



30-015-43158

June 24, 2015

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

NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 04 2015

RECEIVED

Attn: Kanicia Castillo

RE: Crapshoot 13 Federal Com 002H

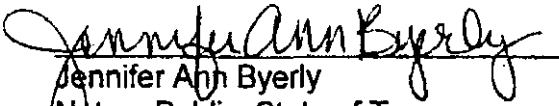
Please find enclosed a copy of the survey from 0' to 7793' ran on the above referenced well.

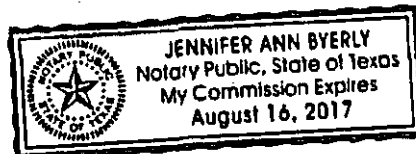
Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 24 day of June,
A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: Concho
Lease/Well: Crapshoot 13 Federal Com/002H

Rig Name: Patriot 6

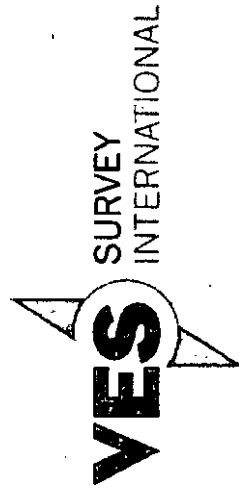
State/County: New Mexico/Eddy

VS-Azi: 0.00 Degrees

Latitude: 32.56538, Longitude: -104.02312

Grid Convergence Applied = -0.17 degs (NAD 27)

Grid North = True North -0.17 degs



Depth Reference : RKB = 18 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 6/24/2015 / 13:57

VES Survey International

Midland, Texas

432-563-5444

Surveyor: Adam Askew

Crapshoot 13 Federal Com 002H / API 30-015-43158

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	1.02	267.03	99.99	-0.05	-0.89	-0.05	0.89	267.03	1.02
200.00	1.60	295.83	199.97	0.51	-3.03	0.51	3.07	279.54	0.86
300.00	2.71	306.77	299.90	2.54	-6.18	2.54	6.68	292.33	1.19
400.00	2.65	304.03	399.79	5.25	-9.99	5.25	11.29	297.72	0.14
500.00	1.18	288.27	499.73	6.87	-12.89	6.87	14.60	298.05	1.54
600.00	0.40	285.49	599.72	7.28	-14.20	7.28	15.96	297.15	0.79
700.00	0.39	220.21	699.72	7.12	-14.76	7.12	16.38	295.75	0.42
800.00	0.75	106.06	799.71	6.68	-14.34	6.68	15.82	294.97	0.98
900.00	1.56	75.21	899.69	6.84	-12.40	6.84	14.16	298.90	0.99
1000.00	1.64	80.37	999.86	7.43	-9.67	7.43	12.20	307.52	0.17
1100.00	1.68	82.16	1099.61	7.87	-6.81	7.87	10.41	319.12	0.07
1200.00	1.31	84.10	1199.58	8.19	-4.22	8.19	9.21	332.73	0.37
1300.00	0.94	35.15	1299.56	8.97	-2.61	8.97	9.34	343.78	0.99
1400.00	0.92	0.31	1399.55	10.45	-2.13	10.45	10.66	348.46	0.56
1500.00	1.01	331.56	1499.54	12.03	-2.55	12.03	12.29	348.03	0.49
1600.00	1.25	307.66	1599.52	13.47	-3.83	13.47	14.00	344.11	0.52

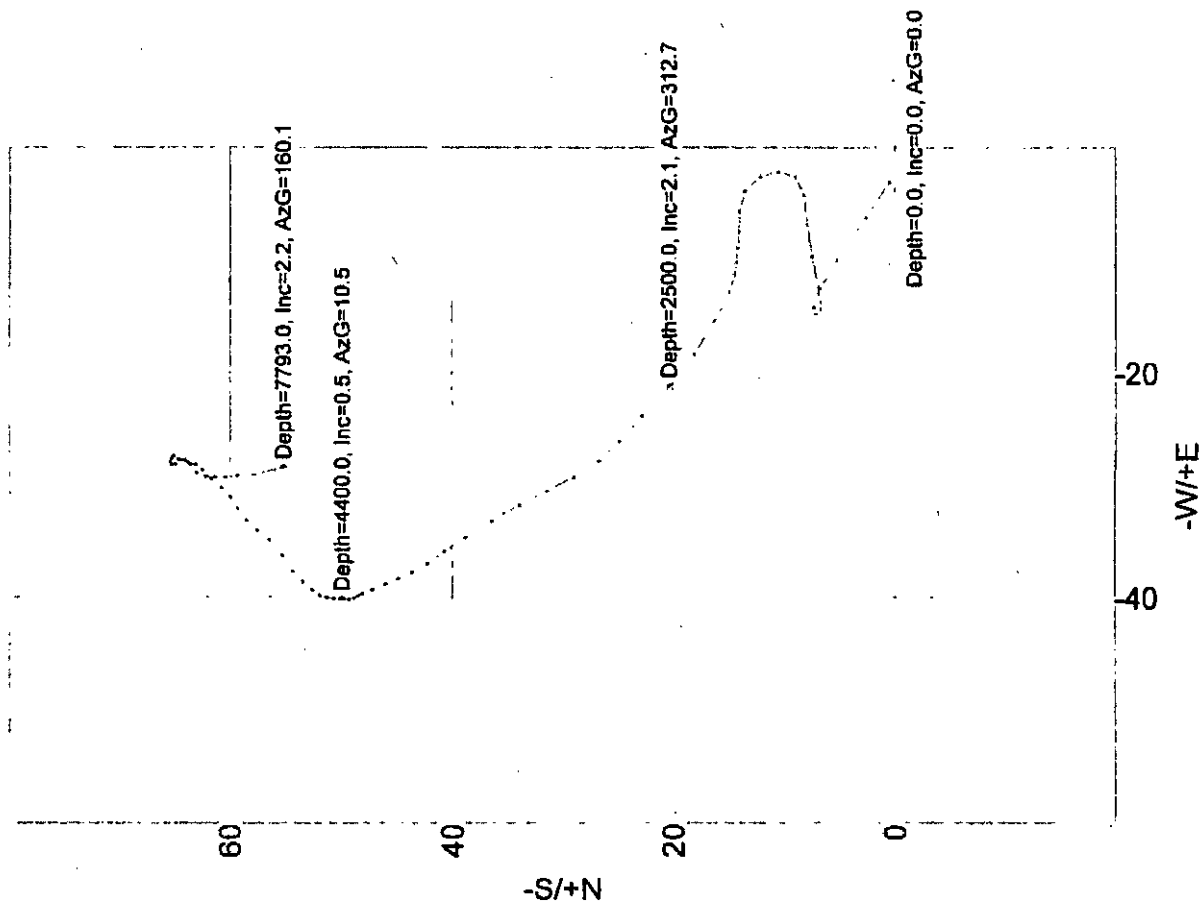
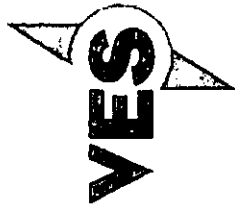
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1700.00	1.06	263.27	1699.50	14.03	-6.81	14.03	16.11	338.19	0.89
1800.00	1.01	278.69	1799.48	14.05	-7.40	14.05	15.88	332.21	0.28
1900.00	0.70	270.36	1899.47	14.19	-8.89	14.19	16.74	327.94	0.34
2000.00	0.76	278.86	1999.46	14.29	-10.15	14.29	17.53	324.83	0.12
2100.00	0.56	274.27	2099.46	14.43	-11.29	14.43	18.32	321.98	0.20
2200.00	1.35	294.62	2199.44	14.96	-12.84	14.96	19.71	319.36	0.85
2300.00	1.91	299.93	2299.40	16.28	-15.35	16.28	22.38	316.68	0.58
2400.00	2.07	303.74	2399.34	18.11	-18.29	18.11	25.74	314.71	0.21
2500.00	2.13	312.73	2499.27	20.37	-21.16	20.37	29.37	313.92	0.34
2600.00	2.04	312.20	2599.21	22.83	-23.85	22.83	33.01	313.76	0.09
2700.00	1.46	310.94	2699.16	24.86	-26.13	24.86	36.07	313.58	0.59
2800.00	1.49	323.17	2799.13	26.74	-27.87	26.74	38.82	313.81	0.32
2900.00	1.53	331.42	2899.09	28.95	-29.28	28.95	41.18	314.67	0.22
3000.00	1.85	332.59	2999.06	31.40	-30.58	31.40	43.83	315.75	0.12
3100.00	1.54	335.97	3099.02	33.90	-31.79	33.90	46.48	316.84	0.14
3200.00	1.75	326.18	3198.98	36.40	-33.19	36.40	48.26	317.64	0.35
3300.00	1.48	330.16	3298.94	38.79	-34.89	38.79	52.04	318.20	0.29
3400.00	1.15	321.76	3398.91	40.70	-35.95	40.70	54.31	318.55	0.38
3500.00	0.97	327.49	3498.89	42.20	-37.02	42.20	56.14	318.74	0.21
3600.00	0.87	331.69	3598.88	43.58	-37.84	43.58	57.71	319.03	0.12
3700.00	0.89	341.36	3698.87	44.82	-38.39	44.82	59.01	319.42	0.22
3800.00	0.76	335.19	3798.86	45.99	-38.88	45.99	60.21	319.80	0.10
3900.00	0.74	339.70	3898.85	47.20	-39.36	47.20	61.46	320.17	0.06
4000.00	0.31	335.63	3998.85	48.05	-39.70	48.05	62.33	320.44	0.43
4100.00	0.14	330.10	4098.85	48.41	-39.87	48.41	62.71	320.52	0.18
4200.00	0.36	332.92	4198.85	48.79	-40.08	48.79	63.14	320.60	0.23
4300.00	0.25	1.41	4298.85	49.30	-40.22	49.30	63.62	320.79	0.19
4400.00	0.46	10.55	4398.84	49.91	-40.14	49.91	64.05	321.20	0.21
4500.00	0.39	351.67	4498.84	50.84	-40.11	50.84	64.80	321.62	0.15
4600.00	0.38	17.83	4598.84	51.29	-40.06	51.29	65.08	322.01	0.17
4700.00	0.38	23.93	4698.84	51.92	-39.82	51.92	65.43	322.51	0.04
4800.00	0.56	42.34	4798.83	52.58	-39.36	52.58	65.68	323.18	0.23
4900.00	0.75	38.48	4898.83	53.46	-38.62	53.46	65.95	324.15	0.20
5000.00	0.73	52.96	4998.82	54.35	-37.71	54.35	66.15	325.25	0.19
5100.00	1.22	57.41	5098.80	55.31	-36.30	55.31	66.16	326.73	0.50
5200.00	0.85	41.37	5198.79	56.44	-34.91	56.44	66.37	328.26	0.47
5300.00	0.76	33.42	5298.78	57.55	-34.06	57.55	66.87	329.38	0.14
5400.00	0.78	51.91	5398.77	58.52	-33.16	58.52	67.26	330.46	0.25
5500.00	0.75	56.02	5498.76	59.31	-32.07	59.31	67.42	331.59	0.06

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
5600.00	0.64	67.33	5698.76	59.97	-31.06	59.97	67.64	332.62	0.12
5700.00	0.67	36.35	5698.75	60.75	-30.26	60.75	67.87	333.52	0.25
5800.00	0.74	45.82	5798.74	61.68	-29.45	61.68	68.35	334.47	0.15
5900.00	0.58	40.56	5898.73	62.51	-28.66	62.51	68.77	335.37	0.18
6000.00	0.31	34.40	5998.73	63.12	-28.18	63.12	69.12	336.94	0.28
6100.00	0.58	5.47	6098.73	63.83	-27.88	63.83	69.69	336.33	0.32
6200.00	0.46	33.26	6198.72	64.64	-27.72	64.64	70.33	336.79	0.26
6300.00	0.15	46.18	6298.72	65.06	-27.41	65.06	70.60	337.16	0.31
6400.00	0.15	262.95	6398.72	65.14	-27.44	65.14	70.88	337.16	0.28
6500.00	0.19	328.19	6498.72	65.26	-27.66	65.26	70.88	337.04	0.18
6600.00	0.21	267.67	6598.72	65.39	-27.92	65.39	71.10	336.88	0.20
6700.00	0.17	212.17	6698.72	65.26	-28.19	65.26	71.09	336.64	0.18
6800.00	0.27	143.82	6798.72	64.94	-28.13	64.94	70.77	336.68	0.26
6900.00	0.34	138.43	6898.72	64.63	-27.79	64.63	70.26	336.70	0.07
7000.00	0.34	211.23	6998.72	64.06	-27.75	64.06	69.81	336.58	0.40
7100.00	0.42	234.28	7098.71	63.59	-28.20	63.59	69.56	336.08	0.17
7200.00	0.68	229.23	7198.71	62.99	-28.95	62.99	69.32	335.32	0.27
7300.00	0.51	160.46	7298.70	62.17	-29.25	62.17	68.71	334.80	0.89
7400.00	0.50	203.03	7398.70	61.35	-29.27	61.35	67.98	334.49	0.37
7500.00	0.62	162.70	7498.70	60.44	-29.29	60.44	67.16	334.15	0.40
7600.00	0.67	182.98	7598.69	59.34	-29.16	59.34	66.11	333.83	0.23
7700.00	1.09	174.74	7698.68	57.80	-29.10	57.80	64.71	333.28	0.44
7793.00	2.23	160.08	7791.64	55.21	-28.40	55.21	62.09	332.78	1.30



VES Survey International
Midland, Texas
432-563-5444

Surveyor: Adam Askew
Crapshoot 13 Federal Com 002H / API 30-015-43158



VES Survey Date: 6/19/2015



COG Operating LLC.

**Eddy County, NM
Crapshoot 13 Federal Com
#2H**

OH

Survey: MWD #1

Survey Report - Geographic

26 June, 2015

**NM OIL CONSERVATION
ARTESTA DISTRICT**

JAN 04 2015

RECEIVED



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC.	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3337.7usft (Original Well Elev)
Site:	Crapshoot 13 Federal Com	MD Reference:	WELL @ 3337.7usft (Original Well Elev)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project:	Eddy 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:		Crapshoot 13 Federal Com			
Site Position:		Northings:	588,535.60 usft	Latitude:	32° 33' 55.360 N
From:	Map	Easting:	595,589.30 usft	Longitude:	104° 1' 23.240 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.17. "

Well)	#2H					
Well Position	+N-S	0.0 usft	Northings:	588,535.60 usft	Latitude:	32° 33' 55.380 N
	+E-W	0.0 usft	Easting:	595,589.30 usft	Longitude:	104° 1' 23.240 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,319.7 usft	

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	8/1/2015	7.33	60.33	48,377

Design:	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	350.79	

Survey Program		Date:	8/28/2015	
From	To	Survey (Wellbore)		Tool Name
(usft)	(usft)			Description
100.0	13,550.0	MWD #1 (OH)	MWD	MWD - Standard

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northings (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	589,535.80	595,589.30	32° 33' 55.380 N	104° 1' 23.240 W
100.0	1.02	287.03	100.0	0.0	-0.9	589,535.58	595,588.41	32° 33' 55.359 N	104° 1' 23.250 W
200.0	1.80	295.83	200.0	0.5	-3.0	589,536.12	595,588.27	32° 33' 55.385 N	104° 1' 23.275 W
300.0	2.71	306.77	299.9	2.5	-6.2	589,538.14	595,583.12	32° 33' 55.385 N	104° 1' 23.312 W
400.0	2.85	304.03	399.8	5.2	-10.0	589,540.85	595,559.31	32° 33' 55.412 N	104° 1' 23.356 W
500.0	1.18	288.27	499.7	8.9	-12.9	589,542.47	595,558.42	32° 33' 55.428 N	104° 1' 23.390 W
600.0	0.40	285.49	599.7	7.3	-14.2	589,542.88	595,555.10	32° 33' 55.432 N	104° 1' 23.405 W
700.0	0.39	220.21	699.7	7.1	-14.6	589,542.72	595,554.54	32° 33' 55.431 N	104° 1' 23.412 W
800.0	0.75	106.06	799.7	6.7	-14.3	589,542.28	595,554.95	32° 33' 55.428 N	104° 1' 23.407 W
900.0	1.56	75.21	899.7	8.8	-12.4	589,542.44	595,556.90	32° 33' 55.428 N	104° 1' 23.384 W
1,000.0	1.84	80.37	999.7	7.4	-9.7	589,543.03	595,559.83	32° 33' 55.434 N	104° 1' 23.352 W
1,100.0	1.88	82.16	1,099.8	7.9	-8.8	589,543.47	595,582.49	32° 33' 55.438 N	104° 1' 23.319 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC.	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3337.7usft (Original Well Elev)
Site:	Crapshoot 13 Federal Com	MD Reference:	WELL @ 3337.7usft (Original Well Elev)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,200.0	1.31	84.10	1,199.6	8.2	-4.2	589,543.79	595,585.08	32° 33' 55.441 N	104° 1' 23.289 W
1,300.0	0.94	35.15	1,299.6	9.0	-2.8	589,544.57	595,586.89	32° 33' 55.448 N	104° 1' 23.270 W
1,400.0	0.92	0.31	1,399.5	10.4	-2.1	589,546.05	595,587.16	32° 33' 55.463 N	104° 1' 23.264 W
1,500.0	1.01	331.58	1,499.5	12.0	-2.8	589,547.63	595,586.75	32° 33' 55.478 N	104° 1' 23.269 W
1,600.0	1.25	307.66	1,599.5	13.5	-3.8	589,549.07	595,585.47	32° 33' 55.493 N	104° 1' 23.284 W
1,700.0	1.08	283.27	1,699.5	14.0	-5.6	589,549.63	595,583.68	32° 33' 55.499 N	104° 1' 23.305 W
1,800.0	1.01	278.89	1,799.5	14.0	-7.4	589,549.85	595,581.89	32° 33' 55.499 N	104° 1' 23.329 W
1,900.0	0.70	270.36	1,899.5	14.2	-8.9	589,549.79	595,580.41	32° 33' 55.500 N	104° 1' 23.343 W
2,000.0	0.78	278.86	1,999.5	14.3	-10.2	589,548.89	595,559.15	32° 33' 55.501 N	104° 1' 23.358 W
2,100.0	0.56	274.27	2,099.5	14.4	-11.3	589,550.03	595,558.00	32° 33' 55.503 N	104° 1' 23.371 W
2,200.0	1.35	284.62	2,199.4	15.0	-12.9	589,550.56	595,556.44	32° 33' 55.508 N	104° 1' 23.389 W
2,300.0	1.91	289.93	2,299.4	16.3	-15.4	589,551.88	595,553.93	32° 33' 55.521 N	104° 1' 23.419 W
2,400.0	2.07	303.74	2,399.3	18.1	-18.3	589,553.72	595,550.88	32° 33' 55.540 N	104° 1' 23.453 W
2,500.0	2.13	312.73	2,499.3	20.4	-21.2	589,555.98	595,548.12	32° 33' 55.582 N	104° 1' 23.488 W
2,600.0	2.04	312.20	2,599.2	22.6	-23.9	589,558.44	595,545.43	32° 33' 55.588 N	104° 1' 23.518 W
2,700.0	1.46	310.94	2,699.2	24.8	-26.2	589,560.47	595,543.15	32° 33' 55.607 N	104° 1' 23.544 W
2,800.0	1.49	323.17	2,799.1	26.7	-27.9	589,562.34	595,541.41	32° 33' 55.625 N	104° 1' 23.565 W
2,900.0	1.53	331.42	2,899.1	29.0	-29.3	589,564.55	595,538.99	32° 33' 55.647 N	104° 1' 23.581 W
3,000.0	1.65	332.59	2,999.1	31.4	-30.6	589,567.01	595,538.88	32° 33' 55.671 N	104° 1' 23.596 W
3,100.0	1.54	335.97	3,099.0	33.9	-31.8	589,569.51	595,537.48	32° 33' 55.696 N	104° 1' 23.610 W
3,200.0	1.75	326.18	3,199.0	36.4	-33.2	589,572.01	595,538.08	32° 33' 55.721 N	104° 1' 23.628 W
3,300.0	1.48	330.16	3,298.9	38.8	-34.7	589,574.40	595,534.59	32° 33' 55.745 N	104° 1' 23.644 W
3,400.0	1.15	321.76	3,398.9	40.7	-38.0	589,576.30	595,533.33	32° 33' 55.784 N	104° 1' 23.659 W
3,500.0	0.97	327.49	3,498.9	42.2	-37.1	589,577.81	595,532.25	32° 33' 55.778 N	104° 1' 23.671 W
3,600.0	0.87	331.69	3,598.9	43.6	-37.9	589,579.19	595,531.44	32° 33' 55.792 N	104° 1' 23.681 W
3,700.0	0.89	341.36	3,698.9	44.6	-38.4	589,580.43	595,530.88	32° 33' 55.804 N	104° 1' 23.687 W
3,800.0	0.78	335.19	3,798.9	46.0	-38.9	589,581.60	595,530.41	32° 33' 55.818 N	104° 1' 23.692 W
3,900.0	0.74	339.70	3,898.9	47.2	-39.4	589,582.61	595,529.91	32° 33' 55.828 N	104° 1' 23.698 W
4,000.0	0.31	335.83	3,998.8	48.1	-39.7	589,583.68	595,529.58	32° 33' 55.838 N	104° 1' 23.702 W
4,100.0	0.14	330.10	4,098.8	48.4	-39.9	589,584.01	595,529.40	32° 33' 55.840 N	104° 1' 23.704 W
4,200.0	0.36	332.92	4,198.8	48.8	-40.1	589,584.40	595,529.20	32° 33' 55.844 N	104° 1' 23.706 W
4,300.0	0.25	1.41	4,298.8	48.3	-40.2	589,584.89	595,529.08	32° 33' 55.849 N	104° 1' 23.708 W
4,400.0	0.46	10.55	4,398.8	49.9	-40.2	589,585.51	595,529.14	32° 33' 55.855 N	104° 1' 23.707 W
4,500.0	0.38	351.87	4,498.8	50.6	-40.1	589,586.24	595,529.16	32° 33' 55.862 N	104° 1' 23.707 W
4,600.0	0.38	17.83	4,598.8	51.3	-40.1	589,588.89	595,529.22	32° 33' 55.888 N	104° 1' 23.708 W
4,700.0	0.38	23.93	4,698.8	51.9	-39.9	589,587.51	595,529.45	32° 33' 55.875 N	104° 1' 23.703 W
4,800.0	0.58	42.34	4,798.8	52.6	-39.4	589,588.17	595,529.92	32° 33' 55.881 N	104° 1' 23.698 W
4,900.0	0.75	38.48	4,898.8	53.4	-38.7	589,589.05	595,530.65	32° 33' 55.890 N	104° 1' 23.689 W
5,000.0	0.73	52.96	4,998.8	54.3	-37.7	589,589.94	595,531.57	32° 33' 55.899 N	104° 1' 23.679 W
5,100.0	1.22	57.41	5,098.8	55.3	-36.3	589,590.90	595,532.87	32° 33' 55.908 N	104° 1' 23.662 W
5,200.0	0.85	41.37	5,198.8	56.4	-34.9	589,592.03	595,534.36	32° 33' 55.919 N	104° 1' 23.646 W
5,300.0	0.76	33.42	5,298.8	57.5	-34.1	589,593.14	595,535.22	32° 33' 55.930 N	104° 1' 23.636 W
5,400.0	0.78	51.91	5,398.8	58.6	-33.2	589,594.11	595,536.12	32° 33' 55.940 N	104° 1' 23.625 W
5,500.0	0.75	56.02	5,498.8	59.3	-32.1	589,594.80	595,537.20	32° 33' 55.947 N	104° 1' 23.613 W
5,600.0	0.84	57.33	5,598.8	60.0	-31.1	589,595.57	595,538.21	32° 33' 55.954 N	104° 1' 23.601 W
5,700.0	0.67	35.35	5,698.7	60.7	-30.3	589,596.35	595,539.02	32° 33' 55.962 N	104° 1' 23.591 W
5,800.0	0.74	45.82	5,798.7	61.7	-29.5	589,597.27	595,539.82	32° 33' 55.971 N	104° 1' 23.582 W
5,900.0	0.58	40.56	5,898.7	62.5	-28.7	589,598.11	595,540.61	32° 33' 55.979 N	104° 1' 23.573 W
6,000.0	0.31	34.40	5,998.7	63.1	-28.2	589,598.72	595,541.09	32° 33' 55.985 N	104° 1' 23.567 W
6,100.0	0.58	5.47	6,098.7	63.8	-28.0	589,599.42	595,541.28	32° 33' 55.992 N	104° 1' 23.565 W
6,200.0	0.46	33.25	6,198.7	64.6	-27.7	589,600.25	595,541.56	32° 33' 56.000 N	104° 1' 23.562 W
6,300.0	0.15	48.18	6,298.7	65.1	-27.4	589,600.67	595,541.87	32° 33' 56.004 N	104° 1' 23.558 W
6,400.0	0.15	282.95	6,398.7	65.1	-27.5	589,600.75	595,541.84	32° 33' 56.005 N	104° 1' 23.558 W
6,500.0	0.19	328.19	6,498.7	65.3	-27.7	589,600.87	595,541.82	32° 33' 56.008 N	104° 1' 23.561 W
6,600.0	0.21	267.67	6,598.7	65.4	-28.0	589,601.01	595,541.35	32° 33' 56.008 N	104° 1' 23.564 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC.	Local Co-ordinates Reference:	Well #2H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3337.7usft (Original Well Elev)
Site:	Crapshoot 13 Federal Com	MD Reference:	WELL @ 3337.7usft (Original Well Elev)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,700.0	0.17	212.17	6,698.7	85.3	-28.2	589,800.87	595,541.09	32° 33' 58.006 N	104° 1' 23.587 W
6,800.0	0.27	143.82	6,798.7	85.0	-28.2	589,800.56	595,541.15	32° 33' 58.003 N	104° 1' 23.586 W
6,900.0	0.34	138.43	6,898.7	84.5	-27.8	589,800.15	595,541.48	32° 33' 55.999 N	104° 1' 23.582 W
7,000.0	0.34	211.23	6,998.7	84.1	-27.8	589,599.67	595,541.53	32° 33' 55.995 N	104° 1' 23.582 W
7,100.0	0.42	234.28	7,098.7	83.8	-28.2	589,599.20	595,541.08	32° 33' 55.990 N	104° 1' 23.587 W
7,200.0	0.68	228.23	7,198.7	83.0	-29.0	589,598.60	595,540.33	32° 33' 55.984 N	104° 1' 23.578 W
7,300.0	0.51	160.48	7,298.7	82.2	-29.3	589,597.79	595,540.03	32° 33' 55.978 N	104° 1' 23.579 W
7,400.0	0.50	203.03	7,398.7	81.4	-29.3	589,596.97	595,540.01	32° 33' 55.988 N	104° 1' 23.580 W
7,500.0	0.62	162.79	7,498.7	80.5	-29.3	589,596.05	595,540.00	32° 33' 55.959 N	104° 1' 23.580 W
7,600.0	0.67	182.98	7,598.7	59.4	-28.2	589,594.95	595,540.13	32° 33' 55.948 N	104° 1' 23.578 W
7,700.0	1.09	174.74	7,698.7	57.8	-29.1	589,593.42	595,540.18	32° 33' 55.933 N	104° 1' 23.578 W
7,793.0	2.23	160.08	7,791.8	55.2	-28.4	589,590.84	595,540.88	32° 33' 55.907 N	104° 1' 23.570 W
7,826.0	2.70	134.10	7,824.6	54.1	-27.6	589,589.70	595,541.68	32° 33' 55.898 N	104° 1' 23.561 W
7,858.0	1.90	115.00	7,856.8	53.3	-28.8	589,588.85	595,542.68	32° 33' 55.888 N	104° 1' 23.549 W
7,889.0	2.80	332.50	7,887.8	53.8	-26.5	589,589.40	595,542.80	32° 33' 55.893 N	104° 1' 23.547 W
7,921.0	7.80	318.10	7,919.4	58.0	-28.3	589,591.82	595,540.97	32° 33' 55.915 N	104° 1' 23.569 W
7,953.0	11.50	329.50	7,951.0	60.3	-31.4	589,595.90	595,537.88	32° 33' 55.857 N	104° 1' 23.605 W
7,984.0	14.60	334.90	7,981.2	68.5	-34.7	589,602.10	595,534.85	32° 33' 56.019 N	104° 1' 23.642 W
8,016.0	17.70	334.40	8,011.9	74.5	-38.5	589,610.14	595,530.84	32° 33' 56.098 N	104° 1' 23.686 W
8,048.0	22.10	330.40	8,042.0	84.2	-43.5	589,619.77	595,525.78	32° 33' 56.194 N	104° 1' 23.745 W
8,079.0	26.90	326.80	8,070.2	95.1	-50.3	589,630.71	595,519.04	32° 33' 56.302 N	104° 1' 23.824 W
8,111.0	30.80	323.50	8,098.2	107.8	-59.1	589,643.38	595,510.18	32° 33' 56.428 N	104° 1' 23.927 W
8,142.0	34.20	320.80	8,124.3	120.9	-69.4	589,656.54	595,499.94	32° 33' 56.558 N	104° 1' 24.046 W
8,174.0	37.10	317.20	8,150.3	135.0	-81.6	589,670.59	595,487.89	32° 33' 56.698 N	104° 1' 24.189 W
8,206.0	40.70	313.80	8,175.2	149.3	-95.7	589,684.91	595,473.61	32° 33' 56.840 N	104° 1' 24.353 W
8,237.0	44.30	311.40	8,188.1	163.5	-111.1	589,699.09	595,458.20	32° 33' 56.981 N	104° 1' 24.532 W
8,269.0	48.00	310.90	8,220.7	178.4	-128.2	589,714.01	595,441.12	32° 33' 57.129 N	104° 1' 24.731 W
8,301.0	48.50	310.80	8,242.4	193.8	-146.0	589,729.38	595,423.34	32° 33' 57.282 N	104° 1' 24.938 W
8,332.0	52.00	312.10	8,282.2	209.6	-163.8	589,745.16	595,405.49	32° 33' 57.438 N	104° 1' 25.147 W
8,364.0	56.00	313.00	8,281.0	227.1	-182.9	589,762.67	595,386.42	32° 33' 57.612 N	104° 1' 25.389 W
8,396.0	59.80	312.50	8,298.1	245.4	-202.8	589,781.04	595,366.54	32° 33' 57.794 N	104° 1' 25.600 W
8,427.0	62.80	311.60	8,313.0	263.8	-222.9	589,799.24	595,346.36	32° 33' 57.975 N	104° 1' 25.838 W
8,459.0	66.30	310.30	8,326.7	282.6	-244.8	589,818.18	595,324.53	32° 33' 58.183 N	104° 1' 26.090 W
8,491.0	69.50	309.40	8,338.7	301.8	-267.5	589,837.17	595,301.77	32° 33' 58.352 N	104° 1' 26.355 W
8,522.0	72.20	309.30	8,348.9	320.1	-290.2	589,855.74	595,279.12	32° 33' 58.538 N	104° 1' 26.619 W
8,552.0	75.10	307.30	8,357.3	338.0	-312.8	589,873.58	595,256.53	32° 33' 58.713 N	104° 1' 26.883 W
8,584.0	78.10	308.30	8,364.8	357.1	-337.4	589,892.65	595,231.94	32° 33' 58.903 N	104° 1' 27.170 W
8,615.0	79.80	308.50	8,370.7	375.9	-361.2	589,911.55	595,208.10	32° 33' 59.090 N	104° 1' 27.448 W
8,647.0	80.40	308.80	8,376.2	395.6	-385.8	589,931.24	595,183.48	32° 33' 59.288 N	104° 1' 27.735 W
8,678.0	81.20	310.50	8,381.2	415.2	-409.4	589,950.77	595,159.92	32° 33' 59.480 N	104° 1' 28.009 W
8,710.0	81.20	312.30	8,386.1	436.1	-433.1	589,971.68	595,136.20	32° 33' 59.687 N	104° 1' 28.286 W
8,742.0	81.70	314.30	8,390.8	457.8	-456.1	589,993.38	595,113.17	32° 33' 59.903 N	104° 1' 28.554 W
8,773.0	82.20	315.30	8,395.2	479.4	-477.9	570,015.01	595,091.39	32° 34' 0.118 N	104° 1' 28.808 W
8,805.0	83.80	316.40	8,399.1	502.2	-500.0	570,037.80	595,069.27	32° 34' 0.344 N	104° 1' 29.065 W
8,837.0	85.20	317.80	8,402.1	525.5	-521.7	570,061.13	595,047.59	32° 34' 0.575 N	104° 1' 29.318 W
8,869.0	85.90	319.60	8,404.6	549.5	-542.8	570,085.10	595,026.53	32° 34' 0.813 N	104° 1' 29.563 W
8,900.0	85.50	321.80	8,408.9	573.4	-562.3	570,109.03	595,006.88	32° 34' 1.050 N	104° 1' 29.791 W
8,932.0	85.90	323.40	8,409.3	598.8	-581.7	570,134.40	594,987.82	32° 34' 1.302 N	104° 1' 30.016 W
8,964.0	87.30	324.80	8,411.2	624.7	-600.4	570,160.27	594,968.89	32° 34' 1.558 N	104° 1' 30.234 W
8,995.0	88.90	326.20	8,412.3	650.2	-618.0	570,185.81	594,951.34	32° 34' 1.812 N	104° 1' 30.439 W
9,027.0	89.70	328.40	8,412.8	677.1	-635.2	570,212.73	594,934.05	32° 34' 2.079 N	104° 1' 30.640 W
9,059.0	89.80	330.30	8,412.8	704.7	-651.6	570,240.26	594,917.74	32° 34' 2.352 N	104° 1' 30.829 W
9,090.0	89.80	332.00	8,412.9	731.8	-666.5	570,267.41	594,902.78	32° 34' 2.621 N	104° 1' 31.003 W
9,122.0	89.80	333.90	8,413.0	760.3	-681.1	570,295.91	594,888.23	32° 34' 2.903 N	104° 1' 31.172 W
9,154.0	89.60	335.70	8,413.2	789.3	-694.7	570,324.88	594,874.61	32° 34' 3.190 N	104° 1' 31.330 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC.	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3337.7usft (Original Well Elev)
Site:	Crapshoot 13 Federal Com	MD Reference:	WELL @ 3337.7usft (Original Well Elev)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N-S (usft)	E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,185.0	89.40	337.80	8,413.4	817.7	-706.9	570,353.34	594,862.37	32° 34' 3.472 N	104° 1' 31.472 W
9,217.0	89.70	339.60	8,413.7	847.5	-718.6	570,363.15	594,850.75	32° 34' 3.767 N	104° 1' 31.607 W
9,248.0	89.80	341.30	8,413.8	876.8	-728.9	570,412.36	594,840.38	32° 34' 4.057 N	104° 1' 31.728 W
9,312.0	89.80	344.80	8,414.1	938.0	-747.6	570,473.57	594,821.72	32° 34' 4.683 N	104° 1' 31.943 W
9,375.0	90.80	347.20	8,413.7	999.1	-762.8	570,534.70	594,806.48	32° 34' 5.288 N	104° 1' 32.119 W
9,439.0	90.80	349.20	8,412.8	1,061.7	-775.9	570,597.33	594,793.40	32° 34' 5.889 N	104° 1' 32.270 W
9,534.0	90.10	351.40	8,412.1	1,155.4	-791.9	570,690.97	594,777.39	32° 34' 6.816 N	104° 1' 32.454 W
9,629.0	90.70	353.00	8,411.4	1,249.5	-804.8	570,785.08	594,764.50	32° 34' 7.747 N	104° 1' 32.602 W
9,755.0	89.60	354.90	8,411.1	1,374.8	-818.1	570,910.37	594,751.22	32° 34' 8.988 N	104° 1' 32.753 W
9,850.0	91.70	354.90	8,410.0	1,469.4	-828.5	571,004.98	594,742.78	32° 34' 9.924 N	104° 1' 32.848 W
9,977.0	89.20	355.70	8,408.0	1,595.9	-836.9	571,131.54	594,732.37	32° 34' 11.177 N	104° 1' 32.965 W
10,104.0	87.70	358.20	8,412.5	1,722.7	-843.7	571,258.30	594,725.62	32° 34' 12.431 N	104° 1' 33.040 W
10,199.0	89.20	358.30	8,415.0	1,817.6	-848.6	571,353.22	594,722.72	32° 34' 13.371 N	104° 1' 33.071 W
10,294.0	90.50	358.30	8,415.3	1,912.6	-849.4	571,448.18	594,719.80	32° 34' 14.310 N	104° 1' 33.100 W
10,389.0	90.60	359.90	8,414.4	2,007.6	-850.9	571,543.16	594,718.41	32° 34' 15.250 N	104° 1' 33.115 W
10,484.0	89.70	0.50	8,414.1	2,102.6	-850.6	571,638.16	594,718.74	32° 34' 16.190 N	104° 1' 33.108 W
10,579.0	89.20	0.00	8,415.0	2,197.5	-850.2	571,733.15	594,718.15	32° 34' 17.130 N	104° 1' 33.100 W
10,674.0	90.80	359.80	8,415.0	2,292.5	-850.3	571,828.15	594,718.99	32° 34' 18.070 N	104° 1' 33.098 W
10,769.0	89.80	359.60	8,414.4	2,387.5	-850.8	571,923.14	594,718.49	32° 34' 19.011 N	104° 1' 33.101 W
10,864.0	88.90	0.00	8,415.4	2,482.5	-851.1	572,018.13	594,718.16	32° 34' 19.951 N	104° 1' 33.102 W
10,859.0	90.20	359.90	8,416.2	2,577.5	-851.2	572,113.13	594,718.07	32° 34' 20.891 N	104° 1' 33.099 W
11,054.0	91.80	359.30	8,414.5	2,672.5	-851.9	572,208.11	594,717.41	32° 34' 21.831 N	104° 1' 33.104 W
11,149.0	90.50	0.60	8,412.6	2,767.5	-852.0	572,303.09	594,717.33	32° 34' 22.770 N	104° 1' 33.102 W
11,243.0	89.80	1.00	8,412.4	2,861.5	-850.7	572,397.08	594,718.64	32° 34' 23.700 N	104° 1' 33.083 W
11,338.0	91.40	0.60	8,411.4	2,956.5	-849.3	572,492.06	594,719.97	32° 34' 24.640 N	104° 1' 33.064 W
11,465.0	89.10	0.20	8,410.8	3,083.4	-848.4	572,618.05	594,720.85	32° 34' 25.897 N	104° 1' 33.050 W
11,560.0	90.80	0.30	8,410.9	3,178.4	-848.0	572,714.04	594,721.27	32° 34' 26.837 N	104° 1' 33.042 W
11,657.0	89.50	0.20	8,410.6	3,305.4	-847.5	572,841.04	594,721.82	32° 34' 28.094 N	104° 1' 33.031 W
11,762.0	90.80	0.20	8,410.3	3,400.4	-847.1	572,936.03	594,722.15	32° 34' 29.034 N	104° 1' 33.024 W
11,808.0	88.90	0.70	8,412.9	3,528.4	-846.2	573,061.88	594,723.14	32° 34' 30.280 N	104° 1' 33.008 W
12,003.0	88.20	0.60	8,416.9	3,621.3	-845.1	573,156.88	594,724.22	32° 34' 31.219 N	104° 1' 32.992 W
12,098.0	89.40	0.80	8,418.9	3,716.3	-843.9	573,251.85	594,725.38	32° 34' 32.159 N	104° 1' 32.975 W
12,193.0	91.00	0.40	8,418.8	3,811.2	-842.9	573,346.85	594,726.37	32° 34' 33.099 N	104° 1' 32.961 W
12,288.0	90.00	0.40	8,417.7	3,906.2	-842.3	573,441.84	594,727.04	32° 34' 34.039 N	104° 1' 32.950 W
12,351.0	90.80	0.60	8,417.4	3,999.2	-841.7	573,504.83	594,727.59	32° 34' 34.882 N	104° 1' 32.941 W
12,446.0	89.80	0.60	8,417.1	4,084.2	-840.7	573,599.83	594,728.58	32° 34' 35.802 N	104° 1' 32.928 W
12,541.0	91.80	1.00	8,415.8	4,159.2	-839.4	573,694.80	594,729.91	32° 34' 36.542 N	104° 1' 32.908 W
12,668.0	89.90	1.20	8,413.9	4,286.2	-837.0	573,821.76	594,732.35	32° 34' 37.798 N	104° 1' 32.875 W
12,763.0	89.50	0.80	8,414.4	4,381.1	-835.2	573,918.74	594,734.09	32° 34' 38.738 N	104° 1' 32.851 W
12,858.0	88.80	359.90	8,415.7	4,478.1	-834.6	574,011.73	594,734.75	32° 34' 39.678 N	104° 1' 32.840 W
12,953.0	90.40	359.70	8,416.3	4,571.1	-834.9	574,106.73	594,734.42	32° 34' 40.618 N	104° 1' 32.841 W
13,048.0	90.00	359.10	8,415.9	4,666.1	-835.9	574,201.72	594,733.42	32° 34' 41.558 N	104° 1' 32.848 W
13,143.0	88.80	359.90	8,416.9	4,761.1	-836.7	574,296.71	594,732.59	32° 34' 42.498 N	104° 1' 32.856 W
13,238.0	90.40	0.30	8,417.6	4,856.1	-836.5	574,391.70	594,732.76	32° 34' 43.438 N	104° 1' 32.851 W
13,384.0	90.00	0.80	8,417.2	4,982.1	-835.3	574,517.69	594,733.97	32° 34' 44.685 N	104° 1' 32.832 W
13,550.0	90.00	0.80	8,417.2	5,168.1	-832.7	574,703.68	594,736.57	32° 34' 46.525 N	104° 1' 32.798 W

PBHL(CSFC#2H)

Checked By: _____ Approved By: _____ Date: _____