |
| CU324 | AV | 0.0339  | mg/L        | SD           | 0.0021 | CV         | 6.12    |
| 2-2A  |    |         |             | REPLICATE #1 |        | 1414       | 9/29/98 |
| CU324 | EM | 1631    | 0.0313 mg/L |              |        | peak-noisy |         |
| 2-2A  |    |         |             | REPLICATE #2 |        |            |         |
| CU324 | EM | 1616    | 0.0299 mg/L |              |        |            |         |
| 2-2A  |    |         |             | REPLICATE #3 |        |            |         |
| CU324 | EM | 1649    | 0.0328 mg/L |              |        |            |         |
| CU324 | AV | 1632.0  | EM          | SD           | 16.5   | CV         | 1.0     |
| CU324 | AV | 0.0313  | mg/L        | SD           | 0.0015 | CV         | 4.64    |
| 3-2A  |    |         |             | REPLICATE #1 |        | 1415       | 9/29/98 |
| CU324 | EM | 1710    | 0.0382 mg/L |              |        | peak-noisy |         |
| 3-2A  |    |         |             | REPLICATE #2 |        |            |         |
| CU324 | EM | 1664    | 0.0342 mg/L |              |        | peak-noisy |         |
| 3-2A  |    |         |             | REPLICATE #3 |        |            |         |
| CU324 | EM | 1678    | 0.0354 mg/L |              |        |            |         |
| CU324 | AV | 1684.0  | EM          | SD           | 23.6   | CV         | 1.4     |
| CU324 | AV | 0.0359  | mg/L        | SD           | 0.0021 | CV         | 5.78    |
| CV    |    |         |             | REPLICATE #1 |        | 1417       | 9/29/98 |
| CU324 | EM | 14658   | 1.1778 mg/L |              |        |            |         |
| CV    |    |         |             | REPLICATE #2 |        |            |         |
| CU324 | EM | 14416   | 1.1565 mg/L |              |        |            |         |

|         |    |         |      |              |        |            |         |
|---------|----|---------|------|--------------|--------|------------|---------|
| CU324   | AV | 14527.3 | EM   | SD           | 122.2  | CV         | 0.8     |
| CU324   | AV | 1.1663  | mg/L | SD           | 0.0108 | CV         | 0.92    |
| CB      |    |         |      | REPLICATE #1 |        | 1419       | 9/29/98 |
| CU324   | EM | 1569    |      | 0.0258       | mg/L   | peak-noisy |         |
| CB      |    |         |      | REPLICATE #2 |        |            |         |
| CU324   | EM | 1576    |      | 0.0264       | mg/L   | peak-noisy |         |
| CB      |    |         |      | REPLICATE #3 |        |            |         |
| CU324   | EM | 1593    |      | 0.0279       | mg/L   | peak-noisy |         |
| CU324   | AV | 1579.3  | EM   | SD           | 12.3   | CV         | 0.8     |
| CU324   | AV | 0.0267  | mg/L | SD           | 0.0011 | CV         | 4.07    |
| 0915.LB |    |         |      | REPLICATE #1 |        | 1421       | 9/29/98 |
| CU324   | EM | 1519    |      | 0.0214       | mg/L   | peak-noisy |         |
| 0915.LB |    |         |      | REPLICATE #2 |        |            |         |
| CU324   | EM | 1447    |      | 0.0151       | mg/L   |            |         |
| 0915.LB |    |         |      | REPLICATE #3 |        |            |         |
| CU324   | EM | 1491    |      | 0.0189       | mg/L   | peak-noisy |         |
| CU324   | AV | 1485.7  | EM   | SD           | 36.3   | CV         | 2.4     |
| CU324   | AV | 0.0185  | mg/L | SD           | 0.0032 | CV         | 17.30   |
| 0915.1  |    |         |      | REPLICATE #1 |        | 1422       | 9/29/98 |
| CU324   | EM | 3009    |      | 0.1525       | mg/L   |            |         |
| 0915.1  |    |         |      | REPLICATE #2 |        |            |         |
| CU324   | EM | 2964    |      | 0.1486       | mg/L   |            |         |
| 0915.1  |    |         |      | REPLICATE #3 |        |            |         |
| CU324   | EM | 3187    |      | 0.1682       | mg/L   |            |         |
| CU324   | AV | 3053.3  | EM   | SD           | 117.9  | CV         | 3.9     |
| CU324   | AV | 0.1564  | mg/L | SD           | 0.0104 | CV         | 6.63    |
| 0915.1S |    |         |      | REPLICATE #1 |        | 1424       | 9/29/98 |
| CU324   | EM | 27070   |      | 2.2701       | mg/L   |            |         |
| 0915.1S |    |         |      | REPLICATE #2 |        |            |         |
| CU324   | EM | 27640   |      | 2.3203       | mg/L   |            |         |
| 0915.1S |    |         |      | REPLICATE #3 |        |            |         |
| CU324   | EM | 28171   |      | 2.3670       | mg/L   |            |         |
| CU324   | AV | 27627.0 | EM   | SD           | 550.6  | CV         | 2.0     |
| CU324   | AV | 2.3192  | mg/L | SD           | 0.0485 | CV         | 2.09    |
| 0915.2  |    |         |      | REPLICATE #1 |        | 1426       | 9/29/98 |
| CU324   | EM | 3196    |      | 0.1690       | mg/L   |            |         |
| 0915.2  |    |         |      | REPLICATE #2 |        |            |         |
| CU324   | EM | 3139    |      | 0.1640       | mg/L   |            |         |

|                   |    |         |             |      |        |              |
|-------------------|----|---------|-------------|------|--------|--------------|
| CU324             | EM | 3049    | 0.1560 mg/L |      |        |              |
| CU324             | AV | 3128.0  | EM          | SD   | 74.1   | CV 2.4       |
| CU324             | AV | 0.1630  | mg/L        | SD   | 0.0065 | CV 4.00      |
| <del>915.2D</del> |    |         |             |      |        |              |
| CU324             | EM | 9129    | 0.6912      | mg/L |        | 1428 9/29/98 |
| <del>915.2D</del> |    |         |             |      |        |              |
| CU324             | EM | 8946    | 0.6750      | mg/L |        | 1428 9/29/98 |
| <del>915.2D</del> |    |         |             |      |        |              |
| CU324             | EM | 9268    | 0.7034      | mg/L |        | 1428 9/29/98 |
| CU324             | AV | 9114.3  | EM          | SD   | 161.5  | CV 1.8       |
| CU324             | AV | 0.6899  | mg/L        | SD   | 0.0142 | CV 2.06      |
| <del>915.3</del>  |    |         |             |      |        |              |
| CU324             | EM | 2694    | 0.1248      | mg/L |        | 1429 9/29/98 |
| <del>915.3</del>  |    |         |             |      |        |              |
| CU324             | EM | 2814    | 0.1354      | mg/L |        | 1429 9/29/98 |
| <del>915.3</del>  |    |         |             |      |        |              |
| CU324             | EM | 2759    | 0.1305      | mg/L |        | 1429 9/29/98 |
| CU324             | AV | 2755.7  | EM          | SD   | 60.1   | CV 2.2       |
| CU324             | AV | 0.1302  | mg/L        | SD   | 0.0053 | CV 4.06      |
| <del>CV</del>     |    |         |             |      |        |              |
| CU324             | EM | 14289   | 1.1453      | mg/L |        | 1431 9/29/98 |
| <del>CV</del>     |    |         |             |      |        |              |
| CU324             | EM | 14323   | 1.1483      | mg/L |        | 1431 9/29/98 |
| <del>CV</del>     |    |         |             |      |        |              |
| CU324             | EM | 13937   | 1.1143      | mg/L |        | 1431 9/29/98 |
| CU324             | AV | 14183.0 | EM          | SD   | 213.7  | CV 1.5       |
| CU324             | AV | 1.1360  | mg/L        | SD   | 0.0188 | CV 1.66      |
| <del>CB</del>     |    |         |             |      |        |              |
| CU324             | EM | 1656    | 0.0335      | mg/L |        | 1433 9/29/98 |
| <del>CB</del>     |    |         |             |      |        |              |
| CU324             | EM | 1557    | 0.0247      | mg/L |        | 1433 9/29/98 |
| <del>CB</del>     |    |         |             |      |        |              |
| CU324             | EM | 1534    | 0.0227      | mg/L |        | 1433 9/29/98 |
| CU324             | AV | 1582.3  | EM          | SD   | 64.8   | CV 4.1       |
| CU324             | AV | 0.0270  | mg/L        | SD   | 0.0057 | CV 21.16     |

AA  
MAIN: -0.02 MG/L HD-0.000      MAIN: -0.02 MG/L HD-0.000

PB      MEAN: -0.02 MG/L      SD: 0.005 RSD: 25.8 AUTOZERO      0.00

AA  
MAIN: 0.23 MG/L HD 0.004      MAIN: 0.23 MG/L HD 0.004

PB      MEAN: 0.23 MG/L      SD: 0.003 RSD: 1.2 1.STANDARD      0.23 MG/L

AA  
MAIN: 0.54 MG/L HD 0.009      MAIN: 0.54 MG/L HD 0.009

PB      MEAN: 0.54 MG/L      SD: 0.002 RSD: 0.4 2.STANDARD      0.54 MG/L

AA  
MAIN: 1.07 MG/L HD 0.017      MAIN: 1.08 MG/L HD 0.017

PB      MEAN: 1.07 MG/L      SD: 0.008 RSD: 0.7 3.STANDARD      1.07 MG/L

AA  
MAIN: 0.02 MG/L HD 0.000      MAIN: 0.03 MG/L HD 0.000

PB      MEAN: 0.02 MG/L      SD: 0.008 RSD: 34.2 AUTOZERO      0.00

AA  
MAIN: 2.02 MG/L HD 0.032      MAIN: 2.04 MG/L HD 0.032

PB      MEAN: 2.03 MG/L      SD: 0.013 RSD: 0.6 4.STANDARD      2.03 MG/L

AA  
MAIN: 5.08 MG/L HD 0.080      MAIN: 5.04 MG/L HD 0.080

PB      MEAN: 5.06 MG/L      SD: 0.026 RSD: 0.5 5.STANDARD      4.98 MG/L

AA  
MAIN: 9.81 MG/L HD 0.157      MAIN: 10.04 MG/L HD 0.161

PB      MEAN: 9.92 MG/L      SD: 0.162 RSD: 1.6 6.STANDARD      9.98 MG/L

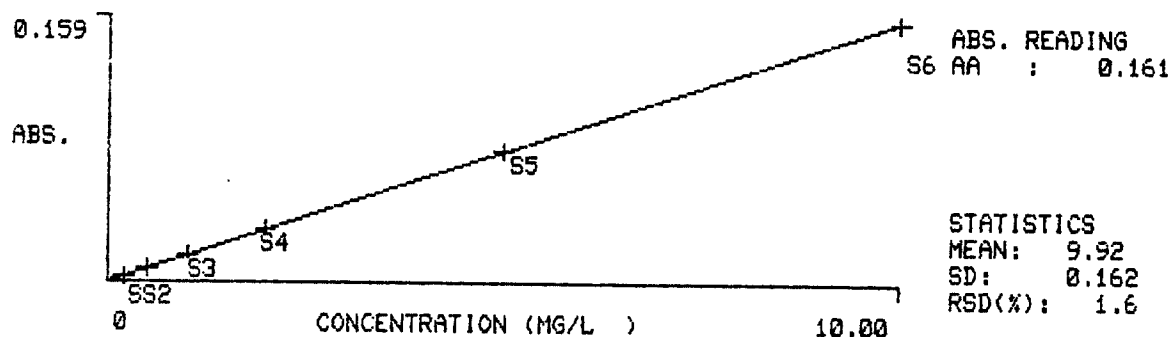


FLAME DISPLAY CALIBRATION MODE  
ELEMENT: PB

PRINTER: ON  
BG CORR: OFF  
UNITS : MG/L

9.98

REPL. 0 OF 2



C2H2: 2.5 L/MIN OXIDANT: 8.0 L/MIN FLAME: C2H2-AIR

MAIN: 0.03 MG/L HO 0.001 AA  
PB MEAN: 0.03 MG/L SD: 0.002 RSD: 7.6 AUTOZERO 0.00

MAIN: 4.94 MG/L HO 0.079 AA  
PB *ICV* MEAN: 4.94 MG/L SD: 0.004 RSD: 0.1

MAIN: 0.03 MG/L HO 0.000 AA  
PB *ICB* MEAN: 0.02 MG/L SD: 0.005 RSD: 20.1

MAIN: 0.03 MG/L HO 0.000 AA  
PB *RB-1* MEAN: 0.03 MG/L SD: 0.006 RSD: 17.4

MAIN: 0.06 MG/L HO 0.001 AA  
PB *FB-1* MEAN: 0.07 MG/L SD: 0.018 RSD: 25.9

MAIN: 4.67 MG/L HO 0.075 AA  
PB *01-1* MEAN: 4.73 MG/L SD: 0.080 RSD: 1.7

MAIN: 6.68 MG/L HO 0.107 AA  
MAIN: 6.73 MG/L HO 0.107 AA

MAIN: 0.13 MG/L HD 0.002 AA  
MAIN: 0.10 MG/L HD 0.002 AA

PB 01-2A MEAN: 0.12 MG/L SD: 0.016 RSD: 14.1

MAIN: 2.06 MG/L HD 0.033 AA  
MAIN: 2.10 MG/L HD 0.034 AA

PB 01-2A MEAN: 2.08 MG/L SD: 0.033 RSD: 1.6

MAIN: 0.15 MG/L HD 0.002 AA  
MAIN: 0.16 MG/L HD 0.003 AA

PB 02-2A MEAN: 0.16 MG/L SD: 0.008 RSD: 4.7

MAIN: 0.16 MG/L HD 0.002 AA  
MAIN: 0.11 MG/L HD 0.002 AA

PB 02-2A MEAN: 0.13 MG/L SD: 0.030 RSD: 22.4

MAIN: 0.12 MG/L HD 0.002 AA  
MAIN: 0.12 MG/L HD 0.002 AA

PB 03-2A MEAN: 0.12 MG/L SD: 0.002 RSD: 1.6

MAIN: 0.06 MG/L HD 0.001 AA  
MAIN: 0.04 MG/L HD 0.001 AA

PB 04-2A MEAN: 0.05 MG/L SD: 0.015 RSD: 30.8 AUTOZERO 0.00

MAIN: 0.10 MG/L HD 0.002 AA  
MAIN: 0.11 MG/L HD 0.002 AA

PB 11-2A MEAN: 0.10 MG/L SD: 0.010 RSD: 9.5

MAIN: 0.10 MG/L HD 0.002 AA  
MAIN: 0.11 MG/L HD 0.002 AA

PB 12-2A MEAN: 0.11 MG/L SD: 0.002 RSD: 1.7

MAIN: 0.11 MG/L HD 0.002 AA  
MAIN: 0.11 MG/L HD 0.002 AA

PB 13-2A MEAN: 0.11 MG/L SD: 0.001 RSD: 1.3

MAIN: 4.89 MG/L HD 0.078 AA  
MAIN: 4.86 MG/L HD 0.078 AA

PB 14-2A MEAN: 4.07 MG/L SD: 0.020 RSD: 0.4

MAIN: 0.03 MG/L HD 0.000

MAIN: -0.00 MG/L HD -0.000

PB CCB MEAN: 0.01 MG/L SD: 0.023 RSD: 99.9

0915 MAIN: 0.06 MG/L HD 0.001

MAIN: 0.07 MG/L HD 0.001

PB LB MEAN: 0.07 MG/L SD: 0.003 RSD: 5.2

MAIN: 0.72 MG/L HD 0.011

MAIN: 0.72 MG/L HD 0.012

PB 1 MEAN: 0.72 MG/L SD: 0.002 RSD: 0.3

MAIN: 2.74 MG/L HD 0.044

MAIN: 2.75 MG/L HD 0.044

PB 1S MEAN: 2.74 MG/L SD: 0.003 RSD: 0.1

MAIN: 0.72 MG/L HD 0.011

MAIN: 0.74 MG/L HD 0.012

PB 2 MEAN: 0.73 MG/L SD: 0.016 RSD: 2.2

MAIN: 0.76 MG/L HD 0.012

MAIN: 0.75 MG/L HD 0.012

PB 2D MEAN: 0.76 MG/L SD: 0.005 RSD: 0.7

MAIN: 0.76 MG/L HD 0.012

MAIN: 0.80 MG/L HD 0.013

PB 3 MEAN: 0.78 MG/L SD: 0.031 RSD: 3.9

MAIN: 5.16 MG/L HD 0.082

MAIN: 5.10 MG/L HD 0.081

PB CCV MEAN: 5.13 MG/L SD: 0.048 RSD: 0.9

MAIN: -0.02 MG/L HD -0.000

MAIN: -0.00 MG/L HD -0.000

PB CCB MEAN: -0.01 MG/L SD: 0.014 RSD: 99.9

|              |              |              |                          |
|--------------|--------------|--------------|--------------------------|
|              | AA           |              | AA                       |
| MAIN: -0.000 | HD-0.000     | MAIN: -0.000 | HD-0.000                 |
| MN           | MEAN: -0.000 | SD: 0.000    | RSD: 13.9 AUTOZERO 0.000 |

|             |             |             |                          |
|-------------|-------------|-------------|--------------------------|
|             | AA          |             | AA                       |
| MAIN: 0.001 | HD 0.001    | MAIN: 0.001 | HD 0.000                 |
| MN          | MEAN: 0.001 | SD: 0.000   | RSD: 26.8 AUTOZERO 0.000 |

|             |             |             |                                |
|-------------|-------------|-------------|--------------------------------|
|             | AA          |             | AA                             |
| MAIN: 0.030 | HD 0.030    | MAIN: 0.030 | HD 0.030                       |
| MN          | MEAN: 0.030 | SD: 0.000   | RSD: 0.3 1.STANDARD 0.200 MG/L |

|                  |                  |                  |                                |
|------------------|------------------|------------------|--------------------------------|
|                  | AA               |                  | AA                             |
| MAIN: 0.497 MG/L | HD 0.076         | MAIN: 0.480 MG/L | HD 0.073                       |
| MN               | MEAN: 0.488 MG/L | SD: 0.011        | RSD: 2.3 2.STANDARD 0.498 MG/L |

|                  |                  |                  |                                |
|------------------|------------------|------------------|--------------------------------|
|                  | AA               |                  | AA                             |
| MAIN: 0.961 MG/L | HD 0.143         | MAIN: 0.943 MG/L | HD 0.141                       |
| MN               | MEAN: 0.952 MG/L | SD: 0.013        | RSD: 1.4 3.STANDARD 0.988 MG/L |

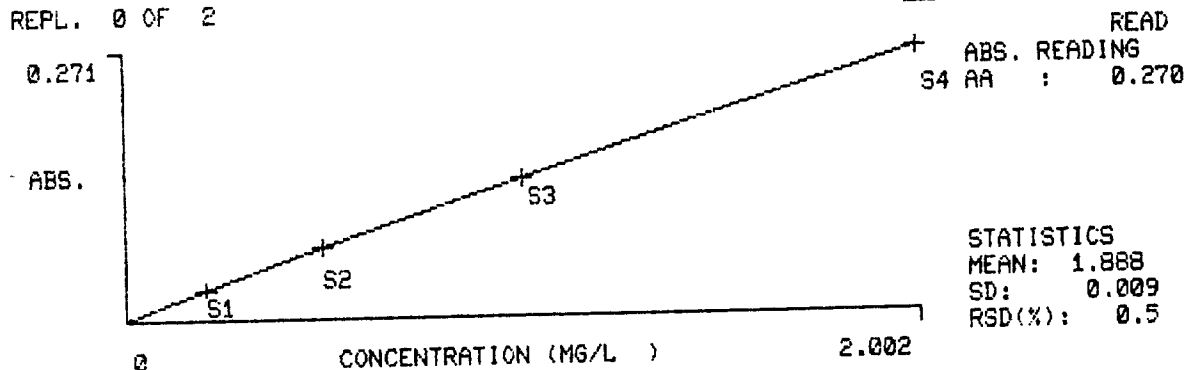
|                  |                  |                  |                                |
|------------------|------------------|------------------|--------------------------------|
|                  | AA               |                  | AA                             |
| MAIN: 1.895 MG/L | HD 0.272         | MAIN: 1.882 MG/L | HD 0.270                       |
| MN               | MEAN: 1.888 MG/L | SD: 0.009        | RSD: 0.5 4.STANDARD 1.970 MG/L |

FLAME DISPLAY CALIBRATION MODE  
ELEMENT: MN

PRINTER: ON  
BG CORR: OFF  
UNITS : MG/L

1.970

REPL. 0 OF 2



C2H2: 2.5 L/MIN OXIDANT: 8.0 L/MIN FLAME: C2H2-AIR

|                  |          |                  |          |
|------------------|----------|------------------|----------|
|                  | AA       |                  | AA       |
| MAIN: 0.018 MG/L | HD 0.003 | MAIN: 0.020 MG/L | HD 0.003 |

MAIN: 0.969 MG/L HO 0.138 AA MAIN: 0.990 MG/L HO 0.141 AA

MN *10* MEAN: 0.980 MG/L SD: 0.015 RSD: 1.6

MAIN: 0.005 MG/L HO 0.001 AA MAIN: 0.006 MG/L HO 0.001 AA

MN *10B* MEAN: 0.006 MG/L SD: 0.001 RSD: 12.3

MAIN: 0.028 MG/L HO 0.004 AA MAIN: 0.036 MG/L HO 0.006 AA

MN *10B* MEAN: 0.032 MG/L SD: 0.006 RSD: 17.8

MAIN: 1.352 MG/L HO 0.189 AA MAIN: 1.359 MG/L HO 0.190 AA

MN *1* MEAN: 1.355 MG/L SD: 0.005 RSD: 0.4

MAIN: 1.757 MG/L HO 0.240 AA MAIN: 1.731 MG/L HO 0.237 AA

MN *1S* MEAN: 1.744 MG/L SD: 0.018 RSD: 1.0

MAIN: 1.403 MG/L HO 0.195 AA MAIN: 1.412 MG/L HO 0.196 AA

MN *2* MEAN: 1.407 MG/L SD: 0.006 RSD: 0.4

MAIN: 1.369 MG/L HO 0.191 AA MAIN: 1.379 MG/L HO 0.192 AA

MN *2D* MEAN: 1.374 MG/L SD: 0.007 RSD: 0.5

MAIN: 1.330 MG/L HO 0.186 AA MAIN: 1.323 MG/L HO 0.185 AA

MN *3* MEAN: 1.326 MG/L SD: 0.005 RSD: 0.4

MAIN: 1.020 MG/L HO 0.145 AA MAIN: 1.030 MG/L HO 0.146 AA

MN *10V* MEAN: 1.025 MG/L SD: 0.007 RSD: 0.7

MAIN: 0.030 MG/L HO 0.005 AA MAIN: 0.032 MG/L HO 0.005 AA

MN *10B* MEAN: 0.031 MG/L SD: 0.001 RSD: 4.2

40911 + 80915

```

 AA-BG BG
: -0.005 PA-0.013 0.006
 PH-0.005 0.002
=====
```

```

30 AUTOZERO
=====
```

```

 AA-BG BG
: 0.010 PA 0.193 -0.014
 PH 0.010 -0.002
=====
```

```

50 1.STANDARD
=====
```

```

 AA-BG BG
: 1.30 UG/L PA 0.384 -0.034
 PH 0.026 -0.004
=====
```

```

Sample concentration greater than highest standard
=====
```

```

04 2.STANDARD
=====
```

```

 AA-BG BG
: 1.77 UG/L PA 0.736 -0.016
 PH 0.044 -0.002
=====
```

```

Sample concentration greater than highest standard
=====
```

```

94 3.STANDARD
=====
```

```

 AA-BG BG
: 5.18 UG/L PA 1.908 0.000
 PH 0.119 -0.002
=====
```

```

Sample concentration greater than highest standard
=====
```

```

03 4.STANDARD
=====
```

```

 AA-BG BG
: 10.26 UG/L PA 3.965 0.008
 PH 0.242 -0.001
=====
```

```

Sample concentration greater than highest standard
=====
```

```

06 5.STANDARD
=====
```

# TECHNICAL REPORT DATA

Please read instructions on the reverse before completing

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                           |  |                                                |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------|--|------------------------------------------------|--|
| 1. REPORT NO.<br>EPA-454/R-99-001b                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 2.                                                        |  | 3. RECIPIENT'S ACCESSION NO.                   |  |
| 4. TITLE AND SUBTITLE<br>Final Report - Emissions Testing of Combustion Stack and Pushing Operations at Coke Battery No. 2 at Bethlehem Steel Corporation's Burns Harbor Division in Chesterton, Indiana<br><br>Volume II of III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                           |  | 5. REPORT DATE<br>February 1999                |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                           |  | 6. PERFORMING ORGANIZATION CODE                |  |
| 7. AUTHOR(S)<br>Franklin Meadows<br>Daniel F. Scheffel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                           |  | 8. PERFORMING ORGANIZATION REPORT NO.          |  |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS<br>Pacific Environmental Services, Inc.<br>Post Office Box 12077<br>Research Triangle Park, North Carolina 27709-2077                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                           |  | 10. PROGRAM ELEMENT NO.                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                           |  | 11. CONTRACT/GRANT NO.<br>68-D-98-004          |  |
| 12. SPONSORING AGENCY NAME AND ADDRESS<br>U.S. Environmental Protection Agency<br>Office of Air Quality Planning and Standards<br>Emissions, Monitoring and Analysis Division<br>Research Triangle Park, North Carolina 27711                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                           |  | 13. TYPE OF REPORT AND PERIOD COVERED<br>Final |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                           |  | 14. SPONSORING AGENCY CODE                     |  |
| 15. SUPPLEMENTARY NOTES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                           |  |                                                |  |
| 16. ABSTRACT<br><br><p>The United States Environmental Protection Agency (EPA) is investigating the coke making industry to characterize hazardous air pollutants (HAPs) emitted from coke pushing operations and combustion (underfire) stacks. This test report addresses pushing emissions from a coke oven, and emissions from the combustion (underfire) stack that serves Coke Battery No. 2 at Bethlehem Steel Corporation's Burns Harbor Division in Chesterton, Indiana. The purpose of this test program was to quantify emissions from the inlet and outlet of the baghouse controlling emissions from the coke pushing operation and to quantify emissions from the combustion outlet stack. The data may be used by the EPA in the future to support a residual risk assessment for coke oven facilities.</p> <p>The testing was performed to quantify uncontrolled and controlled air emissions of filterable particulate matter (PM), methylene chloride extractable matter (MCEM) and 19 polycyclic aromatic hydrocarbons (PAHs) including acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(e)pyrene, benzo(k)fluoranthene, benzo(ghi)perylene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, perylene, phenanthrene, and pyrene. In addition, following the PM and MCEM analyses, the samples were analyzed to screen for the presence of 17 trace metals. Baghouse dust samples were also collected and analyzed for 16 trace metals. Simultaneous testing was performed at the inlet and outlet of the baghouse controlling emissions from the coke pushing operation. Sampling was also performed on the combustion outlet stack. In addition to pollutant testing, oxygen (O<sub>2</sub>) and carbon dioxide (CO<sub>2</sub>) were measured at each location. During the sampling program, Research Triangle Institute (RTI), another EPA contractor, monitored and recorded process and emission control system operating parameters.</p> <p>This volume (Volume II) is comprised of 376 pages and contains Appendix C (Analytical Data)</p> |  |                                                           |  |                                                |  |
| 17. KEY WORDS AND DOCUMENT ANALYSIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                           |  |                                                |  |
| a. DESCRIPTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | b. IDENTIFIERS/OPEN ENDED TERMS                           |  | c. COASTI Field/Group                          |  |
| Baghouse<br>Coke Ovens<br>Emission Measurements<br>Hazardous Air Pollutants<br>Metals<br>Methylene Chloride Extractable Matter<br>Particulate Matter<br>Polycyclic Aromatic Hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                                           |  |                                                |  |
| 18. DISTRIBUTION STATEMENT<br><br>Unlimited                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 19. SECURITY CLASS ( <i>This Report</i> )<br>Unclassified |  | 21. NO. OF PAGES<br>960                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 20. SECURITY CLASS ( <i>This page</i> )<br>Unclassified   |  | 22. PRICE                                      |  |

