

3R - 090

**ANNUAL
MONITORING
REPORT**

06/13/2005



February 21, 2005

RECEIVED
32090

JUN 13 2005

Oil Conservation Division
Environmental Bureau

ConocoPhillips
Attn.: Mr. Neal Goates, RM&R Site Manager
Threadneedle Office
PO Box 2197
Houston, TX 77252-2197

RE: 2004 Annual Ground Water Monitoring Report
ConocoPhillips Location: NELL-HALL #1,
Unit M, Sec. 07, T30N, R11W, NMPM, San Juan Co., NM
SMA Project #: 5114223

Dear Mr. Goates,

The following report summarizes the ground water monitoring activities conducted by Souder Miller and Associates (SMA) on behalf of ConocoPhillips, at the Nell Hall #1, located near Aztec, NM. This report covers the calendar year of 2004, 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.

Historically ground water levels in the area fluctuate leading to periods of the year when there is no measurable water in any of the previously existing monitoring wells or sparge points. The early spring and winter months are routinely the months with the lowest water levels.

SUMMARY OF 2004 ACTIVITIES:

Three ground water monitoring wells were installed in February 2004, and sampled in March 2004. These wells were installed deep enough so that there would be measurable ground water in them year round. The well installation and the results of the initial round of ground water sampling are documented in the *Monitoring Well Installation Report*, dated May 7, 2004.

Additional ground water sampling events were conducted in July, October, and December of 2004. Samples were collected from only the three new wells during these events. Samples were analyzed for benzene, toluene, ethyl benzene and

Table 1. ConocoPhillips Nell Hall #1 Monitoring Well Specifications and Groundwater Elevation Table

Well ID	Date Installed	Total Depth (ft. bgs)	Screen Interval (ft)	Elevation (ft. msl) (TOC)	Date Measured	Groundwater Level (ft TOC)	Groundwater Elevation (ft msl)
MW-4	2/18/2004	35	5-35	5614.87	3/8/2004	36.04	5578.83
					7/19/2004	8.44	5606.43
					10/27/2004	19.69	5595.18
					12/27/2004	27.58	5587.29
					5/10/2005		dry
MW-5	2/17/2004	39	4-39	5615.86	3/8/2004	37.19	5578.67
					7/19/2004	9.38	5606.48
					10/27/2004	21.07	5594.79
					12/27/2004	28.99	5586.87
					5/10/2005	39.79	5576.07
MW-6	2/18/2004	35	5-35	5615.44	3/8/2004	36.27	5579.17
					7/19/2004	9.43	5606.01
					10/27/2004	19.33	5596.11
					12/27/2004	28.62	5586.82
					5/10/2005		dry

ft. = Feet

msl = Mean sea level

TOC = Top of casing

bgs = below ground surface

Nell Hall #1 Site Summary
Conoco Phillips
January 27, 2004

Goal for 2004: Bring monitoring well network into useful condition, evaluate current site condition, get site on MNA/RBCA track

Goal for 2005 and beyond: Propose closure following 4 quarters < NMWQCC stds

I. Hydrogeologic Characteristics

- A. Depth to ground water – ~14' during irrigation, 25-30' during winter, 6.6' in 9/01
- B. Ground water gradient – Variable with irrigation, E to NE in summer, trough with SE and NW components in 10/03
- C. Vadose zone soils – unconsolidated alluvium, silt and sand
- D. Aquifer matrix – same as vadose zone, $K = \sim 10^{-3}$ cm/s

II. Vadose Zone Contaminant Conditions

- A. Scarce data from soil borings, SB's drilled in 1990s

III. Groundwater Contaminant Conditions

Monitoring Point	Completion	Notes
MW-1	2" PVC, Screen 18-28' bgs	ND or < NMWQCC since 9/00
MW-2	2" PVC, Screen 17-27' bgs	ND or < NMWQCC since 6/97
MW-3	2" PVC, Screen 17-27' bgs	ND or < NMWQCC since 6/96
SP-1	2" PVC, Screen 17-28' bgs	< NMWQCC in 9/98
SP-2	2" PVC, Screen 17-27' bgs	< NMWQCC in 9/98
SP-6	2" PVC, Screen 18-28' bgs	ND or < NMWQCC since 9/01
SP-7	2" PVC, Screen 17-27' bgs	Typically > NMWQCC for B (~50 ppb) and X (~2000 ppb), decreasing trend since 1999
SP-8	2" PVC, Screen 16-26' bgs	Typically < NMWQCC, B spike to 94 ppb in 6/03

IV. Monitoring Well Network Condition

- A. Three MWs generally along NW-SE line – improper location and completion (17'-27'), MWs often dry or vice versa – screen is submerged
- B. Six sparge points also being used as MWs – improper completion for monitoring (screen from 16-26')

V. Recommendations

- A. Abandon all old MWs and old sparge points
- B. Propose 3 new 2" i.d. PVC MWs, TD = 35', Screen 5'-35', log soil conditions
 - 1 MW in area of SP-7/SP-8, 1 MW just S of existing MW-1, 1 MW near MW-3
- C. Tier 1 RBCA analysis to demonstrate lack of potential receptors
- D. Evaluate site conditions with data from new wells
- E. Sample impacted wells quarterly (BTEX, DO, NO₄, Fe²⁺, SO₄, PO₄), all wells annually
- F. Annual MNA progress report
- G. Propose closure following 4 quarters < NMWQCC stds



February 3, 2004

#5114223

Mr. William C. Olson
Environmental Bureau
Oil Conservation Division
New Mexico Energy, Minerals & Natural Resources Department
1220 South St. Francis Dr.
Santa Fe, NM 87505

RE: PLAN FOR FUTURE WORK, CONOCOPHILLIPS NELL HALL #1

Dear Mr. Olson:

Souder, Miller & Associates (SMA) has prepared this letter on behalf of ConocoPhillips to confirm the results of the January 27, 2004 meeting between ConocoPhillips and the Oil Conservation Division (OCD). The meeting established a plan for future work on the ConocoPhillips Nell Hall #1 site. ConocoPhillips and SMA understand that the plan consists of:

1. Installation of three (3) new monitoring wells in locations agreed to at the meeting. The wells shall be completed with 2 inch inside diameter PVC casing and screened from approximately 5-35 feet below ground surface.
2. Sample the three new monitoring wells quarterly for benzene, toluene, ethylbenzene and total xylenes by EPA Method 8021B and for biodegradation parameters for the first year. Monitor all site wells for ground water elevation data during the first year.
3. Prepare a year end summary report of site activities. The report will recommend a monitoring program and abandonment of out of service wells. The monitoring program will likely consist of once annual monitoring of any impacted wells until the concentration of contaminants in impacted wells is below New Mexico Water Quality Control Commission standards. At that time, the impacted wells will be monitored quarterly until four quarters of below standard data are achieved. Other site wells will be monitored in the final, fourth quarter to verify site closure.

If this is not OCD's understanding of the plan for future work, please inform me within 10 business days (505-473-9211, rsa@soudermiller.com). ConocoPhillips and SMA appreciated the opportunity to meet with you and establish a path towards closure for this project.

Sincerely,

SOUDER, MILLER & ASSOCIATES

Reid S. Allan
Vice President/Senior Scientist

Cc: Mr. Neal Goates, ConocoPhillips

total xylenes. Depths to ground water in all existing wells were measured during the July and December events.

SAMPLING:

Water levels were measured on the monitoring wells prior to purging and sampling. Water samples were collected, preserved and transported in accordance with Environmental Protection Agency (EPA) prescribed procedures with proper chain-of-custody protocol followed. The laboratory analyses ordered followed the monitoring plan.

Table 1 summarizes the monitoring well data and water levels measured during the current sampling events. Table 2 summarizes the laboratory results for BTEX compounds from the current sampling events.

The original copies of the laboratory reports for the calendar year 2004, along with all laboratory QA/QC documentation and chains-of-custody, are attached to this report.

Summary and Conclusions:

The following conclusions are based on the 2004 ground water monitoring results and trends associated with a former production pit at the Nell-Hall #1 well location:

1. Ground water samples collected from MW-5 shows BTEX levels below the New Mexico Water Quality Control Commission (NMWQCC) standards during the four sampling events.
2. Ground water samples collected from MW-4 and MW-6 showed BTEX contamination levels above the New Mexico Water Quality Control Commission (NMWQCC) standards.
3. The spike in BTEX concentrations during the initial sampling event in March 2004 is likely due to the disturbance of the soil from drilling activities.
4. BTEX contamination of ground water fluctuates with the rise and fall of the ground water elevation.
5. The ground water during 2004 fluctuated seasonally with changes in irrigation and flow in the Animas River.

RECOMMENDATION:

1. Continue the sampling of monitoring wells until four consecutive sampling events demonstrates that contamination levels are below NMWCC standards.

LIMITATIONS AND CLOSURE:

This ground water monitoring report documents the results of ground water monitoring for the ConocoPhillips Nell Hall No. 1 well location during the calendar year 2004. This report format follows the monitoring plan, dated October 15, 1997.

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

Souder, Miller and Associates has prepared this document, for the exclusive use of ConocoPhillips, as it pertains to the referenced well location operated by ConocoPhillips.

If there are any questions regarding this status report, please contact either Reid Allan or Walter Gage at Souder Miller and Associates, (505) 325-5667. Thank you for your consideration.

Respectfully submitted,

Reviewed by:



Walter Gage
Geologist



Reid Allan
Senior Geologist

Souder Miller and Associates

Attachments: Table 1: Ground Water Elevations
Table 2: Ground Water BTEX Results
Figure 1: Vicinity Map
Figure 2: Site Map
Figure 3, 4, & 5: Potentiometric Surface Map
Laboratory Results, QA/QC, Chain of Custody

Acknowledgment:
CONOCOPHILLIPS, Inc.

Neal Goates / Site Manager
(Name/Title)
3/17/05
(Date)

2004 annual QM Rpt.doc

REFERENCES:

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, Nell-Hall #1, Unit M, Sec. 07, T30N, R11W, NMPM, San Juan Co., NM.*

On Site Technologies, Ltd., February 9, 1999, letter to Ms. Shirley Ebert, SHEAR Specialist, Conoco, Inc., Midland Division, regarding 1998 Annual Ground Water Report, *Conoco Location, Nell-Hall #1, Unit M, Sec. 07, T30N, R11W, NMPM, San Juan Co., NM.*

On Site Technologies, Ltd., January 10, 2000, letter to Ms. Shirley Ebert, SHEAR Specialist, Conoco, Inc., Midland Division, regarding 1999 Annual Ground Water Report, *Conoco Location, Nell-Hall #1, Unit M, Sec. 07, T30N, R11W, NMPM, San Juan Co., NM*

Souder, Miller and Associates, July 14, 2004, Report to Neal Goates, *ConocoPhillips, Monitoring Well Installation Report, Nell Hall No. 1, Flora Vista, NM*

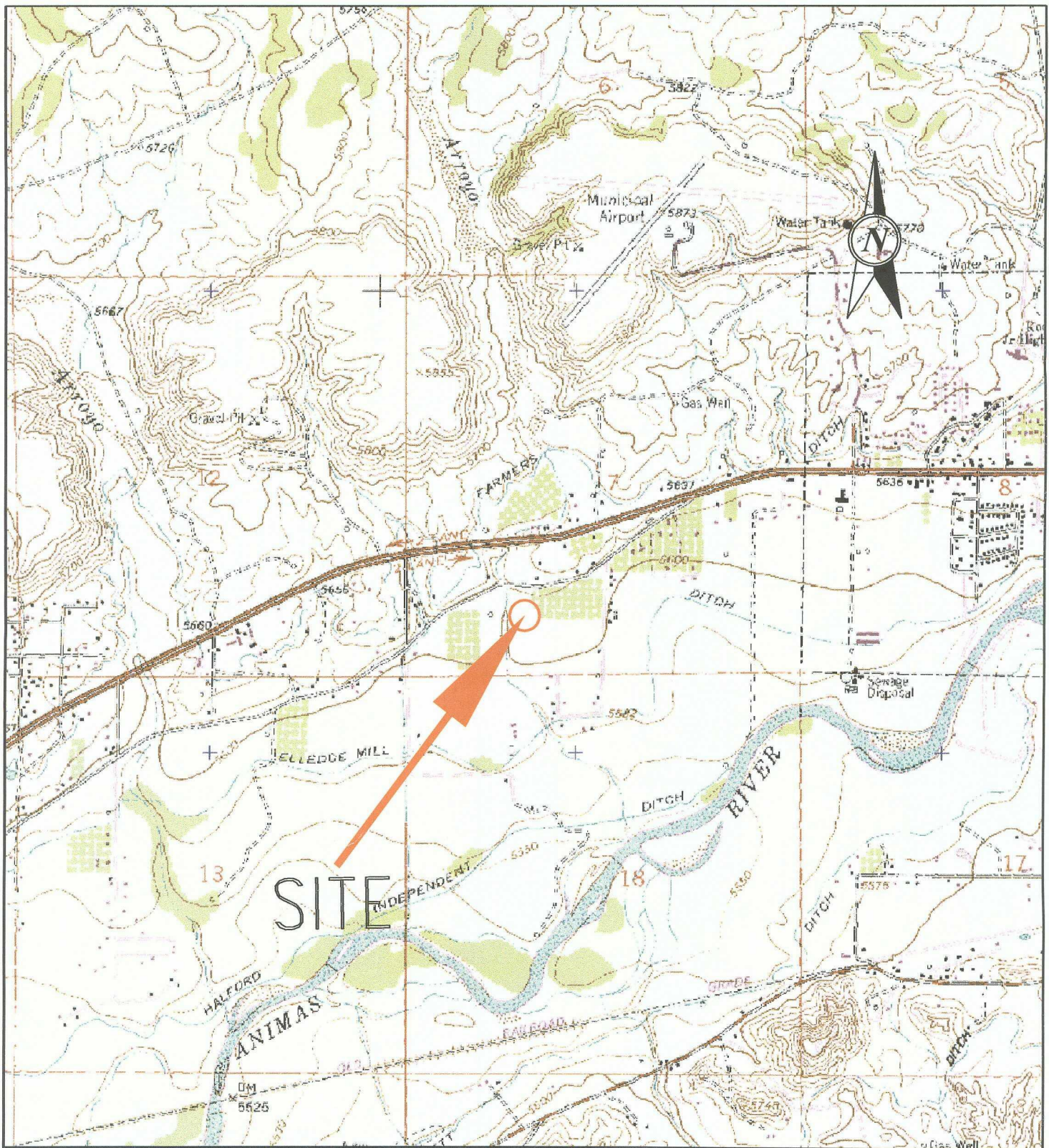
Table 1
Ground Water Elevations
 ConocoPhillips Nell Hall # 1
 Flora Vista, NM

Well Location	Date Measured	Top of Casing Elevation	Total Depth	Depth to Water	Adj. G.W. Elevation
MW-04	3/8/2004	5614.87	37.57	36.04	5578.83
	7/19/2004			8.44	5606.43
	10/27/2004			19.69	5595.18
	12/27/2004			27.58	5587.29
MW-05	3/8/2004	5615.86	42.75	37.19	5578.67
	7/19/2004			9.38	5606.48
	10/27/2004			21.07	5594.79
	12/27/2004			28.99	5586.87
MW-06	3/8/2004	5615.44	38.21	36.27	5579.17
	7/19/2004			9.43	5606.01
	10/27/2004			19.33	5596.11
	12/27/2004			28.62	5586.82

Table 2
Ground Water BTEX Results
 ConocoPhillips Nell Hall # 1
 Flora Vista, NM
 All results in ppb

Well No	Date	Analytical Method 8021			
		Benzene	Ethyl-Benzene	Total Xylenes	Toluene
MW-4	3/8/2004	13	64	1,400	12
	7/19/2004	< 0.5	< 0.5	< 0.5	< 0.5
	10/27/2004	11	21	130	8
	12/27/2004	<2.5	<2.5	<5.0	<2.5
MW-5	3/8/2004	1.1	1	17	< 0.5
	7/19/2004	< 0.5	< 0.5	0.72	0.55
	10/27/2004	< 0.5	< 0.5	< 1.0	< 0.5
	12/27/2004	< 0.5	< 0.5	< 1.0	< 0.5
MW-6	3/8/2004	2,500	1,600	21,031	14
	7/19/2004	< 0.5	0.98	2.6	< 0.5
	10/27/2004	0.4	0.5	2.1	0.3
	12/27/2004	45	14	71.7	6.8
Regulatory Limits		10	750	620	750

< x.x = not detected at or above x.x detection limit



SITE LOCATION: NW 1/4 SW 1/4 SECTION 7 T 30N R 19W
 SOURCE MAP: FLORA VISTA, NEW MEXICO USGS QUADRANGLE

SCALE

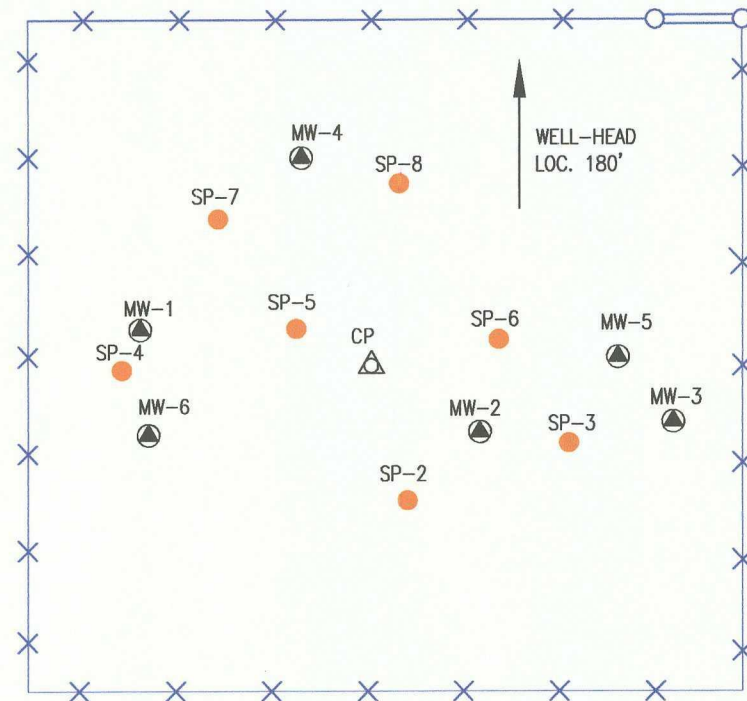
0' 1000' 2000' 4000'



APPROVED: RSA	DATE:
DRAWN BY: JNAKAI	DATE: 1/22/04
REVISIONS BY: TLONG	DATE: 1/7/05
PROJECT # 5114223	FIGURE: 1

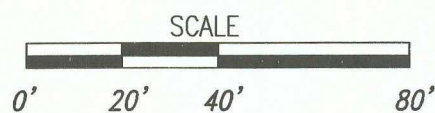
VICINITY MAP
 CONOCOPHILLIPS - NELL HALL #1
 FLORA VISTA, NEW MEXICO

612 E. MURRAY DR. PH. (505) 325-5667
 FARMINGTON, NM 87401 FAX (505) 327-1496



LEGEND

- MW3
● - MONITORING WELL LOCATIONS
- SP3
● - SPARGE POINT LOCATIONS
- CP
△ - SURVEY CONTROL POINT
- ✕ - FENCE



NOTE: SP#1 REMOVED.



612 E. MURRAY DR. PH. (505) 327-1072
FARMINGTON, NM 87401 FAX (505) 327-1496

APPROVED: RSA

DATE:

DRAWN BY: JNAKAI

DATE: 1/22/04

REVISIONS BY: TLONG

DATE: 1/7/05

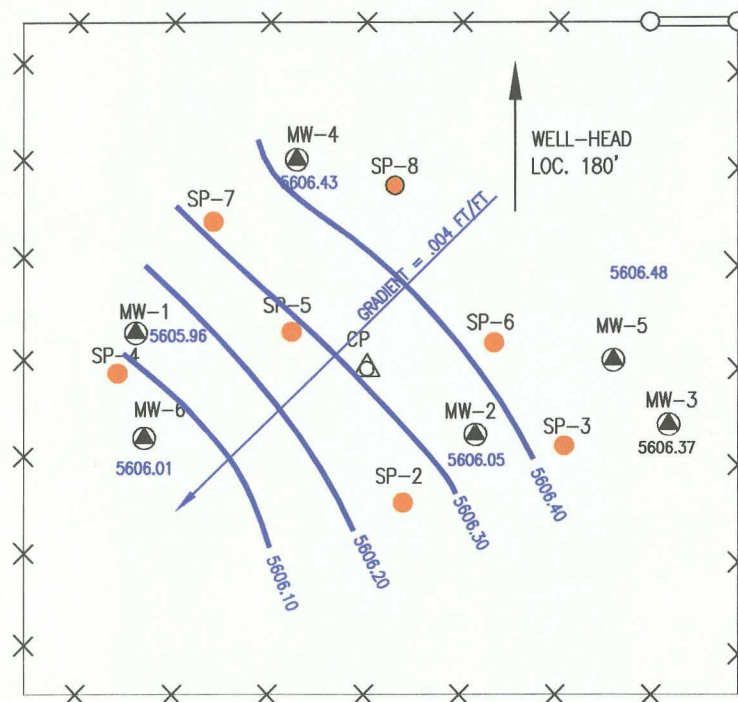
PROJECT # 5114223

FIGURE: 2

SITE MAP

CONOCOPHILLIPS - NELL HALL #1

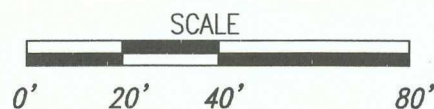
FLORA VISTA, NEW MEXICO



LEGEND

- MW-5
● - MONITORING WELL LOCATIONS
- SP3
● - SPARGE POINT LOCATIONS
- CP
△ - SURVEY CONTROL POINT
- - GROUND WATER CONTOUR
- - FENCE

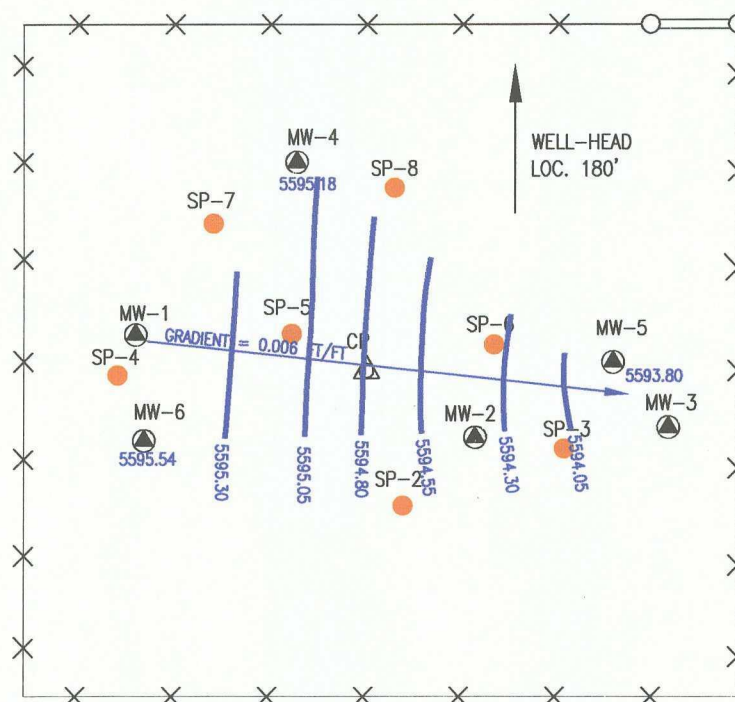
NOTE: SP#1 REMOVED.



612 E. MURRAY DR. PH. (505) 327-1072
FARMINGTON, NM 87401 FAX (505) 327-1496

APPROVED: RSA	DATE:
DRAWN BY: TLONG	DATE: 1/10/05
REVISIONS BY:	DATE:
PROJECT # 5114223	FIGURE: 3

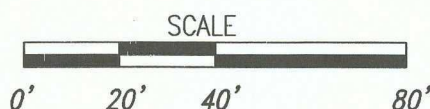
POTENTIOMETRIC SURFACE MAP
7/19/04
CONOCOPHILLIPS - NELL HALL #1
FLORA VISTA, NEW MEXICO



LEGEND

- MW-5
● - MONITORING WELL LOCATIONS
5593.08
- SP3
● - SPARGE POINT LOCATIONS
- CP
△ - SURVEY CONTROL POINT
- - GROUND WATER CONTOUR
(.25 FOOT INTERVAL)
- - FENCE

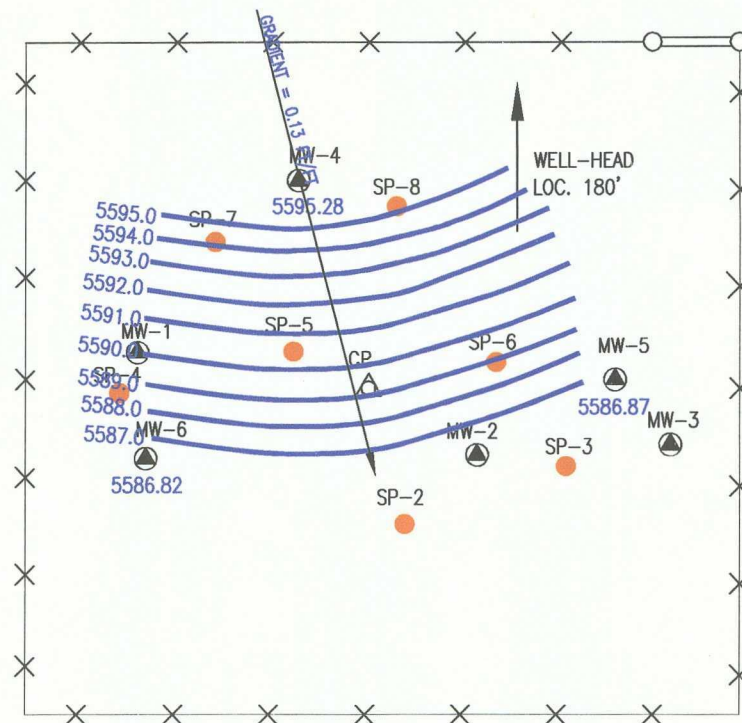
NOTE: SP#1 REMOVED.



612 E. MURRAY DR. PH. (505) 327-1072
FARMINGTON, NM 87401 FAX (505) 327-1496

APPROVED: RSA	DATE:
DRAWN BY: TLONG	DATE: 1/10/05
REVISIONS BY:	DATE:
PROJECT # 5114223	FIGURE: 4

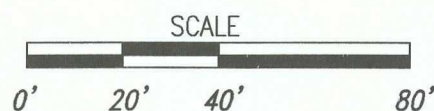
POTENTIOMETRIC SURFACE MAP
 10/27/04
 CONOCOPHILLIPS - NELL HALL #1
 FLORA VISTA, NEW MEXICO



LEGEND

- MW-5
● - MONITORING WELL LOCATIONS
- SP3
● - SPARGE POINT LOCATIONS
- CP
△ - SURVEY CONTROL POINT
- GROUND WATER CONTOUR
(.10 FOOT INTERVAL)
- FENCE

NOTE: SP#1 REMOVED.



Civil / Environmental
Scientists & Engineers

612 E. MURRAY DR. PH. (505) 327-1072
FARMINGTON, NM 87401 FAX (505) 327-1496

APPROVED: RSA

DATE:

DRAWN BY: TLONG

DATE: 1/10/05

REVISIONS BY:

DATE:

PROJECT # 5114223

FIGURE: 5

POTENTIOMETRIC SURFACE MAP

12/27/04

CONOCOPHILLIPS - NELL HALL #1

FLORA VISTA, NEW MEXICO

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072
Fax: (505) 327-1496

iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

August 04, 2004

John Hagstrom
Souder, Miller & Associates
612 E. Murray Dr
Farmington, NM 87401

TEL: 505-325-1556

FAX 505-327-1496

RE: ConocoPhillips/5114223

Order No.: 0407046

Dear John Hagstrom:

iiná bá received 4 samples on 7/19/2004 for the analyses presented in the following report.

This certificate of analysis includes the Analytical Report(s) for the sample(s) received by the laboratory. A Quality Control Summary Report, the Sample Receipt Checklist and an executed Chain of Custody are included as an addendum to this report.

Should you have any questions regarding this certificate of analysis, please contact the laboratory at your convenience.

Report Approved By:



Judy Moore
Laboratory Director

Edwina Aspaas
Quality Assurance Officer

This certificate of analysis and respective material is intended only for the use of the individual(s) or entity to whom it is addressed, and may contain information that is privileged and confidential. If you are not the intended recipient, or the person responsible for delivering this to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this material is strictly prohibited. If you have received this material in error, please notify the laboratory immediately at 505-327-1072.



MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

iiná bá

Date: 04-Aug-04

CLIENT: Souder, Miller & Associates

Project: ConocoPhillips/5114223

Lab Order: 0407046

CASE NARRATIVE

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

Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992.

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

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s), the quality control summary report(s) or the sample receipt checklist.



COVER LETTER

July 29, 2004

Judy Moore
iina ba, Ltd
612 E. Murray Drive
Farmington, NM 87401
TEL: (505) 327-1072
FAX (505) 327-1496

RE: 0407046

Order No.: 0407216

Dear Judy Moore:

Hall Environmental Analysis Laboratory received 4 samples on 7/21/2004 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager



Hall Environmental Analysis Laboratory

Date: 29-Jul-04

CLIENT: iina ba, Ltd**Client Sample ID:** 0407046-001A**Lab Order:** 0407216**Tag Number:****Project:** 0407046**Collection Date:** 7/19/2004 11:15:00 AM**Lab ID:** 0407216-01A**MW4****Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	7/27/2004 9:58:37 PM
Benzene	ND	0.50		µg/L	1	7/27/2004 9:58:37 PM
Toluene	ND	0.50		µg/L	1	7/27/2004 9:58:37 PM
Ethylbenzene	ND	0.50		µg/L	1	7/27/2004 9:58:37 PM
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	7/27/2004 9:58:37 PM
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	7/27/2004 9:58:37 PM
Xylenes, Total	ND	0.50		µg/L	1	7/27/2004 9:58:37 PM
Sum: 4-Bromofluorobenzene	96.2	74-118		%REC	1	7/27/2004 9:58:37 PM

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

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

Hall Environmental Analysis Laboratory

Date: 29-Jul-04

CLIENT:	ina ba, Ltd	Client Sample ID:	0407046-002A
Lab Order:	0407216	Tag Number:	
Project:	0407046	Collection Date:	7/19/2004 10:30:00 AM
Lab ID:	0407216-02A	MW5	Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	7/27/2004 10:29:06 PM
Benzene	ND	0.50		µg/L	1	7/27/2004 10:29:06 PM
Toluene	0.55	0.50		µg/L	1	7/27/2004 10:29:06 PM
Ethylbenzene	ND	0.50		µg/L	1	7/27/2004 10:29:06 PM
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	7/27/2004 10:29:06 PM
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	7/27/2004 10:29:06 PM
Xylenes, Total	0.72	0.50		µg/L	1	7/27/2004 10:29:06 PM
Surr. 4-Bromofluorobenzene	102	74-118		%REC	1	7/27/2004 10:29:06 PM

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

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

Hall Environmental Analysis Laboratory

Date: 29-Jul-04

CLIENT: iina ba, Ltd
 Lab Order: 0407216
 Project: 0407046
 Lab ID: 0407216-03A

Client Sample ID: 0407046-003A
 Tag Number:
 Collection Date: 7/19/2004 11:45:00 AM
 Matrix: AQUEOUS

MW6

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	7/28/2004 11:21:33 AM
Benzene	ND	0.50		µg/L	1	7/28/2004 11:21:33 AM
Toluene	ND	0.50		µg/L	1	7/28/2004 11:21:33 AM
Ethylbenzene	0.98	0.50		µg/L	1	7/28/2004 11:21:33 AM
1,2,4-Trimethylbenzene	0.83	0.50		µg/L	1	7/28/2004 11:21:33 AM
1,3,5-Trimethylbenzene	0.52	0.50		µg/L	1	7/28/2004 11:21:33 AM
Xylenes, Total	2.8	0.50		µg/L	1	7/28/2004 11:21:33 AM
Surr. 4-Bromofluorobenzene	95.3	74-118		%REC	1	7/28/2004 11:21:33 AM

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

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

Hall Environmental Analysis Laboratory

Date: 29-Jul-04

CLIENT: ina ba, Ltd

Client Sample ID: 0407046-004A

Lab Order: 0407216

Tag Number:

Project: 0407046

Collection Date: 7/19/2004 8:20:00 AM

Lab ID: 0407216-04A

TRIP BLANK

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	7/28/2004 11:52:08 AM
Benzene	ND	0.50		µg/L	1	7/28/2004 11:52:08 AM
Toluene	ND	0.50		µg/L	1	7/28/2004 11:52:08 AM
Ethylbenzene	ND	0.50		µg/L	1	7/28/2004 11:52:08 AM
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	7/28/2004 11:52:08 AM
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	7/28/2004 11:52:08 AM
Xylenes, Total	ND	0.50		µg/L	1	7/28/2004 11:52:08 AM
Surf. 4-Bromofluorobenzene	98.7	74-118		%REC	1	7/28/2004 11:52:08 AM

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

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

iiná bá

612 E. Murray Drive
Farmington, NM 87401
(505) 327-1072

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Hall Environmental Analysis Laboratory
4901 Hawkins NE Suite D
Albuquerque, NM 87109

TEL: (505) 345-3975
FAX: (505) 345-4107

Acct #:

20-Jul-04

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests			
				SW8021B			

0407046-001A	Aqueous	7/19/2004 11:15:00 AM	VOAHCL	2 X 40 ml			07072160-1
0407046-002A	Aqueous	7/19/2004 10:30:00 AM	VOAHCL	11			-2
0407046-003A	Aqueous	7/19/2004 11:45:00 AM	VOAHCL	11			-3
0407046-004A	Aqueous	7/19/2004 8:20:00 AM	VOAHCL	11			-4

Comments: Please analyze four (4) aqueous samples for 8021.

10-

Relinquished by: <u>James Argano</u>	Date/Time: <u>7/20/04 5:15 pm</u>	Received by: <u>Chae J. Kim</u>	Date/Time: <u>7/21/04 0837</u>
Relinquished by: _____	Received by: _____	Received by: _____	Received by: _____

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Sample Receipt Checklist

Client Name: **SMA1005**

Date and Time Received:

7/19/2004

Work Order Number: **0407046**

Received by: **ADM**

Checklist completed by:

Jane Aspaas 7/19/04
Signature Date

Reviewed by:

JAM 7/19/04
Initials Date

Matrix:

Carrier name: John Hagstrom

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☒	No ☐
Water - pH acceptable upon receipt?	Yes ☒	No ☐	

Adjusted? _____ Checked by: _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action: _____

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612 E. Murray Drive
Farmington, NM 87401
(505) 327-1072

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

Hall Environmental Analysis Laboratory
4901 Hawkins NE Suite D
Albuquerque, NM 87109

TEL: (505) 345-3975
FAX: (505) 345-4107

Acct #:

20-Jul-04

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests			
				SW8021B			

0407046-001A	Aqueous	7/19/2004 11:15:00 AM	VOAHCL	1			
0407046-002A	Aqueous	7/19/2004 10:30:00 AM	VOAHCL	1			
0407046-003A	Aqueous	7/19/2004 11:45:00 AM	VOAHCL	1			
0407046-004A	Aqueous	7/19/2004 8:20:00 AM	VOAHCL	1			

Comments: Please analyze four (4) aqueous samples for 8021.

Date/Time		Date/Time
Relinquished by: <i>James Aguiar</i>	7/20/04 3:15 pm	Received by:
Relinquished by:		Received by:

CHAIN OF CUSTODY RECORD

8473

(for life's sake)

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
Phone: (505) 327-1072 • Fax: (505) 327-1496

Date 7/19/04

Page 1 of 1[illegible]

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P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

November 17, 2004

Reid Allan
Souder, Miller & Associates
612 E. Murray Dr
Farmington, NM 87401

TEL: 505-325-1556
FAX 505-327-1496

RE: Conoco/Phillips - Nell Hall/5114223

Order No.: 0410082

Dear Reid Allan:

iiná bá received 4 samples on 10/27/2004 for the analyses presented in the following report.

This certificate of analysis includes the Analytical Report(s) for the sample(s) received by the laboratory. A Quality Control Summary Report, the Sample Receipt Checklist and an executed Chain of Custody are included as an addendum to this report.

Should you have any questions regarding this certificate of analysis, please contact the laboratory at your convenience.

Report Approved By: J Moore

Judy Moore
Laboratory Director

Edwina Aspaas
Quality Assurance Officer

This certificate of analysis and respective material is intended only for the use of the individual(s) or entity to whom it is addressed, and may contain information that is privileged and confidential. If you are not the intended recipient, or the person responsible for delivering this to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this material is strictly prohibited. If you have received this material in error, please notify the laboratory immediately at 505-327-1072.



MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

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P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

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Date: 17-Nov-04

CLIENT: Souder, Miller & Associates
Project: Conoco/Phillips - Nell Hall/5114223
Lab Order: 0410082

CASE NARRATIVE

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

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983.

Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94/111, May 1994.

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

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s), the quality control summary report(s) or the sample receipt checklist.

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ANALYTICAL REPORT

Date: 17-Nov-04

CLIENT: Souder, Miller & Associates
Work Order: 0410082
Project: Conoco/Phillips - Nell Hall/5114223
Lab ID: 0410082-001A

Client Sample Info: Nell Hall
Client Sample ID: MW-5
Collection Date: 10/27/2004 2:50:00 PM
Matrix: AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: JEM
Benzene	ND	0.5		µg/L	1	11/9/2004
Ethylbenzene	ND	0.5		µg/L	1	11/9/2004
m,p-Xylene	ND	1.0		µg/L	1	11/9/2004
o-Xylene	ND	0.5		µg/L	1	11/9/2004
Toluene	ND	0.5		µg/L	1	11/9/2004
Surr: 1,4-Difluorobenzene	109	87-124		%REC	1	11/9/2004
Surr: 4-Bromochlorobenzene	105	75-139		%REC	1	11/9/2004
Surr: Fluorobenzene	109	86-119		%REC	1	11/9/2004

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

H - Parameter exceeded Maximum Allowable Holding Time

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted precision limits

E - Value above Upper Quantitation Limit - UQL

Page 1 of 4

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

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Off: (505) 368-4065

ANALYTICAL REPORT

Date: 17-Nov-04

CLIENT: Souder, Miller & Associates
Work Order: 0410082
Project: Conoco/Phillips - Nell Hall/5114223
Lab ID: 0410082-002A

Client Sample Info: Nell Hall
Client Sample ID: MW-4
Collection Date: 10/27/2004 3:25:00 PM
Matrix: AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: JEM		
Benzene	11	5.0		µg/L	10	11/9/2004
Ethylbenzene	21	5.0		µg/L	10	11/9/2004
m,p-Xylene	120	10		µg/L	10	11/9/2004
o-Xylene	10	5.0		µg/L	10	11/9/2004
Toluene	8.0	5.0		µg/L	10	11/9/2004
Surr: 1,4-Difluorobenzene	109	87-124		%REC	10	11/9/2004
Surr: 4-Bromochlorobenzene	104	75-139		%REC	10	11/9/2004
Surr: Fluorobenzene	108	86-119		%REC	10	11/9/2004

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

H - Parameter exceeded Maximum Allowable Holding Time

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted precision limits

E - Value above Upper Quantitation Limit - UQL

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MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

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ANALYTICAL REPORT

Date: 17-Nov-04

CLIENT: Souder, Miller & Associates
Work Order: 0410082
Project: Conoco/Phillips - Nell Hall/5114223
Lab ID: 0410082-003A

Client Sample Info: Nell Hall
Client Sample ID: MW-6
Collection Date: 10/27/2004 3:55:00 PM
Matrix: AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: JEM		
Benzene	0.4	0.5	J	µg/L	1	11/9/2004
Ethylbenzene	0.5	0.5	J	µg/L	1	11/9/2004
m,p-Xylene	1.9	1.0		µg/L	1	11/9/2004
o-Xylene	0.2	0.5	J	µg/L	1	11/9/2004
Toluene	0.3	0.5	J	µg/L	1	11/9/2004
Surr: 1,4-Difluorobenzene	110	87-124		%REC	1	11/9/2004
Surr: 4-Bromochlorobenzene	103	75-139		%REC	1	11/9/2004
Surr: Fluorobenzene	108	86-119		%REC	1	11/9/2004

Qualifiers: ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
H - Parameter exceeded Maximum Allowable Holding Time
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

Page 3 of 4

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

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ANALYTICAL REPORT

Date: 17-Nov-04

CLIENT: Souder, Miller & Associates
Work Order: 0410082
Project: Conoco/Phillips - Nell Hall/5114223
Lab ID: 0410082-004A

Client Sample Info: Nell Hall
Client Sample ID: Trip/Field Blank
Collection Date: 10/27/2004 4:10:00 PM
Matrix: AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: JEM		
Benzene	0	0.5	J	µg/L	1	11/9/2004
Ethylbenzene	0.1	0.5	J	µg/L	1	11/9/2004
m,p-Xylene	0.4	1.0	J	µg/L	1	11/9/2004
o-Xylene	0	0.5	J	µg/L	1	11/9/2004
Toluene	0.3	0.5	J	µg/L	1	11/9/2004
Benzene	ND	0.5		µg/L	1	11/9/2004
Toluene	ND	0.5		µg/L	1	11/9/2004
Ethylbenzene	ND	0.5		µg/L	1	11/9/2004
m,p-Xylene	ND	1.0		µg/L	1	11/9/2004
o-Xylene	ND	0.5		µg/L	1	11/9/2004
Surr: 1,4-Difluorobenzene	109	87-124		%REC	1	11/9/2004
Surr: 4-Bromochlorobenzene	104	75-139		%REC	1	11/9/2004
Surr: Fluorobenzene	107	86-119		%REC	1	11/9/2004
Surr: Fluorobenzene	0	86-119	S	%REC	1	11/9/2004
Surr: 1,4-Difluorobenzene	0	87-124	S	%REC	1	11/9/2004
Surr: 4-Bromochlorobenzene	0	75-139	S	%REC	1	11/9/2004

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

H - Parameter exceeded Maximum Allowable Holding Time

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted precision limits

E - Value above Upper Quantitation Limit - UQL

Page 4 of 4

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

iiná bá

Date: 17-Nov-04

CLIENT: Souder, Miller & Associates
Work Order: 0410082
Project: Conoco/Phillips - Nell Hall/5114223

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	MB_041109	SampType: MBLK	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_041109A					
Client ID:	ZZZZZ	Batch ID: R6210	TestNo: SW8021B		Analysis Date: 11/9/2004	SeqNo: 87983					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	ND	0.50									
Ethylbenzene	ND	0.50									
m,p-Xylene	ND	1.0									
o-Xylene	ND	0.50									
Toluene	0.0736	0.50									J
Surr: 1,4-Difluorobenzene	109.5	0	100	0	109	87	124	0	0	0	
Surr: 4-Bromochlorobenzene	105.2	0	100	0	105	75	139	0	0	0	
Surr: Fluorobenzene	108.1	0	100	0	108	86	119	0	0	0	

Sample ID	LCS1_041109	SampType: LCS	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_041109A					
Client ID:	ZZZZZ	Batch ID: R6210	TestNo: SW8021B		Analysis Date: 11/9/2004	SeqNo: 87982					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	18.66	0.50	20	0	93.3	85	115	0	0	0	
Ethylbenzene	18.86	0.50	20	0	94.3	85	115	0	0	0	
m,p-Xylene	37.45	1.0	40	0	93.6	85	115	0	0	0	
o-Xylene	19.03	0.50	20	0	95.1	85	115	0	0	0	
Toluene	18.83	0.50	20	0.0736	93.8	85	115	0	0	0	
Surr: 1,4-Difluorobenzene	107.5	0	100	0	108	87	124	0	0	0	
Surr: 4-Bromochlorobenzene	108	0	100	0	108	75	139	0	0	0	
Surr: Fluorobenzene	107.5	0	100	0	108	86	119	0	0	0	

Sample ID	0411006-001BMS	SampType: MS	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_041109A					
Client ID:	ZZZZZ	Batch ID: R6210	TestNo: SW8021B		Analysis Date: 11/9/2004	SeqNo: 87984					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	176.9	2.5	200	0	88.5	81	116	0	0	0	
Ethylbenzene	180.5	2.5	200	0	90.3	85	115	0	0	0	
m,p-Xylene	359.5	5.0	400	0	89.9	84	117	0	0	0	

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

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

B - Analyte detected in the associated Method Blank

CLIENT: Souder, Miller & Associates
Work Order: 0410082
Project: Conoco/Phillips - Nell Hall/5114223

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	0411006-001BMS	SampType: MS	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_041109A					
Client ID:	ZZZZZ	Batch ID: R6210	TestNo: SW8021B		Analysis Date: 11/9/2004	SeqNo: 87984					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

o-Xylene	183.8	2.5	200	0	91.9	84	113	0	0		
Toluene	180.3	2.5	200	0	90.2	88	110	0	0		
Surr: 1,4-Difluorobenzene	535.5	0	500	0	107	87	124	0	0		
Surr: 4-Bromochlorobenzene	513.4	0	500	0	103	75	139	0	0		
Surr: Fluorobenzene	532.5	0	500	0	106	86	119	0	0		

Sample ID	0411006-001BMSD	SampType: MSD	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_041109A					
Client ID:	ZZZZ	Batch ID: R6210	TestNo: SW8021B		Analysis Date: 11/9/2004	SeqNo: 87985					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	180.8	2.5	200	0	90.4	78	111	176.9	2.16	7	
Ethylbenzene	185.3	2.5	200	0	92.6	82	111	180.5	2.60	6.9	
m,p-Xylene	369.3	5.0	400	0	92.3	80	113	359.5	2.70	6.8	
o-Xylene	188.1	2.5	200	0	94.1	83	110	183.8	2.35	6.4	
Toluene	184.8	2.5	200	0	92.4	84	110	180.3	2.41	6.3	
Surr: 1,4-Difluorobenzene	537.1	0	500	0	107	87	124	0	0	0	
Surr: 4-Bromochlorobenzene	513.5	0	500	0	103	75	139	0	0	0	
Surr: Fluorobenzene	532.2	0	500	0	106	86	119	0	0	0	

Sample ID	CCV1_041109	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_041109A					
Client ID:	ZZZZZ	Batch ID: R6210	TestNo: SW8021B		Analysis Date: 11/9/2004	SeqNo: 87977					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	18.07	0.50	20	0	90.4	85	115	0	0		
Ethylbenzene	18.26	0.50	20	0	91.3	85	115	0	0		
m,p-Xylene	36.23	1.0	40	0	90.6	85	115	0	0		
o-Xylene	18.45	0.50	20	0	92.3	85	115	0	0		
Toluene	18.27	0.50	20	0	91.3	85	115	0	0		
Surr: 1,4-Difluorobenzene	108.4	0	100	0	108	87	124	0	0		
Surr: 4-Bromochlorobenzene	106.9	0	100	0	107	75	139	0	0		
Surr: Fluorobenzene	107.1	0	100	0	107	86	119	0	0		

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

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

B - Analyte detected in the associated Method Blank

CLIENT: Souder, Miller & Associates
Work Order: 0410082
Project: Conoco/Phillips - Nell Hall/5114223

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	CCV2_041109	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_041109A					
Client ID: ZZZZ		Batch ID: R6210	TestNo: SW8021B		Analysis Date: 11/9/2004	SeqNo: 87978					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.4	0.50	40	0	93.5	85	115	0	0		
Ethylbenzene	37.9	0.50	40	0	94.8	85	115	0	0		
m,p-Xylene	75.8	1.0	80	0	94.8	85	115	0	0		
o-Xylene	38.7	0.50	40	0	96.7	85	115	0	0		
Toluene	37.75	0.50	40	0	94.4	85	115	0	0		
Surr: 1,4-Difluorobenzene	108.1	0	100	0	108	87	124	0	0		
Surr: 4-Bromochlorobenzene	108.9	0	100	0	109	75	139	0	0		
Surr: Fluorobenzene	107.5	0	100	0	107	86	119	0	0		

Sample ID	CCV4_041109	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_041109A					
Client ID: ZZZZ		Batch ID: R6210	TestNo: SW8021B		Analysis Date: 11/9/2004	SeqNo: 87980					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.29	0.50	40	0	93.2	85	115	0	0		
Ethylbenzene	37.8	0.50	40	0	94.5	85	115	0	0		
m,p-Xylene	75.04	1.0	80	0	93.8	85	115	0	0		
o-Xylene	38.43	0.50	40	0	96.1	85	115	0	0		
Toluene	37.74	0.50	40	0	94.4	85	115	0	0		
Surr: 1,4-Difluorobenzene	108.2	0	100	0	108	87	124	0	0		
Surr: 4-Bromochlorobenzene	103.6	0	100	0	104	75	139	0	0		
Surr: Fluorobenzene	106.3	0	100	0	106	86	119	0	0		

Sample ID	CCV5_041109	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_041109A					
Client ID: ZZZZ		Batch ID: R6210	TestNo: SW8021B		Analysis Date: 11/9/2004	SeqNo: 87981					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	36.86	0.50	40	0	92.2	85	115	0	0		
Ethylbenzene	37.28	0.50	40	0	93.2	85	115	0	0		
m,p-Xylene	74.22	1.0	80	0	92.8	85	115	0	0		
o-Xylene	37.89	0.50	40	0	94.7	85	115	0	0		
Toluene	37.17	0.50	40	0	92.9	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Souder, Miller & Associates
Work Order: 0410082
Project: Conoco/Phillips - Nell Hall/5114223

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

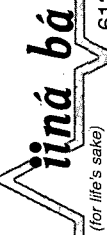
Sample ID	CCV5_041109	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_041109A					
Client ID:	ZZZZZ	Batch ID: R6210	TestNo: SW8021B		Analysis Date: 11/9/2004	SeqNo: 87981					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	CCV3_041109	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_041109A					
Client ID:	ZZZZZ	Batch ID: R6210	TestNo: SW8021B		Analysis Date: 11/9/2004	SeqNo: 88386					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

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



4319

Date 10/27/04

Page 1 of 1

REPORT RESULTS TO:		Report to: Reid Allan		PO No.:		Job No.: S114224/3	
Company: S.M.A.		Company: Reid Allan		Name:			
Address: 6012 E Murray Dr		Address:		Company:			
City: Farmington NM 87401		City:		Address:			
Phone: 325-5667		Fax: 327-1494		Email:			
Turnaround Time:		Sample Integrity		Subcontract			
10 days (normal)		Intact: X		Yes			
24-48 hours (100%)		5°C		No			
3-5 days (50%)		On Ice X					
Sampling Location: Conocophillips / Nell Hall				Analysis Requested			
Sample Identification				CONTAINERS:			
Date				NUMBER OF			
Time				CONTAINERS:			
Sample				Matrix			
Date				Pres.			
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Sample Receipt Checklist

Client Name: **SMA1005**

Date and Time Received:

10/27/2004

Work Order Number: **0410082**

Received by: JEM

Checklist completed by:

Signature

Date

Reviewed by:

Initials

Date

Matrix:

Carrier name: Walter Gage

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☒	No ☐	Not Present ☐
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☒	No ☐
Water - pH acceptable upon receipt?	Yes ☒	No ☐	

Adjusted? _____ Checked by: _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action: _____

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072
Fax: (505) 327-1496

ii ná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

January 06, 2005

John Hagstrom
Souder, Miller & Associates
612 E. Murray Dr
Farmington, NM 87401

TEL: 505-325-1556

FAX 505-327-1496

RE: ConocoPhillips/Nell Hall 5114223

Order No.: 0412065

Dear John Hagstrom:

ii ná bá received 3 samples on 12/27/2004 for the analyses presented in the following report.

This certificate of analysis includes the Analytical Report(s) for the sample(s) received by the laboratory. A Quality Control Summary Report, the Sample Receipt Checklist and an executed Chain of Custody are included as an addendum to this report.

This is a revised report (for report dated January 3, 2005) for samples received 12/15/2004. This report shows a correction on the sample collection date for MW4.

Should you have any questions regarding this certificate of analysis, please contact the laboratory at your convenience.

Report Approved By: 

Edwina Aspaas
Quality Assurance Officer

This certificate of analysis and respective material is intended only for the use of the individual(s) or entity to whom it is addressed, and may contain information that is privileged and confidential. If you are not the intended recipient, or the person responsible for delivering this to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this material is strictly prohibited. If you have received this material in error, please notify the laboratory immediately at 505-327-1072.



MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

612 E. Murray Drive
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iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

iiná bá

Date: 06-Jan-05

CLIENT: Souder, Miller & Associates
Project: ConocoPhillips/Nell Hall 5114223
Lab Order: 0412065

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:
Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983.
Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94/111, May 1994.

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

No trip blank was received in the lab.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s), the quality control summary report(s) or the sample receipt checklist.

612 E. Murray Drive
Farmington, NM 87499

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ANALYTICAL REPORT

iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

Date: 06-Jan-05

CLIENT: Souder, Miller & Associates
Work Order: 0412065
Project: ConocoPhillips/Nell Hall 5114223
Lab ID: 0412065-001A

Client Sample Info: ConocoPhillips/Nell Hall
Client Sample ID: MW4
Collection Date: 12/27/2004 12:35:00 PM
Matrix: AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: JEM		
Benzene	ND	2.5		µg/L	5	12/29/2004
Toluene	0.5	2.5	J	µg/L	5	12/29/2004
Ethylbenzene	0.5	2.5	J	µg/L	5	12/29/2004
m,p-Xylene	ND	5.0		µg/L	5	12/29/2004
o-Xylene	ND	2.5		µg/L	5	12/29/2004
Surr: Fluorobenzene	105	86-119		%REC	5	12/29/2004
Surr: 1,4-Difluorobenzene	107	87-124		%REC	5	12/29/2004
Surr: 4-Bromochlorobenzene	105	75-139		%REC	5	12/29/2004

Qualifiers: ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
H - Parameter exceeded Maximum Allowable Holding Time

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

612 E. Murray Drive
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ANALYTICAL REPORT

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P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

Date: 06-Jan-05

CLIENT: Souder, Miller & Associates
Work Order: 0412065
Project: ConocoPhillips/Nell Hall 5114223
Lab ID: 0412065-002A

Client Sample Info: ConocoPhillips/Nell Hall
Client Sample ID: MW5
Collection Date: 12/27/2004 11:30:00 AM
Matrix: AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: JEM		
Benzene	ND	0.5		µg/L	1	12/29/2004
Toluene	0.2	0.5	J	µg/L	1	12/29/2004
Ethylbenzene	ND	0.5		µg/L	1	12/29/2004
m,p-Xylene	ND	1.0		µg/L	1	12/29/2004
o-Xylene	ND	0.5		µg/L	1	12/29/2004
Surr: Fluorobenzene	106	86-119		%REC	1	12/29/2004
Surr: 1,4-Difluorobenzene	109	87-124		%REC	1	12/29/2004
Surr: 4-Bromochlorobenzene	108	75-139		%REC	1	12/29/2004

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

R - RPD outside accepted precision limits

B - Analyte detected in the associated Method Blank

E - Value above Upper Quantitation Limit - UQL

H - Parameter exceeded Maximum Allowable Holding Time

Page 2 of 3

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ANALYTICAL REPORT

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P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

Date: 06-Jan-05

CLIENT: Souder, Miller & Associates
Work Order: 0412065
Project: ConocoPhillips/Nell Hall 5114223
Lab ID: 0412065-003A

Client Sample Info: ConocoPhillips/Nell Hall
Client Sample ID: MW6
Collection Date: 12/27/2004 1:30:00 PM
Matrix: AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: JEM		
Benzene	45	0.5		µg/L	1	12/29/2004
Toluene	6.8	0.5		µg/L	1	12/29/2004
Ethylbenzene	14	0.5		µg/L	1	12/29/2004
m,p-Xylene	70	1.0		µg/L	1	12/29/2004
o-Xylene	1.7	0.5		µg/L	1	12/29/2004
Surr: Fluorobenzene	102	86-119		%REC	1	12/29/2004
Surr: 1,4-Difluorobenzene	102	87-124		%REC	1	12/29/2004
Surr: 4-Bromochlorobenzene	105	75-139		%REC	1	12/29/2004

Qualifiers: ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
H - Parameter exceeded Maximum Allowable Holding Time

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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ANALYTICAL REPORT

Date: 03-Jan-05

CLIENT: Souder, Miller & Associates
Work Order: 0412065
Project: ConocoPhillips/Nell Hall 5114223
Lab ID: 0412065-002A

Client Sample Info: ConocoPhillips/Nell Hall
Client Sample ID: MW5
Collection Date: 12/27/2004 11:30:00 AM
Matrix: AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: JEM		
Benzene	ND	0.5		µg/L	1	12/29/2004
Toluene	0.2	0.5	J	µg/L	1	12/29/2004
Ethylbenzene	ND	0.5		µg/L	1	12/29/2004
m,p-Xylene	ND	1.0		µg/L	1	12/29/2004
o-Xylene	ND	0.5		µg/L	1	12/29/2004
Surr: Fluorobenzene	106	86-119		%REC	1	12/29/2004
Surr: 1,4-Difluorobenzene	109	87-124		%REC	1	12/29/2004
Surr: 4-Bromochlorobenzene	108	75-139		%REC	1	12/29/2004

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

H - Parameter exceeded Maximum Allowable Holding Time

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted precision limits

E - Value above Upper Quantitation Limit - UQL

612 E. Murray Drive
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ANALYTICAL REPORT

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P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

Date: 03-Jan-05

CLIENT: Souder, Miller & Associates
Work Order: 0412065
Project: ConocoPhillips/Nell Hall 5114223
Lab ID: 0412065-003A

Client Sample Info: ConocoPhillips/Nell Hall
Client Sample ID: MW6
Collection Date: 12/27/2004 1:30:00 PM
Matrix: AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: JEM		
Benzene	45	0.5		µg/L	1	12/29/2004
Toluene	6.8	0.5		µg/L	1	12/29/2004
Ethylbenzene	14	0.5		µg/L	1	12/29/2004
m,p-Xylene	70	1.0		µg/L	1	12/29/2004
o-Xylene	1.7	0.5		µg/L	1	12/29/2004
Surr: Fluorobenzene	102	86-119		%REC	1	12/29/2004
Surr: 1,4-Difluorobenzene	102	87-124		%REC	1	12/29/2004
Surr: 4-Bromochlorobenzene	105	75-139		%REC	1	12/29/2004

Qualifiers: ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
H - Parameter exceeded Maximum Allowable Holding Time

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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Date: 03-Jan-05

CLIENT: Souder, Miller & Associates
Work Order: 0412065
Project: ConocoPhillips/Neff Hall 5114223

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	MB_041229A	SampType: MBLK	TestCode: BTEX_W	Units: µg/L	Prep Date: 12/29/2004	Run ID: GC-1_041229A					
Client ID: ZZZZZ		Batch ID: R6365	TestNo: SW8021B		Analysis Date: 12/29/2004	SeqNo: 90191					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.2205	0.50									J
Toluene	0.2261	0.50									J
Ethylbenzene	0.1837	0.50									J
m,p-Xylene	0.2899	1.0									J
o-Xylene	0.2493	0.50									J
Surr: Fluorobenzene	105.8	0	100	0	106	86	119	0	0		
Surr: 1,4-Difluorobenzene	108.3	0	100	0	108	87	124	0	0		
Surr: 4-Bromochlorobenzene	109.7	0	100	0	110	75	139	0	0		

Sample ID	LCS_041229A	SampType: LCS	TestCode: BTEX_W	Units: µg/L	Prep Date: 12/29/2004	Run ID: GC-1_041229A					
Client ID:	ZZZZZ	Batch ID: R6365	TestNo: SW8021B		Analysis Date: 12/29/2004	SeqNo: 90192					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.16	0.50	40	0.2205	99.8	85	115	0	0		
Toluene	41.21	0.50	40	0.2261	102	85	115	0	0		
Ethylbenzene	40.68	0.50	40	0.1837	101	85	115	0	0		
m,p-Xylene	80.27	1.0	80	0.2899	100	85	115	0	0		
o-Xylene	41.66	0.50	40	0.2493	104	85	115	0	0		
Surr: Fluorobenzene	104.4	0	100	0	104	86	119	0	0		
Surr: 1,4-Difluorobenzene	105.6	0	100	0	106	87	124	0	0		
Surr: 4-Bromochlorobenzene	111.5	0	100	0	111	75	139	0	0		

Sample ID	0412065-003AMS	SampType: MS	TestCode: BTEX_W	Units: µg/L	Prep Date: 12/29/2004	Run ID: GC-1_041229A					
Client ID: MW6		Batch ID: R6365	TestNo: SW8021B		Analysis Date: 12/29/2004	SeqNo: 90199					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	228.4	2.5	200	41.67	93.4	81	116	0	0		
Toluene	200.7	2.5	200	7.752	96.5	88	110	0	0		
Ethylbenzene	204.6	2.5	200	13.34	95.6	85	115	0	0		

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

Page 1 of 3

CLIENT: Souder, Miller & Associates
 Work Order: 0412065
 Project: ConocoPhillips/Nell Hall 5114223

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	0412065-003AMS	SampType: MS	TestCode: BTEX_W	Units: µg/L	Prep Date: 12/29/2004	Run ID: GC-1_041229A					
Client ID: MW6		Batch ID: R6365	TestNo: SW8021B		Analysis Date: 12/29/2004	SeqNo: 90199					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	442.8	5.0	400	63.67	94.8	84	117	0	0		
o-Xylene	196.5	2.5	200	2.739	96.9	84	113	0	0		
Surr: Fluorobenzene	512.7	0	500	0	103	86	119	0	0		
Surr: 1,4-Difluorobenzene	520.7	0	500	0	104	87	124	0	0		
Surr: 4-Bromochlorobenzene	499.7	0	500	0	99.9	75	139	0	0		

Sample ID	0412065-003AMSD	SampType: MSD	TestCode: BTEX_W	Units: µg/L	Prep Date: 12/29/2004	Run ID: GC-1_041229A					
Client ID: MW6		Batch ID: R6365	TestNo: SW8021B		Analysis Date: 12/29/2004	SeqNo: 90200					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	239.9	2.5	200	41.67	99.1	78	111	228.4	4.91	7	
Toluene	211.7	2.5	200	7.752	102	84	110	200.7	5.36	6.3	
Ethylbenzene	216.9	2.5	200	13.34	102	82	111	204.6	5.84	6.9	
m,p-Xylene	470	5.0	400	63.67	102	80	113	442.8	5.96	6.8	
o-Xylene	202.6	2.5	200	2.739	100	83	110	196.5	3.08	6.4	
Surr: Fluorobenzene	515.1	0	500	0	103	86	119	0	0	0	
Surr: 1,4-Difluorobenzene	524.4	0	500	0	105	87	124	0	0	0	
Surr: 4-Bromochlorobenzene	509.2	0	500	0	102	75	139	0	0	0	

Sample ID	CCV1_041229A	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date: 12/29/2004	Run ID: GC-1_041229A					
Client ID: ZZZZZ		Batch ID: R6365	TestNo: SW8021B		Analysis Date: 12/29/2004	SeqNo: 90201					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.17	0.50	40	0	97.9	85	115	0	0		
Ethylbenzene	39.57	0.50	40	0	98.9	85	115	0	0		
m,p-Xylene	78.15	1.0	80	0	97.7	85	115	0	0		
o-Xylene	40.68	0.50	40	0	102	85	115	0	0		
Toluene	40.45	0.50	40	0	101	85	115	0	0		
Surr: 1,4-Difluorobenzene	106.3	0	100	0	106	87	124	0	0		
Surr: 4-Bromochlorobenzene	108.2	0	100	0	108	75	139	0	0		
Surr: Fluorobenzene	104.4	0	100	0	104	86	119	0	0		

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

CLIENT: Souder, Miller & Associates
Work Order: 0412065
Project: ConocoPhillips/Nell Hall 5114223

ANALYTICAL QC SUMMARY REPORT
TestCode: BTEX_W

Sample ID	CCV2_041229A	SampType:	CCV	TestCode:	BTEX_W	Units:	µg/L	Prep Date:	12/29/2004	Run ID:	GC-1_041229A
Client ID:	ZZZZZ	Batch ID:	R6365	TestNo:	SW8021B			Analysis Date:	12/29/2004	SeqNo:	90202
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.42	0.50	20	0	107	85	115	0	0		
Ethylbenzene	21.97	0.50	20	0	110	85	115	0	0		
m,p-Xylene	43.3	1.0	40	0	108	85	115	0	0		
o-Xylene	22.17	0.50	20	0	111	85	115	0	0		
Toluene	21.73	0.50	20	0	109	85	115	0	0		
Surr: 1,4-Difluorobenzene	107.3	0	100	0	107	87	124	0	0		
Surr: 4-Bromochlorobenzene	102.8	0	100	0	103	75	139	0	0		
Surr: Fluorobenzene	105.6	0	100	0	106	86	119	0	0		

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Sample Receipt Checklist

Client Name: **SMA1005**

Date and Time Received:

12/27/2004

Work Order Number: **0412065**

Received by: JEM

Checklist completed by:

J Mac
Signature

12/27/04
Date

Reviewed by:

JEM
Initials

12/25/04
Date

Matrix:

Carrier name: Jpohn Hagstrom

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☒

No ☐

Not Present ☐

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☒

JEM

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☐

No ☒

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - pH acceptable upon receipt?

Yes ☒

No ☐

Adjusted? _____

Checked by: _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: _____

Date contacted: _____

Person contacted: _____

Contacted by: _____

Regarding: _____

Comments:

Temp Blank was not recieved in Lab

Corrective Action: _____