

GW - 71-0

MONITORING REPORTS

**DATE:
2002**

RECEIVED

MAR 17 2003

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

March 14, 2003

Mr. Bill Olson
New Mexico Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505

GW-071

Dear Mr. Olson:

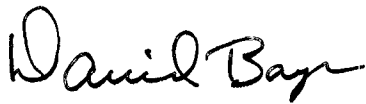
Please find enclosed reports on the following monitoring wells and waste water streams at the El Paso Field Services Co. (EPFS) Chaco Plant. These results are summarized on the attached tables.

Semi-Annual analyses for monitoring wells 1 and 8.
Quarterly analyses for monitoring wells 9 and 10.
Annual analysis for all other monitoring wells.

The analysis for monitoring well 2 showed an elevated level of chlorides. Monitoring wells 2, 4, 6, and 7 all had high readings for sulfate. Monitoring well 3 was dry and could not be sampled. Monitoring well 10, adjacent to the old flare pit which was closed in 1995, exceeds several water quality standards for organics.

If you need any additional information for this reporting period, please call me at (505) 599-2256.

Sincerely yours,



David Bays
Principal Environmental Scientist

cc: Denny Foust - NMOCD - Aztec
Max Blackwood
Troy Chamberlain
Chaco Regulatory File

Chaco Plant Groundwater Monitoring Well Results 2002

All Results Expressed as Micrograms/Liter (ppb)

Monitoring Well 1 (semi-annual)	3/13/02	6/11/02	9/20/02	12/29/02
Benzene	< 0.5		< 0.5	
Toluene	< 0.5		< 0.5	
Ethyl Benzene	< 0.5		< 0.5	
Xylenes	< 1.0		< 1.0	
Cadmium	<0.0004		ND	
Chromium	<0.001		ND	
Mercury	<0.0002		ND	
Total Naphthalenes	<0.4		ND	
Total Benzopyrenes	<0.4		ND	
Monitoring Well 8 (semi-annual)				
Benzene	< 0.5		< 0.5	
Toluene	< 0.5		< 0.5	
Ethyl Benzene	< 0.5		< 0.5	
Xylenes	< 1.0		< 1.0	
Cadmium	<0.0004		ND	
Chromium	0.009		ND	
Mercury	<0.0002		ND	
Total Naphthalenes	<0.4		ND	
Total Benzopyrenes	<0.4		ND	
Monitoring Well 9 (quarterly)				
Benzene	< 0.5	<0.5	< 0.5	< 0.5
Toluene	< 0.5	<0.5	< 0.5	< 0.5
Ethyl Benzene	< 0.5	<0.5	< 0.5	< 0.5
Xylenes	< 1.0	<1.0	< 1.0	< 1.0
Monitoring Well 10 (quarterly)				
Benzene	44	120	91	67
Toluene	2.3	<2.5	0.93	7.3
Ethyl Benzene	22	32	32	28
Xylenes	84	130	94	85

NA = Not Analyzed

ND = None Detected

Chaco Plant Groundwater Monitoring Well Results 2001

All Chemical Results Expressed as Milligrams/Liter (ppm)
pH Expressed in Standard Units (0 - 14 Scale)
Conductivity Expressed as Micromhos/Centimeter

All samples listed on this table were collected on June 25, 2001

Test	Well 2	Well 3	Well 4	Well 5	Well 6	Well 7
pH	7.6	NS	7.3	7.5	8.3	7.6
Alkalinity - CO ₃	430	NS	350	68	450	340
Alkalinity - HCO ₃	430	NS	350	68	440	340
Calcium	91	NS	430	460	48	330
Magnesium	32	NS	85	84	7.7	64
Total Hardness	360	NS	1400	1400	150	1100
Chloride	1500	NS	450	360	170	160
Sulfate as SO ₄	19	NS	2300	2500	1300	2100
Fluoride	2.7	NS	1.5	0.84	7.7	2.9
Nitrate as NO ₃	<0.10	NS	2.9	0.85	3.2	0.26
Nitrate as NO ₂	<0.10	NS	<0.10	<0.10	<0.10	<0.10
Ammonium as N	0.22	NS	0.11	0.10	0.11	0.87
Phosphate	0.21	NS	0.21	0.18	0.12	0.12
Potassium	2.0	NS	18	13	2.4	7.4
Sodium	890	NS	840	660	780	610
TDS	2800	NS	4700	4500	2600	3500
Conductivity	5000	NS	5500	5000	3600	4000
Cadmium	<0.005	NS	<0.005	<0.005	<0.005	<0.005
Chromium	<0.005	NS	0.008	0.016	0.007	0.008
Mercury	<0.0002	NS	<0.0002	<0.0002	<0.0002	<0.0002

MW-03 - Not Sampled, Insufficient Recoverable Liquid Volume

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **203046**
April 12, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name CHACO PLANT SAMPLING
Project Number 1517000054

Attention: ROBERT THOMPSON/DAVID BAYS

On 03/14/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 analyses were performed by Pinnacle Laboratories, Inc. Albuquerque, NM.

All other analyses were performed by EnviroTest Laboratories, LLC. Casper, WY.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 203046
PROJECT #	: 1517000054	DATE RECEIVED	: 03/14/02
PROJECT NAME	: CHACO PLANT SAMPLING	REPORT DATE	: 04/12/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
203046 - 01	CHA-0203-MW1	AQUEOUS	03/13/02
203046 - 02	CHA-0203-MW8	AQUEOUS	03/13/02
203046 - 03	CHA-0203-MW9	AQUEOUS	03/13/02
203046 - 04	CHA-0203-MW10	AQUEOUS	03/13/02
203046 - 05	TRIP BLANK	AQUEOUS	03/04/02

PINNACLE
LABORATORIES

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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000054
PROJECT NAME : CHACO PLANT SAMPLING

PINNACLE I.D.: 203046

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	CHA-0203-MW1	AQUEOUS	03/13/02	NA	03/21/02	1
02	CHA-0203-MW8	AQUEOUS	03/13/02	NA	03/21/02	1
03	CHA-0203-MW9	AQUEOUS	03/13/02	NA	03/21/02	1

PARAMETER	DET. LIMIT	UNITS	CHA-0203-MW1	CHA-0203-MW8	CHA-0203-MW9
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	1.0	UG/L	< 1.0	< 1.0	< 1.0

SURROGATE:

3BROMOFLUOROBENZENE (%)	85	83	88
SURROGATE LIMITS (80 - 120)			

CHEMIST NOTES:

N/A

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Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000054
PROJECT NAME : CHACO PLANT SAMPLING

PINNACLE I.D.: 203046

SAMPLE			DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
14	CHA-0203-MW10	AQUEOUS	03/13/02	NA	03/25/02	1
15	TRIP BLANK	AQUEOUS	03/04/02	NA	03/21/02	1

PARAMETER	DET. LIMIT	UNITS	CHA-0203-MW10	TRIP BLANK
BENZENE	0.5	UG/L	44	< 0.5
TOLUENE	0.5	UG/L	2.3	< 0.5
ETHYLBENZENE	0.5	UG/L	22	< 0.5
TOTAL XYLENES	1.0	UG/L	84	< 1.0

SURROGATE:

BROMOFLUOROBENZENE (%)

105

90

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A

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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203046
BLANK I. D.	: 032102	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/21/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: CHACO PLANT SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 92
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A

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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203046
BLANK I. D.	: 032502	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/25/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: CHACO PLANT SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
OTAL XYLENES	UG/L	<1.0

URROGATE:
ROMOFLUOROBENZENE (%) 86
URROGATE LIMITS: (80 - 120)
HEMIST NOTES:
/A

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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS LCSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203046
CS LCSD #	: 032102	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/21/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: CHACO PLANT SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	18.0	90	18.4	92	2	(80 - 120)	20
OLUENE	<0.5	20.0	18.2	91	18.5	93	2	(80 - 120)	20
THYLBENZENE	<0.5	20.0	17.8	89	18.1	91	2	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	55.3	92	56.1	94	1	(80 - 120)	20

CHEMIST NOTES:
I/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\% \text{PD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203046
CS LCSD #	: 032502	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/25/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: CHACO PLANT SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	18.2	91	17.9	90	2	(80 - 120)	20
TOLUENE	<0.5	20.0	18.2	91	17.1	86	6	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	17.9	90	16.8	84	6	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	55.6	93	52.3	87	6	(80 - 120)	20

ANALYST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\% \text{ PD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203046
MSMSD #	: 203054-01	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/21/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: CHACO PLANT SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	18.3	92	18.2	91	1	(80 - 120)	20
TOLUENE	<0.5	20.0	18.2	91	18.9	95	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	17.7	89	17.9	90	1	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	55.2	92	55.7	93	1	(80 - 120)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Enviro-Test Laboratories LLC.

Chemical Analysis Report

PINNACLE LABORATORIES, INC

Date: 28 MAR 2002

Attn: PROJECT MANAGER

2709D PAN AMERICAN FREEWAY NE

ALBUQUERQUE NM 87107

Lab Work Order #: L4781

Date Received: 15 MAR 2002

Project P.O. #: 203046

Project Reference: AMEC

Comments:

APPROVED BY:

Michelle Borden for

Dave Demorest

Project Manager



**Enviro • Test
LABORATORIES LLC.**

420 West 1st Street Casper, Wyoming 82601
Phone: (307) 235-5741 Fax: (307) 266-1676
Toll Free 1(800)666-0306

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.



Date: March 28, 2002
Client: Pinnacle Laboratories
Job Number: L4781

SAMPLE DELIVERY GROUP NARRATIVE

The following information is relevant to the interpretation of the data for the above job:

8270 SEMI-VOLATILES:

The extraction date for SW-846 3540C does not print on the report. The extractions for samples L4781-1 and -2 were performed on March 19, 2002.

METALS

The samples are digested with trace metals grade acid and, depending on the batch of acid, different metals will be present to some extent above the detection limit of the ICP/MS. In this case this is true for chromium. This should be taken into consideration when interpreting the data.

Because the Matrix Spikes for cadmium and chromium were performed on a sample from a different job number, the results do not print on the QC report. The results are as follows:

Analyte	Spike Added	MS Percent Recovery
Cadmium	0.1 mg/L	94
Chromium	0.1 mg/L	93

If you have any questions regarding the analysis of these samples, please call us at (307) 235-5741 or (800) 666-0306.



Michelle Puder
Project Manager

Chemical Analysis Report

PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: AMEC
Purchase Order: 203046

Page: 2 of 4

Report Date: 28-MAR-02
Work Order: L4781
Lab Sample ID: L4781-1
Client Sample ID: CHA-0203-MW1/203046-01
Date Collected: 13-MAR-02
Sampled By: CLIENT
Date Received: 15-MAR-02
Matrix: WATER

Parameter	Result	Qualifier	MDL	PCL	Units	DF	RunID	Analyzed	By
Misc									
Cadmium (Cd) Total	<0.0004		0.0004		mg/L	5	R16749	25-MAR-02 08:42	GC
Chromium (Cr) Total	<0.001		0.001		mg/L	5	R16749	25-MAR-02 08:42	GC
Mercury (Hg)-Total	<0.0002		0.0002		mg/L		R16644	19-MAR-02 09:27	ML
Modified 8270 SIMS									
Naphthalene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
2-Methylnaphthalene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
1-Methylnaphthalene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Acenaphthylene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Acenaphthene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Fluorene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Phenanthrene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Anthracene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Fluoranthene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Pyrene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Benzo(a)anthracene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Chrysene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Benzo(b)fluoranthene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Benzo(k)fluoranthene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Benzo(a)pyrene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Indeno(1,2,3-c,d)pyrene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Dibenzo(a,h)Anthracene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Benzo(g,h,i)Perylene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Surrogate: Nitrobenzene d5(Surr.)	54		37-138		%		R16725	21-MAR-02 00:00	BCJ
Surrogate: 2-Fluorobiphenyl (surr)	52		45-119		%		R16725	21-MAR-02 00:00	BCJ
Surrogate: p-Terphenyl d14	70		69-134		%		R16725	21-MAR-02 00:00	BCJ



Enviro • Test
LABORATORIES LLC.

420 West 1st Street Casper, Wyoming 82601
Phone: (307) 235-5741 Fax: (307) 266-1676
Toll Free 1(800)666-0304

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.



Chemical Analysis Report

PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: AMEC
Purchase Order: 203046

Page: 3 of 4

Report Date: 28-MAR-02
Work Order: L4781
Lab Sample ID: L4781-2
Client Sample ID: CHA-0203-MW8/203046-02
Date Collected: 13-MAR-02
Sampled By: CLIENT
Date Received: 15-MAR-02
Matrix: WATER

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Cadmium (Cd) Total	<0.0004		0.0004		mg/L	5	R16749	25-MAR-02 08:44	GC
Chromium (Cr) Total	0.009		0.001		mg/L	5	R16749	25-MAR-02 08:44	GC
Mercury (Hg)-Total	<0.0002		0.0002		mg/L		R16644	19-MAR-02 09:27	ML
Modified 8270 SIMS									
Naphthalene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
2-Methylnaphthalene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
1-Methylnaphthalene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Acenaphthylene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Acenaphthene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Fluorene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Phenanthrene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Anthracene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Fluoranthene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Pyrene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Benzo(a)anthracene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Chrysene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Benzo(b)fluoranthene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Benzo(k)fluoranthene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Benzo(a)pyrene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Indeno(1,2,3-c,d)pyrene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Dibenzo(a,h)Anthracene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Benzo(g,h,i)Perylene	<0.4		0.4	1.2	ug/L		R16725	21-MAR-02 00:00	BCJ
Surrogate: Nitrobenzene d5(Surr.)	59		37-138		%		R16725	21-MAR-02 00:00	BCJ
Surrogate: 2-Fluorobiphenyl (surr)	53		45-119		%		R16725	21-MAR-02 00:00	BCJ
Surrogate: p-Terphenyl d14	73		69-134		%		R16725	21-MAR-02 00:00	BCJ



Enviro • Test
LABORATORIES LLC.

420 West 1st Street Casper, Wyoming 82601
Phone: (307) 235-5741 Fax: (307) 266-1676
Toll Free 1(800)666-0304

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.



Reference Information

Page: 4 of 4
Report Date: 28-MAR-02
Work Order: L4781

The following is the Description of sample Qualifiers where applicable:

The following Preparation/Extraction Methods were performed:

ETL Test Code and Matrix		Test Description	Methodology Reference (Based On)
CD-TOT-LOW-CA	Water	Cadmium (Cd)-Total	SW846 3010A
CR-TOT-LOW-CA	Water	Chromium (Cr)-Total	SW846 3010A
8270-SIMS-CA	Water	Modified 8270 SIMS	SW846 3520C
CD-TOT-LOW-CA	Water	Cadmium (Cd)-Total	
CR-TOT-LOW-CA	Water	Chromium (Cr)-Total	
HG-TOT-HYD-CA	Water	Mercury (Hg)-Total	

The following Analytical Methods were performed:

ETL Test Code and Matrix		Test Description	Methodology Reference (Based On)
8270-SIMS-CA	Water	Modified 8270 SIMS	EPA 8270C Modified for S.I.M.
CD-TOT-LOW-CA	Water	Cadmium (Cd)-Total	SM 3125-ICP-MS
CR-TOT-LOW-CA	Water	Chromium (Cr)-Total	SM 3125-ICP-MS
HG-TOT-HYD-CA	Water	Mercury (Hg)-Total	SM 3112 B-AAS Cold Vapor



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ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Page 1 of 4

Report Date: Mar. 28, 2002

Workorder: L4781

Contact: PROJECT MANAGER

Test	Matrix	Reference	Result	Qualifier	Units	Limit	Analyzed
8270-SIMS-CA		Water					
Batch R16725							
WG12969-1 BLANK							
1-Methylnaphthalene			<0.4		ug/L		21-MAR-02
2-Methylnaphthalene			<0.4		ug/L		21-MAR-02
Acenaphthene			<0.4		ug/L		21-MAR-02
Acenaphthylene			<0.4		ug/L		21-MAR-02
Anthracene			<0.4		ug/L		21-MAR-02
Benzo(a)anthracene			<0.4		ug/L		21-MAR-02
Benzo(a)pyrene			<0.4		ug/L		21-MAR-02
Benzo(b)fluoranthene			<0.4		ug/L		21-MAR-02
Benzo(g,h,i)Perylene			<0.4		ug/L		21-MAR-02
Benzo(k)fluoranthene			<0.4		ug/L		21-MAR-02
Chrysene			<0.4		ug/L		21-MAR-02
Dibenzo(a,h)Anthracene			<0.4		ug/L		21-MAR-02
Fluoranthene			<0.4		ug/L		21-MAR-02
Fluorene			<0.4		ug/L		21-MAR-02
Indeno(1,2,3-c,d)pyrene			<0.4		ug/L		21-MAR-02
Naphthalene			<0.4		ug/L		21-MAR-02
Phenanthrene			<0.4		ug/L		21-MAR-02
Pyrene			<0.4		ug/L		21-MAR-02
WG12969-3 BS							
1-Methylnaphthalene		55			%	Amount 4 1-1	21-MAR-02
2-Methylnaphthalene		56			%	4 1-1	21-MAR-02
Acenaphthene		57			%	4 1-1	21-MAR-02
Acenaphthylene		59			%	4 1-1	21-MAR-02
Anthracene		76			%	4 1-1	21-MAR-02
Benzo(a)anthracene		68			%	4 1-1	21-MAR-02
Benzo(a)pyrene		56			%	4 1-1	21-MAR-02
Benzo(b)fluoranthene		60			%	4 1-1	21-MAR-02
Benzo(g,h,i)Perylene		59			%	4 1-1	21-MAR-02
Benzo(k)fluoranthene		60			%	4 1-1	21-MAR-02
Chrysene		78			%	4 1-1	21-MAR-02
Dibenzo(a,h)Anthracene		63			%	4 1-1	21-MAR-02
Fluoranthene		77			%	4 1-1	21-MAR-02
Fluorene		60			%	4 1-1	21-MAR-02
Indeno(1,2,3-c,d)pyrene		60			%	4 1-1	21-MAR-02

ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Page 2 of 4
Report Date: Mar. 28, 2002
Workorder: L4781

Test	Matrix	Reference	Result	Qualifier	Units	Limit	Analyzed
8270-SIMS-CA		Water					
Batch	R16725						
WG12969-3	BS				Amount		
Naphthalene			56		%	4	1-1 21-MAR-02
Phenanthrene			58		%	4	1-1 21-MAR-02
Pyrene			65		%	4	1-1 21-MAR-02
WG12969-4	BSD	WG12969-3			RPD		
1-Methylnaphthalene			55		%	0.0	20 21-MAR-02
2-Methylnaphthalene			54		%	3.6	20 21-MAR-02
Acenaphthene			56		%	1.8	20 21-MAR-02
Acenaphthylene			57		%	3.4	20 21-MAR-02
Anthracene			74		%	2.7	20 21-MAR-02
Benzo(a)anthracene			64		%	6.1	20 21-MAR-02
Benzo(a)pyrene			55		%	1.8	20 21-MAR-02
Benzo(b)fluoranthene			64		%	6.5	20 21-MAR-02
Benzo(g,h,i)Perylene			59		%	0.0	20 21-MAR-02
Benzo(k)fluoranthene			59		%	1.7	20 21-MAR-02
Chrysene			73		%	6.6	20 21-MAR-02
Dibenzo(a,h)Anthracene			64		%	1.6	20 21-MAR-02
Fluoranthene			77		%	0.0	20 21-MAR-02
Fluorene			59		%	1.7	20 21-MAR-02
Indeno(1,2,3-c,d)pyrene			63		%	4.9	20 21-MAR-02
Naphthalene			54		%	3.6	20 21-MAR-02
Phenanthrene			60		%	3.4	20 21-MAR-02
Pyrene			61		%	6.3	20 21-MAR-02
WG12969-2	LCS				Amount		
1-Methylnaphthalene			49		%	4	1-1 21-MAR-02
2-Methylnaphthalene			47		%	4	1-1 21-MAR-02
Acenaphthene			53		%	4	1-1 21-MAR-02
Acenaphthylene			57		%	4	1-1 21-MAR-02
Anthracene			74		%	4	1-1 21-MAR-02
Benzo(a)anthracene			62		%	4	1-1 21-MAR-02
Benzo(a)pyrene			57		%	4	1-1 21-MAR-02
Benzo(b)fluoranthene			87		%	4	1-1 21-MAR-02
Benzo(g,h,i)Perylene			58		%	4	1-1 21-MAR-02
Benzo(k)fluoranthene			61		%	4	1-1 21-MAR-02
Chrysene			71		%	4	1-1 21-MAR-02



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ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Page 3 of 4
Report Date: Mar. 28, 2002
Workorder: L4781

Test	Matrix	Reference	Result	Qualifier	Units	Limit	Analyzed
8270-SIMS-CA <u>Water</u>							
Batch	R16725						
WG12969-2	LCS		Amount				
Dibenzo(a,h)Anthracene			64		%	4	1-1 21-MAR-02
Fluoranthene			71		%	4	1-1 21-MAR-02
Fluorene			56		%	4	1-1 21-MAR-02
Indeno(1,2,3-c,d)pyrene			62		%	4	1-1 21-MAR-02
Naphthalene			48		%	4	1-1 21-MAR-02
Phenanthrene			56		%	4	1-1 21-MAR-02
Pyrene			62		%	4	1-1 21-MAR-02
CD-TOT-LOW-CA <u>Water</u>							
Batch	R16749						
WG12960-1	BLANK						
Cadmium (Cd)			<0.0004		mg/L		25-MAR-02
WG12960-2	LCS		Amount				
Cadmium (Cd)			102		%	0.1 80-120	25-MAR-02
CR-TOT-LOW-CA <u>Water</u>							
Batch	R16749						
WG12960-1	BLANK						
Chromium (Cr)			0.002		mg/L		25-MAR-02
WG12960-2	LCS		Amount				
Chromium (Cr)			95		%	0.1 80-120	25-MAR-02
HG-TOT-HYD-CA <u>Water</u>							
Batch	R16644						
WG12932-5	BLANK						
Mercury (Hg)-Total			<0.0002		mg/L		19-MAR-02
WG12932-6	LCS		Amount				
Mercury (Hg)-Total			107		%	1 80-120	19-MAR-02
WG12932-7	MS	L4781-1	Amount				
Mercury (Hg)-Total			109		%	2 70-130	19-MAR-02

Product - Batch and Sample Number Relations:

8270-SIMS-CA	1	
R16725	L4781-1	L4781-2
CD-TOT-LOW-CA	1	
R16749	L4781-1	L4781-2
CR-TOT-LOW-CA	1	
R16749	L4781-1	L4781-2
HG-TOT-HYD-CA	1	
R16644	L4781-1	L4781-2



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Reference Information

Page 4 of 4

Report Date: Mar. 28, 2002

Work Order L4781

The following is a description of Sample types that where applicable:

BLANK	Laboratory Blank
BS	Blank Spike
BSD	Blank Spike Duplicate
LCS	Laboratory Control Spike
MS	Matrix Spike

The following is a description of sample Qualifiers that where applicable:



Enviro • Test

LABORATORIES LLC.

Sample Receipt Checklist

Client	<u>Pinnacle</u>	Job Number	<u>24781</u>
--------	-----------------	------------	--------------

Samples Shipped	<u>UPS</u>	Federal Express	Airborn:
Samples Hand Delivered	Client	ETL Lab Courier	Other:

*Air Bill #: <u>1Z8781680143921260</u>	# of Packages Received: <u>1</u>
--	----------------------------------

	Yes	No	NA	Comments
1. Chain - of - Custody present?	☒	☐	☐	If no, please fill one out.
2. Are the COC and sample labels legible?	☒	☐	☐	
3. Custody Seal on shipping container?	☐	☒	☐	
If yes, intact on shipping container?	☐	☐	☐	
4. Custody seals on sample containers?	☐	☒	☐	
If yes, intact on sample container?	☐	☐	☐	
5. Samples chilled?	☒	☐	☐	
Is temperature of cooler: $4 \pm 2^{\circ}\text{C}$?	☒	☐	☐	*Record temp: <u>+2.9°C</u>
6. Samples received intact (good condition)?	☐	☒	☐	<u>1 250A - broken</u>
If volatiles required, any with headspace?	☐	☐	☐	
7. Adequate sample volume provided?	☒	☐	☐	
8. Samples preserved correctly?	☒	☐	☐	Na ₂ S ₂ O ₃ , ZnAc, <u>HNO₃</u> , HCl
Circle preservative types in shipment	☐	☐	☐	H ₂ SO ₄ , NaOH, <u>Plain</u> , Other
9. Correct containers used?	☒	☐	☐	
10. Samples received within holding time?	☒	☐	☐	
11. Agreement between COC and sample labels?	☒	☐	☐	
12. Gamma Screen $\mu\text{R}/\text{Hr}$ @ surface within Bkg?	☒	☐	☐	FOR INTERNAL USE ONLY <u>@ Bkg</u>
13. Samples OK to release to Lab/Screening?	☒	☐	☐	

Additional Comments: _____

Sample Container (size/material):

4) 250A

2) 250P

Received and inspected by:

JRS

Date/Time:

3/15/02 0945

* = for multiple packages, see attached page(s) for shipping numbers and temperatures.



Sample Condition Notification Form

Client Pinnacle Date 3/15/02 Job Number L4781

Condition Reported		Explanation
Samples received out of holding time		
Samples not preserved correctly		
Containers broken/spilled in shipment		203046-02 - 1250 Ammer broken. Have another to use for 8270-Sims JRS
Insufficient sample received		
Incorrect containers used		
Chain of Custody does not match labels		
Samples not chilled to $\pm 2-4^{\circ}\text{C}$		
Volatiles have headspace		
Chain of Custody not received or incomplete		
Other problems as noted		

Comments: _____

ANALYSIS REQUEST

ANALYSIS REQUEST

Pinnacle Laboratories, Inc.
2709-D Pan American Freeway, NE
Albuquerque, New Mexico 87107
(505) 344-3777 Fax (505) 344-4413

[illegible]

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY:	1	RELINQUISHED BY:	2
PROJECT #:	203046	Total Number of Containers		PENSACOLA - STL-FL		Signature:	<i>[Signature]</i>	Time:	
PROJ. NAME:	CHACO PLANT	Chain of Custody Seals		ESL - OR		Printed Name:	<i>[Signature]</i>	Date:	
QC LEVEL:	STD IV	Received Intact?		STL - CT		Signature:	<i>[Signature]</i>	Time:	
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		ATEL - AZ		Printed Name:	<i>[Signature]</i>	Date:	
TAT:	STANDARD RUSH!!	LAB NUMBER:		ATEL - MARION		Company	Pinnacle Laboratories, Inc.		
				ATEL - MELMORE		RECEIVED BY:	1	RECEIVED BY:	2
COMMENTS:				BARRINGER		Signature:	<i>[Signature]</i>	Time:	
DUE DATE:				ENVIRO TEST LABS		Printed Name:	<i>[Signature]</i>	Date:	
RUSH SURCHARGE:				WCAS		Signature:	<i>[Signature]</i>	Time:	
CLIENT DISCOUNT:				WOHL		Printed Name:	<i>[Signature]</i>	Date:	
SPECIAL CERTIFICATION						Company	ETL		
REQUIRED: YES NO									



Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 3-13-02 PAGE: 1 OF 1

PLI Accession #: 203046

PROJECT MANAGER: Robert Thompson
COMPANY: AMEC
ADDRESS: 2060 AFTON PLACE
Farmington NM. 87401
PHONE: (505) 327-7928
FAX: (505) 326-5721
BILL TO: DAVID BAYS
COMPANY: El Paso Field Services
ADDRESS: 614 Reilly AVE
Farmington NM. 87401

SHADED AREAS ARE FOR LAB USE ONLY.

ANALYSIS REQUEST

COMPANY:	AMEC	SAMPLE ID:	CHA-0203-MW 1	DATE:	3-13-02	TIME:	1350	MATRIX:	H ₂ O	LAB ID:	
ADDRESS:	2060 AFTON place		CHA-0203-MW 9		3-13-02		1248		H ₂ O		
PHONE:	Farmington NM. 87401		CHA-0203-MW 9		3-13-02		1200		H ₂ O		
FAX:	(505) 327-7928		CHA-0203-MW 10		3-13-02		1048		H ₂ O		
BILL TO:	(505) 326-5721		TRIP BLANK		3-4-02		1605		H ₂ O		
COMPANY:	DAVID BAYS										
ADDRESS:	El Paso Field Services										
	614 Rally AVE										
	Farmington NM. 87401										

Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTX)/8015 (Gasoline) MTBE	8021 (BTX) □ MTBE □ TMB □ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB □ / DBCP □	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Poly/nuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals: Cd, Cr, Hg	NUMBER OF CONTAINERS
				X													X					X		5
				X													X					X		5
				X																				2
				X																				2
				X																				1

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJ. NO.: 1517000054		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK	(NORMAL) ☒	Signature: [Signature]	Time: 1500	Signature: [Signature]	Time:
PROJ. NAME: CHICO plant Sampling		CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER		Printed Name: Chris AMEZ	Date: 3-13-02	Printed Name:	Date:
P.O. NO.:		METHANOL PRESERVATION ☐		Company: AMEC		Company:	
SHIPPED VIA: Greyhound		COMMENTS: FIXED FEE ☐		RECEIVED BY: 1.		RECEIVED BY: (LAB) 2.	
SAMPLE RECEIPT				Signature: [Signature]	Time:	Signature: [Signature]	Time:
NO. CONTAINERS				Printed Name:	Date:	Printed Name:	Date:
CUSTODY SEALS	V/N/NA						
RECEIVED/INTACT							
BLUE ICE/ICE	49						
						Pinnacle Laboratories Inc.	

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **206047**
July 03, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 REILLY AVENUE
FARMINGTON, NM 87401

Project Name EPFS CHACO SAMPLING
Project Number 1517000054

Attention: ROBERT THOMPSON/DAVID BAYS

On 06/13/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA Method 8021 and pH were performed by Pinnacle Laboratories, Inc., NM.

All other analyses were performed by Severn Trent Services, Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 206047
PROJECT #	: 1517000054	DATE RECEIVED	: 06/13/02
PROJECT NAME	: EPFS CHACO SAMPLING	REPORT DATE	: 07/03/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
206047 - 01	CHA-0206-MW2	AQUEOUS	06/11/02
206047 - 02	CHA-0206-MW4	AQUEOUS	06/11/02
206047 - 03	CHA-0206-MW5	AQUEOUS	06/11/02
206047 - 04	CHA-0206-MW6	AQUEOUS	06/11/02
206047 - 05	CHA-0206-MW7	AQUEOUS	06/11/02
206047 - 06	CHA-0206-MW9	AQUEOUS	06/12/02
206047 - 07	CHA-0206-MW10	AQUEOUS	06/12/02
206047 - 08	CHA-0206-NCWW	AQUEOUS	06/12/02
206047 - 09	TRIP BLANK	AQUEOUS	06/04/02

PINNACLE
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GENERAL CHEMISTRY RESULTS

CLIENT : AMEC EARTH & ENVIRONMENTAL PINNACLE I.D. : 206047
PROJECT # : 1517000054 DATE RECEIVED : 06/13/02
PROJECT NAME : EPFS CHACO SAMPLING

SAMPLE			DATE	DATE
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED
01	CHA-0206-MW2	AQUEOUS	06/11/02	06/14/02
02	CHA-0206-MW4	AQUEOUS	06/11/02	06/14/02
03	CHA-0206-MW5	AQUEOUS	06/11/02	06/14/02

PARAMETER	UNITS	CHA-0206-MW2	CHA-0206-MW4	CHA-0206-MW5
PH (150.1)	UNITS	7.65	6.97	6.52

CHEMIST NOTES:
N/A

PINNACLE
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Fax (505) 344-4413

GENERAL CHEMISTRY RESULTS

CLIENT : AMEC EARTH & ENVIRONMENTAL PINNACLE I.D. : 206047
PROJECT # : 1517000054 DATE RECEIVED : 06/13/02
PROJECT NAME : EPFS CHACO SAMPLING

SAMPLE			DATE	DATE
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED
04	CHA-0206-MW6	AQUEOUS	06/11/02	06/14/02
05	CHA-0206-MW7	AQUEOUS	06/11/02	06/14/02
08	CHA-0206-NCWW	AQUEOUS	06/12/02	06/14/02

PARAMETER	UNITS	CHA-0206-MW6	CHA-0206-MW7	CHA-0206-NCWW
PH (150.1)	UNITS	8.18	7.20	6.51

CHEMIST NOTES:
N/A

PINNACLE
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GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE I.D.	: 206047
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS CHACO SAMPLING	DATE ANALYZED	: 06/14/02

PARAMETER	UNITS	PINNACLE I.D.	SAMPLE RESULT	DUP. RESULT	% RPD
PH	UNITS	206055-01	5.83	5.83	0

CHEMIST NOTES:

N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\% \text{ RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

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GAS CHROMATOGRAPHY RESULTS

EST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000054
PROJECT NAME : EPFS CHACO SAMPLING

PINNACLE I.D.: 206047

SAMPLE			DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
6	CHA-0206-MW9	AQUEOUS	06/12/02	NA	06/16/02	1
7	CHA-0206-MW10	AQUEOUS	06/12/02	NA	06/16/02	5
9	TRIP BLANK	AQUEOUS	06/04/02	NA	06/14/02	1

PARAMETER	DET. LIMIT	UNITS	CHA-0206-MW9	CHA-0206-MW10	TRIP BLANK
BENZENE	0.5	UG/L	< 0.5	120	< 0.5
OLUENE	0.5	UG/L	< 0.5	< 2.5	< 0.5
THYLBENZENE	0.5	UG/L	< 0.5	32	< 0.5
TOTAL XYLENES	1.0	UG/L	< 1.0	130	< 1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 97 102 98
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
I/A

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 206047
BLANK I. D.	: 061402	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 06/14/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS CHACO SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 96
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A

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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 206047
BLANK I. D.	: 061602	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 06/16/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS CHACO SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 95
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A

PINNACLE
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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

EST : EPA 8021 MODIFIED
ATCH # : 061402
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000054
PROJECT NAME : EPFS CHACO SAMPLING

PINNACLE I.D. : 206047
DATE EXTRACTED : N/A
DATE ANALYZED : 06/14/02
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	18.3	92	19.6	98	7	(80 - 120)	20
OLUENE	<0.5	20.0	18.8	94	20.0	100	6	(80 - 120)	20
THYLBENZENE	<0.5	20.0	19.1	96	20.2	101	6	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	58.8	98	62.4	104	6	(80 - 120)	20

CHEMIST NOTES:
I/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\% \text{PD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

PINNACLE
LABORATORIES

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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	:	206047
ATCH #	: 061602	DATE EXTRACTED	:	N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	:	06/16/02
PROJECT #	: 1517000054	SAMPLE MATRIX	:	AQUEOUS
PROJECT NAME	: EPFS CHACO SAMPLING	UNITS	:	UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	<0.5	20.0	19.2	96	19.6	98	2	(80 - 120)	20
OLUENE	<0.5	20.0	19.8	99	20.1	101	2	(80 - 120)	20
THYLBENZENE	<0.5	20.0	20.0	100	20.2	101	1	(80 - 120)	20
OTAL XYLENES	<1.0	60.0	62.0	103	62.7	105	1	(80 - 120)	20

CHEMIST NOTES:
N/A

$$\text{Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{PD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

PINNACLE
LABORATORIES

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GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	:	206047
SMSD #	: 206052-01	DATE EXTRACTED	:	N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	:	06/16/02
PROJECT #	: 1517000054	SAMPLE MATRIX	:	AQUEOUS
PROJECT NAME	: EPFS CHACO SAMPLING	UNITS	:	UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	<0.5	20.0	19.4	97	18.8	94	3	(80 - 120)	20
OLUENE	<0.5	20.0	20.0	100	19.4	97	3	(80 - 120)	20
THYLBENZENE	<0.5	20.0	20.1	101	19.5	98	3	(80 - 120)	20
OTAL XYLENES	<1.0	60.0	62.4	104	60.5	101	3	(80 - 120)	20

HEMIST NOTES:
/A

$$\text{Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{PD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

SEVERN

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SERVICES

STL Pensacola

LOG NO: C2-06370

Received: 14 JUN 02

Reported: 25 JUN 02

Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES					DATE/ TIME SAMPLED
06370-1	CHA-0206-MW2/206047-01					06-11-02/14:25
06370-2	CHA-0206-MW4/206047-02					06-11-02/13:25
06370-3	CHA-0206-MW5/206047-03					06-11-02/12:35
06370-4	CHA-0206-MW6/206047-04					06-11-02/10:00
06370-5	CHA-0206-MW7/206047-05					06-11-02/11:10
PARAMETER	06370-1 <i>MW-2</i>	06370-2 <i>MW-4</i>	06370-3 <i>MW-5</i>	06370-4 <i>MW-6</i>	06370-5 <i>MW-7</i>	
Nitrate-Nitrite, Nitrogen (353.2)						
Nitrate + Nitrite-N, mg/l	<0.10	2.9	0.85	3.2	0.26	
Nitrate-N, mg/l	<0.10	2.9	0.85	3.2	0.26	
Dilution Factor	1	1	1	1	1	
Analysis Date	06.18.02	06.18.02	06.18.02	06.18.02	06.18.02	
Batch ID	N3W31A	N3W31A	N3W31A	N3W31A	N3W31A	
Analyst	CR	CR	CR	CR	CR	
Nitrite-N (354.1), mg/l						
Nitrite-N (354.1), mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	
Dilution Factor	1	1	1	1	1	
Analysis Date	06.14.02	06.14.02	06.14.02	06.14.02	06.14.02	
Batch ID	N2W117	N2W117	N2W117	N2W117	N2W117	
Analyst	RB	RB	RB	RB	RB	
Ammonia (350.1), mg/l						
Ammonia (350.1), mg/l	0.22	0.11	0.10	0.11	0.87	
Dilution Factor	1	1	1	1	1	
Analysis Date	06.21.02	06.21.02	06.21.02	06.21.02	06.21.02	
Batch ID	AAW22A	AAW22A	AAW22A	AAW22A	AAW22A	
Analyst	CR	CR	CR	CR	CR	
Chloride (4500E), mg/l						
Chloride (4500E), mg/l	1500	450	360	170	160	
Dilution Factor	20	5	5	2	2	
Analysis Date	06.19.02	06.19.02	06.19.02	06.19.02	06.19.02	
Batch ID	CKW030A	CKW030A	CKW030A	CKW030A	CKW030A	
Analyst	CR	CR	CR	CR	CR	

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SERVICES

STL Pensacola

LOG NO: C2-06370

Received: 14 JUN 02

Reported: 25 JUN 02

Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED				
06370-1	CHA-0206-MW2/206047-01	06-11-02/14:25				
06370-2	CHA-0206-MW4/206047-02	06-11-02/13:25				
06370-3	CHA-0206-MW5/206047-03	06-11-02/12:35				
06370-4	CHA-0206-MW6/206047-04	06-11-02/10:00				
06370-5	CHA-0206-MW7/206047-05	06-11-02/11:10				
PARAMETER	06370-1 MW-2	06370-2 MW-4	06370-3 MW-5	06370-4 MW-6	06370-5 MW-7	
Sulfate as SO4 (375.4), mg/l	19	2200	2500	1300	2100	
Dilution Factor	1	100	100	50	100	
Analysis Date	06.19.02	06.19.02	06.19.02	06.19.02	06.19.02	
Batch ID	SEW048	SEW048	SEW048	SEW048	SEW048	
Analyst	RB	RB	RB	RB	RB	
Alkalinity Series (2320B)						
Alkalinity (to pH 4.5) as CaCO3, mg/l	430	350	68	450	340	
PH, mg/l	7.6	7.3	7.5	8.3	7.6	
Dilution Factor	1	1	1	1	1	
Analysis Date	06.21.02	06.21.02	06.21.02	06.21.02	06.21.02	
Batch ID	AEW030	AEW030	AEW030	AEW030	AEW030	
Analyst	ST	ST	ST	ST	ST	
CO2 and Forms of Alkalinity (4500D)						
Bicarbonate (2320/4500), mg/l	430	350	68	440	340	
Carbon Dioxide, mg/l	22	35	4.0	4.0	17	
Carbonate (2320/4500), mg/l	2.0	1.0	0.0	8.0	1.0	
Hydroxide, mg/l	0.0	0.0	0.0	0.0	0.0	
Dilution Factor	1	1	1	1	1	
Analysis Date	06.21.02	06.21.02	06.21.02	06.21.02	06.21.02	
Batch ID	AEW030	AEW030	AEW030	AEW030	AEW030	
Analyst	ST	ST	ST	ST	ST	

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SERVICES

STL Pensacola

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES					DATE/ TIME SAMPLED
06370-1	CHA-0206-MW2/206047-01					06-11-02/14:25
06370-2	CHA-0206-MW4/206047-02					06-11-02/13:25
06370-3	CHA-0206-MW5/206047-03					06-11-02/12:35
06370-4	CHA-0206-MW6/206047-04					06-11-02/10:00
06370-5	CHA-0206-MW7/206047-05					06-11-02/11:10
PARAMETER	06370-1 <i>MW-2</i>	06370-2 <i>MW-4</i>	06370-3 <i>MW-5</i>	06370-4 <i>MW-6</i>	06370-5 <i>MW-7</i>	
Total Dissolved Solids (160.1), mg/l	2800	4700	4500	2600	3500	
Dilution Factor	1	1	1	1	1	
Analysis Date	06.18.02	06.18.02	06.18.02	06.18.02	06.18.02	
Batch ID	TDW048	TDW048	TDW048	TDW048	TDW048	
Analyst	ST	ST	ST	ST	ST	
Total Phosphorus (365.4), mg/l	0.21B	0.21B	0.18B	0.12B	0.12B	
Dilution Factor	1	1	1	1	1	
Prep Date	06.17.02	06.17.02	06.17.02	06.17.02	---	
Analysis Date	06.20.02	06.20.02	06.20.02	06.20.02	06.20.02	
Batch ID	TPW31V	TPW31V	TPW31V	TPW31V	TPW31V	
Prep Method	365.4	365.4	365.4	365.4	365.4	
Analyst	CR	CR	CR	CR	CR	
Fluoride (340.2), mg/l	2.7	1.5	0.84	7.7	2.9	
Dilution Factor	5	1	1	5	5	
Analysis Date	06.17.02	06.17.02	06.17.02	06.17.02	06.17.02	
Batch ID	FLW026	FLW026	FLW026	FLW026	FLW026	
Analyst	RB	RB	RB	RB	RB	

SEVERN

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SERVICES

STL Pensacola

LOG NO: C2-06370

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Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES					DATE/ TIME SAMPLED
06370-1	CHA-0206-MW2/206047-01					06-11-02/14:25
06370-2	CHA-0206-MW4/206047-02					06-11-02/13:25
06370-3	CHA-0206-MW5/206047-03					06-11-02/12:35
06370-4	CHA-0206-MW6/206047-04					06-11-02/10:00
06370-5	CHA-0206-MW7/206047-05					06-11-02/11:10
PARAMETER	06370-1 <i>mw-2</i>	06370-2 <i>mw-4</i>	06370-3 <i>mw-5</i>	06370-4 <i>mw-6</i>	06370-5 <i>mw-7</i>	
Specific Conductance (120.1), umhos/cm	5000	5500	5000	3600	4000	
Dilution Factor	1	1	1	1	1	
Analysis Date	06.21.02	06.21.02	06.21.02	06.21.02	06.21.02	
Batch ID	CDW016	CDW016	CDW016	CDW016	CDW016	
Analyst	ST	ST	ST	ST	ST	
Hardness by calculation (6010B)						
Hardness as CaCO ₃ , mg/l	360	1400	1400	150	1100	
Dilution Factor	1	1	1	1	1	
Prep Date	06.17.02	06.17.02	06.17.02	06.17.02	06.17.02	
Analysis Date	06.17.02	06.17.02	06.17.02	06.17.02	06.17.02	
Batch ID	PW248	PW248	PW248	PW248	PW248	
Prep Method	3010A	3010A	3010A	3010A	3010A	
Analyst	GSP	GSP	GSP	GSP	GSP	

SEVERN

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SERVICES

STL Pensacola

LOG NO: C2-06370

Received: 14 JUN 02

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Ms. Jacinta Tenorio
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Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
06370-1	CHA-0206-MW2/206047-01	06-11-02/14:25			
06370-2	CHA-0206-MW4/206047-02	06-11-02/13:25			
06370-3	CHA-0206-MW5/206047-03	06-11-02/12:35			
06370-4	CHA-0206-MW6/206047-04	06-11-02/10:00			
06370-5	CHA-0206-MW7/206047-05	06-11-02/11:10			
PARAMETER	06370-1 <i>MW-2</i>	06370-2 <i>MW-4</i>	06370-3 <i>MW-5</i>	06370-4 <i>MW-6</i>	06370-5 <i>MW-7</i>
Metals (6010B)					
Calcium, mg/l	91	430	460	48	330
Magnesium, mg/l	32	85	84	7.7	64
Potassium, mg/l	2.0	18	13	2.4	7.4
Sodium, mg/l	890	840	660	780	610
Cadmium, mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chromium, mg/l	<0.0050	0.0080	0.016	0.0070	0.0080
Dilution Factor	1	1	1	1	1
Prep Date	06.17.02	06.17.02	06.17.02	06.17.02	06.17.02
Analysis Date	06.17.02	06.17.02	06.17.02	06.17.02	06.17.02
Batch ID	PW248	PW248	PW248	PW248	PW248
Prep Method	3010A	3010A	3010A	3010A	3010A
Analyst	GSP	GSP	GSP	GSP	GSP
Mercury (7470A), mg/l					
Dilution Factor	1	1	1	1	1
Prep Date	06.19.02	06.19.02	06.19.02	06.19.02	06.19.02
Analysis Date	06.20.02	06.20.02	06.20.02	06.20.02	06.20.02
Batch ID	HGW057	HGW057	HGW057	HGW057	HGW057
Prep Method	7470A	7470A	7470A	7470A	7470A
Analyst	JDE	JDE	JDE	JDE	JDE
Quantitation Factor	1	1	1	1	1

SEVERN

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SERVICES

STL Pensacola

LOG NO: C2-06370

Received: 14 JUN 02

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Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
06370-6	CHA-0206-NOWW/206047-08	06-12-02/11:45
PARAMETER	06370-6	
Nitrate-Nitrite, Nitrogen (353.2)		
Nitrate + Nitrite-N, mg/l	<0.10	
Nitrate-N, mg/l	<0.10	
Dilution Factor	1	
Analysis Date	06.18.02	
Batch ID	N3W31A	
Analyst	CR	
Nitrite-N (354.1), mg/l		
Dilution Factor	0.10	
Analysis Date	1	
Batch ID	06.14.02	
Analyst	N2W117	
	RB	
Ammonia (350.1), mg/l		
Dilution Factor	37	
Analysis Date	10	
Batch ID	06.21.02	
Analyst	AAW22A	
	CR	
Chloride (4500E), mg/l		
Dilution Factor	420	
Analysis Date	10	
Batch ID	06.19.02	
Analyst	CKW030A	
	CR	

SEVERN

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SERVICES

STL Pensacola

LOG NO: C2-06370

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Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
06370-6	CHA-0206-NOWW/206047-08	06-12-02/11:45
PARAMETER	06370-6	
Sulfate as SO4 (375.4), mg/l	100	
Dilution Factor	5	
Analysis Date	06.19.02	
Batch ID	SEW048	
Analyst	RB	
Alkalinity Series (2320B)		
Alkalinity (to pH 4.5) as CaCO3, mg/l	1100	
PH, mg/l	6.0	
Dilution Factor	1	
Analysis Date	06.21.02	
Batch ID	AEW030	
Analyst	ST	
CO2 and Forms of Alkalinity (4500D)		
Bicarbonate (2320/4500), mg/l	1100	
Carbon Dioxide, mg/l	2200	
Carbonate (2320/4500), mg/l	0.0	
Hydroxide, mg/l	0.0	
Dilution Factor	1	
Analysis Date	06.21.02	
Batch ID	AEW030	
Analyst	ST	
Total Dissolved Solids (160.1), mg/l	1500	
Dilution Factor	1	
Analysis Date	06.18.02	
Batch ID	TDW048	
Analyst	ST	

SEVERN

TRENT

SERVICES

STL Pensacola

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Albuquerque, NM 87107

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Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
06370-6	CHA-0206-NOWW/206047-08	06-12-02/11:45
PARAMETER	06370-6	
Total Phosphorus (365.4), mg/l	75B	
Dilution Factor	1	
Prep Date	06.17.02	
Analysis Date	06.20.02	
Batch ID	TPW31V	
Prep Method	365.4	
Analyst	CR	
Fluoride (340.2), mg/l	<0.20	
Dilution Factor	1	
Analysis Date	06.17.02	
Batch ID	FLW026	
Analyst	RB	
Specific Conductance (120.1), umhos/cm	3100	
Dilution Factor	1	
Analysis Date	06.21.02	
Batch ID	CDW016	
Analyst	ST	

SEVERN

TRENT

SERVICES

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Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
06370-6	CHA-0206-NOWW/206047-08	06-12-02/11:45
PARAMETER	06370-6	
Hardness by calculation (6010B)		
Hardness as CaCO ₃ , mg/l	260	
Dilution Factor	1	
Prep Date	06.17.02	
Analysis Date	06.17.02	
Batch ID	PW248	
Prep Method	3010A	
Analyst	GSP	
Metals (6010B)		
Calcium, mg/l	91	
Magnesium, mg/l	8.3	
Potassium, mg/l	12	
Sodium, mg/l	230	
Cadmium, mg/l	<0.0050	
Chromium, mg/l	0.89	
Dilution Factor	1	
Prep Date	06.17.02	
Analysis Date	06.17.02	
Batch ID	PW248	
Prep Method	3010A	
Analyst	GSP	

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-06370

Received: 14 JUN 02

Reported: 25 JUN 02

Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
06370-6	CHA-0206-NOWW/206047-08	06-12-02/11:45
PARAMETER	06370-6	
Mercury (7470A), mg/l	0.040	
Dilution Factor	10	
Prep Date	06.19.02	
Analysis Date	06.20.02	
Batch ID	HGW057	
Prep Method	7470A	
Analyst	JDE	
Quantitation Factor	10	

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-06370

Received: 14 JUN 02

Reported: 25 JUN 02

Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

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REPORT OF RESULTS

DATE/

TIME SAMPLED

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES				
06370-7	Method Blank				
06370-8	Lab Control Standard % Recovery				
06370-9	Matrix Spike % Recovery				
06370-10	Matrix Spike Duplicate % Recovery				
PARAMETER		06370-7	06370-8	06370-9	06370-10
Nitrate-Nitrite, Nitrogen (353.2)					
Nitrate + Nitrite-N, mg/l		<0.10	98 %	112 %	109 %
Dilution Factor		1	---	---	---
Analysis Date		06.18.02	---	---	---
Batch ID		N3W31A	N3W31A	N3W31A	N3W31A
Analyst		CR	---	---	---
Nitrite-N (354.1), mg/l					
Nitrite-N (354.1), mg/l		<0.10	100 %	100 %	100 %
Dilution Factor		1	---	---	---
Analysis Date		06.14.02	---	---	---
Batch ID		N2W117	N2W117	N2W117	N2W117
Analyst		RB	---	---	---
Ammonia (350.1), mg/l					
Ammonia (350.1), mg/l		<0.050	103 %	112 %	112 %
Dilution Factor		1	---	---	---
Analysis Date		06.21.02	---	---	---
Batch ID		AAW22A	AAW22A	AAW22A	AAW22A
Analyst		CR	---	---	---
Chloride (4500E), mg/l					
Chloride (4500E), mg/l		<2.0	101 %	121 %	117 %
Dilution Factor		1	---	---	---
Analysis Date		06.19.02	---	---	---
Batch ID		CKW030A	CKW030A	CKW030A	CKW030A
Analyst		CR	---	---	---

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-06370

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Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED		
06370-7	Method Blank			
06370-8	Lab Control Standard % Recovery			
06370-9	Matrix Spike % Recovery			
06370-10	Matrix Spike Duplicate % Recovery			
PARAMETER	06370-7	06370-8	06370-9	06370-10
Sulfate as SO ₄ (375.4), mg/l	<5.0	100 %	100 %	112 %
Dilution Factor	1	---	---	---
Analysis Date	06.19.02	---	---	---
Batch ID	SEW048	SEW048	SEW048	SEW048
Prep Method	---	---	---	---
Analyst	RB	---	---	---
Alkalinity Series (2320B)				
Alkalinity (to pH 4.5) as CaCO ₃ , mg/l	<1.0	99 %	114 %	110 %
Dilution Factor	1	---	---	---
Analysis Date	06.21.02	---	---	---
Batch ID	AEW030	AEW030	AEW030	AEW030
Analyst	ST	---	---	---
CO ₂ and Forms of Alkalinity (4500D)				
Bicarbonate (2320/4500), mg/l	<1.0	99 %	114 %	110 %
Dilution Factor	1	---	---	---
Analysis Date	06.21.02	---	---	---
Batch ID	AEW030	AEW030	AEW030	AEW030
Analyst	ST	---	---	---
Total Dissolved Solids (160.1), mg/l	<5.0	106 %	N/A	N/A
Dilution Factor	1	---	---	---
Analysis Date	06.18.02	---	---	---
Batch ID	TDW048	TDW048	---	---
Analyst	ST	---	---	---

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-06370

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Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED		
06370-7	Method Blank			
06370-8	Lab Control Standard % Recovery			
06370-9	Matrix Spike % Recovery			
06370-10	Matrix Spike Duplicate % Recovery			
PARAMETER	06370-7	06370-8	06370-9	06370-10
Total Phosphorus (365.4), mg/l	0.063B	89 %	103 %	74 %
Dilution Factor	1	---	---	---
Prep Date	06.17.02	---	---	---
Analysis Date	06.20.02	---	---	---
Batch ID	TPW31V	TPW31V	TPW31V	TPW31V
Prep Method	365.4	---	---	---
Analyst	CR	---	---	---
Fluoride (340.2), mg/l	<0.20	100 %	105 %	98 %
Dilution Factor	1	---	---	---
Analysis Date	06.17.02	---	---	---
Batch ID	FLW026	FLW026	FLW026	FLW026
Analyst	RB	---	---	---
Specific Conductance (120.1), umhos/cm	<1.0	98 %	N/A	N/A
Dilution Factor	1	---	---	---
Analysis Date	06.21.02	---	---	---
Batch ID	CDW016	CDW016	---	---
Analyst	ST	---	---	---

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-06370

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Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
06370-7	Method Blank				
06370-8	Lab Control Standard % Recovery				
06370-9	Matrix Spike % Recovery				
06370-10	Matrix Spike Duplicate % Recovery				
PARAMETER	06370-7	06370-8	06370-9	06370-10	
Hardness by calculation (6010B)					
Hardness as CaCO ₃ , mg/l	<3.2	N/A	N/A	N/A	
Dilution Factor	1	---	---	---	
Prep Date	06.17.02	---	---	---	
Analysis Date	06.17.02	---	---	---	
Batch ID	PW248	PW248	PW248	PW248	
Prep Method	3010A	---	---	---	
Analyst	GSP	---	---	---	
Metals (6010B)					
Calcium, mg/l	<0.50	102 %	105 %	105 %	
Magnesium, mg/l	<0.50	100 %	103 %	102 %	
Potassium, mg/l	<1.0	102 %	114 %	113 %	
Sodium, mg/l	<1.0	102 %	N/A	N/A	
Cadmium, mg/l	<0.0050	102 %	104 %	104 %	
Chromium, mg/l	<0.0050	103 %	105 %	105 %	
Dilution Factor	1	1	1	1	
Prep Date	06.17.02	06.17.02	06.17.02	06.17.02	
Analysis Date	06.17.02	06.17.02	06.17.02	06.17.02	
Batch ID	PW248	PW248	PW248	PW248	
Prep Method	3010A	3010A	3010A	3010A	
Analyst	GSP	GSP	GSP	GSP	

STL Pensacola

LOG NO: C2-06370

Received: 14 JUN 02

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Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 206047

Project: 206047, AMEC-EPFS CHACO SAMPLING

Sampled By: Client

Code: 085920625

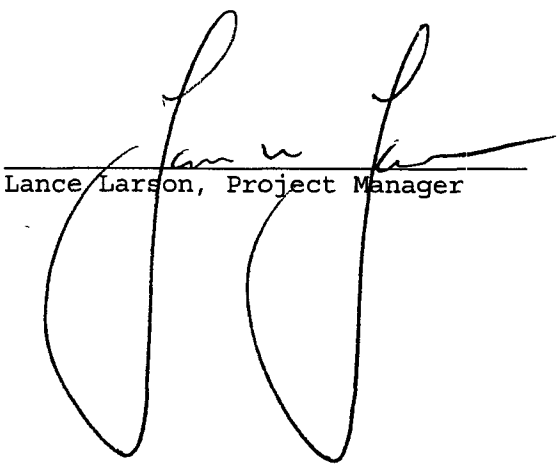
REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
06370-7	Method Blank				
06370-8	Lab Control Standard % Recovery				
06370-9	Matrix Spike % Recovery				
06370-10	Matrix Spike Duplicate % Recovery				
PARAMETER	06370-7	06370-8	06370-9	06370-10	
Mercury (7470A), mg/l	<0.00020	100 %	94 %	94 %	
Dilution Factor	1	---	---	---	
Prep Date	06.19.02	---	---	---	
Analysis Date	06.20.02	---	---	---	
Batch ID	HGW057	HGW057	HGW057	HGW057	
Prep Method	7470A	---	---	---	
Analyst	JDE	---	---	---	
Quantitation Factor	1	---	---	---	

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Data from any samples that do not meet client, federal, or state sample acceptance criteria (collection, preservation, or holding time) will be flagged, or noted on a corrective action form or case narrative, or addressed on the Project Sample Inspection Form (PSIF).


Lance Larson, Project Manager

Final Page Of Report

STL Pensacola Data Qualifiers for Final Report

STL Pensacola

B	The analyte was detected in the associated method blank and in the client's sample.
C	The compound has been quantitated against a one point calibration.
D	Recovery is not calculable due to dilution.
E	Estimated value because the analyte concentration exceeds the upper calibration range of the instrument or method.
I	Estimated value because the analyte concentration is less than the lower calibration range of the instrument but is at the method detection limit or greater than the method detection limit.
H	Sample and/or duplicate is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit.
J1	A sample surrogate or an LCS target compound recovered above the upper control limit (UCL). Compounds qualified with a J1 may be biased high.
J2	A sample surrogate or an LCS target compound recovered outside the lower control limit (LCL). Compounds qualified with a J2 may be biased low.
M1	A matrix effect was present.
M2	The MS and/or MSD %R or RPD was outside upper or lower control limits; not necessarily due to matrix effect.
N/C	Not Calculable; Sample spiked is > 4X spike concentration (may also use this flag in place of negative numbers).
R1	Internal standard area exceeds the acceptance criteria
R2	Calibration verification exceeds the acceptance criteria.
S1	The Method of Standard Additions (MSA) has been performed on this sample.
T	Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.
TIC	The compound is not included in the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified Compound.
U	The analyte was not detected at or above the MDL or the RL, whichever is entered next to the "U" value.
W	Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike absorbance.

When the laboratory receives a sample that does not meet EPA requirements for sample collection, preservation or holding time, the laboratory is required to reject the samples. The client must be notified and asked whether the lab should proceed with analysis. Data from any samples that do not meet sample acceptance criteria (collection, preservation and holding time), must be flagged, or noted on a corrective action form or case narrative, or addressed on the Project Sample Inspection Form (PSIF) in an unambiguous manner clearly defining the nature and substance of the variation. NPDES samples from North Carolina that do not meet EPA requirements for sample collection, preservation or holding time are non-reportable for NPDES compliance monitoring.

Abbreviations

ND	Not Detected at or above the STL Pensacola reporting limit (RL)
NS	Not Submitted
NA	Not Applicable
MDL	STL Pensacola Method Detection Limit
RL	STL Pensacola Reporting Limit
NoMS	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD)

Florida Projects Inorganic/Organic

Refer to FL DEP 62-160.700(7); Table 7 Data Qualifier Codes. FL DEP Rule 62-160.670(1)(h) states that laboratories shall include the analytical result for each analysis with applicable data qualifiers. FL DEP Rule 62-160.700(7), Table 7 lists the FL DEP data qualifiers. FL DEP Rule 62-160.700(3), Table 3 lists the Florida sites which require data qualifiers.

AFCEE QAPP Projects

Refer to AFCEE QAPP for appropriate data qualifiers (AFCEE QAPP Version will be specified by client for the project).

Arizona DEQ Projects

Any qualified data submitted to Arizona DEQ (ADEQ) after January 1, 2001 must be designated using the Arizona Data Qualifiers as developed by the Arizona ELAC technical subcommittee. Refer to the ADEQ qualifier list.

CLP and CLP-like Projects

Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers. CLP SOW to be followed must be specified to client.

STL PENSACOLA

Certifications, Memberships & Affiliations

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL), expires 06/30/02

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater), expires 01/11/03

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental), expires 02/20/03

California Department of Health Services, NELAP Laboratory ID No. 01128CA (Hazardous Waste and Wastewater), expires 03/31/02

Connecticut Department of Health Services, Connecticut Lab Approval No. PH-0697 (D W, H W and Wastewater), expires 09/30/03

Florida DOH, NELAP Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater), expires 06/30/02

Florida DEP/DOH CompQAP # 980156

Kansas Department of Health & Environment, NELAP Laboratory ID No. E10253 (Wastewater and Hazardous Waste), expires 10/31/02

Kentucky NR&EPC, Laboratory ID No. 90043 (Drinking Water), expires 12/31/02.

Louisiana DEQ, LELAP, NELAP Laboratory ID No. 02075, Agency Interest ID 30748 (Environmental, expires 6/30/02)

Maryland DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida), expires 09/30/02

Massachusetts DEP, Laboratory ID No. M-FL094 (Wastewater), expires 06/30/02

Michigan Bureau of E&OCH, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida), expires 06/30/02

New Hampshire DES ELAP, NELAP Laboratory ID No. 250501 (Wastewater), expires 08/16/02

New Jersey DEP&E, NELAP Laboratory ID No. FL006 (Wastewater and Hazardous Waster), expires 06/30/02.

New York State Department of Health, NELAP Laboratory ID No. 11503 (WW and Solids/Hazardous Waste), expires 03/31/02

North Carolina DENR, Laboratory ID No. 314 (Hazardous Waste and Wastewater), expires 12/31/02.

North Dakota DH&Consol Labs, Laboratory ID No. R-108 Wastewater and Hazardous Waste by Reciprocity with Florida), expires 06/30/02

Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater), expires 08/31/02

Pennsylvania Department of Environmental Resources, NELAP Laboratory ID No. 68-467 (Drinking Water & Wastewater), expires 12/01/02

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater & Solids/Hazardous Waste by Reciprocity with FL), expires 06/30/02

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water), expires 08/03/04

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL), expires 06/30/02

Washington Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater), expires 09/14/02

West Virginia DOE, Office of Water Resources, Laboratory ID No. 136 (Haz Waste and Wastewater), expires 04/30/02.

American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 100704, expires April 1, 2004. Participant in AIHA sponsored Laboratory PAT Rounds

EPA ICR (Information Collection Rule) Approved Laboratory, Laboratory ID No. ICRFL031

Naval Facilities Engineering Services Center (NFESC), expires July 5, 2002.

United States Army Corps. of Engineers (USACE), MRD, expires July 5, 2002.

STL Pensacola also has a foreign soil permit to accept soils from locations other than the continental United States. Permit No. S-37599

certlist\condcert.lst revised 05/14/2002

STL Pensacola PROJECT SAMPLE INSPECTION FORM



Lab Order #: C206370 Date Received: 6-14-02

- | | |
|---|--|
| <p>1. Was there a Chain of Custody? ☒ Yes No*</p> <p>2. Was Chain of Custody properly filled out and relinquished? ☒ Yes No*</p> <p>3. Were samples received cold? ☒ Yes No* N/A
(Criteria: 2° - 6°C: STL-SOP)</p> <p>4. Were all samples properly labeled and identified? ☒ Yes No*</p> <p>5. Did samples require splitting or compositing? Yes* ☒ No
Req By: PM Client Other*</p> <p>6. Were samples received in proper containers for analysis requested? ☒ Yes No*</p> <p>7. Were all sample containers received intact? ☒ Yes No*</p> | <p>8. Were samples checked for preservative? ☒ Yes No* N/A
(Check pH of all H₂O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)*</p> <p>9. Is there sufficient volume for analysis requested? ☒ Yes No* N/A (Can)</p> <p>10. Were samples received within Holding Time? (REFER TO STL-SOP 1040) Yes ☒ No*</p> <p>11. Is Headspace visible > ¼" in diameter in VOA vials? If any headspace is evident, comment in out-of-control section. Yes* No ☒ N/A</p> <p>12. If sent, were matrix spike bottles returned? Yes No* ☒ N/A</p> <p>13. Was Project Manager notified of problems? (initials: <u>SAD</u>) ☒ Yes No* N/A
<u>PSIF</u></p> |
|---|--|

Airbill Number(s): 128781680143715082 Shipped By: LPS

Cooler Number(s): Client Shipping Charges: N/A

Cooler Weight(s): 53 # Cooler Temp(s) (°C): 4.0°C
CCK5
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

Out of Control Events and Inspection Comments:

ID, INNO₃ were received out of hold time. SAD 6-14-02

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: SAD Date: 6-14-02 Logged By: LJK Date: 14-Jun-02

- * Note all Out-of-Control and/or questionable events on Comment Section of this form. For holding times, the analytical department will flag immediate hold time samples (pH, Dissolved O₂, Residual CL) as out of hold time, therefore, these samples will not be documented on this PSIF.
- * If Other, note who requested the splitting or compositing of samples on the Comment Section of this form. All volatile samples requested to be split or composited must be done in the Volatile Lab. Document: "Volatile sample values may be compromised due to sample splitting (compositing)"
- + All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938, section 2.2.9).
- * According to EPA, ¼" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938, section 2.2.12).

Network Project Manager: Jacinta A. Tenorio

Pinnacle Laboratories, Inc.
2709-D Pan American Freeway, NE
Albuquerque, New Mexico 87107
(505) 344-3777 Fax (505) 344-4413

INNO3 are out of hold time, ok to run
as specified!!

C206370

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL (23 METALS)	Ca, Mg, K, Na, Cd, Cr, Hg	Conductivity, Total Hardness	Alk + Bicarb./ Carb. INNO3	Gen Chemistry: Cl, SO4, F, NH3	Total Phosphate, TDS	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8240 (TCLP 1311) ZHE	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
CHA-0206-MW2/206047-01	6/11/02	1425	AQ						X	X	X	X	X														
CHA-0206-MW4/-02		1325							X	X	X	X	X														
CHA-0206-MW5/-03		1235							X	X	X	X	X														
CHA-0206-MW6/-04		1000							X	X	X	X	X														
CHA-0206-MW7/-05		1110							X	X	X	X	X														
CHA-0206-NONW/✓-08	6/12/02	1145							X	X	X	X	X														

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:	206047	Total Number of Containers		PENSACOLA - STL-FL		Signature:	Time:	Signature:	Time:
PROJ. NAME:	AMEC	Chain of Custody Seals		ESL - OR		Printed Name:	Date:	Printed Name:	Date:
QC LEVEL:	STD IV	Received Intact?		STL - CT		Company:		Company:	
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		ATEL - AZ		RECEIVED BY:			
TAT:	STANDARD RUSH!!	LAB NUMBER:		ATEL - MARION		RECEIVED BY:			
				ATEL - MELMORE		RECEIVED BY:			
COMMENTS:				BARRINGER		RECEIVED BY:			
DUE DATE:	6/27			ENVIRO TEST LABS		RECEIVED BY:			
RUSH SURCHARGE:	-			WCAS		RECEIVED BY:			
CLIENT DISCOUNT:	-			WOHL		RECEIVED BY:			
SPECIAL CERTIFICATION						RECEIVED BY:			
REQUIRED: YES NO						RECEIVED BY:			

SHADED AREAS ARE FOR LAB USE ONLY. PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: Robert Thompson
COMPANY: AMEC
ADDRESS: 2060 AFLOW Place
Farmington NM 87401
PHONE: (505) 327-7928
FAX: (505) 326-5721
BILL TO: DAVID BAYS
COMPANY: EL Paso Field Services
ADDRESS: 614 Rolly AVE
Farmington NM 87401

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX) (Gasoline) MTBE	8021 (BTEX) □ MTBE □ TMB □ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB □ / DBCP □	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides/PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry: see ATTACHED	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals: see ATTACHED	NUMBER OF CONTAINERS
CHA-0206-MW 2	6-11-02	1425	H ₂ O	01			X																						4
CHA-0206-MW 4	6-11-02	1325	H ₂ O	02			X																						4
CHA-0206-MW 5	6-11-02	1235	H ₂ O	03			X																						4
CHA-0206-MW 6	6-11-02	1000	H ₂ O	04			X																						4
CHA-0206-MW 7	6-11-02	1110	H ₂ O	05			X																						4
CHA-0206-MW 9	6-12-02	0947	H ₂ O	06				X																					2
CHA-0206-MW 10	6-12-02	1110	H ₂ O	07				X																					2
CHA-0206-MCW 6	6-12-02	1145	H ₂ O	08				X																					4
Trip Blank	6-4-02	1035	H ₂ O	09				X																					1

PROJECT INFORMATION	PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS	RELINQUISHED BY:	RELINQUISHED BY:
PROJ. NO: 1517000054	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒	Signature: [Signature]	Signature: [Signature]
PROJ. NAME: GOST CHCO Sampling	CERTIFICATION REQUIRED ☐ NM ☐ SDWA ☐ OTHER	Printed Name: Chris AMEC	Printed Name: [Signature]
P.O. NO:	METHANOL PRESERVATION ☐	Company: AMEC	Company: [Signature]
SHIPPED VIA: Greyhound	COMMENTS: FIXED FEE ☐	See reverse side (Force Majeure)	See reverse side (Force Majeure)
SAMPLE RECEIPT		RECEIVED BY:	RECEIVED BY:
NO. CONTAINERS: 29		Signature: [Signature]	Signature: [Signature]
CUSTODY SERIALS: [Signature]		Time: [Signature]	Time: [Signature]
RECEIVED INTACT: [Signature]		Date: [Signature]	Date: [Signature]
BLINDING: [Signature]		Printed Name: [Signature]	Printed Name: [Signature]
		Company: Pinnacle Laboratories Inc.	Company: Pinnacle Laboratories Inc.

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **209095**
October 08, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name CHACO PLANT SAMPLING
Project Number 1517000054

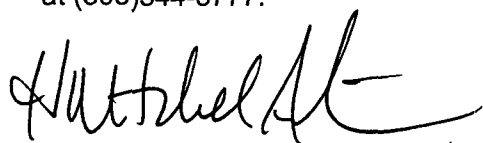
Attention: ROBERT THOMPSON/DAVID BAYS

On 09/24/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 analyses were performed by Pinnacle Laboratories, Inc. Albuquerque, NM.

All other analyses were performed by Environmental Services Laboratory, Inc. Portland, OR.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 209095
PROJECT #	: 1517000054	DATE RECEIVED	: 09/24/02
PROJECT NAME	: CHACO PLANT SAMPLING	REPORT DATE	: 10/08/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
209095 - 01	CHA-0209-MW1	AQUEOUS	09/20/02
209095 - 02	CHA-0209-MW8	AQUEOUS	09/20/02
209095 - 03	CHA-0209-MW9	AQUEOUS	09/20/02
209095 - 04	CHA-0209-MW10	AQUEOUS	09/20/02
209095 - 05	TRIP BLANK	AQUEOUS	09/19/02



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000054
PROJECT NAME : CHACO PLANT SAMPLING

PINNACLE I.D.: 209095

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	CHA-0209-MW1	AQUEOUS	09/20/02	NA	09/24/02	1
02	CHA-0209-MW8	AQUEOUS	09/20/02	NA	09/24/02	1
03	CHA-0209-MW9	AQUEOUS	09/20/02	NA	09/24/02	1

PARAMETER	DET. LIMIT	UNITS	CHA-0209-MW1	CHA-0209-MW8	CHA-0209-MW9
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	1.0	UG/L	< 1.0	< 1.0	< 1.0

SURROGATE:

BROMOFLUOROBENZENE (%)	101	99	102
SURROGATE LIMITS (80 - 120)			

CHEMIST NOTES:

N/A

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Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000054
PROJECT NAME : CHACO PLANT SAMPLING

PINNACLE I.D.: 209095

PROJECT NAME: CHERRY CREEK WASTE TREATMENT PLANT SAMPLING						
SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	CHA-0209-MW10	AQUEOUS	09/20/02	NA	09/24/02	1
05	TRIP BLANK	AQUEOUS	09/19/02	NA	09/24/02	1

PARAMETER	DET. LIMIT	UNITS	CHA-0209-MW10	TRIP BLANK
BENZENE	0.5	UG/L	91	< 0.5
TOLUENE	0.5	UG/L	0.93	< 0.5
ETHYLBENZENE	0.5	UG/L	32	< 0.5
TOTAL XYLENES	1.0	UG/L	94	< 1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 110 100
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A

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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 209095
BLANK I. D.	: 092402	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 09/24/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: CHACO PLANT SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 99
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A

PINNACLE
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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 209095
BATCH #	: 092402	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 09/24/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: CHACO PLANT SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.7	99	18.9	95	4	(80 - 120)	20
TOLUENE	<0.5	20.0	19.5	98	18.5	93	5	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.1	101	18.9	95	6	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	59.3	99	55.8	93	6	(80 - 120)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

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GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 209095
MSMSD #	: 209095-01	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 09/24/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: CHACO PLANT SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.1	96	19.1	96	0	(80 - 120)	20
TOLUENE	<0.5	20.0	18.6	93	18.4	92	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	19.2	96	19.6	98	2	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	56.6	94	58.1	97	3	(80 - 120)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



Environmental Services Laboratory, Inc.

17400 SW Upper Boones Ferry Road, Suite 270 • Portland, OR 97224 • (503) 670-8520

October 03, 2002

Jacinta A. Tenorio
Pinnacle Laboratories
2709-D Pan American Fwy NE
Albuquerque, NM 87107

TEL: 505-344-3777

FAX (505) 344-4413

RE: 209095/AMEC

Order No.: 0209204

Dear Jacinta A. Tenorio:

Environmental Services Laboratory received 2 samples on 9/25/02 for the analyses presented in the following report.

There were no analytical problems encountered and all associated QC data met EPA or laboratory specifications except where noted in a Case Narrative. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety, without the written approval of the laboratory. The following checked data sections are included in this report, and numbered to indicate total pages contained within each report section.

☒ Base Sample Report ☒ Method Blank Report ☒ Sample Duplicate Report ☒ Matrix Spike/Matrix Spike Duplicate Report ☒ Laboratory Control Spike/Spike Duplicate Report
☒ Continuing Calibration Verification Report ☒ Initial Calibration Verification Report

If you have any questions regarding these tests results, please feel free to call.

Project Manager

Technical Review

Environmental Services Laboratory

Date: 03-Oct-02

CLIENT: Pinnacle Laboratories

Client Sample ID: CHA-209-MW1/209095-01

Lab Order: 0209204

Tag Number:

Project: 209095/AMEC

Collection Date: 9/20/02

Lab ID: 0209204-01A

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
MERCURY		EPA 7470A		(3005A)		Analyst: mal
Mercury	ND	0.00020		mg/L	1	9/30/02
ICP METALS		EPA 6010B		(3005A)		Analyst: mal
Cadmium	ND	0.0020		mg/L	1	9/30/02
Chromium	ND	0.0050		mg/L	1	9/30/02
PAH BY SIM, AQUEOUS		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	ND	0.40		µg/L	4	9/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	9/27/02
Acenaphthene	ND	0.40		µg/L	4	9/27/02
Acenaphthylene	ND	0.40		µg/L	4	9/27/02
Anthracene	ND	0.40		µg/L	4	9/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	9/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	9/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	9/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	9/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	9/27/02
Chrysene	ND	0.40		µg/L	4	9/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	9/27/02
Fluoranthene	ND	0.40		µg/L	4	9/27/02
Fluorene	ND	0.40		µg/L	4	9/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	9/27/02
Naphthalene	ND	0.40		µg/L	4	9/27/02
Phenanthrene	ND	0.40		µg/L	4	9/27/02
Pyrene	ND	0.40		µg/L	4	9/27/02
Surr: 2-Fluorobiphenyl	60.0	43-116		%REC	4	9/27/02
Surr: 4-Terphenyl-d14	76.0	33-141		%REC	4	9/27/02
Surr: Nitrobenzene-d5	50.0	35-114		%REC	4	9/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range

Environmental Services Laboratory

Date: 03-Oct-02

CLIENT: Pinnacle Laboratories
Lab Order: 0209204
Project: 209095/AMEC
Lab ID: 0209204-02A

Client Sample ID: CHA-209-MW8/209095-02
Tag Number:
Collection Date: 9/20/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
MERCURY		EPA 7470A		(3005A)		Analyst: mal
Mercury	ND	0.00020		mg/L	1	9/30/02
ICP METALS		EPA 6010B		(3005A)		Analyst: mal
Cadmium	ND	0.0020		mg/L	1	9/30/02
Chromium	ND	0.0050		mg/L	1	9/30/02
PAH BY SIM, AQUEOUS		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	ND	0.40		µg/L	4	9/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	9/27/02
Acenaphthene	ND	0.40		µg/L	4	9/27/02
Acenaphthylene	ND	0.40		µg/L	4	9/27/02
Anthracene	ND	0.40		µg/L	4	9/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	9/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	9/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	9/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	9/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	9/27/02
Chrysene	ND	0.40		µg/L	4	9/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	9/27/02
Fluoranthene	ND	0.40		µg/L	4	9/27/02
Fluorene	1.5	0.40		µg/L	4	9/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	9/27/02
Naphthalene	ND	0.40		µg/L	4	9/27/02
Phenanthrene	ND	0.40		µg/L	4	9/27/02
Pyrene	ND	0.40		µg/L	4	9/27/02
Surr: 2-Fluorobiphenyl	78.0	43-116		%REC	4	9/27/02
Surr: 4-Terphenyl-d14	95.0	33-141		%REC	4	9/27/02
Surr: Nitrobenzene-d5	72.0	35-114		%REC	4	9/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 03-Oct-02

CLIENT: Pinnacle Laboratories

Work Order: 0209204

Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 02 HG A

Sample ID: MB-4911	SampType: MBLK	TestCode: 02 HG A	Units: mg/L	Prep Date: 9/30/02	Run ID: MERC_020930B						
Client ID: ZZZZZ	Batch ID: 4911	TestNo: EPA 7470A (3005A)		Analysis Date: 9/30/02	SeqNo: 140502						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID: LCS-4911	SampType: LCS	TestCode: 02 HG A	Units: mg/L	Prep Date: 9/30/02	Run ID: MERC_020930B						
Client ID: ZZZZZ	Batch ID: 4911	TestNo: EPA 7470A	(3005A)	Analysis Date: 9/30/02	SeqNo: 140503						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00103	0.00020	0.001	0	103	80	120	0	0	0	

Sample ID: 0209181-01A MS	SampType: MS	TestCode: 02 HG A	Units: mg/L	Prep Date: 9/30/02	Run ID: MERC_020930B						
Client ID: ZZZZZ	Batch ID: 4911	TestNo: EPA 7470A (3005A)		Analysis Date: 9/30/02	SeqNo: 140505						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury, Diss	0.00169	0.00020	0.002	0	84.5	75	125	0	0	0	

Sample ID: 0209181-01A MSD	SampType: MSD	TestCode: 02 HG A	Units: mg/L	Prep Date: 9/30/02	Run ID: MERC_020930B						
Client ID: ZZZZZ	Batch ID: 4911	TestNo: EPA 7470A (3005A)		Analysis Date: 9/30/02	SeqNo: 140506						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury, Diss	0.00198	0.00020	0.002	0	99	75	125	0.00169	15.8	20	

Sample ID: 0209183-01A DUP	SampType: DUP	TestCode: 02 HG A	Units: mg/L	Prep Date: 9/30/02	Run ID: MERC_020930B						
Client ID: ZZZZZ	Batch ID: 4911	TestNo: EPA 7470A (3005A)		Analysis Date: 9/30/02	SeqNo: 140508						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020	0	0	0	0	0	0	0	0	20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
Work Order: 0209204
Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 02 HG A

Sample ID: CCV	SampType: CCV	TestCode: 02 HG A	Units: mg/L	Prep Date: 9/30/02	Run ID: MERC_020930B						
Client ID: ZZZZZ	Batch ID: 4911	TestNo: EPA 7470A		Analysis Date: 9/30/02	SeqNo: 140520						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0019	0.00020	0.002	0	95	90	110	0	0	0	

Sample ID: ICV	SampType: ICV	TestCode: 02 HG A	Units: mg/L	Prep Date: 9/30/02	Run ID: MERC_020930B						
Client ID: ZZZZZ	Batch ID: 4911	TestNo: EPA 7470A		Analysis Date: 9/30/02	SeqNo: 140501						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.002	0.00020	0.002	0	100	90	110	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0209204
 Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 02 ICPA

Sample ID: MB-4904	SampType: MBLK	TestCode: 02 ICPA	Units: mg/L	Prep Date: 9/30/02	Run ID: ICP_020930B						
Client ID: ZZZZZ	Batch ID: 4904	TestNo: EPA 6010B (3005A)		Analysis Date: 9/30/02	SeqNo: 140598						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	ND	0.0050									
Arsenic	ND	0.0050									
Barium	ND	0.0050									
Beryllium	ND	0.0020									
Cadmium	ND	0.0020									
Chromium	ND	0.0050									
Copper	ND	0.0050									
Iron	ND	0.010									
Lead	ND	0.0050									
Manganese	ND	0.0050									
Nickel	ND	0.0050									
Selenium	ND	0.0050									
Silver	ND	0.0050									
Thallium	ND	0.010									
Zinc	ND	0.0050									

Sample ID: LCS-4904	SampType: LCS	TestCode: 02 ICPA	Units: mg/L	Prep Date: 9/30/02	Run ID: ICP_020930B						
Client ID: ZZZZZ	Batch ID: 4904	TestNo: EPA 6010B (3005A)		Analysis Date: 9/30/02	SeqNo: 140599						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	0.472	0.0050	0.5	0	94.4	80	120	0	0		
Arsenic	0.478	0.0050	0.5	0	95.6	80	120	0	0		
Barium	0.475	0.0050	0.5	0	95	80	120	0	0		
Beryllium	0.512	0.0020	0.5	0	102	80	120	0	0		
Cadmium	0.469	0.0020	0.5	0	93.8	80	120	0	0		
Chromium	0.495	0.0050	0.5	0	99	80	120	0	0		
Copper	0.498	0.0050	0.5	0	99.6	80	120	0	0		
Iron	5.02	0.010	5	0	100	80	120	0	0		
Lead	0.493	0.0050	0.5	0	98.6	80	120	0	0		
Manganese	0.501	0.0050	0.5	0	100	80	120	0	0		
Nickel	0.488	0.0050	0.5	0	97.6	80	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0209204
 Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 02 ICPA

Sample ID: LCS-4904	SampType: LCS	TestCode: 02 ICPA	Units: mg/L	Prep Date: 9/30/02	Run ID: ICP_020930B						
Client ID: ZZZZZ	Batch ID: 4904	TestNo: EPA 6010B (3005A)		Analysis Date: 9/30/02	SeqNo: 140599						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Selenium	0.484	0.0050	0.5	0	96.8	80	120	0	0		
Silver	0.492	0.0050	0.5	0	98.4	80	120	0	0		
Thallium	0.485	0.010	0.5	0	97	80	120	0	0		
Zinc	0.485	0.0050	0.5	0	97	80	120	0	0		

Sample ID: 0209183-01A MS	SampType: MS	TestCode: 02 ICPA	Units: mg/L	Prep Date: 9/30/02	Run ID: ICP_020930B						
Client ID: ZZZZZ	Batch ID: 4904	TestNo: EPA 6010B (3005A)		Analysis Date: 9/30/02	SeqNo: 140601						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	0.476	0.0050	0.5	0	95.2	75	125	0	0		
Arsenic	0.48	0.0050	0.5	0	96	75	125	0	0		
Barium	0.543	0.0050	0.5	0.0755	93.5	75	125	0	0		
Beryllium	0.507	0.0020	0.5	0	101	75	125	0	0		
Cadmium	0.458	0.0020	0.5	0	91.6	75	125	0	0		
Chromium	0.487	0.0050	0.5	0	97.4	75	125	0	0		
Copper	0.501	0.0050	0.5	0	100	75	125	0	0		
Iron	6.25	0.010	5	1.41	96.8	75	125	0	0		
Lead	0.488	0.0050	0.5	0	97.6	75	125	0	0		
Manganese	6.79	0.0050	0.5	6.37	84	75	125	0	0		
Nickel	0.736	0.0050	0.5	0.263	94.6	75	125	0	0		
Selenium	0.49	0.0050	0.5	0	98	75	125	0	0		
Silver	0.495	0.0050	0.5	0	99	75	125	0	0		
Thallium	0.457	0.010	0.5	0	91.4	75	125	0	0		
Zinc	0.514	0.0050	0.5	0.0352	95.8	75	125	0	0		

Sample ID: 0209183-01A MSD	SampType: MSD	TestCode: 02 ICPA	Units: mg/L	Prep Date: 9/30/02	Run ID: ICP_020930B						
Client ID: ZZZZZ	Batch ID: 4904	TestNo: EPA 6010B (3005A)		Analysis Date: 9/30/02	SeqNo: 140602						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	0.475	0.0050	0.5	0	95	75	125	0.476	0.210	20	
Arsenic	0.484	0.0050	0.5	0	96.8	75	125	0.48	0.830	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0209204
 Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 02 ICPA

Sample ID: 0209183-01A MSD	SampType: MSD	TestCode: 02 ICPA	Units: mg/L	Prep Date: 9/30/02	Run ID: ICP_020930B						
Client ID: ZZZZZ	Batch ID: 4904	TestNo: EPA 6010B (3005A)		Analysis Date: 9/30/02	SeqNo: 140602						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	0.549	0.0050	0.5	0.0755	94.7	75	125	0.543	1.10	20	
Beryllium	0.514	0.0020	0.5	0	103	75	125	0.507	1.37	20	
Cadmium	0.464	0.0020	0.5	0	92.8	75	125	0.458	1.30	20	
Chromium	0.49	0.0050	0.5	0	98	75	125	0.487	0.614	20	
Copper	0.503	0.0050	0.5	0	101	75	125	0.501	0.398	20	
Iron	6.32	0.010	5	1.41	98.2	75	125	6.25	1.11	20	
Lead	0.489	0.0050	0.5	0	97.8	75	125	0.488	0.205	20	
Manganese	6.79	0.0050	0.5	6.37	84	75	125	6.79	0	20	
Nickel	0.745	0.0050	0.5	0.263	96.4	75	125	0.736	1.22	20	
Selenium	0.496	0.0050	0.5	0	99.2	75	125	0.49	1.22	20	
Silver	0.5	0.0050	0.5	0	100	75	125	0.495	1.01	20	
Thallium	0.471	0.010	0.5	0	94.2	75	125	0.457	3.02	20	
Zinc	0.529	0.0050	0.5	0.0352	98.8	75	125	0.514	2.88	20	

Sample ID: 0209183-02A DUP	SampType: DUP	TestCode: 02 ICPA	Units: mg/L	Prep Date: 9/30/02	Run ID: ICP_020930B						
Client ID: ZZZZZ	Batch ID: 4904	TestNo: EPA 6010B (3005A)		Analysis Date: 9/30/02	SeqNo: 140604						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	ND	0.0050	0	0	0	0	0	0	0	20	
Arsenic	ND	0.0050	0	0	0	0	0	0	0	20	
Barium	0.0582	0.0050	0	0	0	0	0	0	200	20	R,Q
Beryllium	ND	0.0020	0	0	0	0	0	0.0583	0	20	
Cadmium	ND	0.0020	0	0	0	0	0	0	0	20	
Chromium	ND	0.0050	0	0	0	0	0	0	0	20	
Copper	ND	0.0050	0	0	0	0	0	0	0	20	
Iron	0.0651	0.010	0	0	0	0	0	0	0	20	
Lead	ND	0.0050	0	0	0	0	0	0.0383	51.8	20	R,Q
Manganese	2.46	0.0050	0	0	0	0	0	0	0	20	
Selenium	ND	0.0050	0	0	0	0	0	2.49	1.21	20	
Silver	ND	0.0050	0	0	0	0	0	0	0	20	
Thallium	ND	0.010	0	0	0	0	0	0	0	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0209204
 Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 02 ICPA

Sample ID: 0209183-02A DUP	SampType: DUP	TestCode: 02 ICPA	Units: mg/L	Prep Date: 9/30/02	Run ID: ICP_020930B
Client ID: ZZZZZ	Batch ID: 4904	TestNo: EPA 6010B (3005A)		Analysis Date: 9/30/02	SeqNo: 140604
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Zinc 0.0581 0.0050 0 0 0 0.0573 1.39 20

Sample ID: CCV	SampType: CCV	TestCode: 02 ICPA	Units: mg/L	Prep Date: 9/27/02	Run ID: ICP_020930B
Client ID: ZZZZZ	Batch ID: 4904	TestNo: EPA 6010B		Analysis Date: 9/30/02	SeqNo: 140621
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Antimony 0.496 0.0050 0.5 0 99.2 90 110 0 0
 Arsenic 0.495 0.0050 0.5 0 99 90 110 0 0
 Barium 0.492 0.0050 0.5 0 98.4 90 110 0 0
 Beryllium 0.549 0.0020 0.5 0 110 90 110 0 0
 Cadmium 0.524 0.0020 0.5 0 105 90 110 0 0
 Chromium 0.508 0.0050 0.5 0 102 90 110 0 0
 Copper 0.501 0.0050 0.5 0 100 90 110 0 0
 Iron 0.495 0.010 0.5 0 99 90 110 0 0
 Lead 0.52 0.0050 0.5 0 104 90 110 0 0
 Manganese 0.515 0.0050 0.5 0 103 90 110 0 0
 Nickel 0.517 0.0050 0.5 0 103 90 110 0 0
 Selenium 0.51 0.0050 0.5 0 102 90 110 0 0
 Silver 0.509 0.0050 0.5 0 102 90 110 0 0
 Thallium 0.499 0.010 0.5 0 99.8 90 110 0 0
 Zinc 0.506 0.0050 0.5 0 101 90 110 0 0

Sample ID: ICVLOW	SampType: ICV	TestCode: 02 ICPA	Units: mg/L	Prep Date: 9/27/02	Run ID: ICP_020930B
Client ID: ZZZZZ	Batch ID: 4904	TestNo: EPA 6010B		Analysis Date: 9/30/02	SeqNo: 140596
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Antimony 0.497 0.0050 0.5 0 99.4 90 110 0 0
 Arsenic 0.49 0.0050 0.5 0 98 90 110 0 0
 Barium 0.504 0.0050 0.5 0 101 90 110 0 0
 Beryllium 0.532 0.0020 0.5 0 106 90 110 0 0
 Cadmium 0.523 0.0020 0.5 0 105 90 110 0 0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0209204
 Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 02 ICPA

Sample ID: ICVLOW	SampType: ICV	TestCode: 02 ICPA	Units: mg/L	Prep Date: 9/27/02	Run ID: ICP_020930B						
Client ID: ZZZZZ	Batch ID: 4904	TestNo: EPA 6010B		Analysis Date: 9/30/02	SeqNo: 140596						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.513	0.0050	0.5	0	103	90	110	0	0		
Copper	0.511	0.0050	0.5	0	102	90	110	0	0		
Iron	0.523	0.010	0.5	0	105	90	110	0	0		
Lead	0.52	0.0050	0.5	0	104	90	110	0	0		
Manganese	0.524	0.0050	0.5	0	105	90	110	0	0		
Nickel	0.514	0.0050	0.5	0	103	90	110	0	0		
Selenium	0.514	0.0050	0.5	0	103	90	110	0	0		
Silver	0.509	0.0050	0.5	0	102	90	110	0	0		
Thallium	0.5	0.010	0.5	0	100	90	110	0	0		
Zinc	0.508	0.0050	0.5	0	102	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0209204
 Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: MB-4902	SampType: MBLK	TestCode: 06 PAH A	Units: µg/L	Prep Date: 9/26/02	Run ID: HEISENBURG_020927A						
Client ID: ZZZZZ	Batch ID: 4902	TestNo: 8270-SIM	(3510C)	Analysis Date: 9/27/02	SeqNo: 139919						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	ND	0.10									
2-Methylnaphthalene	ND	0.10									
Acenaphthene	ND	0.10									
Acenaphthylene	ND	0.10									
Anthracene	ND	0.10									
Benz(a)anthracene	ND	0.10									
Benzo(a)pyrene	ND	0.10									
Benzo(b)fluoranthene	ND	0.10									
Benzo(g,h,i)perylene	ND	0.10									
Benzo(k)fluoranthene	ND	0.10									
Chrysene	ND	0.10									
Dibenz(a,h)anthracene	ND	0.10									
Fluoranthene	ND	0.10									
Fluorene	ND	0.10									
Indeno(1,2,3-cd)pyrene	ND	0.10									
Naphthalene	ND	0.10									
Phenanthrene	ND	0.10									
Pyrene	ND	0.10									
Surr: 2-Fluorobiphenyl	0.54	0	1	0	54	43	116	0	0		
Surr: 4-Terphenyl-d14	0.75	0	1	0	75	33	141	0	0		
Surr: Nitrobenzene-d5	0.53	0	1	0	53	35	114	0	0		

Sample ID: LCS-4902	SampType: LCS	TestCode: 06 PAH A	Units: µg/L	Prep Date: 9/26/02	Run ID: HEISENBURG_020927A						
Client ID: ZZZZZ	Batch ID: 4902	TestNo: 8270-SIM	(3510C)	Analysis Date: 9/27/02	SeqNo: 139920						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	0.74	0.10	1	0	74	21	133	0	0		
2-Methylnaphthalene	0.73	0.10	1	0	73	21	133	0	0		
Acenaphthene	0.82	0.10	1	0	82	47	145	0	0		
Acenaphthylene	0.76	0.10	1	0	76	33	145	0	0		
Anthracene	0.81	0.10	1	0	81	27	133	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0209204
 Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: LCS-4902	SampType: LCS	TestCode: 06 PAH A	Units: µg/L	Prep Date: 9/26/02	Run ID: HEISENBURG_020927A						
Client ID: ZZZZZ	Batch ID: 4902	TestNo: 8270-SIM	(3510C)	Analysis Date: 9/27/02	SeqNo: 139920						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	0.82	0.10	1	0	82	33	143	0	0		
Benzo(a)pyrene	0.85	0.10	1	0	85	17	163	0	0		
Benzo(b)fluoranthene	0.73	0.10	1	0	73	24	159	0	0		
Benzo(g,h,i)perylene	0.68	0.10	1	0	68	1	219	0	0		
Benzo(k)fluoranthene	0.96	0.10	1	0	96	11	162	0	0		
Chrysene	0.9	0.10	1	0	90	17	168	0	0		
Dibenz(a,h)anthracene	0.58	0.10	1	0	58	1	227	0	0		
Fluoranthene	0.9	0.10	1	0	90	26	137	0	0		
Fluorene	0.82	0.10	1	0	82	59	121	0	0		
Indeno(1,2,3-cd)pyrene	0.59	0.10	1	0	59	1	171	0	0		
Naphthalene	0.79	0.10	1	0	79	21	133	0	0		
Phenanthrene	0.85	0.10	1	0	85	54	120	0	0		
Pyrene	0.88	0.10	1	0	88	52	115	0	0		
Surr: 2-Fluorobiphenyl	0.74	0	1	0	74	43	116	0	0		
Surr: 4-Terphenyl-d14	0.84	0	1	0	84	33	141	0	0		
Surr: Nitrobenzene-d5	0.68	0	1	0	68	35	114	0	0		

Sample ID: LCSD-4902	Batch ID: 4902	TestCode: 06 PAH A	Units: µg/L	Prep Date: 9/26/02	Run ID: HEISENBURG_020927A						
Client ID: ZZZZZ		TestNo: 8270-SIM	(3510C)	Analysis Date: 9/27/02	SeqNo: 139921						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	0.66	0.10	1	0	66	21	133	0.74	11.4	0	
2-Methylnaphthalene	0.64	0.10	1	0	64	21	133	0.73	13.1	0	
Acenaphthene	0.68	0.10	1	0	68	47	145	0.82	18.7	30	
Acenaphthylene	0.63	0.10	1	0	63	33	145	0.76	18.7	30	
Anthracene	0.67	0.10	1	0	67	27	133	0.81	18.9	30	
Benz(a)anthracene	0.68	0.10	1	0	68	33	143	0.82	18.7	30	
Benzo(a)pyrene	0.71	0.10	1	0	71	17	163	0.85	17.9	30	
Benzo(b)fluoranthene	0.59	0.10	1	0	59	24	159	0.73	21.2	30	
Benzo(g,h,i)perylene	0.64	0.10	1	0	64	1	219	0.68	6.06	30	
Benzo(k)fluoranthene	0.93	0.10	1	0	93	11	162	0.96	3.17	30	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0209204
 Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: LCSD-4902	SampleType: LCSD	TestCode: 06 PAH A	Units: µg/L	Prep Date: 9/26/02	Run ID: HEISENBURG_020927A						
Client ID: ZZZZZ	Batch ID: 4902	TestNo: 8270-SIM	(3510C)	Analysis Date: 9/27/02	SeqNo: 139921						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chrysene	0.8	0.10	1	0	80	17	168	0.9	11.8	30	
Dibenz(a,h)anthracene	0.47	0.10	1	0	47	1	227	0.58	21.0	30	
Fluoranthene	0.76	0.10	1	0	76	26	137	0.9	16.9	30	
Fluorene	0.71	0.10	1	0	71	59	121	0.82	14.4	30	
Indeno(1,2,3-cd)pyrene	0.49	0.10	1	0	49	1	171	0.59	18.5	30	
Naphthalene	0.6	0.10	1	0	60	21	133	0.79	27.3	30	
Phenanthrene	0.77	0.10	1	0	77	54	120	0.85	9.88	30	
Pyrene	0.84	0.10	1	0	84	52	115	0.88	4.65	30	
Surr: 2-Fluorobiphenyl	0.59	0	1	0	59	43	116	0	0	30	
Surr: 4-Terphenyl-d14	0.78	0	1	0	78	33	141	0	0	30	
Surr: Nitrobenzene-d5	0.52	0	1	0	52	35	114	0	0	30	

Sample ID: 0209204-01A DUP		Sample Type: DUP	TestCode: 06 PAH A		Units: µg/L	Prep Date: 9/26/02		Run ID: HEISENBURG_020927A			
Client ID:	CHA-209-MW1/2090	Batch ID: 4902	TestNo: 8270-SIM		(3510C)	Analysis Date: 9/27/02		SeqNo: 139924			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	ND	0.40	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	ND	0.40	0	0	0	0	0	0	0	0	0
Acenaphthene	ND	0.40	0	0	0	0	0	0	0	20	20
Acenaphthylene	ND	0.40	0	0	0	0	0	0	0	20	20
Anthracene	ND	0.40	0	0	0	0	0	0	0	20	20
Benz(a)anthracene	ND	0.40	0	0	0	0	0	0	0	20	20
Benzo(a)pyrene	ND	0.40	0	0	0	0	0	0	0	20	20
Benzo(b)fluoranthene	ND	0.40	0	0	0	0	0	0	0	20	20
Benzo(g,h,i)perylene	ND	0.40	0	0	0	0	0	0	0	20	20
Benzo(k)fluoranthene	ND	0.40	0	0	0	0	0	0	0	20	20
Chrysene	ND	0.40	0	0	0	0	0	0	0	20	20
Dibenz(a,h)anthracene	ND	0.40	0	0	0	0	0	0	0	20	20
Fluoranthene	ND	0.40	0	0	0	0	0	0	0	20	20
Fluorene	ND	0.40	0	0	0	0	0	0	0	20	20
Indeno(1,2,3-cd)pyrene	ND	0.40	0	0	0	0	0	0	0	20	20

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0209204
 Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: 0209204-01A DUP	SampType: DUP	TestCode: 06 PAH A	Units: µg/L	Prep Date: 9/26/02	Run ID: HEISENBURG_020927A						
Client ID: CHA-209-MW1/2090	Batch ID: 4902	TestNo: 8270-SIM	(3510C)	Analysis Date: 9/27/02	SeqNo: 139924						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	0.40	0	0	0	0	0	0	0	20	
Phenanthrene	ND	0.40	0	0	0	0	0	0	0	20	
Pyrene	ND	0.40	0	0	0	0	0	0	0	20	
Surr: 2-Fluorobiphenyl	3.52	0	4	0	88	43	116	0	0	0	
Surr: 4-Terphenyl-d14	2	0	4	0	50	33	141	0	0	0	
Surr: Nitrobenzene-d5	1.72	0	4	0	43	35	114	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: 06 PAH A	Units: µg/L	Prep Date:	Run ID: HEISENBURG_020927A						
Client ID: ZZZZZ	Batch ID: R11750	TestNo: 8270-SIM		Analysis Date: 9/27/02	SeqNo: 139922						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	1.13	0.10	1	0	113	80	120	0	0	0	
2-Methylnaphthalene	1.07	0.10	1	0	107	80	120	0	0	0	
Acenaphthene	1.05	0.10	1	0	105	80	120	0	0	0	
Acenaphthylene	0.98	0.10	1	0	98	80	120	0	0	0	
Anthracene	1.05	0.10	1	0	105	80	120	0	0	0	
Benzo(a)anthracene	0.93	0.10	1	0	93	80	120	0	0	0	
Benzo(a)pyrene	1.02	0.10	1	0	102	80	120	0	0	0	
Benzo(b)fluoranthene	0.83	0.10	1	0	83	80	120	0	0	0	
Benzo(g,h,i)perylene	0.84	0.10	1	0	84	80	120	0	0	0	
Benzo(k)fluoranthene	1.19	0.10	1	0	119	80	120	0	0	0	
Chrysene	1.05	0.10	1	0	105	80	120	0	0	0	
Dibenz(a,h)anthracene	0.8	0.10	1	0	80	80	120	0	0	0	
Fluoranthene	1.03	0.10	1	0	103	80	120	0	0	0	
Fluorene	1.02	0.10	1	0	102	80	120	0	0	0	
Indeno(1,2,3-cd)pyrene	0.82	0.10	1	0	82	80	120	0	0	0	
Naphthalene	1.06	0.10	1	0	106	80	120	0	0	0	
Phenanthrene	0.96	0.10	1	0	96	80	120	0	0	0	
Pyrene	1.07	0.10	1	0	107	80	120	0	0	0	
Surr: 2-Fluorobiphenyl	0.97	0	1	0	97	43	116	0	0	0	
Surr: 4-Terphenyl-d14	1.02	0	1	0	102	33	141	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 Page 11 of 12

CLIENT: Pinnacle Laboratories
Work Order: 0209204
Project: 209095/AMEC

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: CCV	SampType: CCV	TestCode: 06 PAH A	Units: µg/L	Prep Date:	Run ID: HEISENBURG_020927A						
Client ID: ZZZZZ	Batch ID: R11750	TestNo: 8270-SIM		Analysis Date: 9/27/02	SeqNo: 139922						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	0.85	0	1	0	85	35	114	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

ENVIRONMENTAL SERVICES LABORATORY – GLOSSARY OF FLAGS

<u>QUALIFIER</u>	<u>DESCRIPTION</u>
AA	This sample was analyzed after the holding time had expired.
AB	The hydrocarbon pattern in this sample is not typical of gasoline.
AC	The hydrocarbon pattern in this sample is not typical of diesel.
AD	The hydrocarbon pattern in this sample is not typical of oil.
AE	The hydrocarbon pattern in this sample extends into the gasoline range.
AF	The hydrocarbon pattern in this sample extends into the diesel range.
AG	The hydrocarbon pattern in this sample extends into the oil range.
A	This analysis was performed on a VOA sample containing headspace.
B	Analyte detected in the Method Blank above the reporting level.
C	The Relative Percent Difference (RPD) for the primary result and confirmation result was greater than 40%. The higher result was reported.
D	The sample was supplied in an inappropriate container according to method criteria.
E	This value is above the quantitation limit. It is considered an estimate.
H	The Matrix Spike/Matrix Spike Duplicate (MS/MSD) result was outside control limits. The Laboratory Control Standard/Duplicate (LCS/LCSD) result was in control validating the batch.
J	The result is above the Method Detection Limit (MDL) and below the Reporting level (RL). It is considered an estimate.
M	The MS/MSD recoveries are not calculable due to a high amount of analyte in sample.
MI	This indicates a high level of matrix interference affecting the spike or surrogate recovery.
N	See case narrative.
O	Detection Limits are elevated due to sample dilution. See case narrative.
Q	Further inspection of the sample confirms a non-homogenous sample matrix affecting RPD result.
R	The RPD result is outside method control limits. See other qualifiers or case narrative.
S	The spike recovery is outside method control limits. See other qualifiers or case narrative.
T	The RPD between the sample result and duplicate result was greater than 20%. The original result was less than three times the reporting level, therefore the RPD is not applicable.
X	Unable to quantitate surrogate recovery due to sample dilution.

ANALYSIS REQUEST

(505) 344-3777 Fax (505) 344-4413

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
CHA-0209-MW1/209095-01	9/20/02	1225	AQ	01
CHA-0209-MW8/209095-02	"	1115	"	02

[illegible]

PROJECT INFORMATION				SAMPLE RECEIPT	
PROJECT #:	209095		Total Number of Containers		
PROJ. NAME:	AMEC		Chain of Custody Seals		
QC LEVEL:	IV		Received Intact?		
QC REQUIRED:	MS	MSD	Received Good Cond./Cold		
TAT:	STANDARD	RUSH!!	LAB NUMBER:		
DUE DATE: 10/8			COMMENTS:		
RUSH SURCHARGE: —					
CLIENT DISCOUNT: —					
SPECIAL CERTIFICATION					
REQUIRED: YES (NO)					

PROJECT INFORMATION				SAMPLE RECEIPT	
PROJECT #:	209095		Total Number of Containers		
PROJ. NAME:	AMEC		Chain of Custody Seals		
QC LEVEL:	IV		Received Intact?		
QC REQUIRED:	MS	MSD	Received Good Cond./Cold		
TAT:	STANDARD	RUSH!!	LAB NUMBER:		
DUE DATE: 10/8			COMMENTS:		
RUSH SURCHARGE: —					
CLIENT DISCOUNT: —					
SPECIAL CERTIFICATION					
REQUIRED: YES (NO)					

PROJECT INFORMATION				SAMPLE RECEIPT	
PROJECT #:	209095		Total Number of Containers		
PROJ. NAME:	AMEC		Chain of Custody Seals		
QC LEVEL:	IV		Received Intact?		
QC REQUIRED:	MS	MSD	Received Good Cond./Cold		
TAT:	STANDARD	RUSH!!	LAB NUMBER:		
DUE DATE: 10/8			COMMENTS:		
RUSH SURCHARGE: —					
CLIENT DISCOUNT: —					
SPECIAL CERTIFICATION					
REQUIRED: YES (NO)					

Pinnacle Laboratories Inc.

SHADED AREAS ARE FOR LAB USE ONLY

PROJECT MANAGER: ROBERT THOMPSON

COMPANY: AMEC
ADDRESS: 2060 AFTON PLACE
FARMINGTON, NM. 87401
PHONE: (505) 327-7928
FAX: (505) 326-5721

BILL TO: DAVID BAYS
COMPANY: EL PASO FIELD SERVICES
ADDRESS: 614 REILLY AVE
FARMINGTON, NM. 87401

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.
CHA-0209-MW	9-20-02	1225	H ₂ O	01
CHA-0209-MW	9-20-02	1115	H ₂ O	02
CHA-0209-MW	9-20-02	1010	H ₂ O	03
CHA-0209-MW	9-20-02	0910	H ₂ O	04
TRIP BLANK	9/19/02		H ₂ O	05

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTX)/8015 (Gasoline) MTBE	8021 (BTX) OMTBE O TMB O PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB O / DBCP O	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides/PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals: Cd, Cr, Hg	NUMBER OF CONTAINERS
				X													X					X	5	
				X													X					X	5	
				X																			2	
				X																			2	
				X																			1	

PROJECT INFORMATION

PROJ. NO.: 151200054

PROJ. NAME: HACO PLANT SAMPLING

P.O. NO.:

SHIPPED VIA: Gerhard

SAMPLE RECEIPT

NO. CONTAINERS: 15

CUSTODY SEALS: 15

RECEIVED INTACT: 15

DATE RECEIVED: 9/24/02

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒

CERTIFICATION REQUIRED ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐
9/24 per Robert @ AMEC run Cr, Cd, Hg on samples 01-02. Also the trip blank date is 9/19/02.

RELINQUISHED BY: 1. Signature: [Signature] Time: 9:30 AM Date: 9-23-02

RELINQUISHED BY: 2. Signature: [Signature] Time: 9:30 AM Date: 9-23-02

RECEIVED BY: (LAB) 1. Signature: [Signature] Time: 9:30 AM Date: 9-23-02

RECEIVED BY: (LAB) 2. Signature: [Signature] Time: 9:30 AM Date: 9-23-02

Company: Pinnacle Laboratories Inc.

PLEASE FILL THIS FORM IN COMPLETELY.

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **212101**
January 08, 2003

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

Project Name EPFS/CHACO SAMPLES
Project Number 1517000054

Attention: DON FERNALD

On 12/30/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

PINNACLE
LABORATORIES

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Albuquerque, New Mexico 87107
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CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 212101
PROJECT #	: 1517000054	DATE RECEIVED	: 12/30/02
PROJECT NAME	: EPFS/CHACO SAMPLES	REPORT DATE	: 01/08/03

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
212101 - 01	MW-9	AQUEOUS	12/29/02
212101 - 02	MW-10	AQUEOUS	12/29/02
212101 - 03	TRIP BLANK	AQUEOUS	12/23/02



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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED / 8015 GRO
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000054
PROJECT NAME : EPFS/CHACO SAMPLES

PINNACLE I.D.: 212101

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	MW-9	AQUEOUS	12/29/02	NA	12/31/02	1
02	MW-10	AQUEOUS	12/29/02	NA	01/02/03	1
03	TRIP BLANK	AQUEOUS	12/23/02	NA	12/31/02	1

PARAMETER	DET. LIMIT	UNITS	MW-9	MW-10	TRIP BLANK
BENZENE	0.5	UG/L	< 0.5	67	< 0.5
TOLUENE	0.5	UG/L	< 0.5	7.3	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	28	< 0.5
TOTAL XYLENES	1.0	UG/L	< 1.0	85	< 1.0

SURROGATE:

BROMOFLUOROBENZENE (%) 96 120 100
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A

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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED / 8015 GRO	PINNACLE I.D.	: 212101
BLANK I.D.	: 123102	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 12/31/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS/CHACO SAMPLES		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 98
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED / 8015 GRO	PINNACLE I.D.	: 212101
BLANK I.D.	: 010203	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 01/02/03
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS/CHACO SAMPLES		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 99
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 212101
BATCH I.D. #	: 123102	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 12/31/02
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS/CHACO SAMPLES	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.0	95	18.8	94	1	(80 - 120)	20
TOLUENE	<0.5	20.0	20.0	100	19.8	99	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.2	106	21.1	106	0	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	63.3	106	63.2	105	0	(80 - 120)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 212101
BATCH I.D. #	: 010203	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 01/02/03
PROJECT #	: 1517000054	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS/CHACO SAMPLES	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	18.6	93	19.1	96	3	(80 - 120)	20
TOLUENE	<0.5	20.0	19.8	99	20.2	101	2	(.80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.0	105	21.5	108	2	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	62.8	105	64.5	108	3	(80 - 120)	20

CHEMIST NOTES:
N/A

% Recovery = $\frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$

RPD (Relative Percent Difference) = $\frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$



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GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

TEST : EPA 8021 MODIFIED PINNACLE I.D. : 212101
MSMSD # : 212100-01 DATE EXTRACTED : N/A
CLIENT : AMEC EARTH & ENVIRONMENTAL DATE ANALYZED : 12/31/02
PROJECT # : 1517000054 SAMPLE MATRIX : AQUEOUS
PROJECT NAME : EPFS/CHACO SAMPLES UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.1	96	18.8	94	2	(80 - 120)	20
TOLUENE	<0.5	20.0	20.2	101	20.0	100	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.3	107	21.0	105	1	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	63.8	106	63.0	105	1	(80 - 120)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

CHAIN OF CUSTODY

DATE: 12-29-02 PAGE: 1 OF 1

PLI Accession #

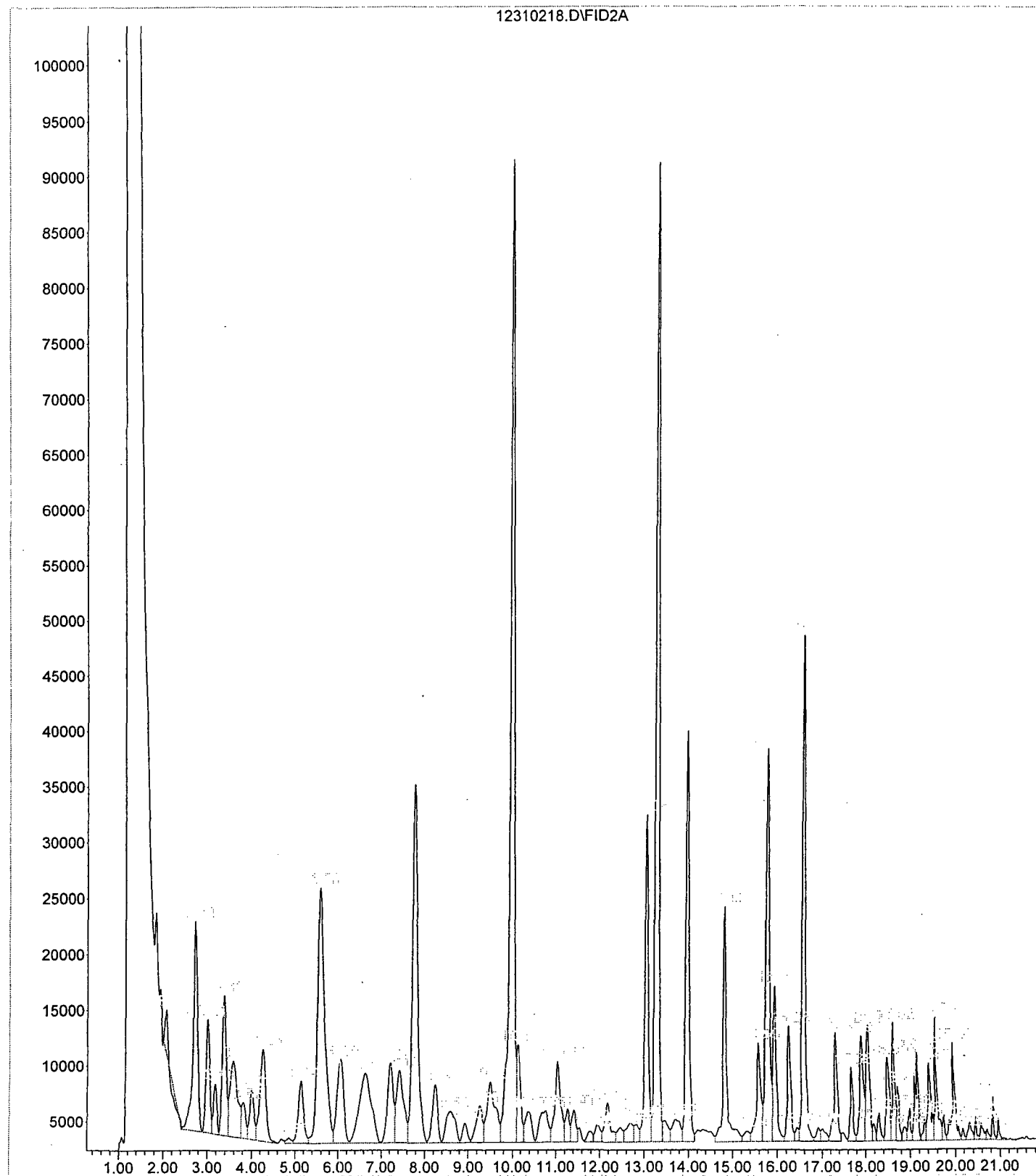
2/2/01

[illegible]

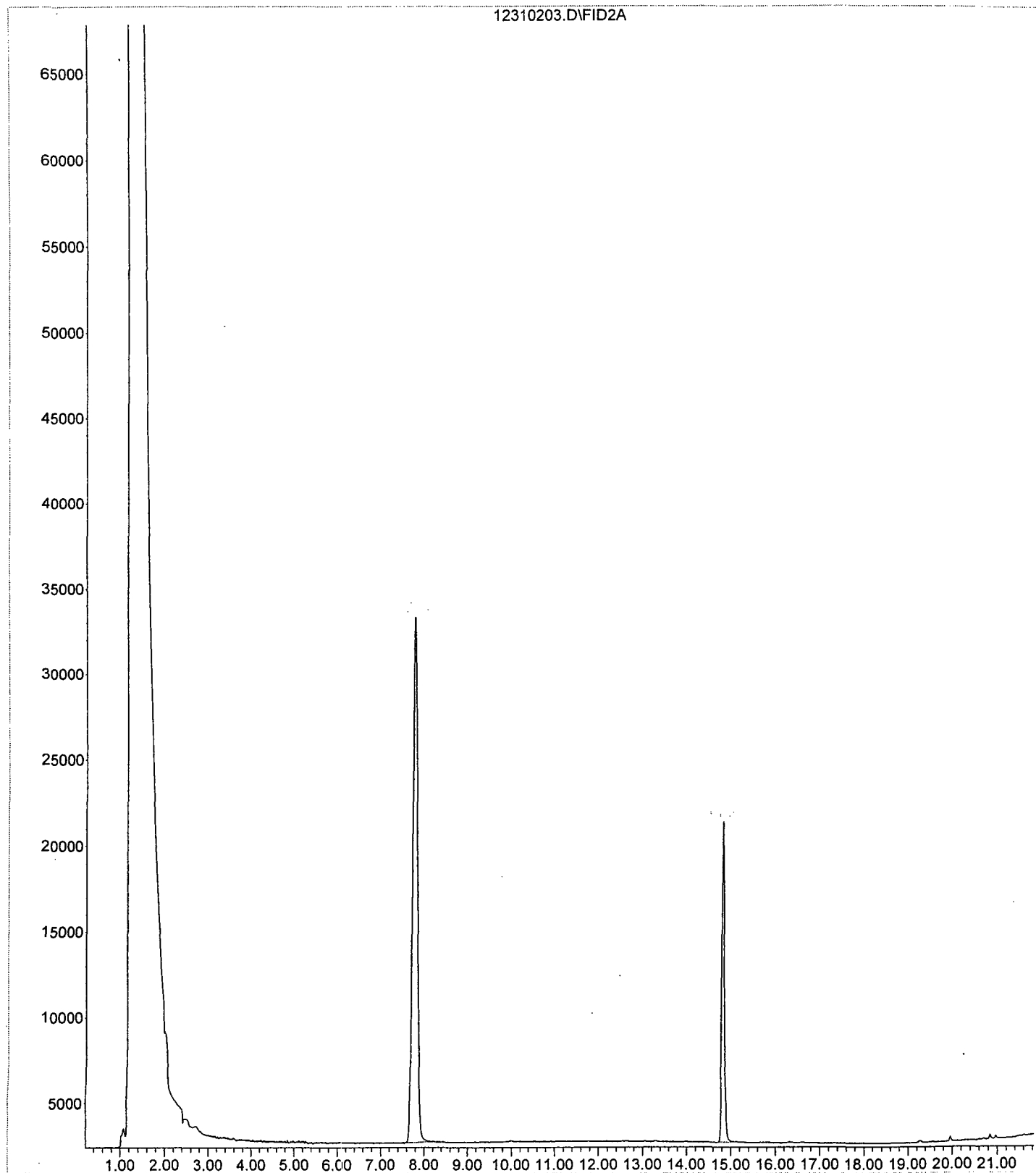
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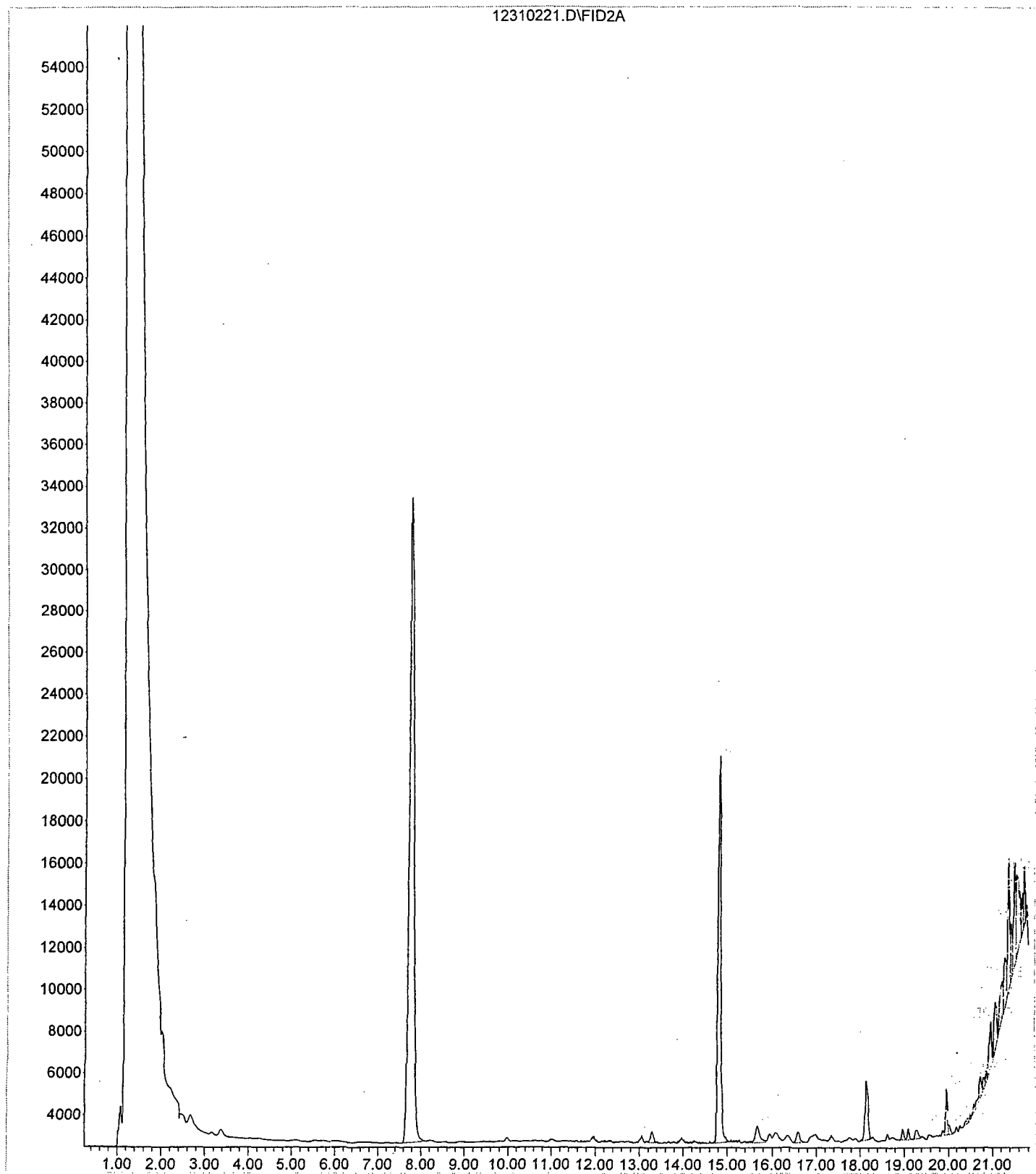
File : C:\HPCHEM\1\DATA\123102\12310218.D
Operator : BP
Acquired : 31 Dec 2002 16:37 using AcqMethod BTEX1118.M
Instrument : GC-2
Sample Name: GRO CCV
Misc Info : 10uL GC4-73-02
Vial Number: 2



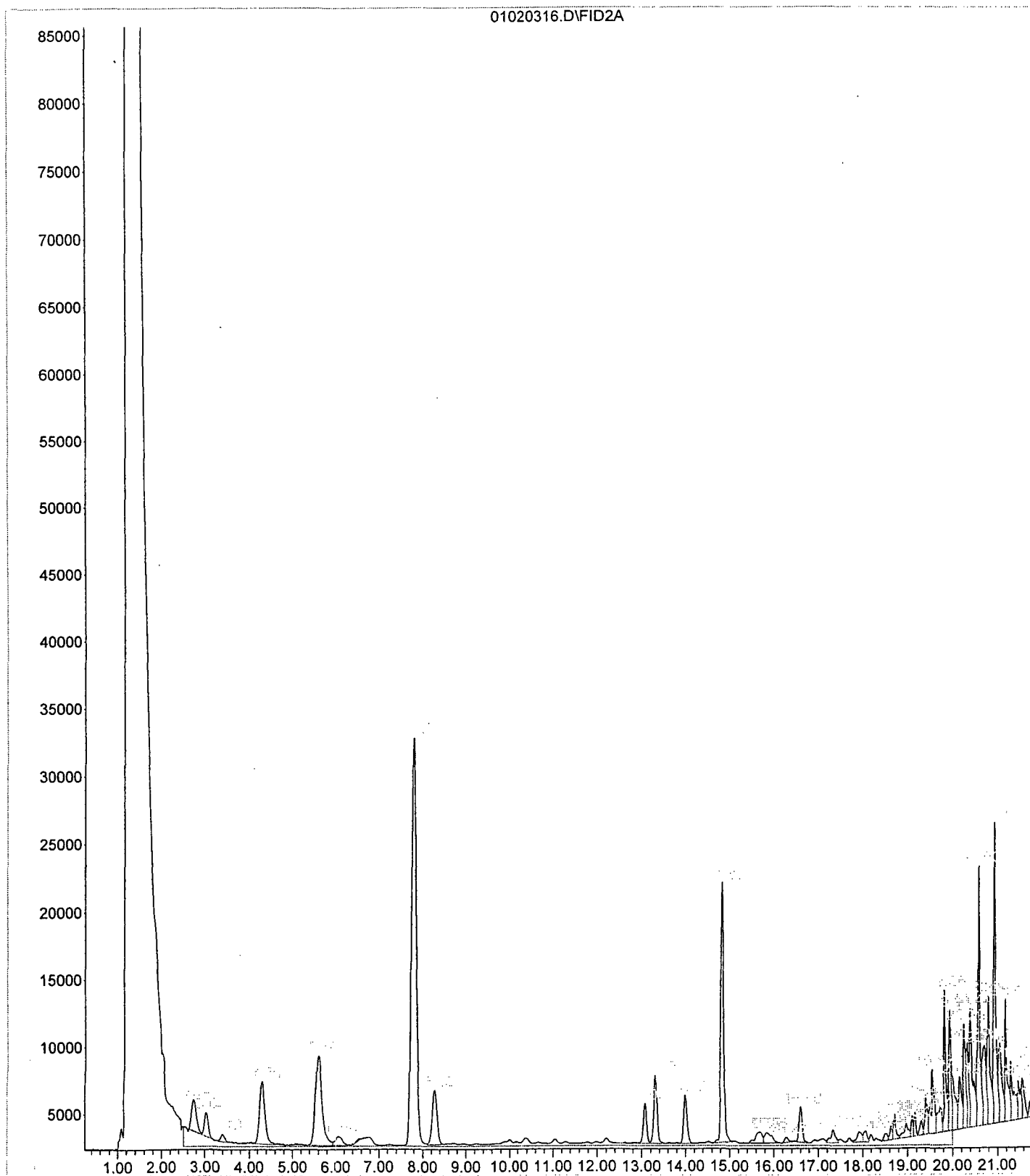
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Operator : BP
Acquired : 31 Dec 2002 8:50 using AcqMethod BTEX1118.M
Instrument : GC-2
Sample Name: Reagent Blank
Misc Info : 10uL GC4-74-08 / GC4-74-09
Vial Number: 3



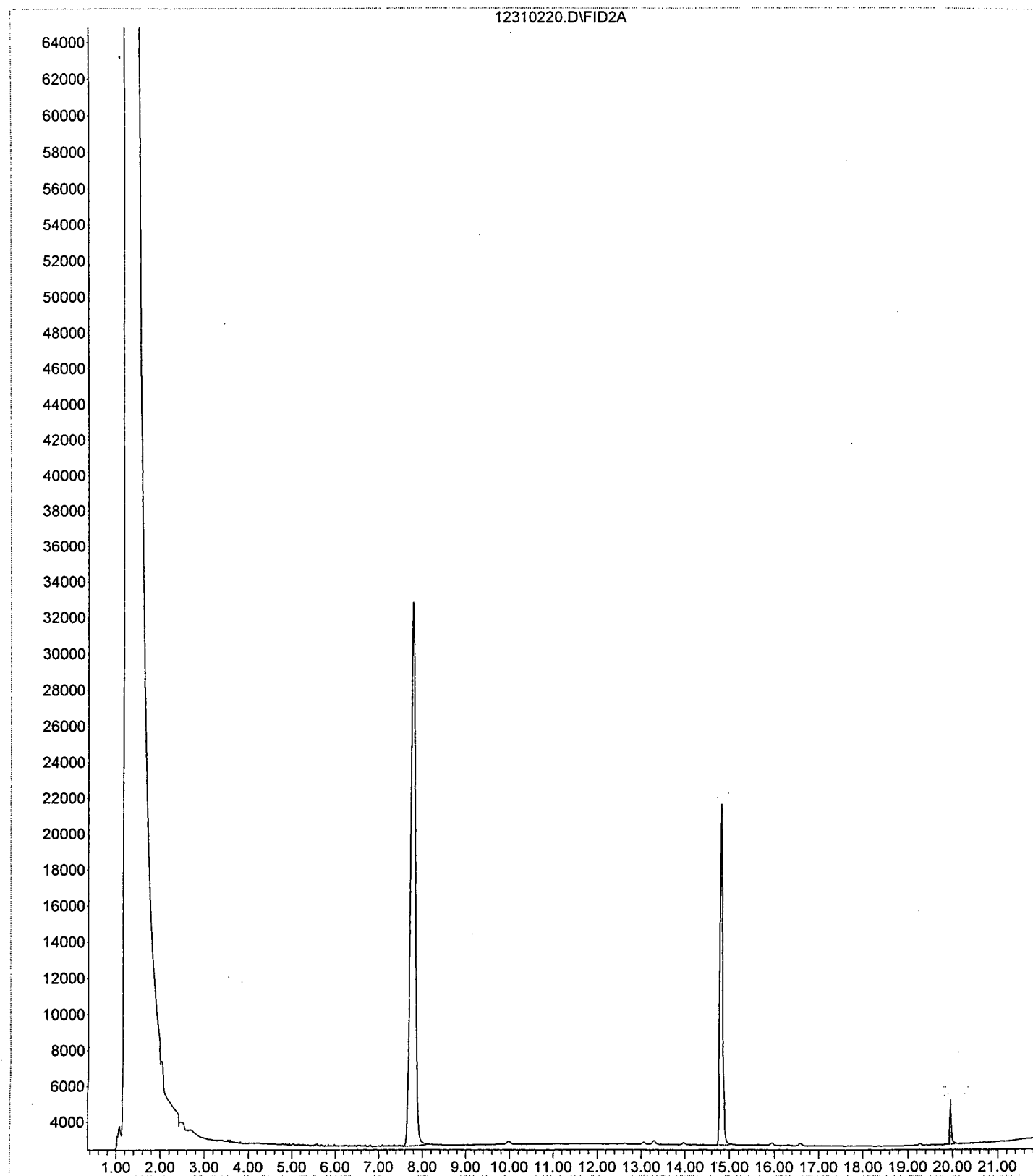
File : C:\HPCHEM\1\DATA\123102\12310221.D
Operator : BP
Acquired : 31 Dec 2002 18:11 using AcqMethod BTEX1118.M
Instrument : GC-2
Sample Name: 212101-01 1X
Misc Info : 5mL
Vial Number: 5



File : C:\HPCHEM\1\DATA\010203\01020316.D
Operator : BP
Acquired : 2 Jan 2003 17:05 using AcqMethod BTEX1118.M
Instrument : GC-2
Sample Name: 212101-02 10X RR
Misc Info : 500uL
Vial Number: 16



File : C:\HPCHEM\1\DATA\123102\12310220.D
Operator : BP
Acquired : 31 Dec 2002 17:39 using AcqMethod_BTEX1118.M
Instrument : GC-2
Sample Name: 212101-03 1X
Misc Info : 5mL TRIP BLANK
Vial Number: 4



amec

Project No.: 1517000054

Task: 12

Date: 12-29-02

Site Name: Chaco Plant

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Signature: James H. [illegible] Date: 12-29-02

Signature: James H. Brown Date: 12-29-02

amec

Project No.: 1517000054

Task: 12

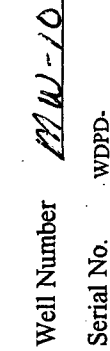
Date: 12-29-02

Site Name: Chaco Plant

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Signature: James H. Hume Date: 12-29-02

Signature: James H. Hume Date: 12-29-02



☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA

Page / of /

Project Name	EPFS Chaco Sampling

Project Manager Don Fernald

Project No. 1517000054

Client Company **EPFS**

Phase.Task No. 12

Site Name Chaco Plant

Site Address

Barak San Juan County

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal

Water Volume Calculation

Initial Depth of Well (feet) 32.15

Initial Depth of Well (feet) 22.15

☐ Stabilization of Indicator Parameters

Initial Depth to Water (feet) 11.25

Initial Depth to Water (feet) 11.25

☐ Other

Height of Water Column in Well (feet) 10

Height of Water Column in Well (feet)	10.9
11.0	11.0
11.1	11.1
11.2	11.2
11.3	11.3
11.4	11.4
11.5	11.5
11.6	11.6
11.7	11.7
11.8	11.8
11.9	11.9
12.0	12.0
12.1	12.1
12.2	12.2
12.3	12.3
12.4	12.4
12.5	12.5
12.6	12.6
12.7	12.7
12.8	12.8
12.9	12.9
13.0	13.0
13.1	13.1
13.2	13.2
13.3	13.3
13.4	13.4
13.5	13.5
13.6	13.6
13.7	13.7
13.8	13.8
13.9	13.9
14.0	14.0
14.1	14.1
14.2	14.2
14.3	14.3
14.4	14.4
14.5	14.5
14.6	14.6
14.7	14.7
14.8	14.8
14.9	14.9
15.0	15.0
15.1	15.1
15.2	15.2
15.3	15.3
15.4	15.4
15.5	15.5
15.6	15.6
15.7	15.7
15.8	15.8
15.9	15.9
16.0	16.0
16.1	16.1
16.2	16.2
16.3	16.3
16.4	16.4
16.5	16.5
16.6	16.6
16.7	16.7
16.8	16.8
16.9	16.9
17.0	17.0
17.1	17.1
17.2	17.2
17.3	17.3
17.4	17.4
17.5	17.5
17.6	17.6
17.7	17.7
17.8	17.8
17.9	17.9
18.0	18.0
18.1	18.1
18.2	18.2
18.3	18.3
18.4	18.4
18.5	18.5
18.6	18.6
18.7	18.7
18.8	18.8
18.9	18.9
19.0	19.0
19.1	19.1
19.2	19.2
19.3	19.3
19.4	19.4
19.5	19.5
19.6	19.6
19.7	19.7
19.8	19.8
19.9	19.9
20.0	20.0
20.1	20.1
20.2	20.2
20.3	20.3
20.4	20.4
20.5	20.5
20.6	20.6
20.7	20.7
20.8	20.8
20.9	20.9
21.0	21.0
21.1	21.1
21.2	21.2
21.3	21.3
21.4	21.4
21.5	21.5
21.6	21.6
21.7	21.7
21.8	21.8
21.9	21.9
22.0	22.0
22.1	22.1
22.2	22.2
22.3	22.3
22.4	22.4
22.5	22.5
22.6	22.6
22.7	22.7
22.8	22.8
22.9	22.9
23.0	23.0
23.1	23.1
23.2	23.2
23.3	23.3
23.4	23.4
23.5	23.5
23.6	23.6
23.7	23.7
23.8	23.8
23.9	23.9
24.0	24.0
24.1	24.1
24.2	24.2
24.3	24.3
24.4	24.4
24.5	24.5
24.6	24.6
24.7	24.7
24.8	24.8
24.9	24.9
25.0	25.0
25.1	25.1
25.2	25.2
25.3	25.3
25.4	25.4
25.5	25.5
25.6	25.6
25.7	25.7
25.8	25.8
25.9	25.9

Methods of Development

Pump

Bailer

Bailer
☒ Bottom Valve

☐ Centrifugal
☐ Submersible

☒ Bottom Valve
☐ Double Check Valve

☐ Stainless-steel Kemmerer

☐ Other

Water Removal Data

[illegible]

Circle the date and time that the development criteria are met.

Comments product Level 11' product thickness, 28' Baked approx. 1st. product

Took samples at 11:45

Developer's Signature (s) James Penrod
James Penrod

Date	12-29-02	Reviewer
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Date _____

CHAIN OF CUSTODY

DATE: 12-29-02 PAGE: 7 OF 7

PLI Accession #:

[illegible]