

October 27, 2014

15-42410

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

Attn: Kanicia Castillo

RE: Passion 1 Federal Com PDKSH

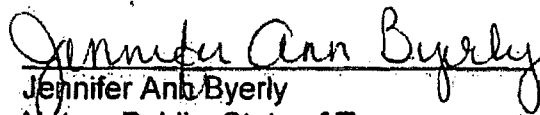
Please find enclosed a copy of the survey from 0.00' to 3813.00' ran on the above referenced well.

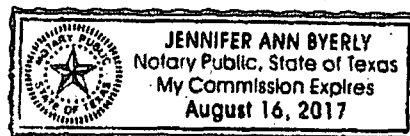
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 27 day of October A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: COG Operating, LLC (Concho)
 Lease/Well: Passion 1 Federal Com PDK/6H
 Location: Sec 1 T17S R29E
 Rig Name: United 43
 State/County: New Mexico/Eddy
 Latitude: 32.86, Longitude: -104.02
 GRID North is 0.17 Degrees East of True North
 VS-Azi: 0.00 Degrees



Depth Reference : RKB = 14.5 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 10/27/2014 / 12:33

VES Survey International

West Texas

(432) 563-6444

Surveyor: Noe Garza

Passion 1 Federal Com PDK 6H / API 30-015-42410

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	0.26	314.57	100.00	0.16	-0.16	0.16	0.23	314.57	0.26
200.00	0.57	281.23	200.00	0.41	-0.81	0.41	0.91	297.03	0.38
300.00	0.75	279.94	299.99	0.63	-1.95	0.63	2.05	287.77	0.18
400.00	0.29	256.26	399.99	0.68	-2.84	0.68	2.92	283.43	0.50
500.00	0.40	267.02	499.98	0.60	-3.44	0.60	3.49	279.91	0.13
600.00	0.12	246.97	599.98	0.54	-3.88	0.54	3.92	277.96	0.29
700.00	0.32	210.64	699.98	0.27	-4.12	0.27	4.12	273.69	0.23
800.00	0.19	359.83	799.98	0.19	-4.26	0.19	4.26	272.61	0.49
900.00	0.24	84.92	899.98	0.38	-4.05	0.38	4.06	275.34	0.30
1000.00	0.80	89.67	999.98	0.40	-3.14	0.40	3.16	277.29	0.56
1100.00	1.13	86.68	1099.96	0.46	-1.45	0.46	1.52	287.64	0.33
1200.00	0.67	73.60	1199.95	0.68	0.09	0.68	0.69	7.73	0.50
1300.00	0.53	88.01	1299.94	0.87	1.12	0.87	1.41	52.16	0.21
1400.00	0.20	89.26	1399.94	0.88	1.75	0.88	1.96	63.14	0.33
1500.00	0.15	46.97	1499.94	0.98	2.02	0.98	2.24	64.12	0.13
1600.00	0.28	105.06	1599.94	1.01	2.35	1.01	2.55	66.79	0.23
1700.00	0.31	106.89	1699.94	0.87	2.83	0.87	2.96	73.01	0.03
1800.00	0.15	101.51	1799.94	0.76	3.21	0.76	3.30	76.65	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	0.14	64.35	1899.94	0.79	3.45	0.79	3.54	77.11	0.09
2000.00	0.23	56.04	1999.94	0.96	3.72	0.96	3.85	75.62	0.10
2100.00	0.32	9.67	2099.94	1.35	3.94	1.35	4.17	71.12	0.23
2200.00	0.22	326.33	2199.94	1.78	3.88	1.78	4.27	65.34	0.22
2300.00	0.36	2.83	2299.94	2.26	3.80	2.26	4.42	59.24	0.23
2400.00	0.63	345.96	2399.93	3.11	3.68	3.11	4.82	49.76	0.30
2500.00	0.49	334.17	2499.93	4.03	3.36	4.03	5.24	39.82	0.19
2600.00	0.79	316.65	2599.92	4.91	2.70	4.91	5.60	28.82	0.36
2700.00	0.74	308.72	2699.91	5.81	1.73	5.81	6.06	16.56	0.12
2800.00	1.16	304.92	2799.90	6.79	0.40	6.79	6.80	3.36	0.42
2900.00	1.39	294.52	2899.87	7.87	-1.53	7.87	8.02	348.97	0.33
3000.00	1.49	287.31	2999.84	8.77	-3.89	8.77	9.59	336.10	0.21
3100.00	1.04	277.81	3099.82	9.28	-6.03	9.28	11.07	326.98	0.50
3200.00	0.79	249.95	3199.80	9.17	-7.58	9.17	11.89	320.41	0.50
3300.00	0.71	251.99	3299.80	8.74	-8.82	8.74	12.41	314.74	0.08
3400.00	0.86	248.21	3399.79	8.26	-10.11	8.26	13.06	309.28	0.16
3500.00	0.66	257.20	3499.78	7.86	-11.37	7.86	13.82	304.64	0.23
3600.00	0.59	230.17	3599.77	7.40	-12.33	7.40	14.38	300.98	0.30
3700.00	0.76	234.43	3699.76	6.69	-13.26	6.69	14.85	296.76	0.18
3813.00	0.40	230.38	3812.76	6.00	-14.17	6.00	15.39	292.96	0.32



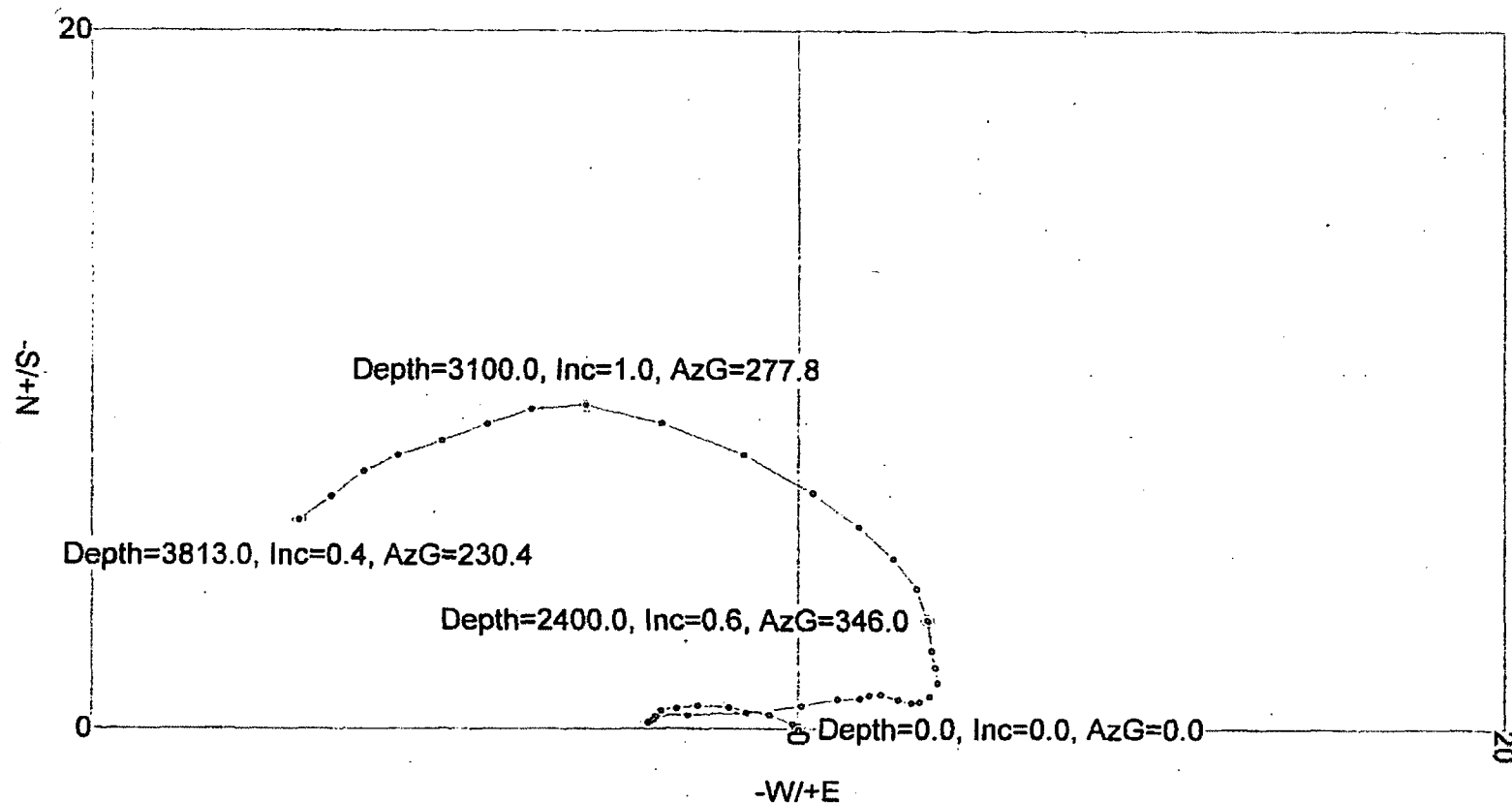
VES Survey International

West Texas

(432) 563-5444

Surveyor: Noe Garza

Passion 1 Federal Com PDK 6H / API 30-015-42410



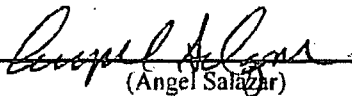
VES Survey Date: 10/06/2014

WELL NAME AND NUMBER Passion 1 Federal Com PDK5 H
 LOCATION Section 1, T17S, R29E, Unit I, 1910 FSL, 180 FEL, Eddy County
 OPERATOR COG Operating LLC
 DRILLING CONTRACTOR United Drilling, Inc.

The undersigned hereby certifies that he is an authorized representative of the drilling contractor who drilled the above described well and had conducted deviation test and obtained the following results:

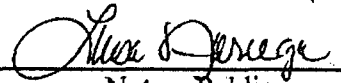
Degrees @ Depth	Degrees @ Depth	Degrees @ Depth
.5° @ 324'	24.4° @ 4227'	90.5° @ 4950'
.5° @ 479'	27.6° @ 4258'	89.7° @ 5234'
.2° @ 888'	35.2° @ 4322'	91.6° @ 5424'
1° @ 1749'	39.3° @ 4353'	91.9° @ 5518'
.4° @ 2191'	43.0° @ 4385'	91.7° @ 5613'
.75° @ 2633'	46.9° @ 4416'	90.1° @ 5709'
1.3° @ 2996'	50.3° @ 4448'	90.7° @ 5804'
1.0° @ 3436'	54.3° @ 4479'	91.0° @ 5898'
.4° @ 3880'	58.3° @ 4510'	91.6° @ 5993'
.8° @ 3911'	62.5° @ 4542'	90.3° @ 6087'
3.2° @ 3943'	70.7° @ 4605'	90.5° @ 6182'
5.8° @ 3974'	78.5° @ 4668'	90.5° @ 6276'
8.9° @ 4006'	82.2° @ 4699'	91.2° @ 6371'
12° @ 4037'	84.9° @ 4731'	91.4° @ 6495'
14.7° @ 4068'	87.3° @ 4762'	91.1° @ 6560'
16.7° @ 4100'	89.5° @ 4794'	91.2° @ 6749'
17.8° @ 4132'	90.9° @ 4825'	91.4° @ 6844'
21.5° @ 4195'	91.8° @ 4856'	91.5° @ 7033'

Drilling Contractor- UNITED DRILLING, INC.

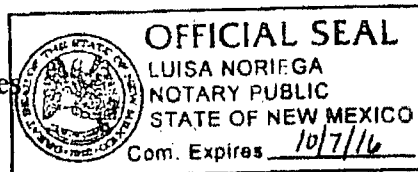
By: 
 (Angel Salazar)

Title: Vice President

Subscribed and sworn to before me this 15th day of October, 2014.


 Notary Public

My Commission Expires



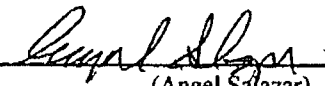
 NM
 County State

WELL NAME AND NUMBER Passion 1 Federal Com PDK 6H
 LOCATION Section 1, T17S, R29E, Unit I, 1910 FSL, 180 FEL, Eddy County
 OPERATOR COG Operating LLC
 DRILLING CONTRACTOR United Drilling, Inc.

The undersigned hereby certifies that he is an authorized representative of the drilling contractor who drilled the above described well and had conducted deviation test and obtained the following results:

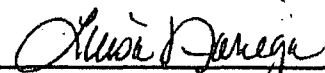
Degrees @ Depth	Degrees @ Depth	Degrees @ Depth
89.2° @ 7224'	90.8° @ 8928'	
89.6° @ 7319'	91.2° @ 9041'	
89.7° @ 7413'		
89.8° @ 7508'		
90.9° @ 7602'		
91.0° @ 7697'		
91.0° @ 7791'		
91.1° @ 7886'		
91.2° @ 7981'		
91.2° @ 8076'		
91.7° @ 8171'		
91.6° @ 8265'		
91.5° @ 8359'		
91.6° @ 8454'		
91.5° @ 8549'		
91.4° @ 8644'		
91.3° @ 8738'		
91.2° @ 8833'		

Drilling Contractor- UNITED DRILLING, INC.

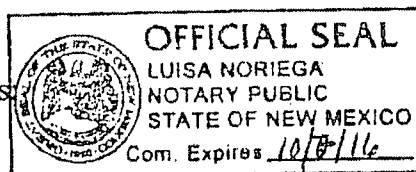
By: 
 (Angel Salazar)

Title: Vice President

Subscribed and sworn to before me this 15th day of October, 2014.


 Notary Public

My Commission Expires



Chaves NM
 County State

COG OPERATING, LLC

Eddy County, NM

**Passion 1 Federal Com PDK 5H
5H**

Lateral

Design: Surveys

Standard Survey Report

13 October, 2014

Archer Survey Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County, NM	TVD Reference:	3682' GL + 13' KB @ 3695.00 usft (Planning)
Site:	Passion, 1 Federal Com PDK 5H	MD Reference:	3682' GL + 13' KB @ 3695.00 usft (Planning)
Well:	5H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM R5000.1/MULTI

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:		Passion, 1 Federal Com PDK 5H			
Site Position:		Northing:	677,233.89 usft	Latitude:	32° 51' 41.06 N
From:	Map	Easting:	596,294.50 usft	Longitude:	104° 1' 11.04 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.17 °

Well:	5H					
Well Position	+N-S	0.00 usft	Northing:	677,233.89 usft	Latitude:	32° 51' 41.06 N
	+E-W	0.00 usft	Easting:	596,294.50 usft	Longitude:	104° 1' 11.04 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,682.00 usft

Wellbore		Lateral			
Magnetics	Model Name	Sample Date	Declination (μ)	Dip Angle (θ)	Field Strength (μ T)
	HDGM	9/5/2014	7.82	60.72	48,563

Design:		Surveys:			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	274.41	

Survey Program		Date	10/13/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	3,813.00	Survey #1 (Lateral)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
3,848.00	9,041.00	Survey #2 (Lateral)	MWD+HDGM	OWSG MWD + HDGM	
9,108.00	9,108.00	Survey #3 (Lateral)	Project	Projection	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Ratio (°/100usft)	Build Ratio (°/100usft)	Turn Ratio (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.26	314.57	100.00	0.16	-0.16	0.17	0.26	0.26	0.00
200.00	0.57	281.23	200.00	0.42	-0.81	0.84	0.38	0.31	-33.34
300.00	0.75	279.94	299.99	0.83	-1.94	1.99	0.18	0.18	-1.29
400.00	0.29	256.26	399.99	0.68	-2.83	2.88	0.50	-0.46	-23.68
500.00	0.40	267.02	499.98	0.60	-3.43	3.46	0.13	0.11	10.76
600.00	0.12	246.97	599.98	0.54	-3.87	3.90	0.29	-0.28	-20.05
700.00	0.32	210.64	699.98	0.28	-4.11	4.12	0.23	0.20	-36.33
800.00	0.19	359.83	799.98	0.18	-4.26	4.26	0.49	-0.13	149.19

Archer Survey Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County, NM	TVD Reference:	3682 GL+13'KB @ 3695.00usft (Planning)
Site:	Passion II Federal Com PDK 5H	MD Reference:	3682 GL+13'KB @ 3695.00usft (Planning)
Well:	5H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM R5000.1(MULTI)

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)
900.00	0.24	84.92	899.98	0.37	-4.05	4.06	0.29	0.05	85.09
1,000.00	0.80	89.67	999.98	0.39	-3.14	3.16	0.56	0.56	4.75
1,100.00	1.13	86.68	1,099.96	0.45	-1.46	1.49	0.33	0.33	-2.99
1,200.00	0.67	73.60	1,199.95	0.68	0.09	-0.04	0.50	-0.46	-13.08
1,300.00	0.53	88.01	1,299.94	0.86	1.11	-1.04	0.20	-0.14	14.41
1,400.00	0.20	89.26	1,399.94	0.87	1.75	-1.67	0.33	-0.33	1.25
1,500.00	0.15	46.97	1,499.94	0.97	2.02	-1.94	0.13	-0.05	-42.29
1,600.00	0.28	105.06	1,599.94	0.99	2.35	-2.27	0.24	0.13	58.08
1,700.00	0.31	106.89	1,699.94	0.85	2.84	-2.77	0.03	0.03	1.83
1,800.00	0.15	101.51	1,799.94	0.75	3.23	-3.16	0.16	-0.16	-5.38
1,900.00	0.14	64.35	1,899.94	0.77	3.47	-3.40	0.09	-0.01	-37.16
2,000.00	0.23	56.04	1,999.94	0.94	3.75	-3.66	0.09	0.09	-8.31
2,100.00	0.32	9.67	2,099.94	1.32	3.96	-3.85	0.23	0.09	-46.37
2,200.00	0.22	326.33	2,199.94	1.76	3.90	-3.75	0.22	-0.10	-43.34
2,300.00	0.36	2.83	2,299.94	2.23	3.81	-3.63	0.23	0.14	36.50
2,400.00	0.63	345.96	2,399.93	3.08	3.69	-3.44	0.30	0.27	-16.87
2,500.00	0.49	334.17	2,499.93	4.00	3.37	-3.05	0.18	-0.14	-11.79
2,600.00	0.79	316.65	2,599.92	4.88	2.71	-2.33	0.35	0.30	-17.52
2,700.00	0.74	308.72	2,699.91	5.79	1.73	-1.28	0.12	-0.05	-7.93
2,800.00	1.16	304.92	2,799.90	6.77	0.40	0.12	0.42	0.42	-3.80
2,900.00	1.39	294.52	2,899.87	7.86	-1.53	2.13	0.33	0.23	-10.40
3,000.00	1.49	287.31	2,999.84	8.75	-3.88	4.54	0.21	0.10	-7.21
3,100.00	1.04	277.81	3,099.82	9.26	-6.02	6.71	0.49	-0.45	-9.50
3,200.00	0.79	249.95	3,199.80	9.14	-7.56	8.24	0.50	-0.25	-27.86
3,300.00	0.71	251.99	3,299.80	8.72	-8.80	9.45	0.08	-0.08	2.04
3,400.00	0.86	248.21	3,399.79	8.25	-10.09	10.69	0.16	0.15	-3.78
3,500.00	0.66	257.20	3,499.78	7.84	-11.35	11.91	0.23	-0.20	8.99
3,600.00	0.59	230.17	3,599.77	7.38	-12.30	12.83	0.30	-0.07	-27.03
3,700.00	0.76	234.43	3,699.77	6.67	-13.24	13.71	0.18	0.17	4.26
3,813.00	0.40	230.38	3,812.76	5.98	-14.15	14.57	0.32	-0.32	-3.58
3,848.00	0.40	184.20	3,847.76	5.78	-14.25	14.66	0.90	0.00	-131.94
3,880.00	0.40	217.80	3,879.76	5.58	-14.33	14.72	0.72	0.00	105.00
3,911.00	0.80	291.10	3,910.76	5.57	-14.60	14.98	2.53	1.29	236.45
3,943.00	3.20	319.80	3,942.73	6.33	-15.38	15.83	7.90	7.50	89.69
3,974.00	5.80	324.20	3,973.64	8.27	-16.86	17.44	8.45	8.39	14.19
4,006.00	8.90	329.70	4,005.37	11.72	-19.05	19.90	9.92	9.69	17.19
4,037.00	12.00	337.10	4,035.85	16.76	-21.52	22.74	10.88	10.00	23.87
4,068.00	14.70	344.60	4,066.02	23.52	-23.82	25.56	10.33	8.71	24.19
4,100.00	16.70	345.80	4,096.82	31.89	-26.02	28.40	6.33	6.25	3.75
4,132.00	17.80	338.50	4,127.38	40.90	-28.94	32.00	7.58	3.44	-22.81
4,163.00	19.20	331.60	4,156.78	49.79	-33.11	36.84	8.38	4.52	-22.26
4,195.00	21.50	326.40	4,186.79	59.31	-38.86	43.30	9.14	7.19	-16.25
4,227.00	24.40	323.30	4,216.25	69.50	-46.05	51.26	9.82	9.06	-9.69

Archer Survey Report

Company:	COG OPERATING LLC	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County NM	TVD Reference:	3682'GL+13'KB @ 3695.00usft (Planning)
Site:	Passion 1 Federal Com PDK 5H	MD Reference:	3682'GL+13'KB @ 3695.00usft (Planning)
Well:	5H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM R5000:1(MULTI)

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)
4,258.00	27.60	319.60	4,244.11	80.10	-54.54	60.53	11.57	10.32	-11.94
4,290.00	31.20	316.10	4,271.99	91.72	-65.09	71.95	12.46	11.25	-10.94
4,322.00	35.20	313.50	4,298.76	104.05	-77.54	85.31	13.27	12.50	-8.13
4,353.00	39.30	311.60	4,323.43	116.72	-91.36	100.07	13.73	13.23	-6.13
4,385.00	43.00	309.50	4,347.53	130.40	-107.37	117.08	12.34	11.56	-8.56
4,416.00	46.90	307.10	4,369.46	143.96	-124.56	135.26	13.72	12.58	-7.74
4,448.00	50.30	304.50	4,390.62	157.98	-144.03	155.75	12.25	10.63	-8.13
4,479.00	54.30	302.50	4,409.58	171.51	-164.48	177.19	13.88	12.90	-6.45
4,510.00	58.30	300.80	4,426.78	185.03	-186.44	200.11	13.69	12.90	-5.48
4,542.00	62.50	299.30	4,442.58	198.95	-210.52	225.19	13.74	13.13	-4.69
4,573.00	66.50	297.50	4,455.92	212.25	-235.13	250.75	13.93	12.90	-5.81
4,605.00	70.70	295.90	4,467.60	225.63	-261.74	278.32	13.93	13.13	-5.00
4,638.00	74.90	294.50	4,476.76	238.23	-288.53	306.00	14.22	13.55	-4.52
4,668.00	78.50	292.50	4,484.12	250.64	-317.09	335.42	12.79	11.25	-6.25
4,699.00	82.20	290.60	4,489.32	261.86	-345.51	364.62	13.38	11.94	-6.13
4,731.00	84.90	286.60	4,492.92	272.00	-375.63	395.44	15.01	8.44	-12.50
4,762.00	87.30	285.10	4,495.03	280.44	-405.38	425.75	9.12	7.74	-4.84
4,794.00	89.50	284.20	4,495.92	288.53	-435.33	457.22	7.43	6.88	-2.81
4,825.00	90.90	284.20	4,495.81	296.14	-466.38	487.77	4.52	4.52	0.00
4,856.00	91.80	284.20	4,495.08	303.74	-496.43	518.31	2.90	2.90	0.00
4,950.00	90.50	281.70	4,493.19	324.80	-588.01	611.24	3.00	-1.38	-2.66
5,045.00	90.60	279.30	4,492.28	342.11	-681.40	705.69	2.53	0.11	-2.53
5,139.00	89.80	276.10	4,491.95	354.70	-774.54	799.52	3.51	-0.85	-3.40
5,234.00	89.70	273.20	4,492.37	362.40	-869.22	894.51	3.05	-0.11	-3.05
5,329.00	91.10	270.50	4,491.70	365.47	-964.16	989.40	3.20	1.47	-2.84
5,424.00	91.60	270.40	4,489.47	366.21	-1,059.13	1,084.15	0.54	0.53	-0.11
5,518.00	91.90	270.10	4,486.60	366.62	-1,153.08	1,177.86	0.45	0.32	-0.32
5,613.00	91.70	269.80	4,483.61	366.54	-1,248.04	1,272.53	0.38	-0.21	-0.32
5,709.00	90.10	270.50	4,482.10	366.79	-1,344.02	1,368.24	1.82	-1.67	0.73
5,804.00	90.70	270.10	4,481.44	367.29	-1,439.02	1,463.00	0.76	0.63	-0.42
5,898.00	91.00	269.70	4,480.05	367.12	-1,533.00	1,556.70	0.53	0.32	-0.43
5,993.00	91.60	270.20	4,477.89	367.04	-1,627.98	1,651.38	0.82	0.63	0.53
6,087.00	90.30	269.70	4,476.33	366.96	-1,721.96	1,745.08	1.48	-1.38	-0.53
6,182.00	90.50	269.50	4,475.67	366.30	-1,816.96	1,839.75	0.30	0.21	-0.21
6,276.00	90.50	268.90	4,474.85	364.98	-1,910.95	1,933.35	0.64	0.00	-0.64
6,371.00	91.20	268.60	4,473.44	362.91	-2,005.91	2,027.88	0.80	0.74	-0.32
6,465.00	91.40	268.30	4,471.31	360.37	-2,099.85	2,121.35	0.38	0.21	-0.32
6,560.00	91.10	269.50	4,469.23	358.55	-2,194.81	2,215.88	1.30	-0.32	1.26
6,655.00	91.30	268.90	4,467.24	357.22	-2,289.78	2,310.47	0.67	0.21	-0.63
6,749.00	91.20	269.70	4,465.19	356.07	-2,383.75	2,404.07	0.86	-0.11	0.85
6,844.00	91.40	269.30	4,463.04	355.24	-2,478.72	2,498.70	0.47	0.21	-0.42
6,939.00	91.40	270.80	4,460.72	355.33	-2,573.69	2,593.39	1.58	0.00	1.58
7,033.00	91.50	270.50	4,458.34	356.39	-2,667.66	2,687.16	0.34	0.11	-0.32

Archer Survey Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County, NM	TVD Reference:	3682 GL+13'KB @ 3695.00usft (Planning)
Site:	Passion 1 Federal Com PDK 5H	MD Reference:	3682 GL+13'KB @ 3695.00usft (Planning)
Well:	5H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM R5000.1/MULTI

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N/S (usft)	E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,128.00	91.30	269.80	4,456.02	356.64	-2,762.63	2,781.87	0.77	-0.21	-0.74
7,224.00	89.50	270.70	4,455.35	357.06	-2,858.62	2,877.61	2.10	-1.88	0.94
7,319.00	89.60	270.60	4,456.09	358.14	-2,953.61	2,972.40	0.15	0.11	-0.11
7,413.00	89.70	270.00	4,456.67	358.63	-3,047.61	3,066.16	0.65	0.11	-0.64
7,508.00	89.80	270.30	4,457.08	358.88	-3,142.60	3,160.90	0.33	0.11	0.32
7,602.00	90.90	270.60	4,456.51	359.62	-3,236.60	3,254.67	1.21	1.17	0.32
7,697.00	91.00	270.40	4,454.93	360.45	-3,331.58	3,349.43	0.24	0.11	-0.21
7,791.00	91.00	270.20	4,453.29	360.94	-3,425.57	3,443.18	0.21	0.00	-0.21
7,886.00	91.10	270.10	4,451.55	361.19	-3,520.55	3,537.90	0.15	0.11	-0.11
7,981.00	91.20	269.60	4,449.64	360.94	-3,615.53	3,632.58	0.54	0.11	-0.53
8,076.00	91.20	269.40	4,447.66	360.11	-3,710.50	3,727.21	0.21	0.00	-0.21
8,171.00	91.70	269.50	4,445.25	359.20	-3,805.47	3,821.82	0.54	0.53	0.11
8,266.00	91.60	269.10	4,442.54	358.05	-3,899.42	3,915.41	0.44	-0.11	-0.43
8,359.00	91.50	270.90	4,440.00	358.05	-3,993.39	4,009.09	1.92	-0.11	1.91
8,454.00	91.60	270.70	4,437.43	359.38	-4,088.34	4,103.87	0.24	0.11	-0.21
8,549.00	91.50	270.40	4,434.86	360.29	-4,183.30	4,198.62	0.33	-0.11	-0.32
8,644.00	91.40	270.70	4,432.46	361.20	-4,278.27	4,293.37	0.33	-0.11	0.32
8,738.00	91.30	270.40	4,430.24	362.10	-4,372.24	4,387.13	0.34	-0.11	-0.32
8,833.00	91.20	270.00	4,428.17	362.43	-4,467.21	4,481.86	0.43	-0.11	-0.42
8,928.00	90.80	269.50	4,426.51	362.02	-4,562.20	4,576.53	0.67	-0.42	-0.53
9,041.00	91.20	269.50	4,424.54	361.03	-4,675.18	4,689.09	0.35	0.35	0.00
9,108.00	91.20	269.50	4,423.14	360.45	-4,742.16	4,755.83	0.00	0.00	0.00

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Eastng (usft)	Latitude	Longitude
Passion 1-5H Surface	0.00	0.00	0.00	0.00	0.00	677,233.89	596,294.50	32° 51' 41.06 N	104° 1' 11.04 W
- actual wellpath hits target center									
- Point									
Passion 1-5H BHL	0.00	0.00	4,423.14	360.45	-4,742.16	677,594.34	591,552.34	32° 51' 44.77 N	104° 2' 6.63 W
- actual wellpath hits target center									
- Point									