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# GENERAL CORRESPONDENCE

YEAR(S):

2001



## NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

July 31, 2001

Mr. Jay Anthony P.O. Box 398

Jal, New Mexico

88252

RE: EPPINEUR WATER WELL SAMPLE ANALYSES

Dear Mr. Anthony:

Enclosed you will find a copy of the laboratory analytical results of the water samples that the New Mexico Oil Conservation Division (OCD) obtained from your water well southwest of Jal, New Mexico on March 30, 2001. The sample analyses did not detect any petroleum hydrocarbon or oilfield-related contaminants in the well water. However, fluoride was found to be present in the water in concentrations in excess of the New Mexico Water Quality Control Commission (WQCC) drinking water standard of 1.6 mg/l. Elevated levels of fluoride are naturally present in ground water in areas of southeastern New Mexico in the Ogallala formation. Please contact the New Mexico Environment Department if you have questions regarding fluoride in ground water.

If you have any questions regarding the laboratory analyses of your water, please feel free to call me at (505) 476-3491.

Sincerely,

William C. Olson

**Hydrologist** 

Environmental Bureau

Enclosure

xc w/enclosure:

Chris Williams, OCD Hobbs District Supervisor

6701 Aberdeen Avenue, Suite 9 155 McCutcheon, Suite H

Lubbock, Texas 79424 El Paso, Texas 79932 800 • 378 • 1296 888 • 588 • 3443

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March 30, 2001

A01032212

Report Date:

Order ID Number:

## Analytical and Quality Control Report

E-Mail: lab@traceanalysis.com

Bill Olson

OCD

1220 S. Saint Francis Dr.

Santa Fe, NM 87504

Project Number: N/A

Project Name:

Jay Anthony

Project Location: Eppineur Well

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	$\operatorname{Taken}$	Taken	Received
167355	0103200945	Water	3/20/01	9:45	3/22/01

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 11 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

## **Cation-Anion Balance Sheet**

Sample #	167355	Date:	4/2/01
Calcium Magnesium Sodium Potassium	Cations ppm  44.2 50.2 99.6 9.72	meq/L 2.20558 4.130958 4.3326 0.2486376	Total Cations 10.9178 in meq/L
	Anions ppm	meg/L	

Alkalinity	
Sulfate	
Chloride	
Nitrate as N	
Fluoride	

ppm	
	260
	160
	60
	0
	2.9

m	ieq/L
	5.2
	3:3312
	1.6926
	0
	0.152656

Total Anions
10.3765 in meq/L

# Percentage Error 5.08419 %

(needs to be <10%)

## OTHER INFORMATION

TDS	500
EC	950

Measure EC and Cation Sums
Measure EC and Anion Sums
Calculated TDS/Conductivity
Measure TDS and Cation Sums
Measure TDS and Anion Sums

1091.7776	Range should be:	855	to	1045
1037.6456	Range should be:	855	to	1045
0.5263158	Range should be:	0.55	to	0.77
0.4579687	Range should be:	0.55	to	0.77
0.4818601	Range should be:	0.55	to	0.77



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## **Analytical Report**

Sample:

167355 - 0103200945

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC10095 Date Analyzed: 3/29/01Analyst: RS Preparation Method: N/A Prep Batch: PB08682 Date Prepared: 3/29/01

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		<b>26</b> 0	mg/L as CaCo3	1	1
Total Alkalinity		260	mg/L as CaCo3	1	1

Sample:

167355 - 0103200945

Analysis: **BTEX** Analytical Method: S 8021B QC Batch: QC09970 Date Analyzed: 3/23/01 Analyst: JW Preparation Method: E 5030B PB08561 Date Prepared: Prep Batch: 3/23/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		< 0.001	mg/L	1	0.001
Toluene		< 0.001	m mg/L	1	0.001
Ethylbenzene		< 0.001	m mg/L	1	0.001
M,P,O-Xylene		< 0.001	mg/L	1	0.001
Total BTEX		< 0.001	$_{ m mg/L}$	1	0.001

Surrogate	Flag	Result	Units	Dilution	$\begin{array}{c} {\bf Spike} \\ {\bf Amount} \end{array}$	Percent Recovery	$egin{array}{c}  ext{Recovery} \  ext{Limits} \end{array}$
$\overline{ ext{TFT}}$		0.117	m mg/L	1	0.10	117	72 - 128
4-BFB		0.105	mg/L	1	0.10	105	72 - 128

Sample:

167355 - 0103200945

Analysis: Analytical Method: Conductivity SM 2510B QC Batch: QC10021 Date Analyzed: 3/27/01Analyst: PB08610 JS Preparation Method: N/A Prep Batch: Date Prepared: 3/27/01

Param Flag Result Units Dilution RDL Specific Conductance 950 μMHOS/cm 1

Sample:

167355 - 0103200945

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC09959 Date Analyzed: 3/22/01 Analyst: Preparation Method: N/A Prep Batch: PB08556 Date Prepared: 3/22/01

Param Flag Result Units Dilution RDL  $\overline{\mathrm{CL}}$ 60 mg/L5 0.50 Fluoride 2.9 5 mg/L0.201 Nitrate-N <1.0 mg/L5 0.205 Sulfate 160 mg/L 0.50

<sup>&</sup>lt;sup>1</sup>Sample out of hold time for NO3.

Report Date: March 30, 2001 N/A.

LDB

Order Number: A01032212 Jay Anthony

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Sample: 167355 - 0103200945

Analysis: Salts Analytical Method:

E 200.7 Preparation Method: E 3005 A QC Batch: QC10033 Prep Batch: PB08572

Date Analyzed: Date Prepared: 3/27/01 3/27/01

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		44.2	m mg/L	1	5
Dissolved Magnesium		50.2	$\mathrm{mg/L}$	1	5
Dissolved Potassium		9.72	m mg/L	1	5
Dissolved Sodium		99.6	m mg/L	1	5

Sample: 167355 - 0103200945

Analysis: TDS Analyst: JS

Analytical Method: Preparation Method:

E 160.1 N/A

QC Batch: QC10043 PB08634 Prep Batch:

Date Analyzed:

Dilution

1

3/27/01

Param Total Dissolved Solids Flag Result 500

Units mg/L Date Prepared:

3/27/01

RDL

 $\overline{10}$ 

Sample:

Analyst:

167355 - 0103200945

Analysis: рH Analyst: RS

Analytical Method: Preparation Method:

E 150.1 N/A

QC Batch: QC10059 Prep Batch: PB08643 Date Analyzed: Date Prepared:

3/22/01 3/22/01

Param

Flag Result

Units

Dilution

RDL

рН	2	7.8	s.u.	1	

<sup>&</sup>lt;sup>2</sup>Sample run out of holding time

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## Quality Control Report Method Blank

Method Blank

QCBatch:

QC09959

Param	Flag	Results	Units	$egin{aligned}  ext{Reporting} \  ext{Limit} \end{aligned}$
$\overline{\mathrm{CL}}$		< 0.5	mg/L	0.50
Fluoride		< 0.2	$\mathrm{mg/L}$	0.20
Nitrate-N		< 0.2	${ m mg/L}$	0.20
Sulfate		< 0.5	$\mathrm{mg/L}$	0.50

Method Blank

QCBatch:

QC09970

Param	Flag	Results	Units	Reporting Limit
Benzene		< 0.001	mg/L	0.001
Toluene		< 0.001	m mg/L	0.001
Ethylbenzene		< 0.001	m mg/L	0.001
M,P,O-Xylene		< 0.001	m mg/L	0.001
Total BTEX		< 0.001	mg/L	0.001

Surrogate	$\operatorname{Flag}$	Result	Units	Dilution	$egin{aligned}  ext{Spike} \  ext{Amount} \end{aligned}$	Percent Recovery	$egin{array}{c}  ext{Recovery} \  ext{Limits} \end{array}$
TFT		0.104	mg/L	1	0.10	104	72 - 128
4-BFB		0.094	mg/L	1	0.10	94	72 - 128

Method Blank

QCBatch:

QC10021

				Reporting
Param	Flag	Results	Units	$\operatorname{Limit}$
Specific Conductance		7.3	μMHOS/cm	

Method Blank

QCBatch:

QC10033

				Reporting
Param	$\operatorname{Flag}$	Results	Units	Limit
Dissolved Calcium		< 5.0	${ m mg/L}$	5
Dissolved Magnesium		< 5.0	$\mathrm{mg/L}$	5
Dissolved Potassium		< 5.0	$\mathrm{mg/L}$	5
Dissolved Sodium		< 5.0	m mg/L	5

Method Blank

QCBatch:

Report Date: March 30, 2001 N/A.

## Order Number: A01032212 Jay Anthony



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				Reporting
Param	Flag	Results	Units	$\mathbf{Limit}$
Total Dissolved Solids		<10	m mg/L	10

Method Blank

QCBatch:

QC10095

Param	Flag	Results	Units	$egin{aligned}  ext{Reporting} \  ext{Limit} \end{aligned}$
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1
Carbonate Alkalinity		< 1.0	mg/L as CaCo3	1
Bicarbonate Alkalinity		< 4.0	mg/L as CaCo3	1
Total Alkalinity		<4.0	mg/L as CaCo3	1

## Quality Control Report Duplicate Samples

Duplicate

QCBatch:

QC10021

		Duplicate	Sample				RPD	
Param	$\operatorname{Flag}$	Result	Result	Units	Dilution	RPD	Limit	
Specific Conductance		1462	1500	μMHOS/cm	1	2	4.6	

Duplicate

QCBatch:

QC10043

Param	Flag	Duplicate Result	$egin{array}{c} { m Sample} \\ { m Result} \end{array}$	Units	Dilution	RPD	RPD Limit	
Total Dissolved Solids		2714	2700	mg/L	1	0	20	

Duplicate

QCBatch:

QC10059

		Duplicate	Sample				RPD	
Param	Flag	Result	Result	$\mathbf{Units}$	Dilution	RPD	${f Limit}$	
pH		7.8	7.8	s.u.	1	0	0.99	

Duplicate

QCBatch:

_		Duplicate	Sample				RPD
Param	$\operatorname{Flag}$	$\mathbf{Result}$	${f Result}$	$\operatorname{Units}$	Dilution	RPD	${f Limit}$
Hydroxide Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	20
Carbonate Alkalinity		< 1.0	<1.0	mg/L as $CaCo3$	1	0	20
Bicarbonate Alkalinity		224	220	mg/L as $CaCo3$	1	1	20
Total Alkalinity		224	220	mg/L as $CaCo3$	1	1	20



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## Quality Control Report Lab Control Spikes and Duplicate Spikes

LCS

QCBatch:

QC09959

		Sample			Spike Amount	Matrix		% Rec
Param	$\operatorname{Flag}$	Result	Units	Dil.	${f A}{f d}{f e}{f d}$	Result	$\%~{ m Rec}$	Limit
$\overline{ ext{CL}}$		11.57	mg/L	1	12.50	< 0.5	92	90 - 110
Fluoride		2.33	mg/L	1	2.50	< 0.2	93	90 - 110
Nitrate-N		2.38	$_{ m mg/L}$	1	2.50	< 0.2	95	90 - 110
Sulfate		11.74	m mg/L	1	12.50	< 0.5	93	90 - 110

LCSD

QCBatch:

QC09959

		Sample			$egin{array}{c} \mathbf{Spike} \ \mathbf{Amount} \end{array}$	Matrix		RPD
Param	$\operatorname{Flag}$	Result	Units	Dil.	$\mathbf{Added}$	Result	RPD	$\mathbf{Limit}$
$\overline{ ext{CL}}$		11.59	mg/L	1	6.25	< 0.5	0	20
Fluoride		2.35	mg/L	1	1.25	< 0.2	0	20
Nitrate-N		2.38	mg/L	1	2.50	< 0.2	0	20
Sulfate		11.79	m mg/L	1	6.25	< 0.5	0	20

LCS

QCBatch:

QC09970

		Sample			$\begin{array}{c} \text{Spike} \\ \text{Amount} \end{array}$	Matrix		% Rec
Param	$\operatorname{Flag}$	${f Result}$	$\mathbf{Units}$	$\mathbf{Dil}.$	${f Added}$	${f Result}$	$\%~{ m Rec}$	${f Limit}$
MTBE		0.098	mg/L	1	0.10	< 0.001	98	80 - 120
Benzene		0.096	$\mathrm{mg/L}$	1	0.10	< 0.001	96	80 - 120
Toluene		0.092	$\mathrm{mg/L}$	1	0.10	< 0.001	92	80 - 120
Ethylbenzene		0.091	m mg/L	1	0.10	< 0.001	91	80 - 120
M,P,O-Xylene		0.276	m mg/L	1	0.30	< 0.001	92	80 - 120

Surrogate	$\operatorname{Flag}$	Result	Units	Dilution	$egin{array}{c} \mathbf{Spike} \\ \mathbf{Amount} \end{array}$	Percent Recovery	$egin{array}{c}  ext{Recovery} \  ext{Limits} \end{array}$
TFT		0.104	mg/L	1	0.10	104	72 - 128
4-BFB		0.102	mg/L	1	0.10	102	72 - 128

LCSD

QCBatch:

QC09970

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	RPD	RPD Limit
MTBE		0.098	mg/L	1	0.10	< 0.001	0	20
Benzene		0.096	$_{ m mg/L}$	1	0.10	< 0.001	0	20
Toluene		0.092	mg/L	1	0.10	< 0.001	0	20
Ethylbenzene		0.092	m mg/L	1	0.10	< 0.001	1	20

 $\overline{Continued}$  ...

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-								$\dots Continued$
					Spike			
		$\mathbf{Sample}$			Amount	Matrix	•	RPD
Param	$\mathbf{Flag}$	Result	Units	Dil.	$\mathbf{Added}$	Result	RPD	Limit
M,P,O-Xylene		0.277	mg/L	1	0.30	< 0.001	0	20

Surrogate	$\operatorname{Flag}$	Result	Uni	ts Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.103	mg/	<u>L 1                                   </u>	0.10	103	72 - 128
4-BFB		0.1	mg/	$^{\prime} \mathbf{L}$ 1	0.10	100	72 - 128

LCS

QCBatch:

QC10033

		Sample			$\begin{array}{c} {\bf Spike} \\ {\bf Amount} \end{array}$	Matrix		% Rec
Param	$\mathbf{Flag}$	Result	$\mathbf{Units}$	Dil.	$\mathbf{Added}$	Result	$\%~{ m Rec}$	${f Limit}$
Dissolved Calcium		1093	mg/L	1	1000	< 5.0	109	75 - 125
Dissolved Magnesium		1055	mg/L	1	1000	< 5.0	105	75 - 125
Dissolved Potassium		1011	mg/L	1	1000	< 5.0	101	75 - 125
Dissolved Sodium		1067	mg/L	1	1000	< 5.0	106	75 - 125

LCSD

QCBatch:

QC10033

					Spike			
		Sample			Amount	Matrix		RPD
Param	$\operatorname{Flag}$	Result	Units	Dil.	${f A}{f d}{f e}{f d}$	$\mathbf{Result}$	RPD	Limit
Dissolved Calcium		1106	mg/L	1	1000	< 5.0	1	20
Dissolved Magnesium		1074	mg/L	1	1000	< 5.0	1	20
Dissolved Potassium		1026	mg/L	1	1000	< 5.0	1	20
Dissolved Sodium		1084	m mg/L	1	1000	< 5.0	1	20

## Quality Control Report Matrix Spikes and Duplicate Spikes

MS

QCBatch:

QC09959

		Sample			$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Matrix		$\%~{ m Rec}$
Param	$\mathbf{Flag}$	Result	$\mathbf{Units}$	Dil.	$\mathbf{Added}$	Result	$\%~{ m Rec}$	Limit
$\overline{ ext{CL}}$	3	828.65	mg/L	1	625	240	94	52 - 131
Fluoride		131.50	${ m mg/L}$	1	125	13	94	80 - 113
Nitrate-N		126.42	${ m mg/L}$	1	125	14	89	86 - 110
Sulfate		2145.62	m mg/L	1	625	1600	87	71 - 121

**MSD** 

QCBatch:

<sup>&</sup>lt;sup>3</sup>I spiked the \*50 dilution for 167359, but reported the \*10 dilution. The correct %EA = 89.





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					Spike			
		$\mathbf{Sample}$			$\overline{ m Amount}$	Matrix		RPD
Param	$\mathbf{Flag}$	Result	${ m Units}$	Dil.	$\mathbf{Added}$	Result	RPD	Limit
$\overline{\mathrm{CL}}$		838.5	mg/L	1	625	240	1	20
Fluoride		125.33	mg/L	1	1.25	13	5	20
Nitrate-N		127.05	mg/L	1	2.50	14	0	20
Sulfate		2158.31	mg/L	1	6.25	1600	2	20

MS

QCBatch:

QC10033

		Sample			$egin{array}{c}  ext{Spike} \  ext{Amount} \end{array}$	Matrix		% Rec
Param	$\mathbf{Flag}$	Result	$\mathbf{Units}$	Dil.	$\mathbf{Added}$	Result	$\%  \mathrm{Rec}$	${f Limit}$
Dissolved Calcium		1190	mg/L	1	1000	190	100	75 - 125
Dissolved Magnesium		1288	mg/L	1	1000	322	96	75 - 125
Dissolved Potassium		1000	mg/L	1	1000	41.1	95	75 - 125
Dissolved Sodium		1260	m mg/L	1	1000	326	93	75 - 125

**MSD** 

QCBatch:

QC10033

Param	Elo <i>a</i>	Sample Result	IInita	T):I	Spike Amount Added	Matrix Result	RPD	RPD Limit
Faram	Flag	Result	Units	Dil.	Added	Result	RPD	LIIIIt
Dissolved Calcium		1306	${ m mg/L}$	1	1000	190	10	20
Dissolved Magnesium		1406	mg/L	1	1000	322	11	20
Dissolved Potassium		1086	mg/L	1	1000	41.1	8	20
Dissolved Sodium		1346	mg/L	1	1000	326	8	20

## Quality Control Report Continuing Calibration Verification Standards

CCV (1)

QCBatch:

QC09959

			CCVs	CCVs	CCVs	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	$\mathbf{Flag}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Bromide		mg/L	2.50	2.27	90	90 - 110	3/22/01
$\operatorname{CL}$		${ m mg/L}$	12.50	11.69	93	90 - 110	3/22/01
Fluoride		${ m mg/L}$	2.50	2.36	94	90 - 110	3/22/01
Nitrate-N		m mg/L	2.50	2.38	. 95	90 - 110	3/22/01
Sulfate		m mg/L	12.50	11.95	95	90 - 110	3/22/01

ICV (1)

QCBatch:





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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$\begin{array}{c} \textbf{Date} \\ \textbf{Analyzed} \end{array}$
Bromide		$_{ m mg/L}$	2.50	2.33	93	90 - 110	3/22/01
$\operatorname{CL}$		m mg/L	12.50	11.57	92	90 - 110	3/22/01
Fluoride		m mg/L	2.50	2.41	96	90 - 110	3/22/01
Nitrate-N		m mg/L	2.50	2.38	95	90 - 110	3/22/01
Sulfate		m mg/L	12.50	11.81	94	90 - 110	3/22/01

CCV (1)

QCBatch:

QC09970

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	$egin{array}{c}  ext{CCVs} \  ext{Percent} \  ext{Recovery} \end{array}$	Percent Recovery Limits	$\begin{array}{c} \text{Date} \\ \textbf{Analyzed} \end{array}$
MTBE		mg/L	0.10	0.104	104	85 - 115	3/23/01
Benzene		m mg/L	0.10	0.099	99	85 - 115	3/23/01
Toluene		$_{ m mg/L}$	0.10	0.095	95	85 - 115	3/23/01
Ethylbenzene		$_{ m mg/L}$	0.10	0.094	94	85 - 115	3/23/01
M,P,O-Xylene		$_{ m mg/L}$	0.30	0.288	96	85 - 115	3/23/01

CCV (2)

QCBatch:

QC09970

Daram	Ela m	IImita	CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	<u>Limits</u>	Analyzed
MTBE		mg/L	0.10	0.106	106	85 - 115	3/23/01
Benzene		m mg/L	0.10	0.106	106	85 - 115	3/23/01
Toluene		mg/L	0.10	0.101	101	85 - 115	3/23/01
Ethylbenzene		m mg/L	0.10	0.1	100	85 - 115	3/23/01
M,P,O-Xylene		${ m mg/L}$	0.30	0.306	102	85 - 115	3/23/01

ICV (1)

QCBatch:

QC09970

Param	$\operatorname{Flag}$	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.1	100	85 - 115	3/23/01
Benzene		m mg/L	0.10	0.1	100	85 - 115	3/23/01
Toluene		mg/L	0.10	0.096	96	85 - 115	3/23/01
Ethylbenzene		$_{ m mg/L}$	0.10	0.096	96	85 - 115	3/23/01
M,P,O-Xylene		$_{ m mg/L}$	0.30	0.289	96	85 - 115	3/23/01

CCV (1)

QCBatch:

			CCVs	CCVs	$_{ m CCVs}$	Percent	_
•			$\operatorname{True}$	$\mathbf{Found}$	$\operatorname{Percent}$	$\operatorname{Recovery}$	$\operatorname{Date}$
Param	Flag	$\mathbf{Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
Specific Conductance		μMHOS/cm	1413	1370	96	88 - 99	3/27/01

Report Date: March 30, 2001 N/A.

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TOTA	(1)	١
	( I ,	,

QCBatch:

QC10021

			CCVs	CCVs	CCVs	Percent	<b>7</b> 0. /
			$\operatorname{True}$	Found	$\mathbf{Percent}$	Recovery	$\operatorname{Date}$
Param	$\mathbf{Flag}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Specific Conductance		$\mu \mathrm{MHOS/cm}$	1413	1387	98	88 - 99	3/27/01

CCV (1)

QCBatch:

QC10033

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium	Tiag	mg/L	25	27.1	108	75 - 125	$\frac{\text{Analyzed}}{3/27/01}$
Dissolved Magnesium		$\frac{mg}{L}$	25	25.4	101	75 - 125	3/27/01
Dissolved Potassium		mg/L	25	23.4	93	75 - 125	3/27/01
Dissolved Sodium		${ m mg/L}$	25	25.0	100	75 - 125	3/27/01

ICV (1)

QCBatch:

QC10033

Param	$\mathbf{Flag}$	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium	6	mg/L	25	25.8	103	75 - 125	3/27/01
Dissolved Magnesium		m mg/L	25	25.6	102	75 - 125	3/27/01
Dissolved Potassium		mg/L	25	23.8	95	75 - 125	3/27/01
Dissolved Sodium		m mg/L	25	24.9	99	75 - 125	3/27/01

CCV (1)

QCBatch:

QC10043

			CCVs	CCVs	CCVs	Percent	
			$\operatorname{True}$	Found	${f Percent}$	$\operatorname{Recovery}$	$\mathbf{Date}$
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Dissolved Solids		mg/L	1000	919	91	90 - 110	3/27/01

ICV (1)

QCBatch:

QC10043

			CCVs	CCVs	CCVs	Percent	
			$\operatorname{True}$	$\mathbf{Found}$	Percent	Recovery	Date
Param	$\operatorname{Flag}$	${f Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
Total Dissolved Solids		mg/L	1000	915	91.	90 - 110	3/27/01

CCV (1)

QCBatch:

QC10059

Continued ...

. Report Date: March 30, 2001 N/A.

Order Number: A01032212 Jay Anthony



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$\dots$ Contin	ued						
			CCVs	CCVs	$\mathrm{CCVs}$	Percent	
			$\mathbf{True}$	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
			CCVs	CCVs	CCVs	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	$\mathbf{Flag}$	$\mathbf{Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
$\overline{\mathrm{pH}}$		s.u.	7	7.1	101	-0.1 s.u +0.1 s.u.	3/22/01

ICV (1)

QCBatch:

QC10059

			$rac{ ext{CCVs}}{ ext{True}}$	${ m CCVs} \ { m Found}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	$\operatorname{Flag}$	${ m Units}$	Conc.	Conc.	Recovery	Limits	$\mathbf{Analyzed}$
pН		s.u.	7	7.1	101	-0.1 s.u +0.1 s.u.	3/22/01

CCV (1)

QCBatch:

QC10095

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$egin{aligned} \mathbf{Date} \ \mathbf{Analyzed} \end{aligned}$
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	85 - 115	3/29/01
Carbonate Alkalinity		mg/L as CaCo3	0	228	0	85 - 115	3/29/01
Bicarbonate Alkalinity		mg/L as CaCo3	0	8.0	0	85 - 115	3/29/01
Total Alkalinity		mg/L as CaCo3	250	236	94	85 - 115	3/29/01

ICV (1)

QCBatch:

Param	$\operatorname{Flag}$	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	85 - 115	3/29/01
Carbonate Alkalinity		mg/L as CaCo3	0	232	0	85 - 115	3/29/01
Bicarbonate Alkalinity		mg/L as CaCo3	0	8.0	0	85 - 115	3/29/01
Total Alkalinity		mg/L as $CaCo3$	250	240	96	85 - 115	3/29/01

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PIOH ant from standard Turn Around Time if diff **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST** 4-415-505 ADIO 3221 BOD, TSS, pH Pesticides 8081A/608 (Circle or Specify Method No.) PCB's 8082/608 **ANALYSIS REQUEST** GC/MS Semi. Vol. 8270C/625 CC-MS Vol. 8260B/624 REMARKS **BCI** 67 TCLP Pesticides LAB Order ID #\_\_ N / ≻ 110 WAS LAB USE TCLP Metals Ag As Ba Cd Cr Pb Se Hg Z Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7 Løg-in Review Headspace 2001XT\1.814 HP Carrier #\_ Temp 🕉 Intact BTEX 8021B/602 8021B/602 **BATN** 3/20/00/28 SAMPLING **BMIT** 4725 Ripley Dr., Ste A El Paso, Texas 79922-1028 Tel (915) 585-3443 Fax (915) 585-4944 1 (888) 588-3443 න් <u>ල</u> ~9/18~9/16/SeS) ORIGINAL COPY **3TA**<sub>Q</sub> Phone #: (505) 476-349 NONE 10.00 Bes 3.33-01 ICE Time: NaOH <sup>⁵</sup>CO<sup>₹</sup>H Project Name: Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of &D.C. Sampler Signature N<sup>g</sup>H2O<sup>t</sup> Date: TraceAnalysis, Inc. Date: Date: **НИОЗ** НСГ Fax #: STADGE MATRIX Red€iveN at Laboratory,by ΑIA TIOS Company Name: NM Pil Conservetion Division **MATER** 18 m Received by Received by: <u>₹</u> JnuomA\emulo\ # CONTAINERS 1000m Time: Time: Time: 150n FIELD CODE 0 0320 08% 10/75 Eppinenn 0/03200945 Street, City, Zip) Francis 6701 Aberdeen Avenue, Ste. Lubbock, Texas 79424 Tel (806) 794-1296 Fax (806) 794-1298 1 (800) 378-1296 (If different from above) Project Location: Contact Person: Relinquished by: Relinquished by: Relinquished 1.335 (LAB USE) 22 nvoice to: Project #: LAB# Address:



## TraceAnalysis , Inc. General Terms and Conditions



#### Article 1: General

1.1 The words "we", "us", and "our" refer to TraceAnalysis. You will deliver samples to us for analysis, accompanied, or preceded by, a signed Chain of Custody/Analysis Request defining the scope and timing of our work and stating either the testing criteria you require or identifying the agency to which the results will be submitted.

#### Article 2: Our General Responsibilities

- 2.1 We agree to provide the professional services described in this agreement. We will provide you with written reports containing analytical results. In performing our service, we will use that degree of care and skill ordinarily exercised under similar circumstances by reputable members of our profession practicing in the same locality.
- 2.2 Test and observations will be conducted using test procedures and laboratory protocols as specified in accepted Chain of Custody/Analysis Request. If you direct a manner of making tests that varies from our standard or recommended procedures, you agree to hold us harmless from all claims, damages, and expenses arising out of your direction.
- 2.3 We will not release information regarding our services for you or any information that we receive from you, except for information that is in the public domain and except as we are required by law.

#### Article 3: Your General Responsibilities

- 3.1 On each Chain of Custody/Analysis Request you will designate a representative who has authority to transmit instructions, receive information, and make decisions relative to our work.
- 3.2 You will respond in a reasonable time to our request for decisions, authorization for changes, additional compensation, or schedule extensions.
- 3.3 For each Chain of Custody/Analysis Request you will either provide us with the exact methods for analysis of each fraction or you will identify the regulations and agency under which or for which the analysis are to be prepared. If permits, consent orders, work plans, quality assurance plans, or correspondence with regulatory agencies address laboratory requirements, you will provide us with copies of the relevant provisions prior to our initiation of the analyses.

#### Article 4: Reports and Records

- 4.1 We will furnish copies of each report to you as specified in the Chain of Custody and Analysis Request. We will retain analytical data for seven years and financial data for three years relating to the services performed following transmittal of our final report.
- 4.2 If you do not pay for our services as agreed, you agree that we may retain all reports and work not yet delivered to you. You also agree that our work will not be used by you for any purpose unless paid for.

#### Article 5: Delivery and Acceptance of Samples

- 5.1 Until we accept delivery of samples by notation on chain of custody documents or otherwise in writing accept the samples, you are responsible for loss of or damage to samples. Until so accepted, we have no responsibility as to samples.
- 5.2 As to any samples that are suspected of containing hazardous substances or radioactive material, such that would make special handling required, you will specify the suspected or known substances and level and type of radioactive activity. This information will be given to us in writing as a part of the Chain of Custody/Analysis Request and will precede or accompany samples suspected of containing hazardous substances.
- 5.3 Samples accepted by us remain your property while in our custody. We will retain samples for a period of 14 days following the date of submission or our report. We will extend the retention period if you so direct. Following the retention period we will dispose of non-hazardous samples. We may return highly hazardous, acutely toxic, or radioactive samples and samples containers and residues to you. You agree to accept them.
- 5.4 Regardless of a prior acceptance, we may refuse acceptance or revoke acceptance of samples if we determine that the samples present a risk to health, safety, or the environment, or that we are not authorized to accept them. If we revoke acceptance of any sample, you will have it removed from our facilities promptly.

#### Article 6: Changes to Task Orders

- 6.1 No persons other than the designated representatives for each Chain of Custody/Analysis Request are authorized to act regarding changes to a Chain of Custody/Analysis Request. We will notify you promptly if we identify any activity that we regard as a change to the terms and conditions of a Chain of Custody/Analysis Request. Our notice will include the date, nature, circumstance, and cause of the activity regarded as a change. We will specify the particular elements of project performance for which we may seek an equitable adjustment.
- 6.2 You will.respond to the notice provided for in paragraph 6.1 promptly. Changes may be made to a Chain of Custody/Analysis Request through issuance of an amendment. The amendment will specify the reason for the change and, as appropriate, include any modified budgets, schedules, scope of work, and other necessary provisions.
- 6.3 Until agreement is reached concerning the proposed change, we may regard the situation as a suspension directed by you.

#### Article 7: Compensation

- 7.1 Our pricing for the work is predicated upon your acceptance of the conditions and allocations of risks and responsibilities described in this agreement. You agree to pay for services as stated in our proposal and accepted by you or according to our then current standard pricing documents if there is no other written agreement as to price. An estimate or statement of probable cost is not a firm figure unless stated as such.
- 7.2 Unless otherwise agreed to elsewhere, you agree to pay invoices within 30 days of receipt unless, within 15 days from receipt of the invoice, you notify us in writing of a particular item that is alleged to be incorrect. You agree to pay the uncontested portions of the invoices within 30 days of receipt. You agree to pay interest on unpaid balances beginning 60 days after receipt of invoice at the rate of 1.5% per month, but not to exceed the maximum rate allowed by law.
- 7.3 If you direct us to invoice another, we will do so, but you agree to be ultimately responsible for our compensation until you provide us with that third party's written acceptance of all terms of our agreement and until we agree to the substitution.
- 7.4 You agree to compensate us for our services and expenses if we are required to respond to legal process related to our services for you. Compensable services include hourly charges for all personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, the preparation of the testifier, and appearances related to the legal process.
- 7.5 If we are delayed by, or the period of performance is materially extended because of, factors beyond our control, or if project condition or the scope or amount of work change, or if the standards or methods of testing change, we will give you timely notice of the change and we will receive an equitable adjustment of our compensation.

### Article 8: Risk Allocation, Disputes, and Damages

- 8.1 Neither we nor you will be liable to the other for special, incidental, consequential or punitive losses or damages, including but not limited to those arising from delay, loss of use, loss of profits or revenue, or the cost of capital.
- 8.2 We will not be liable to you for damages unless suit is commenced within two years of injury or loss or within two years of the date of the completion of our services, whichever is earlier. In no event will we be liable to you unless you have notified us of the discovery of the negligent act, error, omission or breach within 30 days of the date of its discovery and unless you have given us an opportunity to investigate and to recommend ways of mitigating your damages.
- 8.3 In the event you fail to pay us within 90 days following the invoice date, we may consider the default a total breach of our agreement and we may, at our option, terminate all of our duties without liability to you or to others.
- 8.4 If it is claimed by a third party that we did not complete an acceptable analysis, at your request will seek further review and acceptance of the completed work by the third party and use your best efforts to obtain that acceptance. We will assist you as directed.
- 8.5 You and we agree that disputes will be submitted to "Alternative Dispute Resolution" (ADR) as a condition precedent to litigation and other remedies provided by law. Each of us agrees to exercise good faith efforts to resolve disputes through mediation unless we both agree upon another ADR procedure. All disputes will be governed by the law of the place where our services are rendered, or if our services are rendered in more than one state, you and we agree that the law of the place that services were first rendered will govern.
- 8.6 If either of us makes a claim against the other as to issues out of the performance of this agreement, the prevailing party will be entitled to recover its reasonable expenses of litigation, including reasonable attorney's fees. If we bring lawsuit against you to collect our invoiced fees and expenses, you agree to pay our reasonable collection expenses including attorney fees.

#### Article 9: Indemnities

9.1 We will indemnify and hold you harmless from and against demands, damages, and expenses caused by our negligent acts and omissions and breach of contract and by the negligent acts and omissions and breach of contract of persons for whom we are legally responsible. You will indemnify and hold us harmless from and against demands, damages, and expenses caused by your negligent act and omissions and breach of contract and by the negligent acts and omissions and breach of contract of persons for whom you are legally responsible. These indemnities are subject to specific limitations provided for in this agreement.

#### Article 10: Miscellaneous Provisions

- 10.1 This agreement constitutes the entire agreement between you and us, and it supersedes all prior agreements. Any term, condition, prior course of dealing, course of performance, usage of trade, understanding, purchase order conditions, or other agreement purporting to modify, vary, supplement, or explain any provision of this agreement is of no effect until placed in writing and signed by both parties subsequent to the date of this agreement. In no event will the printed terms or conditions stated in a purchase or work order, other than an agreed upon Chain of Custody/Analysis Request, be considered a part of this agreement, even if the document is signed by both of us.
- 10.2 Neither party will assign this agreement without the express written approval of the other, but we may subcontract laboratory procedures with your approval as we deem necessary to meet our obligations to you.
- 10.3 If any of the provisions of this agreement are held to be invalid or unenforceable in any respect, the remaining terms will be in full effect and the agreement will be construed as if the invalid or unenforceable matters were never included in it. No waiver of any default will be waiver of any future default.
- 10.4 Neither you or we will have any liability for nonperformance caused in whole or in part by causes beyond our reasonable control. Such causes include but are not limited to Acts of God, civil unrest and war, labor unrest and strikes, equipment failures, matrix interference, acts of authorities, and failures of subcontractors that could not be reasonably anticipated.
- 10.5 You may stop our work by giving a written suspension or termination directive, but once work has been suspended, we need not resume work until we agree to change in scope, schedule, and compensation. Upon suspension or termination, we will use reasonable care to preserve samples provided that you agree to compensate us for any additional effort, but we will have no responsibility for meeting holding time limitations after the effective time of a suspension or termination directive. We will be compensated for service rendered and expenses incurred prior to termination that cannot reasonably be avoided.