

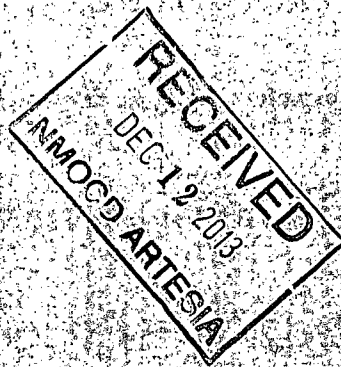


A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

May 10, 2013

30-015-41129



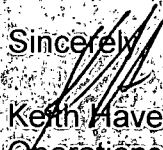
Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

Attn: Kanicia Castillo

RE: Yellow Fin Federal Com.No. 002H

Please find enclosed a copy of the survey from 0.00' to 8000.00' ran on the
above referenced well.

Sincerely,

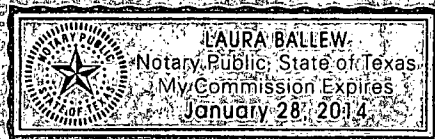

Keith Havelka
Operations

STATE OF TEXAS §

COUNTY OF NUECES §

This instrument was acknowledged before me on the 10th day of May
A.D. 2013, by Keith Havelka.


Laura Ballew
Notary Public, State of Texas



Company: COG Operating LLC (Concho)
Lease/Well: Yellow Fin Federal Com/ No. 002H



Rig Name: Precision Rig 77
State/County: New Mexico/Eddy
Latitude: 32.034, Longitude: -104.334
GRID North is 0.000 Degrees West of True North
VS-Azi: 0.000 Degrees



Depth Reference : RKB= 30'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...n 31 federal com #2h-de_01.ut

Minimum Curvature Method

Report Date/Time: 5/10/2013 / 13:46

VAUGHN ENERGY SERVICES

HENDERSON, COLORADO

303-853-4976

SURVEY ENGINEER: SEAN BRATT

YELLOW FIN FEDERAL COM NO. 002H / API 30-015-41129

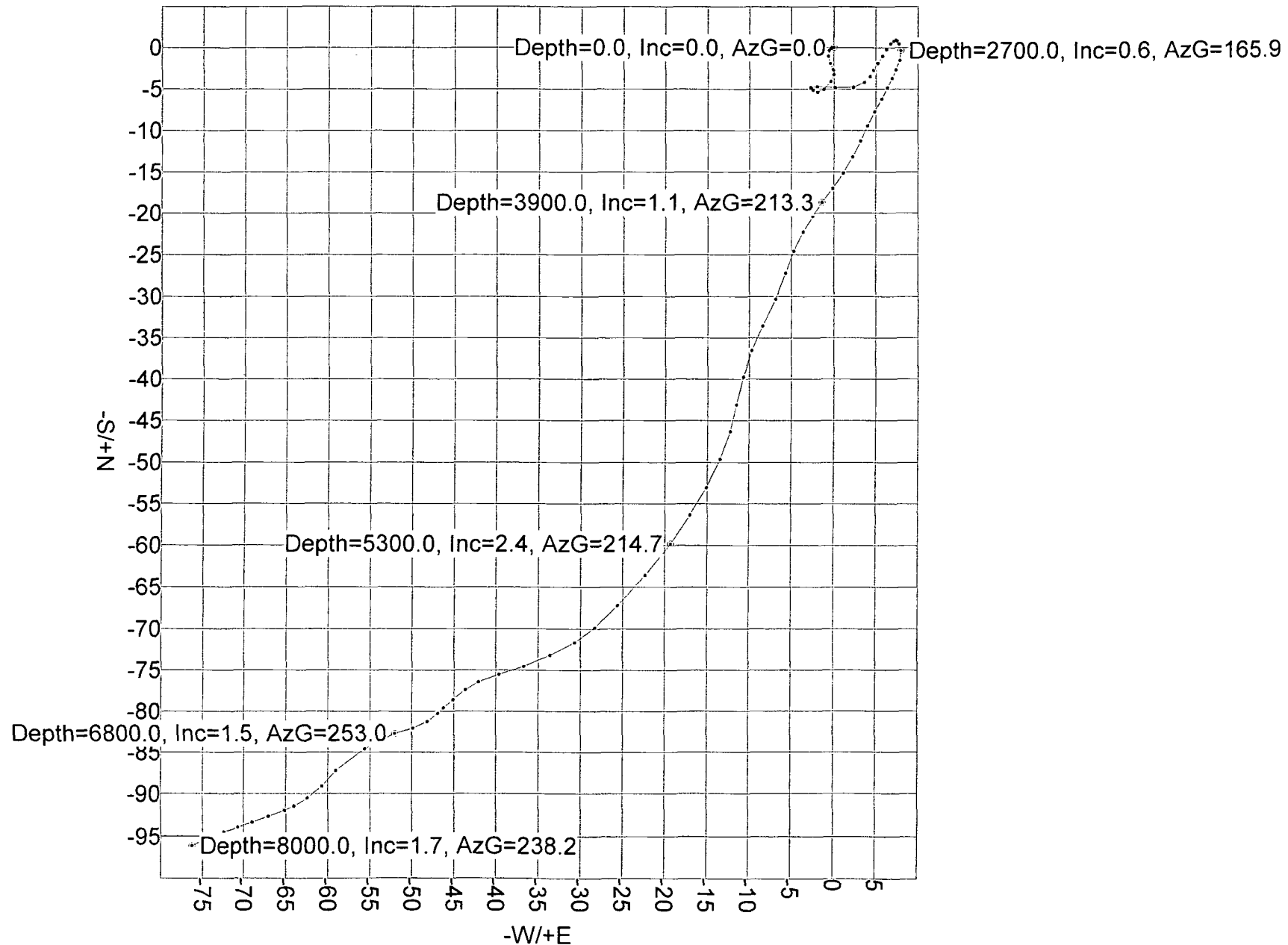
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.128	264.072	100.000	-0.012	-0.111	-0.012	0.112	264.072	0.128
200.000	0.155	236.758	200.000	-0.097	-0.336	-0.097	0.349	253.857	0.072
300.000	0.251	203.536	299.999	-0.372	-0.536	-0.372	0.652	235.246	0.148
400.000	0.527	180.933	399.997	-1.033	-0.631	-1.033	1.210	211.420	0.311
500.000	0.548	152.115	499.992	-1.915	-0.415	-1.915	1.960	192.215	0.268
600.000	0.426	162.681	599.989	-2.693	-0.080	-2.693	2.694	181.709	0.151
700.000	0.257	198.038	699.987	-3.261	-0.039	-3.261	3.261	180.687	0.263
800.000	0.785	204.124	799.983	-4.099	-0.388	-4.099	4.117	185.413	0.530
900.000	0.700	237.946	899.975	-5.048	-1.186	-5.048	5.186	193.222	0.440
1000.000	0.258	269.808	999.971	-5.373	-1.929	-5.373	5.709	199.746	0.500
1100.000	0.486	310.927	1099.969	-5.096	-2.474	-5.096	5.665	205.898	0.338
1200.000	0.057	61.451	1199.968	-4.795	-2.752	-4.795	5.528	209.851	0.509
1300.000	0.852	85.019	1299.964	-4.706	-1.968	-4.706	5.101	202.689	0.800
1400.000	1.564	97.274	1399.941	-4.815	0.126	-4.815	4.816	178.498	0.753
1500.000	0.969	74.448	1499.917	-4.761	2.294	-4.761	5.285	154.270	0.769
1600.000	0.668	56.288	1599.907	-4.210	3.594	-4.210	5.536	139.517	0.393
1700.000	0.492	28.769	1699.902	-3.510	4.286	-3.510	5.540	129.322	0.325
1800.000	0.476	30.263	1799.898	-2.776	4.701	-2.776	5.460	120.558	0.020

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
1900.000	0.715	34.820	1899.893	-1.905	5.267	-1.905	5.601	109.887	0.243
2000.000	0.484	27.528	1999.887	-1.019	5.818	-1.019	5.906	99.934	0.243
2100.000	0.574	31.507	2099.883	-0.218	6.275	-0.218	6.278	91.985	0.098
2200.000	0.383	39.358	2199.880	0.468	6.748	0.468	6.765	86.033	0.202
2300.000	0.216	60.416	2299.878	0.819	7.124	0.819	7.171	83.439	0.197
2400.000	0.077	93.174	2399.878	0.909	7.355	0.909	7.411	82.957	0.157
2500.000	0.158	132.152	2499.878	0.813	7.524	0.813	7.568	83.836	0.109
2600.000	0.368	159.656	2599.877	0.419	7.738	0.419	7.749	86.900	0.239
2700.000	0.573	165.885	2699.873	-0.367	7.971	-0.367	7.980	92.635	0.211
2800.000	0.834	198.608	2799.866	-1.541	7.861	-1.541	8.011	101.093	0.469
2900.000	0.610	206.762	2899.858	-2.706	7.389	-2.706	7.869	110.115	0.245
3000.000	0.663	205.721	2999.852	-3.703	6.898	-3.703	7.829	118.227	0.054
3100.000	0.785	205.522	3099.844	-4.842	6.352	-4.842	7.987	127.320	0.122
3200.000	0.942	205.925	3199.832	-6.200	5.698	-6.200	8.420	137.417	0.157
3300.000	1.081	211.175	3299.817	-7.746	4.850	-7.746	9.139	147.949	0.167
3400.000	1.101	202.414	3399.799	-9.442	3.995	-9.442	10.253	157.067	0.168
3500.000	1.174	205.288	3499.779	-11.257	3.191	-11.257	11.701	164.175	0.092
3600.000	1.303	208.579	3599.756	-13.182	2.209	-13.182	13.366	170.485	0.147
3700.000	1.276	209.735	3699.730	-15.147	1.113	-15.147	15.187	175.796	0.038
3800.000	1.291	217.921	3799.705	-17.002	-0.131	-17.002	17.002	180.441	0.184
3900.000	1.129	213.251	3899.683	-18.714	-1.363	-18.714	18.764	184.167	0.189
4000.000	1.138	213.387	3999.663	-20.367	-2.450	-20.367	20.514	186.859	0.009
4100.000	1.408	210.930	4099.639	-22.250	-3.628	-22.250	22.544	189.260	0.276
4200.000	1.530	200.551	4199.606	-24.554	-4.728	-24.554	25.005	190.899	0.292
4300.000	1.670	198.877	4299.567	-27.183	-5.668	-27.183	27.768	191.778	0.147
4400.000	2.184	202.977	4399.510	-30.316	-6.883	-30.316	31.088	192.792	0.533
4500.000	1.918	207.915	4499.446	-33.549	-8.411	-33.549	34.587	194.074	0.320
4600.000	1.832	197.707	4599.393	-36.550	-9.680	-36.550	37.811	194.834	0.344
4700.000	1.992	198.244	4699.337	-39.724	-10.710	-39.724	41.142	195.089	0.161
4800.000	1.994	189.747	4799.277	-43.090	-11.549	-43.090	44.610	195.004	0.295
4900.000	1.783	195.279	4899.222	-46.305	-12.254	-46.305	47.899	194.822	0.279
5000.000	2.261	203.526	4999.160	-49.615	-13.451	-49.615	51.406	195.169	0.559
5100.000	2.082	208.545	5099.088	-53.019	-15.107	-53.019	55.130	195.904	0.261
5200.000	2.330	211.747	5199.014	-56.344	-17.044	-56.344	58.865	196.831	0.277
5300.000	2.440	214.665	5298.928	-59.824	-19.325	-59.824	62.867	197.902	0.164
5400.000	3.075	221.230	5398.812	-63.592	-22.303	-63.592	67.389	199.327	0.707
5500.000	2.539	223.887	5498.691	-67.205	-25.607	-67.205	71.918	200.858	0.551
5600.000	1.804	228.012	5598.619	-69.855	-28.313	-69.855	75.374	202.063	0.751
5700.000	1.635	237.552	5698.574	-71.673	-30.686	-71.673	77.966	203.178	0.332

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
5800.000	2.097	245.735	5798.521	-73.191	-33.559	-73.191	80.518	204.632	0.532
5900.000	1.837	248.280	5898.462	-74.536	-36.716	-74.536	83.088	206.225	0.275
6000.000	1.732	255.343	5998.413	-75.512	-39.667	-75.512	85.297	207.714	0.243
6100.000	1.272	241.214	6098.379	-76.428	-42.102	-76.428	87.258	208.849	0.588
6200.000	0.818	234.046	6198.362	-77.382	-43.652	-77.382	88.845	209.428	0.471
6300.000	1.361	229.257	6298.344	-78.576	-45.130	-78.576	90.614	209.871	0.550
6400.000	0.368	225.023	6398.331	-79.578	-46.257	-79.578	92.046	210.168	0.994
6500.000	0.724	222.403	6498.326	-80.272	-46.911	-80.272	92.974	210.302	0.356
6600.000	1.111	237.073	6598.314	-81.266	-48.151	-81.266	94.460	210.647	0.450
6700.000	1.063	253.098	6698.296	-82.063	-49.852	-82.063	96.018	211.278	0.307
6800.000	1.524	252.989	6798.270	-82.721	-52.011	-82.721	97.714	212.160	0.461
6900.000	3.210	238.785	6898.182	-84.562	-55.678	-84.562	101.246	213.362	1.772
7000.000	1.777	220.131	6998.086	-87.198	-59.072	-87.198	105.323	214.115	1.628
7100.000	1.079	220.827	7098.054	-89.096	-60.686	-89.096	107.800	214.260	0.699
7200.000	1.509	237.677	7198.029	-90.512	-62.415	-90.512	109.946	214.589	0.570
7300.000	0.576	241.826	7298.011	-91.454	-63.971	-91.454	111.607	214.972	0.935
7400.000	0.887	251.615	7398.003	-91.935	-65.149	-91.935	112.679	215.323	0.334
7500.000	1.473	248.111	7497.982	-92.659	-67.076	-92.659	114.389	215.901	0.589
7600.000	0.831	254.479	7597.961	-93.332	-68.967	-93.332	116.048	216.462	0.654
7700.000	1.260	249.750	7697.944	-93.906	-70.697	-93.906	117.544	216.974	0.438
7800.000	0.821	255.439	7797.927	-94.467	-72.423	-94.467	119.034	217.475	0.451
7900.000	1.152	249.663	7897.912	-94.997	-74.059	-94.997	120.454	217.940	0.345
8000.000	1.691	238.158	7997.881	-96.125	-76.255	-96.125	122.698	218.425	0.607



VAUGHN ENERGY SERVICES
HENDERSON, COLORADO
303-853-4976
SURVEY ENGINEER: SEAN BRATT
YELLOW FIN FEDERAL COM NO. 002H / API 30-015-41129



VES SURVEY DATE: 05/04/2013



COG Operating LLC

Location: Eddy County, NM
Field: (Yellow Fin) Sec 19, T26S, R26E
Facility: Yellow Fin Federal No. 2H

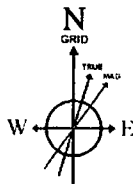
Slot: No. 2H SHL
Well: No. 2H
Wellbore: No. 2H PWB



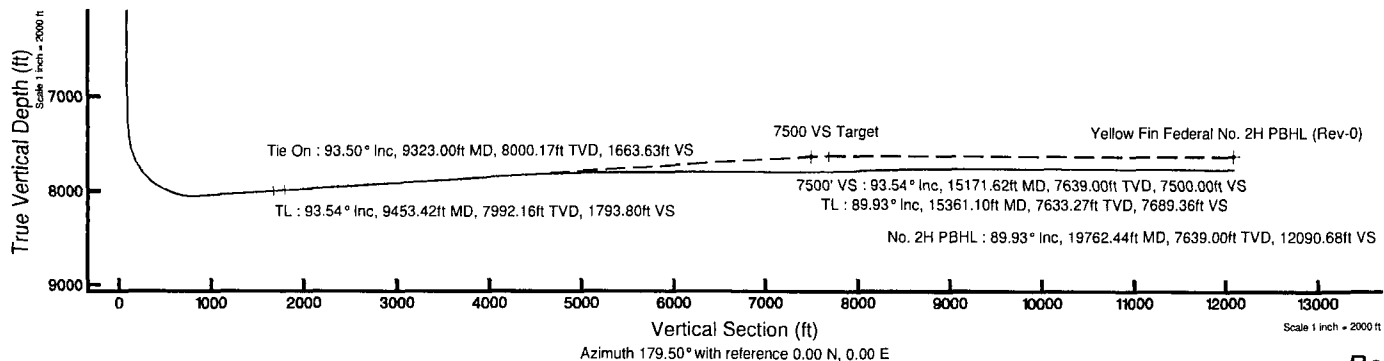
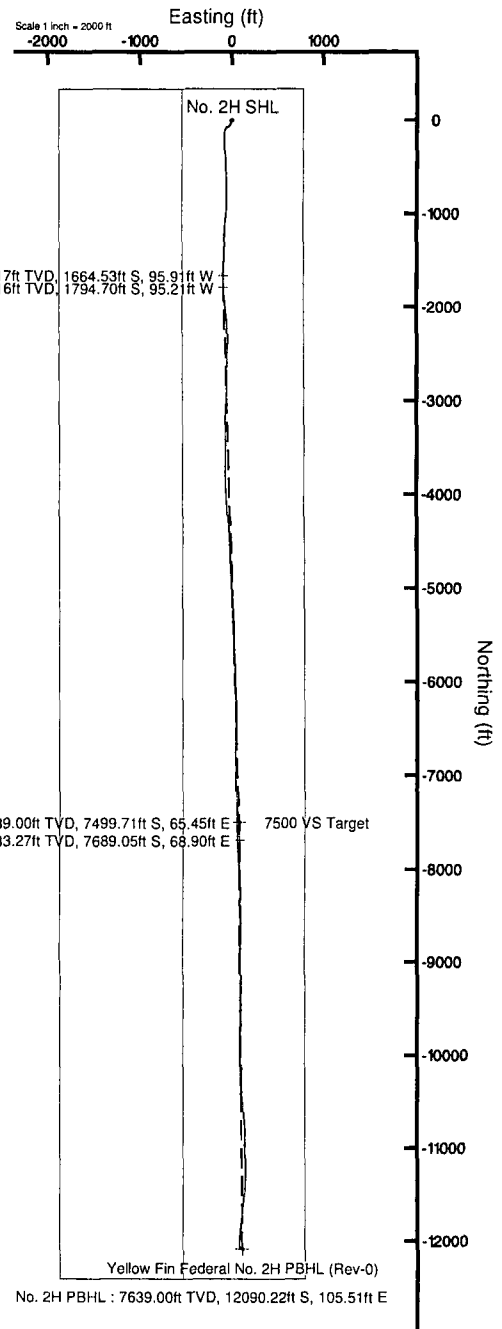
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	9323.00	93.500	181.000	8000.17	-1664.53	-95.91	0.00	1663.63
TL	9453.42	93.541	178.387	7992.16	-1794.70	-95.21	2.00	1793.80
7500' VS	15171.62	93.541	178.387	7639.00	-7499.71	65.45	0.00	7500.00
TL	15361.10	89.925	179.523	7633.27	-7689.05	68.90	2.00	7689.36
No. 2H PBHL	19762.44	89.925	179.523	7639.00	-12090.22	105.51	0.00	12090.68

Plot reference wellpath is Rev-C.0	
True vertical depths are referenced to Rig on No. 2H SHL (KB)	Grid System: NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 2H SHL (KB)	North Reference: Grid north
Rig on No. 2H SHL (KB) to Mean Sea Level: 3552.9 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No. 2H SHL): -3522.9 feet	Depths are in feet
Coordinates are in feet referenced to Facility Center	Created by: genbry on 05/16/2013



BGGM (1945.0 to 2014.0) Dip: 59.79° Field: 48219.9 nT
Magnetic North is 7.82 degrees East of True North (at 02/12/2013)
Grid North is 0.00 degrees West of True North
To correct azimuth from True to Grid add 0.00 degrees
To correct azimuth from Magnetic to Grid add 7.82 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.82 = 97.82



Rev-C.0



Actual Wellpath Report

No.2H AWP

Page 1 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	COG Operating LLC	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Yellow Fin) Sec 19, T26S, R26E	Wellbore	No.2H AWB
Facility	Yellow Fin Federal No. 2H	Sidetrack from	No. 2H AWB (pilot) at 7200.00 MD

REPORT SETUP INFORMATION			
Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Gentbry
Scale	0.999909	Report Generated	06/03/2013 at 3:06:29 PM
Convergence at slot	0.00° West	Database/Source file	WA Midland/No.2H_AWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	499732.50	376143.80	32°02'02.882"N	104°20'03.108"W
Facility Reference Pt			499732.50	376143.80	32°02'02.882"N	104°20'03.108"W
Field Reference Pt			0.00	0.00	30°59'24.512"N	105°55'44.137"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 2H SHL (KB) to Facility Vertical Datum	30.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 2H SHL (KB) to Mean Sea Level	3552.90ft
Vertical Reference Pt	Rig on No. 2H SHL (KB)	Rig on No. 2H SHL (KB) to Mud Line at Slot (No. 2H SHL)	30.00ft
MD Reference Pt	Rig on No. 2H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.50°



Actual Wellpath Report

No.2H AWP

Page 2 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	COG Operating LLC	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Yellow Fin) Sec 19, T26S, R26E	Wellbore	No.2H AWB
Facility	Yellow Fin Federal No. 2H	Sidetrack from	No. 2H AWB (pilot) at 7200.00 MD

WELLPATH DATA (229 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	264.072	0.00	0.00	0.00	0.00	499732.50	376143.80	32°02'02.882"N	104°20'03.108"W	0.00	
30.00	0.000	264.072	30.00	0.00	0.00	0.00	499732.50	376143.80	32°02'02.882"N	104°20'03.108"W	0.00	
100.00	0.128	264.072	100.00	0.01	-0.01	-0.08	499732.42	376143.79	32°02'02.882"N	104°20'03.109"W	0.18	
200.00	0.155	236.758	200.00	0.09	-0.09	-0.30	499732.20	376143.71	32°02'02.881"N	104°20'03.111"W	0.07	
300.00	0.251	203.536	300.00	0.36	-0.37	-0.50	499732.00	376143.43	32°02'02.878"N	104°20'03.113"W	0.15	
400.00	0.527	180.933	400.00	1.02	-1.03	-0.60	499731.90	376142.77	32°02'02.872"N	104°20'03.115"W	0.31	
500.00	0.548	152.115	499.99	1.91	-1.91	-0.38	499732.12	376141.89	32°02'02.863"N	104°20'03.112"W	0.27	
600.00	0.426	162.681	599.99	2.69	-2.69	-0.05	499732.45	376141.11	32°02'02.855"N	104°20'03.108"W	0.15	
700.00	0.257	198.038	699.99	3.26	-3.26	-0.01	499732.49	376140.54	32°02'02.850"N	104°20'03.108"W	0.26	
800.00	0.785	204.124	799.98	4.09	-4.10	-0.36	499732.14	376139.70	32°02'02.841"N	104°20'03.112"W	0.53	
900.00	0.700	237.946	899.97	5.04	-5.05	-1.15	499731.35	376138.76	32°02'02.832"N	104°20'03.121"W	0.44	
1000.00	0.258	269.808	999.97	5.35	-5.37	-1.90	499730.60	376138.43	32°02'02.829"N	104°20'03.130"W	0.50	
1100.00	0.486	310.927	1099.97	5.07	-5.09	-2.44	499730.06	376138.71	32°02'02.831"N	104°20'03.136"W	0.34	
1200.00	0.057	61.451	1199.97	4.77	-4.79	-2.72	499729.78	376139.01	32°02'02.834"N	104°20'03.139"W	0.51	
1300.00	0.852	85.019	1299.96	4.69	-4.70	-1.93	499730.57	376139.10	32°02'02.835"N	104°20'03.130"W	0.80	
1400.00	1.564	97.274	1399.94	4.81	-4.81	0.16	499732.66	376138.99	32°02'02.834"N	104°20'03.106"W	0.75	
1500.00	0.969	74.448	1499.92	4.78	-4.76	2.33	499734.83	376139.04	32°02'02.835"N	104°20'03.081"W	0.77	
1600.00	0.668	56.288	1599.91	4.24	-4.21	3.63	499736.13	376139.59	32°02'02.840"N	104°20'03.066"W	0.39	
1700.00	0.492	28.769	1699.90	3.55	-3.51	4.32	499736.82	376140.29	32°02'02.847"N	104°20'03.057"W	0.32	
1800.00	0.476	30.263	1799.90	2.81	-2.77	4.74	499737.24	376141.03	32°02'02.854"N	104°20'03.053"W	0.02	
1900.00	0.715	34.820	1899.89	1.95	-1.90	5.30	499737.80	376141.90	32°02'02.863"N	104°20'03.046"W	0.24	
2000.00	0.484	27.528	1999.89	1.07	-1.01	5.85	499738.35	376142.79	32°02'02.872"N	104°20'03.040"W	0.24	
2100.00	0.574	31.507	2099.88	0.27	-0.21	6.31	499738.81	376143.59	32°02'02.880"N	104°20'03.034"W	0.10	
2200.00	0.383	39.358	2199.88	-0.41	0.47	6.78	499739.28	376144.27	32°02'02.886"N	104°20'03.029"W	0.20	
2300.00	0.216	60.416	2299.88	-0.76	0.82	7.16	499739.66	376144.62	32°02'02.890"N	104°20'03.024"W	0.20	
2400.00	0.077	93.174	2399.88	-0.85	0.91	7.39	499739.89	376144.71	32°02'02.891"N	104°20'03.022"W	0.16	
2500.00	0.158	132.152	2499.88	-0.75	0.82	7.56	499740.06	376144.62	32°02'02.890"N	104°20'03.020"W	0.11	
2600.00	0.368	159.656	2599.88	-0.36	0.42	7.77	499740.27	376144.22	32°02'02.886"N	104°20'03.017"W	0.24	
2700.00	0.573	165.885	2699.87	0.43	-0.36	8.01	499740.51	376143.44	32°02'02.878"N	104°20'03.015"W	0.21	
2800.00	0.834	198.608	2799.87	1.61	-1.54	7.90	499740.40	376142.26	32°02'02.867"N	104°20'03.016"W	0.47	
2900.00	0.610	206.762	2899.86	2.77	-2.70	7.43	499739.92	376141.10	32°02'02.855"N	104°20'03.021"W	0.25	
3000.00	0.663	205.721	2999.85	3.76	-3.70	6.93	499739.43	376140.10	32°02'02.845"N	104°20'03.027"W	0.05	
3100.00	0.785	205.522	3099.84	4.89	-4.84	6.39	499738.89	376138.96	32°02'02.834"N	104°20'03.033"W	0.12	
3200.00	0.942	205.925	3199.83	6.25	-6.20	5.73	499738.23	376137.60	32°02'02.820"N	104°20'03.041"W	0.16	
3300.00	1.081	211.175	3299.82	7.78	-7.74	4.89	499737.39	376136.06	32°02'02.805"N	104°20'03.051"W	0.17	
3400.00	1.101	202.414	3399.80	9.47	-9.44	4.03	499736.53	376134.36	32°02'02.788"N	104°20'03.061"W	0.17	
3500.00	1.174	205.288	3499.78	11.28	-11.25	3.23	499735.73	376132.55	32°02'02.770"N	104°20'03.070"W	0.09	
3600.00	1.303	208.579	3599.76	13.20	-13.18	2.25	499734.75	376130.62	32°02'02.751"N	104°20'03.082"W	0.15	
3700.00	1.276	209.735	3699.73	15.15	-15.14	1.15	499733.65	376128.66	32°02'02.732"N	104°20'03.094"W	0.04	
3800.00	1.291	217.921	3799.71	17.00	-17.00	0.09	499732.41	376126.80	32°02'02.714"N	104°20'03.109"W	0.18	
3900.00	1.129	213.251	3899.68	18.70	-18.71	-1.33	499731.17	376125.09	32°02'02.697"N	104°20'03.123"W	0.19	
4000.00	1.138	213.387	3999.66	20.34	-20.36	-2.41	499730.09	376123.44	32°02'02.680"N	104°20'03.136"W	0.01	
4100.00	1.408	210.930	4099.64	22.21	-22.25	-3.59	499728.91	376121.56	32°02'02.662"N	104°20'03.149"W	0.28	
4200.00	1.530	200.551	4199.61	24.51	-24.55	-4.69	499727.81	376119.25	32°02'02.639"N	104°20'03.162"W	0.29	
4300.00	1.670	198.877	4299.57	27.13	-27.18	-5.63	499726.87	376116.62	32°02'02.613"N	104°20'03.173"W	0.15	



Actual Wellpath Report

No.2H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	COG Operating LLC	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Yellow Fin) Sec 19, T26S, R26E	Wellbore	No.2H AWB
Facility	Yellow Fin Federal No. 2H	Sidetrack from	No. 2H AWB (pilot) at 7200.00 MD

WELLPATH DATA (229 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4400.00	2.184	202.977	4399.51	30.25	-30.31	-6.85	499725.65	376113.49	32°02'02.582"N	104°20'03.187"W	0.53	
4500.00	1.918	207.915	4499.45	33.47	-33.54	-8.37	499724.13	376110.26	32°02'02.550"N	104°20'03.205"W	0.32	
4600.00	1.832	197.707	4599.39	36.46	-36.55	-9.64	499722.86	376107.26	32°02'02.520"N	104°20'03.220"W	0.34	
4700.00	1.992	198.244	4699.34	39.62	-39.72	-10.67	499721.83	376104.08	32°02'02.489"N	104°20'03.232"W	0.16	
4800.00	1.994	189.747	4799.28	42.98	-43.08	-11.51	499720.99	376100.72	32°02'02.455"N	104°20'03.241"W	0.30	
4900.00	1.783	195.279	4899.22	46.19	-46.30	-12.22	499720.28	376097.50	32°02'02.424"N	104°20'03.250"W	0.28	
5000.00	2.261	203.526	4999.16	49.49	-49.61	-13.41	499719.09	376094.20	32°02'02.391"N	104°20'03.263"W	0.56	
5100.00	2.082	208.545	5099.09	52.88	-53.01	-15.07	499717.43	376090.79	32°02'02.357"N	104°20'03.283"W	0.26	
5200.00	2.330	211.747	5199.01	56.19	-56.34	-17.01	499715.49	376087.47	32°02'02.324"N	104°20'03.305"W	0.28	
5300.00	2.440	214.665	5298.93	59.65	-59.82	-19.29	499713.21	376083.99	32°02'02.290"N	104°20'03.332"W	0.16	
5400.00	3.075	221.230	5398.81	63.39	-63.59	-22.27	499710.24	376080.22	32°02'02.253"N	104°20'03.366"W	0.71	
5500.00	2.539	223.887	5498.69	66.97	-67.20	-25.57	499706.93	376076.61	32°02'02.217"N	104°20'03.405"W	0.55	
5600.00	1.804	228.012	5598.62	69.60	-69.85	-28.28	499704.23	376073.96	32°02'02.191"N	104°20'03.436"W	0.75	
5700.00	1.635	237.552	5698.57	71.40	-71.67	-30.65	499701.85	376072.14	32°02'02.173"N	104°20'03.464"W	0.33	
5800.00	2.097	245.735	5798.52	72.89	-73.18	-33.52	499698.98	376070.62	32°02'02.158"N	104°20'03.497"W	0.53	
5900.00	1.837	248.280	5898.46	74.21	-74.53	-36.68	499695.83	376069.28	32°02'02.144"N	104°20'03.534"W	0.27	
6000.00	1.732	255.343	5998.41	75.16	-75.50	-39.63	499692.87	376068.30	32°02'02.135"N	104°20'03.568"W	0.24	
6100.00	1.272	241.214	6098.38	76.05	-76.42	-42.06	499690.44	376067.39	32°02'02.126"N	104°20'03.596"W	0.59	
6200.00	0.818	234.046	6198.36	76.99	-77.38	-43.61	499688.89	376066.43	32°02'02.116"N	104°20'03.614"W	0.47	
6300.00	1.361	229.257	6298.34	78.17	-78.57	-45.09	499687.41	376065.24	32°02'02.104"N	104°20'03.631"W	0.55	
6400.00	0.368	225.023	6398.33	79.17	-79.57	-46.22	499686.28	376064.24	32°02'02.094"N	104°20'03.645"W	0.99	
6500.00	0.724	222.403	6498.33	79.85	-80.27	-46.87	499685.63	376063.54	32°02'02.087"N	104°20'03.652"W	0.36	
6600.00	1.111	237.073	6598.31	80.84	-81.26	-48.11	499684.39	376062.55	32°02'02.078"N	104°20'03.667"W	0.45	
6700.00	1.063	253.098	6698.30	81.62	-82.06	-49.81	499682.69	376061.75	32°02'02.070"N	104°20'03.686"W	0.31	
6800.00	1.524	252.989	6798.27	82.26	-82.71	-51.97	499680.53	376061.09	32°02'02.063"N	104°20'03.711"W	0.46	
6900.00	3.210	238.785	6898.18	84.07	-84.55	-55.64	499676.87	376059.25	32°02'02.045"N	104°20'03.754"W	1.77	
7000.00	1.777	220.131	6998.09	86.67	-87.19	-59.03	499673.47	376056.62	32°02'02.019"N	104°20'03.793"W	1.63	
7100.00	1.079	220.827	7098.05	88.56	-89.09	-60.65	499671.86	376054.72	32°02'02.000"N	104°20'03.812"W	0.70	
7200.00	1.509	237.677	7198.03	89.96	-90.51	-62.38	499670.13	376053.30	32°02'01.986"N	104°20'03.832"W	0.57	
7437.00	8.200	199.400	7434.08	107.52	-108.14	-70.64	499661.87	376035.67	32°02'01.812"N	104°20'03.928"W	2.99	
7445.00	8.500	198.900	7441.99	108.61	-109.24	-71.02	499661.49	376034.57	32°02'01.801"N	104°20'03.933"W	3.86	
7477.00	10.300	194.700	7473.56	113.60	-114.24	-72.51	499660.00	376029.57	32°02'01.751"N	104°20'03.950"W	6.02	
7508.00	12.700	191.400	7503.94	119.61	-120.26	-73.89	499658.62	376023.55	32°02'01.692"N	104°20'03.966"W	8.02	
7540.00	15.200	187.800	7534.99	127.21	-127.87	-75.15	499657.35	376015.94	32°02'01.616"N	104°20'03.981"W	8.27	
7571.00	17.600	186.400	7564.73	135.88	-136.55	-76.23	499656.28	376007.26	32°02'01.530"N	104°20'03.993"W	7.85	
7603.00	19.800	185.200	7595.04	146.08	-146.76	-77.26	499655.25	375997.05	32°02'01.429"N	104°20'04.005"W	6.98	
7635.00	21.800	184.300	7624.95	157.40	-158.08	-78.19	499654.31	375985.73	32°02'01.317"N	104°20'04.016"W	6.33	
7667.00	23.600	184.100	7654.47	169.70	-170.40	-79.10	499653.41	375973.42	32°02'01.196"N	104°20'04.026"W	5.63	
7699.00	26.200	182.500	7683.49	183.14	-183.85	-79.86	499652.64	375959.97	32°02'01.062"N	104°20'04.035"W	8.39	
7731.00	29.000	181.200	7711.85	197.96	-198.66	-80.33	499652.17	375945.15	32°02'00.916"N	104°20'04.041"W	8.95	
7763.00	31.600	180.000	7739.48	214.10	-214.81	-80.50	499652.01	375929.01	32°02'00.756"N	104°20'04.043"W	8.34	
7795.00	34.200	178.300	7766.34	231.47	-232.18	-80.23	499652.28	375911.64	32°02'00.584"N	104°20'04.040"W	8.62	
7826.00	37.200	177.700	7791.51	249.55	-250.26	-79.60	499652.91	375893.56	32°02'00.405"N	104°20'04.032"W	9.74	
7858.00	40.400	177.100	7816.45	269.59	-270.29	-78.68	499653.82	375873.54	32°02'00.207"N	104°20'04.022"W	10.07	
7890.00	43.400	176.600	7840.26	290.93	-291.62	-77.51	499655.00	375852.20	32°02'00.000"N	104°20'04.008"W	9.43	



Actual Wellpath Report

No.2H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	COG Operating LLC	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Yellow Fin) Sec 19, T26S, R26E	Wellbore	No.2H AWB
Facility	Yellow Fin Federal No. 2H	Sidetrack from	No. 2H AWB (pilot) at 7200.00 MD

WELLPATH DATA (229 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7922.00	46.600	175.900	7862.89	313.52	-314.20	-76.02	499656.48	375829.63	32°01'59.773"N	104°20'03.991"W	10.12	
7954.00	50.100	175.600	7884.15	337.38	-338.04	-74.25	499658.26	375805.79	32°01'59.537"N	104°20'03.970"W	10.96	
7985.00	53.700	175.500	7903.28	361.71	-362.36	-72.36	499660.15	375781.48	32°01'59.296"N	104°20'03.948"W	11.62	
8017.00	56.800	176.000	7921.52	387.94	-388.57	-70.41	499662.10	375755.26	32°01'59.037"N	104°20'03.926"W	9.77	
8049.00	59.500	176.300	7938.40	415.08	-415.69	-68.59	499663.92	375728.15	32°01'58.768"N	104°20'03.904"W	8.47	
8080.00	59.710	176.800	7954.08	441.78	-442.38	-66.98	499665.53	375701.46	32°01'58.504"N	104°20'03.886"W	1.55	
8112.00	61.700	177.400	7969.74	469.66	-470.25	-65.57	499666.94	375673.59	32°01'58.228"N	104°20'03.869"W	6.43	
8144.00	64.500	177.700	7984.22	498.18	-498.76	-64.35	499668.16	375645.08	32°01'57.946"N	104°20'03.855"W	8.79	
8175.00	67.100	177.300	7996.93	526.44	-527.01	-63.11	499669.39	375616.84	32°01'57.667"N	104°20'03.841"W	8.47	
8208.00	70.300	177.100	8008.91	557.15	-557.71	-61.61	499670.89	375586.14	32°01'57.363"N	104°20'03.823"W	9.71	
8239.00	72.700	176.800	8018.75	586.52	-587.07	-60.05	499672.46	375556.79	32°01'57.072"N	104°20'03.805"W	7.80	
8272.00	75.300	176.800	8027.84	618.20	-618.74	-58.28	499674.23	375525.12	32°01'56.759"N	104°20'03.785"W	7.88	
8304.00	77.800	177.000	8035.28	649.29	-649.81	-56.59	499675.91	375494.05	32°01'56.451"N	104°20'03.765"W	7.84	
8336.00	79.900	178.300	8041.47	680.67	-681.18	-55.31	499677.20	375462.69	32°01'56.141"N	104°20'03.750"W	7.68	
8368.00	82.000	178.900	8046.51	712.27	-712.77	-54.54	499677.97	375431.10	32°01'55.828"N	104°20'03.741"W	6.82	
8400.00	85.000	179.000	8050.13	744.05	-744.55	-53.95	499678.55	375399.32	32°01'55.514"N	104°20'03.734"W	9.38	
8431.00	88.600	178.900	8051.86	775.00	-775.49	-53.39	499679.12	375368.38	32°01'55.208"N	104°20'03.728"W	11.62	
8464.00	92.200	179.000	8051.63	807.99	-808.48	-52.78	499679.72	375335.39	32°01'54.881"N	104°20'03.721"W	10.91	
8495.00	93.500	179.600	8050.09	838.95	-839.44	-52.40	499680.10	375304.44	32°01'54.575"N	104°20'03.716"W	4.62	
8559.00	93.400	182.500	8046.23	902.81	-903.31	-53.57	499678.93	375240.58	32°01'53.943"N	104°20'03.730"W	4.53	
8655.00	93.500	185.700	8040.46	998.31	-998.88	-60.42	499672.08	375145.02	32°01'52.997"N	104°20'03.809"W	3.33	
8751.00	93.400	185.200	8034.68	1093.62	-1094.27	-69.53	499662.98	375049.63	32°01'52.053"N	104°20'03.915"W	0.53	
8846.00	93.400	183.500	8029.04	1188.11	-1188.82	-76.72	499655.79	374955.09	32°01'51.117"N	104°20'03.999"W	1.79	
8941.00	93.300	183.000	8023.49	1282.74	-1283.51	-82.09	499650.41	374860.41	32°01'50.180"N	104°20'04.061"W	0.54	
9037.00	93.600	182.100	8017.72	1378.43	-1379.24	-86.36	499646.15	374764.69	32°01'49.233"N	104°20'04.111"W	0.99	
9132.00	93.500	182.400	8011.83	1473.14	-1473.98	-90.08	499642.43	374669.95	32°01'48.296"N	104°20'04.154"W	0.33	
9228.00	93.500	181.800	8005.97	1568.86	-1569.74	-93.59	499638.92	374574.21	32°01'47.348"N	104°20'04.195"W	0.62	
9323.00	93.500	181.000	8000.17	1663.63	-1664.53	-95.91	499636.60	374479.42	32°01'46.410"N	104°20'04.222"W	0.84	
9418.00	93.500	179.400	7994.37	1758.45	-1759.35	-96.24	499636.27	374384.61	32°01'45.472"N	104°20'04.225"W	1.68	
9513.00	93.500	175.600	7988.57	1853.19	-1854.07	-92.10	499640.40	374289.90	32°01'44.534"N	104°20'04.177"W	3.99	
9608.00	93.400	172.600	7982.85	1947.59	-1948.38	-82.36	499650.15	374195.60	32°01'43.601"N	104°20'04.064"W	3.15	
9703.00	93.500	172.600	7977.14	2041.73	-2042.42	-70.14	499662.36	374101.57	32°01'42.670"N	104°20'03.922"W	0.11	
9799.00	93.600	175.000	7971.19	2137.07	-2137.67	-59.80	499672.71	374006.33	32°01'41.728"N	104°20'03.802"W	2.50	
9896.00	93.500	177.800	7965.18	2233.73	-2234.28	-53.72	499678.79	373909.73	32°01'40.772"N	104°20'03.731"W	2.88	
9992.00	93.500	179.500	7959.32	2329.54	-2330.07	-51.46	499681.04	373813.94	32°01'39.824"N	104°20'03.705"W	1.77	
10087.00	93.500	181.900	7953.52	2424.33	-2424.88	-52.62	499679.89	373719.14	32°01'38.886"N	104°20'03.719"W	2.52	
10183.00	93.500	182.000	7947.66	2520.06	-2520.65	-55.88	499676.63	373623.39	32°01'37.938"N	104°20'03.756"W	0.10	
10286.00	93.500	178.500	7941.37	2622.85	-2623.44	-56.33	499676.18	373520.61	32°01'36.921"N	104°20'03.762"W	3.39	
10381.00	93.300	181.000	7935.74	2717.67	-2718.26	-55.91	499676.59	373425.79	32°01'35.982"N	104°20'03.757"W	2.64	
10477.00	93.600	181.000	7929.96	2813.46	-2814.07	-57.59	499674.92	373329.99	32°01'35.034"N	104°20'03.776"W	0.31	
10572.00	93.600	182.200	7923.99	2908.21	-2908.85	-60.23	499672.27	373235.22	32°01'34.096"N	104°20'03.807"W	1.26	
10667.00	93.700	182.900	7917.95	3002.88	-3003.56	-64.45	499668.05	373140.52	32°01'33.159"N	104°20'03.856"W	0.74	
10764.00	93.500	183.200	7911.86	3099.51	-3100.23	-69.60	499662.90	373043.86	32°01'32.203"N	104°20'03.916"W	0.37	
10858.00	93.600	182.100	7906.03	3193.18	-3193.95	-73.94	499658.57	372950.15	32°01'31.275"N	104°20'03.966"W	1.17	
10955.00	93.700	180.500	7899.86	3289.93	-3290.72	-76.14	499656.37	372853.38	32°01'30.318"N	104°20'03.992"W	1.65	



Actual Wellpath Report

No.2H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	COG Operating LLC	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Yellow Fin) Sec 19, T26S, R26E	Wellbore	No.2H AWB
Facility	Yellow Fin Federal No. 2H	Sidetrack from	No. 2H AWB (pilot) at 7200.00 MD

WELLPATH DATA (229 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11049.00	93.700	179.400	7893.79	3383.73	-3384.53	-76.06	499656.45	372759.59	32°01'29.389"N	104°20'03.991"W	1.17	
11144.00	93.600	179.000	7887.74	3478.54	-3479.33	-74.73	499657.78	372664.80	32°01'28.451"N	104°20'03.975"W	0.43	
11239.00	93.600	180.300	7881.78	3573.35	-3574.13	-74.15	499658.35	372570.00	32°01'27.513"N	104°20'03.969"W	1.37	
11335.00	93.500	179.900	7875.84	3669.16	-3669.95	-74.32	499658.19	372474.19	32°01'26.565"N	104°20'03.971"W	0.43	
11431.00	93.600	178.900	7869.89	3764.98	-3765.76	-73.32	499659.19	372378.39	32°01'25.617"N	104°20'03.959"W	1.04	
11526.00	93.500	178.700	7864.01	3859.79	-3860.56	-71.33	499661.18	372283.60	32°01'24.679"N	104°20'03.936"W	0.24	
11623.00	93.700	177.600	7857.92	3956.57	-3957.31	-68.21	499664.30	372186.86	32°01'23.721"N	104°20'03.899"W	1.15	
11719.00	93.600	176.000	7851.81	4052.26	-4052.96	-62.86	499669.65	372091.21	32°01'22.775"N	104°20'03.837"W	1.67	
11815.00	93.600	175.000	7845.78	4147.84	-4148.48	-55.34	499677.16	371995.71	32°01'21.829"N	104°20'03.750"W	1.04	
11911.00	93.700	176.000	7839.67	4243.41	-4243.99	-47.82	499684.68	371900.21	32°01'20.884"N	104°20'03.663"W	1.04	
12007.00	93.400	176.500	7833.72	4339.07	-4339.60	-41.56	499690.95	371804.61	32°01'19.938"N	104°20'03.590"W	0.61	
12101.00	93.400	176.500	7828.15	4432.78	-4433.26	-35.83	499696.67	371710.95	32°01'19.011"N	104°20'03.523"W	0.00	
12197.00	93.400	177.300	7822.45	4528.51	-4528.95	-30.65	499701.86	371615.27	32°01'18.064"N	104°20'03.463"W	0.83	
12294.00	91.800	178.100	7818.05	4625.36	-4625.77	-26.76	499705.74	371518.46	32°01'17.106"N	104°20'03.418"W	1.84	
12389.00	91.100	177.600	7815.65	4720.29	-4720.67	-23.20	499709.31	371423.57	32°01'16.167"N	104°20'03.377"W	0.91	
12485.00	91.000	176.700	7813.89	4816.19	-4816.53	-18.42	499714.08	371327.72	32°01'15.218"N	104°20'03.321"W	0.94	
12577.00	91.100	176.900	7812.20	4908.07	-4908.37	-13.29	499719.21	371235.88	32°01'14.310"N	104°20'03.262"W	0.24	
12668.00	90.900	178.000	7810.62	4999.00	-4999.27	-9.24	499723.26	371145.00	32°01'13.410"N	104°20'03.215"W	1.23	
12760.00	89.900	177.500	7809.97	5090.95	-5091.19	-5.63	499726.87	371053.08	32°01'12.500"N	104°20'03.173"W	1.22	
12852.00	90.200	178.600	7809.89	5182.92	-5183.14	-2.50	499730.00	370961.14	32°01'11.591"N	104°20'03.136"W	1.24	
12943.00	90.000	179.900	7809.73	5273.92	-5274.13	-1.31	499731.19	370870.16	32°01'10.690"N	104°20'03.122"W	1.45	
13034.00	90.200	178.100	7809.58	5364.91	-5365.11	0.28	499732.78	370779.19	32°01'09.790"N	104°20'03.104"W	1.99	
13125.00	90.100	176.300	7809.34	5455.83	-5456.00	4.73	499737.23	370688.31	32°01'08.890"N	104°20'03.052"W	1.98	
13216.00	90.300	175.300	7809.02	5546.64	-5546.75	11.39	499743.89	370597.56	32°01'07.992"N	104°20'02.975"W	1.12	
13309.00	90.300	176.000	7808.53	5639.43	-5639.48	18.44	499750.94	370504.84	32°01'07.075"N	104°20'02.893"W	0.75	
13400.00	90.200	176.700	7808.14	5730.29	-5730.30	24.24	499756.74	370414.04	32°01'06.176"N	104°20'02.826"W	0.78	
13492.00	89.900	177.800	7808.06	5822.22	-5822.19	28.65	499761.15	370322.15	32°01'05.267"N	104°20'02.774"W	1.24	
13583.00	90.000	178.700	7808.13	5913.19	-5913.14	31.43	499763.93	370231.21	32°01'04.367"N	104°20'02.742"W	1.00	
13677.00	89.900	178.900	7808.22	6007.19	-6007.12	33.40	499765.90	370137.23	32°01'03.437"N	104°20'02.719"W	0.24	
13767.00	90.000	177.700	7808.30	6097.16	-6097.08	36.07	499768.57	370047.28	32°01'02.546"N	104°20'02.688"W	1.34	
13863.00	89.800	178.400	7808.46	6193.13	-6193.03	39.34	499771.83	369951.35	32°01'01.597"N	104°20'02.650"W	0.76	
13958.00	90.100	179.300	7808.55	6288.13	-6288.01	41.24	499773.74	369856.38	32°01'00.657"N	104°20'02.628"W	1.00	
14054.00	89.900	181.800	7808.55	6384.10	-6383.99	40.32	499772.82	369760.40	32°00'59.707"N	104°20'02.639"W	2.61	
14149.00	90.100	183.300	7808.55	6478.97	-6478.90	36.09	499768.59	369665.51	32°00'58.768"N	104°20'02.688"W	1.59	
14243.00	89.900	181.600	7808.55	6572.84	-6572.81	32.08	499764.57	369571.60	32°00'57.839"N	104°20'02.735"W	1.82	
14338.00	89.900	180.100	7808.71	6667.81	-6667.79	30.67	499763.16	369476.63	32°00'56.899"N	104°20'02.751"W	1.58	
14434.00	89.900	180.000	7808.88	6763.80	-6763.79	30.58	499763.08	369380.63	32°00'55.949"N	104°20'02.752"W	0.10	
14529.00	90.200	179.800	7808.80	6858.80	-6858.79	30.75	499763.25	369285.64	32°00'55.009"N	104°20'02.750"W	0.38	
14624.00	89.600	179.400	7808.96	6953.80	-6953.79	31.41	499763.91	369190.66	32°00'54.069"N	104°20'02.742"W	0.76	
14720.00	89.700	178.500	7809.55	7049.79	-7049.77	33.17	499765.67	369094.68	32°00'53.119"N	104°20'02.722"W	0.94	
14816.00	89.700	176.600	7810.05	7145.73	-7145.68	37.27	499769.77	368998.79	32°00'52.170"N	104°20'02.674"W	1.98	
14909.00	91.400	176.800	7809.16	7238.61	-7238.52	42.63	499775.12	368905.96	32°00'51.251"N	104°20'02.612"W	1.84	
15005.00	91.600	179.400	7806.65	7334.54	-7334.42	45.81	499778.31	368810.06	32°00'50.302"N	104°20'02.575"W	2.72	
15099.00	91.400	180.300	7804.18	7428.51	-7428.39	46.06	499778.55	368716.10	32°00'49.372"N	104°20'02.572"W	0.98	
15195.00	91.500	179.200	7801.76	7524.47	-7524.36	46.47	499778.97	368620.14	32°00'48.422"N	104°20'02.567"W	1.15	



Actual Wellpath Report

No.2H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	COG Operating LLC	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Yellow Fin) Sec 19, T26S, R26E	Wellbore	No.2H AWB
Facility	Yellow Fin Federal No. 2H	Sidetrack from	No. 2H AWB (pilot) at 7200.00 MD

WELLPATH DATA (229 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
15290.00	90.900	178.400	7799.77	7619.45	-7619.31	48.46	499780.96	368525.20	32°00'47.483"N	104°20'02.544"W	1.05	
15385.00	91.600	179.000	7797.69	7714.41	-7714.26	50.62	499783.11	368430.25	32°00'46.543"N	104°20'02.519"W	0.97	
15481.00	91.600	177.400	7795.01	7810.35	-7810.18	53.63	499786.13	368334.35	32°00'45.594"N	104°20'02.484"W	1.67	
15577.00	91.700	175.400	7792.25	7906.16	-7905.94	59.66	499792.15	368238.59	32°00'44.646"N	104°20'02.414"W	2.09	
15672.00	91.500	176.000	7789.60	8000.92	-8000.64	66.78	499799.27	368143.91	32°00'43.709"N	104°20'02.331"W	0.67	
15767.00	91.700	176.000	7786.94	8095.70	-8095.37	73.40	499805.89	368049.18	32°00'42.772"N	104°20'02.254"W	0.21	
15863.00	91.700	177.700	7784.09	8191.55	-8191.18	78.67	499811.17	367953.38	32°00'41.824"N	104°20'02.193"W	1.77	
15958.00	91.700	178.700	7781.28	8286.49	-8286.09	81.66	499814.15	367858.48	32°00'40.884"N	104°20'02.159"W	1.05	
16053.00	91.600	178.900	7778.54	8381.44	-8381.03	83.65	499816.14	367763.55	32°00'39.945"N	104°20'02.135"W	0.24	
16147.00	91.300	179.100	7776.16	8475.41	-8474.98	85.29	499817.78	367669.60	32°00'39.015"N	104°20'02.116"W	0.38	
16242.00	91.600	179.900	7773.76	8570.37	-8569.95	86.11	499818.61	367574.65	32°00'38.075"N	104°20'02.107"W	0.90	
16338.00	90.000	179.600	7772.42	8666.36	-8665.94	86.53	499819.03	367478.67	32°00'37.126"N	104°20'02.102"W	1.70	
16435.00	90.000	181.200	7772.42	8763.35	-8762.93	85.86	499818.35	367381.68	32°00'36.166"N	104°20'02.110"W	1.65	
16529.00	90.100	180.900	7772.34	8857.31	-8856.91	84.13	499816.63	367287.71	32°00'35.236"N	104°20'02.130"W	0.34	
16624.00	90.100	180.100	7772.17	8952.30	-8951.91	83.30	499815.80	367192.72	32°00'34.296"N	104°20'02.139"W	0.84	
16718.00	90.100	179.300	7772.01	9046.29	-9045.91	83.80	499816.29	367098.73	32°00'33.365"N	104°20'02.134"W	0.85	
16813.00	90.000	179.300	7771.92	9141.29	-9140.90	84.96	499817.45	367003.75	32°00'32.425"N	104°20'02.120"W	0.11	
16909.00	90.000	178.100	7771.92	9237.28	-9236.87	87.14	499819.63	366907.78	32°00'31.476"N	104°20'02.095"W	1.25	
17003.00	89.900	180.300	7772.01	9331.28	-9330.86	88.45	499820.94	366813.81	32°00'30.546"N	104°20'02.080"W	2.34	
17098.00	90.000	181.200	7772.09	9426.25	-9425.85	87.20	499819.70	366718.83	32°00'29.606"N	104°20'02.094"W	0.95	
17196.00	89.900	181.000	7772.17	9524.21	-9523.83	85.32	499817.82	366620.85	32°00'28.636"N	104°20'02.116"W	0.23	
17291.00	89.900	180.800	7772.34	9619.18	-9618.82	83.83	499816.32	366525.87	32°00'27.696"N	104°20'02.133"W	0.21	
17387.00	90.000	180.500	7772.42	9715.17	-9714.81	82.74	499815.23	366429.89	32°00'26.746"N	104°20'02.146"W	0.33	
17482.00	90.000	180.100	7772.42	9810.16	-9809.81	82.24	499814.74	366334.90	32°00'25.806"N	104°20'02.152"W	0.42	
17578.00	90.000	180.100	7772.42	9906.15	-9905.81	82.08	499814.57	366238.91	32°00'24.856"N	104°20'02.154"W	0.00	
17673.00	89.900	180.000	7772.51	10001.15	-10000.81	81.99	499814.49	366143.92	32°00'23.916"N	104°20'02.155"W	0.15	
17769.00	89.800	178.700	7772.76	10097.14	-10096.80	83.08	499815.58	366047.94	32°00'22.966"N	104°20'02.142"W	1.36	
17865.00	89.900	178.500	7773.01	10193.13	-10192.77	85.43	499817.92	365951.97	32°00'22.016"N	104°20'02.115"W	0.23	
17961.00	90.100	178.000	7773.01	10289.11	-10288.73	88.36	499820.85	365856.03	32°00'21.067"N	104°20'02.081"W	0.56	
18055.00	90.400	176.100	7772.60	10383.02	-10382.60	93.20	499825.69	365762.17	32°00'20.138"N	104°20'02.024"W	2.05	
18151.00	89.700	173.800	7772.51	10478.71	-10478.22	101.65	499834.14	365666.55	32°00'19.192"N	104°20'01.926"W	2.50	
18244.00	89.900	173.400	7772.84	10571.21	-10570.64	112.01	499844.50	365574.14	32°00'18.277"N	104°20'01.806"W	0.48	
18338.00	90.000	174.800	7772.92	10664.79	-10664.14	121.68	499854.16	365480.65	32°00'17.352"N	104°20'01.694"W	1.49	
18434.00	90.100	176.500	7772.84	10760.57	-10759.86	128.96	499861.45	365384.94	32°00'16.405"N	104°20'01.609"W	1.77	
18531.00	90.000	178.700	7772.75	10857.51	-10856.77	133.02	499865.51	365288.04	32°00'15.446"N	104°20'01.562"W	2.27	
18627.00	90.100	179.800	7772.67	10953.51	-10952.76	134.28	499866.76	365192.06	32°00'14.496"N	104°20'01.547"W	1.15	
18723.00	90.000	179.800	7772.59	11049.51	-11048.76	134.61	499867.10	365096.07	32°00'13.546"N	104°20'01.543"W	0.10	
18817.00	90.000	176.400	7772.59	11143.47	-11142.69	137.73	499870.21	365002.14	32°00'12.616"N	104°20'01.507"W	3.62	
18912.00	90.000	181.100	7772.59	11238.43	-11237.64	139.80	499872.29	364907.20	32°00'11.676"N	104°20'01.483"W	4.95	
19008.00	90.000	182.700	7772.59	11334.35	-11333.59	136.62	499869.10	364811.27	32°00'10.727"N	104°20'01.520"W	1.67	
19103.00	90.000	183.800	7772.59	11429.14	-11428.43	131.23	499863.72	364716.43	32°00'09.788"N	104°20'01.583"W	1.16	
19200.00	90.000	185.400	7772.59	11525.75	-11525.12	123.45	499855.94	364619.75	32°00'08.832"N	104°20'01.673"W	1.65	
19296.00	90.000	186.600	7772.59	11621.14	-11620.59	113.42	499845.91	364524.29	32°00'07.887"N	104°20'01.790"W	1.25	
19391.00	89.400	185.500	7773.08	11715.51	-11715.06	103.40	499835.89	364429.83	32°00'06.952"N	104°20'01.906"W	1.32	
19487.00	89.200	186.300	7774.26	11810.91	-11810.54	93.54	499826.03	364334.36	32°00'06.007"N	104°20'02.020"W	0.86	



Actual Wellpath Report

No.2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	COG Operating LLC	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Yellow Fin) Sec 19, T26S, R26E	Wellbore	No.2H AWB
Facility	Yellow Fin Federal No. 2H	Sidetrack from	No. 2H AWB (pilot) at 7200.00 MD

WELLPATH DATA (229 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
19584.00	89.300	184.900	7775.53	11907.35	-11907.07	84.07	499816.56	364237.84	32°00'05.052"N	104°20'02.130"W	1.45	
19680.00	89.700	181.000	7776.36	12003.15	-12002.92	79.13	499811.63	364142.00	32°00'04.103"N	104°20'02.188"W	4.08	
19745.00	89.300	178.800	7776.93	12068.14	-12067.91	79.25	499811.74	364077.01	32°00'03.460"N	104°20'02.186"W	3.44	
19770.00	89.300	178.800	7777.24	12093.14	-12092.90	79.77	499812.26	364052.02	32°00'03.213"N	104°20'02.180"W	0.00	

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
7500 VS Target		7639.00	-7499.71	65.45	499797.94	368644.78	32°00'48.666"N	104°20'02.347"W	point
Yellow Fin Federal No. 2H PBHL (Rev-0)		7639.00	-12090.22	105.51	499838.00	364054.70	32°00'03.239"N	104°20'01.881"W	point

WELLPATH COMPOSITION - Ref Wellbore: No.2H AWB Ref Wellpath: No.2H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
30.00	7200.00	Generic gyro - northseeking (Standard)	VES GYROS <100-8000>	No. 2H AWB (pilot)
7200.00	19745.00	AT Curve (Short Spaced)	BHI MWD AT-Curve <7437-XXXX>	No.2H AWB
19745.00	19770.00	Blind Drilling (std)	Projection to bit	No.2H AWB