



Scientific Drilling
Directional Drilling Operations

30-039-27822

ConocoPhillips

SAN JUAN BASIN
SEC 25-T28N-R5W
SJ 28-5 #81N
OH

Surface 930/S 940/W Sec. 25 28N 5W
B.H.E. 1940/S 343/E S. 26

MD 8536 TVL 8233

P.A.

Survey: SDI MWD

Standard Survey Report

19 September, 2007

RCVD SEP 24/07

OIL CONS. DIV.

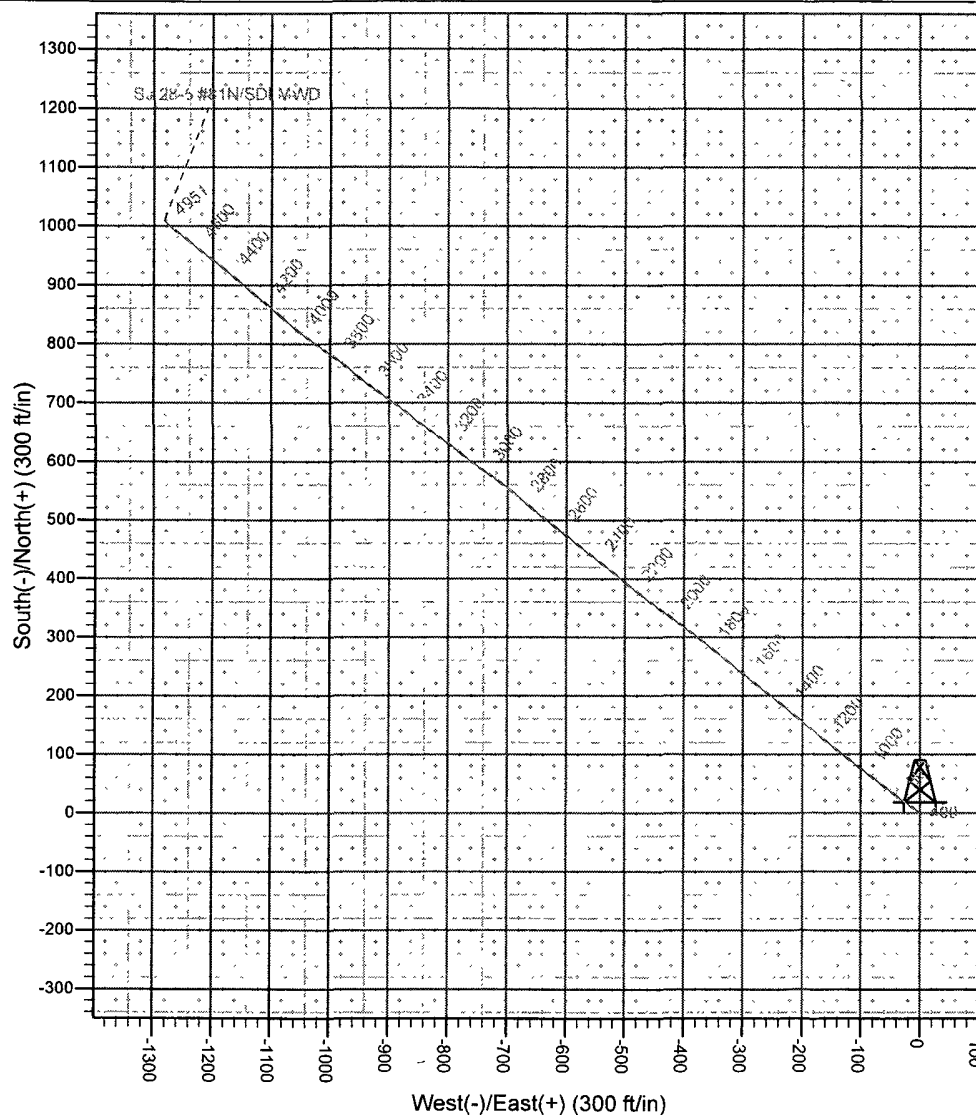
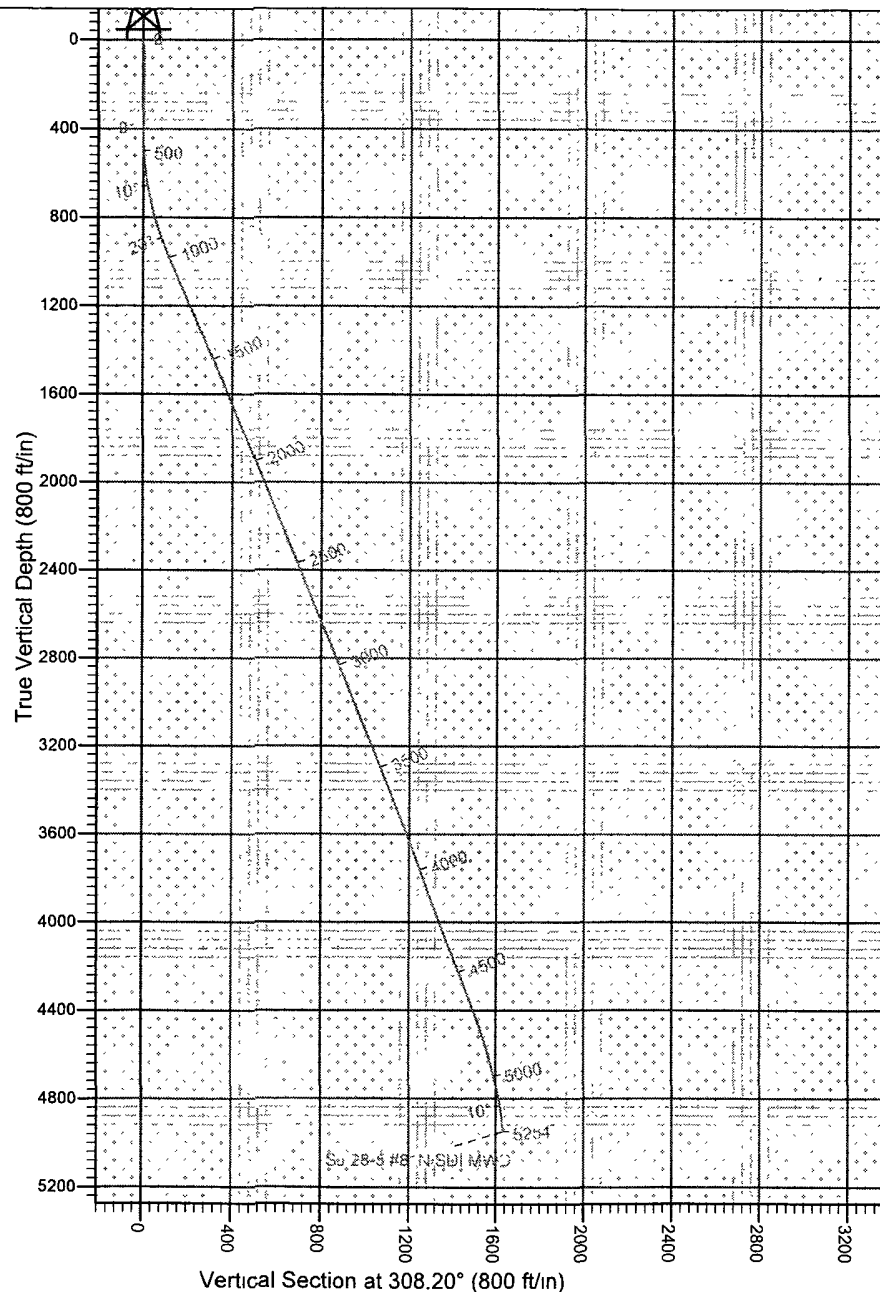
DIST. 3


ConocoPhillips

80



Project: SAN JUAN BASIN
 Site: SEC 25-T28N-R5W
 Well: SJ 28-5 #81N
 Wellbore: OH
 Design: Actual



WELL DETAILS: SJ 28-5 #81N
 RKB @ 6925.0ft (AWS 673)
 Ground Level: 6913.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	2048080.93	651841.11	36° 37' 39.102 N	107° 18' 57.138 W	

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well SJ 28-5 #81N
Project:	SAN JUAN BASIN	TVD Reference:	RKB @ 6925.0ft (AWS 673)
Site:	SEC 25-T28N-R5W	MD Reference:	RKB @ 6925.0ft (AWS 673)
Well:	SJ 28-5 #81N	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 2003.16 Single User.Db

Project	SAN JUAN BASIN, NEW MEXICO		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		Using Well Reference Point
Map Zone:	New Mexico West 3003		Using geodetic scale factor

Site	SEC 25-T28N-R5W		
Site Position:		Northing:	2,048,080.93 ft
From:	Map	Easting:	651,841.11 ft
Position Uncertainty:	15.0 ft	Slot Radius:	12-1/4"
		Latitude:	36° 37' 39.102 N
		Longitude:	107° 18' 57.138 W
		Grid Convergence:	0.31 °

Well	SJ 28-5 #81N, S-Type Dakota Well		
Well Position	+N/-S	0.0 ft	Northing: 2,048,080.93 ft
	+E/-W	0.0 ft	Easting: 651,841.11 ft
Position Uncertainty	15.0 ft	Wellhead Elevation:	ft
		Latitude:	36° 37' 39.102 N
		Longitude:	107° 18' 57.138 W
		Ground Level:	6,913.0 ft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	BGGM2006	9/19/2007	(°)
			10.20
			Dip Angle (°)
			63.58
			Field Strength (nT)
			51,119

Design	Actual		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
			Direction (°)
			308.20

Survey Program	Date 9/19/2007		
From	To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
400.0	5,254.0	SDI MWD (OH)	MWD SDI
			Description
			MWD - Standard ver 1.0.1

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
429.0	0.23	276.04	429.0	0.0	-0.1	0.0	0.79	0.79	0.00
460.0	1.07	302.56	460.0	0.2	-0.4	0.4	2.81	2.71	85.55
491.0	2.30	299.26	491.0	0.6	-1.2	1.3	3.98	3.97	-10.65
522.0	3.50	302.13	521.9	1.4	-2.5	2.8	3.90	3.87	9.26
552.0	5.02	303.90	551.9	2.7	-4.4	5.1	5.08	5.07	5.90
583.0	6.55	306.13	582.7	4.5	-6.9	8.2	4.99	4.94	7.19
613.0	7.87	305.30	612.5	6.6	-10.0	11.9	4.41	4.40	-2.77
644.0	9.43	307.20	643.1	9.4	-13.7	16.6	5.12	5.03	6.13
675.0	10.52	305.65	673.6	12.6	-18.0	22.0	3.62	3.52	-5.00
736.0	13.04	305.67	733.4	19.9	-28.2	34.4	4.13	4.13	0.03
767.0	14.23	307.55	763.5	24.2	-34.0	41.7	4.10	3.84	6.06

Company: ConocoPhillips
Project: SAN JUAN BASIN
Site: SEC 25-T28N-R5W
Well: SJ 28-5 #81N
Wellbore: OH
Design: Actual

Local Co-ordinate Reference: Well SJ 28-5 #81N
TVD Reference: RKB @ 6925.0ft (AWS 673)
MD Reference: RKB @ 6925.0ft (AWS 673)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
798.0	15.47	306.60	793.4	29.0	-40.4	49.7	4.08	4.00	-3.06
830.0	16.70	305.00	824.2	34.2	-47.6	58.5	4.09	3.84	-5.00
862.0	17.95	308.88	854.7	39.9	-55.2	68.0	5.32	3.91	12.12
892.0	19.39	308.69	883.2	45.9	-62.7	77.6	4.80	4.80	-0.63
924.0	20.84	308.66	913.2	52.8	-71.2	88.6	4.53	4.53	-0.09
987.0	21.87	306.92	971.9	66.9	-89.4	111.6	1.92	1.63	-2.76
1,082.0	23.74	307.87	1,059.4	89.2	-118.6	148.4	2.01	1.97	1.00
1,145.0	24.29	308.28	1,117.0	105.0	-138.8	174.0	0.91	0.87	0.65
1,208.0	23.82	309.56	1,174.5	121.2	-158.8	199.7	1.11	-0.75	2.03
1,271.0	22.92	309.24	1,232.4	137.0	-178.1	224.7	1.44	-1.43	-0.51
1,335.0	22.99	309.35	1,291.3	152.8	-197.4	249.7	0.13	0.11	0.17
1,398.0	23.14	310.49	1,349.3	168.7	-216.3	274.3	0.75	0.24	1.81
1,461.0	23.60	308.70	1,407.1	184.6	-235.6	299.3	1.34	0.73	-2.84
1,524.0	24.13	308.81	1,464.7	200.6	-255.5	324.8	0.84	0.84	0.17
1,586.0	23.31	309.45	1,521.5	216.3	-274.8	349.7	1.39	-1.32	1.03
1,648.0	21.42	310.77	1,578.8	231.5	-292.9	373.3	3.15	-3.05	2.13
1,710.0	21.17	308.59	1,636.6	245.9	-310.2	395.8	1.34	-0.40	-3.52
1,772.0	21.60	307.95	1,694.3	259.9	-327.9	418.4	0.79	0.69	-1.03
1,831.0	22.09	309.52	1,749.1	273.6	-345.1	440.4	1.29	0.83	2.66
1,894.0	22.46	307.97	1,807.4	288.5	-363.7	464.2	1.10	0.59	-2.46
1,957.0	21.78	307.94	1,865.7	303.1	-382.4	488.0	1.08	-1.08	-0.05
2,021.0	21.81	306.46	1,925.1	317.5	-401.3	511.7	0.86	0.05	-2.31
2,084.0	22.26	308.20	1,983.5	331.8	-420.1	535.4	1.26	0.71	2.76
2,147.0	22.25	306.60	2,041.8	346.3	-439.1	559.2	0.96	-0.02	-2.54
2,209.0	22.48	306.97	2,099.2	360.5	-458.0	582.8	0.43	0.37	0.60
2,272.0	22.81	305.72	2,157.3	374.8	-477.5	607.0	0.93	0.52	-1.98
2,336.0	22.06	312.35	2,216.5	390.2	-496.5	631.4	4.12	-1.17	10.36
2,396.0	22.37	309.06	2,272.0	405.0	-513.6	654.1	2.14	0.52	-5.48
2,459.0	21.62	306.68	2,330.5	419.4	-532.3	677.7	1.85	-1.19	-3.78
2,521.0	21.43	309.33	2,388.1	433.4	-550.2	700.4	1.60	-0.31	4.27
2,583.0	21.74	306.91	2,445.8	447.5	-568.1	723.2	1.52	0.50	-3.90
2,644.0	22.06	310.34	2,502.4	461.7	-585.9	746.0	2.16	0.52	5.62
2,707.0	22.09	306.61	2,560.8	476.4	-604.4	769.6	2.23	0.05	-5.92
2,769.0	22.43	308.38	2,618.2	490.7	-623.0	793.1	1.21	0.55	2.85
2,833.0	22.69	306.71	2,677.3	505.7	-642.5	817.7	1.08	0.41	-2.61
2,896.0	21.86	312.47	2,735.6	520.9	-660.9	841.5	3.71	-1.32	9.14
2,960.0	22.04	310.97	2,794.9	536.8	-678.8	865.4	0.92	0.28	-2.34
3,023.0	22.23	308.77	2,853.3	552.0	-697.0	889.1	1.35	0.30	-3.49
3,118.0	21.64	305.77	2,941.4	573.5	-725.2	924.6	1.33	-0.62	-3.16
3,181.0	21.63	305.53	3,000.0	587.0	-744.1	947.8	0.14	-0.02	-0.38
3,243.0	22.00	305.51	3,057.5	600.4	-762.8	970.8	0.60	0.60	-0.03
3,307.0	22.22	311.67	3,116.8	615.4	-781.6	994.8	3.64	0.34	9.62
3,369.0	21.21	306.45	3,174.4	629.9	-799.4	1,017.8	3.51	-1.63	-8.42
3,432.0	21.83	305.36	3,233.0	643.4	-818.1	1,040.9	1.17	0.98	-1.73
3,495.0	21.91	304.84	3,291.5	656.9	-837.3	1,064.3	0.33	0.13	-0.83
3,556.0	22.31	311.31	3,348.0	671.1	-855.4	1,087.2	4.04	0.66	10.61
3,619.0	22.12	307.80	3,406.4	686.3	-873.7	1,111.0	2.13	-0.30	-5.57
3,682.0	21.80	304.74	3,464.8	700.2	-892.7	1,134.6	1.89	-0.51	-4.86
3,744.0	21.70	305.49	3,522.4	713.4	-911.5	1,157.5	0.48	-0.16	1.21
3,808.0	21.58	305.19	3,581.9	727.1	-930.8	1,181.1	0.26	-0.19	-0.47
3,870.0	21.14	311.19	3,639.6	741.0	-948.5	1,203.6	3.59	-0.71	9.68
3,931.0	20.46	309.70	3,696.6	755.0	-965.0	1,225.3	1.41	-1.11	-2.44
4,026.0	19.45	304.30	3,785.9	774.6	-990.8	1,257.6	2.21	-1.06	-5.68
4,089.0	20.36	309.23	3,845.2	787.4	-1,008.0	1,279.1	3.03	1.44	7.83



Scientific Drilling Survey Report



Company: ConocoPhillips
Project: SAN JUAN BASIN
Site: SEC 25-T28N-R5W
Well: SJ 28-5 #81N
Wellbore: OH
Design: Actual

Local Co-ordinate Reference: Well SJ 28-5 #81N
TVD Reference: RKB @ 6925.0ft (AWS 673)
MD Reference: RKB @ 6925.0ft (AWS 673)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM.2003.16 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,152.0	20.92	303.89	3,904.1	800.6	-1,025.8	1,301.2	3.12	0.89	-8.48
4,215.0	20.97	304.48	3,963.0	813.3	-1,044.4	1,323.7	0.34	0.08	0.94
4,279.0	21.37	310.27	4,022.7	827.3	-1,062.8	1,346.8	3.33	0.62	9.05
4,340.0	21.33	311.71	4,079.5	841.9	-1,079.5	1,369.0	0.86	-0.07	2.36
4,403.0	21.10	311.51	4,138.2	857.0	-1,096.6	1,391.7	0.38	-0.37	-0.32
4,466.0	21.33	305.50	4,196.9	871.2	-1,114.4	1,414.5	3.47	0.37	-9.54
4,529.0	22.00	311.79	4,255.5	885.7	-1,132.5	1,437.7	3.83	1.06	9.98
4,592.0	21.68	310.88	4,314.0	901.2	-1,150.1	1,461.1	0.74	-0.51	-1.44
4,655.0	21.70	310.08	4,372.5	916.3	-1,167.8	1,484.4	0.47	0.03	-1.27
4,750.0	19.99	307.72	4,461.3	937.5	-1,194.1	1,518.2	2.01	-1.80	-2.48
4,812.0	17.76	306.39	4,520.0	949.6	-1,210.1	1,538.2	3.66	-3.60	-2.15
4,875.0	16.80	308.01	4,580.1	960.9	-1,225.0	1,556.9	1.70	-1.52	2.57
4,938.0	15.32	310.85	4,640.7	972.0	-1,238.5	1,574.4	2.66	-2.35	4.51
5,000.0	13.59	306.86	4,700.7	981.7	-1,250.5	1,589.8	3.22	-2.79	-6.44
5,064.0	11.88	306.63	4,763.1	990.1	-1,261.8	1,603.9	2.67	-2.67	-0.36
5,095.0	11.30	309.52	4,793.5	994.0	-1,266.7	1,610.2	2.65	-1.87	9.32
5,127.0	10.33	310.40	4,824.9	997.8	-1,271.3	1,616.2	3.07	-3.03	2.75
5,158.0	9.25	313.40	4,855.5	1,001.4	-1,275.3	1,621.4	3.85	-3.48	9.68
5,190.0	7.81	316.88	4,887.1	1,004.7	-1,278.6	1,626.1	4.78	-4.50	10.87
5,222.0	6.17	317.89	4,918.9	1,007.6	-1,281.3	1,630.0	5.14	-5.12	3.16
5,254.0	4.74	321.29	4,950.7	1,009.9	-1,283.2	1,633.0	4.58	-4.47	10.62

Checked By: _____ Approved By: _____ Date: _____

COP Deviation Report
SAN JUAN 28-5 UNIT #81N

Survey Data

Date	MD (ftKB)	Incl (°)	Method	Survey Company
10/19/2006	4,529.00	22.00	MWD	Scientific Drilling
10/19/2006	4,592.00	21.68	MWD	Scientific Drilling
10/19/2006	4,655.00	21.70	MWD	Scientific Drilling
10/19/2006	4,750.00	19.99	MWD	Scientific Drilling
10/19/2006	4,812.00	17.76	MWD	Scientific Drilling
10/19/2006	4,875.00	16.80	MWD	Scientific Drilling
10/19/2006	4,938.00	15.32	MWD	Scientific Drilling
10/19/2006	5,000.00	13.59	MWD	Scientific Drilling
10/20/2006	5,064.00	11.88	MWD	Scientific Drilling
10/21/2006	5,095.00	11.30	MWD	Scientific Drilling
10/21/2006	5,127.00	10.53	MWD	Scientific Drilling
10/21/2006	5,158.00	9.25	MWD	Scientific Drilling
10/21/2006	5,190.00	7.81	MWD	Scientific Drilling
10/21/2006	5,222.00	6.17	MWD	Scientific Drilling
11/14/2006	5,245.00	11.00	Gyro SS	TOTCO
11/14/2006	5,245.00	8.00	Incl	
10/21/2006	5,254.00	4.74	MWD	Scientific Drilling
10/21/2006	5,300.00	2.68	MWD	Scientific Drilling
11/14/2006	5,309.00	11.00	Incl	
11/14/2006	5,309.00	11.00	Gyro SS	TOTCO
11/14/2006	5,373.00	12.00	Gyro SS	TOTCO
11/14/2006	5,373.00	12.00	Incl	
11/14/2006	5,437.00	12.00	Gyro SS	TOTCO
11/14/2006	5,437.00	12.00	Incl	
11/15/2006	5,500.00	12.25	Gyro SS	TOTCO
11/14/2006	5,500.00	12.25	Incl	
11/14/2006	5,564.00	12.75	Incl	
11/18/2006	8,536.00	0.25	Incl	

RCVD SEP 24 '07

OIL CONS. DIV.

DIST. 3

I, the undersigned, certify that I acting in my capacity as DRILLING ENGINEER for ConocoPhillips Company, am authorized by said Company to make this report; and that said report was prepared under my supervision and directions, and that the facts stated herein are true to the best of my knowledge and belief.

Subscribed and sworn to me this 4TH DAY OF SEPTEMBER 2007

Marcy A. Monette

Notary Public in and for San Juan County, New Mexico

My Commission expires SEP 24, 2011

**COP Deviation Report
SAN JUAN 28-5 UNIT #81N**

Survey Data					
Date	MD (ftKB)	Incl (°)	Method	Survey Company	
10/16/2006	2,021.00	21.81	MWD	Scientific Drilling	
10/16/2006	2,084.00	22.26	MWD	Scientific Drilling	
10/16/2006	2,147.00	22.25	MWD	Scientific Drilling	
10/16/2006	2,209.00	22.48	MWD	Scientific Drilling	
10/16/2006	2,272.00	22.81	MWD	Scientific Drilling	
10/16/2006	2,336.00	22.06	MWD	Scientific Drilling	
10/16/2006	2,396.00	22.37	MWD	Scientific Drilling	
10/16/2006	2,459.00	21.62	MWD	Scientific Drilling	
10/16/2006	2,521.00	21.43	MWD	Scientific Drilling	
10/16/2006	2,583.00	21.74	MWD	Scientific Drilling	
10/16/2006	2,644.00	22.06	MWD	Scientific Drilling	
10/16/2006	2,707.00	22.09	MWD	Scientific Drilling	
10/16/2006	2,769.00	22.43	MWD	Scientific Drilling	
10/16/2006	2,833.00	22.69	MWD	Scientific Drilling	
10/16/2006	2,896.00	21.86	MWD	Scientific Drilling	
10/17/2006	2,960.00	22.04	MWD	Scientific Drilling	
10/17/2006	3,023.00	22.23	MWD	Scientific Drilling	
10/17/2006	3,118.00	21.64	MWD	Scientific Drilling	
10/17/2006	3,181.00	21.63	MWD	Scientific Drilling	
10/17/2006	3,243.00	22.00	MWD	Scientific Drilling	
10/17/2006	3,307.00	22.22	MWD	Scientific Drilling	
10/17/2006	3,369.00	21.21	MWD	Scientific Drilling	
10/17/2006	3,432.00	21.83	MWD	Scientific Drilling	
10/17/2006	3,495.00	21.91	MWD	Scientific Drilling	
10/17/2006	3,556.00	22.31	MWD	Scientific Drilling	
10/17/2006	3,619.00	22.12	MWD	Scientific Drilling	
10/17/2006	3,682.00	21.80	MWD	Scientific Drilling	
10/17/2006	3,744.00	21.70	MWD	Scientific Drilling	
10/17/2006	3,808.00	21.58	MWD	Scientific Drilling	
10/18/2006	3,870.00	21.14	MWD	Scientific Drilling	
10/18/2006	3,931.00	20.46	MWD	Scientific Drilling	
10/18/2006	4,026.00	19.45	MWD	Scientific Drilling	
10/18/2006	4,089.00	20.36	MWD	Scientific Drilling	
10/18/2006	4,152.00	20.92	MWD	Scientific Drilling	
10/18/2006	4,215.00	20.97	MWD	Scientific Drilling	
10/18/2006	4,279.00	21.37	MWD	Scientific Drilling	
10/18/2006	4,340.00	21.33	MWD	Scientific Drilling	
10/18/2006	4,403.00	21.10	MWD	Scientific Drilling	
10/19/2006	4,466.00	21.33	MWD	Scientific Drilling	

I, the undersigned, certify that I acting in my capacity as _____ for ConocoPhillips Company, am authorized by said Company to make this report; and that said report was prepared under my supervision and directions, and that the facts stated herein are true to the best of my knowledge and belief.

Subscribed and sworn to me this _____

Notary Public in and for San Juan County, New Mexico

My Commission expires _____

**COP Deviation Report
SAN JUAN 28-5 UNIT #81N**

Operator BURLINGTON RESOURCES O&G CO LP	Legal WellName SAN JUAN 28-5 UNIT #81N	API / UWI 3003927822	County RIO ARRIBA	State/Province NEW MEXICO
Surface Legal Location NMPM,026-028N-005W	N/S Dist (ft) 930.00	N/S Ref S	E/W Dist (ft) 940.00	E/W Ref W

Survey Data					
Date	MD (ftKB)	Incl (°)	Method	Survey Company	
10/12/2006	78.00	1.00	Incl	TOTCO	
10/12/2006	212.00	0.25	Incl	TOTCO	
10/12/2006	340.00	1.00	Incl	TOTCO	
10/15/2006	429.00	0.23	MWD	Scientific Drilling	
10/15/2006	460.00	1.07	MWD	Scientific Drilling	
10/15/2006	491.00	2.30	MWD	Scientific Drilling	
10/15/2006	522.00	3.50	MWD	Scientific Drilling	
10/15/2006	552.00	5.02	MWD	Scientific Drilling	
10/15/2006	583.00	6.55	MWD	Scientific Drilling	
10/15/2006	613.00	7.87	MWD	Scientific Drilling	
10/15/2006	644.00	9.43	MWD	Scientific Drilling	
10/15/2006	675.00	10.52	MWD	Scientific Drilling	
10/15/2006	736.00	13.04	MWD	Scientific Drilling	
10/15/2006	767.00	14.23	MWD	Scientific Drilling	
10/15/2006	798.00	15.47	MWD	Scientific Drilling	
10/15/2006	830.00	16.70	MWD	Scientific Drilling	
10/15/2006	862.00	17.95	MWD	Scientific Drilling	
10/15/2006	892.00	19.39	MWD	Scientific Drilling	
10/15/2006	924.00	20.84	MWD	Scientific Drilling	
10/15/2006	987.00	21.87	MWD	Scientific Drilling	
10/15/2006	1,082.00	23.74	MWD	Scientific Drilling	
10/15/2006	1,145.00	24.29	MWD	Scientific Drilling	
10/15/2006	1,208.00	23.82	MWD	Scientific Drilling	
10/15/2006	1,271.00	22.92	MWD	Scientific Drilling	
10/15/2006	1,335.00	22.99	MWD	Scientific Drilling	
10/15/2006	1,398.00	23.14	MWD	Scientific Drilling	
10/15/2006	1,461.00	23.60	MWD	Scientific Drilling	
10/15/2006	1,524.00	24.13	MWD	Scientific Drilling	
10/15/2006	1,586.00	23.31	MWD	Scientific Drilling	
10/15/2006	1,648.00	21.42	MWD	Scientific Drilling	
10/15/2006	1,710.00	21.17	MWD	Scientific Drilling	
10/15/2006	1,772.00	21.60	MWD	Scientific Drilling	
10/16/2006	1,831.00	22.09	MWD	Scientific Drilling	
10/16/2006	1,894.00	22.46	MWD	Scientific Drilling	
10/16/2006	1,957.00	21.78	MWD	Scientific Drilling	

I, the undersigned, certify that I acting in my capacity as _____ for ConocoPhillips Company, am authorized by said Company to make this report; and that said report was prepared under my supervision and directions, and that the facts stated herein are true to the best of my knowledge and belief.

Subscribed and sworn to me this _____

Notary Public in and for San Juan County, New Mexico

My Commission expires _____