

Results of Directional Survey

API number:	30-025-40794		
OGRID:		Operator:	COG OPERATING LLC
		Property:	BEN LILLY STATE COM # 2H

surface	ULSTR:	B <i>w/o</i>	02	T 21S	R 33E
				330 FSL	1980 FEL

BH Loc	ULSTR:	B	02	T 21S	R 33E
18640	MD	11464.9	TVD	350 FNL	2079 FEL
				7572 FSL	

7922'

Top Perf/OH	ULSTR:	O	02	T 21S	R 33E
11742	MD	11530.6	TVD	680 FSL	2011 FEL

Bot Perf/OH	ULSTR:	B	02	T 21S	R 33E
18583	MD	11466.9	TVD	407 FNL	2079 FEL
				7515 FSL	

	MD	N/S	E/W	VD
	11679	289.40	-32.80	11512.5
TOP PERFS/OH	11742	349.60	-30.50	11530.60
	11742	349.60	-30.50	11530.60
	18453	7054.80	-98.20	11470.90
BOT PERFS/OH	18583	7184.71	-98.55	11466.92
	18600	7201.70	-98.60	11466.40

NEXT TO LAST	18600	7201.70	-98.60	11466.40
LAST READING	18640	7241.70	-99.00	11464.90
TD	18640	7241.70	-99.00	11464.90

Surface Location	330	FS	1980	FE
Projected BHL	7572	FS	2079	FE
Location of				
Top Perfs/OH	680	FS	2011	FE
Bottom Perfs/OH	7515	FS	2079	FE

SUMMARY of Subsurface Locations

Surface Location	O-02-21S-33E	330	FS	1980	FE	Vert. Depth
Top Perfs/OH	O-02-21S-33E	680	FS	2011	FE	11530.60
Bottom Perfs/OH	B-02-21S-33E	7515	FS	2079	FE	11466.92
Projected TD	B-02-21S-33E	7572	FS	2079	FE	11464.90

JUN 27 2013



A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

February 11, 2013

HOEBS OCD

MAY 15 2013

RECEIVED

COG Operating LLC (Concho)
One Concho Center
600 W. Illinois Avenue
Midland, TX 79701

Attn: Kanicia Castillo

Re: Ben Lilly State Com No 002H

30-025-40794

Please find enclosed a copy of the survey from 0' to 10,960' ran on the above referenced well.

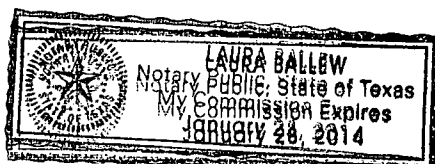
If I can be of any further service, please do not hesitate to call me at 800-606-4976.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 11th day of February
A.D., 2013, by Keith Havelka.



Laura Balley
Notary Public, State of Texas

Company: COG Operating LLC (Concho)
Lease/Well: Ben Lilly State Com/No 002H

30-025-40784



Rig Name: Precision 77
State/County: New Mexico/Lea
Latitude: 32.50, Longitude: -103.54
GRID North is 0.43 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB= 30'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 2/12/2013 / 14:57

Vaughn Energy Services
Midland, Texas
432-563-5444

Surveyor: Tim Dillon
Ben Lilly State Com No 002H / API 30-025-40794

HOBBS OCD

MAY 15 2013

RECEIVED

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W 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	****
100.00	0.09	43.66	100.00	0.05	0.05	0.08	43.66	0.09
200.00	0.17	65.97	200.00	0.17	0.24	0.29	54.77	0.10
300.00	0.33	71.74	300.00	0.32	0.65	0.72	63.74	0.16
400.00	0.47	77.50	400.00	0.50	1.32	1.41	69.32	0.14
500.00	0.56	70.07	499.99	0.75	2.18	2.30	70.92	0.11
600.00	0.65	62.65	599.99	1.18	3.13	3.35	69.41	0.12
700.00	0.71	45.47	699.98	1.87	4.08	4.49	65.34	0.21
800.00	0.78	28.29	799.97	2.91	4.84	5.65	59.03	0.23
900.00	0.75	28.45	899.96	4.08	5.48	6.83	53.32	0.03
1000.00	0.74	28.60	999.95	5.22	6.10	8.03	49.42	0.01
1100.00	0.71	25.34	1099.95	6.35	6.67	9.21	46.42	0.05
1200.00	0.70	22.07	1199.94	7.48	7.17	10.36	43.78	0.04
1300.00	0.73	15.70	1299.93	8.66	7.57	11.50	41.17	0.08
1400.00	0.75	9.33	1399.92	9.91	7.85	12.64	38.37	0.09
1500.00	0.86	0.40	1499.91	11.31	7.96	13.83	35.13	0.17
1600.00	0.98	351.46	1599.90	12.91	7.84	15.10	31.26	0.18
1700.00	0.87	349.09	1699.89	14.50	7.57	16.36	27.56	0.11
1800.00	0.79	346.72	1799.88	15.92	7.27	17.50	24.53	0.09

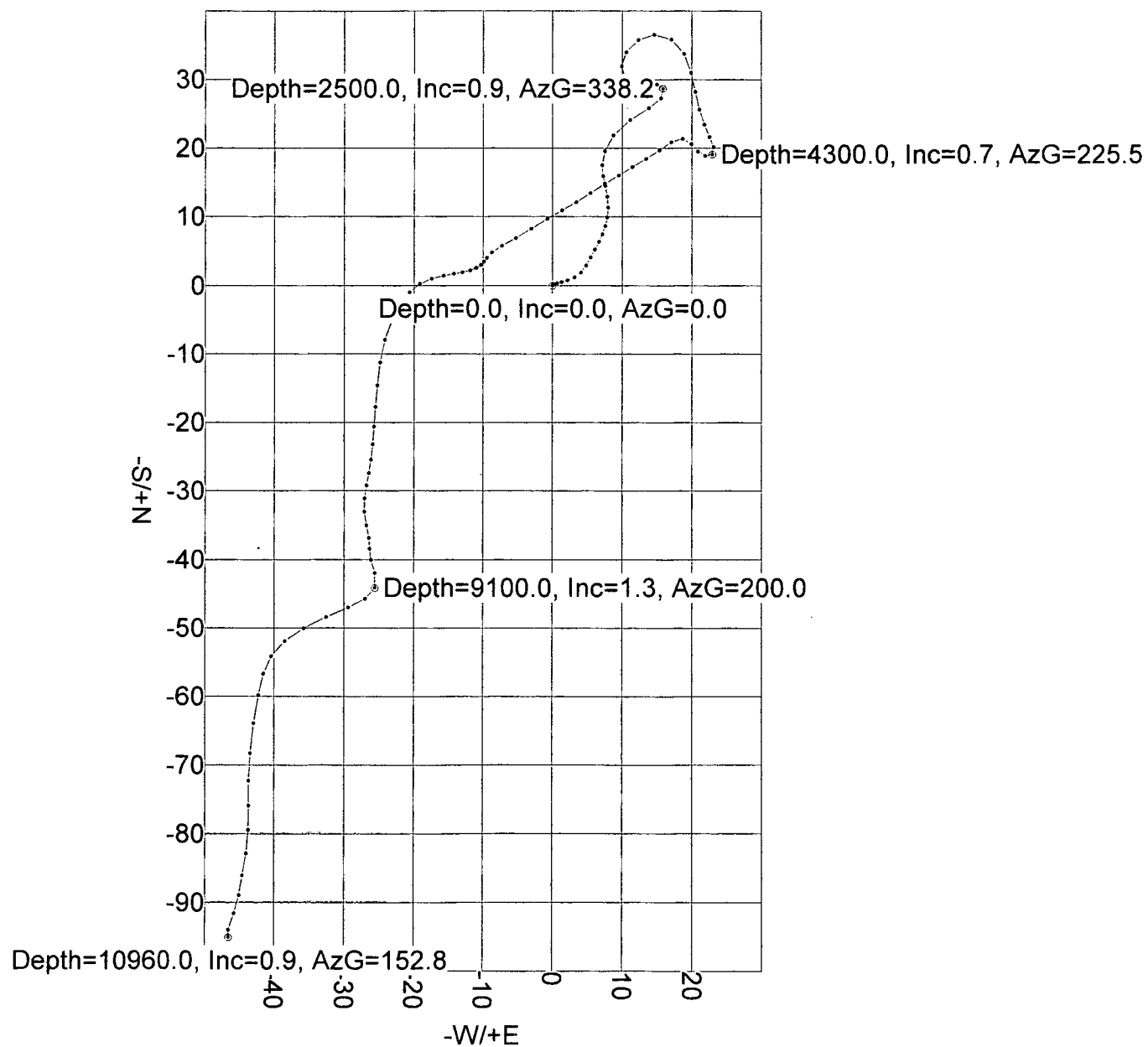
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	1.06	1.65	1899.86	17.51	7.13	18.91	22.16	0.36
2000.00	1.33	16.58	1999.84	19.55	7.49	20.94	20.97	0.41
2100.00	1.72	36.54	2099.81	21.87	8.71	23.54	21.73	0.65
2200.00	2.10	56.51	2199.75	24.08	11.14	26.53	24.82	0.76
2300.00	1.57	57.78	2299.70	25.82	13.82	29.29	28.16	0.54
2400.00	1.05	39.04	2399.67	27.26	15.55	31.39	29.71	0.66
2500.00	0.87	338.16	2499.66	28.68	15.85	32.77	28.93	0.99
2600.00	0.69	261.27	2599.66	29.29	14.97	32.90	27.07	0.98
2700.00	0.72	270.18	2699.65	29.20	13.75	32.28	25.22	0.11
2800.00	0.74	277.10	2799.64	29.29	12.49	31.84	23.09	0.09
2900.00	0.73	299.59	2899.63	29.68	11.29	31.76	20.82	0.29
3000.00	0.72	322.08	2999.62	30.49	10.35	32.20	18.74	0.28
3100.00	1.09	357.54	3099.61	31.94	9.92	33.45	17.25	0.66
3200.00	1.47	33.00	3199.59	33.97	10.57	35.58	17.29	0.86
3300.00	1.44	55.48	3299.56	35.76	12.31	37.82	19.00	0.57
3400.00	1.42	87.95	3399.53	36.52	14.59	39.32	21.78	0.80
3500.00	1.58	120.93	3499.50	35.85	17.02	39.68	25.39	0.87
3600.00	1.74	153.91	3599.46	33.77	18.87	38.69	29.19	0.96
3700.00	1.67	166.50	3699.41	30.99	19.88	36.82	32.68	0.38
3800.00	1.60	169.09	3799.37	28.20	20.48	34.86	35.99	0.10
3900.00	1.42	164.15	3899.34	25.64	21.09	33.20	39.43	0.22
4000.00	1.24	159.21	3999.31	23.44	21.81	32.02	42.93	0.21
4100.00	1.00	158.43	4099.29	21.62	22.51	31.21	46.16	0.23
4200.00	0.79	157.64	4199.28	20.16	23.10	30.66	48.88	0.21
4300.00	0.73	225.52	4299.27	19.08	22.90	29.81	50.21	0.85
4400.00	0.67	293.40	4399.26	18.86	21.91	28.91	49.28	0.79
4500.00	0.76	310.05	4499.26	19.52	20.86	28.57	46.90	0.23
4600.00	0.86	326.70	4599.25	20.58	19.94	28.65	44.10	0.25
4700.00	1.00	279.50	4699.24	21.35	18.67	28.36	41.18	0.75
4800.00	1.13	232.30	4799.22	20.89	17.03	26.95	39.20	0.86
4900.00	1.26	235.72	4899.20	19.66	15.34	24.94	37.96	0.14
5000.00	1.34	239.14	4999.17	18.44	13.43	22.81	36.06	0.11
5100.00	1.32	238.46	5099.15	17.24	11.44	20.69	33.57	0.03
5200.00	1.31	237.79	5199.12	16.03	9.49	18.63	30.64	0.02
5300.00	1.37	238.01	5299.09	14.78	7.51	16.58	26.93	0.06
5400.00	1.43	236.24	5399.06	13.45	5.45	14.52	22.06	0.07
5500.00	1.37	238.35	5499.03	12.13	3.39	12.59	15.63	0.08
5600.00	1.33	240.47	5599.00	10.93	1.36	11.01	7.10	0.06
5700.00	1.48	238.90	5698.97	9.68	-0.76	9.71	355.50	0.15

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	1.61	237.33	5798.94	8.25	-3.06	8.80	339.69	0.14
5900.00	1.40	239.67	5898.90	6.88	-5.30	8.68	322.39	0.22
6000.00	1.21	242.00	5998.88	5.76	-7.29	9.29	308.33	0.20
6100.00	0.81	227.93	6098.86	4.79	-8.75	9.97	298.71	0.47
6200.00	0.41	213.86	6198.85	4.02	-9.47	10.29	293.00	0.43
6300.00	0.40	221.67	6298.85	3.47	-9.90	10.49	289.29	0.06
6400.00	0.38	229.47	6398.85	2.99	-10.38	10.80	286.08	0.05
6500.00	0.50	241.24	6498.85	2.57	-11.02	11.31	283.12	0.15
6600.00	0.62	253.02	6598.84	2.20	-11.91	12.11	280.47	0.16
6700.00	0.70	257.62	6698.84	1.91	-13.02	13.16	278.36	0.10
6800.00	0.76	262.22	6798.83	1.69	-14.27	14.37	276.76	0.08
6900.00	0.94	258.09	6898.82	1.43	-15.73	15.79	275.21	0.19
7000.00	1.09	253.96	6998.80	1.00	-17.44	17.47	273.29	0.17
7100.00	1.11	237.84	7098.78	0.23	-19.17	19.18	270.67	0.31
7200.00	1.12	221.73	7198.76	-1.02	-20.64	20.67	267.18	0.31
7300.00	1.37	212.73	7298.74	-2.75	-21.94	22.11	262.85	0.32
7400.00	1.65	203.74	7398.71	-5.08	-23.17	23.71	257.64	0.36
7500.00	1.84	195.60	7498.66	-7.94	-24.17	25.44	251.83	0.31
7600.00	2.03	187.46	7598.60	-11.24	-24.84	27.26	245.66	0.33
7700.00	1.87	185.85	7698.54	-14.62	-25.23	29.16	239.92	0.17
7800.00	1.73	184.23	7798.50	-17.74	-25.51	31.07	235.18	0.15
7900.00	1.55	184.29	7898.45	-20.60	-25.72	32.96	231.31	0.18
8000.00	1.40	184.34	7998.42	-23.17	-25.92	34.76	228.20	0.16
8100.00	1.22	187.83	8098.40	-25.43	-26.15	36.48	225.80	0.20
8200.00	1.04	191.31	8198.38	-27.37	-26.47	38.08	224.05	0.19
8300.00	1.08	189.11	8298.36	-29.19	-26.80	39.63	222.56	0.06
8400.00	1.11	186.91	8398.34	-31.08	-27.07	41.22	221.05	0.05
8500.00	1.14	176.16	8498.32	-33.03	-27.12	42.74	219.38	0.21
8600.00	1.17	165.42	8598.30	-35.01	-26.79	44.08	217.43	0.22
8700.00	0.98	172.81	8698.28	-36.84	-26.43	45.34	215.66	0.23
8800.00	0.82	180.20	8798.27	-38.41	-26.33	46.57	214.43	0.20
8900.00	1.05	169.48	8898.26	-40.03	-26.16	47.82	213.16	0.29
9000.00	1.29	158.77	8998.24	-41.98	-25.59	49.17	211.36	0.32
9100.00	1.32	200.05	9098.21	-44.11	-25.57	50.99	210.10	0.92
9200.00	1.34	241.32	9198.19	-45.75	-26.99	53.12	210.54	0.94
9300.00	1.76	244.32	9298.15	-46.98	-29.41	55.43	212.05	0.43
9400.00	2.17	247.32	9398.09	-48.38	-32.54	58.30	213.93	0.41
9500.00	1.98	238.81	9498.03	-50.00	-35.76	61.47	215.57	0.36
9600.00	1.79	230.29	9597.97	-51.89	-38.44	64.57	216.53	0.34

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
9700.00	1.67	212.27	9697.93	-54.12	-40.42	67.55	216.75	0.55
9800.00	1.56	194.24	9797.89	-56.68	-41.53	70.27	216.23	0.52
9900.00	2.11	191.22	9897.84	-59.80	-42.23	73.21	215.22	0.56
10000.00	2.64	188.20	9997.75	-63.88	-42.91	76.96	213.89	0.54
10100.00	2.41	184.83	10097.65	-68.26	-43.42	80.90	212.46	0.27
10200.00	2.19	181.47	10197.57	-72.27	-43.64	84.42	211.13	0.26
10300.00	1.98	179.06	10297.51	-75.90	-43.66	87.57	209.91	0.23
10400.00	2.06	181.55	10397.45	-79.43	-43.68	90.65	208.81	0.12
10500.00	1.89	189.38	10497.39	-82.85	-44.00	93.81	207.97	0.32
10600.00	1.84	190.42	10597.33	-86.06	-44.56	96.91	207.37	0.06
10700.00	1.51	187.95	10697.29	-88.94	-45.03	99.69	206.85	0.34
10800.00	1.66	202.53	10797.25	-91.58	-45.77	102.39	206.55	0.43
10900.00	1.27	194.60	10897.22	-94.00	-46.61	104.92	206.37	0.44
10960.00	0.89	152.82	10957.21	-95.06	-46.56	105.85	206.10	1.42



Vaughn Energy Services
Midland, Texas
432-563-5444
Surveyor: Tim Dillon
Ben Lilly State Com No 002H / API 30-025-40794



VES Survey Date: 02/06/2013

COG Operating LLC

Lea County, NM
Ben Lilly 2 State
#2H

ST1

Design: ST1

Standard Survey Report

27 February, 2013

30-025-40784
HOBBS OCD

MAY 15 2013

RECEIVED



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3837.9usft (Precision #77 - 30' KB)
Site:	Ben Lilly 2 State	MD Reference:	WELL @ 3837.9usft (Precision #77 - 30' KB)
Well:	#2H	North Reference:	Grid
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Houston R5000 Database

Project	Lea County, NM		
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	Ben Lilly 2 State				
Site Position:		Northing:	547,009.01 usft	Latitude:	32° 30' 4.828 N
From:	Map	Easting:	744,386.01 usft	Longitude:	103° 32' 26.323 W
Position Uncertainty:	2.0 usft	Slot Radius:	8-1/8 "	Grid Convergence:	0.43 °

Well	#2H					
Well Position	+N/-S	0.0 usft	Northing:	547,009.01 usft	Latitude:	32° 30' 4.828 N
	+E/-W	0.0 usft	Easting:	744,386.01 usft	Longitude:	103° 32' 26.323 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,807.9 usft

Wellbore	ST1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/10/2013	7.39	60.41	48,618

Design	ST1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	11,450.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	353.54	

Survey Program	Date	2/27/2013			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	10,900.0	Survey #1 - VES1 (OH)	CB-GYRO-MS	Camera based gyro multishot	
10,944.0	11,450.0	Survey #2 - Crescent1 (OH)	MWD	MWD - Standard	
11,488.0	18,600.0	Survey #3 - Crescent2 (ST1)	MWD	MWD - Standard	
18,640.0	18,640.0	Survey #4 - PTB (ST1)	MWD	MWD - Standard	

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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.09	43.66	100.0	0.1	0.1	0.1	0.09	0.09	0.00	
200.0	0.17	65.97	200.0	0.2	0.2	0.1	0.09	0.08	22.31	
300.0	0.33	71.74	300.0	0.3	0.7	0.2	0.16	0.16	5.77	
400.0	0.47	77.50	400.0	0.5	1.3	0.4	0.15	0.14	5.76	
500.0	0.56	70.07	500.0	0.8	2.2	0.5	0.11	0.09	-7.43	
600.0	0.65	62.65	600.0	1.2	3.1	0.8	0.12	0.09	-7.42	
700.0	0.71	45.47	700.0	1.9	4.1	1.4	0.21	0.06	-17.18	

Survey Report



Company: COG Operating LLC
Project: Lea County, NM
Site: Ben Lilly 2 State
Well: #2H
Wellbore: ST1
Design: ST1

Local Co-ordinate Reference: Well #2H
TVD Reference: WELL @ 3837.9usft (Precision #77 - 30' KB)
MD Reference: WELL @ 3837.9usft (Precision #77 - 30' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Houston R5000 Database

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)
800.0	0.78	28.29	800.0	2.9	4.9	2.3	0.23	0.07	-17.18
900.0	0.75	28.45	900.0	4.1	5.5	3.4	0.03	-0.03	0.16
1,000.0	0.74	28.60	1,000.0	5.2	6.1	4.5	0.01	-0.01	0.15
1,100.0	0.71	25.34	1,099.9	6.4	6.7	5.6	0.05	-0.03	-3.26
1,200.0	0.70	22.07	1,199.9	7.5	7.2	6.6	0.04	-0.01	-3.27
1,300.0	0.73	15.70	1,299.9	8.7	7.6	7.8	0.08	0.03	-6.37
1,400.0	0.75	9.33	1,399.9	9.9	7.9	9.0	0.08	0.02	-6.37
1,500.0	0.86	0.40	1,499.9	11.3	8.0	10.4	0.17	0.11	-8.93
1,600.0	0.98	351.46	1,599.9	12.9	7.9	12.0	0.19	0.12	-8.94
1,700.0	0.87	349.09	1,699.9	14.5	7.6	13.6	0.12	-0.11	-2.37
1,800.0	0.79	346.72	1,799.9	15.9	7.3	15.0	0.09	-0.08	-2.37
1,900.0	1.06	1.65	1,899.9	17.5	7.1	16.6	0.36	0.27	14.93
2,000.0	1.33	16.58	1,999.8	19.6	7.5	18.6	0.41	0.27	14.93
2,100.0	1.72	36.54	2,099.8	21.9	8.7	20.8	0.65	0.39	19.96
2,200.0	2.10	56.51	2,199.8	24.1	11.2	22.7	0.76	0.38	19.97
2,300.0	1.57	57.78	2,299.7	25.8	13.8	24.1	0.53	-0.53	1.27
2,400.0	1.05	39.04	2,399.7	27.3	15.6	25.3	0.67	-0.52	-18.74
2,500.0	0.87	338.16	2,499.7	28.7	15.9	26.7	0.99	-0.18	-60.88
2,600.0	0.69	261.27	2,599.7	29.3	15.0	27.4	0.98	-0.18	-76.89
2,700.0	0.72	270.18	2,699.6	29.2	13.8	27.5	0.11	0.03	8.91
2,800.0	0.74	277.10	2,799.6	29.3	12.5	27.7	0.09	0.02	6.92
2,900.0	0.73	299.59	2,899.6	29.7	11.3	28.2	0.29	-0.01	22.49
3,000.0	0.72	322.08	2,999.6	30.5	10.4	29.1	0.28	-0.01	22.49
3,100.0	1.09	357.54	3,099.6	31.9	9.9	30.6	0.65	0.37	35.46
3,200.0	1.47	33.00	3,199.6	34.0	10.6	32.6	0.86	0.38	35.46
3,300.0	1.44	55.48	3,299.6	35.8	12.3	34.1	0.57	-0.03	22.48
3,400.0	1.42	87.95	3,399.5	36.5	14.6	34.6	0.80	-0.02	32.47
3,500.0	1.58	120.93	3,499.5	35.9	17.0	33.7	0.87	0.16	32.98
3,600.0	1.74	153.91	3,599.5	33.8	18.9	31.4	0.95	0.16	32.98
3,700.0	1.67	166.50	3,699.4	31.0	19.9	28.6	0.38	-0.07	12.59
3,800.0	1.60	169.09	3,799.4	28.2	20.5	25.7	0.10	-0.07	2.59
3,900.0	1.42	164.15	3,899.3	25.6	21.1	23.1	0.22	-0.18	-4.94
4,000.0	1.24	159.21	3,999.3	23.4	21.8	20.8	0.21	-0.18	-4.94
4,100.0	1.00	158.43	4,099.3	21.6	22.5	19.0	0.24	-0.24	-0.78
4,200.0	0.79	157.64	4,199.3	20.2	23.1	17.4	0.21	-0.21	-0.79
4,300.0	0.73	225.52	4,299.3	19.1	22.9	16.4	0.85	-0.06	67.88
4,400.0	0.67	293.40	4,399.3	18.9	21.9	16.3	0.78	-0.06	67.88
4,500.0	0.76	310.05	4,499.3	19.5	20.9	17.1	0.23	0.09	16.65
4,600.0	0.86	326.70	4,599.2	20.6	20.0	18.2	0.25	0.10	16.65
4,700.0	1.00	279.50	4,699.2	21.4	18.7	19.1	0.76	0.14	-47.20
4,800.0	1.13	232.30	4,799.2	20.9	17.0	18.9	0.86	0.13	-47.20
4,900.0	1.26	235.72	4,899.2	19.7	15.4	17.8	0.15	0.13	3.42
5,000.0	1.34	239.14	4,999.2	18.5	13.4	16.8	0.11	0.08	3.42

Survey Report



Company: COG Operating LLC
Project: Lea County, NM
Site: Ben Lilly 2 State
Well: #2H
Wellbore: ST1
Design: ST1

Local Co-ordinate Reference: Well #2H
TVD Reference: WELL @ 3837.9usft (Precision #77 - 30' KB)
MD Reference: WELL @ 3837.9usft (Precision #77 - 30' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Houston R5000 Database

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)
5,100.0	1.32	238.46	5,099.1	17.3	11.5	15.9	0.03	-0.02	-0.68
5,200.0	1.31	237.79	5,199.1	16.0	9.5	14.9	0.02	-0.01	-0.67
5,300.0	1.37	238.01	5,299.1	14.8	7.5	13.9	0.06	0.06	0.22
5,400.0	1.43	236.24	5,399.1	13.5	5.5	12.8	0.07	0.06	-1.77
5,500.0	1.37	238.35	5,499.0	12.2	3.4	11.7	0.08	-0.06	2.11
5,600.0	1.33	240.47	5,599.0	11.0	1.4	10.7	0.06	-0.04	2.12
5,700.0	1.48	238.90	5,699.0	9.7	-0.7	9.7	0.15	0.15	-1.57
5,800.0	1.61	237.33	5,798.9	8.3	-3.0	8.6	0.14	0.13	-1.57
5,900.0	1.40	239.67	5,898.9	6.9	-5.3	7.5	0.22	-0.21	2.34
6,000.0	1.21	242.00	5,998.9	5.8	-7.2	6.6	0.20	-0.19	2.33
6,100.0	0.81	227.93	6,098.9	4.8	-8.7	5.8	0.47	-0.40	-14.07
6,200.0	0.41	213.86	6,198.9	4.1	-9.4	5.1	0.42	-0.40	-14.07
6,300.0	0.40	221.67	6,298.9	3.5	-9.8	4.6	0.06	-0.01	7.81
6,400.0	0.38	229.47	6,398.9	3.0	-10.3	4.2	0.06	-0.02	7.80
6,500.0	0.50	241.24	6,498.8	2.6	-11.0	3.8	0.15	0.12	11.77
6,600.0	0.62	253.02	6,598.8	2.2	-11.9	3.6	0.17	0.12	11.78
6,700.0	0.70	257.62	6,698.8	1.9	-13.0	3.4	0.10	0.08	4.60
6,800.0	0.76	262.22	6,798.8	1.7	-14.2	3.3	0.08	0.06	4.60
6,900.0	0.94	258.09	6,898.8	1.5	-15.7	3.2	0.19	0.18	-4.13
7,000.0	1.09	253.96	6,998.8	1.0	-17.4	3.0	0.17	0.15	-4.13
7,100.0	1.11	237.84	7,098.8	0.3	-19.1	2.4	0.31	0.02	-16.12
7,200.0	1.12	221.73	7,198.8	-1.0	-20.6	1.3	0.31	0.01	-16.11
7,300.0	1.37	212.73	7,298.7	-2.7	-21.9	-0.2	0.32	0.25	-9.00
7,400.0	1.65	203.74	7,398.7	-5.0	-23.1	-2.4	0.37	0.28	-8.99
7,500.0	1.84	195.60	7,498.7	-7.9	-24.2	-5.1	0.31	0.19	-8.14
7,600.0	2.03	187.46	7,598.6	-11.2	-24.8	-8.3	0.33	0.19	-8.14
7,700.0	1.87	185.85	7,698.5	-14.6	-25.2	-11.7	0.17	-0.16	-1.61
7,800.0	1.73	184.23	7,798.5	-17.7	-25.5	-14.7	0.15	-0.14	-1.62
7,900.0	1.55	184.29	7,898.5	-20.6	-25.7	-17.6	0.18	-0.18	0.06
8,000.0	1.40	184.34	7,998.4	-23.1	-25.9	-20.1	0.15	-0.15	0.05
8,100.0	1.22	187.83	8,098.4	-25.4	-26.1	-22.3	0.20	-0.18	3.49
8,200.0	1.04	191.31	8,198.4	-27.4	-26.5	-24.2	0.19	-0.18	3.48
8,300.0	1.08	189.11	8,298.4	-29.2	-26.8	-26.0	0.06	0.04	-2.20
8,400.0	1.11	186.91	8,398.3	-31.1	-27.0	-27.8	0.05	0.03	-2.20
8,500.0	1.14	176.16	8,498.3	-33.0	-27.1	-29.8	0.21	0.03	-10.75
8,600.0	1.17	165.42	8,598.3	-35.0	-26.8	-31.8	0.22	0.03	-10.74
8,700.0	0.98	172.81	8,698.3	-36.8	-26.4	-33.6	0.23	-0.19	7.39
8,800.0	0.82	180.20	8,798.3	-38.4	-26.3	-35.2	0.20	-0.16	7.39
8,900.0	1.05	169.48	8,898.3	-40.0	-26.1	-36.8	0.29	0.23	-10.72
9,000.0	1.29	158.77	8,998.2	-42.0	-25.6	-38.8	0.32	0.24	-10.71
9,100.0	1.32	200.05	9,098.2	-44.1	-25.6	-40.9	0.92	0.03	41.28
9,200.0	1.34	241.32	9,198.2	-45.7	-27.0	-42.4	0.94	0.02	41.27
9,300.0	1.76	244.32	9,298.2	-47.0	-29.4	-43.4	0.43	0.42	3.00
9,400.0	2.17	247.32	9,398.1	-48.4	-32.5	-44.4	0.42	0.41	3.00

Survey Report



Company: COG Operating LLC
Project: Lea County, NM
Site: Ben Lilly 2 State
Well: #2H
Wellbore: ST1
Design: ST1

Local Co-ordinate Reference: Well #2H
TVD Reference: WELL @ 3837.9usft (Precision #77 - 30' KB)
MD Reference: WELL @ 3837.9usft (Precision #77 - 30' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Houston R5000 Database

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)
9,500.0	1.98	238.81	9,498.0	-50.0	-35.7	-45.7	0.36	-0.19	-8.51
9,600.0	1.79	230.29	9,598.0	-51.9	-38.4	-47.2	0.34	-0.19	-8.52
9,700.0	1.67	212.27	9,697.9	-54.1	-40.4	-49.2	0.55	-0.12	-18.02
9,800.0	1.56	194.24	9,797.9	-56.7	-41.5	-51.6	0.52	-0.11	-18.03
9,900.0	2.11	191.22	9,897.8	-59.8	-42.2	-54.7	0.56	0.55	-3.02
10,000.0	2.64	188.20	9,997.8	-63.9	-42.9	-58.6	0.54	0.53	-3.02
10,100.0	2.41	184.83	10,097.7	-68.3	-43.4	-62.9	0.27	-0.23	-3.37
10,200.0	2.19	181.47	10,197.6	-72.3	-43.6	-66.9	0.26	-0.22	-3.36
10,300.0	1.98	179.06	10,297.5	-75.9	-43.6	-70.5	0.23	-0.21	-2.41
10,400.0	2.06	181.55	10,397.4	-79.4	-43.7	-74.0	0.12	0.08	2.49
10,500.0	1.89	189.38	10,497.4	-82.8	-44.0	-77.4	0.32	-0.17	7.83
10,600.0	1.84	190.42	10,597.3	-86.0	-44.5	-80.5	0.06	-0.05	1.04
10,700.0	1.51	187.95	10,697.3	-88.9	-45.0	-83.3	0.34	-0.33	-2.47
10,800.0	1.66	202.53	10,797.3	-91.6	-45.7	-85.8	0.43	0.15	14.58
10,900.0	1.27	194.60	10,897.2	-94.0	-46.6	-88.1	0.44	-0.39	-7.93
10,944.0	1.00	135.80	10,941.2	-94.7	-46.4	-88.9	2.59	-0.61	-133.64
10,976.0	1.10	122.00	10,973.2	-95.1	-46.0	-89.3	0.85	0.31	-43.13
11,007.0	2.50	4.00	11,004.2	-94.6	-45.7	-88.8	10.22	4.52	-380.65
11,039.0	7.50	356.50	11,036.1	-91.8	-45.8	-86.1	15.72	15.63	-23.44
11,071.0	12.00	355.50	11,067.6	-86.4	-46.2	-80.6	14.07	14.06	-3.13
11,102.0	15.10	359.40	11,097.7	-79.1	-46.4	-73.4	10.42	10.00	12.58
11,134.0	18.00	0.80	11,128.4	-70.0	-46.4	-64.4	9.15	9.06	4.38
11,166.0	21.40	359.00	11,158.5	-59.2	-46.5	-53.6	10.79	10.63	-5.63
11,197.0	23.70	355.60	11,187.2	-47.4	-47.0	-41.8	8.53	7.42	-10.97
11,229.0	26.70	354.50	11,216.1	-33.8	-48.2	-28.2	9.49	9.38	-3.44
11,261.0	29.60	354.90	11,244.3	-18.8	-49.6	-13.1	9.08	9.06	1.25
11,292.0	33.20	355.20	11,270.8	-2.7	-51.0	3.1	11.62	11.61	0.97
11,324.0	36.80	356.10	11,297.0	15.6	-52.4	21.4	11.36	11.25	2.81
11,356.0	39.30	358.00	11,322.2	35.3	-53.4	41.1	8.63	7.81	5.94
11,387.0	41.20	0.00	11,345.8	55.3	-53.7	61.0	7.41	6.13	6.45
11,419.0	43.50	2.50	11,369.5	76.9	-53.2	82.4	8.91	7.19	7.81
11,450.0	46.70	1.90	11,391.4	98.8	-52.4	104.1	10.41	10.32	-1.94
Tie into OH @ 11450' MD									
11,488.0	47.10	5.40	11,417.3	126.5	-50.6	131.4	6.81	1.05	9.21
11,520.0	51.40	7.90	11,438.2	150.6	-47.8	155.0	14.68	13.44	7.81
11,552.0	55.60	7.70	11,457.3	176.0	-44.3	179.9	13.13	13.13	-0.63
11,584.0	60.40	7.80	11,474.2	202.9	-40.7	206.2	15.00	15.00	0.31
11,615.0	65.20	6.70	11,488.4	230.3	-37.2	233.0	15.80	15.48	-3.55
11,647.0	68.00	3.70	11,501.1	259.5	-34.5	261.8	12.27	8.75	-9.38
11,679.0	70.20	3.10	11,512.5	289.4	-32.8	291.2	7.09	6.88	-1.88
11,742.0	76.40	1.30	11,530.6	349.6	-30.5	350.8	10.21	9.84	-2.86
11,774.0	79.10	1.20	11,537.4	380.9	-29.8	381.8	8.44	8.44	-0.31
11,805.0	80.50	1.40	11,542.9	411.4	-29.1	412.0	4.56	4.52	0.65

Survey Report



Company: COG Operating LLC
Project: Lea County, NM
Site: Ben Lilly 2 State
Well: #2H
Wellbore: ST1
Design: ST1

Local Co-ordinate Reference: Well #2H
TVD Reference: WELL @ 3837.9usft (Precision #77 - 30' KB)
MD Reference: WELL @ 3837.9usft (Precision #77 - 30' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Houston R5000 Database

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)
11,837.0	80.80	1.70	11,548.1	442.9	-28.2	443.3	1.32	0.94	0.94
11,869.0	81.90	1.60	11,552.9	474.6	-27.3	474.6	3.45	3.44	-0.31
11,900.0	83.50	1.60	11,556.8	505.3	-26.5	505.1	5.16	5.16	0.00
11,932.0	85.20	1.60	11,560.0	537.1	-25.6	536.6	5.31	5.31	0.00
11,964.0	86.60	1.00	11,562.3	569.0	-24.9	568.2	4.76	4.38	-1.88
11,995.0	87.80	0.00	11,563.8	600.0	-24.6	599.0	5.04	3.87	-3.23
12,059.0	88.60	0.00	11,565.8	664.0	-24.6	662.5	1.25	1.25	0.00
12,148.0	90.85	0.66	11,566.2	753.0	-24.1	750.9	2.63	2.53	0.74
EOC - 12148.0' MD, 11566.2' TVD, 90.85° INC, 750.9' VS									
12,154.0	91.00	0.70	11,566.1	759.0	-24.0	756.8	2.63	2.53	0.74
12,249.0	91.50	0.90	11,564.0	853.9	-22.7	851.1	0.57	0.53	0.21
12,344.0	91.10	0.40	11,561.9	948.9	-21.6	945.3	0.67	-0.42	-0.53
12,439.0	91.00	0.80	11,560.1	1,043.9	-20.6	1,039.6	0.43	-0.11	0.42
12,534.0	90.40	359.60	11,559.0	1,138.9	-20.3	1,133.9	1.41	-0.63	-1.26
12,629.0	90.50	359.70	11,558.2	1,233.9	-20.9	1,228.4	0.15	0.11	0.11
12,724.0	91.60	0.00	11,556.5	1,328.8	-21.1	1,322.8	1.20	1.16	0.32
12,818.0	92.40	359.70	11,553.2	1,422.8	-21.4	1,416.2	0.91	0.85	-0.32
12,913.0	91.10	358.60	11,550.3	1,517.7	-22.8	1,510.7	1.79	-1.37	-1.16
13,008.0	89.30	357.80	11,550.0	1,612.7	-25.7	1,605.3	2.07	-1.89	-0.84
13,103.0	90.10	358.20	11,550.5	1,707.6	-29.1	1,700.0	0.94	0.84	0.42
13,198.0	89.80	358.00	11,550.6	1,802.6	-32.2	1,794.7	0.38	-0.32	-0.21
13,293.0	89.40	358.00	11,551.2	1,897.5	-35.5	1,889.4	0.42	-0.42	0.00
13,388.0	89.30	358.00	11,552.3	1,992.4	-38.8	1,984.2	0.11	-0.11	0.00
13,483.0	89.10	358.00	11,553.6	2,087.4	-42.2	2,078.9	0.21	-0.21	0.00
13,578.0	89.50	359.60	11,554.8	2,182.3	-44.1	2,173.4	1.74	0.42	1.68
13,673.0	90.60	0.20	11,554.7	2,277.3	-44.3	2,267.9	1.32	1.16	0.63
13,768.0	90.90	0.40	11,553.5	2,372.3	-43.8	2,362.2	0.38	0.32	0.21
13,863.0	90.50	359.80	11,552.3	2,467.3	-43.7	2,456.6	0.76	-0.42	-0.63
13,958.0	91.60	359.60	11,550.1	2,568.3	-44.3	2,576.8	0.92	0.91	-0.17
14,079.0	92.40	359.50	11,546.8	2,683.2	-45.0	2,671.3	0.85	0.84	-0.11
14,174.0	90.00	359.30	11,544.8	2,778.2	-46.0	2,765.7	2.54	-2.53	-0.21
14,269.0	89.70	358.50	11,545.0	2,873.2	-47.8	2,860.3	0.90	-0.32	-0.84
14,364.0	90.40	358.20	11,545.0	2,968.1	-50.6	2,955.0	0.80	0.74	-0.32
14,459.0	91.40	358.30	11,543.5	3,063.1	-53.5	3,049.6	1.06	1.05	0.11
14,554.0	92.60	358.20	11,540.1	3,158.0	-56.4	3,144.3	1.27	1.26	-0.11
14,649.0	92.40	358.90	11,536.0	3,252.9	-58.8	3,238.8	0.77	-0.21	0.74
14,744.0	91.10	358.80	11,533.1	3,347.8	-60.7	3,333.4	1.37	-1.37	-0.11
14,839.0	91.90	359.20	11,530.6	3,442.7	-62.3	3,427.9	0.94	0.84	0.42
14,934.0	92.20	358.70	11,527.2	3,537.7	-64.1	3,522.4	0.61	0.32	-0.53
15,029.0	92.90	358.50	11,523.0	3,632.5	-66.4	3,616.9	0.77	0.74	-0.21
15,124.0	92.60	357.50	11,518.4	3,727.4	-69.7	3,711.5	1.10	-0.32	-1.05
15,218.0	92.70	357.10	11,514.1	3,821.2	-74.1	3,805.2	0.44	0.11	-0.43
15,313.0	91.10	357.30	11,510.9	3,916.0	-78.8	3,900.0	1.70	-1.68	0.21
15,408.0	90.50	357.50	11,509.6	4,010.9	-83.1	3,994.8	0.67	-0.63	0.21

Survey Report



Company: COG Operating LLC
Project: Lea County, NM
Site: Ben Lilly 2 State
Well: #2H
Wellbore: ST1
Design: ST1

Local Co-ordinate Reference: Well #2H
TVD Reference: WELL @ 3837.9usft (Precision #77 - 30' KB)
MD Reference: WELL @ 3837.9usft (Precision #77 - 30' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Houston R5000 Database

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)
15,503.0	91.00	357.00	11,508.4	4,105.8	-87.6	4,089.6	0.74	0.53	-0.53
15,598.0	91.80	358.00	11,506.0	4,200.7	-91.8	4,184.3	1.35	0.84	1.05
15,696.0	92.20	357.90	11,502.6	4,298.5	-95.3	4,282.0	0.42	0.41	-0.10
15,791.0	92.80	357.40	11,498.5	4,393.4	-99.2	4,376.6	0.82	0.63	-0.53
15,886.0	91.90	358.70	11,494.6	4,488.2	-102.4	4,471.2	1.66	-0.95	1.37
15,981.0	90.00	359.00	11,493.0	4,583.2	-104.3	4,565.8	2.02	-2.00	0.32
16,075.0	89.30	0.10	11,493.6	4,677.2	-105.1	4,659.3	1.39	-0.74	1.17
16,170.0	89.50	359.60	11,494.6	4,772.2	-105.3	4,753.7	0.57	0.21	-0.53
16,265.0	90.30	359.70	11,494.7	4,867.2	-105.9	4,848.2	0.85	0.84	0.11
16,360.0	89.40	0.50	11,495.0	4,962.2	-105.7	4,942.6	1.27	-0.95	0.84
16,455.0	89.90	0.50	11,495.6	5,057.2	-104.9	5,036.8	0.53	0.53	0.00
16,550.0	90.00	0.20	11,495.7	5,152.2	-104.3	5,131.2	0.33	0.11	-0.32
16,645.0	90.50	0.10	11,495.2	5,247.2	-104.1	5,225.5	0.54	0.53	-0.11
16,739.0	90.20	0.20	11,494.7	5,341.2	-103.8	5,318.9	0.34	-0.32	0.11
16,834.0	88.90	0.40	11,495.4	5,436.2	-103.3	5,413.3	1.38	-1.37	0.21
16,929.0	89.30	0.60	11,496.9	5,531.1	-102.5	5,507.5	0.47	0.42	0.21
17,024.0	89.90	0.20	11,497.6	5,626.1	-101.8	5,601.9	0.76	0.63	-0.42
17,119.0	89.60	359.90	11,498.0	5,721.1	-101.7	5,696.2	0.45	-0.32	-0.32
17,214.0	89.90	359.70	11,498.4	5,816.1	-102.1	5,790.7	0.38	0.32	-0.21
17,309.0	90.50	359.70	11,498.1	5,911.1	-102.6	5,885.1	0.63	0.63	0.00
17,404.0	91.50	0.00	11,496.4	6,006.1	-102.8	5,979.5	1.10	1.05	0.32
17,503.0	91.50	0.60	11,493.8	6,105.1	-102.3	6,077.8	0.61	0.00	0.61
17,598.0	91.90	0.20	11,491.0	6,200.0	-101.6	6,172.1	0.60	0.42	-0.42
17,693.0	91.40	0.30	11,488.3	6,295.0	-101.2	6,266.4	0.54	-0.53	0.11
17,788.0	91.10	0.10	11,486.2	6,390.0	-100.9	6,360.7	0.38	-0.32	-0.21
17,883.0	91.30	1.20	11,484.2	6,484.9	-99.8	6,455.0	1.18	0.21	1.16
17,978.0	91.50	0.30	11,481.9	6,579.9	-98.6	6,549.2	0.97	0.21	-0.95
18,073.0	91.50	0.90	11,479.4	6,674.9	-97.6	6,643.4	0.63	0.00	0.63
18,168.0	91.50	359.60	11,476.9	6,769.8	-97.2	6,737.8	1.37	0.00	-1.37
18,263.0	91.40	359.50	11,474.5	6,864.8	-97.9	6,832.2	0.15	-0.11	-0.11
18,358.0	90.80	359.90	11,472.7	6,959.8	-98.4	6,926.6	0.76	-0.63	0.42
18,453.0	91.40	0.30	11,470.9	7,054.8	-98.2	7,021.0	0.76	0.63	0.42
18,600.0	92.10	359.40	11,466.4	7,201.7	-98.6	7,167.0	0.78	0.48	-0.61
18,640.0	92.10	359.40	11,464.9	7,241.7	-99.0	7,206.8	0.00	0.00	0.00

BHL - 18640.0' MD, 11464.9' TVD, 92.10° INC, 359.40° AZI, 7241.7' N, -99.0' E, 7206.8' VS

Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3837.9usft (Precision #77 - 30' KB)
Site:	Ben Lilly 2 State	MD Reference:	WELL @ 3837.9usft (Precision #77 - 30' KB)
Well:	#2H	North Reference:	Grid
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Houston R5000 Database

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,450.0	11,391.4	98.8	-52.4	Tie into OH @ 11450' MD
12,148.0	11,566.2	753.0	-24.1	EOC - 12148.0' MD, 11566.2' TVD, 90.85° INC, 750.9' VS
18,640.0	11,464.9	7,241.7	-99.0	BHL - 18640.0' MD, 11464.9' TVD, 92.10° INC, 359.40° AZI, 7241.7' N, -99.0' E,

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------

COG Operating LLC
 Project: Lea County, NM
 Site: Ben Lilly 2 State
 Well: #2H
 Wellbore: ST1
 Plan: ST1 Plan #1 (#2H/ST1)



Azimuths to Grid North
 True North: -0.43°
 Magnetic North: 6.96°

Magnetic Field
 Strength: 48618.0snT
 Dip Angle: 60.41°
 Date: 2/10/2013
 Model: IGRF2010

HOBBS OCD

MAY 15 2013

RECEIVED

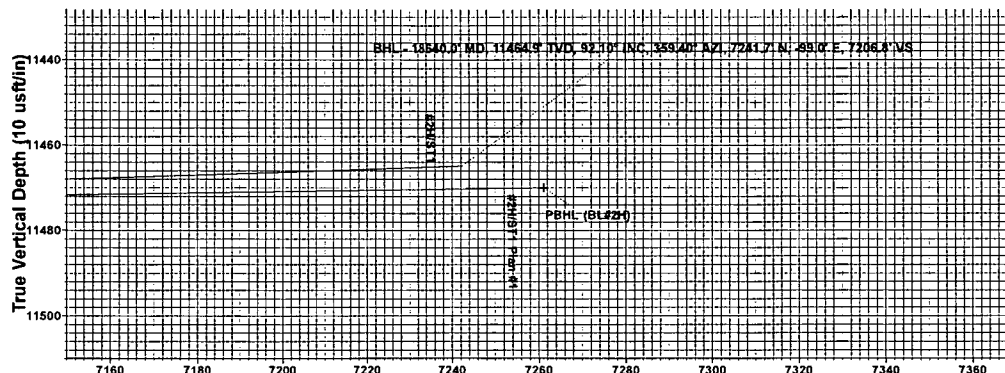
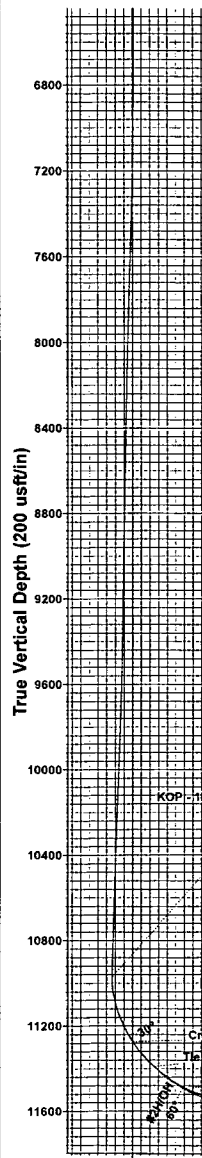
WELL DETAILS: #2H

Ground Elevation: 3807.9
 RKB Elevation: WELL @ 3837.9usft (Precision #77 - 30' KB)
 Rig Name: Precision #77 - 30' KB

Surface Hole Location
 Northing: 547009.01 Easting: 744386.01 Latitude: 32° 30' 4.828 N Longitude: 103° 32' 26.323 W

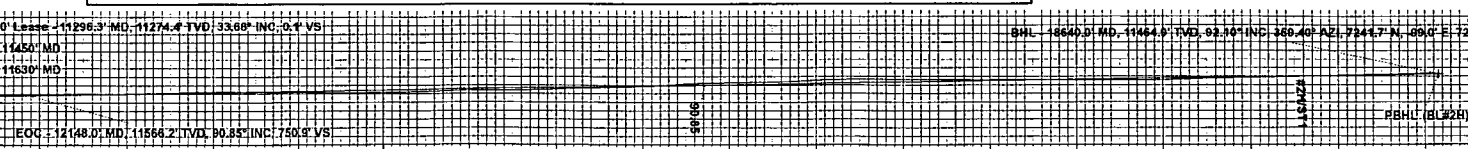
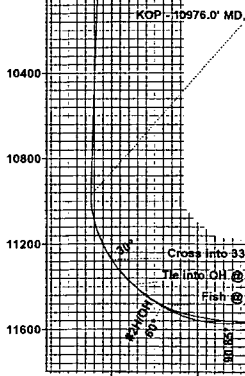
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (BL#2H)	11470.0	7260.8	-61.3	554269.79	744324.71	32° 31' 16.678 N	103° 32' 26.408 W



Vertical Section at 359.52° (10 usft/in)

Section Details										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	11500.0	51.44	359.90	11424.1	136.6	-51.8	0.00	0.00	137.0	Target
2	11508.0	51.05	0.79	11429.1	142.8	-51.8	10.00	120.00	143.2	
3	11529.5	51.05	0.79	11442.7	159.5	-51.5	0.00	0.00	160.0	
4	11927.6	90.85	0.79	11570.0	528.2	-46.5	10.00	0.00	528.6	
5	11973.5	90.85	359.87	11569.3	574.2	-46.2	2.00	-89.92	574.6	
6	18660.9	90.85	359.87	11470.0	7260.8	-61.3	0.00	0.00	7261.0	PBHL (BL#2H)

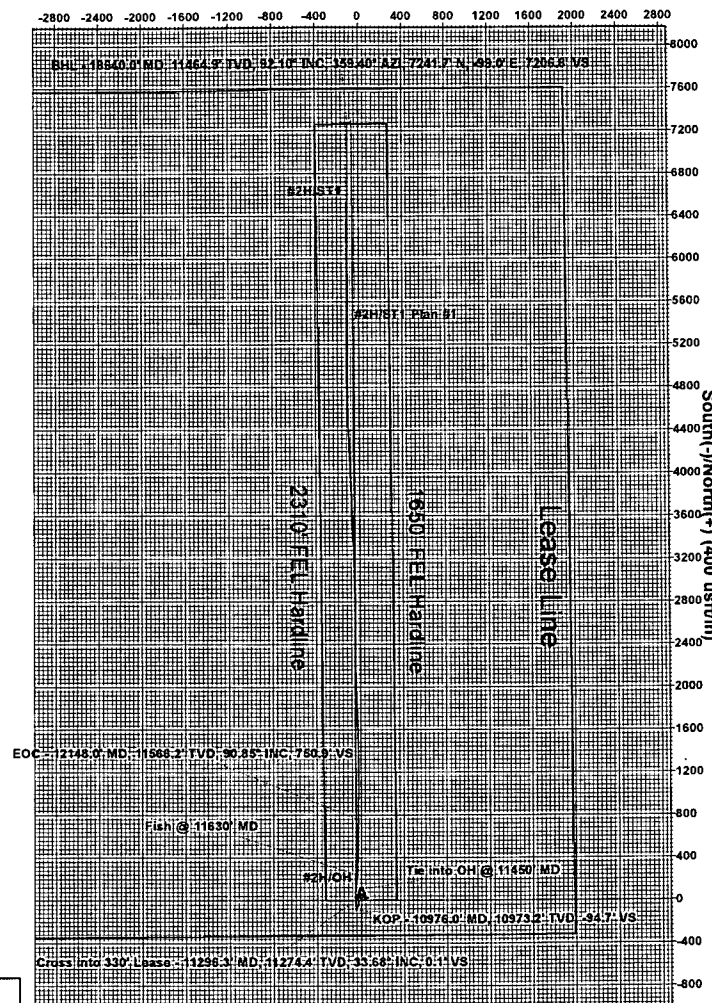


Vertical Section at 359.52° (200 usft/in)

Crescent Directional Drilling
 7715 West Industrial Ave. Midland, Tx 79706
 Phone: 432-618-1135



West(-)/East(+) (400 usft/in)



PROJECT DETAILS: Lea County, NM
 Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: New Mexico East 3001
 System Datum: Mean Sea Level
 Local North: Grid

Plan: ST1 Plan #1 (#2H/ST1)
 Created By: Matt Higgins Date: 15:57, February 27 2013