

3R - 98

REPORTS

DATE:

FEB 1999



February 8, 1999

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

RECEIVED

RE: 1998 Annual Ground Water Report
Conoco Location: Shephard & Kelsey #1E
Unit D, Sec. 29, T29N, R11W, NMPM, San Juan Co., NM

FEB 19 1999

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

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 covers the calendar year of 1998, 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 1998 ACTIVITIES:

During 1998, ground water monitoring was conducted in March and in June.

Results of the soil excavation efforts and initial ground water sampling were previously documented in the following correspondence:

On Site Technologies, Ltd., April 16, 1997. Letter to Mr. W. L. Brignon, Senior Council Conoco, Inc. Midland Division, regarding: *Former Production Pit Assessment and Remediation, Conoco Location, Shephard & Kelsey #1E, Unit D, Sec. 29, T29N, R11W, NMPM, San Juan Co., NM.*

On Site Technologies, Ltd., April 28, 1997. Letter to Mr. W. L. Brignon, Senior Council Conoco, Inc. Midland Division, regarding: *Former Production Tank Leak, Assessment and Remediation, Conoco Location, Shephard & Kelsey #1E, Unit D, Sec. 29, T29N, R11W, NMPM, San Juan Co., NM.*

On Site Technologies, Ltd., February 1, 1998. Letter to Ms. Shirley Ebert, Field SHEAR Specialist, Conoco, Inc. Midland Division, regarding, *1997 Annual Ground Water Report, Conoco Location, Shephard & Kelsey #1E, Unit D, Sec. 29, T29N, R11W, NMPM, San Juan Co., NM.*

SAMPLING:

In accordance with the monitoring plan, water levels were measured on all monitoring wells prior to purging and sampling. Samples were collected, preserved and transported in accordance with Environmental Protection Agency (EPA) prescribed procedures, and proper chain-of-custody protocol followed. 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.

Copies of all laboratory reports for the calendar year 1998 along with all laboratory QA/QC documentation and chain-of-custody, are attached with this report.

PO Box 2606
Farmington, NM

505-325-5667

FAX: 505-327-1496

SUMMARY AND CONCLUSIONS:

The following conclusions are based on the 1998 ground water monitoring results and trends associated with a former production pit at the Shephard and Kelsey #1E well location:

1. BTEX contamination of ground water has declined for all constituents and has been below NMWQCC standards for the last four sample events (i.e., August and December 1997 and March, June 1998). The site should be considered for closure.
2. The ground water during 1998, fluctuated seasonally with changes in irrigation and flow in the San Juan River. The ground water surface is relatively flat with a gradient of 0.015 to 0.02 feet/foot to the South-southeast. Refer to the Ground Water Potentiometric Maps attached.

Recommendations

1. This site should be considered for closure and request submitted to NMOCD for approval.
2. All monitoring wells should be plugged and abandon in accordance with current regulations.

LIMITATIONS AND CLOSURE:

This annual groundwater report documents the results of ground water monitoring for the referenced Conoco well location during the calendar year 1998. This report following 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,



Larry Trujillo, C.H.M.M.
Project Manager

On Site Technologies, Limited Partnership

Reviewed by:



Michael K. Lane, P.E.
Senior Engineer

Attachments: Table 1: Monitoring Well Details and Ground Water Levels Summary
Table 2: Ground Water BTEX Analytical Summary
Figure 1: Site Sketch
Figure 2: Ground Water Potentiometric Map (March, 1998)
Figure 3: Ground Water Potentiometric Map (June, 1998)
Laboratory Results, QA/QC, Chain of Custody

Acknowledgment:
CONOCO, Inc.

Shirley Ebert SHAZ Specialist
(Name/Title)

2/17/99
(Date)

Table 1
Ground Water Level Summary
Shephard & Kelsey #1E
Unit D, Sec. 29, T29N, R11W

Well Number	Total Casing Elevation (ft)	Total Depth of Well (ft)	Well Type	Screen Interval (ft)	Sample Date	Depth to Groundwater (ft)	Relative Groundwater Elevation (ft)
MW #1	99.957	6.10		1.10 to 6.10 ft	8/20/97	3.51	36.447
					12/30/97	3.96	35.997
					3/13/98	4.39	35.567
MW #2	100.758	10.00 ft.		5.0 to 10.0 ft	8/20/97	5.61	95.77
	*100.658	9.90			12/30/97	5.81	95.148
					3/13/98	6.43	94.948
MW #3	100.867	10.00		5.0 to 10.0 ft	8/20/97	5.86	94.328
	*100.767	9.90			6/9/98	5.97	94.688
					6/9/98	6.43	94.007
					12/30/97	5.75	95.117
					3/13/98	6.43	94.437
					6/9/98	5.92	94.847

BGS = Below Ground Surface
BTOC = Total Top of Casing
NM = Not Measured

* Removed 1/10th of a foot from top of casing 3/13/98

Table 2
BTEX Analytical Summary
Shephard & Kelsey #1E
Unit D, Sec. 29, T29N, R11W

Sample Date	Sample ID	Monitor Well	Remarks	BTEX per EPA R020 (ppb)				Total BTEX
				Benzene	Toluene	Ethylbenzene	Total Xylyene	
03/20/97	13999	Sep. Pit MW	On Site Lab.	50.3	10.2	6.3	43.9	110.7
08/19/97	15825	MW-1		7.8	BDL	BDL	0.2	8.0
12/30/97	17247			1.6	BDL	BDL	0.2	1.8
3/13/98	9803044-01A			0.5	BDL	BDL	BDL	BDL
6/9/98	9806030-01A			BDL	BDL	BDL	BDL	BDL
<hr/>								
08/20/97	15830	MW-2	On Site Lab.	BDL	BDL	BDL	BDL	BDL
12/30/97	17248			BDL	BDL	BDL	BDL	BDL
3/13/98	9803044-02A			BDL	BDL	BDL	BDL	BDL
6/9/98	9806030-02A			BDL	BDL	BDL	BDL	BDL
<hr/>								
08/20/97	15381	MW-3	On Site Lab.	BDL	BDL	BDL	BDL	BDL
12/30/97	17249			BDL	BDL	BDL	BDL	BDL
03/13/98	9803044-03A			BDL	BDL	BDL	BDL	BDL
6/9/98	9806030-03A			BDL	BDL	BDL	BDL	BDL
WQC	ACTION LEVELS			10.0	750.0	750.0	620.0	

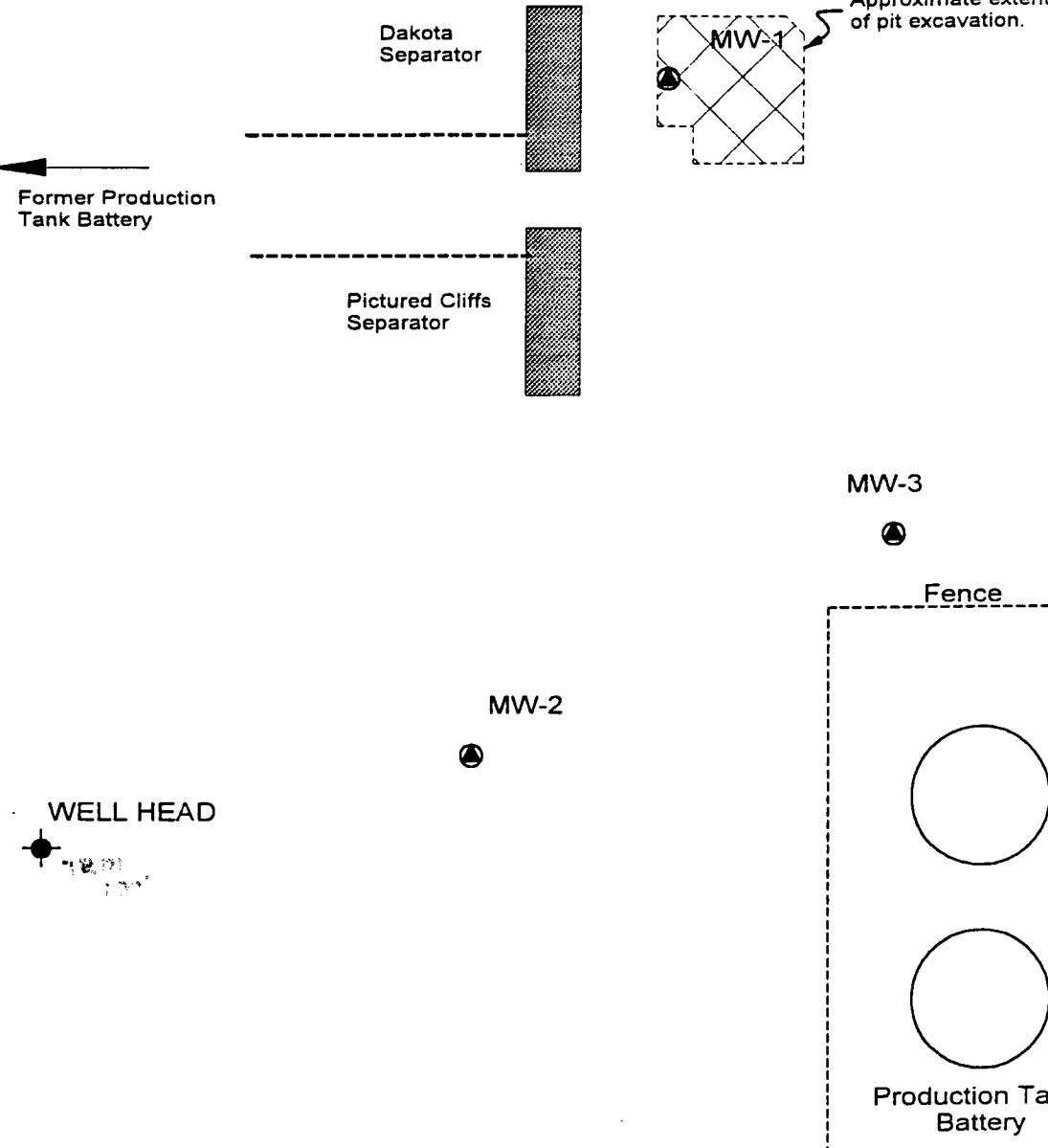
BDL Below Detection Levels



Scale: 1" = 20'

(●) Approximate location of
ground water monitoring wells

TBM: Total Below Mean Sea Level



SHEPHARD & KELSEY #1E NE/NE, Sec. 29, T29W, R11W SAN JUAN BASIN, NM	Site Sketch	
	DRWN: 01-08-98	
PROJECT NO: 4-1303-5	DRWN BY: MKL	
FIGURE: 1	FILE: 41303F1.CAD	PROJECT: Pit Reclamation

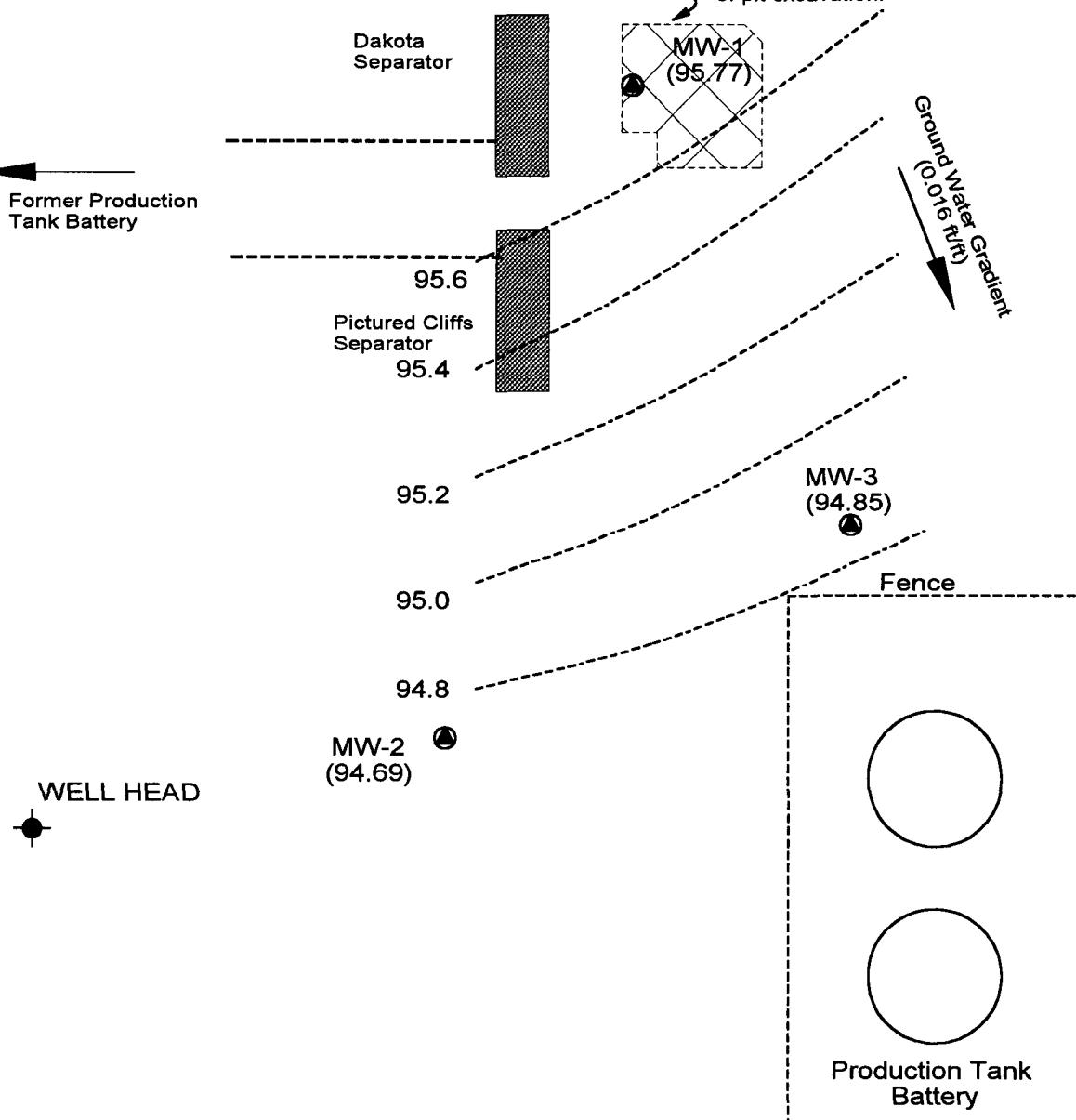


N

Scale: 1" = 20'

Ground water surface
contour (water elevations
measured 6/9/98)

Ⓐ Approximate location of
ground water monitoring wells



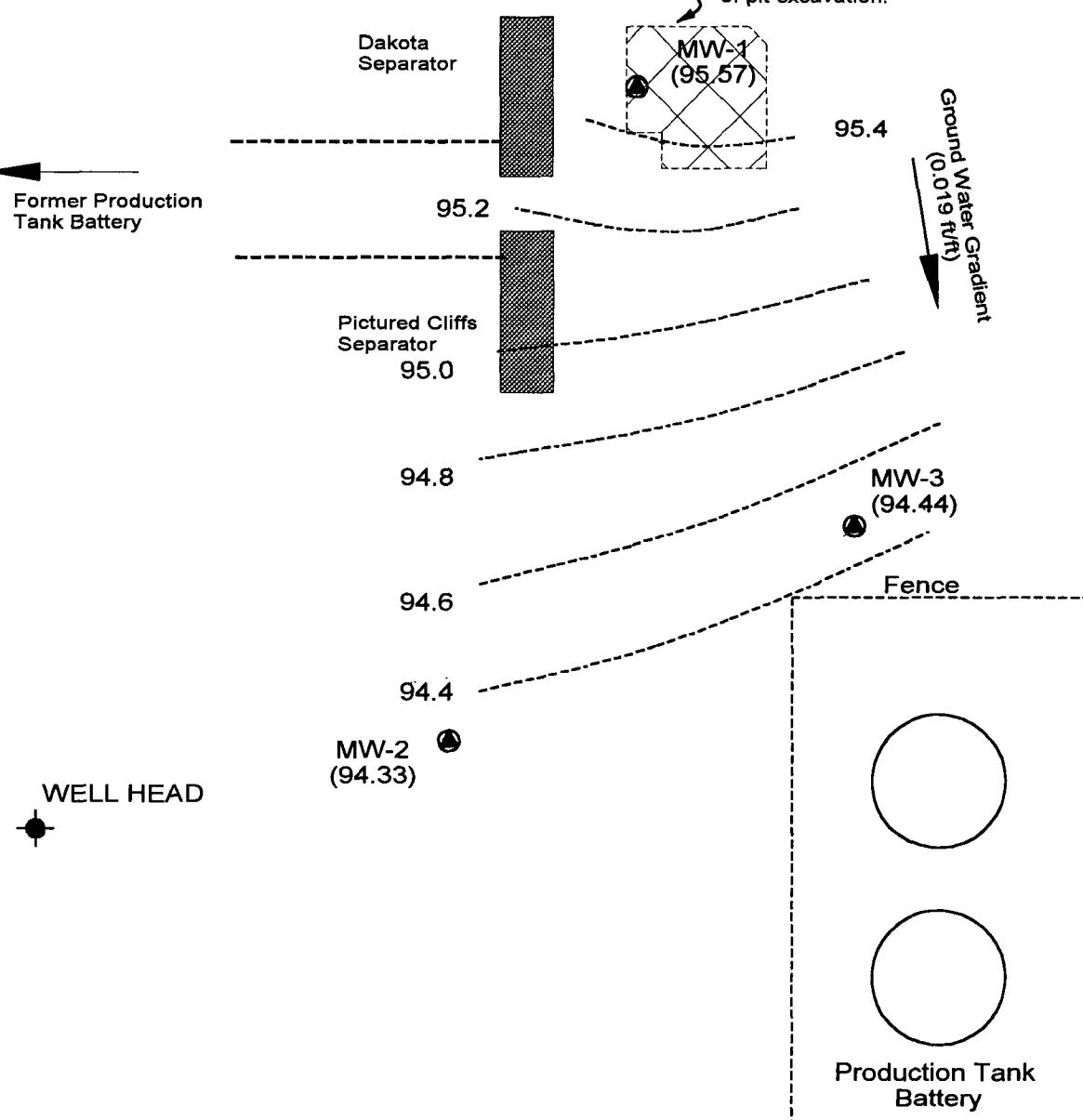
SHEPHARD & KELSEY #1E NE/NE, Sec. 29, T29W, R11W SAN JUAN BASIN, NM	Ground Water Potentiometric Map June, 1998	ON SITE TECHNOLOGIES, LTD. P.O. BOX 2606, FARMINGTON, NM 87499 (505) 325-5667
PROJECT NO: 4-1303-5	DRWN: 01-08-98	
FIGURE: 2	FILE: 41303F2.CAD	



Scale: 1" = 20'

Ground water surface
contour (water elevations
measured 3/13/98)

● Approximate location of
ground water monitoring wells



SHEPHARD & KELSEY #1E
NE/NE, Sec. 29, T29W, R11W
SAN JUAN BASIN, NM

PROJECT NO: 4-1303-5

FIGURE: 2

Ground Water
Potentiometric Map
March, 1998

DRWN: 01-08-98

DRWN BY: MKL

FILE: 41303F2.CAD

PROJECT: Pit Reclamation

ON SITE TECHNOLOGIES, LTD.
P.O. BOX 2606, FARMINGTON, NM 87499
(505) 325-5667





OFF: (505) 325-5667

LAB: (505) 325-1556

June 17, 1998

Larry Trujillo
On Site Technologies, Limited Partnership
612 E. Murray Drive
P.O. Box 2606
Farmington, NM 87499
TEL: (505) 325-5667
FAX (505) 327-1496

RE: 4-1429; Conoco

Order No.: 9806030

Dear Larry Trujillo,

On Site Technologies, LTD. received 3 samples on 6/10/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

BTEX (SW8020A)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

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

Sincerely,

A handwritten signature in black ink, appearing to read "David Cox".

David Cox



OFF: (505) 325-5667

LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 17-Jun-98

CLIENT: On Site Technologies, Limited Partnership
Project: 4-1429; Conoco
Lab Order: 9806030

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 17-Jun-98

Client:	On Site Technologies, Limited Partnership	Client Sample Info:	Shephard & Kelsey 1E
Work Order:	9806030	Client Sample ID:	MW #1
Lab ID:	9806030-01A	Matrix:	AQUEOUS
Project:	4-1429; Conoco	Collection Date:	6/9/98 2:36:00 PM
		COC Record:	5133

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX						
			SW8020A			Analyst: DC
Benzene	ND	0.5		µg/L	1	6/15/98
Toluene	ND	0.5		µg/L	1	6/15/98
Ethylbenzene	ND	0.5		µg/L	1	6/15/98
m,p-Xylene	ND	1		µg/L	1	6/15/98
o-Xylene	ND	0.5		µg/L	1	6/15/98

Qualifiers: PQL - Practical Quantitation Limit S - Spike Recovery outside accepted recovery limits
ND - Not Detected at Practical Quantitation Limit R - RPD outside accepted recovery limits
J - Analyte detected below Practical Quantitation Limit E - Value above quantitation range
B - Analyte detected in the associated Method Blank Surr: - Surrogate

1 of 1

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 17-Jun-98

Client:	On Site Technologies, Limited Partnership	Client Sample Info:	Shephard & Kelsey 1E
Work Order:	9806030	Client Sample ID:	MW #2
Lab ID:	9806030-02A	Matrix:	AQUEOUS
Project:	4-1429; Conoco	Collection Date:	6/9/98 2:53:00 PM
		COC Record:	5133

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX						
			SW8020A			Analyst: DC
Benzene	ND	0.5		µg/L	1	6/14/98
Toluene	ND	0.5		µg/L	1	6/14/98
Ethylbenzene	ND	0.5		µg/L	1	6/14/98
m,p-Xylene	ND	1		µg/L	1	6/14/98
o-Xylene	ND	0.5		µg/L	1	6/14/98

Qualifiers: PQL - Practical Quantitation Limit S - Spike Recovery outside accepted recovery limits
ND - Not Detected at Practical Quantitation Limit R - RPD outside accepted recovery limits
J - Analyte detected below Practical Quantitation Limit E - Value above quantitation range
B - Analyte detected in the associated Method Blank Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



ON SITE
TECHNOLOGIES, LTD.

OFF: (505) 325-5667

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 17-Jun-98

Client:	On Site Technologies, Limited Partnership	Client Sample Info:	Shephard & Kelsey 1E
Work Order:	9806030	Client Sample ID:	MW #3
Lab ID:	9806030-03A	Collection Date:	6/9/98 3:05:00 PM
Project:	4-1429; Conoco	COC Record:	5133

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX						Analyst: DC
Benzene	ND	0.5		µg/L	1	6/14/98
Toluene	ND	0.5		µg/L	1	6/14/98
Ethylbenzene	ND	0.5		µg/L	1	6/14/98
m,p-Xylene	ND	1		µg/L	1	6/14/98
o-Xylene	ND	0.5		µg/L	1	6/14/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

CLIENT: On Site Technologies, Limited Partnership
Work Order: 9806030
Project: 4-1429; Conoco

Date: 17-Jun-98

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-1_980614	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/14/98				Prep Date:			
Client ID:	9806030	Run ID: GC-1_980614B	%REC	SeqNo:	2996	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result	PQL	SPK value	SPK Ref Val							
Benzene	.0426	0.5									J
Ethylbenzene	.0628	0.5									J
m,p-Xylene	.1828	1									J
o-Xylene	.0816	0.5									J
Toluene	.1025	0.5									J
Sample ID: MB1	Batch ID: GC-1_980615	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/15/98				Prep Date:			
Client ID:	9806030	Run ID: GC-1_980615A	%REC	SeqNo:	3106	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result	PQL	SPK value	SPK Ref Val							
Benzene	.0418	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	.1275	1									J
o-Xylene	ND	0.5									
Toluene	.1234	0.5									J

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
R - RPD outside accepted recovery limits

On Site Technologies, LTD.

CLIENT: On Site Technologies, Limited Partnership
Work Order: 9806030
Project: 4-1429; Conoco

Date: 17-Jun-98

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9806014-02AMS Batch ID: GC-1_980614 Test Code: SW8020A Units: µg/L										Analysis Date: 6/14/98 SeqNo: 2997 Prep Date:											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit	
Benzene		813	10		800		4.052		101.1%		56		128								
Ethylbenzene		812.9	10		800		4.38		101.1%		78		107								
m,p-Xylene		1577	20		1600		17.67		97.5%		67		118								
o-Xylene		806.4	10		800		2.606		100.5%		78		107								
Toluene		806.6	10		800		3.922		100.3%		74		116								
Sample ID: 9806014-02AMSD Batch ID: GC-1_980614 Test Code: SW8020A Units: µg/L										Analysis Date: 6/14/98 SeqNo: 2998 Prep Date:											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit	
Benzene		788.5	10		800		4.052		98.1%		56		128								
Ethylbenzene		811.3	10		800		4.38		100.9%		78		107								
m,p-Xylene		1559	20		1600		17.67		96.3%		67		118								
o-Xylene		791.3	10		800		2.606		98.6%		78		107								
Toluene		783.7	10		800		3.922		97.5%		74		116								
Sample ID: 9806015-02AMS Batch ID: GC-1_980615 Test Code: SW8020A Units: µg/L										Analysis Date: 6/15/98 SeqNo: 3107 Prep Date:											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit	
Benzene		8159	50		4000		4153		100.1%		56		128								
Ethylbenzene		4411	50		4000		421		99.7%		78		107								
m,p-Xylene		14170	100		8000		6527		95.5%		67		118								
o-Xylene		5239	50		4000		1346		97.3%		78		107								
Toluene		7282	50		4000		3434		96.2%		74		116								

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: On Site Technologies, Limited Partnership
Work Order: 9806030
Project: 4-1429; Conoco

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID: 9806015-02AMSD	Batch ID: GC-1_980615	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/15/98				Prep Date:			
Client ID:	Run ID:	GC-1_980615A		SeqNo:	3108						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	7966	50	4000	4153	95.3%	56	128	8159	2.4%	12	
Ethylbenzene	4305	50	4000	421	97.1%	78	107	4411	2.4%	11	
m,p-Xylene	13820	100	8000	6527	91.2%	67	118	14170	2.5%	10	
o-Xylene	5137	50	4000	1346	94.8%	78	107	5239	2.0%	14	
Toluene	7100	50	4000	3434	91.6%	74	116	7282	2.5%	14	

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

On Site Technologies, LTD.

Date: 17-Jun-98

CLIENT: On Site Technologies, Limited Partnership
Work Order: 9806030
Project: 4-1429; Conoco

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: GC-1_980614	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/14/98			Prep Date:				
Client ID:	Run ID: GC-1_980614B	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.87	0.5	40	0.0426	102.1%	56	128				
Ethylbenzene	40.4	0.5	40	0.0628	100.8%	78	107				
m,p-Xylene	78.11	1	80	0.1828	97.4%	67	118				
o-Xylene	40.26	0.5	40	0.0816	100.5%	78	107				
Toluene	40.14	0.5	40	0.1025	100.1%	74	116				
Sample ID: LCS WATER	Batch ID: GC-1_980615	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/15/98			Prep Date:				
Client ID:	Run ID: GC-1_980615A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.12	0.5	40	0.0418	102.7%	56	128				
Ethylbenzene	42.19	0.5	40	0	105.5%	78	107				
m,p-Xylene	80.34	1	80	0.1275	100.3%	67	118				
o-Xylene	40.85	0.5	40	0	102.1%	78	107				
Toluene	40.86	0.5	40	0.1234	101.8%	74	116				

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

On Site Technologies, LTD.

CLIENT: On Site Technologies, Limited Partnership
Work Order: 9806030
Project: 4-1429, Conoco

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Date: 17-Jun-98

Sample ID: CCV1 QC0529/30	Batch ID: GC-1_980614	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/14/98			Prep Date:		
Client ID: 9806030	Run ID: GC-1_980614B	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Analyte	Result	PQL	SPK value	SPK Ref Val					
Benzene	21.32	0.5	20	0	106.6%	85	115		
Ethylbenzene	21.51	0.5	20	0	107.6%	85	115		
m,p-Xylene	41.34	1	40	0	103.3%	85	115		
o-Xylene	21.34	0.5	20	0	106.7%	85	115		
Toluene	21.1	0.5	20	0	105.5%	85	115		
1,4-Difluorobenzene	92.58	0	100	0	92.6%	70	130		
4-Bromochlorobenzene	80.52	0	100	0	80.5%	70	130		
Fluorobenzene	93.34	0	100	0	93.3%	70	130		
Sample ID: CCV2 QC0529/30	Batch ID: GC-1_980614	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/14/98			Prep Date:		
Client ID: 9806030	Run ID: GC-1_980614B	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Analyte	Result	PQL	SPK value	SPK Ref Val					
Benzene	20.83	0.5	20	0	104.1%	85	115		
Ethylbenzene	22.1	0.5	20	0	110.5%	85	115		
m,p-Xylene	43.85	1	40	0	109.6%	85	115		
o-Xylene	21.84	0.5	20	0	109.2%	85	115		
Toluene	21.56	0.5	20	0	107.8%	85	115		
1,4-Difluorobenzene	92.73	0	100	0	92.7%	70	130		
4-Bromochlorobenzene	79.29	0	100	0	79.3%	70	130		
Fluorobenzene	92.28	0	100	0	92.3%	70	130		

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

1 of 3

CLIENT: On Site Technologies, Limited Partnership
Work Order: 9806030
Project: 4-1429; Conoco

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV3 QC0529/30		Batch ID: GC-1_980614		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/14/98		Prep Date: 2994	
Client ID: 9806030		Run ID: GC-1_980614B						SeqNo:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.1	0.5	40	0	105.3%	85	115				
Ethylbenzene	42.85	0.5	40	0	107.1%	85	115				
m,p-Xylene	81.5	1	80	0	101.9%	85	115				
o-Xylene	41.48	0.5	40	0	103.7%	85	115				
Toluene	41.48	0.5	40	0	103.7%	85	115				
1,4-Difluorobenzene	92.78	0	100	0	92.8%	70	130				
4-Bromochlorobenzene	80.77	0	100	0	80.8%	70	130				
Fluorobenzene	92.47	0	100	0	92.5%	70	130				
Sample ID: CCV1 QC0529/30		Batch ID: GC-1_980615		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/15/98		Prep Date: 3102	
Client ID: 9806030		Run ID: GC-1_980615A						SeqNo:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.44	0.5	20	0	107.2%	85	115				
Ethylbenzene	22.16	0.5	20	0	110.8%	85	115				
m,p-Xylene	41.99	1	40	0	105.0%	85	115				
o-Xylene	21.39	0.5	20	0	106.9%	85	115				
Toluene	21.37	0.5	20	0	106.9%	85	115				
1,4-Difluorobenzene	92.64	0	100	0	92.6%	70	130				
4-Bromochlorobenzene	79.51	0	100	0	79.5%	70	130				
Fluorobenzene	92.78	0	100	0	92.8%	70	130				

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: On Site Technologies, Limited Partnership
Work Order: 9806030
Project: 4-1429; Conoco

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: ccv2 QC0529/30	Batch ID: GC-1_980615	Test Code: SW8020A	Units: µg/L					Analysis Date: 6/15/98				Prep Date:	
Client ID:	9806030	Run ID: GC-1_980615A	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	SeqNo:	3103		
Analyte	Result	PQL	SPK value	SPK Ref Val					Analysis Date: 6/15/98				Prep Date:
Benzene	20.66	0.5	20	0	103.3%	85	115						
Ethylbenzene	21.47	0.5	20	0	107.3%	85	115						
m,p-Xylene	40.93	1	40	0	102.3%	85	115						
o-Xylene	20.77	0.5	20	0	103.9%	85	115						
Toluene	20.79	0.5	20	0	104.0%	85	115						
1,4-Difluorobenzene	92.43	0	100	0	92.4%	70	130						
4-Bromochlorobenzene	68.57	0	100	0	68.6%	70	130						
Fluorobenzene	92.48	0	100	0	92.5%	70	130						
Sample ID: ccv3 QC0529/30	Batch ID: GC-1_980615	Test Code: SW8020A	Units: µg/L					Analysis Date: 6/15/98				Prep Date:	
Client ID:	9806030	Run ID: GC-1_980615A	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	SeqNo:	3104		
Analyte	Result	PQL	SPK value	SPK Ref Val					Analysis Date: 6/15/98				Prep Date:
Benzene	21.25	0.5	20	0	106.3%	85	115						
Ethylbenzene	21.75	0.5	20	0	108.7%	85	115						
m,p-Xylene	40.9	1	40	0	102.3%	85	115						
o-Xylene	21.08	0.5	20	0	105.4%	85	115						
Toluene	21	0.5	20	0	105.0%	85	115						
1,4-Difluorobenzene	93.05	0	100	0	93.1%	70	130						
4-Bromochlorobenzene	84.48	0	100	0	84.5%	70	130						
Fluorobenzene	92.77	0	100	0	92.8%	70	130						

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

On Site Technologies, LTD.

Date: 17-Jun-98

CLIENT: On Site Technologies, Limited Partnership
Work Order: 9806030
Project: 4-1429; Conoco
Test No: SW8020A

**QC SUMMARY REPORT
SURROGATE RECOVERIES**

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ
9806014-01A	92.3	79.7	93.4
9806014-02A	93.9	77.6	94.9
9806014-02AMS	92.4	75.1	92.7
9806014-02AMSD	92.8	80.4	92.5
9806014-03A	87.6	63.9 *	89.4
9806014-04A	95	67.2 *	95.8
9806014-05A	89.9	68 *	91.6
9806015-01A	93.2	69.9 *	93
9806015-02A	91.6	67.9 *	92.5
9806015-02AMS	91.8	69.1 *	92.5
9806015-02AMSD	91.8	68.4 *	92.8
9806015-03A	92.5	67.4 *	93
9806019-01A	93.8	78.8	93.3
9806019-02A	93	77.9	93.3
9806030-01A	92.6	67.6 *	92.8
9806030-02A	93.6	79.3	93
9806030-03A	93.8	85.6	93.1
9806031-01A	90.9	85.3	91.5
9806031-02A	90.1	85.3	90.6
9806032-01A	93.1	86.7	93.6
9806033-01A	93.4	84.7	93.2
9806034-01A	90.7	83.9	91.5
9806040-01A	92	60.6 *	92
9806041-01A	92.1	76.9	92.1
9806041-02A	92.5	65.2 *	92.3
9806041-03A	93	69.9 *	92.4
9806043-01A	93	74	93.1

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

CLIENT: On Site Technologies, Limited Partnership
Work Order: 9806030
Project: 4-1429; Conoco
Test No: SW8020A

**QC SUMMARY REPORT
SURROGATE RECOVERIES**

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ
9806043-02A	91.8	68.1 *	91.3
9806044-01A	92.4	66.8 *	93
9806044-02A	89.1	65.2 *	89
9806044-04A	83.5	61.8 *	103
CCV1 QC0529/30	92.6	79.5	92.8
CCV2 QC0529/30	92.4	68.6 *	92.5
CCV3 QC0529/30	93	84.5	92.8
LCS	92.4	79.8	92.9
LCS WATER	92.4	78.9	92.6
MB1	93.2	80.5	93.1

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

ON SITE

TECHNOLOGIES, LTD.

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

CHAIN OF CUSTODY RECORD

Date: 6/10/99
Date: 6/10/99

Page 1 of 1

Purchase Order No.:	Job No. <u>4-1429</u>	Name <u>Larry Trujillo</u>	Title _____																
REPORT TO Name <u>Conoco</u> Company <u>Conoco</u> Address _____ City, State, Zip _____ Telephone No. _____ Telefax No. _____																			
RESULTS TO Company <u>Conoco</u> Mailing Address _____ City, State, Zip _____ Telephone No. _____ Telefax No. _____																			
ANALYSIS REQUESTED Sampling Location: <u>Shephard & Kelsey 1E</u> Sampler: <u>Larry Trujillo</u>																			
Number of Containers _____ LAB ID _____ SAMPLE IDENTIFICATION <table border="1"> <thead> <tr> <th>SAMPLE DATE</th> <th>SAMPLE TIME</th> <th>MATRIX</th> <th>PRES.</th> </tr> </thead> <tbody> <tr> <td><u>6/9/99</u></td> <td><u>1436</u></td> <td><u>HCl</u></td> <td><u>2</u></td> </tr> <tr> <td>"</td> <td><u>1433</u></td> <td><u>HCl</u></td> <td><u>1</u></td> </tr> <tr> <td>"</td> <td><u>1505</u></td> <td><u>HCl</u></td> <td><u>2</u></td> </tr> </tbody> </table>				SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	<u>6/9/99</u>	<u>1436</u>	<u>HCl</u>	<u>2</u>	"	<u>1433</u>	<u>HCl</u>	<u>1</u>	"	<u>1505</u>	<u>HCl</u>	<u>2</u>
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"	<u>1433</u>	<u>HCl</u>	<u>1</u>																
"	<u>1505</u>	<u>HCl</u>	<u>2</u>																
Relinquished by: <u>Jay H. H.</u> Date/Time: <u>6/10/99 0752</u> Received by: <u>Jay H. H.</u> Relinquished by: _____ Date/Time: _____ Received by: _____ Relinquished by: _____ Date/Time: _____ Received by: _____ Method of Shipment: _____																			
Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client Authorized by: _____ Date _____ (Client Signature Must Accompany Request)																			
Rush 24-48 Hours 10 Working Days Special Instructions: _____																			

ON SITE

CHAIN OF CUSTODY RECORD

TECHNOLOGIES, LTD.

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

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Page 1 of 1Date: 1/10/00

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ON SITE
TECHNOLOGIES, LTD.

OFF: (505) 325-5667

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 25-Mar-98

Client:	Conoco, Inc.	Client Sample Info:	Shephard & Kelsey 1E
Work Order:	9803044	Client Sample ID:	MW #1
Lab ID:	9803044-01A	Matrix:	AQUEOUS
Project:	4-1429	Collection Date:	3/13/98 11:35:00 AM
		COC#:	6906

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
BTEX			SW8020A			Analyst: DC
Benzene	0.5	0.5		µg/L	1	3/19/98
Toluene	ND	0.5		µg/L	1	3/19/98
Ethylbenzene	ND	0.5		µg/L	1	3/19/98
m,p-Xylene	ND	1		µg/L	1	3/19/98
o-Xylene	ND	0.5		µg/L	1	3/19/98
Surr: Fluorobenzene	93.4	70-130		%REC	1	3/19/98
Surr: 1,4-Difluorobenzene	94.9	70-130		%REC	1	3/19/98
Surr: 4-Bromochlorobenzene	92.8	70-130		%REC	1	3/19/98

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



OFF: (505) 325-5667

LAB: (505) 325-1556

ANALYTICAL REPORT**Date: 25-Mar-98**

Client: Conoco, Inc.	Client Sample Info: Shephard & Kelsey 1E
Work Order: 9803044	Client Sample ID: MW #2
Lab ID: 9803044-02A	Matrix: AQUEOUS
Project: 4-1429	Collection Date: 3/13/98 11:48:00 AM
	COC#: 6906

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	ND	0.5		µg/L	1	3/19/98
Toluene	ND	0.5		µg/L	1	3/19/98
Ethylbenzene	ND	0.5		µg/L	1	3/19/98
m,p-Xylene	ND	1		µg/L	1	3/19/98
o-Xylene	ND	0.5		µg/L	1	3/19/98
Surr: Fluorobenzene	93.4	70-130		%REC	1	3/19/98
Surr: 1,4-Difluorobenzene	94.1	70-130		%REC	1	3/19/98
Surr: 4-Bromochlorobenzene	92.1	70-130		%REC	1	3/19/98

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level

*1 of 1***P.O. BOX 2606 • FARMINGTON, NM 87499****- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -**



OFF: (505) 325-5667

LAB: (505) 325-1556

ANALYTICAL REPORT**Date: 25-Mar-98**

Client:	Conoco, Inc.	Client Sample Info:	Shephard & Kelsey 1E
Work Order:	9803044	Client Sample ID:	MW #3
Lab ID:	9803044-03A	Matrix:	AQUEOUS
Project:	4-1429	Collection Date:	3/13/98 12:01:00 PM
		COC#:	6906

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
BTEX						
				SW8020A		Analyst: DC
Benzene	ND	0.5		µg/L	1	3/19/98
Toluene	ND	0.5		µg/L	1	3/19/98
Ethylbenzene	ND	0.5		µg/L	1	3/19/98
m,p-Xylene	ND	1		µg/L	1	3/19/98
o-Xylene	ND	0.5		µg/L	1	3/19/98
Surr: Fluorobenzene	93.5	70-130		%REC	1	3/19/98
Surr: 1,4-Difluorobenzene	94.5	70-130		%REC	1	3/19/98
Surr: 4-Bromochlorobenzene	91.5	70-130		%REC	1	3/19/98

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

1 of 1

On Site Technologies, LTD.

CLIENT: Conoco, Inc.

Work Order: 9803044

Project: 4-1429

Date: 25-Mar-98

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_980319	Test Code: SW8020A	Units: µg/L	Analysis Date: 3/19/98				Prep Date:			
Client ID: 9803044	Run ID: GC-1_980319A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result										
Benzene	.1309		0.5								J
Ethylbenzene	.1039		0.5								J
m,p-Xylene	.2979		1								J
o-Xylene	.1068		0.5								J
Toluene	.1636		0.5								J

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

On Site Technologies, LTD.

Date: 25-Mar-98

QC SUMMARY REPORT
Laboratory Control Spike - generic

CLIENT: Conoco, Inc.
Work Order: 9803044
Project: 4-1429

Sample ID: LCS WATER	Batch ID: GC-1_980319	Test Code: SW8020A	Units: µg/L	Analysis Date: 3/19/98			Prep Date:			
Client ID:	9803044	Run ID: GC-1_980319A		SeqNo:	92	RPD Ref Val	%RPD			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Limit	RPD	Qual
Benzene	41.51	0.5	40	0.1309	103.4%	39	50			
Ethylbenzene	42.39	0.5	40	0.1039	105.7%	32	60			
m,p-Xylene	80.93	1	80	0.2979	100.8%	35	45			
o-Xylene	41.37	0.5	40	0.1068	103.2%	35	45			
Toluene	41.16	0.5	40	0.1636	102.5%	46	48			

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

ON SITE

6906

CHAIN OF CUSTODY RECORD

TECHNOLOGIES, LTD.

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

Date: 3/13/98

Page 1 of 1

Purchase Order No.:		Job No.	4 - 1429		RESULTS TO		Name	Larry Trujillo	Title
Name		Larry Trujillo		Company		Conoco			
Company		Conoco		Mailing Address					
Address				City, State, Zip					
City, State, Zip				Telephone No.				Telefax No.	
Sampling Location:		Shephard + Kelse 1E		ANALYSIS REQUESTED					
Sampler:		Larry Trujillo		Number of Containers					
SAMPLE IDENTIFICATION		SAMPLE	DATE	TIME	MATRIX	PRES.	LAB ID		
InvocID	To	3/13/98	1135	HrD	HCl	2 ✓	980304-01A		
SEND		11	1148	11	11	2 ✓	-02A		
SEND		11	1201	11	11	2 ✓	-03A		
Reinquished by:		Larry Trujillo		Date/Time		3/13/98 1526		Received by:	
Reinquished by:				Date/Time				Received by:	
Reinquished by:				Date/Time				Received by:	
Method of Shipment:				Rush	24-48 Hours	10 Working Days		Special Instructions:	
Authorized by:		(Client Signature Must Accompany Request)		Date					
Distribution: White - On Site		Yellow - LAB		Pink - Sampler		Gold - Client			

ON SITE

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

CHAIN OF CUSTODY RECORD

Page 1 of 1

Date: 1/1/05

Purchase Order No.:		Job No. <u>1-1-1-1</u>		Name <u> </u>		Title <u> </u>	
Name <u> </u> Company <u> </u>		Dept. <u> </u>		Name <u> </u> Company <u> </u>		Title <u> </u>	
Address <u> </u>		Mailing Address <u> </u>		RESULTS TO REPORT			
City, State, Zip <u> </u>		City, State, Zip <u> </u>		Telephone No. <u> </u>		Telefax No. <u> </u>	
ANALYSIS REQUESTED							
Sampling Location: <u> </u> Sampler: <u> </u>							
Number of Contaminers <u> </u>							
SAMPLE IDENTIFICATION		SAMPLE DATE	TIME	MATRIX	PRES.	LAB ID	
SEND TO INVOICE							
Relinquished by: <u> </u>		Date/Time <u> </u>			Received by: <u> </u>	Date/Time <u> </u>	
Relinquished by: <u> </u>		Date/Time <u> </u>			Received by: <u> </u>	Date/Time <u> </u>	
Relinquished by: <u> </u>		Date/Time <u> </u>			Received by: <u> </u>	Date/Time <u> </u>	
Method of Shipment: <u> </u>		Rush		24-48 Hours	10 Working Days	Special Instructions: <u> </u>	
Authorized by: <u> </u>	Date <u> </u>	Distribution: White - On Site	Yellow - LAB	Pink - Sampler	Goldenrod - Client		
(Client Signature Must Accompany Request)							

On Site Technologies, LTD.

DATE: 25-Mar-98

Remit To: On Site Technologies, LTD.
 612 E. Murray Drive
 Farmington, NM 87401

Attn: Accounts Receivable
 TEL: (505) 325-2432 FAX: (505) 325-6256

INVOICE

Invoice TO: Conoco, Inc.
 3315 Bloomfield Hwy
 Farmington, NM 87401

Attn: Accounts Payable
 Phone: (505) 327-9557

Work Order: 9803044

PO Number:

Order Name 4-1429

Date Received 3/13/98

Invoice Number: 61 8

Payment Due Date:

Payment Terms: Net 30 Days

Item	Remarks	Matrix	Qty	Unit Price	Test Total
BTEX		Aqueous	3	\$75.00	\$225.00

Order TOTAL: \$225.00

Misc Comments

FREE COPY

Misc Charges:	\$0.00
Discount:	0.00%
Surcharge:	5.94%

Subtotal: \$238.36

Payment Received: \$0.00

INVOICE Total \$238.36

All invoices are due and payable net 30 days from receipt.



OFF: (505) 325-5667

LAB: (505) 325-1556

March 25, 1998

Larry Trujillo
Conoco, Inc.
3315 Bloomfield Hwy
Farmington, NM 87401
TEL: (505) 327-9557
FAX (505) 324-5825

RE: 4-1429

Order No.: 9803044

Dear Larry Trujillo,

On Site Technologies, LTD. received 3 samples on 3/13/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

BTEX (SW8020A)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

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

Sincerely,

A handwritten signature in black ink, appearing to read "David".

David Cox



OFF: (505) 325-5667

LAB: (505) 325-1556

Date: 25-Mar-98

CLIENT: Conoco, Inc.
Project: 4-1429
Lab Order: 9803044

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.