



May 29, 2015

3001541666

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 13 2015

RECEIVED

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

Attn: Kanicia Castillo

RE: **Sherman 4 Fee 6H**

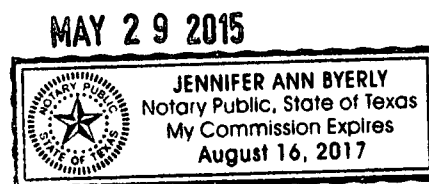
Please find enclosed a copy of the survey from 0' to 2403' ran on the above referenced well.

Sincerely, 
Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 29 day of May,
A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: COG Operating
Lease/Well: Sherman 4 Fee/6H

Rig Name: Silver Oak 3
State/County: New Mexico/Eddy
VS-Azi: 0.00 Degrees

Latitude: 32.68290, Longitude: -104.38770
Grid Convergence Applied = +0.03 degs
Grid North = True North +0.03 degs



NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 13 2015
RECEIVED

Depth Reference : RKB= 18 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: sherman 4 fee 6h.ut
Minimum Curvature Method
Report Date/Time: 5/29/2015 / 08:45

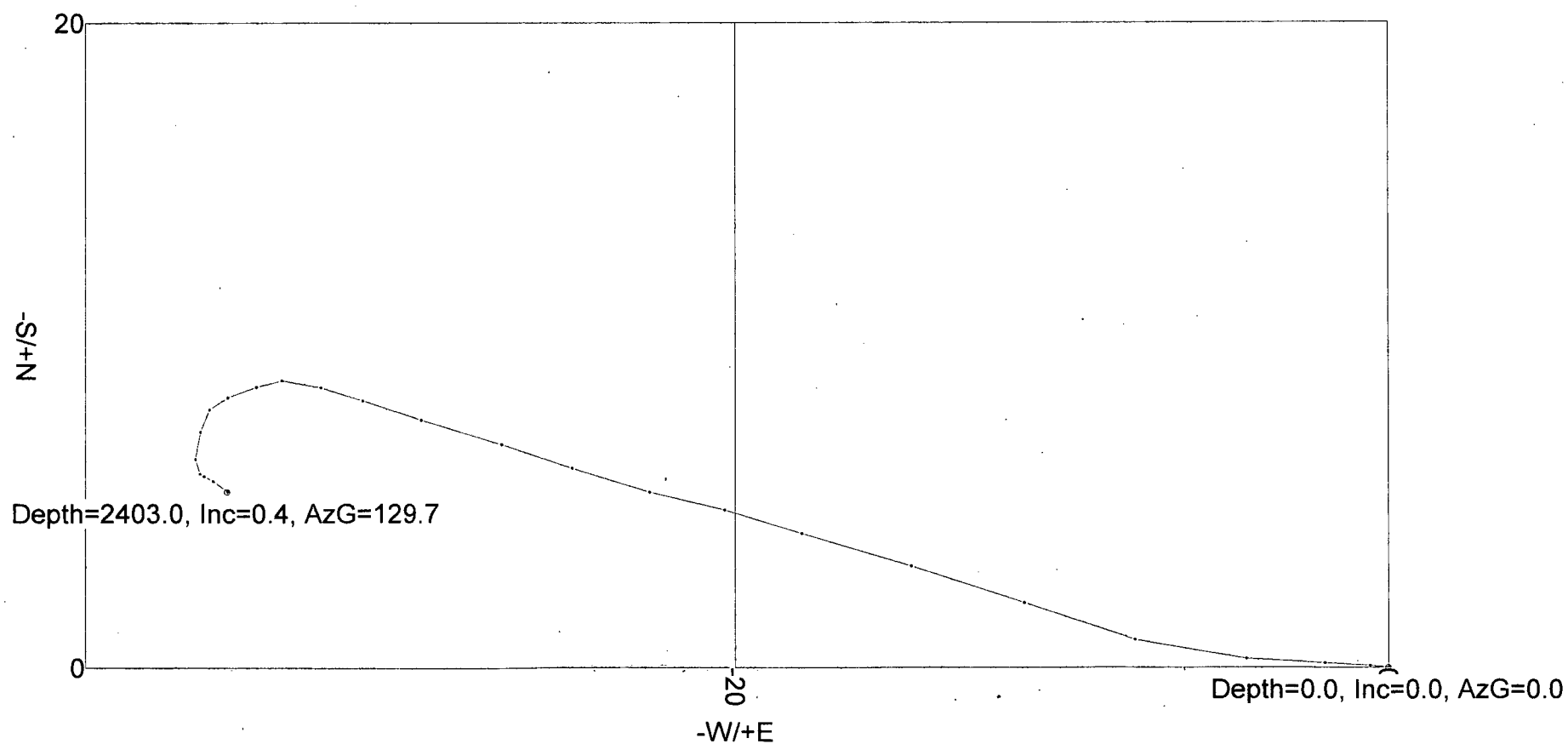
VES Survey International
Fort Worth, Texas
Surveyor: Eric Warner
817-741-3610
Sherman 4 Fee 6H / API 30-015-41666

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.67	275.53	100.00	0.06	-0.58	0.06	0.59	275.53	0.67
200.00	0.92	271.89	199.99	0.14	-1.97	0.14	1.98	274.05	0.26
300.00	1.82	273.86	299.96	0.27	-4.37	0.27	4.37	273.58	0.90
400.00	2.15	284.96	399.90	0.86	-7.76	0.86	7.81	276.35	0.51
500.00	1.96	292.99	499.83	2.02	-11.15	2.02	11.33	280.25	0.35
600.00	2.22	284.15	599.77	3.16	-14.60	3.16	14.94	282.20	0.42
700.00	1.80	290.24	699.71	4.17	-17.96	4.17	18.43	283.09	0.47
800.00	1.06	281.55	799.67	4.90	-20.33	4.90	20.91	283.56	0.77
900.00	1.65	285.09	899.65	5.46	-22.62	5.46	23.27	283.57	0.60
1000.00	1.20	290.59	999.62	6.21	-25.00	6.21	25.75	283.94	0.47
1100.00	1.41	286.85	1099.59	6.93	-27.16	6.93	28.03	284.32	0.23
1200.00	1.55	287.56	1199.56	7.70	-29.62	7.70	30.61	284.56	0.14
1300.00	0.67	289.89	1299.54	8.30	-31.46	8.30	32.54	284.78	0.88
1400.00	0.89	285.12	1399.53	8.70	-32.76	8.70	33.90	284.88	0.23
1500.00	0.52	272.42	1499.52	8.93	-33.97	8.93	35.12	284.72	0.40
1600.00	0.46	237.06	1599.52	8.73	-34.75	8.73	35.83	284.10	0.30

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1700.00	0.64	258.93	1699.51	8.40	-35.63	8.40	36.61	283.27	0.27
1800.00	0.31	185.17	1799.51	8.03	-36.21	8.03	37.08	282.50	0.63
1900.00	0.56	210.96	1899.51	7.34	-36.48	7.34	37.21	281.37	0.31
2000.00	0.50	166.58	1999.50	6.50	-36.63	6.50	37.20	280.06	0.40
2100.00	0.06	137.24	2099.50	6.04	-36.50	6.04	36.99	279.40	0.45
2200.00	0.13	114.42	2199.50	5.96	-36.36	5.96	36.84	279.30	0.08
2300.00	0.24	120.41	2299.50	5.81	-36.08	5.81	36.54	279.14	0.11
2403.00	0.37	129.69	2402.50	5.49	-35.64	5.49	36.06	278.75	0.13



VES Survey International
Fort Worth, Texas
Surveyor: Eric Warner
817-741-3610
Sherman 4 Fee 6H / API 30-015-41666



VES Survey Date: 5/24/2015



PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 13 2015

RECEIVED

May 31, 2015

COG, LLC
One Concho Center
600 W. Illinois Ave.
Midland, TX 79701

RE: Sherman 4 Fee #6H
150' FSL & 2260' FEL
Sec. 4, T19S, R26E
Eddy County, New Mexico

Dear Sir,

The attached is the Deviation Survey for the above captioned well.

Very truly yours,

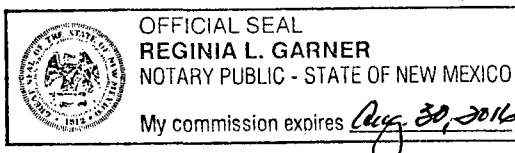
A handwritten signature in black ink, appearing to read "Chris Graham".

Chris Graham
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 31st day of May, 2015.

A handwritten signature in black ink, appearing to read "Regina L. Garner".

Notary Public

SHERMAN 4 FEE # 6 H

Date	Depth	Deviation	Direction	TVD
5/22/2015	258	1.20	0.00	0.00
5/22/2015	315	1.50	0.00	0.00
5/22/2015	494	2.30	0.00	0.00
5/22/2015	615	1.90	0.00	0.00
5/22/2015	706	1.60	0.00	0.00
5/22/2015	959	1.20	0.00	0.00
5/22/2015	1148	1.30	0.00	0.00
5/23/2015	1363	0.60	0.00	0.00
5/24/2015	1800	0.50	0.00	0.00
5/24/2015	2241	0.50	0.00	0.00
5/24/2015	2466	0.60	29.60	0.00
5/25/2015	2497	1.90	11.30	2496.00
5/25/2015	2529	3.90	5.40	2528.00
5/25/2015	2561	7.10	1.40	2560.00
5/25/2015	2593	10.50	358.90	2591.00
5/25/2015	2625	12.50	359.20	2623.00
5/25/2015	2657	15.00	0.90	2684.00
5/25/2015	2688	18.90	0.90	2684.00
5/25/2015	2719	22.40	1.10	2713.00
5/25/2015	2751	25.10	1.20	2742.00
5/25/2015	2814	31.40	3.10	0.00
5/25/2015	2845	35.00	4.50	0.00
5/25/2015	2877	38.50	5.50	0.00
5/25/2015	2908	41.60	5.40	0.00
5/25/2015	2939	44.80	4.70	0.00
5/25/2015	2971	48.30	3.80	0.00
5/25/2015	3003	51.70	3.50	0.00
5/25/2015	3035	54.10	3.10	0.00
5/25/2015	3066	5.66	2.50	0.00
5/25/2015	3097	59.70	2.10	0.00
5/25/2015	3128	63.30	1.90	0.00
5/25/2015	3160	66.60	1.60	0.00
5/25/2015	3191	70.00	2.10	0.00
5/25/2015	3255	77.30	3.00	0.00
5/25/2015	3286	80.30	3.00	0.00
5/26/2015	3371	89.10	2.60	3063.00
5/26/2015	3403	89.40	2.80	3063.00
5/26/2015	3497	89.80	0.30	3064.00
5/26/2015	3687	90.00	359.90	0.00
5/26/2015	3781	89.90	0.20	0.00
5/26/2015	3877	90.80	359.60	0.00
5/26/2015	3972	90.80	359.80	0.00
5/26/2015	4065	90.80	359.60	0.00

Date	Depth	Deviation	Direction	TVD
5/26/2015	4160	90.60	359.30	0.00
5/26/2015	4350	90.90	0.30	0.00
5/26/2015	4444	90.20	1.10	0.00
5/26/2015	4539	90.30	1.10	0.00
5/27/2015	4634	89.80	0.20	3056.00
5/27/2015	4728	90.50	359.40	3056.00
5/27/2015	4821	90.40	359.50	3055.00
5/27/2015	4916	90.40	359.20	3055.00
5/27/2015	5010	90.60	359.50	3054.00
5/27/2015	5106	90.40	359.20	0.00
5/27/2015	5200	90.20	359.30	0.00
5/27/2015	5294	90.10	359.30	0.00
5/27/2015	5389	90.20	0.00	0.00
5/27/2015	5484	90.10	359.70	0.00
5/27/2015	5579	90.30	0.00	0.00
5/27/2015	5673	91.30	0.20	0.00
5/28/2015	5862	90.60	359.60	3047.00
5/28/2015	5956	90.30	359.50	3046.00
5/28/2015	6051	90.10	359.10	3046.00
5/28/2015	6145	90.80	0.20	3045.00
5/28/2015	6240	90.30	0.00	3044.00
5/28/2015	6334	90.00	359.80	0.00
5/28/2015	6424	91.10	0.10	0.00
5/28/2015	6518	90.90	359.60	0.00
5/28/2015	6613	90.80	359.40	0.00
5/28/2015	6707	90.70	359.40	0.00
5/28/2015	6802	90.50	359.10	0.00
5/28/2015	6897	90.70	358.90	0.00
5/29/2015	6991	90.20	0.50	3037.00
5/29/2015	7086	89.90	0.50	3037.00
5/29/2015	7180	89.50	359.40	3037.00
5/29/2015	7276	90.50	359.60	3037.00
5/29/2015	7370	90.34	359.20	3037.00
5/29/2015	7481	90.50	359.60	3036.00

EOF



COG Operating LLC

Eddy County, NM (NAD27 NME)

Sherman 4 Fee

#6H

WB1 / Job #1513564

Design: Surveys (Silver Oak 3)

Standard Survey Report

29 May, 2015

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 13 2015

RECEIVED





Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #6H
Project:	Eddy County, NM (NAD27/NME)	TVD Reference:	KB @ 3366.00usft (Silver Oak 3)
Site:	Sherman 4 Fee	MD Reference:	KB @ 3366.00usft (Silver Oak 3)
Well:	#6H	North Reference:	Grid
Wellbore:	WB1 / Job #1513564	Survey/Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	Compass 5000 GCR

Project	Eddy 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	Sherman 4 Fee		
Site Position:		Northing:	612,151.80 usft
From:	Map	Easting:	485,212.40 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 40' 58.42381 N
		Longitude:	104° 22' 53.02452 W
		Grid Convergence:	-0.03 °

Well	#6H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 40' 58.28879 N
		Longitude:	104° 23' 15.89570 W
		Ground Level:	3,348.00 usft

Wellbore	WB1 / Job #1513564		
Magnetics	Model Name	Sample Date	Declination
	HDGM	5/14/2015	7.62
			Dip Angle
			60.57
			Field Strength
			48,412

Design	Surveys (Silver Oak 3)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			359.72

Survey Program	Date: 5/29/2015		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.00	2,403.00	VES Gryo Survey (WB1 / Job #1513564)	NS-GYRO-MS
2,466.00	7,541.00	Phoenix MWD Surveys (WB1 / Job #1513	PHX+MWD+HDGM
			Description
			North sensing gyrocompassing m/s
			PHX+MWD+HDGM

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.67	275.53	100.00	0.06	-0.58	0.06	0.67	0.67	0.00
200.00	0.92	271.89	199.99	0.14	-1.97	0.15	0.25	0.25	-3.64
300.00	1.82	273.86	299.96	0.27	-4.35	0.29	0.90	0.90	1.97
400.00	2.15	284.96	399.90	0.86	-7.75	0.90	0.51	0.33	11.10
500.00	1.96	292.99	499.83	2.02	-11.14	2.07	0.34	-0.19	8.03
600.00	2.22	284.15	599.77	3.16	-14.59	3.23	0.41	0.26	-8.84
700.00	1.80	290.24	699.71	4.17	-17.94	4.26	0.47	-0.42	6.09
800.00	1.06	281.55	799.67	4.90	-20.32	5.00	0.77	-0.74	-8.69
900.00	1.65	285.09	899.65	5.46	-22.62	5.57	0.60	0.59	3.54



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #6H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3366.00usft (Silver Oak 3)
Site:	Sherman 4 Fee	MD Reference:	KB @ 3366.00usft (Silver Oak 3)
Well:	#6H	North Reference:	Grid
Wellbore:	WB1 / Job #1513564	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	Compass 5000 GCR

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	1.20	290.59	999.62	6.21	-24.99	6.33	0.47	-0.45	5.50
1,100.00	1.41	286.85	1,099.59	6.93	-27.14	7.06	0.23	0.21	-3.74
1,200.00	1.55	287.56	1,199.56	7.70	-29.61	7.84	0.14	0.14	0.71
1,300.00	0.67	289.89	1,299.54	8.30	-31.45	8.45	0.88	-0.88	2.33
1,400.00	0.89	285.12	1,399.53	8.70	-32.75	8.86	0.23	0.22	-4.77
1,500.00	0.52	272.42	1,499.52	8.93	-33.95	9.09	0.40	-0.37	-12.70
1,600.00	0.46	237.06	1,599.52	8.73	-34.74	8.89	0.30	-0.06	-35.36
1,700.00	0.64	258.93	1,699.51	8.40	-35.63	8.57	0.27	0.18	21.87
1,800.00	0.31	185.17	1,799.51	8.02	-36.20	8.20	0.63	-0.33	-73.76
1,900.00	0.56	210.96	1,899.51	7.34	-36.48	7.51	0.31	0.25	25.79
2,000.00	0.50	166.58	1,999.50	6.49	-36.63	6.67	0.40	-0.06	-44.38
2,100.00	0.06	137.24	2,099.50	6.03	-36.49	6.21	0.45	-0.44	-29.34
2,200.00	0.13	114.42	2,199.50	5.94	-36.35	6.12	0.08	0.07	-22.82
2,300.00	0.24	120.41	2,299.50	5.79	-36.07	5.97	0.11	0.11	5.99
2,403.00	0.37	129.69	2,402.50	5.47	-35.63	5.64	0.13	0.13	9.01
Tie-on to VES Gyro Survey									
2,466.00	0.60	29.60	2,465.50	5.63	-35.31	5.80	1.20	0.37	-158.87
First Phoenix MWD Survey									
2,497.00	1.90	17.30	2,496.49	6.26	-35.07	6.43	4.26	4.19	-39.68
2,529.00	3.90	5.40	2,528.45	7.85	-34.81	8.02	6.49	6.25	-37.19
2,561.00	7.10	1.40	2,560.29	10.91	-34.66	11.08	10.07	10.00	-12.50
2,593.00	10.50	358.90	2,591.91	15.80	-34.67	15.97	10.69	10.63	-7.81
2,625.00	12.50	359.20	2,623.27	22.18	-34.77	22.35	6.25	6.25	0.94
2,657.00	15.00	0.60	2,654.35	29.79	-34.78	29.96	7.88	7.81	4.38
2,688.00	18.90	0.90	2,684.00	38.82	-34.66	38.99	12.58	12.58	0.97
2,719.00	22.40	1.10	2,713.00	49.75	-34.47	49.92	11.29	11.29	0.65
2,751.00	25.10	1.20	2,742.29	62.63	-34.21	62.80	8.44	8.44	0.31
2,783.00	28.40	1.90	2,770.86	77.03	-33.81	77.19	10.36	10.31	2.19
2,814.00	31.40	3.10	2,797.73	92.47	-33.13	92.63	9.87	9.68	3.87
2,845.00	35.00	4.50	2,823.67	109.40	-32.00	109.55	11.87	11.61	4.52
2,877.00	38.50	5.50	2,849.30	128.47	-30.32	128.61	11.10	10.94	3.13
2,908.00	41.60	5.40	2,873.03	148.32	-28.43	148.46	10.00	10.00	-0.32
2,939.00	44.80	4.70	2,895.63	169.46	-26.56	169.59	10.44	10.32	-2.26
2,971.00	48.30	3.80	2,917.63	192.62	-24.85	192.74	11.13	10.94	-2.81
3,003.00	51.70	3.50	2,938.20	217.08	-23.29	217.19	10.65	10.63	-0.94
3,035.00	54.10	3.10	2,957.50	242.56	-21.82	242.66	7.57	7.50	-1.25
3,066.00	56.60	2.50	2,975.12	268.03	-20.58	268.13	8.22	8.06	-1.94
3,097.00	59.70	2.10	2,991.48	294.34	-19.52	294.43	10.06	10.00	-1.29
3,128.00	63.30	1.90	3,006.27	321.56	-18.57	321.65	11.63	11.61	-0.65
3,160.00	66.60	1.60	3,019.81	350.53	-17.69	350.61	10.35	10.31	-0.94
3,191.00	70.00	2.10	3,031.28	379.32	-16.76	379.39	11.07	10.97	1.61
3,223.00	73.60	3.00	3,041.27	409.68	-15.40	409.75	11.56	11.25	2.81
3,255.00	77.30	3.00	3,049.31	440.61	-13.78	440.67	11.56	11.56	0.00



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #6H
Project:	Eddy County NM (NAD27 NME)	TVD Reference:	KB @ 3366.00usft (Silver Oak 3)
Site:	Sherman 4 Fee	MD Reference:	KB @ 3366.00usft (Silver Oak 3)
Well:	#6H	North Reference:	Grid
Wellbore:	WB1 // Job #1513564	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	Compass 5000 GCR

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,286.00	80.30	3.00	3,055.33	470.97	-12.19	471.02	9.68	9.68	0.00
3,318.00	83.20	3.30	3,059.92	502.59	-10.45	502.63	9.11	9.06	0.94
3,371.00	89.10	2.60	3,063.48	555.37	-7.73	555.41	11.21	11.13	-1.32
3,403.00	89.40	2.80	3,063.89	587.34	-6.22	587.36	1.13	0.94	0.63
3,497.00	89.80	0.30	3,064.55	681.29	-3.68	681.30	2.69	0.43	-2.66
3,592.00	90.00	359.90	3,064.72	776.29	-3.52	776.30	0.47	0.21	-0.42
3,687.00	90.00	359.90	3,064.72	871.29	-3.68	871.30	0.00	0.00	0.00
3,781.00	89.80	0.20	3,064.88	965.29	-3.60	965.30	0.38	-0.21	0.32
3,877.00	90.80	359.60	3,064.38	1,061.29	-3.77	1,061.29	1.21	1.04	-0.63
3,972.00	90.80	359.80	3,063.05	1,156.28	-4.26	1,156.28	0.21	0.00	0.21
4,065.00	90.80	359.60	3,061.75	1,249.27	-4.75	1,249.28	0.22	0.00	-0.22
4,160.00	90.60	359.30	3,060.59	1,344.26	-5.66	1,344.27	0.38	-0.21	-0.32
4,254.00	90.70	359.40	3,059.53	1,438.24	-6.73	1,438.26	0.15	0.11	0.11
4,350.00	90.90	0.30	3,058.19	1,534.23	-6.98	1,534.25	0.96	0.21	0.94
4,444.00	90.20	1.10	3,057.28	1,628.22	-5.83	1,628.23	1.13	-0.74	0.85
4,539.00	90.30	1.10	3,056.87	1,723.20	-4.01	1,723.20	0.11	0.11	0.00
4,634.00	89.80	0.20	3,056.79	1,818.19	-2.93	1,818.19	1.08	-0.53	-0.95
4,728.00	90.50	359.40	3,056.54	1,912.19	-3.26	1,912.18	1.13	0.74	-0.85
4,821.00	90.40	359.50	3,055.81	2,005.18	-4.15	2,005.18	0.15	-0.11	0.11
4,916.00	90.40	359.20	3,055.15	2,100.18	-5.23	2,100.18	0.32	0.00	-0.32
5,010.00	90.60	359.50	3,054.33	2,194.17	-6.30	2,194.17	0.38	0.21	0.32
5,106.00	90.40	359.20	3,053.49	2,290.16	-7.38	2,290.17	0.38	-0.21	-0.31
5,200.00	90.20	359.30	3,053.00	2,384.15	-8.61	2,384.16	0.24	-0.21	0.11
5,294.00	90.10	359.30	3,052.75	2,478.14	-9.76	2,478.16	0.11	-0.11	0.00
5,389.00	90.20	0.00	3,052.50	2,573.14	-10.34	2,573.16	0.74	0.11	0.74
5,484.00	90.10	359.70	3,052.25	2,668.14	-10.59	2,668.16	0.33	-0.11	-0.32
5,579.00	90.30	0.00	3,051.92	2,763.13	-10.84	2,763.16	0.38	0.21	0.32
5,673.00	91.30	0.20	3,050.61	2,857.12	-10.68	2,857.14	1.08	1.06	0.21
5,768.00	90.90	359.90	3,048.78	2,952.11	-10.59	2,952.12	0.53	-0.42	-0.32
5,862.00	90.60	359.60	3,047.55	3,046.10	-11.00	3,046.11	0.45	-0.32	-0.32
5,956.00	90.30	359.50	3,046.82	3,140.09	-11.74	3,140.11	0.34	-0.32	-0.11
6,051.00	90.10	359.10	3,046.48	3,235.08	-12.90	3,235.11	0.47	-0.21	-0.42
6,145.00	90.80	0.20	3,045.75	3,329.08	-13.48	3,329.10	1.39	0.74	1.17
6,240.00	90.30	0.00	3,044.83	3,424.07	-13.31	3,424.10	0.57	-0.53	-0.21
6,334.00	90.00	359.80	3,044.59	3,518.07	-13.48	3,518.10	0.38	-0.32	-0.21
6,424.00	91.10	0.10	3,043.72	3,608.07	-13.55	3,608.09	1.27	1.22	0.33
6,518.00	90.90	359.60	3,042.08	3,702.05	-13.80	3,702.07	0.57	-0.21	-0.53
6,613.00	90.80	359.40	3,040.67	3,797.04	-14.63	3,797.06	0.24	-0.11	-0.21
6,707.00	90.70	359.40	3,039.44	3,891.02	-15.61	3,891.05	0.11	-0.11	0.00
6,802.00	90.50	359.10	3,038.45	3,986.01	-16.86	3,986.04	0.38	-0.21	-0.32
6,897.00	90.30	358.90	3,037.79	4,080.99	-18.51	4,081.03	0.30	-0.21	-0.21
6,991.00	90.20	0.50	3,037.38	4,174.99	-19.01	4,175.03	1.71	-0.11	1.70
7,086.00	89.90	0.50	3,037.29	4,269.98	-18.18	4,270.02	0.32	-0.32	0.00
7,180.00	89.50	359.40	3,037.78	4,363.98	-18.26	4,364.02	1.25	-0.43	-1.17



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #6H
Project:	Eddy County NM (NAD27 NME)	TVD Reference:	KB @ 3366.00usft (Silver Oak 3)
Site:	Sherman 4 Fee	MD Reference:	KB @ 3366.00usft (Silver Oak 3)
Well:	#6H	North Reference:	Grid
Wellbore:	WB1 / Job #1513564	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	Compass 5000 GCR

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,276.00	90.50	359.60	3,037.78	4,459.98	-19.10	4,460.02	1.06	1.04	0.21
7,370.00	90.40	359.20	3,037.05	4,553.97	-20.08	4,554.01	0.44	-0.11	-0.43
7,465.00	90.50	359.00	3,036.30	4,648.95	-21.57	4,649.00	0.24	0.11	-0.21
7,481.00	90.40	358.90	3,036.17	4,664.95	-21.87	4,665.00	0.88	-0.63	-0.63
Last Phoenix MWD Survey									
7,541.00	90.40	358.90	3,035.76	4,724.94	-23.02	4,724.99	0.00	0.00	0.00
Projection to TD:									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,403.00	2,402.50	5.47	-35.63	Tie-on to VES Gyro Survey
2,466.00	2,465.50	5.63	-35.31	First Phoenix MWD Survey
7,481.00	3,036.17	4,664.95	-21.87	Last Phoenix MWD Survey
7,541.00	3,035.76	4,724.94	-23.02	Projection to TD

Checked By: _____ Approved By: _____ Date: _____