

3R - 94

REPORTS

DATE:

1997



February 1, 1998

Conoco, Inc., Mid-Continent Region
Attn.: Ms. Shirley Ebert, Field SHEAR Specialist
3314 Bloomfield Hwy.
Farmington, NM 87401

RE: 1997 Annual Ground Water Report
Conoco Location: San Juan 28-7-47
Unit A, Sec. 20, T28N, R7W, NMPM, San Juan Co., NM

FEB 27 1998

Dear Ms. Ebert:

The following report summarizes the ground water remediation and monitoring activities conducted by On Site Technologies Limited Partnership and/or others on behalf of Conoco, Inc., at the referenced oil and gas location. This report covered the prior calendar year of 1997, and follows the format outlined in the *Comprehensive Ground Water Remediation and Long-Term Monitoring Plan for Conoco Locations in the San Juan Basin, New Mexico*, submitted to the New Mexico Oil Conservation Division on October 15, 1997.

SUMMARY OF 1997 ACTIVITIES:

This report will only cover the sampling events conducted during 1997. This site was not granted an exemption, as was San Juan 28-7 #19, #126 and #216. Refer to the following correspondence.

New Mexico Oil Conservation Division, January 31, 1997. letter to Mr. Neal Goates, Senior Environmental Specialist, Conoco, Inc. Midland Division, regarding: *Ground Water Contamination Assessment San Juan Unit Wells #219, #47, #19, #126, Conoco Location, San Juan 28-7 #19, Unit G, Sec. 25, T28N, R7W, NMPM, San Juan Co., NM.*

SAMPLING:

Following the approved Conoco plan, during each sampling event, water levels were measured on all monitoring wells prior to purging and sampling. Samples were collected in laboratory supplied containers, preserved as needed, and proper chain-of-custody protocol followed. The laboratory analyses ordered, followed the Conoco Ground Water Plan.

Table 1, summarizes the monitoring well data and water levels measured during each sampling event. Table 2, summarizes the laboratory results for BTEX compounds from all water sampling completed at the referenced site, including assessment data. Table 3, summarizes the laboratory results for RCRA metals and API water quality testing, as required by NMOCD.

Copies of all laboratory reports for the calendar year 1997, along with all laboratory QA/QC documentation and chains-of-custody, are attached with this report.

SUMMARY AND CONCLUSIONS:

The following conclusions are based on the 1997 ground water monitoring results and trends associated with a former production pit at the San Juan 28-7-47 well location:

1. Except for contamination from BTEX constituents, there appears to have been no significant hydrocarbon impact to ground water above the New Mexico Water Quality Control Commission (NMWQCC) standards.
2. BTEX contamination of ground water has remained above NMWQCC standards for benzene. Ground water monitoring must continue, in accordance with Comprehensive Ground Water Remediation and Long-Term Monitoring Plan, until water quality is below NMWQCC action levels.

RECOMMENDATION:

1. Ground water monitoring must continue, in accordance with Comprehensive Ground Water Remediation and Long-Term Monitoring Plan, until water quality is below NMWQCC action levels.
2. To enhance the insitu biodegradation of the remaining BTEX contamination, it is recommended magnesium peroxide socks be installed into the existing monitoring well. These socks should increase the dissolved oxygen levels and enhance the aerobic microbe degrading the BTEX compounds.

LIMITATIONS AND CLOSURE:

This annual groundwater report documents the results of ground water monitoring for the referenced Conoco well location during the calendar year 1997. This report follows the Conoco Ground Water Plan, dated October 15, 1997.

The scope of On Site Technologies' services consisted of project management, periodic water sampling and measurement of water levels, laboratory testing for ground water quality, and preparation of the annual report. All work has been performed in accordance with generally accepted professional practices in geotechnical, petroleum and environmental engineering, and hydrogeology.

This document has been prepared by On Site Technologies for the exclusive use of Conoco Inc., as it pertains to the referenced well location operated by Conoco.

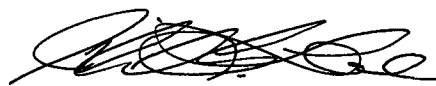
If there are any questions regarding this status report, please contact either Myke Lane or Larry Trujillo at On Site Technologies, (505) 325-5667. Thank you for your consideration.

Respectfully submitted,

Reviewed by:



Larry Trujillo
Project Manager

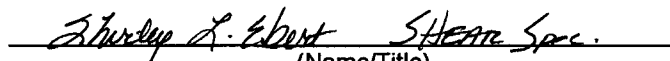


Michael K. Lane, P.E.
Senior Engineer

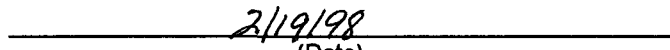
On Site Technologies, Limited Partnership

Attachments: Table 1: Monitoring Well Details and Ground Water Levels Summary
Table 2: Ground Water BTEX Analytical Summary
Table 3: Other Constituents Analytical Summary
Figure 1: Site Sketch
Figure 2: Ground Water Potentiometric Map (Not Applicable)
Boring Logs and Monitoring Well Diagrams (Not Available)
Laboratory Results, QA/QC, Chain of Custody

Acknowledgment:
CONOCO, Inc.



(Name/Title)



(Date)

MKL/mkl: 41359-97.doc

On Site Technologies
 Table 1
 Ground Water Level Summary
 San Juan 28-7-47
 Unit A, Sec. 20, T28N, R7W

Well Number	Elevation at Ground surface (ft)	Total Depth of Well (ft)*	Well Type	Screen Interval (ft) (BGS) *	Sample Date	Depth to Groundwater (ft) (BTOC)*	Relative Groundwater Elevation (ft)
MW#1	6049.00	84.79			03/26/97	69.59	5979.41
					06/10/97	69.67	5979.33
					10/9/97	79.03	5969.97
					12/22/97	69.32	5979.68
BTOC - Below Top of Casing							
NM - Not Measured							

On Site Technologies

Table 2

BTEX Analytical Summary

San Juan 28-7-47

Unit A, Sec. 20, T28N, R7W

Sample Date	Sample ID#	Monitor Well	Remarks	BTEX per EPA 8020 (ppb)				
				Benzene	Toluene	Ethylbenzene	Total Xylene	Total BTEX
08/15/95	G01392	MW	IML	12.2	186.0	BDL	27.7	259.9
03/22/96	0396G00321	MW#1	IML	86.8	896.0	BDL	177.8	1106.6
03/26/97	14047	MW#1	On Site Lab.	301.2	821.2	27.0	182.1	1426.0
04/21/97	14294	MW#1	On Site Lab.	91.1	291.1	8.0	101.4	491.6
06/10/97	14894	MW#1	On Site Lab.	68.0	196.0	7.0	73.0	344.0
10/09/97	16561	MW#1	On Site Lab.	113.0	344.0	10.0	84.0	549.0
12/22/97	17208	MW#1	On Site Lab.	161.0	355.0	16.0	100.0	631.0
WQCC	ACTION	LEVELS		10.0	750.0	750.0	620.0	

BDL, Below Detection Levels

On Site Technologies
Table 3

Other Constituents Analytical Summary

San Juan 28-7-47

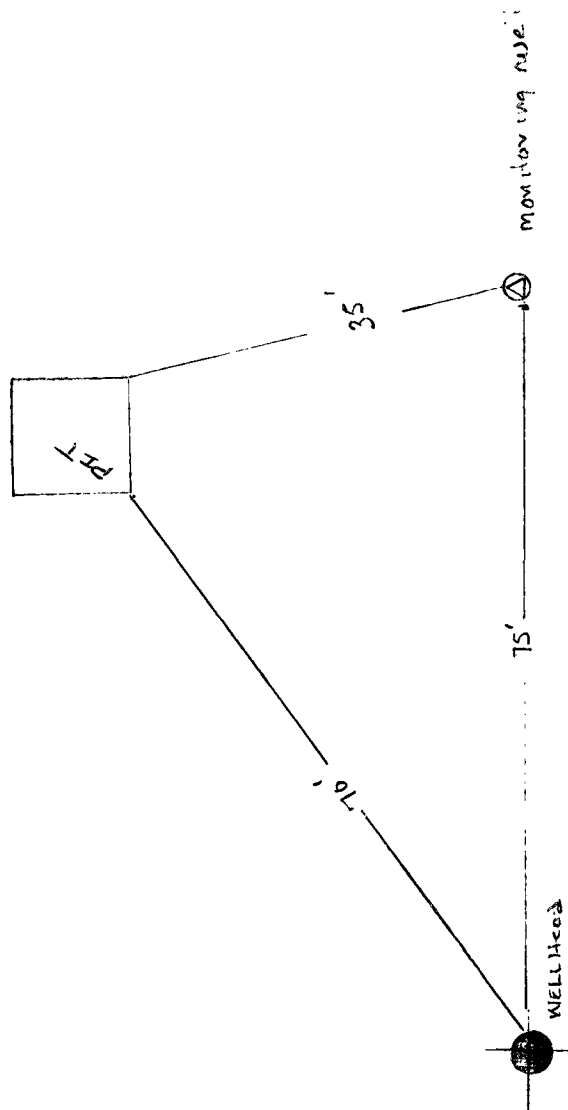
Unit A, Sec. 20, T28N, R7W

API Results

CATIONS				ANIONS			
PARAMETER	RESULTS	UNIT OF MEASURE	WQCC Standards	PARAMETER	RESULTS	UNIT OF MEASURE	WQCC Standards
Sodium	Na	53.0	mg/L	Chloride	Cl	8.0	mg/L
Calcium	Ca	175.0	mg/L	Sulfate	SO ₄	412.0	mg/L
Magnesium	Mg	19.9	mg/L	Carbonate	CO ₃	<1	mg/L
Potassium	K	2.32	mg/L	Bicarbonate	HCO ₃	315.0	mg/L
				Hydroxide	HO	<1	mg/L
				Sulfide	S ₂	NA	mg/L
Sample Date: October 9, 1997				Iron	Fe	0.11	mg/L
Cation-Anion Balance				Total Dissolved Solids		986.0	mg/L
Difference Cation-Anion me/L				pH		7.10	between 6 and 9
Total Cation-Anion me/L				Resistivity		8.1900	ohm-m
Difference Cation-Anion				Specific Gravity		1.0008	
				Total hardness of CaCO ₃		519.0	mg/L

RCRA Metals
Test Method SW-846

PARAMETER	RESULTS	UNITS	WQCC	UNITS
Mercury by CVAA	<0.0005	mg/L	0.002	mg/L
Arsenic by ICP	<0.15	mg/L	0.1	mg/L
Barium by ICP	0.09	mg/L	1.0	mg/L
Cadmium by ICP	<0.020	mg/L	0.01	mg/L
Chromium by ICP	<0.050	mg/L	0.05	mg/L
Lead by ICP	<0.20	mg/L	0.05	mg/L
Selenium by ICP	<0.35	mg/L	0.05	mg/L
Silver by ICP	<0.030	mg/L	0.05	mg/L



SAN JUAN 28-11-47
Not to Scale

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Larry Trujillo*
Company: *On Site Technologies, Ltd.*
Address: *612 E. Murray Drive*
City, State: *Farmington, NM 87401*

Date: *30-Dec-97*
COC No.: *6780*
Sample No.: *17208*
Job No.: *2-1359*

Project Name: *Conoco, Inc. - San Juan 28-7-47*
Project Location: *28-7-47*
Sampled by: *LT* Date: *22-Dec-97* Time: *8:34*
Analyzed by: *HR* Date: *26-Dec-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>161</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Toluene</i>	<i>355</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>16</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>50</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>50</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>631</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *12/30/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



ON SITE
TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT

for EPA Method 8020

Internal QC No.: 0559-STD

Reference Standard QC No.: 0529/30-QC

Method Blank

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>
<i>Average Amount of All Analytes In Blank</i>	<0.2	ppb

Calibration Check

<i>Parameter</i>	<i>Unit of Measure</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	ppb	20.0	20.8	4	15%
<i>Toluene</i>	ppb	20.0	21.7	8	15%
<i>Ethylbenzene</i>	ppb	20.0	21.2	6	15%
<i>m,p-Xylene</i>	ppb	40.0	40.9	2	15%
<i>o-Xylene</i>	ppb	20.0	20.9	4	15%

Matrix Spike

<i>Parameter</i>	<i>1 - Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	91	92	(39-150)	1	20%
<i>Toluene</i>	98	98	(46-148)	0	20%
<i>Ethylbenzene</i>	90	94	(32-160)	2	20%
<i>m,p-Xylene</i>	92	95	(35-145)	3	20%
<i>o-Xylene</i>	96	96	(35-145)	0	20%

Surrogate Recoveries

	S1 Percent <i>Laboratory Identification</i> <i>Recovered</i>	S2 Percent <i>Laboratory Identification</i> <i>Recovered</i>		S1 Percent <i>Laboratory Identification</i> <i>Recovered</i>	S2 Percent <i>Laboratory Identification</i> <i>Recovered</i>
<i>Limit Percent Recovered</i>	(70-130)		<i>Limit Percent Recovered</i>	(70-130)	
17208-6780	92				
				JHK	(nc)
				12/31/97	12/30/92

S1: Flourobenzene

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

[illegible]

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

[illegible]

Distribution: White – On Site	Yellow – LAB	Pink – Sampler	Goldenrod – Client
-------------------------------	--------------	----------------	--------------------

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Larry Trujillo*
Company: *On Site Technologies, Ltd. C/o Conoco, Inc.*
Address: *612 E. Murray Drive*
City, State: *Farmington, NM 87401*

Date: *22-Oct-97*
COC No.: *6516*
Sample No.: *16561*
Job No.: *2-1359*

Project Name: *Conoco, Inc. - 28-7-47*
Project Location: *28-7-47-#1*
Sampled by: *LT*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *9-Oct-97* Time: *10:08*
Date: *20-Oct-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>113</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>344</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>10</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>37</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>45</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>549</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *10/22/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0529/30-QC

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>
<i>Average Amount of All Analytes In Blank</i>	< 0.2	ppb

<i>Parameter</i>	<i>Unit of Measure</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	ppb	20.0	18.5	8	15%
<i>Toluene</i>	ppb	20.0	19.2	4	15%
<i>Ethylbenzene</i>	ppb	20.0	19.2	4	15%
<i>m,p-Xylene</i>	ppb	40.0	37.2	7	15%
<i>o-Xylene</i>	ppb	20.0	19.1	5	15%

<i>Parameter</i>	<i>1 - Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	91	90	(39-150)	0	20%
<i>Toluene</i>	94	93	(46-148)	1	20%
<i>Ethylbenzene</i>	95	93	(32-160)	2	20%
<i>m,p-Xylene</i>	92	91	(35-145)	1	20%
<i>o-Xylene</i>	94	94	(35-145)	0	20%

	S1 Percent Recovered	S2 Percent Recovered		S1 Percent Recovered	S2 Percent Recovered
Laboratory Identification			Laboratory Identification		
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
16561-6516	95				
				7/11	(11)
				10/22/97	10/22/97

P.O. BOX 2606 • FARMINGTON, NM 87499
- *TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT* -

65

Date: 10-1-77

Page 1 of 1

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Distribution: White – On Site	Yellow – LAB	Pink – Sampler	Goldenrod – Client
-------------------------------	--------------	----------------	--------------------

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

[illegible]

Distribution: White – On Site Yellow – LAB Pink – Sampler Goldenrod – Client

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: **Larry Trujillo**
 Company: **On Site Technologies, Ltd. c/o Conoco, Inc.**
 Address: **612 E. Murray Drive**
 City, State: **Farmington, NM 87401**

Date: **10-Oct-97**
 COC No.: **6462**
 Sample ID: **16182**
 Job No.: **4-1359**

Project Name: **Conoco, Inc. - 28-7-47**Project Location: **4-1359**Sampled by: **LT** Date: **15-Sep-97** Time: **11:20**Analyzed by: **HR** Date: **25-Sep-97****API RP-45 Laboratory Analysis**

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>		<i>Result</i>	<i>Unit of Measure</i>	
<i>Cations</i>						
Sodium <i>Na</i>	53	mg/L		2.31	me/L	
Calcium <i>Ca</i>	175	mg/L		8.73	me/L	
Magnesium <i>Mg</i>	19.9	mg/L		1.64	me/L	
Potassium <i>K</i>	2.32	mg/L		0.06	me/L	
<i>Anions</i>						
Chloride <i>Cl</i>	8	mg/L		0.24	me/L	
Sulfate <i>SO4</i>	412	mg/L		8.58	me/L	
Carbonate <i>CO3</i>	< 1	mg/L		< 0.01	me/L	
Bicarbonate <i>HCO3</i>	315	mg/L		5.16	me/L	
Hydroxide <i>OH</i>	< 1	mg/L		< 0.01	me/L	
Sulfide <i>S2</i>	NA	mg/L		NA	me/L	
Iron <i>Fe</i>	0.11	mg/L		< 0.01	me/L	
Total Dissolved Solids			<i>Cation-Anion Balance</i> 1.24 Difference Cation-Anion, me/L 26.72 Total Cation-Anion, me/L 4.6 % Difference Cation-Anion <i>Comments</i> NA: Not Analyzed			
Calculated, Sum of Cation/Anion	986	mg/L				
pH	7.10					
Resistivity	8.1900	ohm-m				
Specific Gravity	1.0008					
Total Hardness as CaCO3	519	mg/L				

Approved by: *[Signature]*Date: *10/24/97*

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

API RP-45 Water Analysis

Date: 25-Sep-97

Quality Control Sample

Parameter	Laboratory Identification	True Value	Analyzed Value	Unit of Measure	% Diff	Limit % Diff
Sodium, Na	0541-QC	2.32	2.22	mg/L	-4	10
Calcium, Ca	0465-QC	2.18	2.03	mg/L	-7	10
Magnesium, Mg	0465-QC	1.14	1.22	mg/L	7	10
Potassium, K	0541-QC	1.33	1.30	mg/L	-2	10
Chloride, Cl	0538-QC	66	68	mg/L	2	10
Sulfate, SO ₄	0538-QC	78	81	mg/L	4	10
Alkalinity	0538-QC	159	169	mg/L	6	10
Iron, Fe	0495-QC	1.00	0.98	mg/L	-2	10
pH	0538-QC	9.13	9.29		2	10
Conductivity	0541-QC	740	745	uS/cm	1	15

Matrix Spike

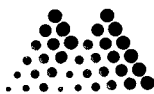
Parameter	Laboratory Identification	Analyzed Value	Matrix Spike	Spike Value	Unit of Measure	Spike Recovery
Sodium, Na	16203-6477	0.84	0.50	1.38	mg/L	103%
Calcium, Ca	16208-6478	1.28	0.50	1.75	mg/L	98%
Magnesium, Mg	16208-6478	1.95	0.50	2.45	mg/L	100%
Potassium, K	16203-6477	0.88	0.50	1.36	mg/L	99%
Iron, Fe	16308-6500	0.04	0.50	0.50	mg/L	93%

Method Blank

Parameter	Laboratory Identification	Analyzed Value	Unit of Measure
Sodium, Na	LF-Blank	<0.2	mg/L
Calcium, Ca	LF-Blank	<0.05	mg/L
Magnesium, Mg	LF-Blank	<0.05	mg/L
Potassium, K	LF-Blank	<0.05	mg/L
Iron, Fe	LF-Blank	<0.05	mg/L
Chloride, Cl	LF-Blank	<3 X DL	mg/L
Sulfate, SO ₄	LF-Blank	<1	mg/L
Sulfide, SO ₂	LF-Blank	NA	mg/L
Conductivity	LF-Blank	<2	uS/cm

10/15/97 10/15/97

RECEIVED OCT 14 1997



Mountain States Analytical, Inc.

October 3, 1997

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:

Project: Conoco ^(W) ~~28-7-19~~ 28-7-47 ^(W) 10/24/97
MSAI Group: 17912

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following sample is included in the report.

16183-6462

All holding times were met for the tests performed on these samples.

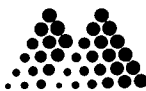
If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox

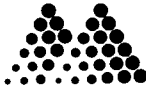
Project: Conoco 28-7-19 (12) 47

20-7-47 (12) 10/24/97

MSAI Sample: 68462
MSAI Group: 17912
Date Reported: 10/03/97
Discard Date: 11/02/97
Date Submitted: 09/17/97
Date Sampled: 09/15/97
Collected by: DC
Purchase Order: 6462
Project No.:

Sample ID: 16183-6462
Matrix: Waste Water

Test Analysis	Results as Received	Units	Limit of Quantitation
0259B Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	ND	mg/l	0.0005
0392I Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Complete		
0392M Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Complete		
7245 Arsenic by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.15
7246 Barium by ICP, w/ww, 6010A Method: SW-846 6010A	0.09	mg/l	0.02
7249 Cadmium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.020
7251 Chromium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.050
7255 Lead by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.20
7264 Selenium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.35
7266 Silver by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.030



Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 68462

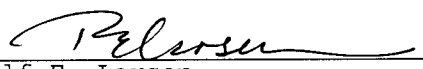
MSAI Group: 17912

Sample ID: 16183-6462

ND - Not detected at the limit of quantitation

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

10/03/97
16:01:50
Group: 17912

Analysis Batch Number: 0259B-09/25/97-107 -2

Test Identification : 0259B-Mercury by CVAA, w/ww, 7470

Sequence : 0259B-1

Number of Samples : 27

Batch Data-Date/Time : 09/30/97 / 10:22:24

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
17873-68371	Mercury	0.0300	0.1000
PBW2-663-2	Mercury	0.0500	0.1000
PBW1-661-3	Mercury	0.1200(Q3)	0.1000

SPIKE						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
17873-68369	Mercury	2.0000	0.0700	1.9300	93.0	80.0	120.0
17816-68144-2	Mercury	25.0000	0.1000	25.2000	100.4	80.0	120.0
17816-68144-3	Mercury	25.0000	0.1000	20.8000	82.8	80.0	120.0

MSD						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
17873-68369	Mercury	2.0000	0.0700	1.9400	93.5	80.0	120.0	0.5	20.0
17816-68144-2	Mercury	25.0000	0.1000	25.1000	100.0	80.0	120.0	0.4	20.0

DUPLICATE						
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
17873-68369	Mercury	0.0700	0.0700	0.0	20.0	1.00
17816-68144-2	Mercury	0.1000	0.1200	18.2	20.0	1.00

CONTROL						QC LIMITS	
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER	
17873-68372	Mercury	2.0800	2.5000	83.2	80.0	120.0	
LCSW-661-2	Mercury	2.0300	2.5000	81.2	80.0	120.0	

QC LIMITS						
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
ICV-	Mercury	3.0000	3.2400	108.0	90.0	110.0
CCV--2	Mercury	5.0000	5.0500	101.0	80.0	120.0
CCV--3	Mercury	5.0000	5.0200	100.4	80.0	120.0
CCV--4	Mercury	5.0000	4.9500	99.0	80.0	120.0
CCV--5	Mercury	5.0000	4.9100	98.2	80.0	120.0
CCV--6	Mercury	5.0000	4.8200	96.4	80.0	120.0
CCV--7	Mercury	5.0000	4.8200	96.4	80.0	120.0
CCV--8	Mercury	5.0000	4.7800	95.6	80.0	120.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Mercury	0.0400	0.1000
CCB-	Mercury	0.0400	0.1000
CCB-	Mercury	0.0800	0.1000
CCB-	Mercury	0.0600	0.1000
CCB-	Mercury	0.0700	0.1000
CCB-	Mercury	0.1000	0.1000
CCB-	Mercury	0.0900	0.1000
CCB-	Mercury	0.1000	0.1000

----- Result Footnotes -----

(Q3) - The regulatory limit is >20x the blank concentration.

Analysis Batch Number: 0259B-09/25/97-107 -2

Test Identification : 0259B-Mercury by CVAA, w/ww, 7470

Sequence : 0259B-1

Number of Samples : 27

Batch Data-Date/Time : 09/30/97 / 10:22:24

Groups & Samples

17797-68094	17809-68116	17816-68142	17816-68144	17837-68250	17838-68251	17838-68252	17859-68316
17873-68367	17873-68368	17873-68369	17873-68371	17873-68372	17889-68413	17907-68442	17907-68443
17912-68462	17913-68464	17940-68560	17942-68562	17943-68563	17944-68564	17945-68565	17946-68566
17947-68567	17948-68568	17949-68569	17950-68570	17951-68571			

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

10/03/97
16:01:58
Group: 17912

Analysis Batch Number: ICPWA-09/30/97-118 -1

Test Identification : ICPWA-*Metals by ICP

Sequence : DATA273

Number of Samples : 17

Batch Data-Date/Time : 09/30/97 / 13:15:40

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
17873-68371	Silver	0.0005	0.0060
	Arsenic	0.0048	0.0300
	Barium	0.0001	0.0030
	Calcium	0.0305	0.4000
	Cadmium	0.0001	0.0040
	Chromium	ND	0.0100
	Iron	ND	0.2000
	Potassium	0.0459	0.1000
	Magnesium	ND	0.0500
	Molybdenum	ND	0.0300
	Sodium	0.0284	0.2000
	Nickel	ND	0.0300
	Lead	ND	0.0400
	Antimony	0.0090	0.1000
	Selenium	ND	0.0700
17873-68371-2	Silver	0.0005	0.0060
	Arsenic	0.0048	0.0300
	Barium	0.0001	0.0030
	Calcium	0.0305	0.4000
	Cadmium	0.0001	0.0040
	Chromium	ND	0.0100
	Iron	ND	0.2000
	Potassium	0.0459	0.1000
	Magnesium	ND	0.0500
	Molybdenum	ND	0.0300
	Sodium	0.0284	0.2000
	Nickel	ND	0.0300
	Lead	ND	0.0400
	Antimony	0.0090	0.1000
	Selenium	ND	0.0700
PBW2-653-3	Silver	ND	0.0060
	Arsenic	ND	0.0300
	Barium	0.0007	0.0030
	Calcium	0.0319	0.4000
	Cadmium	ND	0.0040
	Chromium	ND	0.0100
	Iron	0.0232	0.2000
	Potassium	ND	0.1000
	Magnesium	ND	0.0500
	Molybdenum	0.0102	0.0300
	Sodium	0.0770	0.2000
	Nickel	ND	0.0300
	Lead	ND	0.0400
	Antimony	0.0112	0.1000
	Selenium	0.0176	0.0700

SPIKE						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
17873-68367	Silver	0.0500	0.0017	0.0521	100.8	80.0	120.0
	Arsenic	2.0000	0.0089	2.0135	100.2	80.0	120.0

Analysis Batch Number: ICPWA-09/30/97-118 -1

Test Identification : ICPWA-*Metals by ICP

Number of Samples : 17

Batch Date/Time : 09/30/97 / 13:15:40

Sequence : DATA273

SPIKE

SAMPLE#	ANALYTE					QC LIMITS	
		CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
17873-68367	Barium	2.0000	0.1248	2.0553	96.5	80.0	120.0
	Calcium	2.0000	121.0747	125.0031	196.4(2a)	80.0	120.0
	Cadmium	0.0500	-0.0011	0.0481	98.4	80.0	120.0
	Chromium	0.2000	0.0038	0.2011	98.6	80.0	120.0
	Iron	1.0000	0.7962	1.5954	79.9(B)	80.0	120.0
	Potassium	10.0000	30.2554	40.8598	106.0	80.0	120.0
	Magnesium	2.0000	61.8850	64.8451	148.0(2a)	80.0	120.0
	Molybdenum	0.5000	0.0141	0.5240	102.0	80.0	120.0
	Sodium	3.0000	24.4664	28.1341	122.3(2a)	80.0	120.0
	Nickel	0.5000	0.0080	0.4974	97.9	80.0	120.0
	Lead	0.5000	0.0023	0.4776	95.1	80.0	120.0
	Antimony	0.5000	0.0517	0.5399	97.6	80.0	120.0
	Selenium	2.0000	-0.0132	2.0388	102.6	80.0	120.0

MSD

SAMPLE#	ANALYTE					QC LIMITS			
		CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
17873-68367	Silver	0.0500	0.0017	0.0482	93.0	80.0	120.0	7.8	20.0
	Arsenic	2.0000	0.0089	1.9954	99.3	80.0	120.0	0.9	20.0
	Barium	2.0000	0.1248	2.0108	94.3	80.0	120.0	2.2	20.0
	Calcium	2.0000	121.0747	122.0898	50.8(2a)	80.0	120.0	2.4(2a)	20.0
	Cadmium	0.0500	-0.0011	0.0482	98.6	80.0	120.0	0.2	20.0
	Chromium	0.2000	0.0038	0.1997	97.9	80.0	120.0	0.7	20.0
	Iron	1.0000	0.7962	2.3672	157.1(B)	80.0	120.0	39.0(B)	20.0
	Potassium	10.0000	30.2554	39.4739	92.2	80.0	120.0	3.5	20.0
	Magnesium	2.0000	61.8850	62.9909	55.3(2a)	80.0	120.0	2.9(2a)	20.0
	Molybdenum	0.5000	0.0141	0.4953	96.2	80.0	120.0	5.6	20.0
	Sodium	3.0000	24.4664	27.0086	84.7	80.0	120.0	4.1(2a)	20.0
	Nickel	0.5000	0.0080	0.4850	95.4	80.0	120.0	2.5	20.0
	Lead	0.5000	0.0023	0.5114	101.8	80.0	120.0	6.8	20.0
	Antimony	0.5000	0.0517	0.6089	111.4	80.0	120.0	12.0	20.0
	Selenium	2.0000	-0.0132	1.9676	99.0	80.0	120.0	3.6	20.0

DUPLICATE

SAMPLE#	ANALYTE						
		RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION	
17873-68373	Silver	0.0017	0.0000	200.0(11)	20.0	1.00	
	Arsenic	0.0089	0.0136	41.8(11)	20.0	1.00	
	Barium	0.1248	0.1255	0.6	20.0	1.00	
	Calcium	121.0747	121.5251	0.4	20.0	1.00	
	Cadmium	-0.0011	0.0000	200.0(11)	20.0	1.00	
	Chromium	0.0038	0.0000	200.0(11)	20.0	1.00	
	Iron	0.7962	0.6656	17.9	20.0	1.00	
	Potassium	30.2554	30.4789	0.7	20.0	1.00	
	Magnesium	61.8850	62.2999	0.7	20.0	1.00	
	Molybdenum	0.0141	0.0029	131.8(11)	20.0	1.00	
	Sodium	24.4664	24.6815	0.9	20.0	1.00	
	Nickel	0.0080	0.0070	13.3	20.0	1.00	
	Lead	0.0023	0.0000	200.0(11)	20.0	1.00	
	Antimony	0.0517	0.0820	45.3(11)	20.0	1.00	
	Selenium	-0.0132	0.0000	200.0(11)	20.0	1.00	

Analysis Batch Number: ICPWA-09/30/97-118 -1

Test Identification : ICPWA-*Metals by ICP

Sequence : DATA273

Number of Samples : 17

Batch Data-Date/Time : 09/30/97 / 13:15:40

CONTROL

SAMPLE#	ANALYTE					QC LIMITS	
		CONC FOUND	CONC KNOWN	% REC	#	LOWER	UPPER
17873-68372	Silver	0.0497	0.0500	99.4		80.0	120.0
	Arsenic	1.9664	2.0000	98.3		80.0	120.0
	Barium	1.9262	2.0000	96.3		80.0	120.0
	Calcium	2.0828	2.0000	104.1		80.0	120.0
	Cadmium	0.0497	0.0500	99.4		80.0	120.0
	Chromium	0.2019	0.2000	100.9		80.0	120.0
	Iron	1.1320	1.0000	113.2		80.0	120.0
	Potassium	9.7817	10.0000	97.8		80.0	120.0
	Magnesium	1.9966	2.0000	99.8		80.0	120.0
	Molybdenum	0.4942	0.5000	98.8		80.0	120.0
	Sodium	3.3291	3.0000	111.0		80.0	120.0
	Nickel	0.5092	0.5000	101.8		80.0	120.0
	Lead	0.4854	0.5000	97.1		80.0	120.0
	Antimony	0.5052	0.5000	101.0		80.0	120.0
	Selenium	1.9367	2.0000	96.8		80.0	120.0
17873-68372-2	Silver	0.0497	0.0500	99.4		80.0	120.0
	Arsenic	1.9664	2.0000	98.3		80.0	120.0
	Barium	1.9262	2.0000	96.3		80.0	120.0
	Calcium	2.0828	2.0000	104.1		80.0	120.0
	Cadmium	0.0497	0.0500	99.4		80.0	120.0
	Chromium	0.2019	0.2000	100.9		80.0	120.0
	Iron	1.1320	1.0000	113.2		80.0	120.0
	Potassium	9.7817	10.0000	97.8		80.0	120.0
	Magnesium	1.9966	2.0000	99.8		80.0	120.0
	Molybdenum	0.4942	0.5000	98.8		80.0	120.0
	Sodium	3.3291	3.0000	111.0		80.0	120.0
	Nickel	0.5092	0.5000	101.8		80.0	120.0
	Lead	0.4854	0.5000	97.1		80.0	120.0
	Antimony	0.5052	0.5000	101.0		80.0	120.0
	Selenium	1.9367	2.0000	96.8		80.0	120.0

QC LIMITS

CCV #	ANALYTE					QC LIMITS	
		TRUE VALUE	BATCH READ	% REC	#	LOWER	UPPER
ICV-	Silver	0.4000	0.4084	102.1		90.0	110.0
	Arsenic	1.6000	1.5920	99.5		90.0	110.0
	Barium	4.0000	3.8792	97.0		90.0	110.0
	Calcium	40.0000	40.1790	100.4		90.0	110.0
	Cadmium	4.0000	3.9010	97.5		90.0	110.0
	Chromium	4.0000	4.0676	101.7		90.0	110.0
	Iron	4.0000	3.9906	99.8		90.0	110.0
	Potassium	40.0000	40.4391	101.1		90.0	110.0
	Magnesium	20.0000	19.9911	100.0		90.0	110.0
	Molybdenum	20.0000	20.1293	100.6		90.0	110.0
	Sodium	40.0000	40.7115	101.8		90.0	110.0
	Nickel	8.0000	7.9225	99.0		90.0	110.0
	Lead	20.0000	19.8517	99.3		90.0	110.0
	Antimony	4.0000	3.9728	99.3		90.0	110.0
	Selenium	1.6000	1.6066	100.4		90.0	110.0
CCV1--2	Silver	0.4000	0.3946	98.6		90.0	110.0

Analysis Batch Number: ICPWA-09/30/97-118 -1

Test Identification : ICPWA-*Metals by ICP

Sequence : DATA273

Number of Samples : 17

Batch Data-Date/Time : 09/30/97 / 13:15:40

		QC LIMITS				
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
CCV1--2	Arsenic	1.6000	1.5505	96.9	90.0	110.0
	Barium	4.0000	3.7382	93.5	90.0	110.0
	Calcium	40.0000	39.5678	98.9	90.0	110.0
	Cadmium	4.0000	3.8471	96.2	90.0	110.0
	Chromium	4.0000	3.9923	99.8	90.0	110.0
	Iron	4.0000	3.9404	98.5	90.0	110.0
	Potassium	40.0000	39.1423	97.9	90.0	110.0
	Magnesium	20.0000	19.5563	97.8	90.0	110.0
	Molybdenum	20.0000	19.6449	98.2	90.0	110.0
	Sodium	40.0000	38.7826	97.0	90.0	110.0
	Nickel	8.0000	7.7884	97.4	90.0	110.0
	Lead	20.0000	19.6067	98.0	90.0	110.0
	Antimony	4.0000	3.9268	98.2	90.0	110.0
	Selenium	1.6000	1.5653	97.8	90.0	110.0
CCV2--3	Silver	0.4000	0.3960	99.0	90.0	110.0
	Arsenic	1.6000	1.6100	100.6	90.0	110.0
	Barium	4.0000	3.6530	91.3	90.0	110.0
	Calcium	40.0000	40.9800	102.5	90.0	110.0
	Cadmium	4.0000	4.0089	100.2	90.0	110.0
	Chromium	4.0000	4.0845	102.1	90.0	110.0
	Iron	4.0000	4.0777	101.9	90.0	110.0
	Potassium	40.0000	38.4013	96.0	90.0	110.0
	Magnesium	20.0000	19.6420	98.2	90.0	110.0
	Molybdenum	20.0000	20.1056	100.5	90.0	110.0
	Sodium	40.0000	37.3168	93.3	90.0	110.0
	Nickel	8.0000	8.0271	100.3	90.0	110.0
	Lead	20.0000	20.3417	101.7	90.0	110.0
	Antimony	4.0000	4.1182	103.0	90.0	110.0
	Selenium	1.6000	1.6101	100.6	90.0	110.0
CCV3--4	Silver	0.4000	0.4214	105.4	90.0	110.0
	Arsenic	1.6000	1.6813	105.1	90.0	110.0
	Barium	4.0000	3.9070	97.7	90.0	110.0
	Calcium	40.0000	42.8451	107.1	90.0	110.0
	Cadmium	4.0000	4.1982	105.0	90.0	110.0
	Chromium	4.0000	4.2918	107.3	90.0	110.0
	Iron	4.0000	4.2739	106.8	90.0	110.0
	Potassium	40.0000	40.5605	101.4	90.0	110.0
	Magnesium	20.0000	20.6703	103.4	90.0	110.0
	Molybdenum	20.0000	21.1934	106.0	90.0	110.0
	Sodium	40.0000	40.2441	100.6	90.0	110.0
	Nickel	8.0000	8.4069	105.1	90.0	110.0
	Lead	20.0000	21.3092	106.5	90.0	110.0
	Antimony	4.0000	4.1204	103.0	90.0	110.0
	Selenium	1.6000	1.7315	108.2	90.0	110.0
CCV4--5	Silver	0.4000	0.3969	99.2	90.0	110.0
	Arsenic	1.6000	1.5485	96.8	90.0	110.0
	Barium	4.0000	3.8385	96.0	90.0	110.0
	Calcium	40.0000	38.6554	96.6	90.0	110.0
	Cadmium	4.0000	3.6884	92.2	90.0	110.0

Analysis Batch Number: ICPWA-09/30/97-118 -1

Test Identification : ICPWA-*Metals by ICP

Sequence : DATA273

Number of Samples : 17

Batch Data-Date/Time : 09/30/97 / 13:15:40

		QC LIMITS			
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER UPPER
CCV4--5	Chromium	4.0000	3.9031	97.6	90.0 110.0
	Iron	4.0000	3.8788	97.0	90.0 110.0
	Potassium	40.0000	39.4294	98.6	90.0 110.0
	Magnesium	20.0000	19.4591	97.3	90.0 110.0
	Molybdenum	20.0000	19.2036	96.0	90.0 110.0
	Sodium	40.0000	39.9941	100.0	90.0 110.0
	Nickel	8.0000	7.5063	93.8	90.0 110.0
	Lead	20.0000	19.0487	95.2	90.0 110.0
	Antimony	4.0000	3.8296	95.7	90.0 110.0
	Selenium	1.6000	1.4715	92.0	90.0 110.0
CCV5--6	Silver	0.4000	0.3967	99.2	90.0 110.0
	Arsenic	1.6000	1.5921	99.5	90.0 110.0
	Barium	4.0000	3.6781	92.0	90.0 110.0
	Calcium	40.0000	40.2719	100.7	90.0 110.0
	Cadmium	4.0000	3.8603	96.5	90.0 110.0
	Chromium	4.0000	4.0058	100.1	90.0 110.0
	Iron	4.0000	3.9896	99.7	90.0 110.0
	Potassium	40.0000	38.1655	95.4	90.0 110.0
	Magnesium	20.0000	19.6288	98.1	90.0 110.0
	Molybdenum	20.0000	19.5825	97.9	90.0 110.0
	Sodium	40.0000	37.4663	93.7	90.0 110.0
	Nickel	8.0000	7.8215	97.8	90.0 110.0
	Lead	20.0000	19.9893	99.9	90.0 110.0
	Antimony	4.0000	3.9636	99.1	90.0 110.0
	Selenium	1.6000	1.5106	94.4	90.0 110.0
CCV6--7	Silver	0.4000	0.4014	100.3	90.0 110.0
	Arsenic	1.6000	1.5786	98.7	90.0 110.0
	Barium	4.0000	3.8061	95.2	90.0 110.0
	Calcium	40.0000	39.8883	99.7	90.0 110.0
	Cadmium	4.0000	3.8145	95.4	90.0 110.0
	Chromium	4.0000	4.0193	100.5	90.0 110.0
	Iron	4.0000	4.0182	100.5	90.0 110.0
	Potassium	40.0000	39.1967	98.0	90.0 110.0
	Magnesium	20.0000	19.7641	98.8	90.0 110.0
	Molybdenum	20.0000	19.6012	98.0	90.0 110.0
	Sodium	40.0000	39.3966	98.5	90.0 110.0
	Nickel	8.0000	7.7887	97.4	90.0 110.0
	Lead	20.0000	19.8417	99.2	90.0 110.0
	Antimony	4.0000	4.0360	100.9	90.0 110.0
	Selenium	1.6000	1.5065	94.2	90.0 110.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Silver	ND	0.0060
	Arsenic	ND	0.0300
	Barium	0.0009	0.0030
	Calcium	0.0254	0.4000
	Cadmium	0.0005	0.0040
	Chromium	0.0040	0.0100
	Iron	ND	0.2000

Analysis Batch Number: ICPWA-09/30/97-118 -1

Test Identification : ICPWA-*Metals by ICP

Sequence : DATA273

Number of Samples : 17

Batch Data-Date/Time : 09/30/97 / 13:15:40

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Potassium	0.0651	0.1000
	Magnesium	0.0146	0.0500
	Molybdenum	0.0061	0.0300
	Sodium	0.0178	0.2000
	Nickel	0.0132	0.0300
	Lead	ND	0.0400
	Antimony	0.0543	0.1000
	Selenium	0.0084	0.0700
	Silver	0.0017	0.0060
	Arsenic	ND	0.0300
CCB1-	Barium	0.0011	0.0030
	Calcium	0.0254	0.4000
	Cadmium	0.0008	0.0040
	Chromium	0.0045	0.0100
	Iron	ND	0.2000
	Potassium	0.0715	0.1000
	Magnesium	0.0119	0.0500
	Molybdenum	0.0108	0.0300
	Sodium	ND	0.2000
	Nickel	0.0037	0.0300
CCB2-	Lead	ND	0.0400
	Antimony	0.0427	0.1000
	Selenium	ND	0.0700
	Silver	0.0040	0.0060
	Arsenic	0.0207	0.0300
	Barium	0.0011	0.0030
	Calcium	0.0272	0.4000
	Cadmium	0.0002	0.0040
	Chromium	0.0034	0.0100
	Iron	0.0178	0.2000
CCB3-	Potassium	0.0460	0.1000
	Magnesium	0.0244	0.0500
	Molybdenum	0.0047	0.0300
	Sodium	ND	0.2000
	Nickel	0.0102	0.0300
	Lead	0.0091	0.0400
	Antimony	0.0533	0.1000
	Selenium	0.0295	0.0700
	Silver	0.0047	0.0060
	Arsenic	0.0141	0.0300
	Barium	0.0006	0.0030
	Calcium	0.0277	0.4000
	Cadmium	0.0018	0.0040
	Chromium	0.0029	0.0100
	Iron	0.0381	0.2000
	Potassium	ND	0.1000
	Magnesium	0.0174	0.0500
	Molybdenum	0.0086	0.0300
	Sodium	ND	0.2000
	Nickel	0.0068	0.0300

Analysis Batch Number: ICPWA-09/30/97-118 -1

Test Identification : ICPWA-*Metals by ICP

Sequence : DATA273

Number of Samples : 17

Batch Date-Time : 09/30/97 / 13:15:40

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB3-	Lead	ND	0.0400
	Antimony	0.0301	0.1000
	Selenium	0.0483	0.0700
CCB4-	Silver	ND	0.0060
	Arsenic	0.0073	0.0300
	Barium	0.0008	0.0030
	Calcium	0.0253	0.4000
	Cadmium	0.0023	0.0040
	Chromium	0.0003	0.0100
	Iron	0.0100	0.2000
	Potassium	ND	0.1000
	Magnesium	0.0051	0.0500
	Molybdenum	0.0048	0.0300
	Sodium	0.0534	0.2000
	Nickel	0.0102	0.0300
	Lead	0.0125	0.0400
	Antimony	ND	0.1000
	Selenium	ND	0.0700
CCB5-	Silver	ND	0.0060
	Arsenic	0.0082	0.0300
	Barium	0.0001	0.0030
	Calcium	0.0206	0.4000
	Cadmium	ND	0.0040
	Chromium	ND	0.0100
	Iron	0.0219	0.2000
	Potassium	ND	0.1000
	Magnesium	0.0068	0.0500
	Molybdenum	0.0042	0.0300
	Sodium	ND	0.2000
	Nickel	0.0067	0.0300
	Lead	0.0279	0.0400
	Antimony	0.0248	0.1000
	Selenium	ND	0.0700
CCB6-	Silver	0.0013	0.0060
	Arsenic	0.0035	0.0300
	Barium	0.0013	0.0030
	Calcium	0.0236	0.4000
	Cadmium	0.0021	0.0040
	Chromium	0.0042	0.0100
	Iron	0.0298	0.2000
	Potassium	ND	0.1000
	Magnesium	ND	0.0500
	Molybdenum	ND	0.0300
	Sodium	ND	0.2000
	Nickel	0.0021	0.0300
	Lead	0.0136	0.0400
	Antimony	0.0799	0.1000
	Selenium	ND	0.0700

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting10/03/97
16:02:14
Group: 17912

Analysis Batch Number: ICPWA-09/30/97-118 -1

Test Identification : ICPWA-*Metals by ICP

Sequence : DATA273

Number of Samples : 17

Batch Data-Date/Time : 09/30/97 / 13:15:40

----- Result Footnotes -----

(2a) - Recovery is insignificant because sample conc. is >4x spike added.

(B) - Nonhomogeneous sample

(11) - Both Duplicate results are less than the MDL.

----- Batch Notes -----

Serial dilutions for calcium, magnesium, and sodium were recovered within acceptance limits of +/- 10%. A post digestion spike for iron was recovered within acceptance limits of +/- 15%.

Groups & Samples

17873-68367	17873-68368	17873-68369	17873-68371	17873-68372	17873-68373	17897-68426	17897-68427
17900-68432	17900-68433	17904-68439	17905-68440	17907-68442	17907-68443	17912-68462	17913-68464
17917-68478	17921-68492	17921-68493	17936-68547				

379

ON SITE

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date:

6/9/5

Page

of

[illegible]

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Distribution:	White - On Site	Yellow - LAB	Pink - Sampler	Goldenrod - Client
---------------	-----------------	--------------	----------------	--------------------

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Distribution:	White – On Site	Yellow – LAB	Pink – Sampler	Goldenrod – Client
---------------	-----------------	--------------	----------------	--------------------

ON SITE

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

[illegible]

Distribution:	White - On Site	Yellow - LAB	Pink - Sampler	Goldenrod - Client
---------------	-----------------	--------------	----------------	--------------------

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Larry Trujillo*
Company: *On Site Technologies, Ltd. c/o Conoco*
Address: *612 E. Murray Drive*
City, State: *Farmington, NM 87401*

Date: *17-Jun-97*
COC No.: *6416*
Sample No.: *14894*
Job No.: *4-1359*

Project Name: *Conoco - San Juan 28-7-47*
Project Location: *San Juan 28-7-47*
Sampled by: *LT* Date: *10-Jun-97* Time: *11:21*
Analyzed by: *DC* Date: *13-Jun-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	68	ug/L	1	ug/L
<i>Toluene</i>	196	ug/L	1	ug/L
<i>Ethylbenzene</i>	7	ug/L	1	ug/L
<i>m,p-Xylene</i>	48	ug/L	1	ug/L
<i>o-Xylene</i>	25	ug/L	1	ug/L
<i>TOTAL</i>	345	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *6/17/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0529/30-QC

Parameter	Result	Unit of Measure
Average Amount of All Analytes in Blank	<0.2	ppb

<i>Parameter</i>	<i>Unit of Measure</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>% Diff</i>	<i>Limit</i>
<i>Benzene</i>	ppb	20.0	18.9	6	15%
<i>Toluene</i>	ppb	20.0	19.6	2	15%
<i>Ethylbenzene</i>	ppb	20.0	19.7	2	15%
<i>m,p-Xylene</i>	ppb	40.0	37.9	5	15%
<i>o-Xylene</i>	ppb	20.0	19.8	1	15%

<i>Parameter</i>	<i>1 - Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>%RSD</i>	<i>Limit</i>
<i>Benzene</i>	85	82	(39-150)	2	20%
<i>Toluene</i>	95	95	(46-148)	0	20%
<i>Ethylbenzene</i>	96	93	(32-160)	1	20%
<i>m,p-Xylene</i>	111	106	(35-145)	1	20%
<i>o-Xylene</i>	99	96	(35-145)	1	20%

	S1 Percent <i>Laboratory Identification</i> <i>Limit Percent Recovered</i>	S2 Percent <i>Laboratory Identification</i> <i>Limit Percent Recovered</i>		S1 Percent <i>Laboratory Identification</i> <i>Limit Percent Recovered</i>	S2 Percent <i>Laboratory Identification</i> <i>Limit Percent Recovered</i>
	(70-130)			(70-130)	
14894-6416	96				
				NR	CD
				10/17/97	6/7/07

[illegible]

Distribution:	White -- On Site	Yellow -- LAB	Pink -- Sampler	Goldenrod -- Clifton
---------------	------------------	---------------	-----------------	----------------------

OFF: (505) 325-5667

ON SITE

TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: Michael K. Lane
Company: On Site Technologies, Ltd. c/o Conoco
Address: 612 E. Murray Drive
City, State Farmington, NM 87401

Date: 28-Apr-97
COC No.: 6322
Sample No.: 14294
Job No.: 2-1000

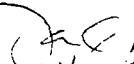
Project Name: Conoco - San Juan 28-7 #47
Project Location: Monitor Well
Sampled by: ML
Analyzed by: DC
Sample Matrix: Liquid

Date: 21-Apr-97 Time: 11:10
Date: 26-Apr-97

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	91.1	ug/L	0.2	ug/L
Toluene	291.1	ug/L	0.2	ug/L
Ethylbenzene	8.0	ug/L	0.2	ug/L
m,p-Xylene	66.4	ug/L	0.2	ug/L
o-Xylene	35.0	ug/L	0.2	ug/L
TOTAL	491.5	ug/L		

ND - Not Detected at Limit of Quantitation

Method - SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography

Approved By: 
Date: 4/28/97

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY - BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667

ON SITE

TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 26-Apr-97

Internal QC No.: 0527-STD

Surrogate QC No.: 0528-STD

Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	Result	Unit of Measure
Average Amount of All Analytes In Blank	0.2	ppb

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	18.1	10	15%
Toluene	ppb	20.0	18.8	6	15%
Ethylbenzene	ppb	20.0	19.0	5	15%
m,p-Xylene	ppb	40.0	36.9	8	15%
o-Xylene	ppb	20.0	19.0	5	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	86	84	(39-150)	2	20%
Toluene	89	87	(46-148)	1	20%
Ethylbenzene	90	89	(32-160)	1	20%
m,p-Xylene	89	88	(35-145)	1	20%
o-Xylene	86	85	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
14294-6322	95				

S1: Fluorobenzene

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Michael Lane*
Company: *On Site Technologies, Ltd. c/o Conoco*
Address: *612 E. Murray Drive*
City, State: *Farmington, NM 87401*

Date: *1-Apr-97*
COC No.: *5100*
Sample No.: *14047*
Job No.: *4-1359*

Project Name: *Conoco - 28-7 #47*
Project Location: *MW-1*
Sampled by: *HR*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *26-Mar-97* Time: *14:15*
Date: *31-Mar-97*

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Benzene</i>	<i>301.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>821.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>27.0</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>182.1</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>95.0</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1426.5</i>	<i>ug/L</i>		

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved By: *[Signature]*

Date: *4/1/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING HARMLESS WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 31-Mar-97

Internal QC No.: 0527-STD

Surrogate QC No.: 0528-STD

Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	Result	Unit of Measure
Average Amount of All Analytes In Blank	<0.2	ppb

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	18.0	10	15%
Toluene	ppb	20.0	19.1	5	15%
Ethylbenzene	ppb	20.0	19.5	3	15%
m,p-Xylene	ppb	40.0	37.6	6	15%
o-Xylene	ppb	20.0	19.3	3	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	87	80	(39-150)	3	20%
Toluene	90	81	(46-148)	2	20%
Ethylbenzene	96	89	(32-160)	5	20%
m,p-Xylene	93	86	(35-145)	4	20%
o-Xylene	95	88	(35-145)	4	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
14047-5100	95				

S1: Fluorobenzene

4/1/97

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INTO THE ENVIRONMENT -

[illegible]

Distribution:	White - On Site	Yellow - LAB	Pink - Sampler	Goldenrod - Client
---------------	-----------------	--------------	----------------	--------------------

AROMATIC VOLATILE ORGANICS

Attn: Michael Lane
 Company: On Site Technologies, Ltd. c/o Conoco
 Address: 612 E. Murray Drive
 City, State: Farmington, NM 87401

Date: 1-Apr-97
 COC No.: 5100
 Sample No.: 14047
 Job No.: 4-1359

Project Name: Conoco - 28-7 #47
 Project Location: MW-1
 Sampled by: HR
 Analyzed by: DC
 Sample Matrix: Liquid

Date: 26-Mar-97 Time: 14:15
 Date: 31-Mar-97

Sample Results

Sample Amount: 5000 uL Calibrated Injection: 5000 uL
 Dilution Factor: 10

	Observed Concentration ug/L	Actual Concentration ug/L	
Benzene	30.1228	301.2	
Toluene	82.1199	821.2	
Ethylbenzene	2.6971	27.0	
m,p-Xylene	18.2101	182.1	
o-Xylene	9.5005	95.0	
(Surrogate Recovered)		(Surrogate Added)	Recovery Acceptable
Flourobenezene	37.8391	40.0000	YES

Internal QC No.: 0527-STD

Calibration Check

Reference Standard QC No.: 0529/30-QC

Surrogate QC No.: 0528-STD

Calibration Standards	Method Blank	Units of Measure	True Value	Analyzed Value	% Diff	%Diff Acceptable
Benzene	0.1459	ppb	20.0	18.0	10	YES
Toluene	0.0733	ppb	20.0	19.1	5	YES
Ethylbenzene	0.0850	ppb	20.0	19.5	3	YES
m,p-Xylene	0.0000	ppb	40.0	37.6	6	YES
o-Xylene	0.0308	ppb	20.0	19.3	3	YES
Average: 0.0670						
		YES Method Blank Acceptable				

Spike Results

Date of Analysis: 31-Mar-97
 Laboratory Identification: 14047-5100

Matrix Spike @: 40 ppb

Analyte	14047-5100 Measured	1-Spike Measured	2-Spike Measured	1-Recovery Acceptable	2-Recovery Acceptable	%RSD Acceptable
Benzene	30.12	64.88	62.30	YES	YES	YES
Toluene	82.12	117.92	114.51	YES	YES	YES
Ethylbenzene	2.70	41.21	38.40	YES	YES	YES
m,p-Xylene	18.21	92.24	86.88	YES	YES	YES
o-Xylene	9.50	47.38	44.74	YES	YES	YES

Software Version: 4.1<2F12>

Date: 3/31/97 12:39 PM

Sample Name : 14047-5100 RA1 D-10X

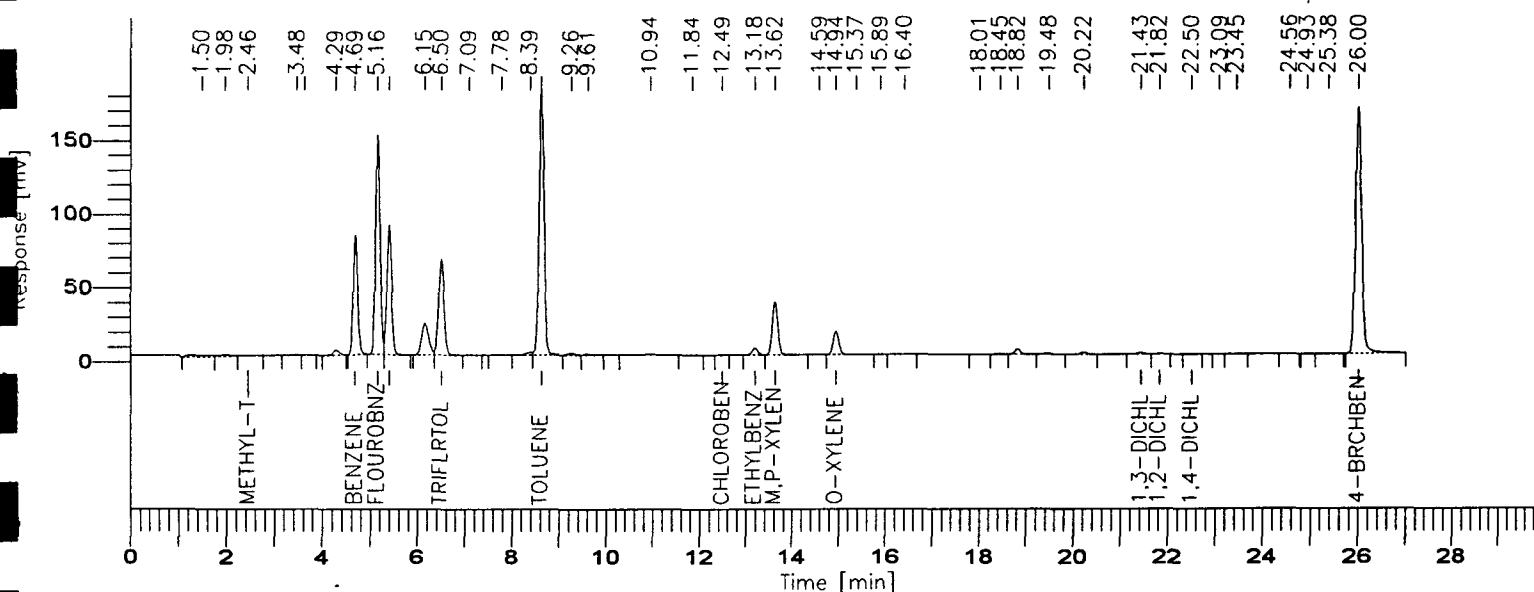
Data File : C:\TC4\DATA\BY-14047.RAW Date: 3/31/97 12:12 PM

Sequence File: C:\TC4\DATA\BTX-1-97.SEQ Cycle: 5 Channel : B

Instrument : PURGE&TRAP Rack/Vial: -20736/0 Operator: manager

Sample Amount : 1.0000

Dilution Factor : 1.00



EPA 602 / 8020 BTEX-MTBE

Time [min]	Area [μV.s]	BL	ISTD Amt. Ratio	Amount ug/L	Component Name
2.463	11021.44	VB	0.0370	1.4782	Methyl-t-Butyl Ether
4.690	530070.55	BB	0.7531	30.1228	Benzene
5.159	999316.34	BV	0.9460	37.8391	Fluorobenz
5.401	583602.13	VB	0.9474	37.8945	1,4-Difluorobenz
6.500	521532.04	VV	1.0000	0.0000	Trifluorotolu
8.621	1324182.27	VV	2.0530	82.1199	Toluene
12.485	1056.57	BB	0.0015	0.0614	Chlorobenzene
13.184	37627.13	BV	0.0674	2.6971	Ethylbenzene
13.623	303832.63	VB	0.4553	18.2101	m,p-Xylene
14.943	133783.19	VE	0.2375	9.5005	o-Xylene
21.426	8163.58	BV	0.0139	0.5556	1,3-Dichlorobenz
21.823	4208.39	VB	0.0072	0.2868	1,2-Dichlorobenz
22.500	741.00	BB	0.0016	0.0620	1,4-Dichlorobenz
26.002	1485863.90	BB	0.9851	39.4038	4-Bromobenz

5945001.16 7.5058 260.2318

Report stored in ASCII file: C:\TC4\DATA\BY-14047.TX0

Chromatogram

Sample Name : 14047-5100 RA1 D-10X

File Name : C:\TC4\DATA\BY-14047.raw

Method : BTX-1-97

Start Time : 0.00 min

End Time : 30.00 min

Scale Factor: 1.0

Plot Offset: -6 mV

Sample #: 5

Date : 3/31/97 12:39 PM

Time of Injection: 3/31/97 12:12 PM

Low Point : -6.03 mV

High Point : 184.39 mV

Plot Scale: 190.4 mV

Page 1 of 1

Response [mV]

