

**3R - 94**

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# **REPORTS**

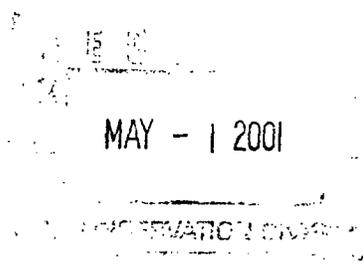
**DATE:**

April 27, 2001



February 27, 2001

Mr. Bill Olson  
New Mexico Oil Conservation Division  
2040 South Pacheco  
Santa Fe, New Mexico 87505



RE: Pit Remediation & Closure Reports

On behalf of Conoco *On Site Technologies Limited Partnership*, is submitting the enclosed Pit Remediation & Closure Reports.

LOCATION NAME	LEGAL DESCRIPTION	RECOMMENDATION
San Juan 28-7#126	Unit M, S 1, T27N, R7W	Pit Remediation & Closure Report
San Juan 28-7#219	Unit N, S 20, T28N, R7W	Pit Remediation & Closure Report
San Juan 28-7#19	Unit G, S 25, T28N, R7W	Pit Remediation & Closure Report
San Juan 28-7#47	Unit A, S 20, T28N, R7W	Pit Remediation & Closure Report

If there are any questions or concerns on this matter, feel free to contact us at (505) 325-5667.

Thank you for your time and considerations.

Respectfully submitted,

Lawrence "Larry" Trujillo, CHMM  
Environmental Specialist  
*On Site Technologies Limited Partnership*

CC:  
Gary Ledbetter, SHEAR, Conoco Inc., 3315 Bloomfield HWY, Farmington, NM 87401  
John Cofer, Sr. Environmental Specialist, Conoco Inc., 3315 Bloomfield HWY, Farmington, NM 874  
Denny Foust, NMOCD 1000 Rio Brazos, Aztec, NM 87410  
Bill Liess, BLM 1235 La Plata HWY, Farmington, NM 87401  
File

District I  
P.O. Box 1980, Hobbs, NM  
District II  
P.O. Drawer DD, Artesia, NM  
88211  
District III  
1000 Rio Brazos Rd, Aztec,  
NM 87410

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION  
P.O. Box 2088

Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO  
APPROPRIATE  
DISTRICT OFFICE  
AND 1 COPY TO

SANTA FE OFFICE

(Revised 3/9/94)

## PIT REMEDIATION AND CLOSURE REPORT

Operator: Conoco Inc Telephone: (505) 325-5813

Address: 3315 Bloomfield Highway Farmington, New Mexico 87401

Facility Or: San Juan 28-7-47

Well Name

Location: Unit or Qtr/Qtr Sec A Sec 20 T28N R7W County San Juan

Pit Type: Separator      Dehydrator      Other Blowdown pressure relief

Land Type: BLM X, State     , Fee     , Other     

Pit Location: Pit dimensions: length 10, width 10', depth 4'

(Attach diagram)

Reference: wellhead X, other: **See Attached Report**

Footage from reference: 75

Direction from reference: 35 Degrees West of North

**Depth To Ground Water:**

(Vertical distance from  
contaminants to seasonal  
high water elevation of  
ground water)

Less than 50 feet (20 points)

50 feet to 99 feet (10 points)

Greater than 100 feet (0 points)

10

**Wellhead Protection Area:**

(Less than 200 feet from a private  
domestic water source, or; less than  
1000 feet from all other water sources)

Yes (20 points)

No (0 points) 0

**Distance To Surface Water:**

(Horizontal distance to perennial  
lakes, ponds, rivers, streams, creeks, irrigation canals  
and ditches)

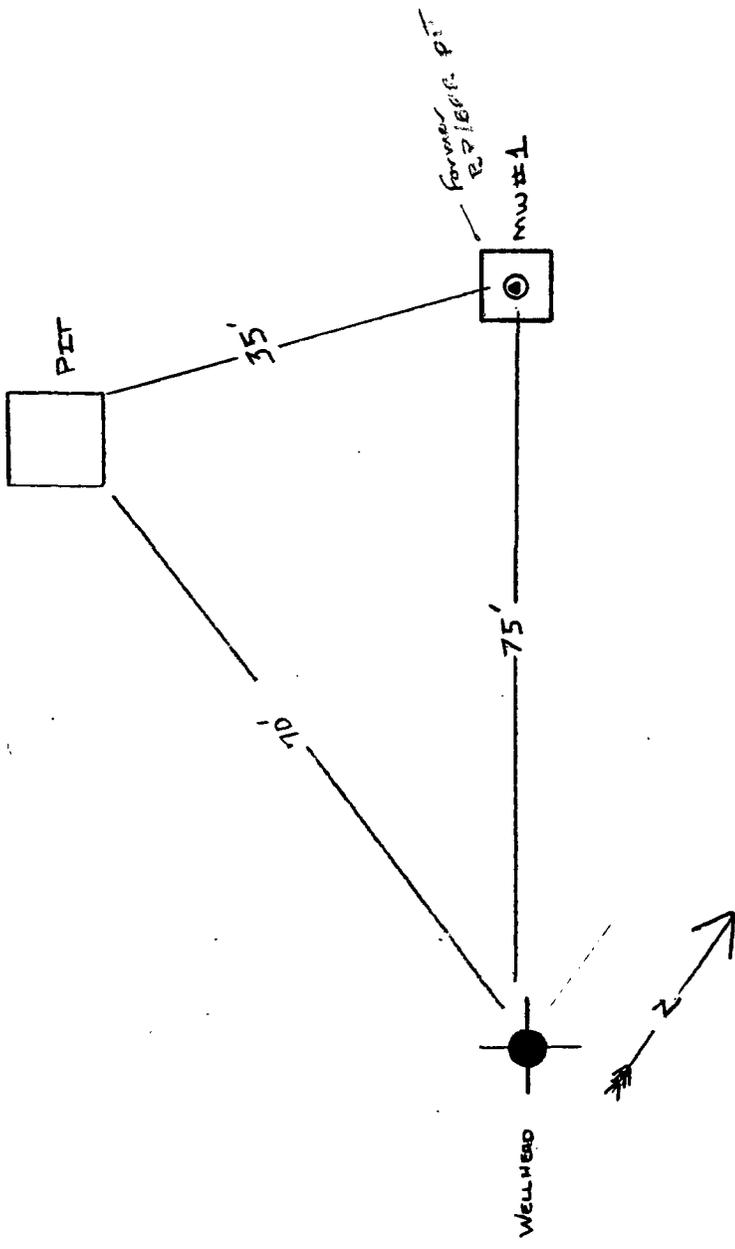
Less than 200 feet (20 points)

200 feet to 1000 feet (10 points)

Greater than 1000 feet (0 points) 0

**RANKING SCORE (TOTAL POINTS):** 10





SITE MAP  
San Juan 28-7-47  
NOT TO SCALE  
ALL DISTANCES APPROXIMATED



March 2, 2001

Conoco, Inc., San Juan/Lobo Business Unit  
Attn.: Mr. Gary Ledbetter, Field SHEAR Specialist  
3314 Bloomfield Hwy.  
Farmington, NM 87401

Project #: 2-1359

RE: 2000 Annual Ground Water Report and Request for Final Closure.  
Conoco Location: San Juan 28-7-47  
Unit A, Sec. 20, T28N, R7W, NMPM, San Juan Co., NM

Dear Mr. Ledbetter:

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 2000, 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 EVENTS:**

During June, 1995, the referenced location was assessed by Conoco and it was determined that the blow down pit was contaminated. Flow was stopped and pit was back filled. A single groundwater monitoring well was set in the approximate center of the pit of the pit. During the installation of the monitoring well soil sample were collected at 13, 18, 29 and 38 feet below the ground surface (BGS) and by record field screened for volatile organic compounds. Drilling stopped at 40 feet BGS, maximum extent of drill rigs reach. No evidence of laboratory results for soil samples were located in the Conoco local files. . Records indicate that groundwater monitoring was conducted from August, 1995 to March, 2000.

***Due to the time frame that the initial site assessment was conducted, laboratory results and QA/QC documents for soil and water sampling could not be located in local Conoco files and may have been previously submitted to the New Mexico Oil Conservation Division (NMCOD).***

Laboratory results of the groundwater monitoring event from August, 1995 indicated that volatile organic, Benzene above New Mexico Water Quality Control Commission (NMWQCC) standards present. Laboratory result from groundwater sampling event March, 1996 to March, 1999 showed a fluctuation in volatile organic contamination above NMWQCC standards. Sampling events, June, 1999, September, 1999, December, 1999 and March 2000, laboratory results showed volatile organics of concern were below NMWQCC standards.

**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.

PO Box 2606  
Farmington, NM 87499

505-325-5667

FAX: 505-327-1496

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.

Copies of all laboratory reports for the calendar year 2000, along with all laboratory QA/QC documentation and chains-of-custody, are attached with this report.

**CONCLUSIONS:**

The following conclusions are based on 2000 ground water monitoring results and trends, site observations, information gathered from available records, available laboratory results, and *ON SITE*'s past experience on similar sites.

1. BTEX contamination of ground water has been below NMWQCC standards for the last four sampling events (June 1999, September 1999, December 1999, and March 2000).
2. The referenced location has continued to show hydrocarbon contamination at or below NMWQCC groundwater quality standards.
3. The site was met the requirements of Conoco's Comprehensive Ground Water Remediation and Long-Term Monitoring for Conoco Locations in the San Juan Basin, New Mexico of four (4) consecutive quarters of water quality at or below NMWQCC standards

**RECOMMENDATION:**

On behalf of Conoco Inc., *ON SITE TECHNOLOGIES LIMITED PARTNERSHIP* requests that the referenced location be closed. Conoco's has met the requirements of the approved Comprehensive Ground Water Remediation and Long-Term Monitoring for Conoco Locations in the San Juan Basin, New Mexico, four (4) consecutive quarters of water quality at or below NMWQCC standards at the referenced site and permission be granted that groundwater monitoring wells be plugged and abandoned in accordance with current regulations and guidelines

**LIMITATIONS AND CLOSURE:**

This annual groundwater report documents the results of ground water monitoring for the referenced Conoco well location during the calendar year 2000. 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,



Lawrence "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 (Not Applicable)  
                         Boring Logs and Monitoring Well Diagrams (Not Available)  
                         Laboratory Results, QA/QC, Chain of Custody

Acknowledgment:  
CONOCO, Inc.

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(Name/Title)

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(Date)

LET/let: 41359-98.doc

**REFERENCES:**

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 #47, Unit A, Sec. 20, T28N, R7W, NMPM, San Juan Co., NM.*

***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

On Site Technologies, Ltd., February 1, 1998, letter to Ms. Shirley Ebert, SHEAR Specialist, Conoco, Inc., Midland Division, regarding 1997 Annual Ground Water Report, *Conoco Location, San Juan 28-7-19, Unit A, Sec. 20, T28N, R7W, NMPM, San Juan Co., NM.*

On Site Technologies, Ltd., February 7, 1999, letter to Ms. Shirley Ebert, SHEAR Specialist, Conoco, Inc., Midland Division, regarding 1998 Annual Ground Water Report, *Conoco Location, San Juan 28-7-19, Unit A, Sec. 20, T28N, R7W, NMPM, San Juan Co., NM.*

On Site Technologies, Ltd., January 6, 2000, letter to Ms. Shirley Ebert, SHEAR Specialist, Conoco, Inc., Midland Division, regarding 1999 Annual Ground Water Report, *Conoco Location, San Juan 28-7-19, Unit A, Sec. 20, T28N, R7W, NMPM, San Juan Co., NM.*

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
					3/12/98	69.37	5979.63
					6/9/98	55.08	5993.92
					9/14/98	69.69	5979.31
					12/9/98	68.87	5980.13
					3/1/99	69.28	5979.72
					6/7/99	69.31	5979.69
					9/10/99	69.32	5979.68
					12/13/99	69.11	5979.89
					3/13/00	69.37	5979.63

BTOC - Below Top of Casing  
 NM - Not Measured

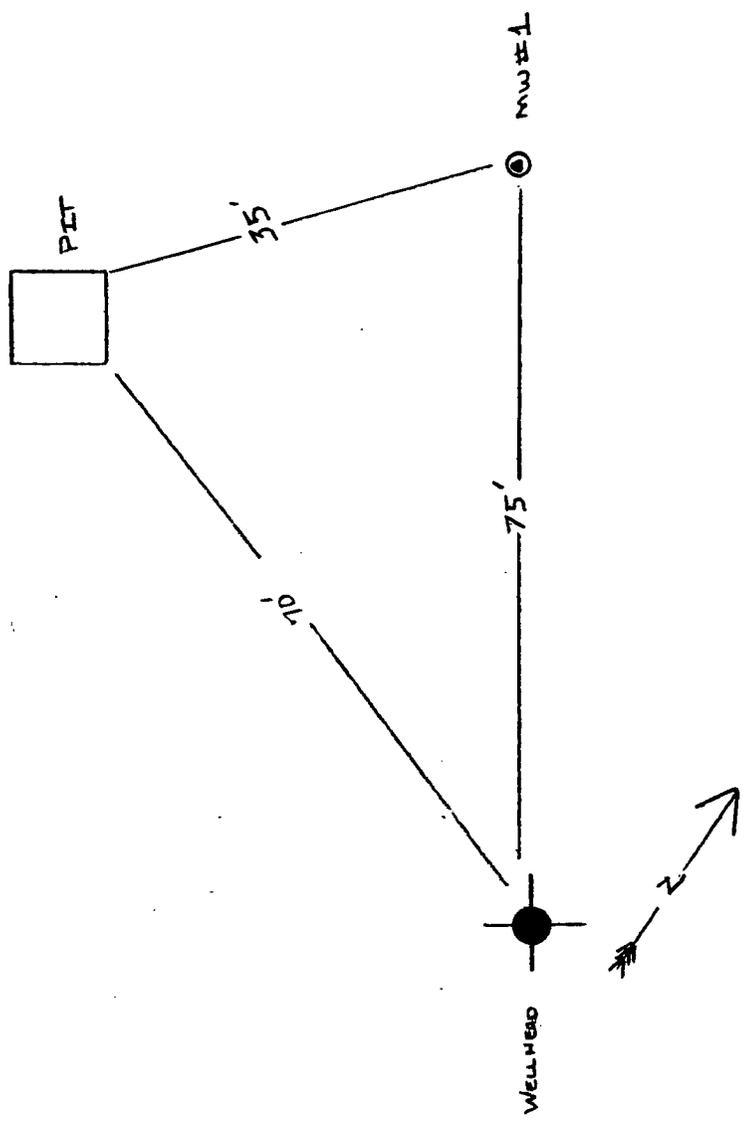
On Site Technologies  
Table 2

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
08/15/95	G01392	MW#1	IML	12.2	186.0	BDL	27.7
03/22/96	0396G00321		IML	86.8	896.0	BDL	177.8
03/26/97	14047		On Site Lab.	301.2	821.2	27.0	182.1
04/21/97	14294		On Site Lab.	91.1	291.1	8.0	101.4
06/10/97	14894		On Site Lab.	68.0	196.0	7.0	73.0
10/09/97	16561		On Site Lab.	113.0	344.0	10.0	84.0
12/22/97	17208		On Site Lab.	161.0	355.0	16.0	100.0
3/12/98	9803029-01A		On Site Lab.	120.0	270.0	14.0	81.0
6/9/98	9806033-01A		On Site Lab.	BDL	BDL	BDL	BDL
9/14/98	9809029-01A		On Site Lab.	30.0	19.0	6.1	9.5
12/9/98	9812022-01A		On Site Lab.	17.0	33.0	2.4	11.4
3/1/99	9903003-01A		On Site Lab.	14.0	59.0	1.4	11.9
6/7/99	9906019-01A		On Site Lab.	5.4	11.0	0.8	1.0
9/10/99	9909037-01A		On Site Lab.	3.4	6.1	BDL	0.6
12/13/99	9912014-01A		On Site Lab.	3.9	12	BDL	2.3
3/13/00	003017-01A		On Site Lab.	2.1	8.0	BDL	BDL
WQCC	ACTION	LEVELS		10.0	750.0	750.0	620.0

BDL, Below Detection Levels



SITE MAP  
San Juan 28-7-47  
NOT TO SCALE  
ALL DISTANCES APPROXIMATED

OFF: (505) 325-5667



LAB: (505) 325-1556

March 17, 2000

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

RE: 2-1359; San Juan 28-7-47

Order No.: 0003017

Dear Larry Trujillo,

On Site Technologies, LTD. received 1 sample on 3/13/2000 for the analyses presented in the following report.

The Samples were analyzed for the following tests:  
Aromatic Volatiles by GC/PID (SW8021B)

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", is written over a horizontal line.

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

**On Site Technologies, LTD.**

**Date:** 17-Mar-00

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**CLIENT:** Conoco, Inc.  
**Project:** 2-1359; San Juan 28-7-47  
**Lab Order:** 0003017

**CASE NARRATIVE**

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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-Mar-00

<b>Client:</b> Conoco, Inc.	<b>Client Sample Info:</b> San Juan 28-7-47
<b>Work Order:</b> 0003017	<b>Client Sample ID:</b> MW-1
<b>Lab ID:</b> 0003017-01A <b>Matrix:</b> AQUEOUS	<b>Collection Date:</b> 3/13/2000 9:30:00 AM
<b>Project:</b> 2-1359; San Juan 28-7-47	<b>COC Record:</b> 10570

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>AROMATIC VOLATILES BY GC/PID</b>		<b>SW8021B</b>		Analyst: DC		
Benzene	2.1	0.5		µg/L	1	3/14/2000
Toluene	8	0.5		µg/L	1	3/14/2000
Ethylbenzene	ND	0.5		µg/L	1	3/14/2000
m,p-Xylene	ND	1		µg/L	1	3/14/2000
o-Xylene	ND	0.5		µg/L	1	3/14/2000

<b>Qualifiers:</b>	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

**On Site Technologies, LTD.**

Date: 17-Mar-00

**CLIENT:** Conoco, Inc.  
**Work Order:** 0003017  
**Project:** 2-1359; San Juan 28-7-47

**QC SUMMARY REPORT**  
 Method Blank

Sample ID: MB1	Batch ID: GC-1_000314	Test Code: SW8021B	Units: µg/L	Analysis Date 3/14/2000	Prep Date:						
Client ID:	0003017	Run ID: GC-1_000314A		SeqNo: 25646							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0396	0.5									J
Ethylbenzene	.065	0.5									J
m,p-Xylene	.1824	1									J
Methyl tert-Butyl Ether	ND	1									J
o-Xylene	.1453	0.5									J
Toluene	.2372	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: 17-Mar-00

**CLIENT:** Conoco, Inc.

**Work Order:** 0003017

**Project:** 2-1359; San Juan 28-7-47

**QC SUMMARY REPORT**

Sample Matrix Spike

Sample ID: 0003019-01AMS	Batch ID: GC-1_000314	Test Code: SW8021B	Units: µg/L	Analysis Date 3/14/2000	Prep Date:						
Client ID: 0003017	Run ID: GC-1_000314A	PQL	SPK value	SPK Ref Val	SeqNo: 25647						
Analyte	Result	QOL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	235.3	2.5	200	44	95.7%	73	126				
Ethylbenzene	333.9	2.5	200	140	96.9%	88	113				
m,p-Xylene	1218	5	400	800	104.6%	83	112				
Methyl tert-Butyl Ether	205.3	5	200	16	94.6%	81	125				
o-Xylene	310.7	2.5	200	110	100.3%	93	110				
Toluene	208.1	2.5	200	0	104.0%	76	126				

Sample ID: 0003019-01AMSD	Batch ID: GC-1_000314	Test Code: SW8021B	Units: µg/L	Analysis Date 3/14/2000	Prep Date:						
Client ID: 0003017	Run ID: GC-1_000314A	PQL	SPK value	SPK Ref Val	SeqNo: 25648						
Analyte	Result	QOL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	224.8	2.5	200	44	90.4%	73	126	235.3	4.6%	6	
Ethylbenzene	320.1	2.5	200	140	90.1%	88	113	333.9	4.2%	5	
m,p-Xylene	1168	5	400	800	92.1%	83	112	1218	4.2%	7	
Methyl tert-Butyl Ether	200.2	5	200	16	92.1%	81	125	205.3	2.5%	9	
o-Xylene	302	2.5	200	110	96.0%	93	110	310.7	2.8%	6	
Toluene	200.2	2.5	200	0	100.1%	76	126	208.1	3.9%	6	

**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-Mar-00

**QC SUMMARY REPORT**  
Laboratory Control Spike - generic

**CLIENT:** Conoco, Inc.  
**Work Order:** 0003017  
**Project:** 2-1359; San Juan 28-7-47

Sample ID: LCS WATER	Batch ID: GC-1_000314	Test Code: SW8021B	Units: µg/L	Analysis Date 3/14/2000	Prep Date:						
Client ID: 0003017	Run ID: GC-1_000314A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.31	0.5	40	0.0396	95.7%	89	112				
Ethylbenzene	39.42	0.5	40	0.065	98.4%	93	112				
m,p-Xylene	74.86	1	80	0.1824	93.3%	88	108				
Methyl tert-Butyl Ether	38.63	1	40	0	96.6%	87	115				
o-Xylene	39.41	0.5	40	0.1453	98.2%	93	112				
Toluene	39.19	0.5	40	0.2372	97.4%	92	111				

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

On Site Technologies, LTD.

Date: 17-Mar-00

CLIENT: Conoco, Inc.

QC SUMMARY REPORT

Work Order: 0003017

Continuing Calibration Verification Standard

Project: 2-1359; San Juan 28-7-47

Sample ID: CCV1 BTEX_0001	Batch ID: GC-1_000314	Test Code: SW8021B	Units: µg/L	Analysis Date 3/14/2000	Prep Date:					
Client ID: 0003017	Run ID: GC-1_000314A	PQL	SPK value	SPK Ref Val	SeqNo: 25642					
Analyte	Result	QQL	SPK value	SPK Ref Val	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.67	0.5	20	0	85	115		103.4%		
Ethylbenzene	21.4	0.5	20	0	85	115		107.0%		
m,p-Xylene	40.35	1	40	0	85	115		100.9%		
Methyl tert-Butyl Ether	20.84	1	20	0	85	115		104.2%		
o-Xylene	21.37	0.5	20	0	85	115		106.9%		
Toluene	21.11	0.5	20	0	85	115		105.6%		
1,4-Difluorobenzene	89.09	0	100	0	80	105		89.1%		
4-Bromochlorobenzene	89.47	0	100	0	78	108		89.5%		
Fluorobenzene	86.62	0	100	0	78	108		86.6%		

Sample ID: CCV2 BTEX_0001	Batch ID: GC-1_000314	Test Code: SW8021B	Units: µg/L	Analysis Date 3/14/2000	Prep Date:					
Client ID: 0003017	Run ID: GC-1_000314A	PQL	SPK value	SPK Ref Val	SeqNo: 25643					
Analyte	Result	QQL	SPK value	SPK Ref Val	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.59	0.5	20	0	85	115		98.0%		
Ethylbenzene	20.23	0.5	20	0	85	115		101.2%		
m,p-Xylene	38.08	1	40	0	85	115		95.2%		
Methyl tert-Butyl Ether	20.17	1	20	0	85	115		100.8%		
o-Xylene	20.22	0.5	20	0	85	115		101.1%		
Toluene	19.94	0.5	20	0	85	115		99.7%		
1,4-Difluorobenzene	88.71	0	100	0	80	105		88.7%		
4-Bromochlorobenzene	90.52	0	100	0	78	108		90.5%		
Fluorobenzene	86.87	0	100	0	78	108		86.9%		

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

**QC SUMMARY REPORT**  
Continuing Calibration Verification Standard

**CLIENT:** Conoco, Inc.  
**Work Order:** 0003017  
**Project:** 2-1359; San Juan 28-7-47

Sample ID: **CCV3 BTEX\_0001** Batch ID: **GC-1\_000314** Test Code: **SW8021B** Units: **µg/L** Analysis Date **3/14/2000** Prep Date:

Client ID: **0003017** Run ID: **GC-1\_000314A** SeqNo: **25644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.76	0.5	40	0	96.9%	85	115				
Ethylbenzene	39.61	0.5	40	0	99.0%	85	115				
m,p-Xylene	74.89	1	80	0	93.6%	85	115				
Methyl tert-Butyl Ether	38.99	1	40	0	97.5%	85	115				
o-Xylene	39.58	0.5	40	0	99.0%	85	115				
Toluene	39.39	0.5	40	0	98.5%	85	115				
1,4-Difluorobenzene	88.62	0	100	0	88.6%	80	105				
4-Bromochlorobenzene	89.92	0	100	0	89.9%	78	108				
Fluorobenzene	86.49	0	100	0	86.5%	78	108				

**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  
2 of 2

CLIENT: Conoco, Inc.  
 Work Order: 0003017  
 Project: 2-1359; San Juan 28-7-47  
 Test No: SW8021B

**QC SUMMARY REPORT  
 SURROGATE RECOVERIES**

**Aromatic Volatiles by GC/PID**

Sample ID	14FBZ	4BCBZ	FLBZ
0003009-01A	89.8	90.3	87.4
0003009-02A	85.6	83.5	87.2
0003009-03A	90.1	89.4	87.6
0003009-04A	89.6	91.4	87.6
0003009-05A	89.9	90	87.5
0003009-06A	89.4	90.4	87.9
0003010-01A	89.4	90.2	87.2
0003010-02A	89.3	90.3	87.4
0003010-03A	89.2	89.8	87.4
0003012-03A	90.1	89.9	87.3
0003012-04A	88.8	88.6	87.3
0003012-05A	86.8	89	85.4
0003012-06A	87	88.9	85.4
0003013-07A	89.8	90	87
0003016-01A	88.1	89.9	86.8
0003017-01A	90.2	91.1	87.3
0003018-01A	86.6	88.6	84.2
0003019-01A	90.2	90.6	91.5
0003019-01AMS	85.9	88.6	88.4
0003019-01AMSD	86.2	89.7	88.7
0003020-01A	86.9	87.8	84.9
CCV1 BTEX_00010	89.1	89.5	86.6
CCV2 BTEX_00010	88.7	90.5	86.9
CCV3 BTEX_00010	88.6	89.9	86.5
LCS WATER	88.1	90.2	85.8
MB1	89.2	89.6	87

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	80-105
4BCBZ	= 4-Bromochlorobenzene	78-108
FLBZ	= Fluorobenzene	78-108

\* Surrogate recovery outside acceptance limits



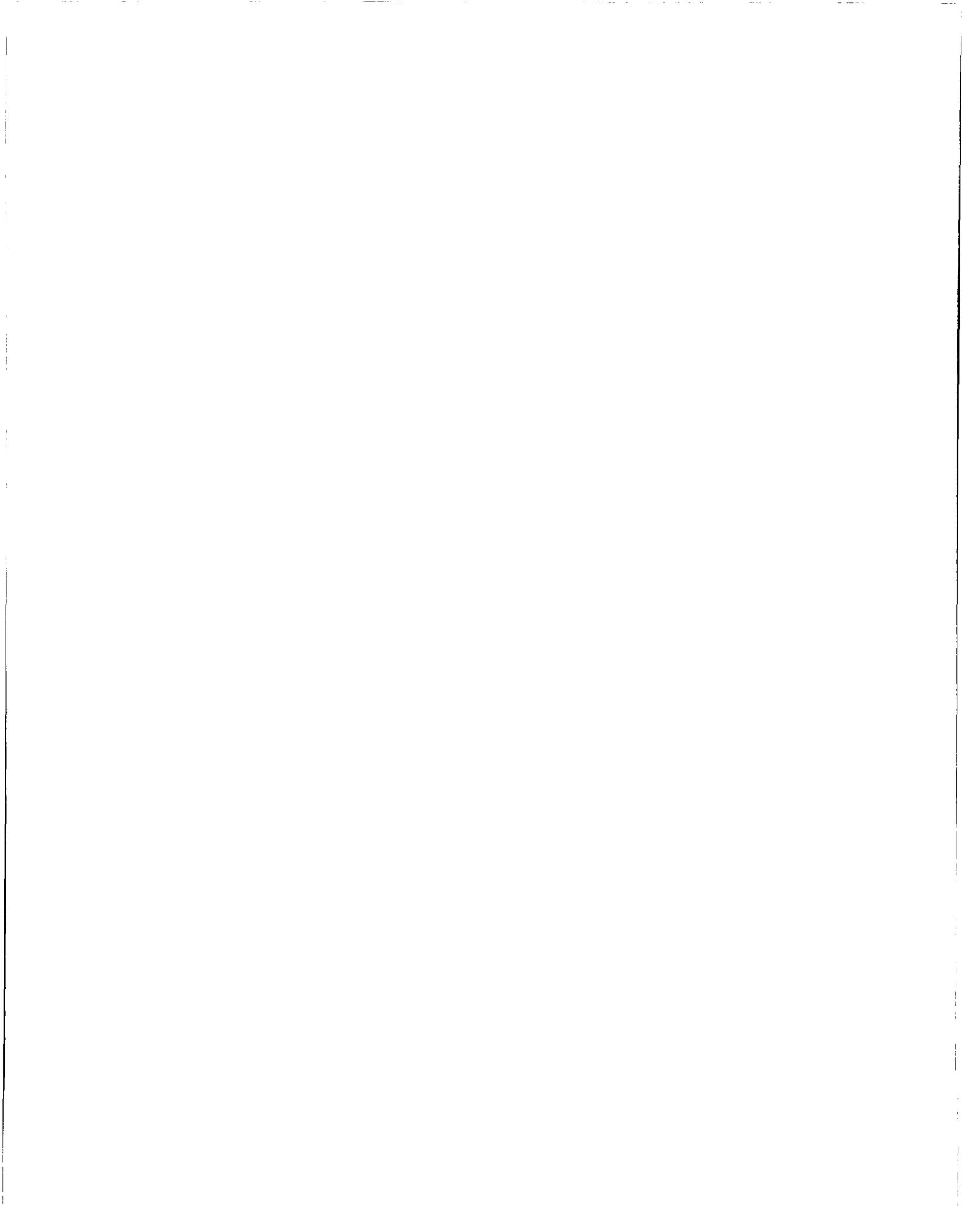
# CHAIN OF CUSTODY RECORD



612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499  
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date:          of           
Page:         

Purchase Order No.:		Project No. <u>        </u>		REPORT TO		Name <u>        </u> Title <u>        </u>	
SEND INVOICE TO		Name <u>        </u> Dept. <u>        </u>		Company <u>        </u>		Company <u>        </u>	
Address <u>        </u>		City, State, Zip <u>        </u>		Mailing Address <u>        </u>		City, State, Zip <u>        </u>	
City, State, Zip <u>        </u>		PROJECT LOCATION: <u>        </u>		Telephone No. <u>        </u>		Telefax No. <u>        </u>	
SAMPLER'S SIGNATURE: <u>        </u>		Number of Containers		ANALYSIS REQUESTED			
SAMPLE IDENTIFICATION		DATE		SAMPLE		LAB ID	
		TIME	MATRIX	PRES.			
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	By Date		
Authorized by: <u>        </u> Date <u>        </u>		Special Instructions / Remarks:					
(Client Signature <u>        </u> Accompany Request)							



**3R - 94**

# **REPORTS**

**DATE:**

April 28, 1997

OFF: (505) 325-5667



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**                      Date: **21-Apr-97**      Time: **11:10**  
 Analyzed by: **DC**                      Date: **26-Apr-97**  
 Sample Matrix: **Liquid**

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
 Date: *4/28/97*

OFF: (505) 325-5667



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				
					(12)
					5/28/97

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



**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

*(Handwritten initials)*  
4/1/97



# CHAIN OF CUSTODY RECORD

5100

Page 1 of 1

Date: 3/26/11

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

Purchase Order No.:		Job No. 410551		Name		Title	
SEND INVOICE TO		Company		Company		Company	
Address		Dept.		Mailing Address		Mailing Address	
City, State, Zip				City, State, Zip		City, State, Zip	
City, State, Zip				Telephone No.		Telephone No.	
Sampling Location: <u>CONCRETE WALL 20' x 11'</u>				ANALYSIS REQUESTED			
Sampler: <u>110</u>				Containers			
SAMPLE IDENTIFICATION		DATE	SAMPLE TIME	MATRIX	PRES.	LAB ID	
<u>20' x 11', WALL</u>		<u>10/1/11</u>	<u>10:00</u>	<u>CONCRETE</u>	<u>110</u>	<u>110-11-5100</u>	
Relinquished by: <u>Mark Rees</u>		Date/Time	Received by: <u>[Signature]</u>		Date/Time	<u>3/26/11 10:55</u>	
Relinquished by:		Date/Time	Received by:		Date/Time		
Relinquished by:		Date/Time	Received by:		Date/Time		
Method of Shipment:		Rush		24-48 Hours		10 Working Days	
Authorized by: <u>Mark Rees</u>		Date: <u>3/26/11</u>		Special Instructions:			
(Client Signature Must Accompany Request)							

**VOLATILE AROMATIC HYDROCARBONS**

Conoco, Inc.

Project ID:	Not Given	Report Date:	07/26/96
Sample ID:	28-7 #47 MW1	Date Sampled:	07/17/96
Lab ID:	0396G01347	Date Received:	07/17/96
Sample Matrix:	Water	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	7/18-25/96

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	108	20.0
Toluene	589	20.0
Ethylbenzene	ND	20.0
m,p-Xylenes	51.8	20.0
o-Xylene	25.8	20.0

ND - Analyte not detected at the stated detection limit.

<b>Quality Control:</b>	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	106.0%	75 -125%

**Reference:** Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

**Comments:**

dk  
Analyst

SB  
Review

TOTAL PETROLEUM HYDROCARBONS  
Quality Assurance/Quality ControlClient: Conoco, Inc.  
Project: Not Given  
Matrix: Soil  
Condition: Intact/CoolDate Reported: 07/26/96  
Date Sampled: 07/16/96  
Date Received: 07/17/96  
Date Extracted: 07/19/96  
Date Analyzed: 07/19/96

## Duplicate Analysis

Lab ID	Sample Result	Duplicate Result	Units	% Difference
0396G01350	822	784	mg/Kg	4.8%

## Method Blank Analysis

Lab ID	Result	Units	Detection Limit
Method Blank	ND	mg/Kg	20

## Spike Analysis

Lab ID	Found Conc. mg/Kg	Sample Conc. mg/Kg	Spike Amount mg/Kg	Percent recover	Acceptance Limits
0396G01350	975	883	200	77%	70-130%

## Known Analysis

Lab ID	Found Conc. mg/Kg	Known Conc. mg/Kg	Percent recover	Acceptance Limits
QC	20.1	20.6	98%	70-130%

References: **Method 418.1:** Petroleum Hydrocarbons, Total Recoverable, USEPA Chemical Analysis of Water and Waste, 1978.**Method 3550:** Ultrasonic Extraction of Non-Volatile and Semi-Volatile Organic Compounds from Solids, USEPA SW-846, Rev. 1, July 1992.Analyst: OKReviewed: JB

TOTAL PETROLEUM HYDROCARBONS  
Quality Assurance/Quality ControlClient: Conoco, Inc.  
Project: Not Given  
Matrix: Soil  
Condition: Intact/CoolDate Reported: 07/26/96  
Date Sampled: 07/16/96  
Date Received: 07/17/96  
Date Extracted: 07/19/96  
Date Analyzed: 07/19/96

## Duplicate Analysis

Lab ID	Sample Result	Duplicate Result	Units	% Difference
0396G01360	324	311	mg/Kg	4.0%

## Method Blank Analysis

Lab ID	Result	Units	Detection Limit
Method Blank	ND	mg/Kg	20

## Spike Analysis

Lab ID	Found Conc. mg/Kg	Sample Conc. mg/Kg	Spike Amount mg/Kg	Percent recover	Acceptance Limits
0396G01360	516	324	250	77%	70-130%

## Known Analysis

Lab ID	Found Conc. mg/Kg	Known Conc. mg/Kg	Percent recover	Acceptance Limits
QC	20.1	20.6	98%	70-130%

References: **Method 418.1:** Petroleum Hydrocarbons, Total Recoverable, USEPA Chemical Analysis of Water and Waste, 1978.**Method 3550:** Ultrasonic Extraction of Non-Volatile and Semi-Volatile Organic Compounds from Solids, USEPA SW-846, Rev. 1, July 1992.Analyst: dtReviewed: AB

**Quality Control / Quality Assurance****Known Analysis****BTEX**Client: Conoco, Inc.  
Project: Not GivenDate Reported: 07/26/96  
Date Analyzed: 07/18/96**Known Analysis**

Parameter	Found Concentration (ppb)	Known Concentration (ppb)	Percent Recovery	Acceptance Limits
Benzene	6.5	6.0	108%	70-130%
Toluene	7.3	6.0	121%	70-130%
Ethylbenzene	6.6	6.0	110%	70-130%
m+p-Xylene	11.6	12.0	97%	70-130%
o-Xylene	7.1	6.0	118%	70-130%

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	82.5%	75-125%

**Reference:** Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

**Comments:**Reported by    *df*   Reviewed by    *JB*

VOLATILE AROMATIC HYDROCARBONS  
QUALITY CONTROL REPORTMethod Blank AnalysisSample Matrix: Water  
Lab ID: Method BlankReport Date: 07/26/96  
Date Analyzed: 07/18/96

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
m,p-Xylenes	ND	0.2
o-Xylene	ND	0.2

ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	96.5%	75-125%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

  
\_\_\_\_\_  
Analyst  
\_\_\_\_\_  
Review

VOLATILE AROMATIC HYDROCARBONS  
QUALITY CONTROL REPORTMatrix Spike AnalysisLab ID: 0396G01343  
Sample Matrix: Water  
Condition: Cool/IntactReport Date: 07/26/96  
Date Analyzed: 07/18-25/96

Target Analyte	Spiked Sample Result in ppb	Sample result in ppb	Spike Added (ppb)	% Recovery	Acceptance Limits (%)
Benzene	168	4.54	150	109%	70-130
Toluene	194	9.47	150	123%	70-130
Ethylbenzene	173	ND	150	115%	70-130
m,p-Xylenes	299	ND	300	99.7%	70-130
o-Xylene	181	2.00	150	119%	70-130

ND - Analyte not detected at the stated detection limit.  
NA - Not applicable or not calculated.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	106.4%	75 -125%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

  
 Analyst

  
 Review





**Environmental Sample Chain of Custody and Log**  
Research and Engineering

Project Number  
Telephone Number  
( )

Facility Name **Conoco** Telephone Number **(505) 324-5813** Transporter Name  
Facility Address **3315 Bloomfield Hwy** Transporter Address  
Facility Supervisor **John Coy** Method of Shipping

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	No.	Analysis Req. Preservative	Remarks
28-7 #47 MW1	7-16-96	9:30am	WTF.	40 ML	Glass	1	HCl 1:1	BTEX-WTF
28-7 #72A-LF	7-16-96	9:45am	soil	8 oz	Glass	1	none	soil TPH
28-7 #72-LF	7-16-96	10:00am	soil	8 oz	Glass	1	none	
28-7 #19-MW1	7-16-96	11:00 am	WTF	40 ML	Glass	1	HCl 1:1	
28-7 #167 Pit 1	7-16-96	1:00 pm	soil	8 oz	Glass	1	none	
28-7 #147 Pit 2	7-16-96	1:05 pm	soil	8 oz	Glass	1	none	
28-7 #167 Pit 3	7-16-96	1:10 pm	soil	8 oz	Glass	1	none	
28-7 #202 Pit 2	7-16-96	1:45 pm	soil	8 oz	Glass	1	none	
28-7 #202 Pit 1	7-16-96	1:40 pm	soil	8 oz	Glass	1	none	
28-7 #67 Pit 1	7-16-96	1:30 pm	soil	8 oz	Glass	1	none	
28-7 #170 Pit 1	7-16-96	2:30 pm	soil	8 oz	Glass	1	none	
28-7 #170 Pit 2	7-16-96	2:35 pm	soil	8 oz	Glass	1	none	
28-7 #122 Pit 1	7-16-96	3:00 pm	soil	8 oz	Glass	1	none	
28-7 #173 Pit 1	7-16-96	3:30 pm	soil	8 oz	Glass	1	none	
28-7 #173 Pit 2	7-16-96	3:35 pm	soil	8 oz	Glass	1	none	
28-7 #173 Pit 3	7-16-96	3:40 pm	soil	8 oz	Glass	1	none	
28-7 #196 Pit 1	7-16-96	4:30 pm	soil	8 oz	Glass	1	none	
28-7 #196 Pit 2	7-16-96	4:35 pm	soil	8 oz	Glass	1	none	
28-7 #124 MW1	7-16-96	5:45 pm	WTF.	40 ML	Glass	1	HCl 1:1	

Condition of Samples Upon Arrival at Final Destination	Date/Time	Signature
Bottles Relinquished by <b>B. B. B.</b>	7/17/96 8:30am	<b>Chris Raymond</b>
Relinquished by	Date/Time	Signature

**VOLATILE AROMATIC HYDROCARBONS**

Conoco, Inc.

Project ID:	Water BTEX	Report Date:	04/24/96
Sample ID:	SJ 28-7 #47	Date Sampled:	04/15/96
Lab ID:	0396W00614	Date Received:	04/15/96
Sample Matrix:	Water	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	04/17/96

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	85.1	2.0
Toluene	845	2.0
Ethylbenzene	7.1	2.0
m,p-Xylenes	122	2.0
o-Xylene	40.2	2.0

ND - Analyte not detected at the stated detection limit.

<b>Quality Control:</b>	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	105.8	75 -125%

**Reference:** Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

**Comments:**

dk  
Analyst

JB  
Review

**iml**  
Inter-Mountain  
Laboratories, Inc.

2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

25 April 1996

John Coy  
Conoco Inc.  
3315 Bloomfield Hwy  
Farmington, NM 87401

Mr. Coy:

Enclosed please find the report for the sample received by our laboratory for analysis on April 15, 1996.

If you have any questions about the results of these analyses, please don't hesitate to call me at your convenience.

Sincerely,



Anna Schaerer  
Organic Analyst/IML-Farmington

Enclosure

xc: File

VOLATILE AROMATIC HYDROCARBONS  
QUALITY CONTROL REPORTDuplicate AnalysisLab ID: 0396W00606  
Sample Matrix: Water  
Condition: Cool/IntactReport Date: 04/24/96  
Date Analyzed: 04/15/96

Target Analyte	Duplicate Concentration (ppb)	Original Concentration (ppb)	% Difference
Benzene	8.7	11.2	25.1
Toluene	2.5	3.1	21.4
Ethylbenzene	1.7	2.1	21.1
m,p-Xylenes	19.4	24.1	21.6
o-Xylene	4.1	5.0	19.8

ND - Analyte not detected at the stated detection limit.  
NA - Not applicable or not calculated.

<b>Quality Control:</b>	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	90%	75 -115%

**Reference:** Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

**Comments:**

dr  
Analyst

213  
Review





## Quality Control / Quality Assurance

### Known Analysis BTEX

Client: Conoco, Inc.  
Project: Water BTEX

Date Reported: 04/24/96  
Date Analyzed: 04/17/96

#### Known Analysis

Parameter	Found Concentration (ppb)	Known Concentration (ppb)	Percent Recovery	Acceptance Limits
Benzene	12.68	12.0	106%	70-130%
Toluene	13.92	12.0	116%	70-130%
Ethylbenzene	13.10	12.0	109%	70-130%
m+p-Xylene	26.2	24.0	109%	70-130%
o-Xylene	13.28	12.0	111%	70-130%

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	113.8	75-125%

**Reference:** Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

**Comments:**

Reported by AK

Reviewed by ST



VOLATILE AROMATIC HYDROCARBONS

Conoco

Project ID: Water-BTEX  
 Sample ID: #1 SJ 28-7 #47  
 Lab ID: 0396G00321  
 Sample Matrix: Water  
 Condition: Cool/Intact

Report Date: 03/29/96  
 Date Sampled: 03/22/96  
 Date Received: 03/22/96  
 Date Extracted: NA  
 Date Analyzed: 03/25/96

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	86.8	10.0
Toluene	896	10.0
Ethylbenzene	ND	10.0
m,p-Xylenes	140	10.0
o-Xylene	37.8	10.0

ND - Analyte not detected at the stated detection limit.

<b>Quality Control:</b>	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	100.2	75 -125%

**Reference:** Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

**Comments:**

*dr*

Analyst

*JB*

Review



## Conoco Inc.

### Case Narrative

On March 13, 1995, four samples were submitted to Inter-Mountain Laboratories - Farmington for analysis. The samples were received intact. Analyses for Benzene-Toluene-Ethylbenzene-Xylenes (BTEX) was performed on the samples as per the accompanying Chain of Custody document. The samples were sent to College Station, Texas to be analyzed because of instrument problems. Sample SJ 28-7 #47 was received broken. Another sample was brought in March 22, 1996 for analysis.

BTEX analysis on the samples were performed by EPA Method 5030, Purge and Trap, and EPA Method 8020, Aromatic Volatile Hydrocarbons, using an OI Analytical 4560 Purge and Trap and a Hewlett-Packard 5890 Gas Chromatograph, equipped with a photoionization detector. Detectable levels of BTEX analytes were found in the samples as indicated in the enclosed report.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the analyses of the samples reported herein are found in Test Methods for Evaluation of Solid Waste, SW-846, USEPA, 1986 and Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, USEPA, 1983.

Quality control reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call at your convenience.

Sincerely,



Anna Schaerer  
Organic Analyst

VOLATILE AROMATIC HYDROCARBONS  
QUALITY CONTROL REPORT

Duplicate Analysis

Lab ID: 0396W00422  
Sample Matrix: Water  
Condition: Cool/Intact

Report Date: 03/29/96  
Date Analyzed: 03/27/96

Target Analyte	Duplicate Concentration (ppb)	Original Concentration (ppb)	% Difference
Benzene	ND	ND	NA
Toluene	ND	ND	NA
Ethylbenzene	ND	ND	NA
m,p-Xylenes	ND	ND	NA
o-Xylene	ND	ND	NA

ND - Analyte not detected at the stated detection limit.  
NA - Not applicable or not calculated.

<b>Quality Control:</b>	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	120.5%	75 -115%

**Reference:** Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

**Comments:**

Analyst

Review

**VOLATILE AROMATIC HYDROCARBONS  
QUALITY CONTROL REPORT**

Matrix Spike Analysis

Lab ID: 0396W00422  
Sample Matrix: Water  
Condition: Cool/intact

Report Date: 03/29/96  
Date Analyzed: 03/27/96

Target Analyte	Spiked Sample Result in ng	Sample result in ng	Spike Added (ng)	% Recovery	Acceptance Limits (%)
Benzene	57.66	0.86	60	94.7%	70-130
Toluene	53.22	0.00	60	88.7%	70-130
Ethylbenzene	55.14	0.00	60	91.9%	70-130
m,p-Xylenes	114.38	0.00	120	95.3%	70-130
o-Xylene	55.79	0.00	60	93.0%	70-130

ND - Analyte not detected at the stated detection limit.  
NA - Not applicable or not calculated.

<b>Quality Control:</b>	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	107.6%	75 -125%

**Reference:** Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

**Comments:**

  
Analyst

  
Review

**VOLATILE AROMATIC HYDROCARBONS  
QUALITY CONTROL REPORT**

Method Blank Analysis

Sample Matrix:  
Lab ID:

Water  
Method Blank

Report Date:  
Date Analyzed:

03/29/96  
03/25/96

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	0.2	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
m,p-Xylenes	ND	0.2
o-Xylene	ND	0.2

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate

Percent Recovery

Acceptance Limits

Bromofluorobenzene

\* NA

75-125%

Reference:

Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

\* Surrogate was not added to this run.

Analyst

Review

## Quality Control / Quality Assurance

### Known Analysis BTEX

Client: Conoco  
Project: Water-BTEX

Date Reported: 03/28/96  
Date Analyzed: 03/25/96

#### Known Analysis

Parameter	Found Concentration (ppb)	Known Concentration (ppb)	Percent Recovery	Acceptance Limits
Benzene	6.37	6.0	106%	70-130%
Toluene	5.84	6.0	97%	70-130%
Ethylbenzene	5.81	6.0	97%	70-130%
m+p-Xylene	12.3	12.0	102%	70-130%
o-Xylene	5.89	6.0	98%	70-130%

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	101.0	75-125%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Reported by

*dk*

Reviewed by

*SB*



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Organics Laboratory  
3304 Longmire Drive College Station, Texas 77845  
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QUALITY CONTROL REPORT - METHOD BLANK  
VOLATILE AROMATIC HYDROCARBONS

Sample Number MB0320  
Sample Matrix: Water

Report Date: 03/20/96  
Date Analyzed: 03/20/96  
Time Analyzed: 10:04 AM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Benzene	ND	0.001
Toluene	ND	0.001
Ethylbenzene	ND	0.001
p,m-xylene	ND	0.001
o-xylene	ND	0.001

ND - Analyte not detected at stated detection limit

Quality Control: Surrogate	Percent Recovery	Acceptance Limits
a,a,a-Trifluorotoluene	102%	75 - 125%
Bromofluorobenzene	99%	70 - 120%

Reference: Method 5030A, Purge and Trap.  
Method 8020A, Aromatic Volatile Organics.  
SW-846, Test Methods for Evaluating Solid Waste, United States  
Environmental Protection Agency, Final Update II, September 1994.

Comments:

  
Analyst

  
Review



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QUALITY CONTROL REPORT - BLANK SPIKE  
VOLATILE AROMATIC HYDROCARBONS

Sample Number: Blank Spike  
Sample Matrix: Water

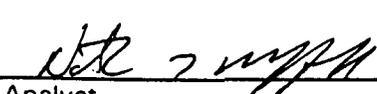
Report Date: 03/20/96  
Date Extracted: 03/20/96  
Date Analyzed: 03/20/96  
Time Analyzed: 2:34 PM

Analyte	Spike Added ppb	Sample Result ppb	Spike Result ppb	Percent Recovery	Acceptance Limit
Benzene	0.020	ND	0.021	105%	39-150%
Toluene	0.020	ND	0.021	104%	46-148%
Ethylbenzene	0.020	ND	0.020	102%	32-160%
m-Xylene	0.020	ND	0.021	104%	50-150%
o-Xylene	0.020	ND	0.020	102%	50-150%

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	a,a,a-Trifluorotoluene	100%	75 - 125%
	Bromofluorobenzene	105%	70 - 120%

Reference: Method 5030A, Purge and Trap.  
Method 8020A, Aromatic Volatile Organics.  
SW-846, Test Methods for Evaluating Solid Waste, United States  
Environmental Protection Agency, Final Update II, September 1994.

Comments:

  
\_\_\_\_\_  
Analyst

  
\_\_\_\_\_  
Review



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**QUALITY CONTROL REPORT - BLANK SPIKE DUPLICATE**  
**VOLATILE AROMATIC HYDROCARBONS**

Sample Number: Blank Spike Duplicate  
Sample Matrix: Water

Report Date: 03/20/96  
Date Extracted: 03/20/96  
Date Analyzed: 03/20/96  
Time Analyzed: 3:15 PM

Analyte	Spike Recovery (%)	Duplicate Recovery (%)	Percent Difference
Benzene	105%	109%	3%
Toluene	104%	108%	4%
Ethylbenzene	102%	107%	4%
m-Xylene	104%	109%	4%
o-Xylene	102%	107%	4%

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	a,a,a-Trifluorotoluene	101%	75 - 125%
	Bromofluorobenzene	102%	70 - 120%

Reference: Method 5030A, Purge and Trap.  
Method 8020A, Aromatic Volatile Organics.  
SW-846, Test Methods for Evaluating Solid Waste, United States  
Environmental Protection Agency, Final Update II, September 1994.

Comments:

\_\_\_\_\_  
Analyst

\_\_\_\_\_  
Review



**Environmental Sample Chain of Custody and L**  
Research and Engineering

No. 77

Project Number

Activity Name <b>ARNOLD INC.</b>	Telephone Number <b>(505) 224-5813</b>	Transporter Name <b>CONOCO INC.</b>	Telephone Number ( )
Activity Address <b>3325 CAMPUS HWY FARMINGTON, NM 87401</b>		Transporter Address <b>SAME</b>	
Activity Supervisor <b>C. F. Coy</b>	Special Shipping Instructions —	Method of Shipping <b>HAND DELIVER</b>	
Process Producing Sample <b>WATER BTEX</b>	Remarks —		
Employee(s) Sampling <b>C. F. Coy</b>			
Other Employee(s) Handling —			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers		Analysis Req. Preservative	Condition of Samples Upon Arrival at Final Destination
					Type	No.		
1) SJ28-7 # 219	3/12/96	11:45 AM	WTR-BTEX		GLASS	1	1:1 HCL	WTR-BTEX
2) SJ28-7 # 47	3/12/96	12:45 PM	WTR-BTEX		"	"	"	Checked when shipped BCS
3) SJ28-7 # 19	3/12/96	2:35 PM	WTR-BTEX		"	"	"	
4) SJ28-7 # 126	3/12/96	4:00 PM	WTR-BTEX		"	"	"	

Bottles Relinquished by <i>[Signature]</i>	Date/Time 3/13/96 11:00 AM	Bottles/Received by <i>Anna Schauer</i>	Date/Time 3/13/96 1100
Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time