



March 17, 2015

15-42886

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

NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 11 2015

RECEIVED

Attn: Kanicia Castillo

RE: **Bradley 8 Fee 7H**

Please find enclosed a copy of the survey from 0.00' to 2332.00' ran on the above referenced well.

If I can be of any further service, please do not hesitate to call me at 800-606-4976.

Sincerely,

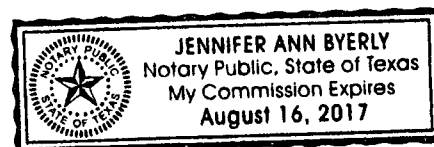
Kimberly D Moller
Operations

STATE OF TEXAS §

§

COUNTY OF NUECES §

This instrument was acknowledged before me on the 17 day of March, A.D., 2015, by Kimberly D Moller.

Jennifer Ann Byerly
Notary Public, State of Texas



Company: COG OPERATING
Lease/Well: BRADLEY 8 FEE/7H

Rig Name: SILVEROAK #3
State/County: NEW MEXICO/EDDY
Latitude: 32.67, Longitude: -104.40
GRID North is 0.04 Degrees West of True North
VS-Azi: 0.00 Degrees



NM OIL CONSERVATION
ARTESIA DISTRICT
MAY 11 2015
RECEIVED

Depth Reference : RKB: 18 FEET

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey final.ut
Minimum Curvature Method
Report Date/Time: 3/17/2015 / 13:30

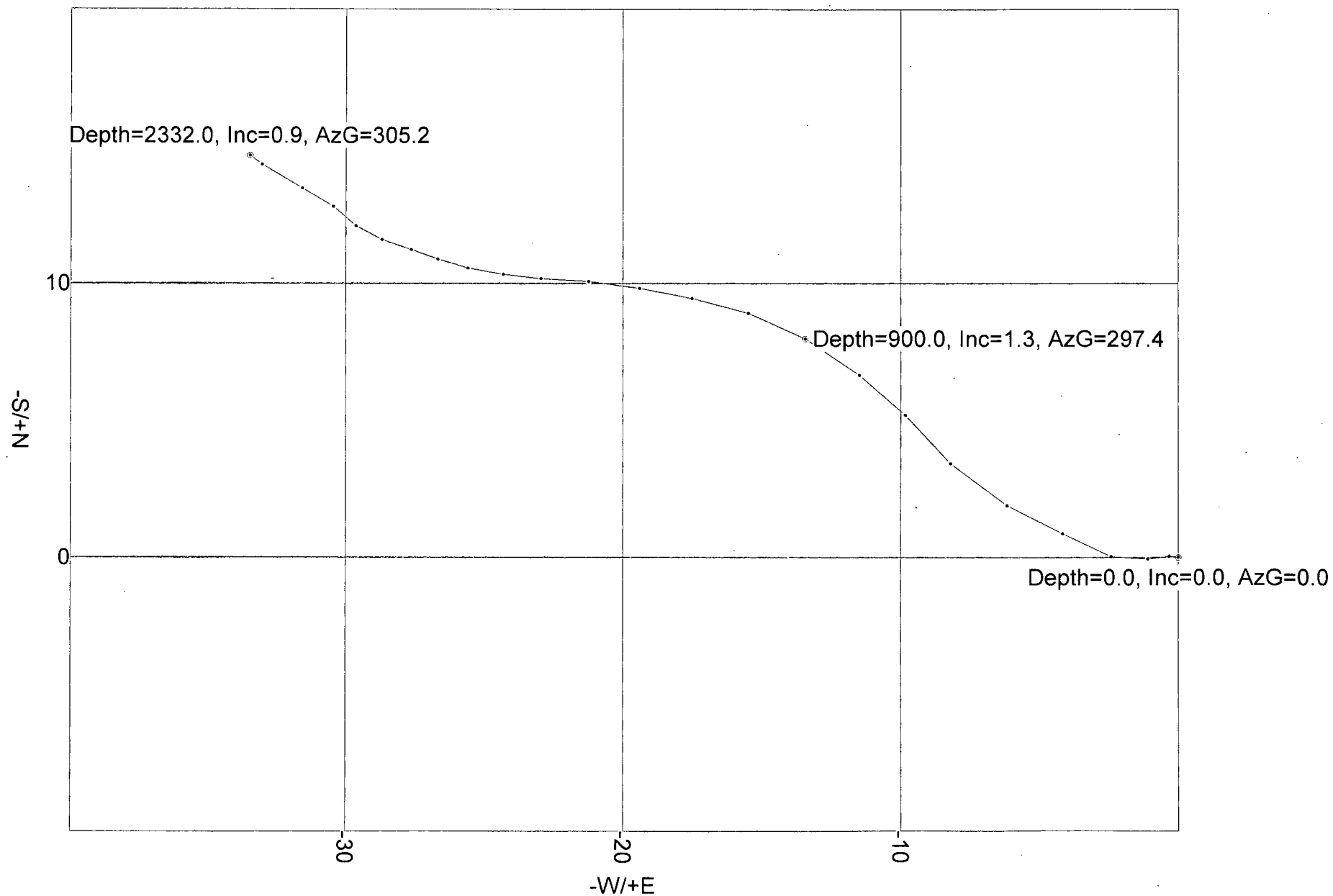
VES Survey International
West Texas
(432) 563-5444
Surveyor: Jordan Shelleby
Bradley 8 Fee 7H / API 30-015-42886

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	0.38	276.80	100.00	0.04	-0.33	0.04	0.33	276.80	0.38
200.00	0.53	253.07	200.00	-0.06	-1.10	-0.06	1.10	267.12	0.23
300.00	1.05	284.36	299.99	0.04	-2.42	0.04	2.42	270.89	0.66
400.00	1.21	305.49	399.97	0.88	-4.16	0.88	4.26	281.90	0.44
500.00	1.38	289.90	499.94	1.90	-6.16	1.90	6.44	287.16	0.39
600.00	1.65	320.75	599.91	3.43	-8.20	3.43	8.89	292.69	0.85
700.00	1.11	312.36	699.88	5.20	-9.83	5.20	11.12	297.87	0.58
800.00	1.42	310.62	799.86	6.66	-11.49	6.66	13.28	300.10	0.31
900.00	1.30	297.35	899.83	7.98	-13.43	7.98	15.62	300.73	0.34
1000.00	1.27	291.75	999.80	8.91	-15.47	8.91	17.85	299.96	0.13
1100.00	1.17	277.43	1099.78	9.46	-17.51	9.46	19.90	298.38	0.32
1200.00	1.04	285.05	1199.76	9.82	-19.39	9.82	21.74	296.87	0.19
1300.00	1.10	271.22	1299.74	10.08	-21.23	10.08	23.50	295.40	0.27
1400.00	0.86	276.01	1399.73	10.18	-22.94	10.18	25.10	293.93	0.25
1500.00	0.69	277.12	1499.72	10.33	-24.29	10.33	26.40	293.04	0.17
1600.00	0.79	283.04	1599.71	10.56	-25.56	10.56	27.66	292.45	0.12
1700.00	0.52	292.69	1699.71	10.89	-26.65	10.89	28.79	292.23	0.29
1800.00	0.66	287.61	1799.70	11.24	-27.62	11.24	29.82	292.15	0.16

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
1900.00	0.62	290.04	1899.69	11.60	-28.68	11.60	30.94	292.03	0.06
2000.00	0.62	306.14	1999.69	12.11	-29.62	12.11	32.00	292.23	0.17
2100.00	0.65	312.77	2099.68	12.81	-30.47	12.81	33.05	292.80	0.08
2200.00	0.89	291.67	2199.67	13.47	-31.60	13.47	34.35	293.09	0.37
2300.00	1.08	307.60	2299.66	14.34	-33.07	14.34	36.04	293.44	0.33
2332.00	0.89	305.19	2331.65	14.66	-33.51	14.66	36.58	293.63	0.62



VES Survey International
West Texas
(432) 563-5444
Surveyor: Jordan Shelleby
Bradley 8 Fee 7H / API 30-015-42886



VES Survey Date: 03/02/2015



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

March 9, 2015

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

RE: Bradley 8 Fee 7H
165' FSL & 1650' FEL
Sec. 8, T19S, R26E
Eddy County, New Mexico

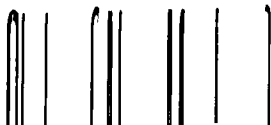
Dear Sir,

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". The signature is written in a cursive, flowing style.

Chris Graham
Drilling Superintendent



BRADLEY 8 FEE # 7H

Date	Depth	Deviation	Direction	TVD	Horiz
2/28/2015	200	0.90	0.00	0.00	0.00
2/28/2015	410	1.10	0.00	0.00	0.00
2/28/2015	682	1.10	0.00	0.00	0.00
3/1/2015	934	1.10	0.00	0.00	0.00
3/1/2015	1154	1.40	0.00	0.00	0.00
3/2/2015	1403	0.80	0.00	0.00	0.00
3/2/2015	1844	0.50	0.00	0.00	0.00
3/2/2015	2253	0.50	0.00	0.00	0.00
3/3/2015	2412	0.50	307.60	0.00	0.00
3/3/2015	2443	1.50	358.30	0.00	0.00
3/3/2015	2475	5.40	359.60	0.00	0.00
3/3/2015	2537	12.20	358.60	0.00	0.00
3/3/2015	2568	15.00	358.10	0.00	0.00
3/3/2015	2600	17.10	357.60	0.00	0.00
3/3/2015	2663	23.30	357.40	0.00	0.00
3/3/2015	2695	25.70	357.50	0.00	0.00
3/3/2015	2727	26.40	358.80	0.00	0.00
3/4/2015	2789	31.00	1.10	2768.00	0.00
3/4/2015	2851	34.50	1.50	2820.00	0.00
3/4/2015	2914	40.90	359.40	2870.00	0.00
3/4/2015	2978	48.00	358.30	2916.00	0.00
3/4/2015	3073	58.30	358.70	2972.00	0.00
3/4/2015	3099	51.80	358.40	2935.00	0.00
3/4/2015	3136	65.80	358.80	0.00	0.00
3/4/2015	3168	69.00	358.20	0.00	0.00
3/4/2015	3199	72.00	358.70	0.00	0.00
3/4/2015	3313	84.60	1.90	3047.97	540.82
3/4/2015	3313	88.70	0.20	3053.90	635.47
3/4/2015	3345	85.90	2.20	3050.12	572.65
3/4/2015	3349	82.70	1.50	0.00	0.00
3/4/2015	3376	86.70	1.80	3052.62	603.53
3/4/2015	3439	89.80	359.60	3054.31	666.46
3/5/2015	3502	90.80	359.50	3053.00	0.00
3/5/2015	3596	91.60	359.60	3052.00	0.00
3/5/2015	3690	90.60	358.70	3050.00	0.00
3/5/2015	3784	90.80	358.80	3049.00	0.00
3/5/2015	3879	91.00	359.00	3047.00	0.00
3/5/2015	3973	91.00	359.00	3045.00	0.00
3/5/2015	4067	91.50	359.00	0.00	0.00
3/5/2015	4161	91.70	359.40	0.00	0.00
3/5/2015	4255	91.80	359.60	0.00	0.00
3/5/2015	4350	91.70	359.60	0.00	0.00

Date	Depth	Deviation	Direction	TVD	Horiz
3/5/2015	4445	96.60	358.60	0.00	0.00
3/5/2015	4540	90.70	358.70	0.00	0.00
3/5/2015	4636	90.60	359.20	0.00	0.00
3/5/2015	4825	90.40	358.00	0.00	0.00
3/6/2015	4920	91.20	357.00	3027.00	0.00
3/6/2015	5016	91.40	356.90	3025.00	0.00
3/6/2015	5111	91.40	357.00	3023.00	0.00
3/6/2015	5206	91.60	3020.00	0.00	0.00
3/6/2015	5397	91.20	358.80	0.00	0.00
3/6/2015	5492	91.10	359.30	0.00	0.00
3/6/2015	5586	91.20	359.50	0.00	0.00
3/6/2015	5682	91.40	359.60	0.00	0.00
3/6/2015	5776	91.60	359.90	0.00	0.00
3/6/2015	5872	91.60	0.10	0.00	0.00
3/6/2015	5966	90.80	359.10	0.00	0.00
3/6/2015	6060	90.90	359.30	0.00	0.00
3/6/2015	6155	91.40	359.00	0.00	0.00
3/6/2015	6250	91.70	359.00	0.00	0.00
3/6/2015	6345	90.60	359.10	0.00	0.00
3/6/2015	6440	90.80	359.30	0.00	0.00
3/7/2015	6535	91.20	359.40	2992.00	0.00
3/7/2015	6629	91.70	359.20	2990.00	0.00
3/7/2015	6724	90.70	359.80	2988.00	0.00
3/7/2015	6914	90.00	359.30	0.00	0.00
3/7/2015	7002	91.30	357.90	0.00	0.00
3/7/2015	7097	91.70	357.50	0.00	0.00
3/7/2015	7193	91.20	358.30	0.00	0.00
3/7/2015	7298	91.30	358.70	0.00	0.00
3/7/2015	7525	92.00	358.60	0.00	0.00

EOF



COG Operating LLC

Eddy County, NM (NAD27 NME)

Bradley 8 Fee

#7H

WB1 / Job #1513074

Design: Surveys (Silver Oak 3)

Standard Survey Report

09 March, 2015





Phoenix
Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #7H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3391.00usft (Silver Oak 3)
Site:	Bradley 8 Fee	MD Reference:	KB @ 3391.00usft (Silver Oak 3)
Well:	#7H	North Reference:	Grid
Wellbore:	WB1 / Job #1513074	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	Bradley 8 Fee		
Site Position:	From:	Map	
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
Northing:	606,797.50 usft	Latitude:	32° 40' 5.40482 N
Easting:	478,847.80 usft	Longitude:	104° 24' 7.45386 W
Grid Convergence:	-0.04 °		

Well	#7H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Ground Level:	3,373.00 usft
		Latitude:	32° 40' 5.51950 N
		Longitude:	104° 24' 0.32006 W

Wellbore	WB1 / Job #1513074				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/26/2015	7.61	60.36	48,349

Design	Surveys (Silver Oak 3)			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	358.55

Survey Program	Date: 3/9/2015				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	2,332.00	VES Gyro Surveys (WB1 / Job #1513074)	NS-GYRO-MS	North sensing gyrocompassing m/s	
2,412.00	7,584.00	Phoenix MWD Survey (WB1 / Job #15130)	PHX+MWD+IGRF	PHX+MWD+IGRF v3: standard declination	

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)
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100.00	0.38	276.80	100.00	0.04	-0.33	0.05	0.38	0.38	0.00
	200.00	0.53	253.07	200.00	-0.06	-1.10	-0.03	0.24	0.15	-23.73
	300.00	1.05	284.36	299.99	0.04	-2.43	0.10	0.66	0.52	31.29
	400.00	1.21	305.49	399.97	0.88	-4.18	0.98	0.44	0.16	21.13
	500.00	1.38	289.90	499.94	1.90	-6.17	2.06	0.39	0.17	-15.59
	600.00	1.65	320.75	599.91	3.42	-8.21	3.63	0.85	0.27	30.85
	700.00	1.11	312.36	699.88	5.19	-9.84	5.44	0.58	-0.54	-8.39
	800.00	1.42	310.62	799.86	6.65	-11.50	6.94	0.31	0.31	-1.74
	900.00	1.30	297.35	899.83	7.98	-13.44	8.32	0.34	-0.12	-13.27



Phoenix
Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #7H
Project:	Eddy County, NM (NAD27, NME)	TVD Reference:	KB @ 3391.00usft (Silver Oak 3)
Site:	Bradley 8 Fee	MD Reference:	KB @ 3391.00usft (Silver Oak 3)
Well:	#7H	North Reference:	Grid
Wellbore:	WVB1 / Job #1513074	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	1.27	291.75	999.80	8.91	-15.48	9.30	0.13	-0.03	-5.60
1,100.00	1.17	277.43	1,099.78	9.45	-17.52	9.89	0.32	-0.10	-14.32
1,200.00	1.04	285.05	1,199.76	9.82	-19.41	10.31	0.20	-0.13	7.62
1,300.00	1.10	271.22	1,299.74	10.08	-21.25	10.61	0.26	0.06	-13.83
1,400.00	0.86	276.01	1,399.73	10.18	-22.95	10.75	0.25	-0.24	4.79
1,500.00	0.69	277.12	1,499.72	10.33	-24.30	10.94	0.17	-0.17	1.11
1,600.00	0.79	283.04	1,599.71	10.56	-25.57	11.20	0.13	0.10	5.92
1,700.00	0.52	292.69	1,699.71	10.89	-26.66	11.56	0.29	-0.27	9.65
1,800.00	0.66	287.61	1,799.70	11.24	-27.62	11.93	0.15	0.14	-5.08
1,900.00	0.62	290.04	1,899.69	11.60	-28.68	12.32	0.05	-0.04	2.43
2,000.00	0.62	306.14	1,999.69	12.10	-29.63	12.85	0.17	0.00	16.10
2,100.00	0.65	312.77	2,099.68	12.81	-30.48	13.58	0.08	0.03	6.63
2,200.00	0.89	291.67	2,199.67	13.48	-31.62	14.28	0.37	0.24	-21.10
2,300.00	1.08	307.60	2,299.66	14.34	-33.09	15.17	0.33	0.19	15.93
2,332.00	0.89	305.19	2,331.65	14.67	-33.53	15.51	0.61	-0.59	-7.53
Tie-on to VES Gyro Survey									
2,412.00	0.50	307.60	2,411.65	15.24	-34.31	16.10	0.49	-0.49	3.01
First Phoenix MWD Survey									
2,443.00	1.50	358.30	2,442.64	15.73	-34.43	16.59	4.02	3.23	163.55
2,475.00	5.40	359.60	2,474.58	17.65	-34.46	18.52	12.19	12.19	4.06
2,506.00	8.70	359.10	2,505.34	21.46	-34.50	22.32	10.65	10.65	-1.61
2,537.00	12.20	358.60	2,535.82	27.08	-34.62	27.94	11.29	11.29	-1.61
2,568.00	15.00	358.10	2,565.95	34.36	-34.83	35.23	9.04	9.03	-1.61
2,600.00	17.10	357.60	2,596.70	43.20	-35.17	44.08	6.58	6.56	-1.56
2,632.00	20.00	357.30	2,627.03	53.37	-35.62	54.26	9.07	9.06	-0.94
2,663.00	23.30	357.40	2,655.84	64.80	-36.15	65.69	10.65	10.65	0.32
2,695.00	25.70	357.50	2,684.96	78.05	-36.74	78.96	7.50	7.50	0.31
2,727.00	26.40	358.80	2,713.71	92.10	-37.19	93.01	2.82	2.19	4.06
2,758.00	28.30	0.40	2,741.24	106.34	-37.28	107.25	6.57	6.13	5.16
2,789.00	31.00	1.10	2,768.18	121.67	-37.08	122.57	8.78	8.71	2.26
2,820.00	33.00	1.90	2,794.47	138.09	-36.65	138.97	6.59	6.45	2.58
2,851.00	34.50	1.50	2,820.24	155.30	-36.14	156.17	4.89	4.84	-1.29
2,883.00	37.30	0.30	2,846.16	174.06	-35.85	174.91	9.02	8.75	-3.75
2,914.00	40.90	359.40	2,870.22	193.61	-35.91	194.46	11.76	11.61	-2.90
2,946.00	44.10	358.90	2,893.81	215.22	-36.23	216.07	10.06	10.00	-1.56
2,978.00	48.00	358.30	2,916.01	238.25	-36.80	239.11	12.26	12.19	-1.88
3,009.00	51.80	358.40	2,935.98	261.95	-37.48	262.81	12.26	12.26	0.32
3,041.00	55.10	358.60	2,955.03	287.64	-38.15	288.52	10.32	10.31	0.63
3,073.00	58.30	358.70	2,972.60	314.38	-38.78	315.26	10.00	10.00	0.31
3,104.00	61.80	358.30	2,988.07	341.23	-39.48	342.12	11.35	11.29	-1.29
3,136.00	65.50	358.00	3,002.27	369.88	-40.41	370.78	11.59	11.56	-0.94
3,168.00	69.00	358.20	3,014.64	399.37	-41.39	400.29	10.95	10.94	0.63
3,199.00	72.00	358.70	3,024.99	428.58	-42.18	429.51	9.80	9.68	1.61



Phoenix
Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #7H
Project:	Eddy County, NM (NAD27.NME)	TVD Reference:	KB @ 3391.00usft (Silver Oak 3)
Site:	Bradley 8 Fee:	MD Reference:	KB @ 3391.00usft (Silver Oak 3)
Well:	#7H	North Reference:	Grid
Wellbore:	WB1 / Job #1513074	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)
3,231.00	75.20	0.00	3,034.03	459.27	-42.52	460.20	10.73	10.00	4.06
3,262.00	79.30	1.10	3,040.87	489.50	-42.23	490.41	13.67	13.23	3.55
3,294.00	82.70	1.50	3,045.87	521.09	-41.51	521.97	10.70	10.63	1.25
3,313.00	84.60	1.90	3,047.97	539.96	-40.95	540.83	10.22	10.00	2.11
3,345.00	85.90	2.20	3,050.62	571.83	-39.81	572.66	4.17	4.06	0.94
3,376.00	86.70	1.80	3,052.62	602.75	-38.73	603.54	2.88	2.58	-1.29
3,408.00	88.70	0.20	3,053.91	634.72	-38.17	635.48	8.00	6.25	-5.00
3,439.00	89.80	359.60	3,054.31	665.71	-38.23	666.47	4.04	3.55	-1.94
3,502.00	90.80	359.50	3,053.98	728.71	-38.72	729.46	1.60	1.59	-0.16
3,596.00	91.60	359.60	3,052.01	822.68	-39.46	823.42	0.86	0.85	0.11
3,690.00	90.60	358.70	3,050.21	916.65	-40.86	917.40	1.43	-1.06	-0.96
3,784.00	90.80	358.80	3,049.06	1,010.63	-42.91	1,011.39	0.24	0.21	0.11
3,879.00	91.00	359.00	3,047.57	1,105.60	-44.73	1,106.37	0.30	0.21	0.21
3,973.00	91.10	359.00	3,045.85	1,199.57	-46.37	1,200.36	0.11	0.11	0.00
4,067.00	91.30	359.00	3,043.88	1,293.53	-48.01	1,294.33	0.21	0.21	0.00
4,161.00	91.70	359.40	3,041.42	1,387.49	-49.32	1,388.29	0.60	0.43	0.43
4,255.00	91.80	359.60	3,038.55	1,481.44	-50.14	1,482.24	0.24	0.11	0.21
4,350.00	91.70	359.60	3,035.65	1,576.40	-50.81	1,577.18	0.11	-0.11	0.00
4,445.00	90.90	358.60	3,033.49	1,671.36	-52.30	1,672.15	1.35	-0.84	-1.05
4,540.00	90.70	358.70	3,032.16	1,766.32	-54.54	1,767.14	0.24	-0.21	0.11
4,636.00	90.60	359.20	3,031.07	1,862.30	-56.29	1,863.13	0.53	-0.10	0.52
4,730.00	90.60	359.30	3,030.09	1,956.29	-57.52	1,957.11	0.11	0.00	0.11
4,825.00	90.40	358.00	3,029.26	2,051.25	-59.76	2,052.11	1.38	-0.21	-1.37
4,920.00	91.20	357.00	3,027.94	2,146.15	-63.91	2,147.08	1.35	0.84	-1.05
5,016.00	91.40	356.90	3,025.76	2,241.99	-69.01	2,243.02	0.23	0.21	-0.10
5,111.00	91.40	357.00	3,023.44	2,336.83	-74.07	2,337.95	0.11	0.00	0.11
5,206.00	91.60	356.60	3,020.95	2,431.65	-79.37	2,432.88	0.47	0.21	-0.42
5,302.00	91.30	358.30	3,018.52	2,527.52	-83.64	2,528.82	1.80	-0.31	1.77
5,397.00	91.20	358.80	3,016.45	2,622.46	-86.04	2,623.80	0.54	-0.11	0.53
5,492.00	91.10	359.30	3,014.54	2,717.43	-87.61	2,718.78	0.54	-0.11	0.53
5,586.00	91.20	359.50	3,012.65	2,811.41	-88.60	2,812.75	0.24	0.11	0.21
5,682.00	91.40	359.60	3,010.48	2,907.38	-89.35	2,908.71	0.23	0.21	0.10
5,776.00	91.60	359.90	3,008.02	3,001.35	-89.76	3,002.66	0.38	0.21	0.32
5,872.00	91.60	0.10	3,005.33	3,097.31	-89.76	3,098.59	0.21	0.00	0.21
5,966.00	90.80	359.10	3,003.37	3,191.28	-90.42	3,192.55	1.36	-0.85	-1.06
6,060.00	90.90	359.30	3,001.97	3,285.26	-91.73	3,286.53	0.24	0.11	0.21
6,155.00	91.40	359.00	3,000.07	3,380.23	-93.14	3,381.51	0.61	0.53	-0.32
6,250.00	91.70	359.00	2,997.50	3,475.19	-94.80	3,476.47	0.32	0.32	0.00
6,345.00	90.60	359.10	2,995.59	3,570.15	-96.37	3,571.45	1.16	-1.16	0.11
6,440.00	90.80	359.30	2,994.43	3,665.14	-97.70	3,666.43	0.30	0.21	0.21
6,535.00	91.20	359.40	2,992.77	3,760.11	-98.78	3,761.41	0.43	0.42	0.11
6,629.00	91.70	359.20	2,990.39	3,854.08	-99.92	3,855.37	0.57	0.53	-0.21
6,724.00	90.70	359.80	2,988.40	3,949.05	-100.75	3,950.34	1.23	-1.05	0.63
6,819.00	91.40	0.20	2,986.66	4,044.03	-100.75	4,045.29	0.85	0.74	0.42



Phoenix
Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well: #7H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3391.00usft (Silver Oak 3)
Site:	Bradley 8 Fee	MD Reference:	KB @ 3391.00usft (Silver Oak 3)
Well:	#7H	North Reference:	Grid
Wellbore:	WB1 / Job #1513074	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)
6,914.00	91.00	359.30	2,984.67	4,139.01	-101.17	4,140.25	1.04	-0.42	-0.95
7,002.00	91.30	357.90	2,982.91	4,226.97	-103.32	4,228.23	1.63	0.34	-1.59
7,097.00	91.70	357.50	2,980.42	4,321.86	-107.13	4,323.18	0.60	0.42	-0.42
7,193.00	91.20	358.30	2,977.99	4,417.76	-110.64	4,419.14	0.98	-0.52	0.83
7,287.00	91.30	358.20	2,975.94	4,511.69	-113.51	4,513.12	0.15	0.11	-0.11
7,382.00	91.50	358.30	2,973.62	4,606.62	-116.41	4,608.09	0.24	0.21	0.11
7,477.00	91.70	358.30	2,970.97	4,701.54	-119.23	4,703.05	0.21	0.21	0.00
7,525.00	92.00	358.60	2,969.42	4,749.50	-120.53	4,751.03	0.88	0.63	0.63
Final Phoenix MWD Survey									
7,584.00	92.00	358.60	2,967.36	4,808.45	-121.97	4,809.99	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)	
2,332.00	2,331.65	14.67	-33.53	Tie-on to VES Gyro Survey
2,412.00	2,411.65	15.24	-34.31	First Phoenix MWD Survey
7,525.00	2,969.42	4,749.50	-120.53	Final Phoenix MWD Survey
7,584.00	2,967.36	4,808.45	-121.97	Projection to TD

Checked By: _____ Approved By: _____ Date: _____