

Results of Directional Survey

API number:	30-025-40854			
OGRID:		Operator:	COG PRODUCTION, LLC	
		Property:	BEBIDAS STATE	# 1H

surface	ULSTR:	M	16	T 23S	R 33E
				394 FSL	380 FWL

BH Loc	ULSTR:	D	16	T 23S	R 33E
15385	MD	11068.4	TVD	417 FNL	342 FWL
				4863 FSL	

Top Perf/OH	ULSTR:	M	16	T 23S	R 33E
11201	MD	11051.0	TVD	694 FSL	365 FWL

Bot Perf/OH	ULSTR:	D	16	T 23S	R 33E
15170	MD	11083.2	TVD	631 FNL	352 FWL
				4649 FSL	

	MD	N/S	E/W	VD
	11169	269.60	-20.80	11041.8
TOP PERFS/OH	11201	299.60	-14.60	11051.00
	11201	299.60	-14.60	11051.00
	15112	4196.90	-25.00	11085.90
BOT PERFS/OH	15170	4254.72	-27.87	11083.21
	15207	4291.60	-29.70	11081.50

NEXT TO LAST	15301	4385.30	-34.20	11075.30
LAST READING	15385	4469.00	-38.00	11068.40
TD	15385	4469.00	-38.00	11068.40

Surface Location	394	FS	380	FW
Projected BHL	4863	FS	342	FW
Location of				
Top Perfs/OH	694	FS	365	FW
Bottom Perfs/OH	4649	FS	352	FW

SUMMARY of Subsurface Locations

Surface Location	M-16-23S-33E	394	FS	380	FW	Vert. Depth
Top Perfs/OH	M-16-23S-33E	694	FS	365	FW	11051.00
Bottom Perfs/OH	D-16-23S-33E	4649	FS	352	FW	11083.21
Projected TD	D-16-23S-33E	4863	FS	342	FW	11068.40

DEC 22 2014

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DEC 18 2014

OPERATOR COG Operating
WELL/LEASE Bebidas ST 1-H
COUNTY Lea Co., NM

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STATE OF NEW MEXICO
DEVIATION REPORT

321	1.25
626	0.58
931	0.89
1180	0.87
1413	0.50
1636	1.10
1919	0.90
2202	0.70
2769	1.00
3105	1.10
3335	0.90
3619	0.60
3902	0.40
4469	1.90
4752	1.00
5463	0.83
5739	0.83
7452	1.90
7799	0.70
8052	0.70
8936	1.10
9300	2.10
9600	3.40
9876	3.10
9971	2.20
10065	1.00
10160	1.40
10255	1.60
10350	1.50
10444	1.50
10601	1.00
10633	2.10
10664	5.10

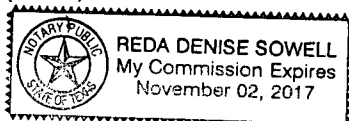
30-025-40854

SIGNED BY: Ron Scandolari
RON SCANDOLARI, VP-CONTRACT DRILLING

STATE OF TEXAS
COUNTY OF MIDLAND

ON THIS 23 DAY OF October, 2014, BEFORE ME, R SOWELL, A NOTARY PUBLIC, PERSONALLY APPEARED RON SCANDOLARI, WHO ACKNOWLEDGED AND EXECUTED THIS DOCUMENT. WITNESS MY HAND AND OFFICIAL SEAL.

(SEAL)



Reda Denise Sowell
NOTARY PUBLIC

hm



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DEC 18 2014
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COG Production LLC

Lea County, NM

Bebidas State

#1H

OH

Design: OH

Survey Report - Geographic

17 October, 2014

30-025-40854



me



TDS
Survey Report - Geographic



Company:	COG Production LLC	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM	TVD Reference:	KB @ 3737.0usft
Site:	Bebidas State	MD Reference:	KB @ 3737.0usft
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project	Lea 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	Bebidas State		
Site Position:		Northing:	473,114.40 usft
From:	Map	Easting:	734,487.40 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 17' 54.337 N
		Longitude:	103° 34' 28.023 W
		Grid Convergence:	0.41 °

Well	#1H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 17' 54.355 N
		Longitude:	103° 35' 2.780 W
		Ground Level:	3,715.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	9/23/2014	7.19
			Dip Angle (°)
			60.17
			Field Strength (nT)
			48,330

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)
	0.0	0.0	0.0
			Direction (°)
			359.58

Survey Program	Date 10/17/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
100.0	9,784.0	GYRO #1 (OH)	MWD
9,876.0	15,385.0	MWD #1 (OH)	MWD
			Description
			MWD - Standard
			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
0.0	0.00	0.00	0.0	0.0	0.0	473,095.20	731,504.10	32° 17' 54.355 N	103° 35' 2.780 W
100.0	0.95	42.79	100.0	0.6	0.6	473,095.81	731,504.66	32° 17' 54.361 N	103° 35' 2.773 W
200.0	1.02	39.78	200.0	1.9	1.7	473,097.10	731,505.79	32° 17' 54.373 N	103° 35' 2.760 W
300.0	1.34	41.06	300.0	3.5	3.0	473,098.67	731,507.13	32° 17' 54.389 N	103° 35' 2.744 W
400.0	0.67	27.07	399.9	4.9	4.1	473,100.07	731,508.16	32° 17' 54.402 N	103° 35' 2.732 W
500.0	0.97	1.72	499.9	6.2	4.4	473,101.44	731,508.46	32° 17' 54.416 N	103° 35' 2.729 W
600.0	0.60	26.15	599.9	7.6	4.6	473,102.75	731,508.71	32° 17' 54.429 N	103° 35' 2.725 W
700.0	0.87	17.29	699.9	8.7	5.1	473,103.95	731,509.17	32° 17' 54.441 N	103° 35' 2.720 W
800.0	0.28	344.78	799.9	9.7	5.2	473,104.91	731,509.33	32° 17' 54.450 N	103° 35' 2.718 W
900.0	0.76	322.01	899.9	10.5	4.8	473,105.67	731,508.86	32° 17' 54.458 N	103° 35' 2.724 W
1,000.0	0.61	320.15	999.9	11.4	4.0	473,106.60	731,508.11	32° 17' 54.467 N	103° 35' 2.732 W



TDS
Survey Report - Geographic



Company: COG Production LLC
Project: Lea County, NM
Site: Bebidas State
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #1H
TVD Reference: KB @ 3737.0usft
MD Reference: KB @ 3737.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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
1,100.0	0.62	319.22	1,099.9	12.2	3.3	473,107.42	731,507.41	32° 17' 54.475 N	103° 35' 2.740 W
1,200.0	1.11	325.91	1,199.9	13.4	2.4	473,108.63	731,506.52	32° 17' 54.487 N	103° 35' 2.751 W
1,300.0	0.57	316.87	1,299.9	14.6	1.5	473,109.79	731,505.63	32° 17' 54.499 N	103° 35' 2.761 W
1,400.0	0.58	321.12	1,399.9	15.3	0.9	473,110.55	731,504.98	32° 17' 54.506 N	103° 35' 2.768 W
1,500.0	0.60	321.85	1,499.9	16.2	0.2	473,111.36	731,504.34	32° 17' 54.514 N	103° 35' 2.776 W
1,600.0	0.85	298.57	1,599.9	16.9	-0.7	473,112.12	731,503.36	32° 17' 54.522 N	103° 35' 2.787 W
1,700.0	1.09	308.06	1,699.8	17.9	-2.1	473,113.06	731,501.96	32° 17' 54.531 N	103° 35' 2.803 W
1,800.0	0.89	287.90	1,799.8	18.7	-3.6	473,113.89	731,500.47	32° 17' 54.540 N	103° 35' 2.821 W
1,900.0	0.62	303.14	1,899.8	19.2	-4.8	473,114.42	731,499.28	32° 17' 54.545 N	103° 35' 2.834 W
2,000.0	0.63	272.81	1,999.8	19.5	-5.8	473,114.75	731,498.28	32° 17' 54.548 N	103° 35' 2.846 W
2,100.0	0.75	271.14	2,099.8	19.6	-7.0	473,114.79	731,497.07	32° 17' 54.549 N	103° 35' 2.860 W
2,200.0	0.81	287.98	2,199.8	19.8	-8.3	473,115.02	731,495.75	32° 17' 54.551 N	103° 35' 2.875 W
2,300.0	0.92	267.85	2,299.8	20.0	-9.8	473,115.20	731,494.27	32° 17' 54.553 N	103° 35' 2.893 W
2,400.0	1.11	263.12	2,399.8	19.9	-11.6	473,115.06	731,492.51	32° 17' 54.552 N	103° 35' 2.913 W
2,500.0	1.06	251.68	2,499.7	19.5	-13.4	473,114.65	731,490.67	32° 17' 54.548 N	103° 35' 2.935 W
2,600.0	1.07	238.37	2,599.7	18.7	-15.1	473,113.87	731,489.00	32° 17' 54.540 N	103° 35' 2.954 W
2,700.0	1.15	266.07	2,699.7	18.1	-16.9	473,113.31	731,487.20	32° 17' 54.535 N	103° 35' 2.975 W
2,800.0	1.12	267.21	2,799.7	18.0	-18.9	473,113.20	731,485.22	32° 17' 54.534 N	103° 35' 2.998 W
2,900.0	0.98	253.48	2,899.7	17.7	-20.7	473,112.91	731,483.43	32° 17' 54.531 N	103° 35' 3.019 W
3,000.0	1.19	259.96	2,999.7	17.3	-22.5	473,112.48	731,481.58	32° 17' 54.527 N	103° 35' 3.041 W
3,100.0	0.96	258.39	3,099.6	16.9	-24.4	473,112.13	731,479.74	32° 17' 54.524 N	103° 35' 3.062 W
3,200.0	0.53	241.66	3,199.6	16.5	-25.6	473,111.74	731,478.51	32° 17' 54.520 N	103° 35' 3.077 W
3,300.0	0.80	269.26	3,299.6	16.3	-26.7	473,111.52	731,477.41	32° 17' 54.518 N	103° 35' 3.089 W
3,400.0	1.00	281.24	3,399.6	16.5	-28.2	473,111.68	731,475.85	32° 17' 54.520 N	103° 35' 3.108 W
3,500.0	0.93	290.25	3,499.6	16.9	-29.9	473,112.13	731,474.24	32° 17' 54.524 N	103° 35' 3.126 W
3,600.0	0.63	283.40	3,599.6	17.3	-31.2	473,112.54	731,472.94	32° 17' 54.528 N	103° 35' 3.141 W
3,700.0	0.56	295.93	3,699.6	17.7	-32.1	473,112.88	731,471.97	32° 17' 54.532 N	103° 35' 3.153 W
3,800.0	0.43	318.38	3,799.6	18.2	-32.8	473,113.37	731,471.28	32° 17' 54.537 N	103° 35' 3.161 W
3,900.0	0.30	327.96	3,899.6	18.7	-33.2	473,113.87	731,470.89	32° 17' 54.542 N	103° 35' 3.165 W
4,000.0	0.10	311.24	3,999.6	19.0	-33.4	473,114.15	731,470.69	32° 17' 54.544 N	103° 35' 3.168 W
4,100.0	0.41	272.44	4,099.6	19.0	-33.8	473,114.23	731,470.26	32° 17' 54.545 N	103° 35' 3.172 W
4,200.0	0.31	290.01	4,199.6	19.1	-34.4	473,114.33	731,469.65	32° 17' 54.546 N	103° 35' 3.180 W
4,300.0	0.31	175.37	4,299.6	19.0	-34.7	473,114.16	731,469.42	32° 17' 54.545 N	103° 35' 3.182 W
4,400.0	1.09	135.78	4,399.6	18.0	-34.0	473,113.21	731,470.10	32° 17' 54.535 N	103° 35' 3.174 W
4,500.0	1.74	143.12	4,499.5	16.1	-32.4	473,111.31	731,471.68	32° 17' 54.516 N	103° 35' 3.156 W
4,600.0	1.32	141.32	4,599.5	14.0	-30.8	473,109.20	731,473.31	32° 17' 54.495 N	103° 35' 3.137 W
4,700.0	1.58	140.91	4,699.5	12.0	-29.2	473,107.23	731,474.90	32° 17' 54.476 N	103° 35' 3.119 W
4,800.0	1.27	145.90	4,799.4	10.0	-27.7	473,105.24	731,476.39	32° 17' 54.456 N	103° 35' 3.102 W
4,900.0	1.61	135.10	4,899.4	8.1	-26.1	473,103.33	731,478.00	32° 17' 54.437 N	103° 35' 3.083 W
5,000.0	0.28	165.64	4,999.4	6.9	-25.0	473,102.09	731,479.05	32° 17' 54.424 N	103° 35' 3.071 W
5,100.0	0.35	262.30	5,099.4	6.6	-25.3	473,101.82	731,478.81	32° 17' 54.422 N	103° 35' 3.074 W
5,200.0	0.16	339.13	5,199.4	6.7	-25.6	473,101.91	731,478.46	32° 17' 54.423 N	103° 35' 3.078 W
5,300.0	0.23	311.02	5,299.4	7.0	-25.8	473,102.17	731,478.26	32° 17' 54.425 N	103° 35' 3.080 W
5,400.0	0.40	291.15	5,399.4	7.2	-26.3	473,102.43	731,477.78	32° 17' 54.428 N	103° 35' 3.086 W
5,500.0	0.36	236.54	5,499.4	7.2	-26.9	473,102.38	731,477.19	32° 17' 54.427 N	103° 35' 3.093 W
5,600.0	0.50	280.41	5,599.4	7.1	-27.6	473,102.28	731,476.50	32° 17' 54.427 N	103° 35' 3.101 W
5,700.0	0.18	303.92	5,699.4	7.2	-28.2	473,102.45	731,475.94	32° 17' 54.428 N	103° 35' 3.107 W
5,800.0	0.68	305.84	5,799.4	7.7	-28.8	473,102.89	731,475.33	32° 17' 54.433 N	103° 35' 3.114 W
5,900.0	0.74	317.07	5,899.4	8.5	-29.7	473,103.71	731,474.41	32° 17' 54.441 N	103° 35' 3.125 W
6,000.0	0.37	331.46	5,999.4	9.3	-30.3	473,104.46	731,473.82	32° 17' 54.448 N	103° 35' 3.132 W
6,100.0	0.60	318.54	6,099.4	9.9	-30.8	473,105.14	731,473.32	32° 17' 54.455 N	103° 35' 3.138 W
6,200.0	0.47	342.61	6,199.4	10.7	-31.2	473,105.92	731,472.85	32° 17' 54.463 N	103° 35' 3.143 W
6,300.0	0.45	323.09	6,299.4	11.4	-31.6	473,106.63	731,472.49	32° 17' 54.470 N	103° 35' 3.147 W
6,400.0	0.74	329.54	6,399.3	12.3	-32.2	473,107.50	731,471.92	32° 17' 54.478 N	103° 35' 3.154 W
6,500.0	0.38	11.64	6,499.3	13.2	-32.4	473,108.38	731,471.66	32° 17' 54.487 N	103° 35' 3.157 W



TDS
Survey Report - Geographic



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Wellbore: OH
Design: OH

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TVD Reference: KB @ 3737.0usft
MD Reference: KB @ 3737.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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
6,600.0	0.40	12.76	6,599.3	13.8	-32.3	473,109.04	731,471.81	32° 17' 54.494 N	103° 35' 3.155 W
6,700.0	0.25	325.90	6,699.3	14.4	-32.3	473,109.57	731,471.76	32° 17' 54.499 N	103° 35' 3.155 W
6,800.0	0.58	348.73	6,799.3	15.0	-32.6	473,110.24	731,471.54	32° 17' 54.506 N	103° 35' 3.158 W
6,900.0	0.25	334.49	6,899.3	15.7	-32.7	473,110.94	731,471.35	32° 17' 54.513 N	103° 35' 3.160 W
7,000.0	0.34	340.30	6,999.3	16.2	-32.9	473,111.41	731,471.16	32° 17' 54.517 N	103° 35' 3.162 W
7,100.0	0.03	220.74	7,099.3	16.5	-33.1	473,111.67	731,471.04	32° 17' 54.520 N	103° 35' 3.164 W
7,200.0	0.39	231.59	7,199.3	16.2	-33.3	473,111.44	731,470.75	32° 17' 54.518 N	103° 35' 3.167 W
7,300.0	0.66	227.83	7,299.3	15.6	-34.0	473,110.84	731,470.06	32° 17' 54.512 N	103° 35' 3.175 W
7,400.0	0.18	239.99	7,399.3	15.2	-34.6	473,110.38	731,469.50	32° 17' 54.507 N	103° 35' 3.182 W
7,500.0	0.58	191.41	7,499.3	14.6	-34.8	473,109.80	731,469.26	32° 17' 54.501 N	103° 35' 3.184 W
7,600.0	0.98	165.84	7,599.3	13.3	-34.7	473,108.48	731,469.37	32° 17' 54.488 N	103° 35' 3.183 W
7,700.0	0.72	168.88	7,699.3	11.8	-34.4	473,107.03	731,469.70	32° 17' 54.474 N	103° 35' 3.180 W
7,800.0	0.98	181.14	7,799.3	10.4	-34.3	473,105.56	731,469.81	32° 17' 54.459 N	103° 35' 3.178 W
7,900.0	1.04	162.10	7,899.3	8.6	-34.0	473,103.84	731,470.07	32° 17' 54.442 N	103° 35' 3.176 W
8,000.0	1.14	162.37	7,999.3	6.8	-33.4	473,102.03	731,470.65	32° 17' 54.424 N	103° 35' 3.169 W
8,100.0	0.59	198.22	8,099.2	5.4	-33.3	473,100.59	731,470.79	32° 17' 54.410 N	103° 35' 3.167 W
8,200.0	0.50	203.07	8,199.2	4.5	-33.6	473,099.70	731,470.46	32° 17' 54.401 N	103° 35' 3.171 W
8,300.0	0.47	189.75	8,299.2	3.7	-33.9	473,098.90	731,470.22	32° 17' 54.393 N	103° 35' 3.174 W
8,400.0	0.86	172.98	8,399.2	2.5	-33.9	473,097.75	731,470.24	32° 17' 54.382 N	103° 35' 3.174 W
8,500.0	1.00	180.48	8,499.2	0.9	-33.8	473,096.13	731,470.32	32° 17' 54.366 N	103° 35' 3.173 W
8,600.0	0.86	197.52	8,599.2	-0.7	-34.0	473,094.54	731,470.09	32° 17' 54.350 N	103° 35' 3.176 W
8,700.0	0.88	180.33	8,699.2	-2.1	-34.2	473,093.06	731,469.86	32° 17' 54.336 N	103° 35' 3.179 W
8,800.0	0.60	233.89	8,799.2	-3.2	-34.7	473,091.98	731,469.43	32° 17' 54.325 N	103° 35' 3.184 W
8,900.0	0.92	228.47	8,899.2	-4.1	-35.7	473,091.14	731,468.41	32° 17' 54.317 N	103° 35' 3.196 W
9,000.0	0.82	247.56	8,999.2	-4.9	-37.0	473,090.34	731,467.14	32° 17' 54.309 N	103° 35' 3.211 W
9,100.0	1.02	273.96	9,099.2	-5.1	-38.5	473,090.12	731,465.60	32° 17' 54.307 N	103° 35' 3.229 W
9,200.0	2.12	292.70	9,199.1	-4.3	-41.1	473,090.90	731,463.00	32° 17' 54.315 N	103° 35' 3.259 W
9,300.0	1.96	286.55	9,299.1	-3.1	-44.4	473,092.10	731,459.66	32° 17' 54.327 N	103° 35' 3.298 W
9,400.0	2.06	283.85	9,399.0	-2.2	-47.8	473,093.02	731,456.27	32° 17' 54.336 N	103° 35' 3.337 W
9,500.0	2.75	271.74	9,498.9	-1.7	-52.0	473,093.52	731,452.13	32° 17' 54.342 N	103° 35' 3.385 W
9,600.0	3.17	266.26	9,598.8	-1.8	-57.1	473,093.41	731,446.97	32° 17' 54.341 N	103° 35' 3.446 W
9,700.0	3.22	254.57	9,698.6	-2.7	-62.6	473,092.49	731,441.50	32° 17' 54.332 N	103° 35' 3.509 W
9,784.0	2.63	249.46	9,782.5	-4.0	-66.7	473,091.18	731,437.43	32° 17' 54.319 N	103° 35' 3.557 W
9,876.0	3.10	266.60	9,874.4	-4.9	-71.1	473,090.29	731,432.97	32° 17' 54.311 N	103° 35' 3.609 W
9,971.0	2.20	269.80	9,969.3	-5.1	-75.5	473,090.13	731,428.58	32° 17' 54.310 N	103° 35' 3.660 W
10,065.0	1.00	185.40	10,063.3	-5.9	-77.4	473,089.31	731,426.70	32° 17' 54.302 N	103° 35' 3.682 W
10,160.0	1.40	224.40	10,158.2	-7.5	-78.3	473,087.66	731,425.81	32° 17' 54.285 N	103° 35' 3.693 W
10,255.0	1.60	225.10	10,253.2	-9.3	-80.0	473,085.89	731,424.06	32° 17' 54.268 N	103° 35' 3.713 W
10,350.0	1.50	223.50	10,348.2	-11.1	-81.8	473,084.05	731,422.26	32° 17' 54.250 N	103° 35' 3.734 W
10,444.0	1.50	228.20	10,442.1	-12.9	-83.6	473,082.34	731,420.50	32° 17' 54.233 N	103° 35' 3.755 W
10,495.0	1.50	228.20	10,493.1	-13.7	-84.6	473,081.45	731,419.50	32° 17' 54.224 N	103° 35' 3.767 W
10,538.0	0.90	344.40	10,536.1	-13.8	-85.1	473,081.40	731,418.99	32° 17' 54.224 N	103° 35' 3.772 W
10,601.0	1.00	314.30	10,599.1	-12.9	-85.6	473,082.26	731,418.46	32° 17' 54.232 N	103° 35' 3.779 W
10,633.0	2.10	347.80	10,631.1	-12.2	-86.0	473,083.03	731,418.14	32° 17' 54.240 N	103° 35' 3.782 W
10,664.0	5.10	5.00	10,662.0	-10.2	-86.0	473,084.96	731,418.14	32° 17' 54.259 N	103° 35' 3.782 W
10,696.0	8.60	10.70	10,693.8	-6.5	-85.4	473,088.73	731,418.71	32° 17' 54.296 N	103° 35' 3.775 W
10,727.0	12.30	13.40	10,724.3	-1.0	-84.2	473,094.22	731,419.90	32° 17' 54.351 N	103° 35' 3.761 W
10,759.0	15.60	15.10	10,755.3	6.5	-82.3	473,101.69	731,421.82	32° 17' 54.424 N	103° 35' 3.738 W
10,790.0	18.70	16.50	10,785.0	15.3	-79.8	473,110.48	731,424.31	32° 17' 54.511 N	103° 35' 3.708 W
10,822.0	22.80	15.50	10,814.9	26.2	-76.7	473,121.38	731,427.43	32° 17' 54.619 N	103° 35' 3.671 W
10,853.0	27.90	14.50	10,842.9	39.0	-73.2	473,134.20	731,430.85	32° 17' 54.746 N	103° 35' 3.630 W
10,885.0	33.00	14.10	10,870.5	54.7	-69.2	473,149.91	731,434.85	32° 17' 54.901 N	103° 35' 3.582 W
10,916.0	38.20	14.30	10,895.6	72.2	-64.8	473,167.40	731,439.28	32° 17' 55.073 N	103° 35' 3.529 W
10,948.0	42.50	13.90	10,920.0	92.3	-59.8	473,187.49	731,444.32	32° 17' 55.272 N	103° 35' 3.469 W
10,980.0	46.20	13.10	10,942.9	114.0	-54.6	473,209.24	731,449.54	32° 17' 55.487 N	103° 35' 3.406 W



TDS
Survey Report - Geographic



Company: COG Production LLC
Project: Lea County, NM
Site: Bebidas State
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #1H
TVD Reference: KB @ 3737.0usft
MD Reference: KB @ 3737.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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
11,011.0	49.50	12.30	10,963.7	136.5	-49.5	473,231.65	731,454.59	32° 17' 55.708 N	103° 35' 3.346 W
11,043.0	53.10	12.00	10,983.7	160.9	-44.3	473,256.06	731,459.84	32° 17' 55.949 N	103° 35' 3.282 W
11,074.0	57.70	12.00	11,001.3	185.8	-39.0	473,281.02	731,465.14	32° 17' 56.196 N	103° 35' 3.219 W
11,106.0	62.50	12.20	11,017.3	212.9	-33.1	473,308.13	731,470.96	32° 17' 56.464 N	103° 35' 3.149 W
11,137.0	67.30	12.40	11,030.4	240.4	-27.2	473,335.55	731,476.94	32° 17' 56.735 N	103° 35' 3.077 W
11,169.0	71.10	12.10	11,041.8	269.6	-20.8	473,364.78	731,483.28	32° 17' 57.024 N	103° 35' 3.000 W
11,201.0	75.40	11.40	11,051.0	299.6	-14.6	473,394.78	731,489.52	32° 17' 57.320 N	103° 35' 2.925 W
11,232.0	79.70	10.50	11,057.7	329.3	-8.8	473,424.49	731,495.27	32° 17' 57.614 N	103° 35' 2.856 W
11,264.0	85.10	10.30	11,061.9	360.5	-3.1	473,455.67	731,500.99	32° 17' 57.922 N	103° 35' 2.787 W
11,332.0	93.50	10.30	11,062.7	427.3	9.0	473,522.51	731,513.14	32° 17' 58.582 N	103° 35' 2.640 W
11,426.0	91.30	8.50	11,058.8	520.0	24.4	473,615.16	731,528.47	32° 17' 59.498 N	103° 35' 2.454 W
11,521.0	89.80	8.10	11,057.9	614.0	38.1	473,709.16	731,542.19	32° 18' 0.427 N	103° 35' 2.286 W
11,615.0	90.60	7.90	11,057.6	707.0	51.2	473,802.24	731,555.27	32° 18' 1.347 N	103° 35' 2.126 W
11,710.0	89.10	8.40	11,057.8	801.1	64.6	473,896.28	731,568.73	32° 18' 2.277 N	103° 35' 1.962 W
11,804.0	90.30	8.30	11,058.3	894.1	78.3	473,989.28	731,582.39	32° 18' 3.196 N	103° 35' 1.795 W
11,899.0	90.60	6.40	11,057.5	988.3	90.4	474,083.49	731,594.54	32° 18' 4.128 N	103° 35' 1.646 W
11,993.0	91.20	3.80	11,056.1	1,081.9	98.8	474,177.10	731,602.89	32° 18' 5.054 N	103° 35' 1.541 W
12,087.0	89.20	1.80	11,055.7	1,175.8	103.4	474,270.98	731,607.48	32° 18' 5.982 N	103° 35' 1.480 W
12,182.0	89.40	359.50	11,056.9	1,270.8	104.5	474,365.96	731,608.56	32° 18' 6.922 N	103° 35' 1.459 W
12,276.0	89.70	357.60	11,057.6	1,364.7	102.1	474,459.92	731,606.18	32° 18' 7.852 N	103° 35' 1.479 W
12,371.0	91.00	357.50	11,057.1	1,459.6	98.0	474,554.83	731,602.12	32° 18' 8.791 N	103° 35' 1.519 W
12,465.0	89.80	357.70	11,056.4	1,553.5	94.1	474,648.74	731,598.19	32° 18' 9.721 N	103° 35' 1.557 W
12,560.0	88.90	357.90	11,057.5	1,648.5	90.4	474,743.67	731,594.54	32° 18' 10.661 N	103° 35' 1.592 W
12,654.0	87.60	357.30	11,060.4	1,742.3	86.5	474,837.54	731,590.60	32° 18' 11.590 N	103° 35' 1.630 W
12,749.0	88.40	357.30	11,063.7	1,837.2	82.0	474,932.37	731,586.13	32° 18' 12.528 N	103° 35' 1.675 W
12,843.0	88.60	356.90	11,066.1	1,931.0	77.3	475,026.22	731,581.38	32° 18' 13.457 N	103° 35' 1.722 W
12,938.0	90.00	356.70	11,067.3	2,025.9	72.0	475,121.06	731,576.08	32° 18' 14.396 N	103° 35' 1.776 W
13,032.0	89.10	357.30	11,068.0	2,119.7	67.1	475,214.93	731,571.16	32° 18' 15.326 N	103° 35' 1.826 W
13,127.0	89.70	356.90	11,069.0	2,214.6	62.3	475,309.80	731,566.35	32° 18' 16.265 N	103° 35' 1.874 W
13,221.0	88.30	356.90	11,070.7	2,308.4	57.2	475,403.65	731,561.27	32° 18' 17.194 N	103° 35' 1.926 W
13,316.0	89.60	357.20	11,072.4	2,403.3	52.3	475,498.50	731,556.38	32° 18' 18.133 N	103° 35' 1.975 W
13,411.0	90.60	358.50	11,072.2	2,498.2	48.7	475,593.43	731,552.82	32° 18' 19.072 N	103° 35' 2.009 W
13,505.0	88.40	358.30	11,073.1	2,592.2	46.1	475,687.39	731,550.19	32° 18' 20.002 N	103° 35' 2.032 W
13,599.0	87.00	357.10	11,076.8	2,686.0	42.3	475,781.23	731,546.42	32° 18' 20.931 N	103° 35' 2.068 W
13,694.0	87.40	356.70	11,081.5	2,780.8	37.2	475,875.98	731,541.29	32° 18' 21.869 N	103° 35' 2.120 W
13,788.0	91.70	358.00	11,082.2	2,874.7	32.9	475,969.85	731,536.95	32° 18' 22.798 N	103° 35' 2.163 W
13,883.0	90.60	358.30	11,080.3	2,969.6	29.8	476,064.78	731,533.88	32° 18' 23.738 N	103° 35' 2.191 W
13,977.0	89.20	358.20	11,080.5	3,063.5	26.9	476,158.74	731,531.01	32° 18' 24.668 N	103° 35' 2.217 W
14,072.0	86.80	357.20	11,083.8	3,158.4	23.1	476,253.59	731,527.20	32° 18' 25.607 N	103° 35' 2.253 W
14,166.0	88.00	357.50	11,088.0	3,252.2	18.8	476,347.39	731,522.86	32° 18' 26.535 N	103° 35' 2.296 W
14,261.0	88.00	357.30	11,091.4	3,347.0	14.5	476,442.24	731,518.55	32° 18' 27.474 N	103° 35' 2.339 W
14,356.0	88.80	356.10	11,094.0	3,441.8	9.0	476,537.04	731,513.09	32° 18' 28.412 N	103° 35' 2.395 W
14,450.0	90.10	356.50	11,094.9	3,535.6	2.9	476,630.84	731,507.02	32° 18' 29.341 N	103° 35' 2.458 W
14,544.0	89.00	357.20	11,095.7	3,629.5	-2.2	476,724.69	731,501.86	32° 18' 30.270 N	103° 35' 2.510 W
14,639.0	89.70	357.80	11,096.7	3,724.4	-6.4	476,819.60	731,497.71	32° 18' 31.209 N	103° 35' 2.551 W
14,733.0	90.50	358.10	11,096.6	3,818.3	-9.7	476,913.53	731,494.35	32° 18' 32.139 N	103° 35' 2.583 W
14,828.0	92.40	358.10	11,094.2	3,913.2	-12.9	477,008.45	731,491.20	32° 18' 33.079 N	103° 35' 2.611 W
14,923.0	91.20	357.60	11,091.2	4,008.1	-16.5	477,103.33	731,487.64	32° 18' 34.018 N	103° 35' 2.645 W
15,017.0	91.40	357.40	11,089.1	4,102.0	-20.6	477,197.22	731,483.54	32° 18' 34.947 N	103° 35' 2.685 W
15,112.0	92.40	357.20	11,085.9	4,196.9	-25.0	477,292.06	731,479.07	32° 18' 35.886 N	103° 35' 2.730 W
15,207.0	92.90	357.10	11,081.5	4,291.6	-29.7	477,386.84	731,474.35	32° 18' 36.824 N	103° 35' 2.777 W
15,301.0	94.70	357.40	11,075.3	4,385.3	-34.2	477,480.52	731,469.85	32° 18' 37.751 N	103° 35' 2.822 W
15,385.0	94.70	357.40	11,068.4	4,469.0	-38.0	477,564.15	731,466.05	32° 18' 38.579 N	103° 35' 2.859 W



Company: COG Operating, LLC (Concho)
Lease/Well: Bebidas State/No. 001H
Location: S16 T23-S R33-E
Rig Name: Basic #46
State/County: New Mexico/Lea
Latitude: 32.30, Longitude: -103.58
GRID North is 0.40 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB = 22FT

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 10/28/2014 / 10:49

VES Survey International

West Texas

(432) 563-5444

Surveyor: Cody Johnson

Bebidas State No. 001H / API 30-025-40854

30-025-40854

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DEC 18 2014

HOBSOCD

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	0.95	42.79	100.00	0.61	0.56	0.61	0.83	42.79	0.95
200.00	1.02	39.78	199.98	1.91	1.70	1.91	2.55	41.74	0.09
300.00	1.34	41.06	299.96	3.47	3.04	3.47	4.62	41.19	0.32
400.00	0.67	27.07	399.94	4.87	4.07	4.87	6.35	39.88	0.71
500.00	0.97	1.72	499.93	6.24	4.36	6.24	7.62	34.95	0.47
600.00	0.60	26.15	599.92	7.56	4.62	7.56	8.86	31.43	0.49
700.00	0.87	17.29	699.92	8.75	5.08	8.75	10.12	30.11	0.29
800.00	0.28	344.78	799.91	9.72	5.24	9.72	11.04	28.32	0.65
900.00	0.76	322.01	899.91	10.48	4.76	10.48	11.51	24.44	0.51
1000.00	0.61	320.15	999.90	11.42	4.01	11.42	12.10	19.36	0.15
1100.00	0.62	319.22	1099.89	12.23	3.32	12.23	12.67	15.17	0.01
1200.00	1.11	325.91	1199.88	13.44	2.42	13.44	13.66	10.22	0.50
1300.00	0.57	316.87	1299.87	14.60	1.54	14.60	14.68	6.03	0.55
1400.00	0.58	321.12	1399.87	15.36	0.88	15.36	15.39	3.29	0.04
1500.00	0.60	321.85	1499.86	16.17	0.24	16.17	16.17	0.85	0.02
1600.00	0.85	298.57	1599.85	16.93	-0.73	16.93	16.95	357.52	0.38
1700.00	1.09	308.06	1699.84	17.87	-2.13	17.87	18.00	353.19	0.28
1800.00	0.89	287.90	1799.82	18.70	-3.62	18.70	19.04	349.05	0.40

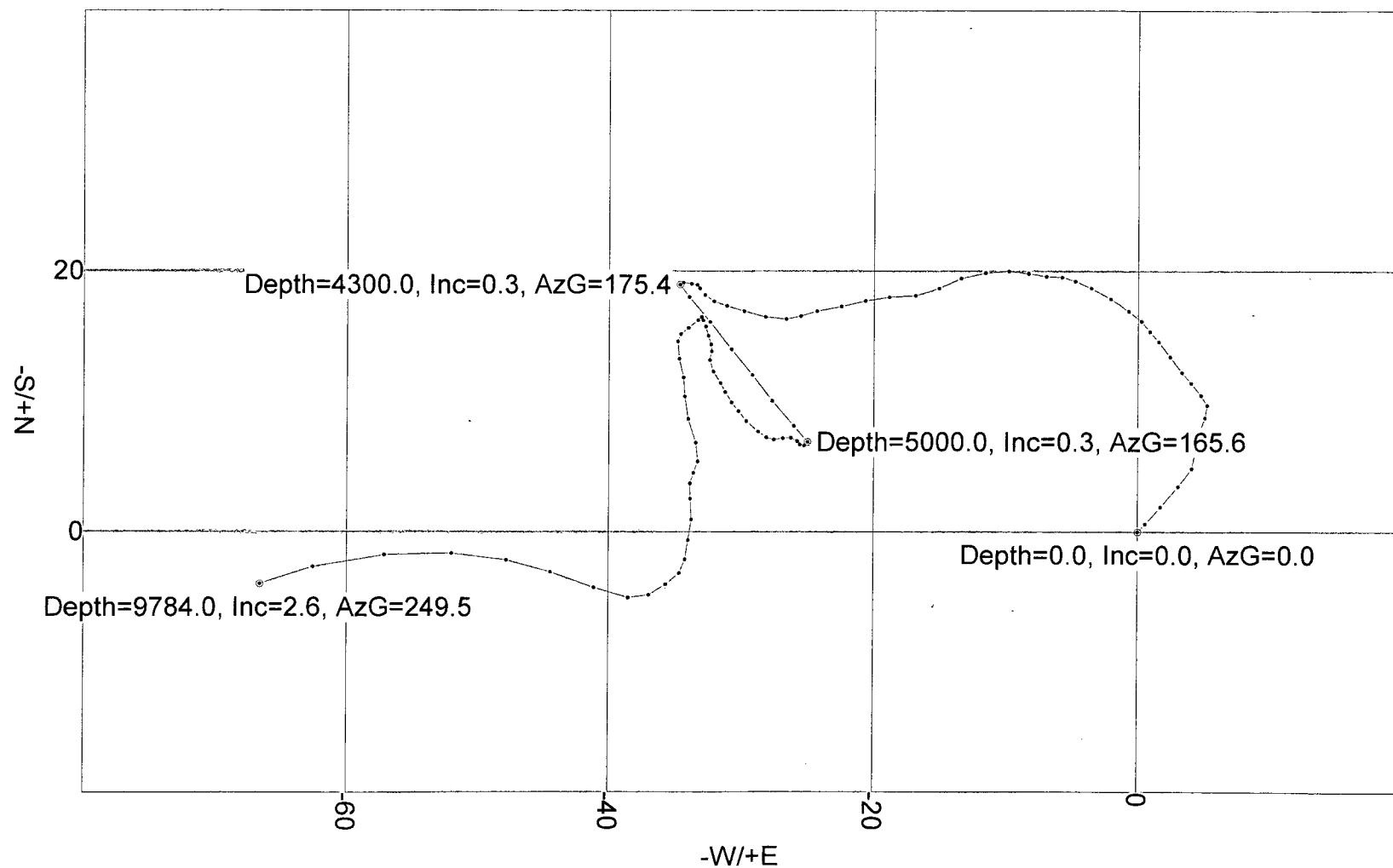
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.62	303.14	1899.81	19.23	-4.81	19.23	19.82	345.97	0.33
2000.00	0.63	272.81	1999.81	19.55	-5.81	19.55	20.39	343.46	0.33
2100.00	0.75	271.14	2099.80	19.59	-7.01	19.59	20.81	340.31	0.12
2200.00	0.81	287.98	2199.79	19.82	-8.34	19.82	21.50	337.19	0.23
2300.00	0.92	267.85	2299.78	20.01	-9.81	20.01	22.28	333.89	0.32
2400.00	1.11	263.12	2399.77	19.86	-11.57	19.86	22.99	329.77	0.21
2500.00	1.06	251.68	2499.75	19.46	-13.41	19.46	23.63	325.42	0.22
2600.00	1.07	238.37	2599.73	18.68	-15.08	18.68	24.01	321.07	0.25
2700.00	1.15	266.07	2699.71	18.12	-16.88	18.12	24.76	317.02	0.54
2800.00	1.12	267.21	2799.69	18.00	-18.86	18.00	26.07	313.67	0.03
2900.00	0.98	253.48	2899.68	17.71	-20.66	17.71	27.21	310.61	0.29
3000.00	1.19	259.96	2999.66	17.28	-22.50	17.28	28.37	307.53	0.24
3100.00	0.96	258.39	3099.64	16.93	-24.35	16.93	29.66	304.82	0.23
3200.00	0.53	241.66	3199.63	16.54	-25.58	16.54	30.46	302.90	0.48
3300.00	0.80	269.26	3299.63	16.32	-26.68	16.32	31.28	301.45	0.41
3400.00	1.00	281.24	3399.61	16.48	-28.24	16.48	32.69	300.27	0.27
3500.00	0.93	290.25	3499.60	16.93	-29.85	16.93	34.32	299.55	0.17
3600.00	0.63	283.40	3599.59	17.34	-31.15	17.34	35.65	299.10	0.31
3700.00	0.56	295.93	3699.58	17.68	-32.12	17.68	36.67	298.82	0.15
3800.00	0.43	318.38	3799.58	18.17	-32.82	18.17	37.51	298.98	0.23
3900.00	0.30	327.96	3899.58	18.67	-33.20	18.67	38.09	299.35	0.15
4000.00	0.10	311.24	3999.58	18.95	-33.40	18.95	38.40	299.56	0.20
4100.00	0.41	272.44	4099.58	19.02	-33.82	19.02	38.80	299.35	0.34
4200.00	0.31	290.01	4199.58	19.13	-34.44	19.13	39.39	299.05	0.15
4300.00	0.31	175.37	4299.57	18.95	-34.67	18.95	39.51	298.66	0.52
4400.00	1.09	135.78	4399.57	18.00	-33.99	18.00	38.46	297.91	0.87
4500.00	1.74	143.12	4499.54	16.11	-32.42	16.11	36.20	296.42	0.67
4600.00	1.32	141.32	4599.50	14.00	-30.79	14.00	33.82	294.45	0.43
4700.00	1.58	140.91	4699.47	12.03	-29.20	12.03	31.58	292.39	0.27
4800.00	1.27	145.90	4799.44	10.04	-27.71	10.04	29.47	289.91	0.34
4900.00	1.61	135.10	4899.41	8.13	-26.09	8.13	27.33	287.30	0.44
5000.00	0.28	165.64	4999.39	6.89	-25.04	6.89	25.97	285.39	1.38
5100.00	0.35	262.30	5099.39	6.61	-25.28	6.61	26.13	284.66	0.47
5200.00	0.16	339.13	5199.39	6.70	-25.63	6.70	26.49	284.65	0.35
5300.00	0.23	311.02	5299.39	6.96	-25.83	6.96	26.75	285.08	0.12
5400.00	0.40	291.15	5399.39	7.22	-26.31	7.22	27.28	285.34	0.20
5500.00	0.36	236.54	5499.38	7.17	-26.90	7.17	27.84	284.93	0.35
5600.00	0.50	280.41	5599.38	7.08	-27.60	7.08	28.49	284.38	0.35
5700.00	0.18	303.92	5699.38	7.24	-28.15	7.24	29.07	284.42	0.35

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	0.68	305.84	5799.38	7.67	-28.76	7.67	29.76	284.94	0.50
5900.00	0.74	317.07	5899.37	8.49	-29.68	8.49	30.87	285.97	0.15
6000.00	0.37	331.46	5999.36	9.25	-30.28	9.25	31.66	286.99	0.40
6100.00	0.60	318.54	6099.36	9.93	-30.78	9.93	32.34	287.88	0.26
6200.00	0.47	342.61	6199.36	10.72	-31.25	10.72	33.04	288.93	0.26
6300.00	0.45	323.09	6299.35	11.42	-31.61	11.42	33.61	289.86	0.16
6400.00	0.74	329.54	6399.35	12.28	-32.17	12.28	34.43	290.90	0.30
6500.00	0.38	11.64	6499.34	13.16	-32.43	13.16	35.00	292.10	0.52
6600.00	0.40	12.76	6599.34	13.84	-32.28	13.84	35.12	293.20	0.02
6700.00	0.25	325.90	6699.34	14.36	-32.33	14.36	35.37	293.96	0.30
6800.00	0.58	348.73	6799.34	15.04	-32.55	15.04	35.86	294.80	0.36
6900.00	0.25	334.49	6899.33	15.74	-32.74	15.74	36.33	295.67	0.34
7000.00	0.34	340.30	6999.33	16.22	-32.94	16.22	36.71	296.21	0.09
7100.00	0.03	220.74	7099.33	16.48	-33.06	16.48	36.93	296.49	0.36
7200.00	0.39	231.59	7199.33	16.24	-33.34	16.24	37.09	295.97	0.36
7300.00	0.66	227.83	7299.33	15.64	-34.04	15.64	37.46	294.68	0.27
7400.00	0.18	239.99	7399.32	15.17	-34.61	15.17	37.79	293.67	0.49
7500.00	0.58	191.41	7499.32	14.59	-34.84	14.59	37.78	292.73	0.48
7600.00	0.98	165.84	7599.31	13.27	-34.74	13.27	37.18	290.91	0.52
7700.00	0.72	168.88	7699.30	11.83	-34.41	11.83	36.38	288.97	0.26
7800.00	0.98	181.14	7799.29	10.36	-34.30	10.36	35.83	286.80	0.32
7900.00	1.04	162.10	7899.27	8.64	-34.04	8.64	35.12	284.24	0.34
8000.00	1.14	162.37	7999.26	6.83	-33.46	6.83	34.15	281.53	0.09
8100.00	0.59	198.22	8099.25	5.40	-33.32	5.40	33.75	279.20	0.74
8200.00	0.50	203.07	8199.24	4.51	-33.65	4.51	33.95	277.63	0.10
8300.00	0.47	189.75	8299.24	3.70	-33.89	3.70	34.09	276.23	0.12
8400.00	0.86	172.98	8399.23	2.55	-33.87	2.55	33.97	274.31	0.43
8500.00	1.00	180.48	8499.22	0.94	-33.79	0.94	33.80	271.59	0.18
8600.00	0.86	197.52	8599.20	-0.65	-34.02	-0.65	34.03	268.91	0.31
8700.00	0.88	180.33	8699.19	-2.13	-34.25	-2.13	34.32	266.44	0.26
8800.00	0.60	233.89	8799.19	-3.20	-34.67	-3.20	34.82	264.73	0.71
8900.00	0.92	228.47	8899.18	-4.04	-35.70	-4.04	35.93	263.54	0.33
9000.00	0.82	247.56	8999.17	-4.85	-36.96	-4.85	37.28	262.53	0.31
9100.00	1.02	273.96	9099.15	-5.06	-38.51	-5.06	38.84	262.51	0.46
9200.00	2.12	292.70	9199.11	-4.29	-41.10	-4.29	41.32	264.04	1.20
9300.00	1.96	286.55	9299.05	-3.09	-44.44	-3.09	44.55	266.02	0.27
9400.00	2.06	283.85	9398.99	-2.17	-47.82	-2.17	47.87	267.40	0.14
9500.00	2.75	271.74	9498.90	-1.67	-51.95	-1.67	51.98	268.16	0.85
9600.00	3.17	266.26	9598.77	-1.78	-57.10	-1.78	57.13	268.22	0.51

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	3.22	254.57	9698.62	-2.71	-62.57	-2.71	62.63	267.52	0.65
9784.00	2.63	249.46	9782.51	-4.01	-66.65	-4.01	66.77	266.56	0.77



VES Survey International
West Texas
(432) 563-5444
Surveyor: Cody Johnson
Bebidas State No. 001H / API 30-025-40854



30 - 025 - 40854

October 28, 2014

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

Attn: Kanicia Castillo

RE: **Bebidas State No. 001H**

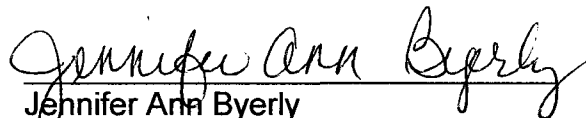
Please find enclosed a copy of the survey from 0.00' to 9784.00' ran on the above referenced well.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 28 day of October
A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas

