



EOG Resources

Lea County, NM (NAD27 NME)

Ophelia 27

#3H

Wellbore #1 Job #1410184

Plan: Plan #1 01-28-14

Planning Report

28 January, 2014





Phoenix Technology Services
Planning Report



Company: EOG Resources
Project: Lea County, NM (NAD27 NME)
Site: Ophelia 27
Well: #3H
Wellbore: Wellbore #1 Job #1410184
Design: Plan #1 01-28-14

Local Co-ordinate Reference: Well #3H
TVD Reference: WELL @ 3319.00usft (Patterson 452)
NED Reference: WELL @ 3319.00usft (Patterson 452)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR DB

Project	Lea County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)		System Datum: Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Ophelia 27		
Site Position:		Northing: 370,025.00 usft	Latitude: 32° 0' 53.71140 N
From: Map		Easting: 741,483.00 usft	Longitude: 103° 33' 15.21704 W
Position Uncertainty: 0.00 usft		Slot Radius: 13-3/16 "	Grid Convergence: 0.41 °

Well	#3H		
Well Position	+N/-S 0.00 usft	Northing: 370,024.00 usft	Latitude: 32° 0' 53.70384 N
	+E/-W 0.00 usft	Easting: 741,453.00 usft	Longitude: 103° 33' 15.56554 W
Position Uncertainty	0.00 usft	Wellhead Elevation: usft	Ground Level: 3,292.00 usft

Wellbore	Wellbore #1 Job #1410184				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	01/28/14	7.24	59.93	48,231

Design	Plan #1 01-28-14			
Audit Notes:				
Version:	Phase: PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	358.83

Survey Tool Program	Date 01/28/14			
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
0.00	14,203.94	Plan #1 01-28-14 (Wellbore #1 Job #1410)	MWD	MWD - Standard



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Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLog (°/100usft)
0.00	0.00	0.00	-3,319.00	0.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
100.00	0.00	0.00	-3,219.00	100.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
200.00	0.00	0.00	-3,119.00	200.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
300.00	0.00	0.00	-3,019.00	300.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
400.00	0.00	0.00	-2,919.00	400.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
500.00	0.00	0.00	-2,819.00	500.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
600.00	0.00	0.00	-2,719.00	600.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
700.00	0.00	0.00	-2,619.00	700.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
800.00	0.00	0.00	-2,519.00	800.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
900.00	0.00	0.00	-2,419.00	900.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
1,000.00	0.00	0.00	-2,319.00	1,000.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
1,100.00	0.00	0.00	-2,219.00	1,100.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
1,200.00	0.00	0.00	-2,119.00	1,200.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
1,300.00	0.00	0.00	-2,019.00	1,300.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
1,400.00	0.00	0.00	-1,919.00	1,400.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
1,500.00	0.00	0.00	-1,819.00	1,500.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
1,600.00	0.00	0.00	-1,719.00	1,600.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
1,700.00	0.00	0.00	-1,619.00	1,700.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
1,800.00	0.00	0.00	-1,519.00	1,800.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
1,900.00	0.00	0.00	-1,419.00	1,900.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
2,000.00	0.00	0.00	-1,319.00	2,000.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
2,100.00	0.00	0.00	-1,219.00	2,100.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
2,200.00	0.00	0.00	-1,119.00	2,200.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
2,300.00	0.00	0.00	-1,019.00	2,300.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
2,400.00	0.00	0.00	-919.00	2,400.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
2,500.00	0.00	0.00	-819.00	2,500.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
2,600.00	0.00	0.00	-719.00	2,600.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00



Phoenix Technology Services
Planning Report



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Planned Survey

MD (usft)	Inc (")	Azi (azimuth) (")	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLog ("/100usft)
2,700.00	0.00	0.00	-619.00	2,700.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
2,800.00	0.00	0.00	-519.00	2,800.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
2,900.00	0.00	0.00	-419.00	2,900.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
3,000.00	0.00	0.00	-319.00	3,000.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
3,100.00	0.00	0.00	-219.00	3,100.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
3,200.00	0.00	0.00	-119.00	3,200.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
3,300.00	0.00	0.00	-19.00	3,300.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
3,400.00	0.00	0.00	81.00	3,400.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
3,500.00	0.00	0.00	181.00	3,500.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
3,600.00	0.00	0.00	281.00	3,600.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
3,700.00	0.00	0.00	381.00	3,700.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
3,800.00	0.00	0.00	481.00	3,800.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
3,900.00	0.00	0.00	581.00	3,900.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
4,000.00	0.00	0.00	681.00	4,000.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
4,100.00	0.00	0.00	781.00	4,100.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
4,200.00	0.00	0.00	881.00	4,200.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
4,300.00	0.00	0.00	981.00	4,300.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
4,400.00	0.00	0.00	1,081.00	4,400.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
4,500.00	0.00	0.00	1,181.00	4,500.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
4,600.00	0.00	0.00	1,281.00	4,600.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
4,700.00	0.00	0.00	1,381.00	4,700.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
4,800.00	0.00	0.00	1,481.00	4,800.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
4,900.00	0.00	0.00	1,581.00	4,900.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
5,000.00	0.00	0.00	1,681.00	5,000.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
5,100.00	0.00	0.00	1,781.00	5,100.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
5,200.00	0.00	0.00	1,881.00	5,200.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
5,300.00	0.00	0.00	1,981.00	5,300.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00



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5,400.00	0.00	0.00	2,081.00	5,400.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
5,500.00	0.00	0.00	2,181.00	5,500.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
5,600.00	0.00	0.00	2,281.00	5,600.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
5,700.00	0.00	0.00	2,381.00	5,700.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
5,800.00	0.00	0.00	2,481.00	5,800.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
5,900.00	0.00	0.00	2,581.00	5,900.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
6,000.00	0.00	0.00	2,681.00	6,000.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
6,100.00	0.00	0.00	2,781.00	6,100.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
6,200.00	0.00	0.00	2,881.00	6,200.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
6,300.00	0.00	0.00	2,981.00	6,300.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
6,400.00	0.00	0.00	3,081.00	6,400.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
6,500.00	0.00	0.00	3,181.00	6,500.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
6,600.00	0.00	0.00	3,281.00	6,600.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
6,700.00	0.00	0.00	3,381.00	6,700.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
6,800.00	0.00	0.00	3,481.00	6,800.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
6,900.00	0.00	0.00	3,581.00	6,900.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
7,000.00	0.00	0.00	3,681.00	7,000.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
7,100.00	0.00	0.00	3,781.00	7,100.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
7,200.00	0.00	0.00	3,881.00	7,200.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
7,300.00	0.00	0.00	3,981.00	7,300.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
7,400.00	0.00	0.00	4,081.00	7,400.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
7,500.00	0.00	0.00	4,181.00	7,500.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
7,600.00	0.00	0.00	4,281.00	7,600.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
7,700.00	0.00	0.00	4,381.00	7,700.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
7,800.00	0.00	0.00	4,481.00	7,800.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
7,900.00	0.00	0.00	4,581.00	7,900.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
8,000.00	0.00	0.00	4,681.00	8,000.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00



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8,100.00	0.00	0.00	4,781.00	8,100.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
8,200.00	0.00	0.00	4,881.00	8,200.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
8,300.00	0.00	0.00	4,981.00	8,300.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
8,400.00	0.00	0.00	5,081.00	8,400.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
8,500.00	0.00	0.00	5,181.00	8,500.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
8,600.00	0.00	0.00	5,281.00	8,600.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
8,700.00	0.00	0.00	5,381.00	8,700.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
8,800.00	0.00	0.00	5,481.00	8,800.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
8,900.00	0.00	0.00	5,581.00	8,900.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
9,000.00	0.00	0.00	5,681.00	9,000.00	0.00	0.00	370,024.00	741,453.00	0.00	0.00
9,097.55	0.00	0.00	5,778.55	9,097.55	0.00	0.00	370,024.00	741,453.00	0.00	0.00
KOP: Start Build 12.00"/100'										
9,100.00	0.29	353.40	5,781.00	9,100.00	0.01	0.00	370,024.01	741,453.00	0.01	12.00
9,125.00	3.29	353.40	5,805.98	9,124.98	0.78	-0.09	370,024.78	741,452.91	0.79	12.00
9,150.00	6.29	353.40	5,830.89	9,149.89	2.86	-0.33	370,026.86	741,452.67	2.87	12.00
9,175.00	9.29	353.40	5,855.66	9,174.66	6.23	-0.72	370,030.23	741,452.28	6.24	12.00
9,200.00	12.29	353.40	5,880.22	9,199.22	10.88	-1.26	370,034.88	741,451.74	10.90	12.00
9,225.00	15.29	353.40	5,904.49	9,223.49	16.80	-1.94	370,040.80	741,451.06	16.83	12.00
9,250.00	18.29	353.40	5,928.42	9,247.42	23.97	-2.77	370,047.97	741,450.23	24.02	12.00
9,275.00	21.29	353.40	5,951.94	9,270.94	32.38	-3.75	370,056.38	741,449.25	32.45	12.00
9,300.00	24.29	353.40	5,974.99	9,293.99	42.00	-4.86	370,066.00	741,448.14	42.09	12.00
9,325.00	27.29	353.40	5,997.49	9,316.49	52.81	-6.11	370,076.81	741,446.89	52.92	12.00
9,350.00	30.29	353.40	6,019.40	9,338.40	64.77	-7.49	370,088.77	741,445.51	64.91	12.00
9,375.00	33.29	353.40	6,040.65	9,359.65	77.85	-9.01	370,101.85	741,443.99	78.02	12.00
9,400.00	36.29	353.40	6,061.18	9,380.18	92.02	-10.65	370,116.02	741,442.35	92.22	12.00
9,425.00	39.29	353.40	6,080.93	9,399.93	107.24	-12.41	370,131.24	741,440.59	107.47	12.00
9,450.00	42.29	353.40	6,099.85	9,418.85	123.46	-14.28	370,147.46	741,438.72	123.73	12.00



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9,475.00	45.29	353.40	6,117.90	9,436.90	140.64	-18.27	370,164.64	741,436.73	140.95	12.00
9,500.00	48.29	353.40	6,135.01	9,454.01	158.74	-18.37	370,182.74	741,434.63	159.09	12.00
9,525.00	51.29	353.40	6,151.15	9,470.15	177.71	-20.56	370,201.71	741,432.44	178.09	12.00
9,550.00	54.29	353.40	6,166.26	9,485.26	197.49	-22.85	370,221.49	741,430.15	197.91	12.00
9,575.00	57.29	353.40	6,180.31	9,499.31	218.02	-25.23	370,242.02	741,427.77	218.49	12.00
9,600.00	60.29	353.40	6,193.27	9,512.27	239.26	-27.68	370,263.26	741,425.32	239.78	12.00
9,625.00	63.29	353.40	6,205.08	9,524.08	261.14	-30.22	370,285.14	741,422.78	261.71	12.00
9,650.00	66.29	353.40	6,215.73	9,534.73	283.61	-32.81	370,307.61	741,420.19	284.22	12.00
9,675.00	69.29	353.40	6,225.17	9,544.17	306.60	-35.47	370,330.60	741,417.53	307.26	12.00
9,700.00	72.29	353.40	6,233.40	9,552.40	330.05	-38.19	370,354.05	741,414.81	330.76	12.00
9,725.00	75.29	353.40	6,240.37	9,559.37	353.89	-40.95	370,377.89	741,412.05	354.66	12.00
9,750.00	78.29	353.40	6,246.08	9,565.08	378.07	-43.74	370,402.07	741,409.26	378.89	12.00
9,775.00	81.29	353.40	6,250.51	9,569.51	402.51	-46.57	370,426.51	741,406.43	403.38	12.00
9,800.00	84.29	353.40	6,253.65	9,572.65	427.14	-49.42	370,451.14	741,403.58	428.07	12.00
9,825.00	87.29	353.40	6,255.48	9,574.48	451.91	-52.29	370,475.91	741,400.71	452.88	12.00
9,851.72	90.50	353.40	6,256.00	9,575.00	478.44	-55.38	370,502.44	741,397.64	479.47	12.00
LP: Start Turn 3.00°/100'										
9,900.00	90.50	354.85	6,255.58	9,574.58	526.47	-60.30	370,550.47	741,392.70	527.59	3.00
10,000.00	90.50	357.85	6,254.70	9,573.70	626.25	-66.67	370,650.25	741,386.33	627.48	3.00
10,057.41	90.50	359.57	6,254.20	9,573.20	683.64	-67.96	370,707.64	741,385.04	684.89	3.00
EOT: 90.6° Inc at 359.57° Azi										
10,100.00	90.50	359.57	6,253.83	9,572.83	726.23	-68.28	370,750.23	741,384.72	727.47	0.00
10,200.00	90.50	359.57	6,252.96	9,571.96	826.22	-69.03	370,850.22	741,383.97	827.46	0.00
10,300.00	90.50	359.57	6,252.09	9,571.09	926.21	-69.78	370,950.21	741,383.22	927.45	0.00
10,400.00	90.50	359.57	6,251.21	9,570.21	1,026.21	-70.52	371,050.21	741,382.48	1,027.44	0.00
10,500.00	90.50	359.57	6,250.34	9,569.34	1,126.20	-71.27	371,150.20	741,381.73	1,127.42	0.00
10,600.00	90.50	359.57	6,249.47	9,568.47	1,226.19	-72.02	371,250.19	741,380.98	1,227.41	0.00



Phoenix Technology Services Planning Report



Company: EOG Resources
Project: Lea County, NM (NAD27 NME)
Site: Ophelia 27
Well: #3H
Wellbore: Wellbore #1 Job #1410184
Design: Plan #1 01-28-14

Local Co-ordinate Reference: Well #3H
TVD Reference: WELL @ 3319.00usft (Patterson 452)
ESD Reference: WELL @ 3319.00usft (Patterson 452)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	EW (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLog (°/100usft)
10,700.00	90.50	359.57	6,248.60	9,567.60	1,326.19	-72.77	371,350.19	741,360.23	1,327.40	0.00
10,800.00	90.50	359.57	6,247.72	9,566.72	1,426.18	-73.52	371,450.18	741,379.48	1,427.39	0.00
10,900.00	90.50	359.57	6,246.85	9,565.85	1,526.17	-74.27	371,550.17	741,378.73	1,527.37	0.00
11,000.00	90.50	359.57	6,245.98	9,564.98	1,626.17	-75.02	371,650.17	741,377.98	1,627.36	0.00
11,100.00	90.50	359.57	6,245.11	9,564.11	1,726.16	-75.76	371,750.16	741,377.24	1,727.35	0.00
11,200.00	90.50	359.57	6,244.24	9,563.24	1,826.15	-76.51	371,850.15	741,376.49	1,827.34	0.00
11,300.00	90.50	359.57	6,243.36	9,562.36	1,926.15	-77.26	371,950.15	741,375.74	1,927.33	0.00
11,400.00	90.50	359.57	6,242.49	9,561.49	2,026.14	-78.01	372,050.14	741,374.99	2,027.31	0.00
11,500.00	90.50	359.57	6,241.62	9,560.62	2,126.13	-78.76	372,150.13	741,374.24	2,127.30	0.00
11,600.00	90.50	359.57	6,240.75	9,559.75	2,226.13	-79.51	372,250.13	741,373.49	2,227.29	0.00
11,700.00	90.50	359.57	6,239.88	9,558.88	2,326.12	-80.26	372,350.12	741,372.74	2,327.28	0.00
11,800.00	90.50	359.57	6,239.00	9,558.00	2,426.11	-81.00	372,450.11	741,372.00	2,427.26	0.00
11,900.00	90.50	359.57	6,238.13	9,557.13	2,526.11	-81.75	372,550.11	741,371.25	2,527.25	0.00
12,000.00	90.50	359.57	6,237.26	9,556.26	2,626.10	-82.50	372,650.10	741,370.50	2,627.24	0.00
12,100.00	90.50	359.57	6,236.39	9,555.39	2,726.09	-83.25	372,750.09	741,369.75	2,727.23	0.00
12,200.00	90.50	359.57	6,235.52	9,554.52	2,826.09	-84.00	372,850.09	741,369.00	2,827.22	0.00
12,300.00	90.50	359.57	6,234.64	9,553.64	2,926.08	-84.75	372,950.08	741,368.25	2,927.20	0.00
12,400.00	90.50	359.57	6,233.77	9,552.77	3,026.07	-85.50	373,050.07	741,367.50	3,027.19	0.00
12,500.00	90.50	359.57	6,232.90	9,551.90	3,126.07	-86.24	373,150.07	741,366.76	3,127.18	0.00
12,600.00	90.50	359.57	6,232.03	9,551.03	3,226.06	-86.99	373,250.06	741,366.01	3,227.17	0.00
12,700.00	90.50	359.57	6,231.16	9,550.16	3,326.05	-87.74	373,350.05	741,365.26	3,327.15	0.00
12,800.00	90.50	359.57	6,230.28	9,549.28	3,426.05	-88.49	373,450.05	741,364.51	3,427.14	0.00
12,900.00	90.50	359.57	6,229.41	9,548.41	3,526.04	-89.24	373,550.04	741,363.76	3,527.13	0.00
13,000.00	90.50	359.57	6,228.54	9,547.54	3,626.03	-89.99	373,650.03	741,363.01	3,627.12	0.00
13,100.00	90.50	359.57	6,227.67	9,546.67	3,726.03	-90.74	373,750.03	741,362.26	3,727.11	0.00
13,200.00	90.50	359.57	6,226.80	9,545.80	3,826.02	-91.48	373,850.02	741,361.52	3,827.09	0.00
13,300.00	90.50	359.57	6,225.92	9,544.92	3,926.01	-92.23	373,950.01	741,360.77	3,927.08	0.00



Phoenix Technology Services Planning Report



Company: EOG Resources
Project: Lea County, NM (NAD27 NME)
Site: Ophelia 27
Well: #3H
Wellbore: Wellbore #1 Job #1410184
Design: Plan #1 01-28-14

Local Co-ordinate Reference: Well #3H
TVD Reference: WELL @ 3319.00usft (Patterson 452)
MD Reference: WELL @ 3319.00usft (Patterson 452)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	EW (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLog (°/100usft)
13,400.00	90.50	359.57	6,225.05	9,544.05	4,026.01	-92.98	374,050.01	741,360.02	4,027.07	0.00
13,500.00	90.50	359.57	6,224.18	9,543.18	4,126.00	-93.73	374,150.00	741,359.27	4,127.06	0.00
13,600.00	90.50	359.57	6,223.31	9,542.31	4,226.00	-94.48	374,250.00	741,358.52	4,227.04	0.00
13,700.00	90.50	359.57	6,222.44	9,541.44	4,325.99	-95.23	374,349.99	741,357.77	4,327.03	0.00
13,800.00	90.50	359.57	6,221.56	9,540.56	4,425.98	-95.98	374,449.98	741,357.02	4,427.02	0.00
13,900.00	90.50	359.57	6,220.69	9,539.69	4,525.98	-96.72	374,549.98	741,356.28	4,527.01	0.00
14,000.00	90.50	359.57	6,219.82	9,538.82	4,625.97	-97.47	374,649.97	741,355.53	4,626.99	0.00
14,100.00	90.50	359.57	6,218.95	9,537.95	4,725.96	-98.22	374,749.96	741,354.78	4,726.98	0.00
14,204.04	90.50	359.57	6,218.04	9,537.04	4,830.00	-99.00	374,854.00	741,354.00	4,831.01	0.00
TD at 14204.04										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
9,097.55	9,097.55	0.00	0.00	KOP: Start Build 12.00°/100'
9,851.72	9,575.00	478.44	-55.36	LP: Start Turn 3.00°/100'
10,057.41	9,573.20	683.64	-67.96	EOT: 90.5° Inc at 359.57° Azi
14,204.04	9,537.04	4,830.00	-99.00	TD at 14204.04

EOG RESOURCES, INC.
OPHELIA 27 #3H

Hydrogen Sulfide Plan Summary

- A. All personnel shall receive proper H₂S training in accordance with Onshore Order III.C.3.a.
- B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
- C. Required Emergency Equipment:

- Well control equipment
 - a. Flare line 150' from wellhead to be ignited by flare gun.
 - b. Choke manifold with a remotely operated choke.
 - c. Mud/gas separator

- Protective equipment for essential personnel.

Breathing apparatus:

- a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- b. Work/Escapes packs — 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
- c. Emergency Escape Packs — 4 packs shall be stored in the doghouse for emergency evacuation.

Auxiliary Rescue Equipment:

- a. Stretcher
- b. Two OSHA full body harness
- c. 100 ft 5/8 inch OSHA approved rope
- d. 1-20# class ABC fire extinguisher

- H₂S detection and monitoring equipment:

The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.

(Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.

- a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
- c. Two wind socks will be placed in strategic locations, visible from all angles.

EOG RESOURCES, INC.
OPHELIA 27 #3H

- **Mud program:**
The mud program has been designed to minimize the volume of H₂S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H₂S bearing zones.
- **Metallurgy:**
All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.
- **Communication:**
Communication will be via cell phones and land lines where available.