CONCHO

COG Operating LLC

Lea County, NM (NAD27 NME)
Resolver Federal Com
#2H

OH

Survey: MWD #1

Survey Report - Geographic

25 November, 2015

CONCHO

Wellplanning

Survey Report - Geographic

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3774.3usft (Original Well Elev)
Site:	Resolver Federal Com	**MD Reference:**	WELL @ 3774.3usft (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	Lea County, NM (NAD27 NME)		
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	Resolver Federal Com				
Site Position:		**Northing:**	482,989.80 usft	**Latitude:**	32° 19' 33.203 N
From:	Map	**Easting:**	717,531.80 usft	**Longitude:**	103° 37' 44.801 W
Position Uncertainty:	3.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.38 °

Well	#2H						
Well Position	**+N/-S**	0.0 usft	**Northing:**	482,989.80 usft	**Latitude:**	32° 19' 33.203 N
	+E/-W	0.0 usft	**Easting:**	717,531.80 usft	**Longitude:**	103° 37' 44.801 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,754.3 usft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	10/8/2015	7.09	60.16	48,238

Design	OH					
Audit Notes:						
Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**		0.0
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**		
	0.0	0.0	0.0	179.62		

Survey Program **Date** 11/25/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	9,000.0	GYRO (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
9,205.0	14,096.0	MWD #1 (OH)	MWD	MWD - Standard

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,000.0	1.58	212.98	8,998.7	-34.2	-62.1	482,955.57	717,469.68	32° 19' 32.869 N	103° 37' 45.527 W
9,205.0	7.80	185.20	9,202.9	-50.5	-64.9	482,939.33	717,466.88	32° 19' 32.708 N	103° 37' 45.561 W
9,236.0	11.80	184.20	9,233.4	-55.7	-65.3	482,934.07	717,466.46	32° 19' 32.656 N	103° 37' 45.566 W
9,268.0	15.20	184.10	9,264.6	-63.2	-65.9	482,926.62	717,465.92	32° 19' 32.583 N	103° 37' 45.573 W
9,300.0	18.20	183.50	9,295.2	-72.4	-66.5	482,917.44	717,465.31	32° 19' 32.492 N	103° 37' 45.581 W
9,332.0	21.10	183.40	9,325.3	-83.1	-67.1	482,906.70	717,464.67	32° 19' 32.386 N	103° 37' 45.589 W
9,363.0	23.90	182.90	9,354.0	-94.9	-67.8	482,894.86	717,464.02	32° 19' 32.268 N	103° 37' 45.598 W
9,395.0	26.10	181.90	9,383.0	-108.5	-68.3	482,881.35	717,463.46	32° 19' 32.135 N	103° 37' 45.605 W
9,427.0	27.10	183.50	9,411.6	-122.8	-69.0	482,867.04	717,462.78	32° 19' 31.993 N	103° 37' 45.614 W
9,458.0	29.30	184.30	9,438.9	-137.4	-70.0	482,852.42	717,461.78	32° 19' 31.849 N	103° 37' 45.627 W
9,490.0	32.70	184.20	9,466.3	-153.8	-71.2	482,835.99	717,460.56	32° 19' 31.686 N	103° 37' 45.643 W

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3774.3usft (Original Well Elev)
Site:	Resolver Federal Com	**MD Reference:**	WELL @ 3774.3usft (Original Well Elev)
Well:	#2H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,522.0	36.40	184.10	9,492.7	-171.9	-72.5	482,817.89	717,459.25	32° 19' 31.507 N	103° 37' 45.659 W
9,553.0	39.10	183.60	9,517.2	-190.8	-73 8	482,798.96	717,457.98	32° 19' 31.320 N	103° 37' 45.676 W
9,585.0	41.90	182.30	9,541.5	-211.6	-74.9	482,778.21	717,456.91	32° 19' 31.115 N	103° 37' 45.690 W
9,617.0	42.30	180.00	9,565.3	-233.0	-75.3	482,756.76	717,456.48	32° 19' 30.902 N	103° 37' 45.696 W
9,649.0	42.00	179.60	9,589.0	-254.5	-75.2	482,735.29	717,456.56	32° 19' 30.690 N	103° 37' 45.697 W
9,680.0	43.70	180.30	9,611.7	-275.6	-75.2	482,714.20	717,456.57	32° 19' 30.481 N	103° 37' 45.698 W
9,712.0	47.90	180.20	9,634.0	-298.5	-75.3	482,691.27	717,456.48	32° 19' 30.254 N	103° 37' 45.701 W
9,744.0	52.60	180.60	9,654.5	-323.1	-75.5	482,666.67	717,456.30	32° 19' 30.011 N	103° 37' 45.705 W
9,775.0	57.70	181.40	9,672.2	-348.6	-75.9	482,641.25	717,455.85	32° 19' 29.759 N	103° 37' 45.712 W
9,807.0	63.30	182.80	9,687.9	-376.4	-77.0	482,613.43	717,454.82	32° 19' 29.484 N	103° 37' 45.727 W
9,839.0	69.10	183.90	9,700.8	-405.6	-78.7	482,584.21	717,453.11	32° 19' 29.195 N	103° 37' 45.749 W
9,870.0	74.20	182.90	9,710.6	-435.0	-80.4	482,554.85	717,451.36	32° 19' 28.905 N	103° 37' 45.771 W
9,899.0	79.20	180.90	9,717.3	-463.1	-81.4	482,526.65	717,450.43	32° 19' 28.626 N	103° 37' 45.784 W
9,931.0	82.20	179.60	9,722.4	-494.7	-81.5	482,495.08	717,450.30	32° 19' 28.313 N	103° 37' 45.788 W
9,962 0	83.50	179.60	9,726.3	-525 5	-81.3	482,464.32	717,450.51	32° 19' 28.009 N	103° 37' 45.788 W
9,994.0	85.10	178.80	9,729.5	-557.3	-80.8	482,432.48	717,450.96	32° 19' 27.694 N	103° 37' 45.786 W
10,026.0	87.60	177.90	9,731.5	-589.2	-79.9	482,400.56	717,451.88	32° 19' 27.378 N	103° 37' 45.777 W
10,058.0	88.60	177.70	9,732.6	-621.2	-78.7	482,368.61	717,453.11	32° 19' 27.062 N	103° 37' 45.765 W
10,090.0	88.70	177.70	9,733.3	-653.2	-77.4	482,336.64	717,454.39	32° 19' 26.745 N	103° 37' 45.753 W
10,185.0	89.40	177.70	9,734.9	-748 1	-73.6	482,241.73	717,458.20	32° 19' 25.806 N	103° 37' 45.716 W
10,280.0	89.10	176.90	9,736.1	-843.0	-69.1	482,146 84	717,462.68	32° 19' 24.867 N	103° 37' 45.671 W
10,375.0	90.40	176.60	9,736.6	-937.8	-63.7	482,052 00	717,468.06	32° 19' 23.928 N	103° 37' 45.615 W
10,470.0	88.50	177.10	9,737.5	-1,032.6	-58.5	481,957.15	717,473.28	32° 19' 22.989 N	103° 37' 45.562 W
10,565.0	88.90	176.60	9,739.6	-1,127.5	-53.3	481,862.32	717,478.50	32° 19' 22.050 N	103° 37' 45.508 W
10,660.0	89.10	178.30	9,741.3	-1,222.4	-49.1	481,767.43	717,482.73	32° 19' 21.111 N	103° 37' 45.466 W
10,756.0	90.00	177.80	9,742.0	-1,318.3	-45.8	481,671.49	717,485.99	32° 19' 20.161 N	103° 37' 45.435 W
10,851.0	90.30	178.00	9,741.8	-1,413.2	-42.3	481,576.56	717,489.47	32° 19' 19.221 N	103° 37' 45.402 W
10,946.0	91.80	178.00	9,740.1	-1,508.2	-39.0	481,481.63	717,492.79	32° 19' 18.282 N	103° 37' 45.371 W
11,041.0	90.30	177.70	9,738.3	-1,603.1	-35.4	481,386.72	717,496.35	32° 19' 17.343 N	103° 37' 45.337 W
11,136.0	89.60	177.50	9,738.4	-1,698.0	-31.5	481,291.80	717,500.33	32° 19' 16.403 N	103° 37' 45.297 W
11,231.0	85.70	179.20	9,742.3	-1,792.9	-28.7	481,196.94	717,503.06	32° 19' 15.464 N	103° 37' 45.273 W
11,326.0	86.40	179.30	9,748.8	-1,887.6	-27.5	481,102.18	717,504.31	32° 19' 14.526 N	103° 37' 45.266 W
11,421.0	88.10	179.30	9,753.4	-1,982.5	-26.3	481,007.30	717,505.46	32° 19' 13.587 N	103° 37' 45.259 W
11,516.0	88.70	179.90	9,756.0	-2,077.5	-25.7	480,912.34	717,506.13	32° 19' 12.648 N	103° 37' 45.259 W
11,612.0	89.00	179.90	9,758.0	-2,173.4	-25.5	480,816.36	717,506.29	32° 19' 11.698 N	103° 37' 45.264 W
11,707.0	89.60	179.50	9,759.1	-2,268.4	-25.0	480,721.37	717,506.79	32° 19' 10.758 N	103° 37' 45.266 W
11,802.0	90.00	179.10	9,759.5	-2,363.4	-23.8	480,626.38	717,507.95	32° 19' 9.818 N	103° 37' 45.260 W
11,897.0	91.00	179.20	9,758.6	-2,458.4	-22.4	480,531.39	717,509.36	32° 19' 8.878 N	103° 37' 45.250 W
11,992.0	89.40	179.30	9,758.3	-2,553.4	-21.2	480,436.40	717,510.61	32° 19' 7.938 N	103° 37' 45.243 W
12,087.0	89.40	179.90	9,759.3	-2,648.4	-20.5	480,341.41	717,511.27	32° 19' 6.998 N	103° 37' 45.243 W
12,182.0	89.70	179.80	9,760.0	-2,743.4	-20.3	480,246.41	717,511.52	32° 19' 6.058 N	103° 37' 45.247 W
12,277.0	89.40	179.80	9,760.8	-2,838.4	-19.9	480,151.42	717,511.85	32° 19' 5.118 N	103° 37' 45.251 W
12,372.0	90.10	179.20	9,761.2	-2,933.4	-19.1	480,056.42	717,512.68	32° 19' 4.178 N	103° 37' 45.248 W
12,468.0	91.10	178.30	9,760.2	-3,029.3	-17.0	479,960.45	717,514.77	32° 19' 3.228 N	103° 37' 45.231 W
12,563.0	92.00	177.70	9,757.6	-3,124.3	-13.7	479,865.55	717,518.09	32° 19' 2.288 N	103° 37' 45.200 W
12,658.0	90.60	176.90	9,755.5	-3,219.1	-9.2	479,770.68	717,522.56	32° 19' 1.349 N	103° 37' 45.155 W
12,753.0	89.50	177.30	9,755.4	-3,314.0	-4.4	479,675.80	717,527.37	32° 19' 0.410 N	103° 37' 45.108 W
12,849.0	88.40	177.00	9,757.1	-3,409.9	0.3	479,579.94	717,532.14	32° 18' 59.461 N	103° 37' 45.058 W
12,944.0	88.90	176.70	9,759.4	-3,504.7	5.6	479,485 11	717,537.36	32° 18' 58.523 N	103° 37' 45.004 W
13,039.0	89.90	175.90	9,760.4	-3,599.5	11.7	479,390.32	717,543.49	32° 18' 57.584 N	103° 37' 44.940 W
13,134.0	89.00	175.80	9,761.3	-3,694.2	18.6	479,295.57	717,550.36	32° 18' 56.646 N	103° 37' 44.867 W
13,230.0	87.80	175.50	9,764.0	-3,789.9	25.8	479,199.89	717,557.64	32° 18' 55.699 N	103° 37' 44.790 W
13,324.0	86.70	176.40	9,768.5	-3,883.6	32.5	479,106.23	717,564.27	32° 18' 54.772 N	103° 37' 44.720 W
13,419.0	88.00	177.90	9,772.9	-3,978.3	37.2	479,011.46	717,568.99	32° 18' 53.833 N	103° 37' 44.672 W
13,514.0	88.80	177.60	9,775.5	-4,073.2	40.9	478,916.57	717,572.72	32° 18' 52.894 N	103° 37' 44.636 W

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3774 3usft (Original Well Elev)
Site:	Resolver Federal Com	**MD Reference:**	WELL @ 3774 3usft (Original Well Elev)
Well:	#2H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000 1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,610.0	88.00	178.10	9,778 2	-4,169.1	44.5	478,820.67	717,576.32	32° 18' 51.945 N	103° 37' 44.601 W
13,705.0	88.60	177.70	9,781.0	-4,264.0	48.0	478,725.78	717,579.80	32° 18' 51 006 N	103° 37' 44.568 W
13,800.0	88.40	178.80	9,783 5	-4,358 9	50.9	478,630.86	717,582.70	32° 18' 50 066 N	103° 37' 44.541 W
13,895.0	89.10	179.40	9,785 6	-4,453.9	52.4	478,535.89	717,584.19	32° 18' 49.126 N	103° 37' 44.531 W
13,990.0	88.90	179.00	9,787.2	-4,548.9	53.7	478,440.92	717,585 52	32° 18' 48.187 N	103° 37' 44 523 W
14,048.0	89.80	178.90	9,787.9	-4,606.9	54.8	478,382.93	717,586 58	32° 18' 47 613 N	103° 37' 44.515 W
14,096.0	89.80	178.90	9,788 1	-4,654.9	55.7	478,334.94	717,587 50	32° 18' 47 138 N	103° 37' 44 508 W
PBHL(resolver#2H)									

Checked By: _____ Approved By: _____ Date: _____

RESOLVER FEDERAL COM #2H

30-025-42170

Sec 12-T23S-R32E

Perfs	7 1/2% Acid (Gal)	Sand (#)	Fluid (Gal)
13832-13930	4032	301305	312312
13676-13774	3024	299995	338268
13528-13620	3024	301396	321132
13372-13472	3024	235607	296268
13220-13321	3024	184079	300930
13067-13169	3024	302828	484218
12915-13017	3024	306692	285432
12763-12864	3024	300539	286650
12611-12704	3066	301562	304206
12458-12555	3024	301375	282984
12306-12404	3024	300835	288867
12158-12245	3024	305332	285600
12002-12103	3024	302851	292404
11849-11951	3234	301426	286272
11697-11799	3024	302142	280476
11545-11646	3024	300342	284424
11393-11494	3024	301298	277494
11240-11342	3024	294018	276570
11089-11190	3024	306591	285054
10936-11034	3024	304713	281190
10788-10885	3024	302776	279636
10631-10691	4546	302638	314833
10477-10581	3024	300791	282870
10327-10428	3024	303172	279090
10175-10276	3024	298244	275688
10022-10124	3024	308331	281652
9870-9975	2982	304745	389970
Totals	**84388**	**7975623**	**8154490**

PATRIOT DRILLING, LLC

OPERATOR: COG Operating, LLC
WELL/LEASE: Resolver Fed Com 2H
COUNTY: Lea Co., New Mexico
Sec. 12, T 23S, R 32E

STATE OF NEW MEXICO
DEVIATION REPORT

Depth	Deviation	Depth	Deviation
407	3/4	6,920	1 1/2
834	1/2	7,141	3/4
1,023	1/2	7,368	1 1/4
1,469	1 1/2	7,621	1 1/4
2,038	1 1/4	8,123	1/2
2,416	1	8,636	1 3/4
3,079	1 1/2	9,138	2
3,459	1 1/2	9,519	2 1/2
4,027	1 1/2	9,979	3 1/4
4,501	1 1/4	10,537	2 1/2
4,976	1 1/2	10,727	1
5,309	1	11,298	1/2
5,719	1	11,488	1
6,161	1 1/2	12,059	1
6,414	1/2	12,451	3/4

Patriot Drilling, LLC

M. Leroy Peterson, Executive Vice-President

The foregoing instrument was acknowledged before me on this 30th day of November 2015 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 02/01/2019

LORI TERESA ROWAN
Notary Public, State of Texas
My Commission Expires
February 01, 2019

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

303 W. Wall St. Ste. 2201 • P.O. Box 1610 • Midland, Texas 79702 • 432-686-2780 • Fax 432-686-8800

VES SURVEY INTERNATIONAL

November 19, 2015

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

Attn: Kanicia Castillo

RE: **Resolver Federal Com No 002H**

Please find enclosed a copy of the survey from 0' to 12,300' ran on the above referenced well.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
§
COUNTY OF NUECES §

This instrument was acknowledged before me on the 19 day of November A.D., 2015, by Keith Havelka.

Jennifer Ann Byerly
Notary Public, State of Texas

JENNIFER ANN BYERLY
Notary Public, State of Texas
My Commission Expires
August 16, 2017

VES Survey International
P.O. Box 261021, Corpus Christi, Texas 78426
T (361) 767-0602 F (361) 767-0612
www.vessurvey.com

Company: Cog Operating LLC
Lease/Well: Resolver Federal Com No/002H

Rig Name: Patriot 2
State/County: New Mexico /Lea
VS-Azi: 0.00 Degrees
Latitude: 32.32589, Longitude: -103.62911
Grid North = True North -0.38 degs (NAD 27)
Grid Correction Applied = -0.38 degs

Depth Reference : R.K.B = 20 FT

DRILLOG HA GYRO SURVEY CALCULATIONS
Filename: resolver federal com 2h .ut
Minimum Curvature Method
Report Date/Time: 11/19/2015 / 11:14

VES Survey International
Midland, Texas
432-563-5444
Surveyor: Javier Estrada
Resolver Federal Com No 002H / API 30-025-42170

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	0.33	345.45	100.00	0.28	-0.07	0.28	0.29	345.45	0.33
200.00	0.24	321.41	200.00	0.73	-0.28	0.73	0.78	339.18	0.15
300.00	0.28	296.37	300.00	1.00	-0.62	1.00	1.18	328.05	0.12
400.00	0.47	328.01	400.00	1.46	-1.06	1.46	1.80	324.02	0.28
500.00	0.35	314.85	499.99	2.02	-1.49	2.02	2.51	323.57	0.16
600.00	0.42	331.58	599.99	2.56	-1.88	2.56	3.18	323.66	0.13
700.00	0.38	300.86	699.99	3.06	-2.35	3.06	3.85	322.48	0.22
800.00	0.41	344.39	799.99	3.57	-2.73	3.57	4.49	322.58	0.29
900.00	0.25	222.30	899.98	3.75	-2.97	3.75	4.78	321.55	0.58
1000.00	0.38	335.56	999.98	3.88	-3.26	3.88	5.07	319.99	0.53
1100.00	0.35	293.11	1099.98	4.30	-3.68	4.30	5.66	319.47	0.27
1200.00	0.51	318.08	1199.98	4.75	-4.26	4.75	6.38	318.14	0.24
1300.00	0.49	322.98	1299.98	5.43	-4.81	5.43	7.25	318.42	0.04
1400.00	1.06	300.42	1399.97	6.24	-5.87	6.24	8.56	316.74	0.63
1500.00	1.27	297.12	1499.95	7.21	-7.65	7.21	10.51	313.30	0.22
1600.00	1.53	300.52	1599.92	8.39	-9.79	8.39	12.89	310.61	0.27

V.E.S. Survey Date: 11/12/2015

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	1.74	282.75	1699.88	9.41	-12.42	9.41	15.58	307.14	0.55
1800.00	1.45	281.38	1799.84	9.99	-15.14	9.99	18.14	303.42	0.29
1900.00	1.17	205.24	1899.82	9.31	-16.82	9.31	19.23	298.97	1.64
2000.00	0.82	215.59	1999.80	7.80	-17.68	7.80	19.32	293.81	0.39
2100.00	1.62	225.54	2099.78	6.23	-19.10	6.23	20.09	288.06	0.82
2200.00	0.61	233.32	2199.76	4.92	-20.54	4.92	21.12	283.48	1.01
2300.00	0.57	239.37	2299.75	4.35	-21.39	4.35	21.83	281.49	0.07
2400.00	0.68	248.01	2399.75	3.87	-22.38	3.87	22.71	279.82	0.15
2500.00	0.81	250.60	2499.74	3.41	-23.60	3.41	23.84	278.23	0.13
2600.00	0.75	256.29	2599.73	3.02	-24.90	3.02	25.08	276.92	0.10
2700.00	0.86	256.15	2699.72	2.69	-26.26	2.69	26.40	275.85	0.11
2800.00	1.04	239.38	2799.71	2.05	-27.77	2.05	27.84	274.22	0...
2900.00	1.09	244.85	2899.69	1.18	-29.41	1.18	29.43	272.30	0...
3000.00	1.19	244.23	2999.67	0.33	-31.20	0.33	31.20	270.60	0.10
3100.00	1.34	243.71	3099.64	-0.64	-33.18	-0.64	33.19	268.89	0.15
3200.00	1.49	242.31	3199.61	-1.76	-35.38	-1.76	35.42	267.15	0.16
3300.00	1.22	246.57	3299.59	-2.79	-37.50	-2.79	37.61	265.75	0.29
3400.00	1.38	243.39	3399.56	-3.75	-39.56	-3.75	39.73	264.58	0.18
3500.00	1.51	239.87	3499.53	-4.95	-41.78	-4.95	42.07	263.24	0.16
3600.00	1.39	240.50	3599.50	-6.21	-43.97	-6.21	44.41	261.96	0.13
3700.00	1.48	248.20	3699.46	-7.29	-46.23	-7.29	46.80	261.04	0.21
3800.00	1.45	249.20	3799.43	-8.22	-48.61	-8.22	49.30	260.41	0.04
3900.00	1.49	259.81	3899.40	-8.89	-51.07	-8.89	51.83	260.12	0.27
4000.00	1.35	262.21	3999.37	-9.28	-53.51	-9.28	54.31	260.16	0.15
4100.00	1.38	260.59	4099.34	-9.64	-55.86	-9.64	56.69	260.21	0.05
4200.00	1.44	258.27	4199.31	-10.09	-58.27	-10.09	59.14	260.18	0.08
4300.00	1.29	234.85	4299.28	-11.00	-60.42	-11.00	61.42	259.69	[illegible]
4400.00	1.37	206.93	4399.26	-12.71	-61.89	-12.71	63.18	258.40	0.65
4500.00	1.35	195.42	4499.23	-14.90	-62.74	-14.90	64.49	256.64	0.27
4600.00	1.70	148.01	4599.20	-17.30	-62.26	-17.30	64.62	254.48	1.27
4700.00	1.93	99.57	4699.15	-18.84	-59.82	-18.84	62.71	252.52	1.50
4800.00	1.02	53.84	4799.12	-18.59	-57.44	-18.59	60.37	252.07	1.42
4900.00	1.24	42.04	4899.10	-17.26	-55.99	-17.26	58.59	252.87	0.32
5000.00	1.30	46.42	4999.08	-15.67	-54.44	-15.67	56.65	253.94	0.11
5100.00	1.12	42.59	5099.06	-14.17	-52.96	-14.17	54.82	255.02	0.20
5200.00	0.93	45.13	5199.04	-12.87	-51.72	-12.87	53.30	256.02	0.19
5300.00	0.83	16.45	5299.03	-11.60	-50.94	-11.60	52.24	257.17	0.45
5400.00	0.75	46.54	5399.02	-10.46	-50.26	-10.46	51.34	258.25	0.42
5500.00	0.64	48.67	5499.01	-9.63	-49.36	-9.63	50.29	258.96	0.11

V.E.S. Survey Date: 11/12/2015

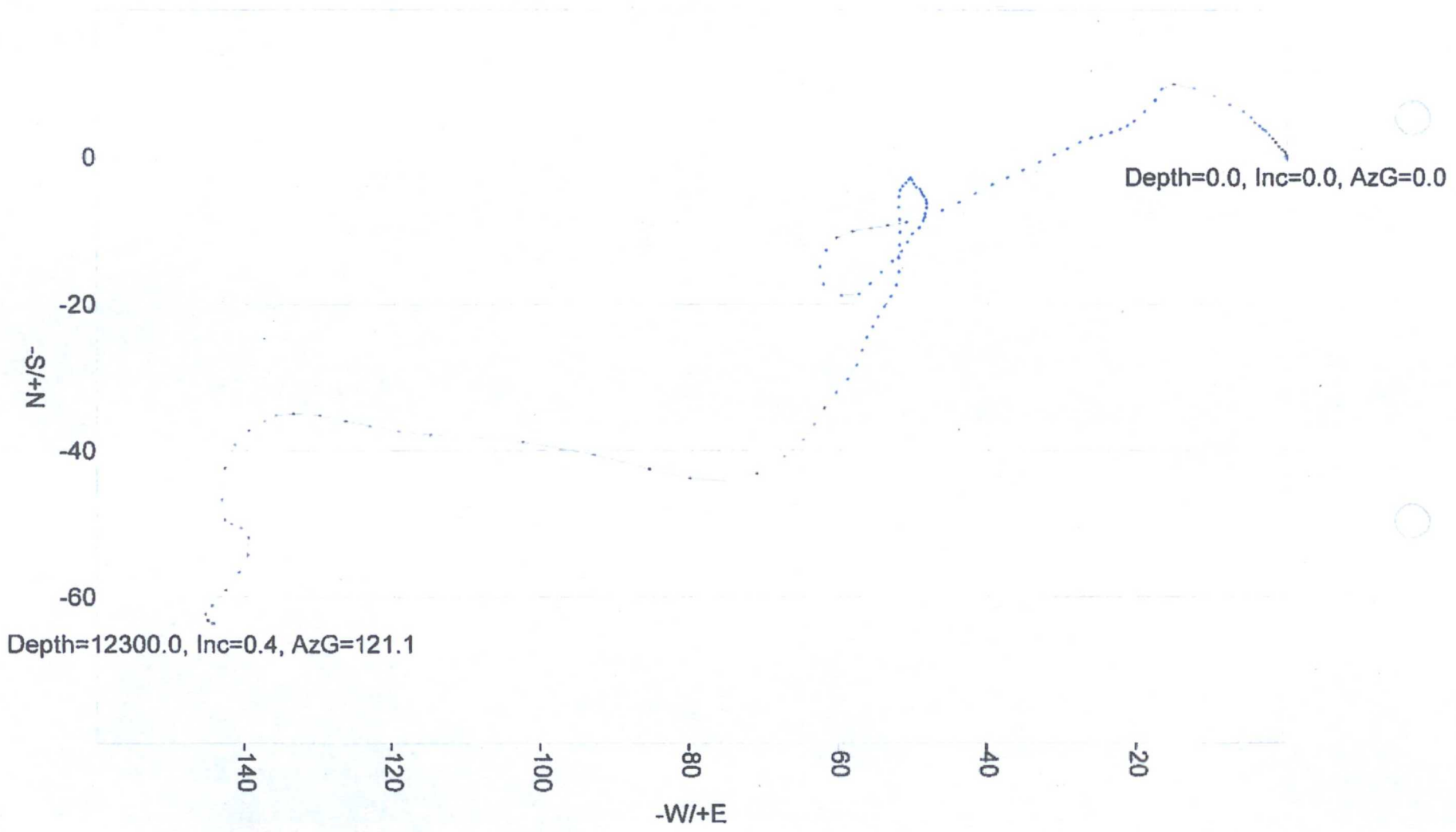
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5600.00	0.67	13.58	5599.01	-8.69	-48.80	-8.69	49.57	259.90	0.40
5700.00	0.47	19.32	5699.00	-7.74	-48.53	-7.74	49.14	260.94	0.21
5800.00	0.49	6.64	5799.00	-6.93	-48.35	-6.93	48.84	261.85	0.11
5900.00	0.20	352.09	5898.99	-6.33	-48.32	-6.33	48.73	262.54	0.30
6000.00	0.36	346.62	5998.99	-5.85	-48.42	-5.85	48.77	263.11	0.15
6100.00	0.26	309.94	6098.99	-5.40	-48.66	-5.40	48.96	263.67	0.21
6200.00	0.18	327.68	6198.99	-5.12	-48.92	-5.12	49.19	264.02	0.11
6300.00	0.28	356.57	6298.99	-4.75	-49.02	-4.75	49.25	264.47	0.15
6400.00	0.28	297.86	6398.99	-4.39	-49.25	-4.39	49.45	264.90	0.27
6500.00	0.36	306.39	6498.99	-4.09	-49.72	-4.09	49.89	265.30	0.09
6600.00	0.36	337.62	6598.99	-3.61	-50.10	-3.61	50.23	265.88	0.20
6700.00	0.33	337.25	6698.98	-3.05	-50.33	-3.05	50.42	266.53	[illegible]
6800.00	0.08	277.30	6798.98	-2.78	-50.51	-2.78	50.59	266.85	[illegible]
6900.00	0.35	216.76	6898.98	-3.01	-50.77	-3.01	50.85	266.60	0.32
7000.00	0.34	218.68	6998.98	-3.49	-51.13	-3.49	51.25	266.10	0.02
7100.00	0.40	232.84	7098.98	-3.93	-51.60	-3.93	51.75	265.64	0.11
7200.00	0.41	188.73	7198.98	-4.49	-51.93	-4.49	52.13	265.05	0.30
7300.00	0.66	188.22	7298.97	-5.41	-52.07	-5.41	52.35	264.07	0.25
7400.00	0.95	176.24	7398.96	-6.80	-52.09	-6.80	52.54	262.56	0.34
7500.00	1.02	176.50	7498.95	-8.52	-51.99	-8.52	52.68	260.70	0.07
7600.00	1.00	180.34	7598.93	-10.27	-51.94	-10.27	52.94	258.81	0.07
7700.00	0.99	185.35	7698.92	-12.00	-52.02	-12.00	53.39	257.01	0.09
7800.00	1.03	180.30	7798.90	-13.76	-52.11	-13.76	53.89	255.21	0.10
7900.00	1.15	179.61	7898.88	-15.65	-52.11	-15.65	54.41	253.28	0.13
8000.00	0.95	202.57	7998.87	-17.42	-52.42	-17.42	55.24	251.61	0.46
8100.00	0.97	209.51	8098.85	-18.92	-53.15	-18.92	56.42	250.41	0.12
8200.00	0.93	213.86	8198.84	-20.33	-54.02	-20.33	57.72	249.38	[illegible]
8300.00	0.94	211.31	8298.83	-21.70	-54.90	-21.70	59.03	248.43	[illegible]
8400.00	0.87	205.50	8398.81	-23.09	-55.65	-23.09	60.25	247.46	0.11
8500.00	1.00	210.81	8498.80	-24.53	-56.43	-24.53	61.53	246.50	0.15
8600.00	1.18	190.80	8598.78	-26.30	-57.07	-26.30	62.84	245.26	0.42
8700.00	1.31	207.05	8698.76	-28.33	-57.78	-28.33	64.35	243.88	0.38
8800.00	1.32	217.85	8798.73	-30.26	-59.01	-30.26	66.31	242.85	0.25
8900.00	1.42	221.24	8898.70	-32.10	-60.53	-32.10	68.52	242.06	0.13
9000.00	1.58	212.98	8998.67	-34.18	-62.10	-34.18	70.89	241.17	0.26
9100.00	1.48	208.66	9098.63	-36.47	-63.47	-36.47	73.20	240.12	0.15
9200.00	1.50	221.65	9198.60	-38.58	-64.96	-38.58	75.55	239.29	0.34
9300.00	2.40	232.84	9298.54	-40.82	-67.49	-40.82	78.87	238.83	0.97
9400.00	2.66	243.64	9398.45	-43.11	-71.23	-43.11	83.26	238.82	0.64

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
9500.00	2.62	269.17	9498.34	-44.17	-75.59	-44.17	87.55	239.70	1.17
9600.00	2.70	281.30	9598.24	-43.74	-80.19	-43.74	91.34	241.39	0.57
9700.00	3.70	284.51	9698.08	-42.47	-85.62	-42.47	95.58	243.62	1.02
9800.00	5.12	284.16	9797.78	-40.57	-93.08	-40.57	101.54	246.45	1.42
9900.00	6.07	277.16	9897.30	-38.82	-102.65	-38.82	109.74	249.28	1.17
10000.00	2.83	271.84	9996.99	-38.08	-110.36	-38.08	116.75	250.96	3.26
10100.00	2.58	273.51	10096.88	-37.87	-115.07	-37.87	121.14	251.79	0.27
10200.00	2.35	280.06	10196.79	-37.37	-119.34	-37.37	125.05	252.61	0.36
10300.00	2.07	279.42	10296.71	-36.72	-123.13	-36.72	128.49	253.40	0.29
10400.00	1.90	285.86	10396.65	-35.97	-126.51	-35.97	131.52	254.13	0.28
10500.00	2.23	279.54	10496.59	-35.20	-130.02	-35.20	134.70	254.85	0.40
10600.00	2.00	267.93	10596.52	-34.94	-133.67	-34.94	138.16	255.35	[illegible]
10700.00	0.71	250.23	10696.49	-35.21	-135.99	-35.21	140.48	255.48	[illegible]
10800.00	1.27	240.45	10796.48	-35.96	-137.54	-35.96	142.16	255.35	0.58
10900.00	1.54	238.34	10896.45	-37.22	-139.65	-37.22	144.52	255.08	0.28
11000.00	1.71	210.17	10996.41	-39.21	-141.54	-39.21	146.87	254.62	0.81
11100.00	2.23	198.76	11096.35	-42.34	-142.91	-42.34	149.05	253.50	0.65
11200.00	2.86	176.34	11196.25	-46.67	-143.38	-46.67	150.78	251.97	1.17
11300.00	0.50	132.19	11296.20	-49.45	-142.90	-49.45	151.21	250.91	2.53
11400.00	0.68	113.10	11396.20	-49.97	-142.03	-49.97	150.57	250.62	0.26
11500.00	0.92	114.32	11496.19	-50.54	-140.75	-50.54	149.55	250.25	0.25
11600.00	1.22	162.76	11596.17	-51.89	-139.70	-51.89	149.03	249.62	0.92
11700.00	1.55	198.82	11696.14	-54.18	-139.82	-54.18	149.95	248.82	0.91
11800.00	1.53	212.09	11796.11	-56.59	-140.97	-56.59	151.90	248.13	0.36
11900.00	1.98	219.56	11896.06	-59.05	-142.78	-59.05	154.51	247.53	0.51
12000.00	1.16	226.69	11996.02	-61.08	-144.62	-61.08	156.99	247.10	0.84
12100.00	0.65	200.41	12096.01	-62.31	-145.55	-62.31	158.33	246.82	[illegible]
12200.00	0.70	122.62	12196.01	-63.17	-145.23	-63.17	158.38	246.49	0.85
12300.00	0.38	121.14	12296.00	-63.68	-144.43	-63.68	157.84	246.21	0.32

CONCHO

VES Survey International
Midland, Texas
432-563-5444
Surveyor: Javier Estrada
Resolver Federal Com No 002H / API 30-025-42170

VES SURVEY INTERNATIONAL



V.E.S. Survey Date: 11/12/2015