



Company: COG OPERATING
Lease/Well: BRANEX COG FED COM/15H

Rig Name: PATRIOT 6
State/County: NEW MEXICO/LEA
VS-Azi: 0.00 Degrees
Latitude: 32.84814, Longitude: -103.77907
Grid North = True North -0.30 degs (NAD 27)
Grid Correction Applied = -0.30 degs



Depth Reference : RKB 18 FEET

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: eline-de_01.ut
Minimum Curvature Method
Report Date/Time: 9/13/2016 / 09:17

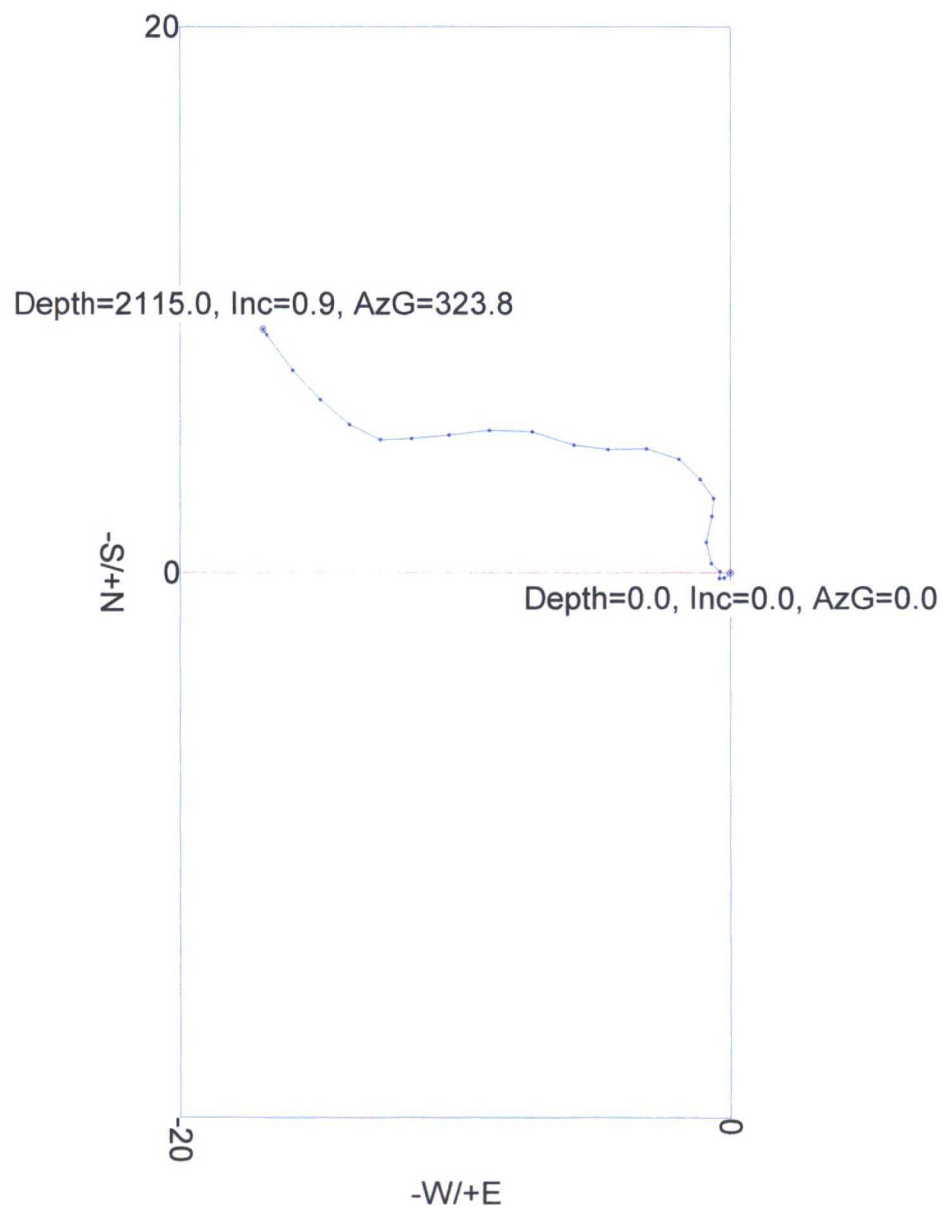
VES Survey International
West Texas
432-563-5444
Surveyor: Dustin Byers
Branex-COG Fed Com 15H / API 30-025-42906

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	0.34	231.74	100.00	-0.19	-0.24	-0.19	0.30	231.74	0.34
200.00	0.20	18.46	200.00	-0.21	-0.42	-0.21	0.47	243.35	0.52
300.00	0.11	343.74	300.00	0.05	-0.39	0.05	0.39	276.83	0.12
400.00	0.39	306.03	400.00	0.34	-0.69	0.34	0.77	296.18	0.31
500.00	0.66	8.71	499.99	1.11	-0.88	1.11	1.42	321.57	0.59
600.00	0.46	16.58	599.99	2.07	-0.68	2.07	2.17	341.77	0.22
700.00	0.33	350.07	699.99	2.73	-0.61	2.73	2.80	347.31	0.22
800.00	0.70	314.41	799.98	3.43	-1.10	3.43	3.60	342.28	0.47
900.00	0.53	311.45	899.98	4.17	-1.88	4.17	4.57	335.72	0.17
1000.00	0.96	275.21	999.97	4.55	-3.06	4.55	5.48	326.09	0.61
1100.00	0.67	259.85	1099.96	4.52	-4.46	4.52	6.35	315.39	0.36
1200.00	0.82	292.38	1199.95	4.69	-5.70	4.69	7.38	309.48	0.44
1300.00	1.01	283.46	1299.94	5.17	-7.21	5.17	8.87	305.63	0.23
1400.00	0.84	258.22	1399.93	5.22	-8.78	5.22	10.22	300.74	0.44
1500.00	0.86	268.31	1499.91	5.05	-10.25	5.05	11.43	296.24	0.15
1600.00	0.70	259.76	1599.91	4.92	-11.61	4.92	12.61	292.98	0.20

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	0.61	277.23	1699.90	4.88	-12.74	4.88	13.64	290.96	0.22
1800.00	0.88	308.98	1799.89	5.43	-13.86	5.43	14.89	291.39	0.48
1900.00	0.72	313.60	1899.88	6.35	-14.91	6.35	16.21	293.05	0.18
2000.00	0.98	319.24	1999.87	7.42	-15.92	7.42	17.57	294.99	0.27
2100.00	0.87	329.68	2099.86	8.72	-16.86	8.72	18.99	297.35	0.20
2115.00	0.94	323.77	2114.86	8.92	-16.99	8.92	19.19	297.69	0.77



VES Survey International
West Texas
432-563-5444
Surveyor: Dustin Byers
Branex-COG Fed Com 15H / API 30-025-42906





I Dustin Byers certify that I am employed by VES Survey International. That I did on the day(s) of 09/07/16 through 09/07/16 conduct or supervise the taking of a Rate Gyro survey from a depth of 0.00 feet to a depth of 2,115.00 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of COG Operating for the Branex COG Fed Com Well # 15H API # 30-025-42906 in Lea County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by VES Survey International.

A handwritten signature in blue ink, appearing to read "Dustin Byers", is written over a horizontal line.

Dustin Byers
Service Technician
VES Survey International



PATRIOT DRILLING, LLC

OPERATOR: COG Operating, LLC
WELL/LEASE: Branex-COG Fed Com #15H
COUNTY: Lea Co., New Mexico
Sec. 9, T 17S, R 32E

**STATE OF NEW MEXICO
DEVIATION REPORT**

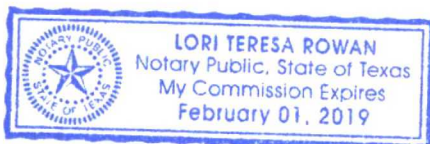
<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
572	1/2	1,674	3/4
969	1/2	1,929	1/2
1,326	3/4		

Patriot Drilling, LLC

M. Leroy Peterson, Executive Vice-President

The foregoing instrument was acknowledged before me on this 26th day of September 2016 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 02/01/2019

Lori T. Rowan
Notary Public for Ector Co., Texas

September 13, 2016

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

Attn: Kanicia Castillo

RE: **Branex-COG Fed Com 15H**

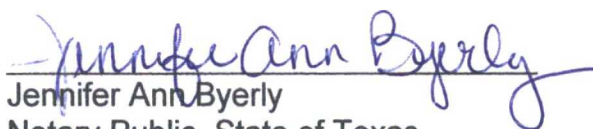
Please find enclosed a copy of the survey from 0' to 2115' ran on the above referenced well.

Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 13th day of
September, A.D., 2016, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas

