

Results of Directional Survey

API number:	30-025-41204		
OGRID:		Operator:	COG OPERATING LLC
		Property:	BEN LILLY STATE COM # 4H

surface	ULSTR:	U	02	T	21S	R	33E
				330	FSL	660	FWL

7922

BH Loc	ULSTR:	D	02	T	21S	R	33E
18583	MD	11435.3	TVD	338	FNL	637	FWL
				7584	FSL		

Top Perf/OH	ULSTR:	U	02	T	21S	R	33E
11878	MD	11582.0	TVD	886	FSL	675	FWL

Bot Perf/OH	ULSTR:	D	02	T	21S	R	33E
18495	MD	11438.7	TVD	426	FNL	634	FWL
				7496	FSL		

	MD	N/S	E/W	VD
	11846	524.84	17.92	11574.3
TOP PERFS/OH	11878	555.75	14.91	11581.99
	11878	555.75	14.91	11581.99
	18421	7091.87	-28.83	11441.63
BOT. PERFS/OH	18495	7165.75	-25.92	11438.72
	18517	7187.72	-25.06	11437.86

NEXT TO LAST	18535	7205.69	-24.37	11437.18
LAST READING	18583	7253.63	-22.82	11435.26
TD	18583	7253.63	-22.82	11435.26

Surface Location	330	FS	660	FW
Projected BHL	7584	FS	637	FW
Location of				
Top Perfs/OH	886	FS	675	FW
Bottom Perfs/OH	7496	FS	634	FW

SUMMARY of Subsurface Locations

Surface Location	U-02-21S-33E	330	FS	660	FW	Vert. Depth
Top Perfs/OH	U-02-21S-33E	886	FS	675	FW	11581.99
Bottom Perfs/OH	D-02-21S-33E	7496	FS	634	FW	11438.72
Projected TD	D-02-21S-33E	7584	FS	637	FW	11435.26

JUN 06 2014



A GYRO TECHNOLOGIES INC. COMPANY

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

November 14, 2013

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

HOBBS OCD

JUN 03 2014

RECEIVED

Attn: Kanicia Castillo

RE: **Ben Lilly 2 State Com No. 004H**

Please find enclosed a copy of the survey from 0.00' to 10,926.00' ran on the above referenced well.

Sincerely,

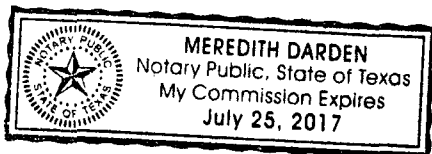

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 14th day of November A.D., 2013, by Keith Havelka.



Meredith Darden
Notary Public, State of Texas



Company: COG Operating, LLC (Concho)
Lease/Well: Ben Lilly 2 State Com/No. 004H



Rig Name: Precision 105
State/County: New Mexico/Lea
Latitude: 32.50, Longitude: -103.55
GRID North is 0.42 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB = 26 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...2 state com 4h_gyro survey.ut

Minimum Curvature Method

Report Date/Time: 11/14/2013 / 09:34

Vaughn Energy Services

Midland, Texas

432-563-5444

Surveyor: Gene Heiss

Ben Lilly 2 State Com No. 004H / API 30-025-41204

HOBBS OCD

JUN 03 2014

RECEIVED

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	0.13	169.98	100.00	-0.11	0.02	-0.11	0.12	169.98	0.13
200.00	0.18	118.33	200.00	-0.30	0.18	-0.30	0.35	149.38	0.14
300.00	0.15	114.52	300.00	-0.43	0.44	-0.43	0.61	134.73	0.04
400.00	0.22	124.89	400.00	-0.60	0.71	-0.60	0.93	129.92	0.08
500.00	0.26	106.79	500.00	-0.77	1.09	-0.77	1.34	125.31	0.09
600.00	0.15	106.22	600.00	-0.88	1.44	-0.88	1.69	121.37	0.11
700.00	0.24	88.07	700.00	-0.91	1.77	-0.91	1.99	117.07	0.11
800.00	0.15	62.23	800.00	-0.84	2.10	-0.84	2.26	111.83	0.13
900.00	0.22	81.25	900.00	-0.75	2.40	-0.75	2.51	107.42	0.09
1000.00	0.33	73.71	999.99	-0.64	2.86	-0.64	2.93	102.67	0.12
1100.00	0.47	67.76	1099.99	-0.41	3.52	-0.41	3.54	96.59	0.15
1200.00	0.25	84.46	1199.99	-0.23	4.12	-0.23	4.12	93.19	0.24
1300.00	0.46	96.98	1299.99	-0.26	4.74	-0.26	4.75	93.11	0.22
1400.00	0.46	68.93	1399.98	-0.16	5.51	-0.16	5.52	91.69	0.22
1500.00	0.28	27.16	1499.98	0.20	6.00	0.20	6.00	88.09	0.31
1600.00	0.04	281.50	1599.98	0.43	6.08	0.43	6.09	85.99	0.29
1700.00	0.35	312.50	1699.98	0.64	5.82	0.64	5.86	83.73	0.32
1800.00	0.30	287.63	1799.98	0.93	5.35	0.93	5.43	80.17	0.15

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	0.41	343.60	1899.98	1.35	5.00	1.35	5.18	74.94	0.34
2000.00	0.40	137.15	1999.98	1.43	5.14	1.43	5.33	74.43	0.78
2100.00	0.33	56.68	2099.98	1.34	5.62	1.34	5.77	76.61	0.47
2200.00	0.24	346.36	2199.98	1.70	5.81	1.70	6.05	73.71	0.34
2300.00	0.17	344.31	2299.97	2.04	5.72	2.04	6.07	70.33	0.06
2400.00	0.05	235.59	2399.97	2.17	5.64	2.17	6.05	68.99	0.19
2500.00	0.23	184.53	2499.97	1.94	5.59	1.94	5.92	70.86	0.21
2600.00	0.12	106.04	2599.97	1.71	5.68	1.71	5.93	73.24	0.24
2700.00	0.12	174.35	2699.97	1.58	5.78	1.58	5.99	74.74	0.13
2800.00	0.06	181.80	2799.97	1.42	5.79	1.42	5.96	76.23	0.06
2900.00	0.13	71.32	2899.97	1.40	5.90	1.40	6.06	76.63	0.16
3000.00	0.14	59.42	2999.97	1.50	6.11	1.50	6.29	76.22	0.03
3100.00	0.25	5.68	3099.97	1.78	6.23	1.78	6.48	74.09	0.20
3200.00	0.21	352.43	3199.97	2.18	6.23	2.18	6.60	70.75	0.07
3300.00	0.23	326.01	3299.97	2.52	6.09	2.52	6.59	67.50	0.10
3400.00	0.03	18.19	3399.97	2.72	5.99	2.72	6.58	65.59	0.21
3500.00	0.24	8.67	3499.97	2.95	6.03	2.95	6.71	63.92	0.20
3600.00	0.26	286.61	3599.97	3.22	5.84	3.22	6.67	61.14	0.33
3700.00	0.26	208.54	3699.97	3.08	5.52	3.08	6.32	60.80	0.33
3800.00	0.26	31.65	3799.97	3.08	5.53	3.08	6.32	60.89	0.52
3900.00	0.18	299.55	3899.97	3.35	5.51	3.35	6.45	58.69	0.32
4000.00	0.17	307.77	3999.97	3.52	5.25	3.52	6.32	56.18	0.03
4100.00	0.14	185.70	4099.97	3.48	5.12	3.48	6.20	55.78	0.28
4200.00	0.49	105.42	4199.97	3.24	5.52	3.24	6.41	59.57	0.49
4300.00	0.75	81.03	4299.96	3.23	6.58	3.23	7.33	63.84	0.36
4400.00	0.82	44.10	4399.95	3.85	7.72	3.85	8.63	63.52	0.50
4500.00	0.75	34.50	4499.94	4.90	8.59	4.90	9.88	60.31	0.15
4600.00	0.96	28.93	4599.93	6.17	9.36	6.17	11.21	56.62	0.23
4700.00	1.10	50.36	4699.92	7.52	10.51	7.52	12.92	54.42	0.41
4800.00	1.30	59.43	4799.89	8.71	12.22	8.71	15.01	54.54	0.28
4900.00	1.01	49.69	4899.87	9.85	13.87	9.85	17.01	54.62	0.35
5000.00	1.04	40.54	4999.86	11.11	15.13	11.11	18.77	53.71	0.17
5100.00	1.26	54.52	5099.84	12.43	16.61	12.43	20.75	53.19	0.35
5200.00	1.34	76.43	5199.81	13.35	18.64	13.35	22.93	54.40	0.50
5300.00	1.33	88.10	5299.79	13.66	20.94	13.66	25.00	56.88	0.27
5400.00	1.50	79.51	5399.75	13.94	23.39	13.94	27.22	59.21	0.27
5500.00	1.64	77.64	5499.72	14.48	26.07	14.48	29.82	60.95	0.15
5600.00	1.69	82.18	5599.68	14.99	28.93	14.99	32.58	62.61	0.14
5700.00	2.18	81.30	5699.62	15.47	32.27	15.47	35.78	64.38	0.49

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
5800.00	2.05	79.55	5799.55	16.09	35.90	16.09	39.34	65.87	0.14
5900.00	2.04	86.04	5899.49	16.53	39.44	16.53	42.76	67.25	0.23
6000.00	2.00	80.50	5999.42	16.94	42.93	16.94	46.15	68.46	0.20
6100.00	2.14	82.91	6099.36	17.46	46.50	17.46	49.67	69.42	0.16
6200.00	1.94	78.99	6199.30	18.02	50.01	18.02	53.16	70.19	0.24
6300.00	1.95	85.49	6299.24	18.47	53.38	18.47	56.48	70.91	0.22
6400.00	1.89	87.90	6399.18	18.67	56.72	18.67	59.72	71.78	0.10
6500.00	1.94	90.81	6499.13	18.71	60.07	18.71	62.91	72.70	0.11
6600.00	1.73	92.34	6599.07	18.62	63.27	18.62	65.95	73.60	0.21
6700.00	1.62	98.53	6699.03	18.35	66.18	18.35	68.68	74.50	0.21
6800.00	1.79	93.66	6798.99	18.04	69.14	18.04	71.46	75.38	0.22
6900.00	1.66	101.95	6898.94	17.64	72.12	17.64	74.25	76.26	0.28
7000.00	1.77	99.03	6998.90	17.10	75.06	17.10	76.99	77.17	0.14
7100.00	1.66	91.23	7098.85	16.82	78.04	16.82	79.83	77.84	0.26
7200.00	1.56	103.49	7198.81	16.47	80.81	16.47	82.47	78.48	0.36
7300.00	1.63	107.55	7298.77	15.73	83.49	15.73	84.96	79.33	0.14
7400.00	1.39	120.77	7398.74	14.68	85.89	14.68	87.14	80.30	0.42
7500.00	1.44	117.71	7498.71	13.47	88.04	13.47	89.07	81.30	0.09
7600.00	1.49	122.90	7598.68	12.18	90.25	12.18	91.06	82.31	0.14
7700.00	1.28	126.32	7698.65	10.81	92.24	10.81	92.87	83.31	0.22
7800.00	1.54	139.43	7798.62	9.13	94.02	9.13	94.46	84.45	0.41
7900.00	1.39	130.90	7898.59	7.31	95.80	7.31	96.08	85.63	0.27
8000.00	1.38	133.58	7998.56	5.69	97.59	5.69	97.76	86.66	0.06
8100.00	1.41	150.89	8098.53	3.78	99.07	3.78	99.14	87.81	0.42
8200.00	1.26	148.45	8198.50	1.77	100.24	1.77	100.26	88.99	0.16
8300.00	1.45	144.54	8298.47	-0.21	101.56	-0.21	101.56	90.12	0.21
8400.00	1.15	155.81	8398.45	-2.16	102.70	-2.16	102.72	91.20	0.40
8500.00	1.05	156.18	8498.43	-3.91	103.48	-3.91	103.56	92.16	0.10
8600.00	1.30	148.18	8598.41	-5.71	104.45	-5.71	104.61	93.13	0.29
8700.00	1.21	153.91	8698.38	-7.62	105.51	-7.62	105.79	94.13	0.15
8800.00	1.11	163.99	8798.36	-9.50	106.24	-9.50	106.67	95.11	0.23
8900.00	1.06	175.91	8898.34	-11.35	106.57	-11.35	107.18	96.08	0.23
9000.00	1.03	185.41	8998.33	-13.16	106.56	-13.16	107.37	97.04	0.17
9100.00	0.82	193.46	9098.31	-14.75	106.30	-14.75	107.32	97.90	0.25
9200.00	0.87	189.55	9198.30	-16.20	106.01	-16.20	107.24	98.69	0.08
9300.00	0.77	200.46	9298.29	-17.58	105.65	-17.58	107.10	99.45	0.19
9400.00	0.39	248.88	9398.29	-18.33	105.10	-18.33	106.69	99.89	0.59
9500.00	0.56	322.81	9498.29	-18.06	104.49	-18.06	106.04	99.81	0.59
9600.00	0.76	319.56	9598.28	-17.17	103.76	-17.17	105.17	99.40	0.21

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
9700.00	0.90	329.52	9698.27	-15.99	102.93	-15.99	104.16	98.83	0.20
9800.00	1.22	299.75	9798.25	-14.78	101.60	-14.78	102.67	98.28	0.63
9900.00	0.95	264.93	9898.24	-14.32	99.85	-14.32	100.88	98.16	0.70
10000.00	1.15	250.73	9998.22	-14.72	98.09	-14.72	99.19	98.54	0.33
10100.00	0.94	238.43	10098.20	-15.48	96.45	-15.48	97.68	99.12	0.31
10200.00	1.06	239.24	10198.19	-16.38	94.96	-16.38	96.36	99.79	0.12
10300.00	0.95	251.91	10298.17	-17.11	93.38	-17.11	94.93	100.38	0.25
10400.00	0.78	257.01	10398.16	-17.52	91.93	-17.52	93.58	100.79	0.18
10500.00	1.22	248.67	10498.14	-18.06	90.27	-18.06	92.06	101.31	0.46
10600.00	0.94	236.70	10598.13	-18.90	88.59	-18.90	90.58	102.04	0.36
10700.00	1.27	232.30	10698.11	-20.02	87.03	-20.02	89.31	102.96	0.34
10800.00	1.31	218.20	10798.08	-21.60	85.45	-21.60	88.14	104.19	0.32
10900.00	1.87	189.38	10898.05	-24.11	84.48	-24.11	87.85	105.93	0.96
10926.00	1.78	185.98	10924.03	-24.93	84.36	-24.93	87.97	106.46	0.54



Vaughn Energy Services

Midland, Texas

432-563-5444

Surveyor: Gene Heiss

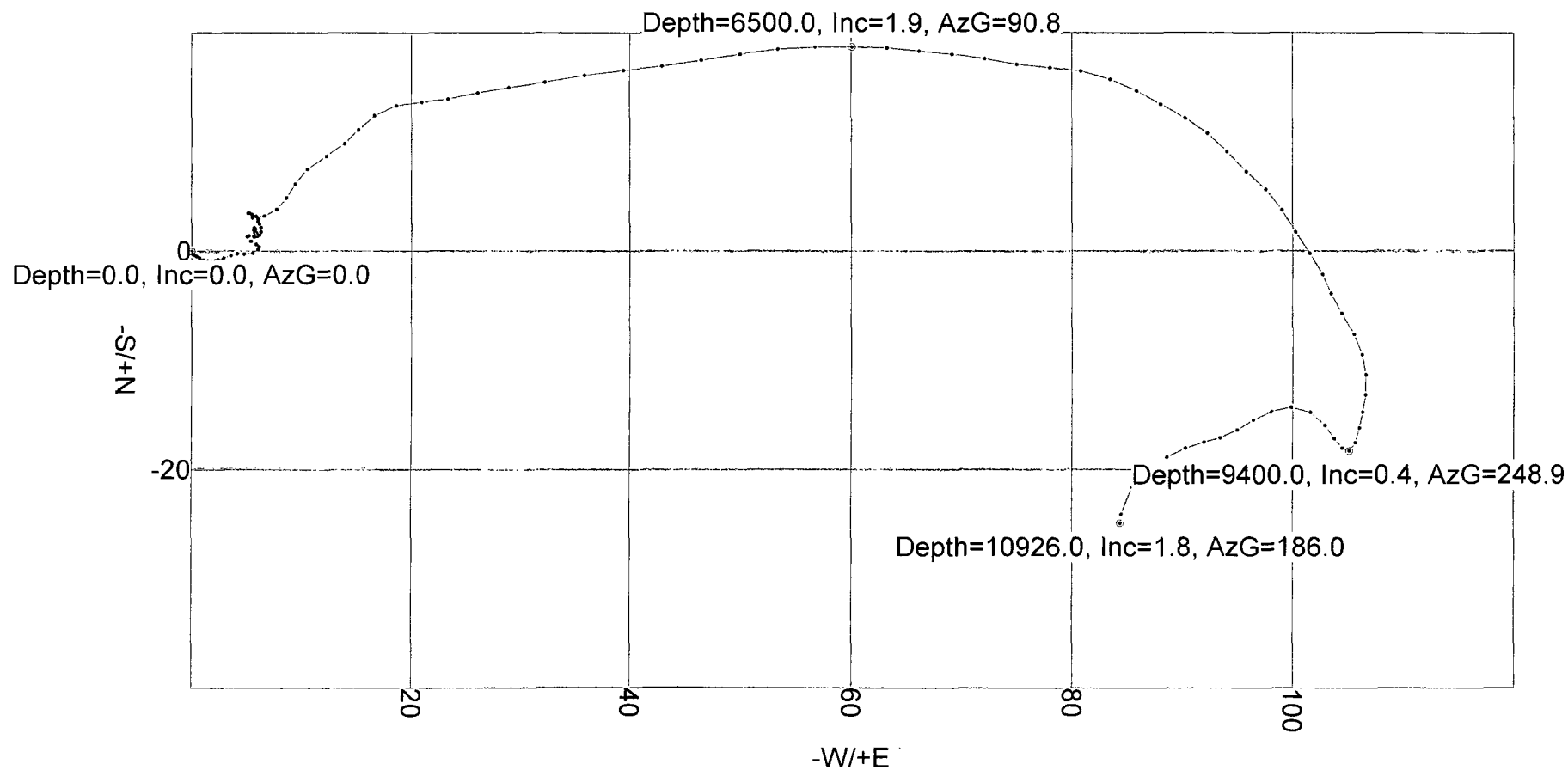
Ben Lilly 2 State Com No. 004H / API 30-025-41204



HOBBS OCD

JUN 03 2014

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VES Survey Date: 11/03/2013



Company: COG Operating

Field: Lea County, NM.

Cty/Blk/Par: Lea County, NM.

Well Name: Ben Lilly 2 State 4H

Rig: Precision 105

3BS OGD
JUN 03 2014
RECEIVED

Job Number: 6935

Magnetic Field: 0.485

Dip Angle: 60.39

Total Survey Corr.: 6.88

Target Info:

Calculation Method: Minimum Curvature

Proposed Azimuth: 359.47

Depth Reference: Driller

Tie Into: Gyro

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)	
0	Tie	10926.00	1.78	185.98	0	10924.03	-25.68	-24.90	84.34	0	0	0
1	MWD	10989.00	2.10	196.30	63	10986.99	-27.76	26.98 S	83.91 E	88.15	107.82	0.75
2	MWD	11021.00	1.50	331.50	32	11018.99	-27.95	27.18 S	83.55 E	87.86	108.02	10.43
3	MWD	11053.00	8.10	350.40	32	11050.86	-25.35	24.58 S	82.97 E	86.54	106.50	20.93
4	MWD	11085.00	15.10	356.40	32	11082.19	-18.95	18.19 S	82.33 E	84.32	102.46	22.17
5	MWD	11117.00	20.00	356.20	32	11112.69	-9.32	8.56 S	81.71 E	82.16	95.98	15.31
6	MWD	11149.00	22.50	352.20	32	11142.51	2.22	2.96 N	80.52 E	80.57	87.89	9.03
7	MWD	11181.00	27.50	349.40	32	11171.50	15.58	16.30 N	78.32 E	80.00	78.24	16.05
8	MWD	11213.00	31.90	350.30	32	11199.29	31.20	31.90 N	75.54 E	82.00	67.10	13.82
9	MWD	11244.00	35.60	348.70	31	11225.07	48.16	48.83 N	72.39 E	87.32	56.00	12.27
10	MWD	11276.00	40.00	350.90	32	11250.35	67.49	68.13 N	68.94 E	96.92	45.34	14.38
11	MWD	11307.00	38.90	357.80	31	11274.29	87.08	87.71 N	66.99 E	110.36	37.37	14.58
12	MWD	11339.00	41.30	359.90	32	11298.77	107.69	108.31 N	66.58 E	127.14	31.58	8.61
13	MWD	11371.00	45.10	358.40	32	11322.09	129.59	130.21 N	66.25 E	146.09	26.97	12.30
14	MWD	11403.00	48.20	355.90	32	11344.06	152.83	153.44 N	65.08 E	166.67	22.98	11.23
15	MWD	11435.00	49.40	353.20	32	11365.14	176.82	177.40 N	62.79 E	188.19	19.49	7.37
16	MWD	11466.00	49.80	350.90	31	11385.23	200.22	200.78 N	59.52 E	209.42	16.51	5.80
17	MWD	11498.00	51.00	351.30	32	11405.63	224.62	225.14 N	55.71 E	231.93	13.90	3.87
18	MWD	11529.00	52.90	350.80	31	11424.74	248.76	249.25 N	51.91 E	254.60	11.76	6.26
19	MWD	11561.00	54.20	352.30	32	11443.75	274.26	274.71 N	48.13 E	278.90	9.94	5.54
20	MWD	11593.00	57.00	351.50	32	11461.83	300.43	300.85 N	44.40 E	304.11	8.40	8.99
21	MWD	11624.00	58.50	351.90	31	11478.37	326.40	326.79 N	40.62 E	329.31	7.09	4.96
22	MWD	11656.00	57.40	351.50	32	11495.35	353.28	353.63 N	36.71 E	355.53	5.93	3.60
23	MWD	11688.00	60.70	353.30	32	11511.80	380.51	380.83 N	33.08 E	382.26	4.97	11.38
24	MWD	11719.00	63.60	353.10	31	11526.28	407.75	408.04 N	29.84 E	409.13	4.18	9.37
25	MWD	11751.00	65.20	353.40	32	11540.11	436.44	436.70 N	26.45 E	437.50	3.47	5.07
26	MWD	11783.00	67.80	355.40	32	11552.87	465.66	465.90 N	23.59 E	466.50	2.90	9.94
27	MWD	11815.00	69.50	354.10	32	11564.52	495.37	495.58 N	20.86 E	496.02	2.41	6.52
28	MWD	11846.00	73.70	354.40	31	11574.30	524.65	524.84 N	17.92 E	525.15	1.96	13.58
29	MWD	11878.00	78.50	354.50	32	11581.99	555.59	555.75 N	14.91 E	555.95	1.54	15.00
30	MWD	11910.00	82.60	355.70	32	11587.24	587.05	587.19 N	12.22 E	587.32	1.19	13.34
31	MWD	11942.00	85.80	358.50	32	11590.48	618.85	618.98 N	10.61 E	619.07	0.98	13.26



Company: COG Operating
 Field: Lea County, NM.
 Cty/Blk/Par: Lea County, NM.
 Well Name: Ben Lilly 2 State 4H
 Rig: Precision 105

Job Number: 6935
 Magnetic Field: 0.485
 Dip Angle: 60.39
 Total Survey Corr.: 6.88
 Target Info: _____

Calculation Method: Minimum Curvature
 Proposed Azimuth: 359.47
 Depth Reference: Driller
 Tie Into: Gyro

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)	
32	MWD	12037.00	90.50	1.70	95	11593.54	713.76	713.89 N	10.78 E	713.97	0.87	5.98
33	MWD	12133.00	92.00	1.00	96	11591.45	809.68	809.84 N	13.04 E	809.94	0.92	1.72
34	MWD	12228.00	91.20	0.70	95	11588.80	904.62	904.79 N	14.45 E	904.91	0.91	0.90
35	MWD	12323.00	90.10	359.80	95	11587.72	999.60	999.78 N	14.86 E	999.89	0.85	1.50
36	MWD	12419.00	92.50	0.20	96	11585.54	1095.56	1095.75 N	14.86 E	1095.85	0.78	2.53
37	MWD	12514.00	92.70	0.20	95	11581.23	1190.46	1190.65 N	15.20 E	1190.75	0.73	0.21
38	MWD	12609.00	90.90	0.10	95	11578.25	1285.40	1285.60 N	15.44 E	1285.69	0.69	1.90
39	MWD	12704.00	89.60	358.50	95	11577.83	1380.39	1380.59 N	14.28 E	1380.66	0.59	2.17
40	MWD	12797.00	92.20	359.00	93	11576.37	1473.37	1473.54 N	12.25 E	1473.59	0.48	2.85
41	MWD	12893.00	91.70	358.50	96	11573.11	1569.30	1569.46 N	10.16 E	1569.50	0.37	0.74
42	MWD	12988.00	91.00	358.40	95	11570.87	1664.26	1664.40 N	7.59 E	1664.42	0.26	0.74
43	MWD	13083.00	91.70	358.00	95	11568.63	1759.21	1759.33 N	4.61 E	1759.33	0.15	0.85
44	MWD	13179.00	90.60	358.00	96	11566.70	1855.16	1855.25 N	1.26 E	1855.25	0.04	1.15
45	MWD	13274.00	91.90	358.50	95	11564.63	1950.11	1950.18 N	1.64 W	1950.18	359.95	1.47
46	MWD	13369.00	93.90	358.80	95	11559.82	2044.98	2045.03 N	3.88 W	2045.03	359.89	2.13
47	MWD	13465.00	93.40	358.70	96	11553.71	2140.77	2140.81 N	5.97 W	2140.82	359.84	0.53
48	MWD	13560.00	93.80	358.40	95	11547.75	2235.57	2235.59 N	8.37 W	2235.61	359.79	0.53
49	MWD	13655.00	93.50	358.70	95	11541.70	2330.37	2330.37 N	10.76 W	2330.39	359.74	0.45
50	MWD	13751.00	93.50	358.90	96	11535.84	2426.18	2426.17 N	12.77 W	2426.20	359.70	0.21
51	MWD	13846.00	92.00	359.50	95	11531.28	2521.07	2521.05 N	14.10 W	2521.09	359.68	1.70
52	MWD	13941.00	92.00	359.80	95	11527.97	2616.01	2615.99 N	14.68 W	2616.03	359.68	0.32
53	MWD	14037.00	89.80	358.80	96	11526.46	2711.99	2711.96 N	15.85 W	2712.01	359.67	2.52
54	MWD	14132.00	89.50	358.20	95	11527.04	2806.98	2806.93 N	18.34 W	2806.99	359.63	0.71
55	MWD	14227.00	89.30	357.90	95	11528.03	2901.94	2901.87 N	21.57 W	2901.95	359.57	0.38
56	MWD	14323.00	89.90	357.80	96	11528.70	2997.90	2997.79 N	25.17 W	2997.90	359.52	0.63
57	MWD	14418.00	90.50	357.60	95	11528.37	3092.85	3092.72 N	28.98 W	3092.85	359.46	0.67
58	MWD	14513.00	90.60	357.70	95	11527.46	3187.80	3187.63 N	32.88 W	3187.80	359.41	0.15
59	MWD	14609.00	91.20	357.70	96	11525.95	3283.74	3283.54 N	36.73 W	3283.75	359.36	0.62
60	MWD	14704.00	91.40	357.60	95	11523.80	3378.67	3378.44 N	40.62 W	3378.68	359.31	0.24
61	MWD	14800.00	91.60	357.00	96	11521.28	3474.57	3474.30 N	45.14 W	3474.59	359.26	0.66
62	MWD	14895.00	91.70	358.70	95	11518.55	3569.49	3569.19 N	48.71 W	3569.52	359.22	1.79
63	MWD	14991.00	91.40	359.00	96	11515.95	3665.45	3665.13 N	50.63 W	3665.48	359.21	0.44



Company: COG Operating
 Field: Lea County, NM.
 Cty/Blk/Par: Lea County, NM.
 Well Name: Ben Lilly 2 State 4H
 Rig: Precision 105

Job Number: 6935
 Magnetic Field: 0.485
 Dip Angle: 60.39
 Total Survey Corr.: 6.88
 Target Info: _____

Calculation Method: Minimum Curvature
 Proposed Azimuth: 359.47
 Depth Reference: Driller
 Tie Into: Gyro

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)	
64	MWD	15086.00	90.50	1.50	95	11514.38	3760.42	3760.11 N	50.22 W	3760.45	359.23	2.80
65	MWD	15182.00	89.70	1.00	96	11514.21	3856.37	3856.09 N	48.12 W	3856.39	359.28	0.98
66	MWD	15276.00	91.00	0.40	94	11513.63	3950.34	3950.08 N	46.97 W	3950.36	359.32	1.52
67	MWD	15371.00	91.00	0.70	95	11511.98	4045.31	4045.06 N	46.06 W	4045.32	359.35	0.32
68	MWD	15466.00	90.70	1.10	95	11510.57	4140.27	4140.04 N	44.57 W	4140.28	359.38	0.53
69	MWD	15561.00	91.30	1.70	95	11508.91	4235.20	4234.99 N	42.25 W	4235.20	359.43	0.89
70	MWD	15657.00	92.70	2.60	96	11505.56	4331.03	4330.86 N	38.65 W	4331.03	359.49	1.73
71	MWD	15752.00	92.00	2.60	95	11501.66	4425.81	4425.68 N	34.35 W	4425.82	359.56	0.74
72	MWD	15847.00	89.20	1.70	95	11500.67	4520.69	4520.60 N	30.78 W	4520.71	359.61	3.10
73	MWD	15942.00	88.70	1.20	95	11502.41	4615.62	4615.55 N	28.38 W	4615.64	359.65	0.74
74	MWD	16038.00	88.60	1.20	96	11504.67	4711.55	4711.51 N	26.37 W	4711.58	359.68	0.10
75	MWD	16133.00	87.90	1.20	95	11507.57	4806.46	4806.44 N	24.38 W	4806.50	359.71	0.74
76	MWD	16228.00	89.30	359.20	95	11509.89	4901.42	4901.40 N	24.05 W	4901.46	359.72	2.57
77	MWD	16323.00	91.10	358.40	95	11509.56	4996.41	4996.38 N	26.04 W	4996.45	359.70	2.07
78	MWD	16419.00	91.30	356.50	96	11507.55	5092.32	5092.26 N	30.31 W	5092.35	359.66	1.99
79	MWD	16514.00	92.40	356.40	95	11504.48	5187.14	5187.03 N	36.19 W	5187.15	359.60	1.16
80	MWD	16609.00	92.70	357.20	95	11500.26	5281.94	5281.78 N	41.49 W	5281.95	359.55	0.90
81	MWD	16704.00	93.70	358.60	95	11494.95	5376.75	5376.57 N	44.96 W	5376.75	359.52	1.81
82	MWD	16800.00	94.60	359.50	96	11488.01	5472.50	5472.30 N	46.55 W	5472.50	359.51	1.32
83	MWD	16895.00	94.50	359.10	95	11480.47	5567.20	5566.99 N	47.71 W	5567.20	359.51	0.43
84	MWD	16990.00	93.80	358.60	95	11473.60	5661.94	5661.72 N	49.61 W	5661.94	359.50	0.90
85	MWD	17086.00	92.70	359.80	96	11468.15	5757.78	5757.56 N	50.95 W	5757.78	359.49	1.69
86	MWD	17181.00	90.90	1.00	95	11465.17	5852.72	5852.50 N	50.28 W	5852.72	359.51	2.28
87	MWD	17276.00	90.50	0.70	95	11464.01	5947.68	5947.48 N	48.87 W	5947.69	359.53	0.53
88	MWD	17371.00	90.60	0.90	95	11463.10	6042.65	6042.47 N	47.55 W	6042.66	359.55	0.24
89	MWD	17466.00	90.00	0.50	95	11462.60	6137.63	6137.46 N	46.39 W	6137.64	359.57	0.76
90	MWD	17562.00	89.90	0.70	96	11462.68	6233.61	6233.46 N	45.38 W	6233.62	359.58	0.23
91	MWD	17658.00	89.70	0.40	96	11463.02	6329.59	6329.45 N	44.46 W	6329.61	359.60	0.38
92	MWD	17753.00	89.80	0.60	95	11463.43	6424.57	6424.45 N	43.63 W	6424.59	359.61	0.24
93	MWD	17849.00	91.80	1.30	96	11462.09	6520.53	6520.42 N	42.04 W	6520.55	359.63	2.21
94	MWD	17944.00	92.90	2.00	95	11458.20	6615.38	6615.30 N	39.31 W	6615.41	359.66	1.37
95	MWD	18040.00	91.00	0.50	96	11454.93	6711.27	6711.21 N	37.21 W	6711.31	359.68	2.52



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 Magnetic Field: 0.485
 Dip Angle: 60.39
 Total Survey Corr.: 6.88
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Calculation Method: Minimum Curvature
 Proposed Azimuth: 359.47
 Depth Reference: Driller
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No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		Closure		DLS (°/100')
								N/S (ft)	E/W (ft)	Dist (ft)	Ang (°)	
96	MWD	18135.00	91.60	1.00	95	11452.77	6806.22	6806.18 N	35.97 W	6806.27	359.70	0.82
97	MWD	18230.00	92.70	1.70	95	11449.21	6901.10	6901.08 N	33.74 W	6901.17	359.72	1.37
98	MWD	18326.00	92.00	1.00	96	11445.27	6996.97	6996.97 N	31.48 W	6997.05	359.74	1.03
99	MWD	18421.00	92.40	2.20	95	11441.63	7091.83	7091.87 N	28.83 W	7091.92	359.77	1.33
100	MWD	18517.00	92.10	2.30	96	11437.86	7187.64	7187.72 N	25.06 W	7187.76	359.80	0.33
101	MWD	18535.00	92.20	2.10	18	11437.18	7205.61	7205.69 N	24.37 W	7205.73	359.81	1.24
102	PTB	18583.00	92.40	1.60	48	11435.26	7253.53	7253.63 N	22.82 W	7253.66	359.82	1.12
103	MWD											
104	MWD											
105	MWD											
106	MWD											
107	MWD											
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