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NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 13 2017

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COG Operating L L C

Eddy County, NM (NAD 27 NME)

Sec. 32, T 26 S. , R 29 E

Sidewinder Federal Com 4H

30-015-44192

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

10 July, 2017





Integrity Directional Services, LLC
Survey Report - Geographic



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Sidewinder Federal Com 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=25' @ 2910.50ft
Site:	Sec. 32, T 26 S. , R 29 E	MD Reference:	KB=25' @ 2910.50ft
Well:	Sidewinder Federal Com 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Project	Eddy County, NM (NAD 27 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	Sec. 32, T 26 S. , R 29 E		
Site Position:		Northing:	364,114.7000 usft
From:	Map	Easting:	599,682.6800 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32.0006573
		Longitude:	-104.0117692
		Grid Convergence:	0.17 °

Well	Sidewinder Federal Com 4H, ACTIVE		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft
		Latitude:	32.0006573
		Longitude:	-104.0117692
		Ground Level:	2,885.50 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	HDGM	6/1/2017	(°)
			7.07
			Dip Angle
			(°)
			59.70
			Field Strength
			(nT)
			47,998

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			(°)
			357.79

Survey Program	Date 7/10/2017		
From	To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
50.00	9,655.00	VES Gyros (Wellbore #1)	VESSI_GYROFLEX
9,823.00	17,795.00	IDS MWD Surveys (Wellbore #1)	MWD
			Description
			VESSI Gyroflex Gyro
			MWD - Standard

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map	Latitude	Longitude
Depth	(°)	(°)	Depth	(ft)	(ft)	Northing	Easting		
(ft)			(ft)			(usft)	(usft)		
0.00	0.00	0.00	0.00	0.00	0.00	364,114.7000	599,682.6800	32.0006573	-104.0117692
4H Drilling Window									
50.00	0.25	42.30	50.00	0.08	0.07	364,114.7807	599,682.7535	32.0006575	-104.0117690
75.00	0.44	38.03	75.00	0.20	0.17	364,114.8966	599,682.8493	32.0006578	-104.0117687
100.00	0.51	38.65	100.00	0.36	0.30	364,115.0591	599,682.9779	32.0006583	-104.0117683
125.00	0.51	40.63	125.00	0.53	0.44	364,115.2305	599,683.1199	32.0006588	-104.0117678
150.00	0.39	35.72	150.00	0.68	0.56	364,115.3840	599,683.2420	32.0006592	-104.0117674
175.00	0.23	279.56	175.00	0.76	0.56	364,115.4614	599,683.2422	32.0006594	-104.0117674
200.00	0.39	252.20	200.00	0.74	0.43	364,115.4437	599,683.1117	32.0006593	-104.0117678
225.00	0.68	251.01	225.00	0.67	0.21	364,115.3694	599,682.8904	32.0006591	-104.0117685
250.00	0.88	247.82	249.99	0.55	-0.11	364,115.2487	599,682.5724	32.0006588	-104.0117696



Integrity Directional Services, LLC

Survey Report - Geographic



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Site:	Sec. 32, T 26 S. , R 29 E	MD Reference:	KB=25' @ 2910.50ft
Well:	Sidewinder Federal Com 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
275.00	0.94	244.13	274.99	0.39	-0.47	364,115.0867	599,682.2101	32.0006584	-104.0117707
300.00	0.99	242.04	299.99	0.20	-0.85	364,114.8960	599,681.8348	32.0006579	-104.0117719
325.00	1.04	248.57	324.98	0.01	-1.25	364,114.7119	599,681.4328	32.0006574	-104.0117732
350.00	1.09	246.77	349.98	-0.16	-1.68	364,114.5352	599,681.0031	32.0006569	-104.0117746
375.00	1.03	257.25	374.97	-0.31	-2.11	364,114.3918	599,680.5655	32.0006565	-104.0117760
400.00	0.91	255.00	399.97	-0.41	-2.53	364,114.2908	599,680.1546	32.0006562	-104.0117774
425.00	0.99	257.61	424.97	-0.51	-2.93	364,114.1931	599,679.7519	32.0006559	-104.0117787
450.00	1.05	257.03	449.96	-0.60	-3.36	364,114.0953	599,679.3177	32.0006557	-104.0117801
475.00	1.08	261.58	474.96	-0.69	-3.82	364,114.0094	599,678.8614	32.0006554	-104.0117815
500.00	1.17	259.43	499.95	-0.77	-4.30	364,113.9281	599,678.3774	32.0006552	-104.0117831
525.00	1.35	267.93	524.95	-0.83	-4.85	364,113.8707	599,677.8322	32.0006551	-104.0117849
550.00	1.50	272.13	549.94	-0.83	-5.47	364,113.8722	599,677.2109	32.0006551	-104.0117869
575.00	1.63	271.94	574.93	-0.80	-6.15	364,113.8964	599,676.5286	32.0006551	-104.0117891
600.00	1.68	272.14	599.92	-0.78	-6.87	364,113.9221	599,675.8070	32.0006552	-104.0117914
625.00	1.69	271.16	624.91	-0.76	-7.61	364,113.9433	599,675.0722	32.0006553	-104.0117938
650.00	1.72	267.24	649.90	-0.77	-8.35	364,113.9326	599,674.3289	32.0006553	-104.0117962
675.00	1.77	268.23	674.89	-0.80	-9.11	364,113.9027	599,673.5683	32.0006552	-104.0117986
700.00	1.83	265.37	699.87	-0.84	-9.90	364,113.8585	599,672.7845	32.0006551	-104.0118011
725.00	1.78	261.46	724.86	-0.93	-10.68	364,113.7686	599,672.0026	32.0006548	-104.0118037
750.00	1.74	252.56	749.85	-1.10	-11.42	364,113.5972	599,671.2566	32.0006544	-104.0118061
775.00	1.74	229.54	774.84	-1.46	-12.07	364,113.2372	599,670.6057	32.0006534	-104.0118082
800.00	1.91	215.43	799.83	-2.05	-12.60	364,112.6514	599,670.0754	32.0006518	-104.0118099
825.00	1.93	218.50	824.81	-2.72	-13.11	364,111.9825	599,669.5718	32.0006499	-104.0118115
850.00	1.94	219.41	849.80	-3.37	-13.64	364,111.3260	599,669.0411	32.0006481	-104.0118132
875.00	1.89	218.32	874.78	-4.02	-14.16	364,110.6757	599,668.5168	32.0006464	-104.0118149
900.00	1.89	216.79	899.77	-4.68	-14.67	364,110.0221	599,668.0143	32.0006446	-104.0118166
925.00	1.86	216.16	924.76	-5.34	-15.15	364,109.3644	599,667.5280	32.0006428	-104.0118181
950.00	1.62	221.10	949.75	-5.93	-15.62	364,108.7705	599,667.0563	32.0006411	-104.0118197
975.00	1.48	223.90	974.74	-6.43	-16.08	364,108.2716	599,666.6001	32.0006398	-104.0118212
1,000.00	1.32	224.69	999.73	-6.87	-16.51	364,107.8342	599,666.1738	32.0006386	-104.0118225
1,025.00	0.96	211.63	1,024.72	-7.25	-16.82	364,107.4512	599,665.8614	32.0006375	-104.0118235
1,050.00	0.76	223.86	1,049.72	-7.55	-17.04	364,107.1533	599,665.6367	32.0006367	-104.0118243
1,075.00	0.47	233.59	1,074.72	-7.73	-17.24	364,106.9729	599,665.4393	32.0006362	-104.0118249
1,100.00	0.52	232.11	1,099.72	-7.86	-17.41	364,106.8424	599,665.2672	32.0006358	-104.0118255
1,125.00	0.39	215.52	1,124.72	-8.00	-17.55	364,106.7035	599,665.1283	32.0006355	-104.0118259
1,150.00	0.33	224.39	1,149.72	-8.12	-17.65	364,106.5828	599,665.0285	32.0006351	-104.0118262
1,175.00	0.44	242.02	1,174.72	-8.21	-17.79	364,106.4863	599,664.8934	32.0006349	-104.0118267
1,200.00	0.50	239.59	1,199.72	-8.31	-17.97	364,106.3860	599,664.7145	32.0006346	-104.0118273
1,225.00	0.46	214.06	1,224.72	-8.45	-18.12	364,106.2477	599,664.5642	32.0006342	-104.0118277
1,250.00	0.24	202.93	1,249.71	-8.58	-18.19	364,106.1163	599,664.4876	32.0006339	-104.0118280
1,275.00	0.18	303.10	1,274.71	-8.61	-18.25	364,106.0895	599,664.4343	32.0006338	-104.0118282
1,300.00	0.20	290.91	1,299.71	-8.57	-18.32	364,106.1266	599,664.3607	32.0006339	-104.0118284
1,325.00	0.18	1.26	1,324.71	-8.52	-18.36	364,106.1814	599,664.3208	32.0006340	-104.0118285
1,350.00	0.38	27.73	1,349.71	-8.41	-18.32	364,106.2940	599,664.3602	32.0006343	-104.0118284
1,375.00	0.64	22.64	1,374.71	-8.20	-18.23	364,106.4963	599,664.4525	32.0006349	-104.0118281
1,400.00	0.86	24.03	1,399.71	-7.90	-18.10	364,106.7965	599,664.5827	32.0006357	-104.0118277
1,425.00	1.06	20.98	1,424.71	-7.52	-17.94	364,107.1838	599,664.7419	32.0006368	-104.0118272
1,450.00	1.35	19.27	1,449.70	-7.02	-17.76	364,107.6777	599,664.9219	32.0006381	-104.0118266
1,475.00	1.79	16.48	1,474.69	-6.37	-17.55	364,108.3301	599,665.1298	32.0006399	-104.0118259
1,500.00	2.09	8.88	1,499.68	-5.55	-17.37	364,109.1549	599,665.3109	32.0006422	-104.0118253
1,525.00	2.23	12.44	1,524.66	-4.62	-17.19	364,110.0803	599,665.4861	32.0006447	-104.0118247
1,550.00	2.32	11.24	1,549.64	-3.65	-16.99	364,111.0515	599,665.6895	32.0006474	-104.0118241
1,575.00	2.36	11.29	1,574.62	-2.65	-16.79	364,112.0526	599,665.8889	32.0006502	-104.0118234
1,600.00	2.40	7.14	1,599.60	-1.62	-16.63	364,113.0768	599,666.0547	32.0006530	-104.0118229
1,625.00	2.44	2.38	1,624.58	-0.57	-16.54	364,114.1278	599,666.1419	32.0006559	-104.0118226



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Survey Report - Geographic



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Sidewinder Federal Com 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=25' @ 2910.50ft
Site:	Sec. 32, T 26 S. , R 29 E	MD Reference:	KB=25' @ 2910.50ft
Well:	Sidewinder Federal Com 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,650.00	2.58	358.99	1,649.55	0.52	-16.53	364,115.2221	599,666.1541	32.0006589	-104.0118225
1,675.00	2.47	0.93	1,674.53	1.62	-16.53	364,116.3234	599,666.1529	32.0006619	-104.0118225
1,700.00	2.15	357.78	1,699.51	2.63	-16.54	364,117.3306	599,666.1435	32.0006647	-104.0118225
1,725.00	1.77	340.43	1,724.49	3.46	-16.68	364,118.1630	599,665.9960	32.0006670	-104.0118230
1,750.00	1.72	331.64	1,749.48	4.16	-16.99	364,118.8569	599,665.6884	32.0006689	-104.0118240
1,775.00	1.69	333.37	1,774.47	4.82	-17.34	364,119.5166	599,665.3450	32.0006707	-104.0118251
1,800.00	1.65	331.31	1,799.46	5.46	-17.67	364,120.1619	599,665.0070	32.0006725	-104.0118262
1,825.00	1.64	324.87	1,824.45	6.07	-18.05	364,120.7702	599,664.6283	32.0006741	-104.0118274
1,850.00	1.69	315.95	1,849.44	6.63	-18.51	364,121.3278	599,664.1661	32.0006757	-104.0118289
1,875.00	1.68	322.72	1,874.43	7.18	-18.99	364,121.8843	599,663.6879	32.0006772	-104.0118304
1,900.00	1.69	324.04	1,899.42	7.77	-19.43	364,122.4743	599,663.2494	32.0006788	-104.0118318
1,925.00	1.69	324.82	1,924.41	8.37	-19.86	364,123.0740	599,662.8205	32.0006805	-104.0118332
1,950.00	1.65	324.10	1,949.40	8.97	-20.28	364,123.6669	599,662.3971	32.0006821	-104.0118346
1,975.00	1.71	331.19	1,974.39	9.59	-20.67	364,124.2853	599,662.0063	32.0006838	-104.0118358
2,000.00	1.75	347.06	1,999.37	10.28	-20.94	364,124.9841	599,661.7410	32.0006858	-104.0118367
2,025.00	1.97	22.47	2,024.36	11.05	-20.86	364,125.7533	599,661.8198	32.0006879	-104.0118364
2,050.00	2.53	42.52	2,049.34	11.86	-20.32	364,126.5571	599,662.3570	32.0006901	-104.0118347
2,075.00	3.14	55.78	2,074.31	12.65	-19.38	364,127.3488	599,663.2961	32.0006922	-104.0118316
2,100.00	3.60	65.43	2,099.27	13.36	-18.10	364,128.0602	599,664.5761	32.0006942	-104.0118275
2,125.00	4.11	67.59	2,124.21	14.03	-16.56	364,128.7281	599,666.1181	32.0006960	-104.0118225
2,150.00	4.35	73.66	2,149.14	14.64	-14.82	364,129.3364	599,667.8562	32.0006977	-104.0118169
2,175.00	4.37	74.59	2,174.07	15.16	-13.00	364,129.8563	599,669.6842	32.0006991	-104.0118110
2,200.00	4.44	72.66	2,199.00	15.70	-11.15	364,130.3978	599,671.5261	32.0007006	-104.0118050
2,225.00	4.34	75.33	2,223.92	16.23	-9.32	364,130.9257	599,673.3649	32.0007020	-104.0117991
2,250.00	4.27	78.56	2,248.85	16.65	-7.49	364,131.3499	599,675.1923	32.0007031	-104.0117932
2,275.00	4.27	79.03	2,273.78	17.01	-5.66	364,131.7116	599,677.0182	32.0007041	-104.0117873
2,300.00	4.21	80.15	2,298.72	17.35	-3.84	364,132.0457	599,678.8360	32.0007050	-104.0117815
2,325.00	4.35	81.89	2,323.65	17.64	-2.00	364,132.3364	599,680.6788	32.0007058	-104.0117755
2,350.00	4.42	83.11	2,348.57	17.89	-0.11	364,132.5857	599,682.5738	32.0007065	-104.0117694
2,375.00	4.40	82.43	2,373.50	18.13	1.80	364,132.8276	599,684.4808	32.0007071	-104.0117632
2,400.00	4.45	82.90	2,398.43	18.37	3.71	364,133.0739	599,686.3938	32.0007078	-104.0117571
2,425.00	4.54	83.11	2,423.35	18.61	5.66	364,133.3124	599,688.3385	32.0007084	-104.0117508
2,450.00	4.76	84.59	2,448.27	18.83	7.67	364,133.5289	599,690.3535	32.0007090	-104.0117443
2,475.00	4.94	85.30	2,473.18	19.01	9.78	364,133.7149	599,692.4589	32.0007095	-104.0117375
2,500.00	4.94	85.60	2,498.08	19.19	11.92	364,133.8857	599,694.6049	32.0007100	-104.0117306
2,525.00	4.90	85.99	2,522.99	19.34	14.06	364,134.0429	599,696.7433	32.0007104	-104.0117237
2,550.00	4.44	89.12	2,547.91	19.43	16.10	364,134.1325	599,698.7760	32.0007106	-104.0117171
2,575.00	3.75	88.95	2,572.84	19.46	17.88	364,134.1623	599,700.5609	32.0007107	-104.0117113
2,600.00	3.40	87.40	2,597.80	19.51	19.44	364,134.2109	599,702.1189	32.0007108	-104.0117063
2,625.00	2.42	86.70	2,622.76	19.57	20.71	364,134.2749	599,703.3864	32.0007110	-104.0117022
2,650.00	1.98	85.89	2,647.74	19.64	21.66	364,134.3363	599,704.3441	32.0007111	-104.0116991
2,675.00	1.86	85.05	2,672.73	19.70	22.50	364,134.4022	599,705.1791	32.0007113	-104.0116965
2,700.00	1.47	91.12	2,697.72	19.73	23.22	364,134.4310	599,705.9039	32.0007114	-104.0116941
2,725.00	1.31	85.32	2,722.71	19.75	23.83	364,134.4480	599,706.5094	32.0007114	-104.0116922
2,750.00	1.20	102.74	2,747.71	19.71	24.37	364,134.4136	599,707.0495	32.0007113	-104.0116904
2,775.00	0.80	109.59	2,772.70	19.60	24.79	364,134.2974	599,707.4693	32.0007110	-104.0116891
2,800.00	0.67	158.23	2,797.70	19.40	25.01	364,134.1031	599,707.6879	32.0007104	-104.0116884
2,825.00	0.74	227.81	2,822.70	19.16	24.94	364,133.8589	599,707.6225	32.0007098	-104.0116886
2,850.00	0.93	251.22	2,847.70	18.99	24.63	364,133.6852	599,707.3108	32.0007093	-104.0116896
2,875.00	1.69	257.62	2,872.69	18.84	24.08	364,133.5408	599,706.7587	32.0007089	-104.0116914
2,900.00	1.83	257.10	2,897.68	18.67	23.33	364,133.3727	599,706.0095	32.0007084	-104.0116938
2,925.00	2.19	252.01	2,922.66	18.44	22.49	364,133.1360	599,705.1661	32.0007078	-104.0116965
2,950.00	2.80	249.30	2,947.64	18.07	21.46	364,132.7727	599,704.1405	32.0007068	-104.0116998
2,975.00	2.88	246.64	2,972.61	17.61	20.31	364,132.3078	599,702.9928	32.0007055	-104.0117035
3,000.00	3.16	248.44	2,997.57	17.11	19.10	364,131.8056	599,701.7753	32.0007042	-104.0117075



Integrity Directional Services, LLC

Survey Report - Geographic



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Sidewinder Federal Com 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=25' @ 2910.50ft
Site:	Sec. 32, T 26 S. , R 29 E	MD Reference:	KB=25' @ 2910.50ft
Well:	Sidewinder Federal Com 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,025.00	3.34	248.57	3,022.53	16.59	17.78	364,131.2863	599,700.4566	32.0007028	-104.0117117
3,050.00	3.38	246.71	3,047.49	16.03	16.42	364,130.7288	599,699.1017	32.0007012	-104.0117161
3,075.00	3.37	243.48	3,072.45	15.41	15.09	364,130.1093	599,697.7673	32.0006995	-104.0117204
3,100.00	3.63	246.42	3,097.40	14.76	13.70	364,129.4646	599,696.3845	32.0006978	-104.0117249
3,125.00	4.22	241.85	3,122.34	14.01	12.17	364,128.7141	599,694.8482	32.0006957	-104.0117298
3,150.00	4.42	241.43	3,147.27	13.12	10.51	364,127.8194	599,693.1911	32.0006933	-104.0117352
3,175.00	4.47	240.56	3,172.20	12.18	8.82	364,126.8799	599,691.4967	32.0006907	-104.0117407
3,200.00	4.56	238.81	3,197.12	11.19	7.12	364,125.8864	599,689.7981	32.0006880	-104.0117461
3,225.00	4.55	241.69	3,222.04	10.20	5.39	364,124.9015	599,688.0749	32.0006853	-104.0117517
3,250.00	4.54	241.02	3,246.96	9.25	3.66	364,123.9518	599,686.3364	32.0006827	-104.0117573
3,275.00	4.40	239.75	3,271.88	8.29	1.96	364,122.9893	599,684.6424	32.0006801	-104.0117628
3,300.00	4.34	237.77	3,296.81	7.30	0.33	364,122.0017	599,683.0139	32.0006774	-104.0117681
3,325.00	4.25	239.49	3,321.74	6.33	-1.26	364,121.0269	599,681.4156	32.0006747	-104.0117732
3,350.00	4.30	239.17	3,346.67	5.38	-2.87	364,120.0763	599,679.8127	32.0006721	-104.0117784
3,375.00	4.23	239.23	3,371.60	4.42	-4.46	364,119.1243	599,678.2157	32.0006695	-104.0117836
3,400.00	4.23	236.93	3,396.53	3.45	-6.03	364,118.1495	599,676.6508	32.0006668	-104.0117886
3,425.00	4.20	238.10	3,421.47	2.46	-7.58	364,117.1626	599,675.1010	32.0006641	-104.0117936
3,450.00	4.18	239.03	3,446.40	1.51	-9.14	364,116.2100	599,673.5425	32.0006615	-104.0117987
3,475.00	4.07	239.27	3,471.34	0.59	-10.68	364,115.2878	599,671.9987	32.0006590	-104.0118037
3,500.00	4.06	237.88	3,496.27	-0.34	-12.19	364,114.3639	599,670.4865	32.0006565	-104.0118086
3,525.00	4.03	237.24	3,521.21	-1.28	-13.68	364,113.4180	599,668.9982	32.0006539	-104.0118134
3,550.00	4.02	237.06	3,546.15	-2.23	-15.16	364,112.4661	599,667.5240	32.0006513	-104.0118181
3,575.00	3.93	235.35	3,571.09	-3.20	-16.60	364,111.5025	599,666.0838	32.0006487	-104.0118228
3,600.00	3.83	238.27	3,596.03	-4.12	-18.01	364,110.5763	599,664.6689	32.0006461	-104.0118274
3,625.00	3.71	236.59	3,620.98	-5.01	-19.40	364,109.6918	599,663.2836	32.0006437	-104.0118318
3,650.00	3.64	236.19	3,645.93	-5.90	-20.73	364,108.8049	599,661.9490	32.0006413	-104.0118361
3,675.00	3.59	237.12	3,670.88	-6.76	-22.05	364,107.9384	599,660.6323	32.0006389	-104.0118404
3,700.00	3.65	237.62	3,695.83	-7.61	-23.38	364,107.0873	599,659.3030	32.0006366	-104.0118447
3,725.00	3.65	234.73	3,720.78	-8.50	-24.70	364,106.2016	599,657.9812	32.0006341	-104.0118490
3,750.00	3.55	236.58	3,745.73	-9.38	-25.99	364,105.3158	599,656.6855	32.0006317	-104.0118532
3,775.00	3.52	236.95	3,770.68	-10.23	-27.28	364,104.4710	599,655.3962	32.0006294	-104.0118573
3,800.00	3.51	236.84	3,795.63	-11.07	-28.57	364,103.6339	599,654.1123	32.0006271	-104.0118615
3,825.00	3.53	236.74	3,820.58	-11.91	-29.85	364,102.7932	599,652.8281	32.0006248	-104.0118656
3,850.00	3.57	237.38	3,845.54	-12.75	-31.15	364,101.9515	599,651.5289	32.0006225	-104.0118698
3,875.00	3.80	238.90	3,870.48	-13.60	-32.52	364,101.1040	599,650.1640	32.0006202	-104.0118742
3,900.00	3.92	240.01	3,895.43	-14.45	-33.97	364,100.2489	599,648.7145	32.0006179	-104.0118789
3,925.00	3.97	240.85	3,920.37	-15.30	-35.46	364,099.4003	599,647.2186	32.0006155	-104.0118838
3,950.00	4.04	242.77	3,945.31	-16.12	-37.00	364,098.5758	599,645.6797	32.0006133	-104.0118887
3,975.00	4.06	242.81	3,970.25	-16.93	-38.57	364,097.7684	599,644.1094	32.0006111	-104.0118938
4,000.00	4.07	243.39	3,995.18	-17.73	-40.15	364,096.9666	599,642.5290	32.0006089	-104.0118989
4,025.00	4.09	241.05	4,020.12	-18.56	-41.72	364,096.1377	599,640.9556	32.0006066	-104.0119040
4,050.00	4.08	241.99	4,045.06	-19.41	-43.29	364,095.2885	599,639.3903	32.0006043	-104.0119090
4,075.00	4.00	241.71	4,069.99	-20.24	-44.84	364,094.4575	599,637.8373	32.0006020	-104.0119141
4,100.00	3.98	238.03	4,094.93	-21.12	-46.35	364,093.5849	599,636.3335	32.0005996	-104.0119189
4,125.00	3.96	238.92	4,119.87	-22.02	-47.82	364,092.6799	599,634.8581	32.0005972	-104.0119237
4,150.00	4.00	237.32	4,144.81	-22.94	-49.30	364,091.7635	599,633.3849	32.0005947	-104.0119285
4,175.00	3.97	237.34	4,169.75	-23.87	-50.76	364,090.8256	599,631.9224	32.0005921	-104.0119332
4,200.00	3.97	238.45	4,194.69	-24.79	-52.22	364,089.9058	599,630.4563	32.0005896	-104.0119379
4,225.00	3.96	238.27	4,219.63	-25.70	-53.70	364,088.9989	599,628.9846	32.0005871	-104.0119427
4,250.00	3.96	237.51	4,244.57	-26.62	-55.16	364,088.0813	599,627.5222	32.0005846	-104.0119474
4,275.00	3.93	236.72	4,269.51	-27.55	-56.60	364,087.1474	599,626.0779	32.0005820	-104.0119521
4,300.00	3.79	237.54	4,294.46	-28.47	-58.02	364,086.2339	599,624.6645	32.0005795	-104.0119566
4,325.00	3.68	237.09	4,319.40	-29.35	-59.39	364,085.3545	599,623.2938	32.0005771	-104.0119611
4,350.00	3.63	234.92	4,344.35	-30.24	-60.71	364,084.4638	599,621.9726	32.0005747	-104.0119653
4,375.00	3.60	234.02	4,369.30	-31.15	-61.99	364,083.5478	599,620.6898	32.0005722	-104.0119695



Integrity Directional Services, LLC

Survey Report - Geographic



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Sidewinder Federal Com 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=25' @ 2910.50ft
Site:	Sec. 32, T 26 S , R 29 E	MD Reference:	KB=25' @ 2910.50ft
Well:	Sidewinder Federal Com 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/S (ft)	+E/W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,400.00	3.61	235.01	4,394.25	-32.06	-63.27	364,082.6354	599,619.4098	32.0005697	-104.0119736
4,425.00	3.60	235.10	4,419.20	-32.97	-64.56	364,081.7350	599,618.1213	32.0005672	-104.0119778
4,450.00	3.65	231.76	4,444.15	-33.91	-65.83	364,080.7934	599,616.8526	32.0005646	-104.0119819
4,475.00	3.63	231.31	4,469.10	-34.89	-67.07	364,079.8061	599,615.6098	32.0005619	-104.0119859
4,500.00	3.65	233.94	4,494.05	-35.86	-68.33	364,078.8430	599,614.3488	32.0005593	-104.0119900
4,525.00	3.68	233.19	4,519.00	-36.81	-69.62	364,077.8939	599,613.0632	32.0005567	-104.0119941
4,550.00	3.71	235.44	4,543.95	-37.75	-70.93	364,076.9543	599,611.7547	32.0005541	-104.0119984
4,575.00	3.94	235.70	4,568.89	-38.69	-72.30	364,076.0115	599,610.3791	32.0005515	-104.0120028
4,600.00	4.09	233.91	4,593.83	-39.70	-73.73	364,075.0023	599,608.9491	32.0005488	-104.0120074
4,625.00	4.10	234.67	4,618.77	-40.74	-75.18	364,073.9603	599,607.4995	32.0005459	-104.0120121
4,650.00	4.11	232.02	4,643.71	-41.81	-76.62	364,072.8922	599,606.0642	32.0005430	-104.0120168
4,675.00	4.07	236.64	4,668.64	-42.85	-78.06	364,071.8530	599,604.6171	32.0005402	-104.0120214
4,700.00	4.04	236.43	4,693.58	-43.82	-79.54	364,070.8782	599,603.1423	32.0005375	-104.0120262
4,725.00	3.97	236.54	4,718.52	-44.79	-80.99	364,069.9140	599,601.6865	32.0005349	-104.0120309
4,750.00	3.93	236.11	4,743.46	-45.74	-82.43	364,068.9592	599,600.2533	32.0005322	-104.0120356
4,775.00	3.96	236.60	4,768.40	-46.69	-83.86	364,068.0063	599,598.8215	32.0005296	-104.0120402
4,800.00	3.95	236.61	4,793.34	-47.64	-85.30	364,067.0572	599,597.3819	32.0005270	-104.0120448
4,825.00	3.97	236.04	4,818.28	-48.60	-86.74	364,066.0999	599,595.9451	32.0005244	-104.0120495
4,850.00	3.92	234.36	4,843.22	-49.58	-88.15	364,065.1185	599,594.5328	32.0005217	-104.0120540
4,875.00	3.87	236.18	4,868.16	-50.55	-89.54	364,064.1510	599,593.1374	32.0005191	-104.0120586
4,900.00	3.89	235.82	4,893.11	-51.50	-90.95	364,063.2050	599,591.7350	32.0005165	-104.0120631
4,925.00	3.83	236.23	4,918.05	-52.44	-92.34	364,062.2645	599,590.3394	32.0005139	-104.0120676
4,950.00	3.81	235.51	4,942.99	-53.37	-93.72	364,061.3300	599,588.9607	32.0005114	-104.0120721
4,975.00	3.69	232.91	4,967.94	-54.33	-95.05	364,060.3746	599,587.6344	32.0005087	-104.0120763
5,000.00	3.59	234.68	4,992.89	-55.26	-96.33	364,059.4369	599,586.3540	32.0005062	-104.0120805
5,025.00	3.49	234.86	5,017.84	-56.15	-97.59	364,058.5464	599,585.0931	32.0005037	-104.0120846
5,050.00	3.49	233.85	5,042.80	-57.04	-98.82	364,057.6596	599,583.8565	32.0005013	-104.0120886
5,075.00	3.45	233.90	5,067.75	-57.93	-100.05	364,056.7675	599,582.6342	32.0004989	-104.0120925
5,100.00	3.47	233.20	5,092.70	-58.83	-101.26	364,055.8711	599,581.4206	32.0004964	-104.0120964
5,125.00	3.44	233.13	5,117.66	-59.73	-102.47	364,054.9678	599,580.2148	32.0004939	-104.0121003
5,150.00	3.42	234.14	5,142.61	-60.62	-103.67	364,054.0810	599,579.0104	32.0004915	-104.0121042
5,175.00	3.46	232.12	5,167.57	-61.52	-104.87	364,053.1810	599,577.8106	32.0004890	-104.0121081
5,200.00	3.48	232.71	5,192.52	-62.44	-106.07	364,052.2581	599,576.6116	32.0004865	-104.0121120
5,225.00	3.50	232.63	5,217.48	-63.36	-107.28	364,051.3352	599,575.4015	32.0004840	-104.0121159
5,250.00	3.45	233.42	5,242.43	-64.28	-108.49	364,050.4237	599,574.1909	32.0004815	-104.0121198
5,275.00	3.33	229.81	5,267.39	-65.19	-109.65	364,049.5069	599,573.0322	32.0004790	-104.0121235
5,300.00	3.27	233.81	5,292.35	-66.08	-110.78	364,048.6173	599,571.9021	32.0004765	-104.0121272
5,325.00	3.22	233.63	5,317.31	-66.92	-111.92	364,047.7800	599,570.7613	32.0004743	-104.0121309
5,350.00	3.13	232.94	5,342.27	-67.75	-113.03	364,046.9523	599,569.6513	32.0004720	-104.0121345
5,375.00	3.10	232.24	5,367.23	-68.57	-114.11	364,046.1270	599,568.5722	32.0004697	-104.0121380
5,400.00	3.10	232.45	5,392.19	-69.40	-115.18	364,045.3011	599,567.5019	32.0004675	-104.0121414
5,425.00	3.11	232.15	5,417.16	-70.23	-116.25	364,044.4730	599,566.4304	32.0004652	-104.0121449
5,450.00	3.17	231.33	5,442.12	-71.08	-117.33	364,043.6250	599,565.3553	32.0004629	-104.0121484
5,475.00	3.24	231.75	5,467.08	-71.94	-118.42	364,042.7557	599,564.2608	32.0004605	-104.0121519
5,500.00	3.55	233.01	5,492.04	-72.85	-119.59	364,041.8526	599,563.0877	32.0004580	-104.0121557
5,525.00	3.80	230.13	5,516.99	-73.84	-120.85	364,040.8559	599,561.8337	32.0004553	-104.0121598
5,550.00	3.87	229.00	5,541.93	-74.93	-122.12	364,039.7713	599,560.5612	32.0004523	-104.0121639
5,575.00	3.84	228.87	5,566.87	-76.03	-123.39	364,038.6672	599,559.2939	32.0004493	-104.0121680
5,600.00	3.86	230.04	5,591.82	-77.12	-124.66	364,037.5761	599,558.0184	32.0004463	-104.0121721
5,625.00	3.85	229.93	5,616.76	-78.20	-125.95	364,036.4954	599,556.7311	32.0004433	-104.0121763
5,650.00	3.85	229.41	5,641.70	-79.29	-127.23	364,035.4090	599,555.4515	32.0004404	-104.0121804
5,675.00	3.72	228.03	5,666.65	-80.38	-128.47	364,034.3206	599,554.2111	32.0004374	-104.0121844
5,700.00	3.75	226.79	5,691.60	-81.48	-129.67	364,033.2185	599,553.0123	32.0004344	-104.0121883
5,725.00	3.69	227.01	5,716.54	-82.59	-130.85	364,032.1102	599,551.8280	32.0004313	-104.0121921
5,750.00	3.66	226.51	5,741.49	-83.69	-132.02	364,031.0125	599,550.6606	32.0004283	-104.0121959



Integrity Directional Services, LLC

Survey Report - Geographic



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Sidewinder Federal Com 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=25' @ 2910.50ft
Site:	Sec. 32, T 26 S. , R 29 E	MD Reference:	KB=25' @ 2910.50ft
Well:	Sidewinder Federal Com 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,775.00	3.58	225.04	5,766.44	-84.79	-133.15	364,029.9118	599,549.5294	32.0004253	-104.0121996
5,800.00	3.68	224.25	5,791.39	-85.91	-134.26	364,028.7855	599,548.4173	32.0004222	-104.0122031
5,825.00	3.70	225.95	5,816.34	-87.05	-135.40	364,027.6500	599,547.2777	32.0004191	-104.0122068
5,850.00	3.73	226.48	5,841.29	-88.17	-136.57	364,026.5292	599,546.1082	32.0004160	-104.0122106
5,875.00	3.97	227.97	5,866.23	-89.31	-137.80	364,025.3898	599,544.8757	32.0004129	-104.0122146
5,900.00	4.08	230.57	5,891.17	-90.45	-139.13	364,024.2455	599,543.5460	32.0004098	-104.0122189
5,925.00	4.12	231.53	5,916.11	-91.58	-140.52	364,023.1220	599,542.1559	32.0004067	-104.0122234
5,950.00	4.09	232.89	5,941.04	-92.67	-141.94	364,022.0254	599,540.7418	32.0004037	-104.0122280
5,975.00	4.08	233.46	5,965.98	-93.74	-143.36	364,020.9579	599,539.3162	32.0004008	-104.0122326
6,000.00	3.93	233.70	5,990.92	-94.78	-144.77	364,019.9212	599,537.9112	32.0003979	-104.0122371
6,025.00	3.91	234.00	6,015.86	-95.79	-146.15	364,018.9130	599,536.5312	32.0003952	-104.0122416
6,050.00	3.89	233.58	6,040.80	-96.79	-147.52	364,017.9086	599,535.1592	32.0003924	-104.0122460
6,075.00	3.89	234.85	6,065.74	-97.78	-148.90	364,016.9169	599,533.7835	32.0003897	-104.0122505
6,100.00	3.89	234.86	6,090.68	-98.76	-150.28	364,015.9406	599,532.3966	32.0003870	-104.0122550
6,125.00	3.86	231.41	6,115.63	-99.77	-151.63	364,014.9276	599,531.0454	32.0003843	-104.0122593
6,150.00	3.82	232.83	6,140.57	-100.80	-152.96	364,013.8996	599,529.7241	32.0003815	-104.0122636
6,175.00	3.75	233.06	6,165.52	-101.80	-154.27	364,012.9051	599,528.4071	32.0003787	-104.0122679
6,200.00	3.65	234.29	6,190.46	-102.75	-155.57	364,011.9493	599,527.1075	32.0003761	-104.0122721
6,225.00	3.66	234.11	6,215.41	-103.68	-156.87	364,011.0171	599,525.8149	32.0003736	-104.0122762
6,250.00	3.52	233.10	6,240.37	-104.61	-158.13	364,010.0885	599,524.5547	32.0003710	-104.0122803
6,275.00	3.55	232.77	6,265.32	-105.54	-159.36	364,009.1594	599,523.3248	32.0003685	-104.0122843
6,300.00	3.50	230.19	6,290.27	-106.50	-160.56	364,008.2026	599,522.1223	32.0003659	-104.0122882
6,325.00	3.44	233.93	6,315.22	-107.43	-161.75	364,007.2724	599,520.9298	32.0003633	-104.0122920
6,350.00	3.46	233.18	6,340.18	-108.32	-162.96	364,006.3787	599,519.7197	32.0003609	-104.0122959
6,375.00	3.41	232.55	6,365.13	-109.23	-164.15	364,005.4744	599,518.5255	32.0003584	-104.0122998
6,400.00	3.42	234.73	6,390.09	-110.11	-165.35	364,004.5918	599,517.3264	32.0003560	-104.0123037
6,425.00	3.50	237.64	6,415.04	-110.95	-166.61	364,003.7527	599,516.0730	32.0003537	-104.0123077
6,450.00	3.94	244.62	6,439.99	-111.72	-168.03	364,002.9761	599,514.6524	32.0003515	-104.0123123
6,475.00	4.27	247.40	6,464.93	-112.45	-169.66	364,002.2503	599,513.0172	32.0003496	-104.0123176
6,500.00	4.57	248.88	6,489.85	-113.17	-171.45	364,001.5338	599,511.2289	32.0003476	-104.0123234
6,525.00	4.51	251.62	6,514.77	-113.84	-173.31	364,000.8650	599,509.3671	32.0003458	-104.0123294
6,550.00	4.41	251.78	6,539.70	-114.45	-175.16	364,000.2546	599,507.5213	32.0003441	-104.0123353
6,575.00	4.45	254.65	6,564.62	-115.00	-177.01	363,999.6973	599,505.6731	32.0003426	-104.0123413
6,600.00	4.25	255.06	6,589.55	-115.50	-178.84	363,999.2017	599,503.8428	32.0003413	-104.0123472
6,625.00	4.10	254.50	6,614.49	-115.98	-180.59	363,998.7241	599,502.0865	32.0003400	-104.0123529
6,650.00	4.01	252.71	6,639.42	-116.47	-182.29	363,998.2254	599,500.3907	32.0003386	-104.0123584
6,675.00	3.93	252.90	6,664.36	-116.99	-183.94	363,997.7137	599,498.7372	32.0003372	-104.0123637
6,700.00	3.84	251.99	6,689.31	-117.50	-185.56	363,997.2030	599,497.1222	32.0003358	-104.0123689
6,725.00	3.79	247.55	6,714.25	-118.07	-187.12	363,996.6287	599,495.5625	32.0003343	-104.0123740
6,750.00	3.71	246.36	6,739.20	-118.71	-188.62	363,995.9888	599,494.0579	32.0003325	-104.0123788
6,775.00	3.56	246.73	6,764.15	-119.34	-190.08	363,995.3578	599,492.6039	32.0003308	-104.0123835
6,800.00	3.43	245.55	6,789.10	-119.96	-191.47	363,994.7416	599,491.2101	32.0003291	-104.0123880
6,825.00	3.30	242.99	6,814.06	-120.59	-192.79	363,994.1053	599,489.8882	32.0003274	-104.0123923
6,850.00	3.35	242.15	6,839.02	-121.26	-194.08	363,993.4373	599,488.6013	32.0003255	-104.0123964
6,875.00	3.26	239.76	6,863.97	-121.96	-195.34	363,992.7381	599,487.3414	32.0003236	-104.0124005
6,900.00	3.29	238.78	6,888.93	-122.69	-196.57	363,992.0083	599,486.1138	32.0003216	-104.0124045
6,925.00	3.39	236.68	6,913.89	-123.47	-197.80	363,991.2304	599,484.8827	32.0003195	-104.0124085
6,950.00	3.47	237.08	6,938.85	-124.29	-199.05	363,990.4132	599,483.6299	32.0003173	-104.0124125
6,975.00	3.44	235.74	6,963.80	-125.12	-200.31	363,989.5798	599,482.3749	32.0003150	-104.0124166
7,000.00	3.39	233.19	6,988.76	-125.99	-201.52	363,988.7147	599,481.1633	32.0003126	-104.0124205
7,025.00	3.23	229.01	7,013.71	-126.89	-202.64	363,987.8099	599,480.0398	32.0003101	-104.0124241
7,050.00	3.10	224.60	7,038.68	-127.83	-203.65	363,986.8666	599,479.0336	32.0003076	-104.0124274
7,075.00	3.14	223.43	7,063.64	-128.81	-204.59	363,985.8880	599,478.0882	32.0003049	-104.0124304
7,100.00	3.17	220.93	7,088.60	-129.83	-205.52	363,984.8685	599,477.1647	32.0003021	-104.0124334
7,125.00	3.18	222.90	7,113.56	-130.86	-206.44	363,983.8383	599,476.2398	32.0002992	-104.0124364



Integrity Directional Services, LLC

Survey Report - Geographic



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Sidewinder Federal Com 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=25' @ 2910.50ft
Site:	Sec. 32, T 26 S. , R 29 E	MD Reference:	KB=25' @ 2910.50ft
Well:	Sidewinder Federal Com 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
7,150.00	3.18	225.80	7,138.52	-131.85	-207.41	363,982.8470	599,475.2707	32.0002965	-104.0124395
7,175.00	3.17	227.20	7,163.49	-132.81	-208.41	363,981.8939	599,474.2664	32.0002939	-104.0124428
7,200.00	3.25	227.31	7,188.45	-133.76	-209.44	363,980.9438	599,473.2383	32.0002913	-104.0124461
7,225.00	3.27	227.73	7,213.41	-134.72	-210.49	363,979.9837	599,472.1898	32.0002887	-104.0124495
7,250.00	3.16	228.83	7,238.37	-135.65	-211.54	363,979.0505	599,471.1435	32.0002861	-104.0124529
7,275.00	2.92	232.39	7,263.33	-136.49	-212.56	363,978.2083	599,470.1204	32.0002838	-104.0124562
7,300.00	2.86	236.13	7,288.30	-137.23	-213.58	363,977.4721	599,469.0981	32.0002818	-104.0124595
7,325.00	2.81	240.96	7,313.27	-137.87	-214.64	363,976.8270	599,468.0444	32.0002800	-104.0124629
7,350.00	2.81	242.01	7,338.24	-138.46	-215.71	363,976.2419	599,466.9676	32.0002784	-104.0124664
7,375.00	2.89	241.73	7,363.21	-139.04	-216.81	363,975.6558	599,465.8714	32.0002768	-104.0124699
7,400.00	3.19	240.97	7,388.17	-139.68	-217.97	363,975.0198	599,464.7081	32.0002751	-104.0124737
7,425.00	3.52	243.43	7,413.13	-140.36	-219.27	363,974.3390	599,463.4135	32.0002732	-104.0124779
7,450.00	3.52	242.89	7,438.08	-141.05	-220.64	363,973.6460	599,462.0440	32.0002713	-104.0124823
7,475.00	3.68	243.07	7,463.03	-141.77	-222.03	363,972.9329	599,460.6455	32.0002694	-104.0124868
7,500.00	3.69	241.61	7,487.98	-142.51	-223.46	363,972.1870	599,459.2225	32.0002674	-104.0124914
7,525.00	3.63	239.70	7,512.93	-143.30	-224.85	363,971.4052	599,457.8315	32.0002652	-104.0124959
7,550.00	3.66	243.77	7,537.88	-144.05	-226.25	363,970.6533	599,456.4324	32.0002632	-104.0125004
7,575.00	3.42	244.58	7,562.83	-144.72	-227.64	363,969.9805	599,455.0431	32.0002613	-104.0125049
7,600.00	3.16	244.95	7,587.79	-145.33	-228.94	363,969.3687	599,453.7454	32.0002597	-104.0125091
7,625.00	2.95	249.23	7,612.76	-145.85	-230.16	363,968.8488	599,452.5196	32.0002582	-104.0125131
7,650.00	3.07	250.06	7,637.72	-146.31	-231.39	363,968.3923	599,451.2888	32.0002570	-104.0125170
7,675.00	3.11	248.48	7,662.69	-146.79	-232.65	363,967.9153	599,450.0286	32.0002557	-104.0125211
7,700.00	3.03	246.73	7,687.65	-147.29	-233.89	363,967.4055	599,448.7908	32.0002543	-104.0125251
7,725.00	2.96	248.96	7,712.62	-147.79	-235.10	363,966.9127	599,447.5813	32.0002530	-104.0125290
7,750.00	2.83	250.24	7,737.58	-148.23	-236.28	363,966.4723	599,446.3981	32.0002518	-104.0125328
7,775.00	2.76	247.78	7,762.55	-148.66	-237.42	363,966.0360	599,445.2600	32.0002506	-104.0125365
7,800.00	2.70	251.33	7,787.53	-149.08	-238.54	363,965.6199	599,444.1450	32.0002494	-104.0125401
7,825.00	2.72	248.89	7,812.50	-149.48	-239.65	363,965.2178	599,443.0338	32.0002483	-104.0125437
7,850.00	2.99	252.41	7,837.47	-149.89	-240.82	363,964.8071	599,441.8588	32.0002472	-104.0125475
7,875.00	3.51	256.11	7,862.43	-150.27	-242.19	363,964.4263	599,440.4944	32.0002462	-104.0125519
7,900.00	3.93	260.00	7,887.37	-150.61	-243.77	363,964.0939	599,438.9078	32.0002453	-104.0125570
7,925.00	4.16	258.44	7,912.31	-150.94	-245.50	363,963.7634	599,437.1757	32.0002444	-104.0125626
7,950.00	4.21	258.23	7,937.24	-151.31	-247.29	363,963.3945	599,435.3889	32.0002434	-104.0125684
7,975.00	4.22	259.14	7,962.18	-151.67	-249.09	363,963.0340	599,433.5872	32.0002424	-104.0125742
8,000.00	4.34	261.07	7,987.11	-151.99	-250.93	363,962.7139	599,431.7494	32.0002415	-104.0125801
8,025.00	4.39	262.75	8,012.03	-152.25	-252.81	363,962.4463	599,429.8658	32.0002408	-104.0125862
8,050.00	4.39	263.88	8,036.96	-152.48	-254.72	363,962.2235	599,427.9653	32.0002402	-104.0125923
8,075.00	4.28	263.56	8,061.89	-152.68	-256.59	363,962.0169	599,426.0869	32.0002397	-104.0125984
8,100.00	4.35	263.60	8,086.82	-152.89	-258.46	363,961.8066	599,424.2177	32.0002391	-104.0126044
8,125.00	4.25	262.21	8,111.75	-153.12	-260.32	363,961.5753	599,422.3577	32.0002385	-104.0126104
8,150.00	4.35	259.62	8,136.68	-153.42	-262.17	363,961.2789	599,420.5073	32.0002377	-104.0126164
8,175.00	4.53	250.44	8,161.60	-153.92	-264.04	363,960.7776	599,418.6444	32.0002363	-104.0126224
8,200.00	4.67	245.87	8,186.52	-154.67	-265.90	363,960.0310	599,416.7853	32.0002343	-104.0126284
8,225.00	4.70	245.30	8,211.44	-155.51	-267.75	363,959.1869	599,414.9260	32.0002320	-104.0126344
8,250.00	4.65	242.18	8,236.36	-156.41	-269.58	363,958.2860	599,413.0993	32.0002295	-104.0126403
8,275.00	4.46	226.60	8,261.28	-157.56	-271.18	363,957.1452	599,411.4967	32.0002264	-104.0126455
8,300.00	4.42	222.02	8,286.20	-158.94	-272.53	363,955.7616	599,410.1456	32.0002226	-104.0126499
8,325.00	4.44	222.91	8,311.13	-160.36	-273.84	363,954.3372	599,408.8419	32.0002187	-104.0126541
8,350.00	4.09	221.04	8,336.06	-161.74	-275.08	363,952.9560	599,407.5977	32.0002149	-104.0126581
8,375.00	3.44	220.56	8,361.01	-162.99	-276.16	363,951.7137	599,406.5246	32.0002115	-104.0126616
8,400.00	3.19	219.55	8,385.96	-164.09	-277.09	363,950.6075	599,405.5940	32.0002085	-104.0126646
8,425.00	3.04	217.90	8,410.93	-165.15	-277.94	363,949.5481	599,404.7438	32.0002056	-104.0126674
8,450.00	2.82	220.52	8,435.89	-166.14	-278.74	363,948.5575	599,403.9371	32.0002028	-104.0126700
8,475.00	2.59	223.04	8,460.87	-167.02	-279.53	363,947.6772	599,403.1520	32.0002004	-104.0126725
8,500.00	2.38	220.28	8,485.84	-167.83	-280.25	363,946.8683	599,402.4309	32.0001982	-104.0126749



Integrity Directional Services, LLC

Survey Report - Geographic



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Sidewinder Federal Com 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=25' @ 2910.50ft
Site:	Sec. 32, T 26 S. , R 29 E	MD Reference:	KB=25' @ 2910.50ft
Well:	Sidewinder Federal Com 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,525.00	2.25	218.70	8,510.82	-168.61	-280.89	363,946.0893	599,401.7884	32.0001961	-104.0126769
8,550.00	2.22	217.55	8,535.80	-169.38	-281.49	363,945.3224	599,401.1865	32.0001940	-104.0126789
8,575.00	2.13	220.18	8,560.78	-170.12	-282.09	363,944.5836	599,400.5916	32.0001920	-104.0126808
8,600.00	2.26	220.73	8,585.77	-170.85	-282.71	363,943.8551	599,399.9702	32.0001900	-104.0126828
8,625.00	2.28	221.27	8,610.75	-171.59	-283.36	363,943.1078	599,399.3206	32.0001879	-104.0126849
8,650.00	2.30	219.56	8,635.73	-172.35	-284.01	363,942.3473	599,398.6731	32.0001858	-104.0126870
8,675.00	2.30	216.75	8,660.71	-173.14	-284.63	363,941.5586	599,398.0535	32.0001837	-104.0126890
8,700.00	2.34	217.56	8,685.69	-173.95	-285.24	363,940.7521	599,397.4422	32.0001814	-104.0126910
8,725.00	2.31	217.95	8,710.67	-174.75	-285.86	363,939.9502	599,396.8212	32.0001792	-104.0126930
8,750.00	2.41	214.47	8,735.64	-175.58	-286.47	363,939.1196	599,396.2139	32.0001770	-104.0126950
8,775.00	2.34	219.51	8,760.62	-176.41	-287.09	363,938.2925	599,395.5917	32.0001747	-104.0126970
8,800.00	2.38	215.96	8,785.60	-177.22	-287.72	363,937.4786	599,394.9622	32.0001725	-104.0126990
8,825.00	2.33	218.49	8,810.58	-178.04	-288.34	363,936.6606	599,394.3411	32.0001702	-104.0127011
8,850.00	2.29	216.73	8,835.56	-178.84	-288.95	363,935.8626	599,393.7261	32.0001680	-104.0127030
8,875.00	2.28	217.57	8,860.54	-179.63	-289.56	363,935.0681	599,393.1242	32.0001659	-104.0127050
8,900.00	2.19	213.68	8,885.52	-180.42	-290.12	363,934.2765	599,392.5561	32.0001637	-104.0127068
8,925.00	2.09	215.91	8,910.50	-181.19	-290.66	363,933.5097	599,392.0238	32.0001616	-104.0127086
8,950.00	2.04	216.63	8,935.49	-181.92	-291.19	363,932.7834	599,391.4910	32.0001596	-104.0127103
8,975.00	2.02	215.76	8,960.47	-182.63	-291.71	363,932.0688	599,390.9680	32.0001576	-104.0127120
9,000.00	2.00	216.32	8,985.46	-183.34	-292.23	363,931.3598	599,390.4521	32.0001557	-104.0127136
9,025.00	2.05	215.73	9,010.44	-184.06	-292.75	363,930.6453	599,389.9326	32.0001537	-104.0127153
9,050.00	2.02	215.89	9,035.43	-184.77	-293.27	363,929.9254	599,389.4132	32.0001517	-104.0127170
9,075.00	2.08	214.61	9,060.41	-185.51	-293.78	363,929.1950	599,388.8972	32.0001497	-104.0127187
9,100.00	2.10	215.70	9,085.39	-186.25	-294.31	363,928.4497	599,388.3723	32.0001477	-104.0127204
9,125.00	2.14	215.09	9,110.38	-187.00	-294.84	363,927.6957	599,387.8366	32.0001456	-104.0127221
9,150.00	2.08	215.89	9,135.36	-187.75	-295.38	363,926.9463	599,387.3024	32.0001436	-104.0127239
9,175.00	2.02	215.66	9,160.34	-188.48	-295.90	363,926.2207	599,386.7795	32.0001416	-104.0127255
9,200.00	2.02	214.49	9,185.33	-189.20	-296.41	363,925.4996	599,386.2732	32.0001396	-104.0127272
9,225.00	1.97	216.48	9,210.31	-189.91	-296.91	363,924.7909	599,385.7682	32.0001377	-104.0127288
9,250.00	2.04	215.70	9,235.30	-190.62	-297.43	363,924.0841	599,385.2531	32.0001357	-104.0127305
9,275.00	2.08	215.04	9,260.28	-191.35	-297.95	363,923.3513	599,384.7329	32.0001337	-104.0127322
9,300.00	2.09	216.25	9,285.26	-192.09	-298.48	363,922.6122	599,384.2029	32.0001317	-104.0127339
9,325.00	2.08	215.74	9,310.25	-192.82	-299.01	363,921.8763	599,383.6683	32.0001297	-104.0127356
9,350.00	2.11	214.68	9,335.23	-193.57	-299.54	363,921.1296	599,383.1415	32.0001276	-104.0127373
9,375.00	1.70	216.42	9,360.22	-194.25	-300.02	363,920.4527	599,382.6594	32.0001258	-104.0127389
9,400.00	1.11	211.97	9,385.21	-194.75	-300.37	363,919.9489	599,382.3111	32.0001244	-104.0127400
9,425.00	0.85	210.85	9,410.21	-195.12	-300.59	363,919.5843	599,382.0878	32.0001234	-104.0127407
9,450.00	0.88	213.56	9,435.20	-195.44	-300.79	363,919.2651	599,381.8865	32.0001225	-104.0127414
9,475.00	0.92	210.36	9,460.20	-195.77	-301.00	363,918.9320	599,381.6790	32.0001216	-104.0127421
9,500.00	1.01	205.90	9,485.20	-196.14	-301.20	363,918.5606	599,381.4813	32.0001206	-104.0127427
9,525.00	1.02	201.77	9,510.19	-196.54	-301.38	363,918.1557	599,381.3025	32.0001195	-104.0127433
9,550.00	1.02	202.61	9,535.19	-196.96	-301.55	363,917.7437	599,381.1344	32.0001183	-104.0127438
9,575.00	1.08	206.38	9,560.18	-197.37	-301.74	363,917.3272	599,380.9442	32.0001172	-104.0127445
9,600.00	1.17	204.70	9,585.18	-197.82	-301.95	363,916.8842	599,380.7329	32.0001160	-104.0127451
9,625.00	1.22	204.49	9,610.17	-198.29	-302.16	363,916.4101	599,380.5159	32.0001147	-104.0127458
9,650.00	1.16	205.06	9,635.17	-198.76	-302.38	363,915.9387	599,380.2984	32.0001134	-104.0127466
9,655.00	1.14	205.02	9,640.17	-198.85	-302.42	363,915.8478	599,380.2559	32.0001131	-104.0127467
9,823.00	1.81	203.66	9,808.11	-202.80	-304.20	363,911.9032	599,378.4843	32.0001023	-104.0127524
First IDS MWD Survey									
9,918.00	1.13	11.55	9,903.10	-203.25	-304.61	363,911.4467	599,378.0697	32.0001010	-104.0127538
10,011.00	0.50	353.78	9,996.09	-201.95	-304.47	363,912.7486	599,378.2094	32.0001046	-104.0127533
10,105.00	0.45	312.20	10,090.09	-201.30	-304.79	363,913.4043	599,377.8915	32.0001064	-104.0127543
10,200.00	1.38	275.37	10,185.07	-200.94	-306.20	363,913.7619	599,376.4761	32.0001074	-104.0127589
10,231.00	3.45	325.63	10,216.05	-200.13	-307.10	363,914.5669	599,375.5778	32.0001096	-104.0127618
10,263.00	6.91	347.43	10,247.91	-197.46	-308.07	363,917.2415	599,374.6149	32.0001170	-104.0127649



Integrity Directional Services, LLC

Survey Report - Geographic



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Sidewinder Federal Com 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=25' @ 2910.50ft
Site:	Sec. 32, T 26 S. , R 29 E	MD Reference:	KB=25' @ 2910.50ft
Well:	Sidewinder Federal Com 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,294.00	10.69	353.94	10,278.54	-192.78	-308.78	363,921.9225	599,373.9052	32.0001299	-104.0127671
10,341.00	14.57	356.11	10,324.40	-182.54	-309.64	363,932.1593	599,373.0437	32.0001580	-104.0127698
10,388.00	17.77	5.98	10,369.54	-169.50	-309.29	363,945.1964	599,373.3900	32.0001939	-104.0127686
10,420.00	20.95	10.59	10,399.73	-159.02	-307.73	363,955.6796	599,374.9506	32.0002227	-104.0127634
10,451.00	23.99	11.73	10,428.37	-147.40	-305.43	363,967.3004	599,377.2508	32.0002546	-104.0127559
10,483.00	27.15	9.87	10,457.24	-133.83	-302.86	363,980.8665	599,379.8255	32.0002919	-104.0127475
10,514.00	31.55	7.13	10,484.25	-118.81	-300.63	363,995.8904	599,382.0458	32.0003331	-104.0127402
10,545.00	36.53	3.79	10,509.93	-101.54	-299.02	364,013.1564	599,383.6634	32.0003806	-104.0127348
10,577.00	42.07	4.51	10,534.69	-81.34	-297.54	364,033.3627	599,385.1371	32.0004361	-104.0127298
10,608.00	48.57	6.34	10,556.47	-59.41	-295.44	364,055.2908	599,387.2394	32.0004964	-104.0127228
10,640.00	54.31	4.81	10,576.41	-34.52	-293.02	364,080.1846	599,389.6559	32.0005648	-104.0127148
10,670.00	58.99	2.80	10,592.90	-9.52	-291.37	364,105.1809	599,391.3065	32.0006335	-104.0127092
10,686.00	60.71	2.47	10,600.94	4.30	-290.74	364,119.0011	599,391.9422	32.0006715	-104.0127070
10,711.00	63.94	1.80	10,612.55	26.42	-289.92	364,141.1226	599,392.7650	32.0007323	-104.0127042
10,747.00	66.65	2.85	10,627.59	59.10	-288.59	364,173.7968	599,394.0948	32.0008221	-104.0126996
10,767.20	68.11	3.66	10,635.36	77.71	-287.53	364,192.4121	599,395.1548	32.0008733	-104.0126960
South 330 Crossing 10767.20'MD / 88.73'VS									
10,780.00	69.04	4.17	10,640.04	89.60	-286.71	364,204.2996	599,395.9688	32.0009060	-104.0126932
10,827.00	70.18	3.41	10,656.41	133.56	-283.80	364,248.2573	599,398.8797	32.0010268	-104.0126834
10,874.00	73.36	0.61	10,671.12	178.16	-282.25	364,292.8600	599,400.4351	32.0011494	-104.0126780
10,919.00	79.11	358.45	10,681.82	221.85	-282.61	364,336.5448	599,400.0666	32.0012695	-104.0126788
10,969.00	85.70	0.46	10,688.43	271.37	-283.08	364,386.0739	599,399.6021	32.0014056	-104.0126798
11,063.00	85.42	1.17	10,695.70	365.08	-281.75	364,479.7814	599,400.9350	32.0016632	-104.0126746
11,157.00	88.33	1.25	10,700.83	458.91	-279.76	364,573.6104	599,402.9169	32.0019212	-104.0126673
11,251.00	90.94	3.13	10,701.43	552.83	-276.17	364,667.5273	599,406.5087	32.0021793	-104.0126548
11,345.00	87.21	358.84	10,702.94	646.76	-274.56	364,761.4624	599,408.1256	32.0024375	-104.0126487
11,439.00	87.55	356.01	10,707.24	740.56	-278.77	364,855.2595	599,403.9070	32.0026954	-104.0126614
11,533.00	88.98	358.06	10,710.09	834.38	-283.63	364,949.0830	599,399.0480	32.0029534	-104.0126762
11,627.00	89.15	357.53	10,711.62	928.30	-287.25	365,043.0003	599,395.4318	32.0032116	-104.0126870
11,722.00	89.99	358.55	10,712.33	1,023.24	-290.50	365,137.9398	599,392.1829	32.0034726	-104.0126965
11,816.00	90.38	359.78	10,712.03	1,117.23	-291.87	365,231.9271	599,390.8130	32.0037310	-104.0127000
11,910.00	90.01	359.17	10,711.71	1,211.22	-292.73	365,325.9218	599,389.9517	32.0039894	-104.0127019
12,003.00	90.97	358.58	10,710.92	1,304.20	-294.55	365,418.8988	599,388.1259	32.0042450	-104.0127069
12,097.00	89.85	353.20	10,710.24	1,397.92	-301.29	365,512.6186	599,381.3913	32.0045027	-104.0127278
12,192.00	88.61	353.27	10,711.52	1,492.25	-312.48	365,606.9466	599,370.2018	32.0047621	-104.0127629
12,286.00	90.27	356.26	10,712.44	1,585.84	-321.05	365,700.5360	599,361.6272	32.0050195	-104.0127897
12,380.00	90.04	0.22	10,712.18	1,679.78	-323.94	365,794.4723	599,358.7408	32.0052777	-104.0127981
12,474.00	88.45	0.01	10,713.42	1,773.76	-323.75	365,888.4607	599,358.9294	32.0055361	-104.0127966
12,568.00	88.47	3.74	10,715.95	1,867.66	-320.68	365,982.3597	599,362.0034	32.0057942	-104.0127858
12,663.00	89.29	4.33	10,717.81	1,962.41	-313.99	366,077.1047	599,368.6868	32.0060546	-104.0127633
12,757.00	89.40	1.82	10,718.88	2,056.26	-308.95	366,170.9554	599,373.7285	32.0063126	-104.0127462
12,851.00	89.59	1.69	10,719.71	2,150.21	-306.07	366,264.9074	599,376.6072	32.0065708	-104.0127360
12,944.00	90.13	2.30	10,719.94	2,243.15	-302.84	366,357.8498	599,379.8447	32.0068263	-104.0127247
13,038.00	91.55	3.04	10,718.56	2,337.04	-298.46	366,451.7344	599,384.2228	32.0070844	-104.0127096
13,132.00	91.36	3.73	10,716.17	2,430.84	-292.91	366,545.5394	599,389.7713	32.0073422	-104.0126908
13,226.00	89.68	0.78	10,715.32	2,524.75	-289.21	366,639.4488	599,393.4688	32.0076003	-104.0126780
13,320.00	88.19	2.69	10,717.07	2,618.69	-286.37	366,733.3823	599,396.3138	32.0078585	-104.0126679
13,413.00	88.00	5.17	10,720.16	2,711.41	-280.00	366,826.1048	599,402.6836	32.0081134	-104.0126465
13,507.00	89.29	1.45	10,722.38	2,805.21	-274.57	366,919.9032	599,408.1076	32.0083712	-104.0126281
13,600.00	89.37	2.95	10,723.47	2,898.13	-271.00	367,012.8254	599,411.6774	32.0086266	-104.0126157
13,694.00	89.76	357.89	10,724.18	2,992.10	-270.31	367,106.7893	599,412.3660	32.0088849	-104.0126126
13,788.00	89.54	357.51	10,724.76	3,086.02	-274.09	367,200.7114	599,408.5937	32.0091431	-104.0126238
13,883.00	90.41	356.94	10,724.80	3,180.90	-278.69	367,295.5985	599,403.9945	32.0094040	-104.0126378
13,977.00	89.71	354.18	10,724.70	3,274.61	-285.96	367,389.3065	599,396.7182	32.0096617	-104.0126603
14,071.00	88.61	358.74	10,726.08	3,368.40	-291.76	367,483.0906	599,390.9159	32.0099196	-104.0126782



Integrity Directional Services, LLC

Survey Report - Geographic



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Sidewinder Federal Com 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=25' @ 2910.50ft
Site:	Sec. 32, T 26 S. , R 29 E	MD Reference:	KB=25' @ 2910.50ft
Well:	Sidewinder Federal Com 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,166.00	88.67	2.38	10,728.33	3,463.35	-290.84	367,578.0432	599,391.8440	32.0101806	-104.0126743
14,259.00	90.52	6.49	10,728.99	3,556.05	-283.65	367,670.7383	599,399.0339	32.0104353	-104.0126502
14,354.00	92.03	4.74	10,726.88	3,650.56	-274.35	367,765.2524	599,408.3265	32.0106951	-104.0126193
14,448.00	87.77	0.93	10,727.04	3,744.41	-269.71	367,859.0981	599,412.9739	32.0109530	-104.0126034
14,542.00	87.77	0.25	10,730.70	3,838.33	-268.74	367,953.0212	599,413.9411	32.0112112	-104.0125994
14,636.00	90.57	3.82	10,732.06	3,932.24	-265.40	368,046.9273	599,417.2789	32.0114694	-104.0125877
14,730.00	97.74	6.48	10,725.25	4,025.54	-257.00	368,140.2331	599,425.6784	32.0117258	-104.0125597
14,824.00	90.46	3.20	10,718.54	4,118.89	-249.11	368,233.5833	599,433.5706	32.0119823	-104.0125334
14,919.00	88.56	359.52	10,719.35	4,213.84	-246.86	368,328.5322	599,435.8252	32.0122433	-104.0125252
15,013.00	90.85	1.99	10,719.83	4,307.82	-245.62	368,422.5091	599,437.0638	32.0125017	-104.0125203
15,108.00	87.80	356.34	10,720.95	4,402.75	-247.00	368,517.4426	599,435.6817	32.0127627	-104.0125238
15,202.00	88.39	356.92	10,724.08	4,496.54	-252.52	368,611.2271	599,430.1592	32.0130205	-104.0125408
15,296.00	87.89	356.34	10,727.13	4,590.32	-258.04	368,705.0143	599,424.6366	32.0132784	-104.0125577
15,390.00	90.97	358.03	10,728.06	4,684.19	-262.66	368,798.8813	599,420.0214	32.0135365	-104.0125717
15,485.00	87.66	356.69	10,729.20	4,779.07	-267.03	368,893.7582	599,415.6471	32.0137973	-104.0125849
15,579.00	84.52	356.44	10,735.61	4,872.67	-272.65	368,987.3590	599,410.0292	32.0140547	-104.0126021
15,672.00	92.03	358.66	10,738.41	4,965.47	-276.62	369,080.1595	599,406.0621	32.0143098	-104.0126140
15,758.00	91.64	358.30	10,735.65	5,051.39	-278.90	369,166.0847	599,403.7821	32.0145461	-104.0126206
15,852.00	87.57	356.66	10,736.30	5,145.28	-283.03	369,259.9685	599,399.6505	32.0148042	-104.0126330
15,942.00	93.96	357.41	10,735.10	5,235.10	-287.68	369,349.7926	599,394.9976	32.0150512	-104.0126471
16,036.00	91.81	357.00	10,730.37	5,328.87	-292.26	369,443.5558	599,390.4197	32.0153090	-104.0126610
16,129.00	90.97	356.82	10,728.11	5,421.70	-297.27	369,536.3922	599,385.4081	32.0155642	-104.0126763
16,222.00	90.83	354.50	10,726.65	5,514.42	-304.31	369,629.1076	599,378.3716	32.0158192	-104.0126981
16,319.00	88.53	354.91	10,727.19	5,611.00	-313.26	369,725.6853	599,369.4209	32.0160847	-104.0127261
16,414.00	89.79	358.47	10,728.59	5,705.81	-318.74	369,820.4993	599,363.9378	32.0163454	-104.0127428
16,508.00	89.76	2.65	10,728.96	5,799.78	-317.82	369,914.4730	599,364.8563	32.0166037	-104.0127390
16,601.00	86.37	2.03	10,732.10	5,892.64	-314.03	370,007.3283	599,368.6512	32.0168590	-104.0127258
16,695.00	92.87	6.04	10,732.72	5,986.34	-307.42	370,101.0235	599,375.2618	32.0171165	-104.0127036
16,789.00	88.89	4.24	10,731.28	6,079.92	-299.00	370,194.6116	599,383.6794	32.0173737	-104.0126756
16,883.00	91.27	5.66	10,731.14	6,173.56	-290.89	370,288.2516	599,391.7894	32.0176311	-104.0126485
16,977.00	87.58	3.00	10,732.09	6,267.27	-283.80	370,381.9538	599,398.8850	32.0178886	-104.0126247
17,070.00	90.38	4.92	10,733.74	6,360.02	-277.37	370,474.7032	599,405.3063	32.0181435	-104.0126031
17,164.00	89.73	6.55	10,733.65	6,453.54	-267.98	370,568.2288	599,414.6991	32.0184005	-104.0125719
17,258.00	89.59	5.66	10,734.21	6,547.01	-257.98	370,661.6929	599,424.6958	32.0186574	-104.0125388
17,352.00	89.09	5.93	10,735.29	6,640.52	-248.49	370,755.2058	599,434.1862	32.0189144	-104.0125072
17,446.00	87.46	6.15	10,738.12	6,733.95	-238.61	370,848.6382	599,444.0722	32.0191712	-104.0124744
17,487.00	86.59	4.35	10,740.25	6,774.72	-234.86	370,889.4090	599,447.8188	32.0192832	-104.0124620
17,575.00	85.78	4.00	10,746.11	6,862.29	-228.47	370,976.9800	599,454.2113	32.0195239	-104.0124405
17,644.00	86.45	3.97	10,750.78	6,930.97	-223.69	371,045.6544	599,458.9954	32.0197126	-104.0124244
17,682.14	87.05	3.76	10,752.94	6,968.96	-221.12	371,083.6480	599,461.5622	32.0198171	-104.0124158
4H 330 HL									
17,682.81	87.06	3.76	10,752.98	6,969.63	-221.07	371,084.3139	599,461.6059	32.0198189	-104.0124156
North 330 Crossing 17682.81' MD / 6972.97' VS									
17,753.00	88.16	3.37	10,755.91	7,039.62	-216.72	371,154.3059	599,465.9641	32.0200113	-104.0124009
Final IDS MWD Survey									
17,795.00	88.16	3.37	10,757.25	7,081.53	-214.25	371,196.2115	599,468.4317	32.0201265	-104.0123925
Projection to TD - Sidewinder Fed Com 4H BHL									



Integrity Directional Services, LLC

Survey Report - Geographic



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Sidewinder Federal Com 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=25' @ 2910.50ft
Site:	Sec. 32, T 26 S. , R 29 E	MD Reference:	KB=25' @ 2910.50ft
Well:	Sidewinder Federal Com 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
9,823.00	9,808.11	-202.80	-304.20	First IDS MWD Survey
10,767.20	10,635.36	77.71	-287.53	South 330 Crossing 10767.20'MD / 88.73'VS
17,682.81	10,752.98	6,969.63	-221.07	North 330 Crossing 17682.81'MD / 6972.97'VS
17,753.00	10,755.91	7,039.62	-216.72	Final IDS MWD Survey
17,795.00	10,757.25	7,081.53	-214.25	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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