

COG OPERATING, LLC

Eddy County, NM (NAD83) NMEZ

Myox 21 State COM

#41H

30-015-44937

OH

Plan #1 - PP

NM OIL CONSERVATION
ARTESIA DISTRICT

APR 30 2018

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Anticollision Report

25 April, 2018

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Reference	Plan #1 - PP		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.000 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	04/25/18		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	20,221.43	Plan #1 - PP (OH)	MWD	MWD v3: standard declination	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Myox 21 State COM						
#51H - OH - OH	10,428.09	10,118.52	8.70	-19.20	0.312	Level 1, CC, ES, SF
#51H - OH - Plan #8 - T3	10,428.09	10,118.52	8.70	-19.20	0.312	Level 1, CC, ES, SF
O-#1H - OH - OH	7,786.55	7,711.65	261.73	227.70	7.691	CC, ES
O-#1H - OH - OH	7,800.00	7,721.88	261.84	227.73	7.677	SF
O-#31H - OH - OH	8,034.86	7,967.06	61.65	28.34	1.851	CC, ES, SF
O-#32H - OH - OH	7,970.90	7,903.39	89.98	58.98	2.727	CC
O-#32H - OH - OH	8,000.00	7,932.13	90.09	56.96	2.719	ES, SF
O-#33H - OH - OH	7,907.34	7,840.22	118.24	85.56	3.618	CC, ES
O-#33H - OH - OH	8,000.00	7,931.73	119.13	86.02	3.598	SF
O-#8H - OH - OH	6,755.56	10,695.00	171.22	91.73	2.154	CC, ES, SF
O-#9H - OH - OH	6,560.60	6,527.35	447.29	430.93	27.329	CC, ES
O-#9H - OH - OH	10,100.00	9,535.00	567.33	536.88	18.630	SF
O-#9H - ST1 - ST1	6,548.25	6,514.88	447.35	431.02	27.391	CC, ES
O-#9H - ST1 - ST1	6,800.00	6,693.17	468.12	450.62	26.736	SF

Offset Design													
Myox 21 State COM - #51H - OH - OH													
Survey Program: 100-GYD_DP_MS_9639-MWD													
Offset Site Error: 0.00 usft													
Offset Well Error: 0.00 usft													
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	89.41	0.31	30.00	30.52				
100.00	100.00	94.50	94.50	0.08	0.08	89.93	0.04	29.85	29.85	29.70	.153	194.506	
200.00	200.00	194.52	194.51	0.30	0.14	90.99	-0.51	29.45	29.45	29.02	.434	67.848	
241.80	241.80	236.21	236.20	0.40	0.16	91.68	-0.85	29.34	29.35	28.81	.545	53.870	
300.00	300.00	294.13	294.12	0.53	0.18	93.43	-1.77	29.58	29.64	28.94	.696	42.599	
400.00	400.00	393.48	393.40	0.75	0.24	98.37	-4.63	31.44	31.79	30.84	.954	33.324	
500.00	500.00	493.34	493.16	0.98	0.27	103.39	-8.13	34.15	35.12	33.91	1.209	29.050	
600.00	600.00	593.40	593.13	1.20	0.30	107.36	-11.52	36.84	38.62	37.15	1.465	26.361	
700.00	700.00	693.68	693.36	1.43	0.33	110.01	-14.24	39.10	41.63	39.91	1.722	24.180	
800.00	800.00	794.57	794.22	1.65	0.35	108.73	-13.72	40.47	42.73	40.76	1.970	21.690	
900.00	900.00	894.67	894.31	1.88	0.35	106.27	-12.04	41.24	42.97	40.75	2.211	19.430	
1,000.00	1,000.00	994.74	994.36	2.10	0.36	103.89	-10.34	41.80	43.06	40.61	2.451	17.567	
1,100.00	1,100.00	1,094.77	1,094.37	2.33	0.37	101.80	-8.82	42.23	43.14	40.45	2.691	16.030	
1,200.00	1,200.00	1,194.80	1,194.40	2.55	0.38	99.86	-7.40	42.56	43.20	40.26	2.931	14.739	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - #51H - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 100-GYD_DP_MS, 9639-MWD														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
1,300.00	1,300.00	1,295.53	1,295.12	2.78	0.39	98.25	-6.07	41.83	42.27	39.11	3.164	13.358			
1,400.00	1,400.00	1,395.47	1,395.03	3.00	0.40	96.63	-4.69	40.34	40.62	37.22	3.396	11.959			
1,500.00	1,500.00	1,495.51	1,495.05	3.23	0.41	94.88	-3.32	38.87	39.02	35.39	3.630	10.749			
1,600.00	1,600.00	1,595.49	1,595.01	3.45	0.42	93.13	-2.04	37.37	37.43	33.56	3.865	9.682			
1,700.00	1,700.00	1,695.47	1,694.98	3.67	0.44	91.47	-0.92	35.70	35.72	31.62	4.102	8.707			
1,800.00	1,800.00	1,795.44	1,794.92	3.90	0.45	90.11	-0.06	34.14	34.14	29.80	4.340	7.867			
1,900.00	1,900.00	1,895.38	1,894.85	4.12	0.47	88.87	0.65	32.67	32.68	28.10	4.579	7.137			
2,000.00	2,000.00	1,995.38	1,994.84	4.35	0.49	87.47	1.38	31.25	31.28	26.46	4.819	6.491			
2,100.00	2,100.00	2,095.70	2,095.14	4.57	0.51	85.70	2.20	29.31	29.40	24.34	5.061	5.810			
2,200.00	2,200.00	2,195.62	2,195.02	4.80	0.53	83.11	3.24	26.79	27.00	21.70	5.302	5.092			
2,300.00	2,300.00	2,295.48	2,294.86	5.02	0.56	81.06	3.88	24.64	24.95	19.41	5.543	4.501			
2,400.00	2,400.00	2,395.65	2,394.99	5.25	0.57	82.36	3.02	22.47	22.68	16.89	5.789	3.917			
2,500.00	2,500.00	2,495.57	2,494.86	5.47	0.58	87.28	0.96	20.12	20.15	14.11	6.039	3.336			
2,600.00	2,600.00	2,595.47	2,594.73	5.70	0.60	92.94	-0.93	18.11	18.14	11.85	6.289	2.884			
2,700.00	2,700.00	2,695.42	2,694.64	5.92	0.62	99.86	-2.82	16.24	16.48	9.95	6.536	2.522			
2,800.00	2,800.00	2,795.36	2,794.55	6.15	0.63	107.55	-4.61	14.58	15.30	8.52	6.778	2.257			
2,900.00	2,900.00	2,895.35	2,894.51	6.37	0.65	115.99	-6.31	12.94	14.39	7.38	7.012	2.052			
3,000.00	3,000.00	2,995.38	2,994.52	6.60	0.67	125.14	-7.91	11.23	13.74	6.50	7.239	1.898			
3,100.00	3,100.00	3,095.47	3,094.58	6.82	0.70	134.57	-8.68	8.81	12.37	4.91	7.464	1.657			
3,200.00	3,200.00	3,195.44	3,194.51	7.05	0.72	146.08	-9.36	6.29	11.28	3.60	7.679	1.469 Level 3			
3,300.00	3,300.00	3,295.40	3,294.43	7.27	0.75	160.03	-9.98	3.63	10.62	2.73	7.888	1.346 Level 3			
3,341.68	3,341.68	3,337.06	3,336.08	7.36	0.76	166.49	-10.25	2.46	10.54	2.57	7.976	1.322 Level 3			
3,400.00	3,400.00	3,395.35	3,394.34	7.50	0.78	175.86	-10.70	0.77	10.73	2.63	8.107	1.324 Level 3			
3,500.00	3,500.00	3,495.30	3,494.24	7.72	0.81	-169.04	-11.40	-2.21	11.61	3.26	8.354	1.390 Level 3			
3,600.00	3,600.00	3,595.25	3,594.15	7.95	0.84	-156.82	-12.17	-5.21	13.24	4.61	8.623	1.535			
3,700.00	3,700.00	3,695.21	3,694.05	8.17	0.87	-147.18	-12.86	-8.30	15.31	6.41	8.900	1.720			
3,800.00	3,800.00	3,795.15	3,793.95	8.40	0.90	-140.37	-13.61	-11.27	17.67	8.50	9.174	1.926			
3,900.00	3,900.00	3,895.12	3,893.87	8.62	0.93	-134.94	-14.28	-14.30	20.22	10.77	9.445	2.140			
4,000.00	4,000.00	3,995.07	3,993.77	8.84	0.96	-130.89	-15.01	-17.34	22.94	13.23	9.713	2.362			
4,100.00	4,100.00	4,095.33	4,094.00	9.07	0.98	-128.24	-15.50	-19.67	25.05	15.07	9.976	2.511			
4,200.00	4,200.00	4,195.13	4,193.78	9.29	1.01	-128.81	-16.92	-21.04	27.01	16.78	10.225	2.641			
4,300.00	4,300.00	4,295.08	4,293.70	9.52	1.03	-131.33	-19.43	-22.09	29.43	18.96	10.465	2.812			
4,400.00	4,400.00	4,395.08	4,393.65	9.74	1.05	-133.78	-22.13	-23.10	32.00	21.29	10.705	2.989			
4,500.00	4,500.00	4,495.27	4,493.82	9.97	1.07	-134.54	-23.75	-24.13	33.86	22.91	10.954	3.091			
4,600.00	4,599.99	4,595.23	4,593.77	10.16	1.10	27.25	-25.04	-25.20	34.36	23.18	11.183	3.073			
4,700.00	4,699.91	4,695.24	4,693.76	10.33	1.12	30.24	-26.33	-26.40	32.68	21.28	11.395	2.868			
4,800.00	4,799.69	4,795.07	4,793.58	10.51	1.15	36.41	-27.64	-27.62	28.97	17.35	11.620	2.493			
4,900.00	4,899.27	4,894.79	4,893.28	10.68	1.18	48.49	-28.98	-28.75	23.82	11.97	11.847	2.011			
5,000.00	4,998.57	4,994.31	4,992.78	10.86	1.20	72.63	-30.42	-29.82	19.24	7.24	12.003	1.603			
5,041.86	5,040.04	5,035.86	5,034.33	10.94	1.21	87.51	-31.04	-30.26	18.60	6.59	12.002	1.549			
5,100.00	5,097.54	5,093.48	5,091.94	11.05	1.23	109.79	-31.85	-30.89	20.12	8.18	11.940	1.685			
5,200.00	5,196.30	5,192.54	5,190.98	11.24	1.26	136.67	-33.27	-31.96	28.52	16.53	11.991	2.378			
5,300.00	5,295.07	5,291.58	5,290.00	11.45	1.28	149.84	-34.80	-33.02	40.04	27.83	12.208	3.280			
5,400.00	5,393.84	5,390.60	5,389.01	11.66	1.31	156.94	-36.39	-34.06	52.64	40.19	12.449	4.228			
5,500.00	5,492.61	5,489.71	5,488.09	11.88	1.34	161.21	-37.97	-35.18	65.73	53.05	12.688	5.181			
5,600.00	5,591.38	5,588.83	5,587.20	12.11	1.36	164.10	-39.60	-36.24	79.02	66.10	12.924	6.114			
5,700.00	5,690.15	5,687.94	5,686.28	12.34	1.39	166.18	-41.36	-37.27	92.33	79.17	13.158	7.017			
5,800.00	5,788.92	5,786.98	5,785.30	12.58	1.42	167.74	-43.12	-38.27	105.72	92.33	13.391	7.895			
5,900.00	5,887.69	5,885.72	5,884.03	12.83	1.45	168.88	-44.79	-39.40	119.25	105.63	13.622	8.754			
6,000.00	5,986.46	5,984.54	5,982.82	13.08	1.48	169.56	-46.10	-41.02	133.09	119.24	13.849	9.611			
6,100.00	6,085.22	6,083.39	6,081.66	13.34	1.51	170.09	-47.26	-42.66	147.10	133.02	14.075	10.451			
6,200.00	6,183.99	6,181.95	6,180.19	13.60	1.54	170.49	-48.21	-44.37	161.30	147.00	14.300	11.280			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Survey Program: 100-GYD_DP/MS/0639-MWD													Offset Well Error:
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6,300.00	6,282.76	6,278.90	6,277.13	13.87	1.57	170.83	-48.57	-45.93	176.12	161.60	14.522	12.128	
6,400.00	6,381.53	6,377.59	6,375.81	14.14	1.60	171.16	-48.34	-47.29	191.56	176.83	14.735	13.000	
6,500.00	6,480.30	6,476.47	6,474.68	14.42	1.62	171.43	-48.09	-48.70	207.03	192.08	14.949	13.849	
6,600.00	6,579.07	6,578.36	6,576.55	14.70	1.65	171.71	-48.66	-50.10	221.70	206.53	15.176	14.609	
6,700.00	6,677.84	6,678.90	6,677.07	14.98	1.68	172.02	-50.13	-51.42	235.52	220.11	15.415	15.279	
6,800.00	6,776.61	6,778.91	6,777.06	15.27	1.71	172.45	-52.29	-52.17	248.79	233.13	15.661	15.886	
6,900.00	6,875.37	6,876.37	6,874.49	15.56	1.73	172.79	-54.20	-53.03	262.23	246.33	15.902	16.491	
7,000.00	6,974.14	6,975.77	6,973.87	15.85	1.77	172.94	-55.65	-54.58	276.03	259.88	16.142	17.100	
7,100.00	7,072.91	7,073.55	7,071.62	16.15	1.80	172.98	-56.93	-56.55	289.88	273.50	16.378	17.700	
7,200.00	7,171.68	7,172.11	7,170.15	16.45	1.83	172.94	-57.88	-58.93	303.98	287.37	16.611	18.299	
7,300.00	7,270.45	7,271.36	7,269.35	16.75	1.86	172.73	-58.54	-62.16	318.20	301.36	16.841	18.895	
7,400.00	7,369.22	7,375.63	7,373.53	17.05	1.90	172.47	-60.17	-66.15	331.44	314.36	17.084	19.401	
7,500.00	7,467.99	7,476.41	7,474.19	17.36	1.93	172.26	-62.78	-70.03	343.67	326.34	17.328	19.833	
7,600.00	7,566.76	7,575.87	7,573.55	17.67	1.97	172.11	-65.52	-73.65	355.80	338.23	17.572	20.248	
7,700.00	7,665.53	7,676.11	7,673.68	17.98	2.00	171.98	-68.63	-77.33	367.58	349.76	17.820	20.627	
7,800.00	7,764.29	7,773.69	7,771.15	18.29	2.03	171.83	-71.20	-81.00	379.80	361.74	18.060	21.030	
7,900.00	7,863.06	7,875.92	7,873.25	18.61	2.07	171.62	-74.01	-85.33	391.84	373.52	18.313	21.396	
8,000.00	7,961.83	7,979.91	7,977.04	18.93	2.11	171.39	-78.43	-90.18	402.31	383.73	18.581	21.651	
8,100.00	8,060.60	8,076.02	8,072.96	19.24	2.14	171.20	-82.38	-94.58	412.95	394.14	18.817	21.946	
8,200.00	8,159.37	8,174.95	8,171.74	19.56	2.18	171.05	-85.95	-98.76	424.15	405.09	19.065	22.247	
8,300.00	8,258.14	8,271.02	8,267.70	19.89	2.21	170.97	-88.95	-102.28	435.93	416.62	19.307	22.579	
8,400.00	8,356.91	8,370.99	8,367.56	20.21	2.24	170.91	-91.92	-105.76	447.89	428.32	19.561	22.897	
8,500.00	8,455.68	8,470.18	8,466.64	20.53	2.28	170.82	-94.95	-109.46	459.72	439.91	19.814	23.202	
8,544.88	8,500.00	8,513.89	8,510.30	20.88	2.29	170.77	-96.20	-111.19	465.10	445.18	19.925	23.343	
8,600.00	8,554.51	8,568.99	8,565.33	20.86	2.31	170.71	-97.74	-113.43	471.34	451.28	20.084	23.492	
8,700.00	8,653.66	8,670.69	8,666.90	21.16	2.35	170.54	-100.74	-117.69	480.51	460.20	20.317	23.650	
8,800.00	8,753.13	8,773.08	8,769.14	21.44	2.39	170.37	-104.46	-121.72	486.47	465.89	20.572	23.647	
8,900.00	8,852.83	8,870.46	8,866.39	21.69	2.42	170.18	-108.12	-125.29	489.79	468.98	20.806	23.540	
9,000.00	8,952.69	8,969.48	8,965.31	21.92	2.45	170.00	-111.34	-128.22	491.14	470.09	21.042	23.341	
9,100.00	9,052.66	9,072.41	9,068.12	22.13	2.49	169.74	-114.99	-131.47	489.59	468.30	21.285	23.002	
9,144.88	9,097.54	9,118.32	9,113.97	22.21	2.51	8.49	-116.79	-133.08	487.87	466.48	21.392	22.807	
9,200.00	9,152.66	9,174.69	9,170.25	22.31	2.53	8.29	-119.14	-135.16	485.30	463.78	21.523	22.548	
9,300.00	9,252.66	9,274.03	9,269.43	22.49	2.56	7.92	-123.32	-138.87	480.61	458.86	21.749	22.098	
9,400.00	9,352.66	9,371.22	9,366.49	22.66	2.60	7.57	-127.17	-142.38	476.19	454.23	21.966	21.679	
9,500.00	9,452.66	9,471.89	9,467.01	22.84	2.63	7.19	-131.03	-146.04	471.92	449.72	22.197	21.261	
9,515.72	9,468.38	9,487.13	9,482.23	22.87	2.64	7.13	-131.61	-146.57	471.26	449.03	22.231	21.198	
9,550.00	9,502.64	9,520.32	9,515.39	22.93	2.66	7.56	-132.81	-147.69	468.97	446.67	22.305	21.025	
9,600.00	9,552.41	9,568.46	9,563.47	22.98	2.69	7.54	-134.44	-149.25	462.50	440.09	22.408	20.640	
9,650.00	9,601.87	9,616.01	9,610.98	23.02	2.71	7.64	-135.92	-150.70	452.34	429.83	22.503	20.101	
9,700.00	9,650.10	9,662.88	9,657.81	23.03	2.73	7.87	-137.24	-152.04	438.54	415.95	22.596	19.408	
9,750.00	9,697.41	9,709.25	9,704.15	23.01	2.75	8.25	-138.51	-153.25	421.12	398.43	22.690	18.559	
9,800.00	9,743.31	9,751.39	9,746.24	22.98	2.76	8.68	-139.36	-154.98	400.34	377.56	22.785	17.570	
9,850.00	9,787.51	9,786.07	9,780.82	22.92	2.78	9.05	-139.47	-157.52	376.70	353.76	22.942	16.420	
9,900.00	9,829.74	9,814.78	9,809.27	22.86	2.80	9.23	-138.40	-161.20	351.12	327.81	23.306	15.066	
9,950.00	9,869.75	9,843.76	9,837.77	22.78	2.82	9.27	-135.98	-165.84	324.00	300.20	23.801	13.613	
10,000.00	9,907.29	9,871.96	9,865.30	22.70	2.84	9.22	-132.57	-170.90	295.21	270.80	24.407	12.095	
10,050.00	9,942.11	9,898.28	9,890.86	22.61	2.86	9.27	-128.18	-175.38	265.18	240.02	25.160	10.540	
10,100.00	9,974.02	9,922.00	9,913.71	22.53	2.89	9.42	-123.14	-179.25	234.08	207.95	26.132	8.958	
10,150.00	10,002.81	9,950.45	9,940.76	22.45	2.94	9.53	-115.61	-183.76	202.06	175.18	26.874	7.519	
10,200.00	10,028.30	9,981.89	9,969.93	22.38	3.01	9.42	-105.79	-189.09	168.93	141.51	27.422	6.160	
10,250.00	10,050.35	10,012.78	9,998.44	22.32	3.10	8.62	-95.12	-195.34	134.10	106.13	27.967	4.795	
10,300.00	10,068.80	10,042.51	10,025.26	22.29	3.21	6.83	-83.94	-201.68	97.83	69.17	28.653	3.414	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - #51H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-GYD_DP_MS_9639-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,350.00	10,083.55	10,071.29	10,050.70	22.27	3.34	2.68	-71.92	-207.76	60.65	31.02	29.629	2.047		
10,400.00	10,094.51	10,101.34	10,076.46	22.29	3.50	-15.71	-57.88	-214.20	23.53	-7.35	30.881	0.762	Level 1	
10,428.09	10,098.98	10,118.52	10,090.81	22.31	3.61	-72.68	-49.30	-218.15	8.70	-19.20	27.894	0.312	Level 1, CC, ES, SF	
10,450.00	10,101.61	10,132.16	10,101.94	22.33	3.71	-122.49	-42.14	-221.48	19.26	-9.01	28.272	0.681	Level 1	
10,500.00	10,104.81	10,162.87	10,126.16	22.42	3.94	-144.96	-25.20	-229.77	57.72	27.41	30.314	1.904		
10,513.95	10,105.00	10,171.08	10,132.49	22.45	4.01	-146.36	-20.57	-232.22	69.02	38.52	30.500	2.263		
10,600.00	10,105.24	10,229.27	10,175.63	22.72	4.58	-152.23	13.87	-250.57	137.90	106.18	31.716	4.348		
10,700.00	10,105.52	10,316.23	10,234.05	23.20	5.64	-153.16	71.57	-278.99	212.35	179.02	33.329	6.371		
10,800.00	10,105.79	10,439.08	10,302.44	23.81	7.46	-152.01	164.97	-319.43	277.27	241.60	35.666	7.774		
10,900.00	10,106.07	10,637.74	10,347.86	24.56	11.15	-144.35	342.72	-390.87	314.30	275.37	38.931	8.073		
11,000.00	10,106.35	10,736.93	10,347.76	25.42	13.13	-139.11	434.55	-428.21	337.92	298.06	39.853	8.479		
11,100.00	10,106.63	10,859.53	10,341.78	26.38	15.62	-132.82	547.62	-475.09	361.62	319.91	41.702	8.671		
11,200.00	10,106.91	10,984.26	10,332.76	27.43	18.05	-128.16	666.65	-510.82	378.41	334.40	44.010	8.598		
11,300.00	10,107.18	11,128.72	10,325.46	28.56	20.65	-125.52	809.35	-531.06	385.49	338.97	46.523	8.286		
11,400.00	10,107.46	11,238.37	10,323.67	29.76	22.50	-124.97	918.88	-535.49	387.01	338.25	48.755	7.938		
11,500.00	10,107.74	11,339.84	10,322.26	31.03	24.21	-124.68	1,020.33	-537.37	386.86	335.79	51.065	7.576		
11,600.00	10,108.02	11,440.66	10,320.46	32.35	25.92	-124.38	1,121.12	-538.77	386.11	332.62	53.484	7.219		
11,657.11	10,108.18	11,495.26	10,319.31	33.14	26.86	-124.17	1,175.70	-539.91	385.92	330.99	54.928	7.026		
11,700.00	10,108.30	11,537.93	10,318.52	33.73	27.60	-124.00	1,218.35	-540.94	385.95	329.92	56.027	6.889		
11,800.00	10,108.57	11,639.05	10,318.25	35.14	29.35	-123.91	1,319.46	-542.16	385.92	327.34	58.581	6.588		
11,900.00	10,108.85	11,739.27	10,318.05	36.60	31.10	-123.86	1,419.67	-542.93	385.56	324.38	61.187	6.301		
11,965.91	10,109.04	11,804.09	10,317.78	37.58	32.24	-123.79	1,484.49	-543.67	385.46	322.50	62.952	6.123		
12,000.00	10,109.13	11,837.43	10,317.70	38.09	32.83	-123.75	1,517.83	-544.12	385.49	321.62	63.870	6.036		
12,100.00	10,109.41	11,951.65	10,316.92	39.61	34.84	-123.67	1,632.04	-544.41	384.53	317.98	66.542	5.779		
12,200.00	10,109.69	12,067.34	10,313.66	41.15	36.84	-123.68	1,747.59	-539.97	378.87	309.77	69.102	5.483		
12,300.00	10,109.97	12,152.87	10,312.53	42.73	38.32	-123.90	1,833.01	-536.07	373.41	301.52	71.888	5.194		
12,400.00	10,110.24	12,256.54	10,312.92	44.32	40.12	-124.39	1,936.59	-531.51	369.10	294.70	74.397	4.961		
12,500.00	10,110.52	12,356.00	10,312.55	45.93	41.86	-124.79	2,035.93	-526.93	364.22	287.24	76.980	4.731		
12,600.00	10,110.80	12,446.93	10,313.08	47.56	43.46	-125.21	2,126.80	-523.52	360.61	281.00	79.618	4.529		
12,644.76	10,110.92	12,483.71	10,313.82	48.30	44.12	-125.38	2,163.56	-522.89	360.12	279.31	80.809	4.456		
12,700.00	10,111.08	12,529.11	10,315.09	49.21	44.94	-125.53	2,208.94	-523.23	360.87	278.61	82.258	4.387		
12,800.00	10,111.36	12,628.00	10,317.92	50.87	46.74	-125.69	2,307.76	-525.91	363.86	278.86	85.004	4.281		
12,900.00	10,111.63	12,733.00	10,318.43	52.54	48.67	-125.46	2,412.68	-529.69	366.20	278.15	88.052	4.159		
13,000.00	10,111.91	12,826.05	10,318.42	54.22	50.39	-125.10	2,505.63	-534.10	369.16	277.99	91.167	4.049		
13,100.00	10,112.19	12,933.11	10,317.85	55.92	52.37	-124.67	2,612.58	-538.68	371.47	277.03	94.443	3.933		
13,200.00	10,112.47	13,027.89	10,317.01	57.62	54.12	-124.26	2,707.27	-542.59	373.50	275.82	97.681	3.824		
13,300.00	10,112.75	13,116.01	10,317.75	59.34	55.76	-123.90	2,795.21	-548.27	378.40	277.57	100.829	3.753		
13,400.00	10,113.03	13,226.60	10,318.93	61.06	57.82	-123.45	2,905.52	-555.95	383.96	279.65	104.316	3.681		
13,500.00	10,113.30	13,342.71	10,317.68	62.79	59.95	-123.15	3,021.59	-558.31	384.02	276.40	107.622	3.568		
13,574.27	10,113.51	13,413.93	10,316.39	64.08	61.26	-122.92	3,092.79	-559.44	383.62	273.54	110.079	3.485		
13,600.00	10,113.58	13,437.74	10,315.92	64.52	61.70	-122.82	3,116.58	-560.07	383.69	272.73	110.951	3.458		
13,700.00	10,113.86	13,531.90	10,314.32	66.27	63.44	-122.36	3,210.66	-563.62	385.05	270.65	114.402	3.366		
13,800.00	10,114.14	13,630.80	10,314.39	68.02	65.27	-122.11	3,309.49	-567.38	387.41	269.70	117.714	3.291		
13,900.00	10,114.42	13,744.74	10,313.17	69.77	67.37	-121.74	3,423.37	-570.73	388.53	267.37	121.156	3.207		
14,000.00	10,114.69	13,859.07	10,309.54	71.53	69.45	-121.38	3,537.63	-569.81	385.27	260.85	124.426	3.096		
14,100.00	10,114.97	13,957.22	10,306.05	73.29	71.23	-121.14	3,635.69	-567.65	380.64	252.84	127.802	2.978		
14,200.00	10,115.25	14,070.24	10,302.20	75.06	73.25	-121.11	3,748.50	-562.14	373.74	243.10	130.645	2.861		
14,300.00	10,115.53	14,164.09	10,302.54	76.83	74.92	-121.76	3,842.07	-555.03	366.56	233.31	133.247	2.751		
14,400.00	10,115.81	14,258.21	10,304.56	78.61	76.59	-122.62	3,935.93	-548.42	360.87	225.32	135.554	2.662		
14,500.00	10,116.08	14,350.40	10,306.28	80.39	78.25	-123.24	4,028.01	-544.35	357.28	219.21	138.071	2.588		
14,600.00	10,116.36	14,447.73	10,306.60	82.17	80.02	-123.46	4,125.32	-542.78	355.22	214.29	140.930	2.521		
14,700.00	10,116.64	14,548.72	10,306.10	83.95	81.87	-123.54	4,226.31	-541.56	353.06	209.15	143.913	2.453		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - #51H - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 100-GYD_DP_MS_9630-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,800.00	10,116.92	14,644.76	10,304.74	85.74	83.64	-123.40	4,322.34	-541.52	351.36	204.15	147.213	2.387	
14,855.38	10,117.07	14,696.57	10,304.13	86.73	84.59	-123.28	4,374.14	-542.15	351.08	201.99	149.095	2.355	
14,900.00	10,117.20	14,737.46	10,303.88	87.53	85.35	-123.19	4,415.02	-542.99	351.30	200.70	150.599	2.333	
15,000.00	10,117.48	14,829.71	10,304.52	89.33	87.06	-123.04	4,507.21	-546.10	353.61	199.74	153.865	2.298	
15,100.00	10,117.75	14,923.92	10,305.87	91.12	88.81	-122.86	4,601.31	-550.58	357.50	200.36	157.143	2.275	
15,200.00	10,118.03	15,017.32	10,308.98	92.92	90.56	-122.82	4,694.47	-556.33	363.58	203.37	160.208	2.269	
15,300.00	10,118.31	15,123.47	10,311.28	94.72	92.55	-122.54	4,800.34	-563.69	369.71	205.82	163.886	2.256	
15,400.00	10,118.59	15,243.81	10,310.20	96.52	94.79	-121.99	4,920.53	-569.23	372.31	204.35	167.962	2.217	
15,500.00	10,118.87	15,342.83	10,306.48	98.33	96.62	-121.38	5,019.46	-571.08	371.04	199.07	171.973	2.158	
15,509.84	10,118.89	15,351.73	10,306.30	98.50	96.78	-121.34	5,028.36	-571.27	371.03	198.69	172.340	2.153	
15,600.00	10,119.14	15,436.28	10,305.23	100.13	98.35	-121.04	5,112.87	-573.64	371.79	196.15	175.636	2.117	
15,700.00	10,119.42	15,539.64	10,304.00	101.94	100.27	-120.64	5,216.16	-577.13	373.20	193.78	179.424	2.080	
15,800.00	10,119.70	15,671.04	10,298.39	103.75	102.68	-120.03	5,347.37	-575.88	369.22	188.35	182.875	2.019	
15,900.00	10,119.98	15,784.16	10,292.57	105.56	104.37	-119.50	5,440.26	-572.80	362.34	175.27	187.069	1.937	
16,000.00	10,120.26	15,857.88	10,288.64	107.37	106.08	-119.17	5,533.86	-570.38	357.14	166.20	190.950	1.870	
16,100.00	10,120.54	15,949.39	10,287.05	109.19	107.76	-119.08	5,625.34	-569.05	354.12	159.63	194.494	1.821	
16,200.00	10,120.81	16,043.63	10,287.45	111.00	109.49	-119.21	5,719.58	-568.55	352.97	155.34	197.622	1.786	
16,210.29	10,120.84	16,052.97	10,287.60	111.19	109.66	-119.23	5,728.92	-568.54	352.95	155.03	197.925	1.783	
16,300.00	10,121.09	16,135.15	10,289.88	112.82	111.18	-119.52	5,811.06	-569.22	354.00	153.61	200.386	1.767	
16,400.00	10,121.37	16,235.22	10,292.94	114.63	113.03	-119.84	5,911.07	-571.02	356.18	153.02	203.154	1.753	
16,500.00	10,121.65	16,336.18	10,294.85	116.45	114.90	-119.97	6,011.99	-573.07	357.98	151.78	206.202	1.736	
16,600.00	10,121.93	16,433.79	10,296.37	118.27	116.71	-119.99	6,109.55	-575.93	360.39	150.98	209.412	1.721	
16,700.00	10,122.20	16,536.25	10,297.01	120.09	118.61	-119.87	6,211.98	-578.87	362.28	149.40	212.878	1.702	
16,800.00	10,122.48	16,635.02	10,296.90	121.91	120.45	-119.61	6,310.66	-582.45	364.47	147.91	216.589	1.683	
16,900.00	10,122.76	16,739.42	10,298.41	123.74	122.38	-119.68	6,415.03	-584.62	366.11	146.36	219.744	1.666	
17,000.00	10,123.04	16,840.43	10,302.30	125.56	124.24	-120.28	6,515.96	-584.02	366.61	144.66	221.955	1.652	
17,100.00	10,123.32	16,937.10	10,307.53	127.38	126.01	-121.08	6,612.48	-583.22	367.77	144.02	223.752	1.644	
17,200.00	10,123.59	16,979.00	10,309.75	129.21	126.78	-121.39	6,654.32	-583.21	374.03	150.72	223.315	1.675	
17,300.00	10,123.87	16,979.00	10,309.75	131.03	126.78	-121.39	6,654.32	-583.21	403.40	192.64	210.757	1.914	
17,400.00	10,124.15	16,979.00	10,309.75	132.86	126.78	-121.39	6,654.32	-583.21	453.39	262.16	191.224	2.371	
17,500.00	10,124.43	16,979.00	10,309.75	134.69	126.78	-121.39	6,654.32	-583.21	518.07	347.12	170.942	3.031	
17,600.00	10,124.71	16,979.00	10,309.75	136.52	126.78	-121.39	6,654.32	-583.21	592.64	439.78	152.859	3.877	
17,700.00	10,124.99	16,979.00	10,309.75	138.35	126.78	-121.39	6,654.32	-583.21	673.84	536.14	137.696	4.894	
17,800.00	10,125.26	16,979.00	10,309.75	140.18	126.78	-121.39	6,654.32	-583.21	759.53	634.28	125.251	6.064	
17,900.00	10,125.54	16,979.00	10,309.75	142.01	126.78	-121.39	6,654.32	-583.21	848.36	733.29	115.074	7.372	
18,000.00	10,125.82	16,979.00	10,309.75	143.84	126.78	-121.39	6,654.32	-583.21	939.44	832.72	106.716	8.803	
18,100.00	10,126.10	16,979.00	10,309.75	145.67	126.78	-121.39	6,654.32	-583.21	1,032.17	932.37	99.799	10.343	
18,200.00	10,126.38	16,979.00	10,309.75	147.50	126.78	-121.39	6,654.32	-583.21	1,126.15	1,032.12	94.025	11.977	
18,300.00	10,126.65	16,979.00	10,309.75	149.33	126.78	-121.39	6,654.32	-583.21	1,221.08	1,131.92	89.163	13.695	
18,400.00	10,126.93	16,979.00	10,309.75	151.16	126.78	-121.39	6,654.32	-583.21	1,316.76	1,231.73	85.035	15.485	
18,500.00	10,127.21	16,979.00	10,309.75	153.00	126.78	-121.39	6,654.32	-583.21	1,413.05	1,331.54	81.502	17.337	
18,600.00	10,127.49	16,979.00	10,309.75	154.83	126.78	-121.39	6,654.32	-583.21	1,509.81	1,431.35	78.458	19.244	
18,700.00	10,127.77	16,979.00	10,309.75	156.66	126.78	-121.39	6,654.32	-583.21	1,606.97	1,531.16	75.817	21.196	
18,800.00	10,128.05	16,979.00	10,309.75	158.50	126.78	-121.39	6,654.32	-583.21	1,704.46	1,630.95	73.512	23.186	
18,900.00	10,128.32	16,979.00	10,309.75	160.33	126.78	-121.39	6,654.32	-583.21	1,802.23	1,730.74	71.490	25.210	
19,000.00	10,128.60	16,979.00	10,309.75	162.17	126.78	-121.39	6,654.32	-583.21	1,900.22	1,830.52	69.707	27.260	
19,100.00	10,128.88	16,979.00	10,309.75	164.01	126.78	-121.39	6,654.32	-583.21	1,998.42	1,930.29	68.129	29.333	
19,200.00	10,129.16	16,979.00	10,309.75	165.84	126.78	-121.39	6,654.32	-583.21	2,096.79	2,030.06	66.726	31.424	
19,300.00	10,129.44	16,979.00	10,309.75	167.68	126.78	-121.39	6,654.32	-583.21	2,195.30	2,129.83	65.474	33.529	
19,400.00	10,129.71	16,979.00	10,309.75	169.52	126.78	-121.39	6,654.32	-583.21	2,293.94	2,229.59	64.353	35.646	
19,500.00	10,129.99	16,979.00	10,309.75	171.35	126.78	-121.39	6,654.32	-583.21	2,392.70	2,329.35	63.348	37.771	
19,600.00	10,130.27	16,979.00	10,309.75	173.19	126.78	-121.39	6,654.32	-583.21	2,491.55	2,429.11	62.443	39.901	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - #51H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-GYD_DP_MS, 9639-MWD													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,700.00	10,130.55	16,979.00	10,309.75	175.03	126.78	-121.39	6,654.32	-583.21	2,590.50	2,528.87	61.627	42.035		
19,800.00	10,130.83	16,979.00	10,309.75	176.87	126.78	-121.39	6,654.32	-583.21	2,689.52	2,628.63	60.889	44.171		
19,900.00	10,131.11	16,979.00	10,309.75	178.71	126.78	-121.39	6,654.32	-583.21	2,788.61	2,728.39	60.221	46.306		
20,000.00	10,131.38	16,979.00	10,309.75	180.55	126.78	-121.39	6,654.32	-583.21	2,887.76	2,828.15	59.616	48.440		
20,100.00	10,131.66	16,979.00	10,309.75	182.38	126.78	-121.39	6,654.32	-583.21	2,986.97	2,927.90	59.066	50.570		
20,200.00	10,131.94	16,979.00	10,309.75	184.22	126.78	-121.39	6,654.32	-583.21	3,086.23	3,027.67	58.566	52.697		
20,221.81	10,132.00	16,979.00	10,309.75	184.55	126.78	-121.39	6,654.32	-583.21	3,107.89	3,042.18	65.710	47.297		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company: COG OPERATING, LLC
Project: Eddy County, NM (NAD83) NMEZ
Reference Site: Myox 21 State COM
Site Error: 0.00 usft
Reference Well: #41H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1 - PP

Local Co-ordinate Reference: Well #41H
TVD Reference: RKB @ 3019.80usft (SDQ - KB=30')
MD Reference: RKB @ 3019.80usft (SDQ - KB=30')
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.000 sigma
Database: EDM 5000.14 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Myox 21 State COM - #51H - OH - Plan #8 - T3														Offset Site Error:
Survey Program: 100-GYD_DP_MS_0639-MWD_16031-MWD														Offset Well Error:
Reference	Offset	Semi-Major Axis		Distance		Minimum		Separation		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre <N/S (usft)	Offset Wellbore Centre <E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	89.41	0.31	30.00	30.52					
100.00	100.00	94.50	94.50	0.08	0.08	89.93	0.04	29.85	29.85	29.70	.153	194.508		
200.00	200.00	194.52	194.51	0.30	0.14	90.99	-0.51	29.45	29.45	29.02	.434	67.848		
241.80	241.80	236.21	236.20	0.40	0.16	91.66	-0.85	29.34	29.35	28.81	.545	53.870		
300.00	300.00	294.13	294.12	0.53	0.18	93.43	-1.77	29.58	29.64	28.94	.696	42.599		
400.00	400.00	393.48	393.40	0.75	0.24	98.37	-4.63	31.44	31.79	30.84	.954	33.324		
500.00	500.00	493.34	493.16	0.98	0.27	103.39	-8.13	34.15	35.12	33.91	1.209	29.050		
600.00	600.00	593.40	593.13	1.20	0.30	107.36	-11.52	36.84	38.62	37.15	1.465	26.361		
700.00	700.00	693.68	693.36	1.43	0.33	110.01	-14.24	39.10	41.63	39.91	1.722	24.180		
800.00	800.00	794.57	794.22	1.65	0.35	108.73	-13.72	40.47	42.73	40.76	1.970	21.690		
900.00	900.00	894.67	894.31	1.88	0.35	106.27	-12.04	41.24	42.97	40.75	2.211	19.430		
1,000.00	1,000.00	994.74	994.36	2.10	0.36	103.89	-10.34	41.80	43.06	40.61	2.451	17.567		
1,100.00	1,100.00	1,094.77	1,094.37	2.33	0.37	101.80	-8.82	42.23	43.14	40.45	2.691	16.030		
1,200.00	1,200.00	1,194.80	1,194.40	2.55	0.38	99.86	-7.40	42.56	43.20	40.26	2.931	14.739		
1,300.00	1,300.00	1,295.53	1,295.12	2.78	0.39	98.25	-6.07	41.83	42.27	39.11	3.164	13.358		
1,400.00	1,400.00	1,395.47	1,395.03	3.00	0.40	96.63	-4.69	40.34	40.62	37.22	3.396	11.959		
1,500.00	1,500.00	1,495.51	1,495.05	3.23	0.41	94.88	-3.32	38.87	39.02	35.39	3.630	10.749		
1,600.00	1,600.00	1,595.49	1,595.01	3.45	0.42	93.13	-2.04	37.37	37.43	33.56	3.865	9.682		
1,700.00	1,700.00	1,695.47	1,694.98	3.67	0.44	91.47	-0.92	35.70	35.72	31.62	4.102	8.707		
1,800.00	1,800.00	1,795.44	1,794.92	3.90	0.45	90.11	-0.06	34.14	34.14	29.80	4.340	7.867		
1,900.00	1,900.00	1,895.38	1,894.85	4.12	0.47	88.87	0.65	32.67	32.68	28.10	4.579	7.137		
2,000.00	2,000.00	1,995.38	1,994.84	4.35	0.49	87.47	1.38	31.25	31.28	26.46	4.819	6.491		
2,100.00	2,100.00	2,095.70	2,095.14	4.57	0.51	85.70	2.20	29.31	29.40	24.34	5.061	5.810		
2,200.00	2,200.00	2,195.62	2,195.02	4.80	0.53	83.11	3.24	26.79	27.00	21.70	5.302	5.092		
2,300.00	2,300.00	2,295.48	2,294.86	5.02	0.56	81.06	3.88	24.64	24.95	19.41	5.543	4.501		
2,400.00	2,400.00	2,395.65	2,394.99	5.25	0.57	82.36	3.02	22.47	22.68	16.89	5.789	3.917		
2,500.00	2,500.00	2,495.57	2,494.86	5.47	0.58	87.28	0.96	20.12	20.15	14.11	6.039	3.336		
2,600.00	2,600.00	2,595.47	2,594.73	5.70	0.60	92.94	-0.93	18.11	18.14	11.85	6.289	2.884		
2,700.00	2,700.00	2,695.42	2,694.64	5.92	0.62	99.66	-2.82	16.24	16.48	9.95	6.536	2.522		
2,800.00	2,800.00	2,795.36	2,794.55	6.15	0.63	107.55	-4.61	14.58	15.30	8.52	6.778	2.257		
2,900.00	2,900.00	2,895.35	2,894.51	6.37	0.65	115.99	-6.31	12.94	14.39	7.38	7.012	2.052		
3,000.00	3,000.00	2,995.38	2,994.52	6.60	0.67	125.14	-7.91	11.23	13.74	6.50	7.239	1.898		
3,100.00	3,100.00	3,095.47	3,094.58	6.82	0.70	134.57	-8.68	8.81	12.37	4.91	7.464	1.657		
3,200.00	3,200.00	3,195.44	3,194.51	7.05	0.72	146.08	-9.36	6.29	11.28	3.60	7.679	1.489 Level 3		
3,300.00	3,300.00	3,295.40	3,294.43	7.27	0.75	160.03	-9.98	3.63	10.62	2.73	7.888	1.346 Level 3		
3,341.68	3,341.68	3,337.06	3,336.08	7.36	0.76	166.49	-10.25	2.46	10.54	2.57	7.976	1.322 Level 3		
3,400.00	3,400.00	3,395.35	3,394.34	7.50	0.78	175.86	-10.70	0.77	10.73	2.83	8.107	1.324 Level 3		
3,500.00	3,500.00	3,495.30	3,494.24	7.72	0.81	-169.04	-11.40	-2.21	11.61	-3.26	8.354	1.390 Level 3		
3,600.00	3,600.00	3,595.25	3,594.15	7.95	0.84	-156.82	-12.17	-5.21	13.24	4.61	8.623	1.535		
3,700.00	3,700.00	3,695.21	3,694.05	8.17	0.87	-147.18	-12.86	-8.30	15.31	6.41	8.900	1.720		
3,800.00	3,800.00	3,795.15	3,793.95	8.40	0.90	-140.37	-13.61	-11.27	17.67	8.50	9.174	1.926		
3,900.00	3,900.00	3,895.12	3,893.87	8.62	0.93	-134.94	-14.28	-14.30	20.22	10.77	9.445	2.140		
4,000.00	4,000.00	3,995.07	3,993.77	8.84	0.96	-130.89	-15.01	-17.34	22.94	13.23	9.713	2.362		
4,100.00	4,100.00	4,095.33	4,094.00	9.07	0.98	-128.24	-15.50	-19.67	25.05	15.07	9.976	2.511		
4,200.00	4,200.00	4,195.13	4,193.78	9.29	1.01	-128.81	-16.92	-21.04	27.01	16.78	10.225	2.641		
4,300.00	4,300.00	4,295.08	4,293.70	9.52	1.03	-131.33	-19.43	-22.09	29.43	18.86	10.465	2.812		
4,400.00	4,400.00	4,395.08	4,393.65	9.74	1.05	-133.78	-22.13	-23.10	32.00	21.29	10.705	2.989		
4,500.00	4,500.00	4,495.27	4,493.82	9.97	1.07	-134.54	-23.76	-24.13	33.86	22.91	10.954	3.091		
4,600.00	4,599.99	4,595.23	4,593.77	10.16	1.10	27.25	-25.04	-25.20	34.36	23.18	11.183	3.073		
4,700.00	4,699.91	4,695.24	4,693.76	10.33	1.12	30.24	-26.33	-26.40	32.68	21.28	11.395	2.868		
4,800.00	4,799.69	4,795.07	4,793.58	10.51	1.15	36.41	-27.64	-27.62	28.97	17.35	11.620	2.493		
4,900.00	4,899.27	4,894.79	4,893.28	10.68	1.18	48.49	-28.98	-28.75	23.82	11.97	11.847	2.011		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - #51H - OH - Plan #8 - T3													Offset Site Error:	0.00 usft
Survey Program: 100-GYD_DP_MS, 9639-MWD, 16031-MWD													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,998.57	4,994.31	4,992.78	10.86	1.20	72.63	-30.42	-29.82	19.24	7.24	12.003	1.603		
5,041.86	5,040.04	5,035.86	5,034.33	10.94	1.21	87.51	-31.04	-30.26	18.60	6.59	12.002	1.549		
5,100.00	5,097.54	5,093.48	5,091.94	11.05	1.23	109.79	-31.85	-30.89	20.12	8.18	11.940	1.685		
5,200.00	5,196.30	5,192.54	5,190.98	11.24	1.26	136.67	-33.27	-31.96	28.52	16.53	11.991	2.378		
5,300.00	5,295.07	5,291.58	5,290.00	11.45	1.28	149.84	-34.80	-33.02	40.04	27.83	12.208	3.280		
5,400.00	5,393.84	5,390.60	5,389.01	11.66	1.31	156.94	-36.39	-34.06	52.64	40.19	12.449	4.228		
5,500.00	5,492.61	5,489.71	5,488.09	11.88	1.34	161.21	-37.97	-35.18	65.73	53.05	12.688	5.181		
5,600.00	5,591.38	5,588.83	5,587.20	12.11	1.36	164.10	-39.60	-36.24	79.02	66.10	12.924	6.114		
5,700.00	5,690.15	5,687.94	5,686.28	12.34	1.39	166.18	-41.36	-37.27	92.33	79.17	13.158	7.017		
5,800.00	5,788.92	5,786.98	5,785.30	12.58	1.42	167.74	-43.12	-38.27	105.72	92.33	13.391	7.895		
5,900.00	5,887.69	5,885.72	5,884.03	12.83	1.45	168.88	-44.79	-39.40	119.25	105.63	13.622	8.754		
6,000.00	5,986.46	5,984.54	5,982.82	13.08	1.48	169.56	-46.10	-41.02	133.09	119.24	13.849	9.611		
6,100.00	6,085.22	6,083.39	6,081.66	13.34	1.51	170.09	-47.26	-42.66	147.10	133.02	14.075	10.451		
6,200.00	6,183.99	6,181.95	6,180.19	13.60	1.54	170.49	-48.21	-44.37	161.30	147.00	14.300	11.280		
6,300.00	6,282.76	6,278.90	6,277.13	13.87	1.57	170.83	-48.57	-45.93	176.12	161.60	14.522	12.128		
6,400.00	6,381.53	6,377.59	6,375.81	14.14	1.60	171.16	-48.34	-47.29	191.56	176.83	14.735	13.000		
6,500.00	6,480.30	6,476.47	6,474.68	14.42	1.62	171.43	-48.09	-48.70	207.03	192.08	14.949	13.849		
6,600.00	6,579.07	6,578.36	6,576.55	14.70	1.65	171.71	-48.66	-50.10	221.70	206.53	15.176	14.609		
6,700.00	6,677.84	6,678.90	6,677.07	14.98	1.68	172.02	-50.13	-51.42	235.52	220.11	15.415	15.279		
6,800.00	6,776.61	6,778.91	6,777.06	15.27	1.71	172.45	-52.29	-52.17	248.79	233.13	15.661	15.886		
6,900.00	6,875.37	6,876.37	6,874.49	15.56	1.73	172.79	-54.20	-53.03	262.23	246.33	15.902	16.491		
7,000.00	6,974.14	6,975.77	6,973.87	15.85	1.77	172.94	-55.65	-54.58	276.03	259.88	16.142	17.100		
7,100.00	7,072.91	7,073.55	7,071.62	16.15	1.80	172.98	-56.93	-56.55	289.88	273.50	16.378	17.700		
7,200.00	7,171.68	7,172.11	7,170.15	16.45	1.83	172.94	-57.88	-58.93	303.98	287.37	16.611	18.299		
7,300.00	7,270.45	7,271.36	7,269.35	16.75	1.86	172.73	-58.54	-62.16	318.20	301.36	16.841	18.895		
7,400.00	7,369.22	7,375.63	7,373.53	17.05	1.90	172.47	-60.17	-66.15	331.44	314.36	17.084	19.401		
7,500.00	7,467.99	7,476.41	7,474.19	17.36	1.93	172.26	-62.78	-70.03	343.67	326.34	17.328	19.833		
7,600.00	7,566.76	7,575.87	7,573.55	17.67	1.97	172.11	-65.52	-73.65	355.80	338.23	17.572	20.248		
7,700.00	7,665.53	7,676.11	7,673.68	17.98	2.00	171.98	-68.63	-77.33	367.58	349.76	17.820	20.627		
7,800.00	7,764.29	7,773.69	7,771.15	18.29	2.03	171.83	-71.20	-81.00	379.80	361.74	18.060	21.030		
7,900.00	7,863.06	7,875.92	7,873.25	18.61	2.07	171.62	-74.01	-85.33	391.84	373.52	18.313	21.396		
8,000.00	7,961.83	7,979.91	7,977.04	18.93	2.11	171.39	-78.43	-90.18	402.31	383.73	18.581	21.651		
8,100.00	8,060.60	8,076.02	8,072.96	19.24	2.14	171.20	-82.38	-94.58	412.95	394.14	18.817	21.946		
8,200.00	8,159.37	8,174.95	8,171.74	19.56	2.18	171.05	-85.95	-98.76	424.15	405.09	19.065	22.247		
8,300.00	8,258.14	8,271.02	8,267.70	19.89	2.21	170.97	-88.95	-102.28	435.93	416.62	19.307	22.579		
8,400.00	8,356.91	8,370.99	8,367.56	20.21	2.24	170.91	-91.92	-105.76	447.89	428.32	19.561	22.897		
8,500.00	8,455.68	8,470.18	8,466.64	20.53	2.28	170.82	-94.95	-109.46	459.72	439.91	19.814	23.202		
8,544.88	8,500.00	8,513.89	8,510.30	20.68	2.29	170.77	-96.20	-111.19	465.10	445.18	19.925	23.343		
8,600.00	8,554.51	8,568.99	8,565.33	20.86	2.31	170.71	-97.74	-113.43	471.34	451.28	20.064	23.492		
8,700.00	8,653.66	8,670.69	8,666.90	21.16	2.35	170.54	-100.74	-117.69	480.51	460.20	20.317	23.650		
8,800.00	8,753.13	8,773.08	8,769.14	21.44	2.39	170.37	-104.46	-121.72	486.47	465.89	20.572	23.647		
8,900.00	8,852.83	8,870.46	8,866.39	21.69	2.42	170.18	-108.12	-125.29	489.79	468.98	20.806	23.540		
9,000.00	8,952.69	8,969.48	8,965.31	21.92	2.45	170.00	-111.34	-128.22	491.14	470.09	21.042	23.341		
9,100.00	9,052.66	9,072.41	9,068.12	22.13	2.49	169.74	-114.99	-131.47	489.59	468.30	21.285	23.002		
9,144.88	9,097.54	9,118.32	9,113.97	22.21	2.51	8.49	-116.79	-133.08	487.87	466.48	21.392	22.807		
9,200.00	9,152.66	9,174.69	9,170.25	22.31	2.53	8.29	-119.14	-135.16	485.30	463.78	21.523	22.548		
9,300.00	9,252.66	9,274.03	9,269.43	22.49	2.56	7.92	-123.32	-138.87	480.61	458.86	21.749	22.098		
9,400.00	9,352.66	9,371.22	9,366.49	22.66	2.60	7.57	-127.17	-142.38	476.19	454.23	21.966	21.679		
9,500.00	9,452.66	9,471.89	9,467.01	22.84	2.63	7.19	-131.03	-146.04	471.92	449.72	22.197	21.261		
9,515.72	9,468.38	9,487.13	9,482.23	22.87	2.64	7.13	-131.61	-146.57	471.26	449.03	22.231	21.198		
9,550.00	9,502.64	9,520.32	9,515.39	22.93	2.66	7.56	-132.81	-147.69	468.97	446.67	22.305	21.025		
9,600.00	9,552.41	9,568.46	9,563.47	22.98	2.69	7.54	-134.44	-149.25	462.50	440.09	22.408	20.640		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30°)
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30°)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - #51H - OH - Plan #8 - T3													Offset Site Error: 0.00 usft
Survey Program: 100-GYD_DP_MS_9639-MWD_16031-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre -N-S (usft)	Offset Wellbore Centre -E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,650.00	9,601.67	9,616.01	9,610.98	23.02	2.71	7.64	-135.92	-150.70	452.34	429.83	22.503	20.101	
9,700.00	9,650.10	9,662.88	9,657.81	23.03	2.73	7.87	-137.24	-152.04	438.54	415.95	22.596	19.408	
9,750.00	9,697.41	9,709.25	9,704.15	23.01	2.75	8.25	-138.51	-153.25	421.12	398.43	22.680	18.559	
9,800.00	9,743.31	9,751.39	9,746.24	22.98	2.76	8.68	-139.36	-154.98	400.34	377.56	22.785	17.570	
9,850.00	9,787.51	9,786.07	9,780.82	22.92	2.78	9.05	-139.47	-157.52	378.70	353.76	22.942	16.420	
9,900.00	9,829.74	9,814.78	9,809.27	22.86	2.80	9.23	-138.40	-161.20	351.12	327.81	23.306	15.066	
9,950.00	9,869.75	9,843.76	9,837.77	22.78	2.82	9.27	-135.98	-165.84	324.00	300.20	23.801	13.613	
10,000.00	9,907.29	9,871.96	9,865.30	22.70	2.84	9.22	-132.57	-170.90	295.21	270.80	24.407	12.095	
10,050.00	9,942.11	9,898.28	9,890.86	22.61	2.86	9.27	-128.18	-175.38	265.18	240.02	25.160	10.540	
10,100.00	9,974.02	9,922.00	9,913.71	22.53	2.89	9.42	-123.14	-179.25	234.08	207.95	26.132	8.958	
10,150.00	10,002.81	9,950.45	9,940.76	22.45	2.94	9.53	-115.61	-183.76	202.06	175.18	26.874	7.519	
10,200.00	10,028.30	9,981.69	9,969.93	22.38	3.01	9.42	-105.79	-189.09	168.93	141.51	27.422	6.160	
10,250.00	10,050.35	10,012.78	9,998.44	22.32	3.10	8.62	-95.12	-195.34	134.10	106.13	27.967	4.795	
10,300.00	10,068.80	10,042.51	10,025.26	22.29	3.21	6.83	-83.94	-201.68	97.83	69.17	28.653	3.414	
10,350.00	10,083.55	10,071.29	10,050.70	22.27	3.34	2.68	-71.92	-207.76	60.65	31.02	29.629	2.047	
10,400.00	10,094.51	10,101.34	10,076.46	22.29	3.50	-15.71	-57.88	-214.20	23.53	-7.35	30.881	0.762 Level 1	
10,428.09	10,098.98	10,118.52	10,090.81	22.31	3.61	-72.68	-49.30	-218.15	8.70	-19.20	27.894	0.312 Level 1, CC, ES, SF	
10,450.00	10,101.61	10,132.16	10,101.94	22.33	3.71	-122.49	-42.14	-221.48	19.26	-9.01	28.272	0.681 Level 1	
10,500.00	10,104.81	10,162.87	10,126.16	22.42	3.94	-144.96	-25.20	-229.77	57.72	27.41	30.314	1.904	
10,513.95	10,105.00	10,171.08	10,132.49	22.45	4.01	-146.36	-20.57	-232.22	69.02	38.52	30.500	2.263	
10,600.00	10,105.24	10,229.27	10,175.63	22.72	4.58	-162.23	13.87	-250.57	137.90	106.18	31.716	4.348	
10,700.00	10,105.52	10,316.23	10,234.05	23.20	5.64	-153.16	71.57	-278.99	212.35	179.02	33.329	6.371	
10,800.00	10,105.79	10,439.08	10,302.44	23.81	7.46	-152.01	164.97	-319.43	277.27	241.60	35.666	7.774	
10,900.00	10,106.07	10,637.74	10,347.86	24.56	11.15	-144.35	342.72	-390.87	314.30	275.37	38.931	8.073	
11,000.00	10,106.35	10,736.93	10,347.76	25.42	13.13	-139.11	434.55	-428.21	337.92	298.06	39.853	8.479	
11,100.00	10,106.63	10,859.53	10,341.78	26.38	15.62	-132.82	547.62	-475.09	361.62	319.91	41.702	8.671	
11,200.00	10,106.91	10,984.26	10,332.76	27.43	18.05	-128.16	666.65	-510.82	378.41	334.40	44.010	8.598	
11,300.00	10,107.18	11,128.72	10,325.46	28.56	20.65	-125.52	809.35	-531.06	385.49	338.97	46.523	8.286	
11,400.00	10,107.46	11,238.37	10,323.67	29.76	22.50	-124.97	918.88	-535.49	387.01	338.25	48.755	7.938	
11,500.00	10,107.74	11,339.84	10,322.26	31.03	24.21	-124.68	1,020.33	-537.37	386.86	335.79	51.065	7.576	
11,600.00	10,108.02	11,440.66	10,320.46	32.35	25.92	-124.38	1,121.12	-538.77	386.11	332.62	53.484	7.219	
11,657.11	10,108.18	11,495.26	10,319.31	33.14	26.86	-124.17	1,175.70	-539.91	385.92	330.99	54.828	7.026	
11,700.00	10,108.30	11,537.93	10,318.52	33.73	27.60	-124.00	1,218.35	-540.94	385.95	329.92	56.027	6.889	
11,800.00	10,108.57	11,639.05	10,318.25	35.14	29.35	-123.91	1,319.46	-542.16	385.92	327.34	58.581	6.588	
11,900.00	10,108.85	11,739.27	10,318.05	36.60	31.10	-123.86	1,419.67	-542.93	385.56	324.38	61.187	6.301	
11,965.91	10,109.04	11,804.09	10,317.78	37.58	32.24	-123.79	1,484.49	-543.67	385.46	322.50	62.952	6.123	
12,000.00	10,109.13	11,837.43	10,317.70	38.09	32.83	-123.75	1,517.83	-544.12	385.49	321.62	63.870	6.036	
12,100.00	10,109.41	11,951.65	10,316.92	39.61	34.84	-123.67	1,632.04	-544.41	384.53	317.98	66.542	5.779	
12,200.00	10,109.69	12,067.34	10,313.66	41.15	36.84	-123.68	1,747.59	-539.97	378.87	309.77	69.102	5.483	
12,300.00	10,109.97	12,152.87	10,312.53	42.73	38.32	-123.90	1,833.01	-536.07	373.41	301.52	71.888	5.194	
12,400.00	10,110.24	12,256.54	10,312.92	44.32	40.12	-124.39	1,936.59	-531.51	369.10	294.70	74.397	4.961	
12,500.00	10,110.52	12,356.00	10,312.55	45.93	41.86	-124.79	2,035.93	-526.93	364.22	287.24	76.980	4.731	
12,600.00	10,110.80	12,446.93	10,313.08	47.56	43.46	-125.21	2,126.80	-523.52	360.61	281.00	79.618	4.529	
12,644.76	10,110.92	12,483.71	10,313.82	48.30	44.12	-125.38	2,163.56	-522.89	360.12	279.31	80.809	4.456	
12,700.00	10,111.08	12,529.11	10,315.09	49.21	44.94	-125.53	2,208.94	-523.23	360.87	278.61	82.258	4.387	
12,800.00	10,111.36	12,628.00	10,317.92	50.87	46.74	-125.69	2,307.76	-525.91	363.86	278.86	85.004	4.281	
12,900.00	10,111.63	12,733.00	10,318.43	52.54	48.67	-125.46	2,412.68	-529.69	366.20	278.15	88.052	4.159	
13,000.00	10,111.91	12,826.05	10,318.42	54.22	50.39	-125.10	2,505.63	-534.10	369.16	277.99	91.167	4.049	
13,100.00	10,112.19	12,933.11	10,317.85	55.92	52.37	-124.67	2,612.58	-538.68	371.47	277.03	94.443	3.933	
13,200.00	10,112.47	13,027.89	10,317.01	57.62	54.12	-124.26	2,707.27	-542.59	373.50	275.82	97.681	3.824	
13,300.00	10,112.75	13,116.01	10,317.75	59.34	55.76	-123.90	2,795.21	-548.27	378.40	277.57	100.829	3.753	
13,400.00	10,113.03	13,226.60	10,318.93	61.06	57.82	-123.45	2,905.52	-555.95	383.96	279.85	104.316	3.681	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - #51H - OH - Plan #8 - T3													Offset Site Error:	0.00 usft
Survey Program: 100-GYD_DP_MS, 9639-MWD, 16031-MWD													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
13,500.00	10,113.30	13,342.71	10,317.68	62.79	59.95	-123.15	3,021.59	-558.31	384.02	276.40	107.622	3.568		
13,574.27	10,113.51	13,413.93	10,316.39	64.08	61.26	-122.92	3,092.79	-559.44	383.62	273.54	110.079	3.485		
13,600.00	10,113.58	13,437.74	10,315.92	64.52	61.70	-122.82	3,116.58	-560.07	383.69	272.73	110.951	3.458		
13,700.00	10,113.86	13,531.90	10,314.32	66.27	63.44	-122.36	3,210.66	-563.62	385.05	270.65	114.402	3.366		
13,800.00	10,114.14	13,630.80	10,314.39	68.02	65.27	-122.11	3,309.49	-567.38	387.41	269.70	117.714	3.291		
13,900.00	10,114.42	13,744.74	10,313.17	69.77	67.37	-121.74	3,423.37	-570.73	388.53	267.37	121.156	3.207		
14,000.00	10,114.69	13,859.07	10,309.54	71.53	69.45	-121.38	3,537.63	-569.81	385.27	260.85	124.426	3.096		
14,100.00	10,114.97	13,957.22	10,306.05	73.29	71.23	-121.14	3,635.69	-567.65	380.64	252.84	127.802	2.978		
14,200.00	10,115.25	14,070.24	10,302.20	75.06	73.25	-121.11	3,748.50	-562.14	373.74	243.10	130.645	2.861		
14,300.00	10,115.53	14,164.09	10,302.54	76.83	74.92	-121.76	3,842.07	-555.03	366.56	233.31	133.247	2.751		
14,400.00	10,115.81	14,258.21	10,304.56	78.61	76.59	-122.62	3,935.93	-548.42	360.87	225.32	135.554	2.662		
14,500.00	10,116.08	14,350.40	10,306.28	80.39	78.25	-123.24	4,028.01	-544.35	357.28	219.21	138.071	2.588		
14,600.00	10,116.36	14,447.73	10,306.60	82.17	80.02	-123.46	4,125.32	-542.78	355.22	214.29	140.930	2.521		
14,700.00	10,116.64	14,548.72	10,306.10	83.95	81.87	-123.54	4,226.31	-541.56	353.06	209.15	143.913	2.453		
14,800.00	10,116.92	14,644.76	10,304.74	85.74	83.64	-123.40	4,322.34	-541.52	351.36	204.15	147.213	2.387		
14,855.38	10,117.07	14,696.57	10,304.13	86.73	84.59	-123.28	4,374.14	-542.15	351.08	201.99	149.095	2.355		
14,900.00	10,117.20	14,737.46	10,303.88	87.53	85.35	-123.19	4,415.02	-542.99	351.30	200.70	150.599	2.333		
15,000.00	10,117.48	14,829.71	10,304.52	89.33	87.06	-123.04	4,507.21	-546.10	353.61	199.74	153.865	2.298		
15,100.00	10,117.75	14,923.92	10,305.87	91.12	88.81	-122.86	4,601.31	-550.58	357.50	200.36	157.143	2.275		
15,200.00	10,118.03	15,017.32	10,308.98	92.92	90.56	-122.82	4,694.47	-556.33	363.58	203.37	160.208	2.269		
15,300.00	10,118.31	15,123.47	10,311.28	94.72	92.55	-122.54	4,800.34	-563.69	369.71	205.82	163.886	2.256		
15,400.00	10,118.59	15,243.81	10,310.20	96.52	94.79	-121.99	4,920.53	-569.23	372.31	204.35	167.962	2.217		
15,500.00	10,118.87	15,342.83	10,306.48	98.33	96.62	-121.38	5,019.46	-571.08	371.04	199.07	171.973	2.158		
15,509.84	10,118.89	15,351.73	10,306.30	98.50	96.78	-121.34	5,028.36	-571.27	371.03	198.69	172.340	2.153		
15,600.00	10,119.14	15,436.28	10,305.23	100.13	98.35	-121.04	5,112.87	-573.64	371.79	196.15	175.636	2.117		
15,700.00	10,119.42	15,539.64	10,304.00	101.94	100.27	-120.64	5,216.16	-577.13	373.20	193.78	179.424	2.080		
15,800.00	10,119.70	15,671.04	10,298.39	103.75	102.68	-120.03	5,347.37	-575.88	369.22	186.35	182.875	2.019		
15,900.00	10,119.98	15,764.16	10,292.57	105.56	104.37	-119.50	5,440.26	-572.80	362.34	175.27	187.069	1.937		
16,000.00	10,120.26	15,857.88	10,288.64	107.37	106.08	-119.17	5,533.86	-570.38	357.14	166.20	190.950	1.870		
16,100.00	10,120.54	15,949.39	10,287.05	109.19	107.76	-119.08	5,625.34	-569.05	354.12	159.63	194.494	1.821		
16,200.00	10,120.81	16,044.92	10,287.44	111.00	109.51	-119.21	5,720.87	-568.53	352.94	155.33	197.613	1.786		
16,268.43	10,121.00	16,111.11	10,288.23	112.24	110.73	-119.36	5,787.06	-568.33	352.55	152.92	199.633	1.766		
16,300.00	10,121.09	16,137.78	10,288.69	112.82	111.22	-119.41	5,813.71	-568.56	352.77	152.20	200.576	1.759		
16,400.00	10,121.37	16,225.93	10,291.25	114.63	112.86	-119.56	5,901.77	-571.59	356.23	152.78	203.450	1.751		
16,500.00	10,121.65	16,325.81	10,294.65	116.45	114.72	-119.70	6,001.50	-576.11	360.96	154.47	206.487	1.748		
16,600.00	10,121.93	16,425.69	10,298.05	118.27	116.58	-119.84	6,101.22	-580.64	365.69	156.16	209.523	1.745		
16,700.00	10,122.20	16,525.58	10,301.45	120.09	118.44	-119.98	6,200.94	-585.17	370.41	157.86	212.557	1.743		
16,800.00	10,122.48	16,625.46	10,304.85	121.91	120.30	-120.12	6,300.67	-589.70	375.14	159.55	215.591	1.740		
16,900.00	10,122.76	16,728.76	10,308.26	123.74	122.22	-120.24	6,403.81	-594.30	379.77	161.07	218.698	1.737		
17,000.00	10,123.04	16,843.17	10,309.63	125.56	124.35	-120.23	6,518.16	-597.26	381.71	159.62	222.091	1.719		
17,100.00	10,123.32	16,945.37	10,308.89	127.38	126.23	-120.10	6,620.35	-598.19	381.23	155.66	225.569	1.690		
17,200.00	10,123.59	17,045.36	10,308.12	129.21	128.08	-119.96	6,720.34	-599.06	380.71	151.64	229.063	1.662		
17,300.00	10,123.87	17,145.36	10,307.36	131.03	129.93	-119.82	6,820.32	-599.94	380.18	147.62	232.565	1.635		
17,400.00	10,124.15	17,245.35	10,306.59	132.86	131.78	-119.69	6,920.31	-600.81	379.66	143.59	236.075	1.608		
17,500.00	10,124.43	17,345.34	10,305.83	134.69	133.62	-119.55	7,020.30	-601.69	379.14	139.55	239.593	1.582		
17,600.00	10,124.71	17,445.34	10,305.06	136.52	135.47	-119.41	7,120.29	-602.56	378.63	135.51	243.119	1.557		
17,700.00	10,124.99	17,545.33	10,304.30	138.35	137.32	-119.28	7,220.28	-603.44	378.12	131.46	246.653	1.533		
17,800.00	10,125.26	17,645.33	10,303.53	140.18	139.17	-119.14	7,320.26	-604.31	377.60	127.41	250.195	1.509		
17,900.00	10,125.54	17,745.32	10,302.77	142.01	141.02	-119.00	7,420.25	-605.18	377.09	123.35	253.745	1.486 Level 3		
18,000.00	10,125.82	17,845.32	10,302.00	143.84	142.86	-118.86	7,520.24	-606.06	376.59	119.28	257.302	1.464 Level 3		
18,100.00	10,126.10	17,945.31	10,301.24	145.67	144.71	-118.72	7,620.23	-606.93	376.08	115.21	260.867	1.442 Level 3		
18,200.00	10,126.38	18,045.31	10,300.47	147.50	146.56	-118.58	7,720.21	-607.81	375.58	111.14	264.440	1.420 Level 3		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.000 sigma
Reference Wellbore:	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - #51H - OH - Plan #8 - T3													Offset Site Error:	0.00 usft
Survey Program: 100-GYD-DP-MS-9639-MWD-16031-MWD													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
18,300.00	10,126.65	18,145.30	10,299.71	149.33	148.41	-118.44	7,820.20	-608.68	375.08	107.06	268.021	1.399 Level 3		
18,400.00	10,126.93	18,245.30	10,298.94	151.16	150.26	-118.30	7,920.19	-609.55	374.58	102.97	271.608	1.379 Level 3		
18,500.00	10,127.21	18,345.29	10,298.18	153.00	152.11	-118.16	8,020.18	-610.43	374.08	98.88	275.204	1.359 Level 3		
18,600.00	10,127.49	18,445.28	10,297.41	154.83	153.96	-118.02	8,120.17	-611.30	373.59	94.78	278.806	1.340 Level 3		
18,700.00	10,127.77	18,545.28	10,296.65	156.66	155.81	-117.88	8,220.15	-612.18	373.10	90.68	282.416	1.321 Level 3		
18,800.00	10,128.05	18,645.27	10,295.88	158.50	157.66	-117.74	8,320.14	-613.05	372.61	86.58	286.033	1.303 Level 3		
18,900.00	10,128.32	18,745.27	10,295.11	160.33	159.51	-117.60	8,420.13	-613.93	372.12	82.46	289.658	1.285 Level 3		
19,000.00	10,128.60	18,845.26	10,294.35	162.17	161.35	-117.46	8,520.12	-614.80	371.64	78.35	293.289	1.267 Level 3		
19,100.00	10,128.88	18,945.26	10,293.58	164.01	163.20	-117.31	8,620.10	-615.67	371.16	74.23	296.928	1.250 Level 2		
19,200.00	10,129.16	19,045.25	10,292.82	165.84	165.05	-117.17	8,720.09	-616.55	370.68	70.10	300.573	1.233 Level 2		
19,300.00	10,129.44	19,145.25	10,292.05	167.68	166.90	-117.03	8,820.08	-617.42	370.20	65.97	304.226	1.217 Level 2		
19,400.00	10,129.71	19,245.24	10,291.29	169.52	168.75	-116.88	8,920.07	-618.30	369.72	61.84	307.885	1.201 Level 2		
19,500.00	10,129.99	19,345.24	10,290.52	171.35	170.60	-116.74	9,020.06	-619.17	369.25	57.70	311.552	1.185 Level 2		
19,600.00	10,130.27	19,445.23	10,289.76	173.19	172.45	-116.59	9,120.04	-620.04	368.78	53.55	315.225	1.170 Level 2		
19,700.00	10,130.55	19,545.22	10,288.99	175.03	174.30	-116.45	9,220.03	-620.92	368.31	49.40	318.905	1.155 Level 2		
19,800.00	10,130.83	19,645.22	10,288.23	176.87	176.15	-116.30	9,320.02	-621.79	367.84	45.25	322.592	1.140 Level 2		
19,900.00	10,131.11	19,745.21	10,287.46	178.71	178.00	-116.16	9,420.01	-622.67	367.38	41.10	326.285	1.126 Level 2		
20,000.00	10,131.38	19,845.21	10,286.70	180.55	179.85	-116.01	9,520.00	-623.54	366.92	36.93	329.985	1.112 Level 2		
20,100.00	10,131.66	19,945.20	10,285.93	182.38	181.70	-115.87	9,619.98	-624.41	366.46	32.77	333.691	1.098 Level 2		
20,200.00	10,131.94	20,045.20	10,285.17	184.22	183.55	-115.72	9,719.97	-625.29	366.00	28.60	337.404	1.085 Level 2		
20,221.81	10,132.00	20,067.01	10,285.00	184.55	183.96	-115.69	9,741.78	-625.48	365.90	27.77	338.135	1.082 Level 2		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore:	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#1H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-142.43	-501.18	-385.51	632.82					
100.00	100.00	70.92	70.91	0.08	0.08	-142.42	-501.25	-385.72	632.49	632.33	.159	3,967.874		
200.00	200.00	168.80	168.79	0.30	0.27	-142.38	-501.58	-386.56	633.27	632.70	.571	1,108.268		
300.00	300.00	270.35	270.34	0.53	0.50	-142.31	-501.92	-387.73	634.25	633.23	1.024	619.280		
400.00	400.00	368.92	368.90	0.75	0.72	-142.28	-502.18	-388.47	634.92	633.45	1.470	431.882		
500.00	500.00	468.00	467.98	0.98	0.94	-142.27	-502.85	-389.06	635.82	633.91	1.914	332.130		
600.00	600.00	568.24	568.22	1.20	1.16	-142.28	-503.65	-389.59	636.78	634.42	2.361	269.707		
700.00	700.00	668.45	668.42	1.43	1.39	-142.28	-504.33	-390.34	637.77	634.96	2.810	226.946		
800.00	800.00	770.41	770.37	1.65	1.62	-142.24	-504.84	-390.98	638.55	635.28	3.264	195.643		
900.00	900.00	873.28	873.23	1.88	1.85	-142.23	-505.01	-391.29	638.86	635.15	3.718	171.839		
1,000.00	1,000.00	974.15	974.11	2.10	2.06	-142.22	-505.05	-391.43	638.97	634.82	4.154	153.838		
1,100.00	1,100.00	1,072.71	1,072.68	2.33	2.26	-142.22	-505.13	-391.55	639.12	634.53	4.585	139.401		
1,200.00	1,200.00	1,169.99	1,169.96	2.55	2.48	-142.23	-505.52	-391.74	639.56	634.53	5.023	127.324		
1,300.00	1,300.00	1,270.43	1,270.40	2.78	2.70	-142.21	-505.93	-392.33	640.23	634.76	5.473	116.978		
1,400.00	1,400.00	1,370.67	1,370.63	3.00	2.93	-142.18	-506.18	-392.98	640.83	634.90	5.922	108.212		
1,500.00	1,500.00	1,471.21	1,471.17	3.23	3.15	-142.14	-506.35	-393.68	641.39	635.02	6.371	100.674		
1,600.00	1,600.00	1,571.49	1,571.45	3.45	3.38	-142.11	-506.47	-394.12	641.76	634.94	6.819	94.108		
1,700.00	1,700.00	1,672.74	1,672.70	3.67	3.60	-142.11	-506.67	-394.29	642.01	634.75	7.268	88.380		
1,800.00	1,800.00	1,779.61	1,779.56	3.90	3.80	-142.19	-507.02	-393.38	641.75	634.06	7.691	83.444		
1,900.00	1,900.00	1,881.87	1,881.58	4.12	3.99	-142.41	-507.66	-390.86	640.73	632.63	8.104	79.059		
2,000.00	2,000.00	1,979.28	1,979.15	4.35	4.17	-142.59	-508.08	-388.56	639.65	631.14	8.513	75.138		
2,100.00	2,100.00	2,079.50	2,079.38	4.57	4.36	-142.65	-507.97	-387.69	639.04	630.11	8.927	71.586		
2,200.00	2,200.00	2,184.99	2,184.84	4.80	4.56	-142.84	-508.24	-385.20	637.81	628.45	9.356	68.169		
2,300.00	2,300.00	2,285.52	2,285.30	5.02	4.76	-143.13	-508.76	-381.56	636.04	626.26	9.781	65.030		
2,378.36	2,378.36	2,350.80	2,350.56	5.20	4.89	-143.24	-508.96	-380.17	635.27	625.19	10.085	62.993		
2,400.00	2,400.00	2,369.68	2,369.44	5.25	4.93	-143.23	-508.96	-380.28	635.36	625.18	10.177	62.429		
2,500.00	2,500.00	2,467.52	2,467.26	5.47	5.14	-143.08	-508.89	-382.34	636.55	625.94	10.610	59.997		
2,600.00	2,600.00	2,569.39	2,569.11	5.70	5.36	-142.91	-508.37	-384.36	637.34	626.29	11.050	57.878		
2,700.00	2,700.00	2,670.38	2,670.08	5.92	5.57	-142.74	-507.86	-386.35	638.12	626.63	11.489	55.540		
2,800.00	2,800.00	2,770.92	2,770.60	6.15	5.79	-142.57	-507.24	-388.28	638.80	626.88	11.928	53.554		
2,900.00	2,900.00	2,871.23	2,870.89	6.37	6.00	-142.40	-506.48	-390.06	639.28	626.91	12.367	51.694		
3,000.00	3,000.00	2,973.45	2,973.09	6.60	6.22	-142.25	-505.75	-391.65	639.67	626.86	12.810	49.936		
3,100.00	3,100.00	3,077.12	3,076.78	6.82	6.44	-142.16	-505.03	-392.37	639.54	626.29	13.251	48.262		
3,200.00	3,200.00	3,178.13	3,177.76	7.05	6.65	-142.07	-504.08	-392.77	639.05	625.36	13.684	46.699		
3,300.00	3,300.00	3,278.81	3,278.44	7.27	6.86	-141.99	-503.06	-393.18	638.49	624.37	14.118	45.227		
3,400.00	3,400.00	3,375.81	3,375.42	7.50	7.08	-141.89	-502.11	-393.80	638.11	623.57	14.547	43.867		
3,493.76	3,493.76	3,468.35	3,467.98	7.71	7.26	-141.79	-501.37	-394.65	638.06	623.10	14.956	42.662		
3,500.00	3,500.00	3,474.32	3,473.93	7.72	7.27	-141.78	-501.32	-394.71	638.06	623.08	14.983	42.586		
3,600.00	3,600.00	3,573.90	3,573.51	7.95	7.49	-141.67	-500.59	-395.78	638.15	622.72	15.423	41.376		
3,700.00	3,700.00	3,674.94	3,674.53	8.17	7.71	-141.54	-499.77	-396.91	638.21	622.34	15.867	40.224		
3,710.86	3,710.86	3,685.47	3,685.06	8.19	7.73	-141.53	-499.68	-397.03	638.21	622.29	15.914	40.104		
3,800.00	3,800.00	3,773.55	3,773.13	8.40	7.92	-141.42	-498.99	-398.04	638.30	622.00	16.306	39.146		
3,900.00	3,900.00	3,873.79	3,873.36	8.62	8.14	-141.35	-498.57	-398.77	638.43	621.68	16.748	38.119		
4,000.00	4,000.00	3,973.72	3,973.30	8.84	8.34	-141.37	-498.89	-398.63	638.59	621.41	17.175	37.181		
4,100.00	4,100.00	4,074.25	4,073.83	9.07	8.54	-141.42	-499.28	-398.35	638.73	621.12	17.602	36.288		
4,177.25	4,177.25	4,152.18	4,151.75	9.24	8.70	-141.45	-499.52	-398.05	638.72	620.79	17.930	35.623		
4,200.00	4,200.00	4,171.88	4,171.46	9.29	8.74	-141.46	-499.61	-398.01	638.77	620.75	18.021	35.445		
4,300.00	4,300.00	4,274.77	4,274.34	9.52	8.94	-141.52	-500.17	-397.60	638.95	620.49	18.454	34.623		
4,303.20	4,303.20	4,278.10	4,277.67	9.53	8.95	-141.52	-500.18	-397.58	638.95	620.48	18.468	34.597		
4,400.00	4,400.00	4,375.80	4,375.17	9.74	9.15	-141.58	-500.60	-397.12	638.98	620.10	18.882	33.841		
4,433.13	4,433.13	4,407.76	4,407.33	9.82	9.21	-141.59	-500.68	-396.95	638.94	619.92	19.021	33.591		
4,500.00	4,500.00	4,473.12	4,472.89	9.97	9.34	-141.63	-500.99	-398.68	639.02	619.72	19.305	33.102		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#1H - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 100-MVD														Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
4,600.00	4,599.99	4,571.99	4,571.56	10.16	9.55	19.46	-501.50	-396.24	637.92	618.21	19.703	32.377			
4,700.00	4,699.91	4,670.16	4,669.72	10.33	9.75	19.53	-502.17	-396.01	634.61	614.53	20.077	31.609			
4,800.00	4,799.69	4,769.68	4,769.24	10.51	9.96	19.68	-503.25	-395.72	629.12	608.66	20.457	30.753			
4,900.00	4,899.27	4,870.08	4,869.61	10.68	10.17	19.91	-504.46	-395.41	621.25	600.41	20.842	29.808			
5,000.00	4,998.57	4,968.38	4,967.92	10.86	10.38	20.26	-505.56	-395.25	610.96	589.74	21.226	28.784			
5,100.00	5,097.54	5,066.85	5,066.39	11.05	10.59	20.73	-506.72	-395.21	598.39	576.77	21.615	27.684			
5,200.00	5,196.30	5,165.47	5,165.00	11.24	10.80	21.19	-507.89	-395.14	584.61	562.60	22.007	26.565			
5,300.00	5,295.07	5,263.87	5,263.39	11.45	11.02	21.67	-509.13	-395.11	570.97	548.57	22.401	25.488			
5,400.00	5,393.84	5,363.79	5,363.30	11.66	11.23	22.18	-510.32	-395.00	557.25	534.45	22.804	24.437			
5,500.00	5,492.61	5,462.88	5,462.39	11.88	11.45	22.75	-511.28	-394.80	543.34	520.12	23.216	23.403			
5,600.00	5,591.38	5,566.20	5,565.71	12.11	11.65	23.35	-511.50	-394.34	528.78	505.17	23.614	22.393			
5,700.00	5,690.15	5,666.01	5,665.51	12.34	11.86	23.99	-511.76	-393.91	514.33	490.31	24.018	21.414			
5,800.00	5,788.92	5,763.69	5,763.20	12.58	12.07	24.66	-512.04	-393.51	499.98	475.55	24.425	20.470			
5,900.00	5,887.69	5,861.44	5,860.95	12.83	12.27	25.36	-512.44	-393.24	485.87	461.03	24.839	19.561			
6,000.00	5,986.46	5,959.91	5,959.41	13.08	12.49	26.11	-512.92	-393.07	471.97	446.71	25.260	18.685			
6,100.00	6,085.22	6,058.53	6,058.03	13.34	12.70	26.92	-513.41	-392.95	458.20	432.51	25.687	17.838			
6,200.00	6,183.99	6,151.54	6,151.03	13.60	12.90	27.67	-514.27	-392.78	444.80	418.70	26.106	17.039			
6,300.00	6,282.76	6,254.44	6,253.93	13.87	13.12	28.54	-515.54	-392.66	431.70	405.15	26.552	16.259			
6,400.00	6,381.53	6,353.06	6,352.54	14.14	13.34	29.46	-516.59	-392.74	418.76	391.76	26.994	15.513			
6,500.00	6,480.30	6,451.52	6,451.00	14.42	13.55	30.54	-517.14	-393.34	405.98	378.54	27.441	14.795			
6,600.00	6,579.07	6,550.17	6,549.64	14.70	13.76	31.80	-517.15	-394.48	393.45	365.56	27.889	14.108			
6,700.00	6,677.84	6,649.34	6,648.80	14.98	13.97	33.20	-516.89	-395.88	381.13	352.78	28.344	13.446			
6,800.00	6,776.61	6,751.37	6,750.81	15.27	14.18	34.88	-515.49	-397.37	368.44	339.63	28.808	12.789			
6,900.00	6,875.37	6,853.03	6,852.43	15.56	14.38	36.85	-512.62	-398.48	354.95	325.67	29.278	12.124			
7,000.00	6,974.14	6,948.23	6,947.59	15.85	14.57	38.79	-510.32	-399.71	342.27	312.52	29.750	11.505			
7,100.00	7,072.91	7,047.68	7,047.00	16.15	14.78	40.95	-508.13	-401.16	330.29	300.04	30.241	10.922			
7,200.00	7,171.68	7,146.45	7,145.74	16.45	14.98	43.24	-505.93	-402.46	318.67	287.93	30.743	10.366			
7,300.00	7,270.45	7,245.20	7,244.46	16.75	15.18	45.67	-503.83	-403.58	307.47	276.22	31.257	9.837			
7,400.00	7,369.22	7,343.18	7,342.42	17.05	15.38	48.12	-502.35	-404.41	296.86	265.08	31.782	9.341			
7,500.00	7,467.99	7,442.81	7,442.04	17.36	15.58	50.69	-501.36	-405.18	286.94	254.62	32.321	8.878			
7,600.00	7,566.76	7,546.15	7,545.38	17.67	15.79	53.53	-500.06	-404.81	278.51	243.64	32.873	8.411			
7,700.00	7,665.53	7,642.84	7,641.32	17.98	15.99	56.48	-489.01	-405.95	265.77	232.28	33.491	7.935			
7,786.55	7,751.01	7,711.65	7,707.54	18.25	16.13	64.44	-471.15	-410.87	261.73	227.70	34.032	7.691 CC, ES			
7,800.00	7,764.29	7,721.88	7,717.17	18.29	16.16	65.47	-467.86	-411.93	261.84	227.73	34.107	7.677 SF			
7,900.00	7,863.06	7,795.94	7,785.07	18.61	16.33	73.66	-440.02	-421.55	270.20	235.67	34.531	7.825			
8,000.00	7,961.83	7,869.74	7,848.17	18.93	16.54	82.99	-403.26	-431.67	292.07	257.37	34.999	8.417			
8,100.00	8,060.60	7,926.05	7,891.88	19.24	16.72	90.70	-368.28	-437.21	328.27	293.96	34.309	9.568			
8,200.00	8,159.37	7,966.68	7,920.18	19.56	16.87	96.32	-339.33	-440.55	379.96	346.41	33.545	11.327			
8,300.00	8,258.14	8,000.00	7,941.74	19.89	17.01	100.74	-314.07	-443.05	443.46	410.66	32.800	13.520			
8,400.00	8,356.91	8,031.13	7,960.63	20.21	17.15	104.61	-289.43	-445.42	515.44	483.18	32.260	15.978			
8,500.00	8,455.68	8,045.00	7,968.63	20.53	17.21	108.24	-278.17	-446.55	593.71	562.00	31.703	18.727			
8,544.88	8,500.00	8,060.50	7,977.18	20.68	17.30	108.00	-265.30	-447.89	630.22	598.57	31.645	19.915			
8,600.00	8,554.51	8,069.04	7,981.67	20.86	17.34	110.11	-258.09	-448.67	676.26	644.78	31.480	21.482			
8,700.00	8,653.66	8,093.00	7,993.43	21.16	17.47	114.72	-237.35	-451.04	782.10	730.73	31.372	24.292			
8,800.00	8,753.13	8,093.00	7,993.43	21.44	17.47	117.17	-237.35	-451.04	849.63	818.51	31.128	27.295			
8,900.00	8,852.83	8,093.00	7,993.43	21.69	17.47	119.82	-237.35	-451.04	939.16	908.17	30.994	30.302			
9,000.00	8,952.69	8,116.86	8,003.78	21.92	17.61	124.16	-216.00	-453.57	1,029.04	997.93	31.112	33.076			
9,100.00	9,052.66	8,138.00	8,011.73	22.13	17.74	127.99	-196.56	-455.88	1,120.31	1,089.07	31.239	35.862			
9,144.88	9,097.54	8,138.00	8,011.73	22.21	17.74	-31.95	-196.56	-455.88	1,161.19	1,129.94	31.247	37.162			
9,200.00	9,152.66	8,138.00	8,011.73	22.31	17.74	-31.95	-196.56	-455.88	1,211.72	1,180.45	31.272	38.747			
9,300.00	9,252.66	8,138.00	8,011.73	22.49	17.74	-31.95	-196.56	-455.88	1,304.34	1,272.98	31.358	41.595			
9,400.00	9,352.66	8,155.55	8,017.61	22.66	17.86	-31.13	-180.14	-457.85	1,397.62	1,366.05	31.567	44.275			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#1H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,500.00	9,452.66	8,165.28	8,020.68	22.84	17.93	-30.69	-170.97	-458.96	1,491.60	1,459.84	31.760	46.965		
9,515.72	9,468.38	8,166.73	8,021.13	22.87	17.94	-30.63	-169.60	-459.13	1,506.43	1,474.64	31.792	47.384		
9,550.00	9,502.64	8,170.08	8,022.14	22.93	17.96	-26.12	-166.43	-459.52	1,538.53	1,506.67	31.859	48.292		
9,600.00	9,552.41	8,187.00	8,027.02	22.98	18.08	-21.56	-150.36	-461.51	1,584.51	1,552.52	31.997	49.520		
9,650.00	9,601.67	8,187.00	8,027.02	23.02	18.08	-18.58	-150.36	-461.51	1,628.89	1,596.84	32.058	50.811		
9,700.00	9,650.10	8,187.00	8,027.02	23.03	18.08	-16.32	-150.36	-461.51	1,671.83	1,639.72	32.114	52.060		
9,750.00	9,697.41	8,187.00	8,027.02	23.01	18.08	-14.56	-150.36	-461.51	1,713.17	1,681.00	32.166	53.261		
9,800.00	9,743.31	8,207.77	8,032.48	22.98	18.24	-13.09	-130.47	-463.97	1,752.38	1,720.10	32.284	54.280		
9,850.00	9,787.51	8,232.00	8,038.16	22.92	18.42	-11.94	-107.09	-466.81	1,789.86	1,757.45	32.405	55.234		
9,900.00	9,829.74	8,232.00	8,038.16	22.86	18.42	-11.07	-107.09	-466.81	1,824.79	1,792.34	32.442	56.248		
9,950.00	9,869.75	8,232.00	8,038.16	22.78	18.42	-10.34	-107.09	-466.81	1,857.62	1,825.15	32.479	57.195		
10,000.00	9,907.29	8,253.72	8,042.65	22.70	18.60	-9.74	-85.98	-469.28	1,887.90	1,855.32	32.578	57.950		
10,050.00	9,942.11	8,281.00	8,047.55	22.61	18.83	-9.25	-59.31	-472.25	1,915.83	1,883.14	32.688	58.610		
10,100.00	9,974.02	8,281.00	8,047.55	22.53	18.83	-8.84	-59.31	-472.25	1,940.81	1,908.08	32.725	59.306		
10,150.00	10,002.81	8,298.17	8,050.24	22.45	18.98	-8.52	-42.45	-474.02	1,963.16	1,930.35	32.810	59.834		
10,200.00	10,028.30	8,325.00	8,053.94	22.38	19.22	-8.27	-16.00	-476.61	1,982.71	1,949.79	32.920	60.228		
10,250.00	10,050.35	8,325.00	8,053.94	22.32	19.22	-8.05	-16.00	-476.61	1,999.25	1,966.27	32.973	60.634		
10,300.00	10,068.80	8,325.00	8,053.94	22.29	19.22	-7.86	-16.00	-476.61	2,013.21	1,980.17	33.036	60.940		
10,350.00	10,083.55	8,325.00	8,053.94	22.27	19.22	-7.72	-16.00	-476.61	2,024.57	1,991.46	33.111	61.145		
10,400.00	10,094.51	8,374.76	8,058.83	22.29	19.73	-7.73	33.24	-481.82	2,031.24	1,997.95	33.292	61.013		
10,450.00	10,101.61	8,389.34	8,059.73	22.33	19.87	-7.72	47.68	-483.58	2,035.95	2,002.54	33.412	60.935		
10,500.00	10,104.81	8,403.93	8,060.40	22.42	20.02	-7.75	62.13	-485.45	2,037.64	2,004.10	33.541	60.750		
10,513.95	10,105.00	8,407.99	8,060.55	22.45	20.06	-7.76	66.16	-485.99	2,037.57	2,003.99	33.579	60.679		
10,525.95	10,105.03	8,411.49	8,060.65	22.49	20.10	-7.77	69.62	-486.46	2,037.44	2,003.83	33.614	60.613		
10,600.00	10,105.24	8,453.00	8,060.89	22.72	20.52	-7.93	110.69	-492.49	2,038.06	2,004.19	33.868	60.177		
10,700.00	10,105.52	8,476.26	8,060.43	23.20	20.78	-8.02	133.66	-496.07	2,041.05	2,006.83	34.221	59.643		
10,800.00	10,105.79	8,557.16	8,058.09	23.81	21.72	-8.32	213.66	-507.91	2,046.16	2,011.44	34.716	58.939		
10,900.00	10,106.07	8,688.15	8,055.08	24.56	23.38	-8.71	343.69	-523.42	2,050.20	2,014.83	35.368	57.967		
11,000.00	10,106.35	8,858.93	8,052.75	25.42	25.70	-9.08	513.72	-538.90	2,053.54	2,017.35	36.191	56.741		
11,100.00	10,106.63	8,980.57	8,054.01	26.38	27.43	-9.13	635.30	-541.69	2,052.91	2,015.95	36.961	55.543		
11,200.00	10,106.91	9,142.60	8,057.50	27.43	29.83	-9.14	797.27	-542.96	2,051.14	2,013.25	37.892	54.131		
11,300.00	10,107.18	9,229.28	8,060.57	28.56	31.16	-9.16	883.89	-543.87	2,047.94	2,009.25	38.681	52.944		
11,400.00	10,107.46	9,315.67	8,063.06	29.76	32.51	-9.17	970.24	-544.53	2,045.35	2,005.84	39.510	51.768		
11,500.00	10,107.74	9,395.00	8,064.59	31.03	33.76	-9.16	1,049.56	-544.80	2,043.63	2,003.28	40.355	50.642		
11,600.00	10,108.02	9,474.81	8,065.25	32.35	35.04	-9.14	1,129.36	-544.55	2,042.91	2,001.68	41.234	49.544		
11,618.78	10,108.07	9,489.00	8,065.27	32.61	35.26	-9.13	1,143.55	-544.44	2,042.89	2,001.49	41.400	49.345		
11,700.00	10,108.30	9,549.12	8,064.93	33.73	36.24	-9.09	1,203.67	-543.71	2,043.29	2,001.17	42.124	48.506		
11,800.00	10,108.57	9,643.08	8,063.51	35.14	37.77	-9.03	1,297.61	-542.58	2,044.72	2,001.62	43.097	47.444		
11,900.00	10,108.85	9,738.17	8,062.59	36.60	39.35	-9.04	1,392.68	-543.88	2,046.03	2,001.91	44.121	46.373		
12,000.00	10,109.13	9,845.38	8,061.35	38.09	41.15	-9.06	1,499.87	-545.87	2,047.62	2,002.40	45.217	45.284		
12,100.00	10,109.41	9,961.15	8,061.23	39.61	43.12	-9.15	1,615.56	-550.10	2,048.43	2,002.04	46.390	44.156		
12,200.00	10,109.69	10,049.38	8,061.16	41.15	44.64	-9.21	1,703.74	-553.03	2,049.17	2,001.67	47.497	43.143		
12,300.00	10,109.97	10,145.76	8,060.61	42.73	46.30	-9.25	1,800.08	-555.59	2,050.30	2,001.65	48.650	42.144		
12,400.00	10,110.24	10,259.48	8,060.12	44.32	48.27	-9.29	1,913.77	-558.05	2,051.20	2,001.32	49.882	41.121		
12,500.00	10,110.52	10,383.24	8,060.64	45.93	50.42	-9.31	2,037.52	-559.90	2,051.17	2,000.00	51.163	40.091		
12,600.00	10,110.80	10,489.54	8,061.94	47.56	52.28	-9.31	2,143.81	-560.74	2,050.22	1,997.82	52.400	39.126		
12,700.00	10,111.08	10,598.38	8,063.09	49.21	54.18	-9.26	2,252.63	-559.89	2,049.18	1,995.54	53.641	38.202		
12,800.00	10,111.36	10,731.61	8,066.66	50.87	56.51	-9.22	2,385.81	-559.06	2,046.43	1,991.45	54.974	37.225		
12,900.00	10,111.63	10,794.00	8,068.18	52.54	57.61	-9.22	2,448.18	-559.17	2,044.25	1,988.13	56.122	36.425		
12,959.77	10,111.80	10,830.27	8,068.51	53.55	58.25	-9.21	2,484.45	-559.19	2,043.85	1,987.04	56.805	35.980		
13,000.00	10,111.91	10,852.12	8,068.42	54.22	58.64	-9.20	2,506.30	-559.09	2,044.03	1,986.78	57.254	35.701		
13,100.00	10,112.19	10,925.15	8,066.94	55.92	59.93	-9.15	2,579.31	-558.24	2,045.87	1,987.45	58.422	35.019		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore:	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#1H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-MWD													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toeface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
13,200.00	10,112.47	11,081.91	8,064.93	57.62	62.70	-9.06	2,736.04	-556.58	2,047.33	1,987.47	59.867	34.198		
13,300.00	10,112.75	11,192.80	8,065.57	59.34	64.67	-8.98	2,846.90	-554.74	2,046.66	1,985.48	61.174	33.456		
13,400.00	10,113.03	11,295.46	8,066.67	61.06	66.49	-8.90	2,949.53	-552.40	2,045.38	1,982.93	62.457	32.749		
13,500.00	10,113.30	11,371.77	8,067.49	62.79	67.86	-8.89	3,025.83	-552.64	2,044.57	1,980.86	63.706	32.094		
13,502.82	10,113.31	11,373.52	8,067.49	62.84	67.89	-8.89	3,027.59	-552.68	2,044.57	1,980.82	63.741	32.076		
13,600.00	10,113.58	11,435.71	8,067.30	64.52	69.01	-8.92	3,089.74	-554.53	2,045.43	1,980.49	64.942	31.497		
13,700.00	10,113.86	11,546.69	8,066.55	66.27	71.01	-9.01	3,200.63	-559.07	2,046.88	1,980.49	66.392	30.830		
13,800.00	10,114.14	11,652.17	8,066.23	68.02	72.92	-9.09	3,306.05	-562.63	2,047.83	1,980.01	67.820	30.195		
13,900.00	10,114.42	11,755.57	8,065.73	69.77	74.79	-9.12	3,409.42	-564.94	2,048.80	1,979.58	69.227	29.596		
14,000.00	10,114.69	11,879.30	8,065.90	71.53	77.03	-9.13	3,533.14	-568.39	2,049.00	1,978.31	70.694	28.984		
14,100.00	10,114.97	12,011.12	8,067.70	73.28	79.41	-9.11	3,664.95	-566.74	2,047.84	1,975.67	72.168	28.376		
14,200.00	10,115.25	12,068.81	8,068.77	75.06	80.81	-9.09	3,742.63	-566.61	2,046.55	1,973.07	73.482	27.851		
14,247.59	10,115.38	12,118.44	8,068.93	75.90	81.35	-9.09	3,772.26	-566.52	2,046.34	1,972.25	74.083	27.622		
14,300.00	10,115.53	12,150.46	8,068.82	76.83	81.92	-9.08	3,804.28	-566.56	2,046.60	1,971.86	74.740	27.383		
14,400.00	10,115.81	12,210.12	8,067.80	78.61	83.01	-9.07	3,863.93	-567.02	2,048.56	1,972.58	75.983	26.961		
14,500.00	10,116.08	12,280.00	8,065.07	80.39	84.27	-9.07	3,933.74	-567.98	2,052.62	1,975.36	77.258	26.568		
14,600.00	10,116.36	12,325.08	8,062.37	82.17	85.09	-9.06	3,978.74	-568.62	2,058.61	1,980.22	78.396	26.259		
14,700.00	10,116.64	12,563.03	8,050.21	83.95	89.42	-9.04	4,216.24	-571.97	2,066.30	1,985.90	80.396	25.701		
14,800.00	10,116.92	12,629.02	8,049.72	85.74	90.62	-9.06	4,282.24	-573.17	2,067.49	1,985.78	81.710	25.303		
14,900.00	10,117.20	12,850.19	8,051.12	87.53	94.65	-9.08	4,503.34	-575.98	2,067.91	1,984.37	83.538	24.754		
15,000.00	10,117.48	12,908.81	8,052.95	89.33	95.73	-9.11	4,561.92	-577.12	2,065.20	1,980.31	84.896	24.326		
15,100.00	10,117.75	13,038.28	8,056.04	91.12	98.09	-9.16	4,691.33	-579.62	2,063.46	1,977.00	86.459	23.866		
15,200.00	10,118.03	13,107.97	8,058.05	92.92	99.36	-9.19	4,760.97	-581.05	2,061.05	1,973.19	87.860	23.458		
15,300.00	10,118.31	13,175.97	8,059.09	94.72	100.61	-9.21	4,828.95	-582.52	2,060.03	1,970.79	89.243	23.083		
15,312.96	10,118.35	13,184.59	8,059.14	94.95	100.77	-9.22	4,837.57	-582.71	2,060.02	1,970.60	89.421	23.037		
15,400.00	10,118.59	13,318.79	8,060.36	96.52	103.23	-9.28	4,971.72	-585.84	2,060.03	1,969.15	90.885	22.666		
15,500.00	10,118.87	13,382.78	8,061.53	98.33	104.40	-9.30	5,035.68	-587.21	2,058.67	1,966.40	92.271	22.311		
15,526.34	10,118.94	13,400.21	8,061.67	98.80	104.72	-9.31	5,053.11	-587.55	2,058.59	1,965.96	92.634	22.223		
15,600.00	10,119.14	13,448.91	8,061.63	100.13	105.61	-9.32	5,101.80	-588.41	2,058.96	1,965.32	93.637	21.989		
15,700.00	10,119.42	13,540.88	8,060.26	101.94	107.29	-9.33	5,193.74	-589.93	2,060.78	1,965.69	95.088	21.672		
15,800.00	10,119.70	13,733.17	8,064.12	103.75	110.83	-9.46	5,385.88	-595.60	2,058.83	1,961.85	96.979	21.230		
15,900.00	10,119.98	13,806.11	8,066.24	105.56	112.16	-9.49	5,458.77	-597.16	2,056.46	1,958.03	98.429	20.893		
16,000.00	10,120.26	13,881.00	8,067.14	107.37	113.54	-9.51	5,533.65	-598.46	2,055.62	1,955.76	99.861	20.585		
16,009.17	10,120.28	13,881.00	8,067.14	107.54	113.54	-9.51	5,533.65	-598.46	2,055.60	1,955.64	99.968	20.563		
16,100.00	10,120.54	13,940.78	8,066.85	109.19	114.63	-9.52	5,593.42	-599.25	2,056.33	1,955.12	101.209	20.318		
16,200.00	10,120.81	14,085.45	8,066.02	111.00	117.29	-9.51	5,738.07	-600.65	2,057.38	1,954.53	102.848	20.004		
16,261.83	10,120.98	14,133.47	8,066.34	112.12	118.17	-9.52	5,786.09	-601.20	2,057.17	1,953.45	103.727	19.833		
16,300.00	10,121.09	14,164.00	8,066.38	112.82	118.73	-9.52	5,816.62	-601.61	2,057.25	1,952.97	104.277	19.729		
16,400.00	10,121.37	14,232.03	8,065.85	114.63	119.98	-9.53	5,884.63	-602.76	2,058.42	1,952.76	105.661	19.481		
16,500.00	10,121.65	14,385.33	8,065.18	116.45	122.79	-9.53	6,037.91	-604.32	2,059.20	1,951.85	107.346	19.183		
16,600.00	10,121.93	14,519.00	8,066.56	118.27	125.23	-9.50	6,171.57	-603.93	2,058.44	1,949.56	108.882	18.905		
16,700.00	10,122.20	14,609.99	8,068.45	120.09	126.89	-9.41	6,262.49	-601.26	2,056.07	1,945.83	110.243	18.650		
16,800.00	10,122.48	14,684.49	8,069.07	121.91	128.24	-9.32	6,336.95	-598.66	2,054.82	1,943.27	111.555	18.420		
16,900.00	10,122.76	14,849.19	8,071.56	123.74	131.25	-9.19	6,501.56	-594.86	2,053.38	1,940.35	113.022	18.188		
17,000.00	10,123.04	14,935.93	8,074.79	125.56	132.83	-9.17	6,588.23	-594.75	2,049.84	1,935.36	114.481	17.905		
17,100.00	10,123.32	15,009.00	8,076.63	127.38	134.17	-9.16	6,661.28	-594.54	2,047.42	1,931.52	115.899	17.666		
17,200.00	10,123.59	15,081.76	8,077.43	129.21	135.50	-9.13	6,734.03	-593.95	2,046.33	1,929.05	117.279	17.448		
17,230.73	10,123.68	15,103.00	8,077.48	129.77	135.89	-9.12	6,755.27	-593.72	2,046.25	1,928.55	117.693	17.386		
17,300.00	10,123.87	15,152.14	8,077.23	131.03	136.79	-9.08	6,804.41	-593.09	2,046.56	1,927.95	118.617	17.254		
17,400.00	10,124.15	15,221.39	8,075.93	132.86	138.06	-9.03	6,873.63	-592.04	2,048.31	1,928.39	119.914	17.081		
17,500.00	10,124.43	15,293.97	8,073.45	134.69	139.39	-8.97	6,946.18	-590.72	2,051.52	1,930.34	121.186	16.929		
17,600.00	10,124.71	15,456.80	8,071.68	136.52	142.38	-8.97	7,108.94	-592.56	2,052.34	1,929.37	122.971	16.690		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#1H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
17,700.00	10,124.99	15,532.73	8,071.17	138.35	143.79	-9.01	7,184.84	-594.76	2,053.61	1,929.18	124.434	16.504		
17,800.00	10,125.26	15,664.77	8,069.64	140.18	146.23	-9.08	7,316.79	-598.90	2,055.59	1,929.42	126.174	16.292		
17,900.00	10,125.54	15,739.22	8,069.54	142.01	147.60	-9.15	7,391.18	-602.13	2,056.55	1,928.87	127.689	16.106		
18,000.00	10,125.82	15,812.51	8,068.49	143.84	148.96	-9.22	7,464.38	-605.41	2,058.83	1,929.65	129.182	15.937		
18,100.00	10,126.10	15,968.01	8,066.60	145.67	151.84	-9.35	7,619.72	-611.98	2,061.08	1,929.95	131.135	15.717		
18,200.00	10,126.38	16,042.00	8,066.63	147.50	153.21	-9.41	7,693.65	-614.88	2,061.85	1,929.19	132.653	15.543		
18,300.00	10,126.65	16,120.53	8,065.71	149.33	154.67	-9.47	7,772.13	-617.73	2,063.76	1,929.59	134.166	15.382		
18,400.00	10,126.93	16,267.08	8,065.07	151.16	157.37	-9.52	7,918.62	-621.20	2,064.49	1,928.52	135.970	15.183		
18,500.00	10,127.21	16,426.97	8,065.30	153.00	160.32	-9.51	8,078.50	-622.24	2,065.35	1,927.72	137.630	15.007		
18,600.00	10,127.49	16,508.93	8,067.04	154.83	161.82	-9.50	8,160.44	-622.22	2,063.34	1,924.24	139.096	14.834		
18,700.00	10,127.77	16,575.27	8,067.76	156.66	163.04	-9.48	8,226.77	-622.13	2,062.38	1,921.88	140.503	14.679		
18,706.87	10,127.79	16,579.75	8,067.77	156.79	163.13	-9.48	8,231.25	-622.12	2,062.38	1,921.78	140.597	14.669		
18,800.00	10,128.05	16,641.96	8,067.33	158.50	164.27	-9.46	8,293.46	-621.92	2,063.09	1,921.23	141.862	14.543		
18,900.00	10,128.32	16,810.00	8,065.80	160.33	167.36	-9.37	8,461.47	-620.70	2,064.73	1,921.27	143.458	14.393		
19,000.00	10,128.60	16,909.16	8,067.59	162.17	169.18	-9.33	8,560.60	-619.66	2,062.91	1,918.01	144.901	14.237		
19,100.00	10,128.88	16,996.92	8,068.91	164.01	170.79	-9.28	8,648.35	-618.72	2,061.39	1,915.07	146.322	14.088		
19,200.00	10,129.16	17,070.01	8,069.20	165.84	172.13	-9.24	8,721.43	-617.58	2,060.88	1,913.20	147.680	13.955		
19,239.36	10,129.27	19,239.36	8,070.25	166.57	211.94	-9.20	8,797.31	-616.60	2,060.06	1,895.67	164.398	12.531		
19,300.00	10,129.44	17,242.93	8,073.19	167.68	175.30	-9.17	8,894.28	-615.95	2,058.09	1,908.85	149.241	13.790		
19,400.00	10,129.71	17,326.93	8,075.81	169.52	176.85	-9.14	8,978.23	-615.20	2,055.02	1,904.33	150.688	13.638		
19,500.00	10,129.99	17,401.30	8,077.25	171.35	178.21	-9.08	9,052.58	-613.78	2,052.96	1,900.90	152.067	13.500		
19,600.00	10,130.27	17,503.63	8,077.73	173.19	180.08	-8.97	9,154.84	-610.44	2,052.14	1,898.76	153.383	13.379		
19,700.00	10,130.55	17,612.81	8,080.06	175.03	182.08	-8.91	9,263.99	-609.00	2,049.92	1,895.11	154.819	13.241		
19,800.00	10,130.83	17,703.51	8,081.48	176.87	183.75	-8.86	9,354.67	-607.78	2,048.30	1,892.07	156.227	13.111		
19,900.00	10,131.11	17,787.63	8,082.47	178.71	185.29	-8.82	9,438.78	-606.83	2,047.12	1,889.49	157.627	12.987		
19,973.29	10,131.31	17,846.68	8,082.65	180.05	186.38	-8.79	9,497.82	-606.23	2,046.89	1,888.25	158.641	12.903		
20,000.00	10,131.38	17,869.89	8,082.64	180.55	186.81	-8.78	9,521.04	-606.10	2,046.91	1,887.89	159.017	12.872		
20,100.00	10,131.66	17,962.45	8,082.40	182.38	188.51	-8.76	9,613.59	-606.39	2,047.35	1,886.87	160.481	12.758		
20,200.00	10,131.94	18,063.46	8,082.18	184.22	190.38	-8.76	9,714.60	-607.33	2,047.85	1,885.84	162.006	12.641		
20,221.81	10,132.00	18,085.27	8,082.14	184.55	190.78	-8.76	9,736.41	-607.55	2,047.95	1,885.71	162.247	12.622		

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.000 sigma
Reference Wellbore:	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#31H - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 8937-MWD-IFR1-MS												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N/S (usft)	Offset Wellbore Centre E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	29.20	-29.20	0.00	0.05	-168.04	-498.82	-105.62	509.88				
100.00	100.00	70.80	70.80	0.08	0.13	-168.04	-498.82	-105.62	509.88	509.67	.206	2,477.969	
200.00	200.00	170.80	170.80	0.30	0.31	-168.04	-498.82	-105.62	509.88	509.27	.610	836.192	
300.00	300.00	270.80	270.80	0.53	0.49	-168.04	-498.82	-105.62	509.88	508.87	1.014	502.958	
400.00	400.00	370.80	370.80	0.75	0.66	-168.04	-498.82	-105.62	509.88	508.46	1.418	359.637	
500.00	500.00	470.80	470.80	0.98	0.84	-168.04	-498.82	-105.62	509.88	508.06	1.822	279.883	
600.00	600.00	570.80	570.80	1.20	1.02	-168.04	-498.82	-105.62	509.88	507.65	2.226	229.081	
700.00	700.00	670.80	670.80	1.43	1.20	-168.04	-498.82	-105.62	509.88	507.25	2.630	193.888	
800.00	800.00	770.80	770.80	1.65	1.38	-168.04	-498.82	-105.62	509.88	506.85	3.034	168.069	
900.00	900.00	870.80	870.80	1.88	1.56	-168.04	-498.82	-105.62	509.88	506.44	3.438	148.318	
1,000.00	1,000.00	970.80	970.80	2.10	1.74	-168.04	-498.82	-105.62	509.88	506.04	3.842	132.721	
1,100.00	1,100.00	1,070.80	1,070.80	2.33	1.92	-168.04	-498.82	-105.62	509.88	505.63	4.246	120.092	
1,200.00	1,200.00	1,170.80	1,170.80	2.55	2.10	-168.04	-498.82	-105.62	509.88	505.23	4.650	109.657	
1,300.00	1,300.00	1,270.80	1,270.80	2.78	2.28	-168.04	-498.82	-105.62	509.88	504.83	5.054	100.891	
1,400.00	1,400.00	1,370.80	1,370.80	3.00	2.46	-168.04	-498.82	-105.62	509.88	504.42	5.458	93.423	
1,500.00	1,500.00	1,470.80	1,470.80	3.23	2.64	-168.04	-498.82	-105.62	509.88	504.02	5.862	86.984	
1,600.00	1,600.00	1,570.80	1,570.80	3.45	2.82	-168.04	-498.82	-105.62	509.88	503.61	6.266	81.376	
1,700.00	1,700.00	1,670.80	1,670.80	3.67	2.99	-168.04	-498.82	-105.62	509.88	503.21	6.670	76.447	
1,800.00	1,800.00	1,770.80	1,770.80	3.90	3.17	-168.04	-498.82	-105.62	509.88	502.81	7.074	72.081	
1,900.00	1,900.00	1,870.80	1,870.80	4.12	3.35	-168.04	-498.82	-105.62	509.88	502.40	7.478	68.186	
2,000.00	2,000.00	1,970.80	1,970.80	4.35	3.53	-168.04	-498.82	-105.62	509.88	502.00	7.882	64.691	
2,100.00	2,100.00	2,070.80	2,070.80	4.57	3.71	-168.04	-498.82	-105.62	509.88	501.59	8.286	61.537	
2,200.00	2,200.00	2,170.80	2,170.80	4.80	3.89	-168.04	-498.82	-105.62	509.88	501.19	8.690	58.676	
2,300.00	2,300.00	2,270.80	2,270.80	5.02	4.07	-168.04	-498.82	-105.62	509.88	500.79	9.094	56.069	
2,400.00	2,400.00	2,370.80	2,370.80	5.25	4.25	-168.04	-498.82	-105.62	509.88	500.38	9.498	53.684	
2,500.00	2,500.00	2,470.80	2,470.80	5.47	4.43	-168.04	-498.82	-105.62	509.88	499.98	9.902	51.494	
2,600.00	2,600.00	2,570.80	2,570.80	5.70	4.61	-168.04	-498.82	-105.62	509.88	499.57	10.306	49.475	
2,700.00	2,700.00	2,670.80	2,670.80	5.92	4.79	-168.04	-498.82	-105.62	509.88	499.17	10.710	47.609	
2,800.00	2,800.00	2,770.80	2,770.80	6.15	4.97	-168.04	-498.82	-105.62	509.88	498.77	11.114	45.878	
2,900.00	2,900.00	2,870.80	2,870.80	6.37	5.15	-168.04	-498.82	-105.62	509.88	498.36	11.518	44.269	
3,000.00	3,000.00	2,970.80	2,970.80	6.60	5.32	-168.04	-498.82	-105.62	509.88	497.96	11.922	42.769	
3,100.00	3,100.00	3,070.80	3,070.80	6.82	5.50	-168.04	-498.82	-105.62	509.88	497.55	12.326	41.367	
3,200.00	3,200.00	3,170.80	3,170.80	7.05	5.68	-168.04	-498.82	-105.62	509.88	497.15	12.730	40.054	
3,300.00	3,300.00	3,270.80	3,270.80	7.27	5.86	-168.04	-498.82	-105.62	509.88	496.75	13.134	38.822	
3,400.00	3,400.00	3,370.80	3,370.80	7.50	6.04	-168.04	-498.82	-105.62	509.88	496.34	13.538	37.664	
3,500.00	3,500.00	3,470.80	3,470.80	7.72	6.22	-168.04	-498.82	-105.62	509.88	495.94	13.942	36.572	
3,600.00	3,600.00	3,570.80	3,570.80	7.95	6.40	-168.04	-498.82	-105.62	509.88	495.53	14.346	35.542	
3,700.00	3,700.00	3,670.80	3,670.80	8.17	6.58	-168.04	-498.82	-105.62	509.88	495.13	14.750	34.569	
3,800.00	3,800.00	3,770.80	3,770.80	8.40	6.76	-168.04	-498.82	-105.62	509.88	494.73	15.154	33.647	
3,900.00	3,900.00	3,870.80	3,870.80	8.62	6.94	-168.04	-498.82	-105.62	509.88	494.32	15.558	32.773	
4,000.00	4,000.00	3,970.80	3,970.80	8.84	7.12	-168.04	-498.82	-105.62	509.88	493.92	15.962	31.944	
4,100.00	4,100.00	4,070.80	4,070.80	9.07	7.30	-168.04	-498.82	-105.62	509.88	493.51	16.366	31.155	
4,200.00	4,200.00	4,170.80	4,170.80	9.29	7.48	-168.04	-498.82	-105.62	509.88	493.11	16.770	30.405	
4,300.00	4,300.00	4,270.80	4,270.80	9.52	7.65	-168.04	-498.82	-105.62	509.88	492.71	17.174	29.690	
4,400.00	4,400.00	4,370.80	4,370.80	9.74	7.83	-168.04	-498.82	-105.62	509.88	492.30	17.578	29.007	
4,500.00	4,500.00	4,470.80	4,470.80	9.97	8.01	-168.04	-498.82	-105.62	509.88	491.90	17.982	28.355	
4,600.00	4,599.99	4,570.79	4,570.79	10.16	8.19	-6.97	-498.82	-105.62	508.88	490.22	18.357	27.705	
4,700.00	4,699.91	4,670.71	4,670.71	10.33	8.37	-7.03	-498.82	-105.62	504.68	485.98	18.706	26.980	
4,800.00	4,799.69	4,770.49	4,770.49	10.51	8.55	-7.13	-498.82	-105.62	498.19	479.14	19.057	26.142	
4,900.00	4,899.27	4,870.07	4,870.07	10.68	8.73	-7.28	-498.82	-105.62	489.12	469.71	19.409	25.200	
5,000.00	4,998.57	4,969.37	4,969.37	10.86	8.91	-7.48	-498.82	-105.62	477.46	457.69	19.764	24.158	
5,100.00	5,097.54	5,068.34	5,068.34	11.05	9.08	-7.74	-498.82	-105.62	463.23	443.11	20.120	23.024	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#31H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 8937-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toeface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,196.30	5,167.10	5,167.10	11.24	9.26	-8.01	-498.82	-105.62	447.73	427.26	20.477	21.865		
5,300.00	5,295.07	5,265.87	5,265.87	11.45	9.44	-8.30	-498.82	-105.62	432.24	411.41	20.836	20.745		
5,400.00	5,393.84	5,364.64	5,364.64	11.66	9.62	-8.61	-498.82	-105.62	416.77	395.57	21.198	19.660		
5,500.00	5,492.61	5,463.41	5,463.41	11.88	9.79	-8.95	-498.82	-105.62	401.30	379.74	21.563	18.611		
5,600.00	5,591.38	5,562.18	5,562.18	12.11	9.97	-9.31	-498.82	-105.62	385.85	363.92	21.931	17.594		
5,700.00	5,690.15	5,660.95	5,660.95	12.34	10.15	-9.70	-498.82	-105.62	370.42	348.12	22.300	16.610		
5,800.00	5,788.92	5,759.72	5,759.72	12.58	10.32	-10.12	-498.82	-105.62	355.00	332.33	22.673	15.658		
5,900.00	5,887.69	5,858.49	5,858.49	12.83	10.50	-10.59	-498.82	-105.62	339.61	316.56	23.048	14.735		
6,000.00	5,986.46	5,957.26	5,957.26	13.08	10.68	-11.09	-498.82	-105.62	324.24	300.81	23.425	13.841		
6,100.00	6,085.22	6,056.02	6,056.02	13.34	10.85	-11.65	-498.82	-105.62	308.89	285.09	23.805	12.976		
6,200.00	6,183.99	6,154.79	6,154.79	13.60	11.03	-12.27	-498.82	-105.62	293.58	269.39	24.188	12.137		
6,300.00	6,282.76	6,253.56	6,253.56	13.87	11.21	-12.95	-498.82	-105.62	278.31	253.73	24.574	11.325		
6,400.00	6,381.53	6,352.33	6,352.33	14.14	11.39	-13.72	-498.82	-105.62	263.07	238.11	24.962	10.539		
6,500.00	6,480.30	6,451.10	6,451.10	14.42	11.56	-14.57	-498.82	-105.62	247.89	222.54	25.354	9.777		
6,600.00	6,579.07	6,549.87	6,549.87	14.70	11.74	-15.47	-498.82	-105.62	232.77	207.02	25.750	9.040		
6,700.00	6,677.84	6,648.64	6,648.64	14.98	11.92	-16.64	-498.82	-105.62	217.73	191.58	26.150	8.326		
6,800.00	6,776.61	6,747.41	6,747.41	15.27	12.09	-17.91	-498.82	-105.62	202.77	176.22	26.556	7.636		
6,900.00	6,875.37	6,846.17	6,846.17	15.56	12.27	-19.37	-498.82	-105.62	187.93	160.96	26.968	6.969		
7,000.00	6,974.14	6,944.94	6,944.94	15.85	12.45	-21.09	-498.82	-105.62	173.23	145.84	27.389	6.325		
7,100.00	7,072.91	7,043.71	7,043.71	16.15	12.62	-23.11	-498.82	-105.62	158.71	130.89	27.820	5.705		
7,200.00	7,171.68	7,142.48	7,142.48	16.45	12.80	-25.55	-498.82	-105.62	144.42	116.15	28.266	5.109		
7,300.00	7,270.45	7,241.25	7,241.25	16.75	12.98	-28.50	-498.82	-105.62	130.45	101.71	28.733	4.540		
7,400.00	7,369.22	7,340.02	7,340.02	17.05	13.16	-32.15	-498.82	-105.62	116.89	87.67	29.228	3.999		
7,500.00	7,467.99	7,438.79	7,438.79	17.36	13.33	-36.72	-498.82	-105.62	103.93	74.17	29.762	3.492		
7,600.00	7,566.76	7,537.56	7,537.56	17.67	13.51	-42.54	-498.82	-105.62	91.81	61.46	30.351	3.025		
7,700.00	7,665.53	7,636.33	7,636.33	17.98	13.69	-50.00	-498.82	-105.62	80.90	49.89	31.007	2.609		
7,800.00	7,764.29	7,735.09	7,735.09	18.29	13.86	-59.52	-498.82	-105.62	71.77	40.04	31.731	2.262		
7,900.00	7,863.06	7,833.86	7,833.86	18.61	14.04	-71.33	-498.82	-105.62	65.16	32.68	32.477	2.006		
8,000.00	7,961.83	7,932.63	7,932.63	18.93	14.22	-85.01	-498.82	-105.62	61.89	28.76	33.133	1.868		
8,034.86	7,996.26	7,967.06	7,967.06	19.04	14.28	-90.00	-498.82	-105.62	61.65	28.34	33.316	1.851	CC, ES, SF	
8,100.00	8,060.60	8,031.40	8,031.40	19.24	14.40	-99.27	-498.82	-105.62	62.49	28.91	33.579	1.861		
8,200.00	8,159.37	8,130.17	8,130.17	19.56	14.57	-112.48	-498.82	-105.62	66.85	33.03	33.812	1.977		
8,300.00	8,258.14	8,228.94	8,228.94	19.89	14.75	-123.60	-498.82	-105.62	74.31	40.37	33.939	2.189		
8,400.00	8,356.91	8,327.71	8,327.71	20.21	14.93	-132.46	-498.82	-105.62	84.05	49.98	34.062	2.467		
8,500.00	8,455.68	8,426.48	8,426.48	20.53	15.10	-139.38	-498.82	-105.62	95.37	61.14	34.226	2.786		
8,544.88	8,500.00	8,470.80	8,470.80	20.68	15.18	-141.96	-498.82	-105.62	100.83	66.51	34.317	2.938		
8,600.00	8,554.51	8,525.31	8,525.31	20.86	15.28	-144.71	-498.82	-105.62	107.46	73.02	34.444	3.120		
8,700.00	8,653.66	8,624.46	8,624.46	21.16	15.46	-148.41	-498.82	-105.62	118.27	83.55	34.720	3.407		
8,800.00	8,753.13	8,723.93	8,723.93	21.44	15.64	-150.91	-498.82	-105.62	127.19	92.16	35.034	3.631		
8,900.00	8,852.83	8,823.63	8,823.63	21.69	15.82	-152.56	-498.82	-105.62	133.99	98.62	35.374	3.788		
9,000.00	8,952.69	8,923.49	8,923.49	21.92	15.99	-153.56	-498.82	-105.62	138.54	102.81	35.730	3.877		
9,100.00	9,052.66	9,023.46	9,023.46	22.13	16.17	-154.02	-498.82	-105.62	140.77	104.67	36.099	3.899		
9,144.88	9,097.54	9,068.34	9,068.34	22.21	16.25	44.83	-498.82	-105.62	141.00	104.74	36.267	3.888		
9,200.00	9,152.66	9,123.46	9,123.46	22.31	16.35	44.83	-498.82	-105.62	141.00	104.53	36.475	3.866		
9,300.00	9,252.66	9,223.46	9,223.46	22.49	16.53	44.83	-498.82	-105.62	141.00	104.15	36.851	3.826		
9,333.33	9,285.99	9,256.79	9,256.79	22.54	16.59	44.83	-498.82	-105.62	141.00	104.03	36.977	3.813		
9,400.00	9,352.66	9,323.46	9,323.46	22.66	16.71	44.83	-498.82	-105.62	141.00	103.78	37.228	3.788		
9,500.00	9,452.66	9,423.46	9,423.46	22.84	16.89	44.83	-498.82	-105.62	141.00	103.40	37.606	3.750		
9,505.24	9,457.90	9,428.70	9,428.70	22.85	16.90	44.83	-498.82	-105.62	141.00	103.38	37.626	3.748		
9,515.72	9,468.38	9,439.18	9,439.18	22.87	16.92	44.83	-498.82	-105.62	141.00	103.34	37.665	3.744		
9,550.00	9,502.64	9,322.14	9,281.56	22.93	16.88	6.67	-371.13	-179.34	298.17	262.35	35.817	8.325		
9,600.00	9,552.41	9,345.08	9,297.02	22.98	16.93	4.18	-356.45	-187.82	327.93	292.15	35.784	9.164		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#31H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 8937-MWD-IFR1-MS													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,650.00	9,601.67	9,367.43	9,311.27	23.02	16.98	2.13	-341.55	-196.42	358.98	321.23	35.749	9.986		
9,700.00	9,650.10	9,389.23	9,324.39	23.03	17.03	0.41	-326.46	-205.13	385.19	349.48	35.715	10.785		
9,750.00	9,697.41	9,410.56	9,336.43	23.01	17.08	-1.05	-311.23	-213.93	412.51	376.82	35.683	11.560		
9,800.00	9,743.31	9,431.45	9,347.46	22.98	17.13	-2.31	-295.86	-222.80	438.85	403.19	35.656	12.308		
9,850.00	9,787.51	9,451.94	9,357.51	22.92	17.18	-3.40	-280.40	-231.72	464.16	428.52	35.637	13.025		
9,900.00	9,829.74	9,472.08	9,366.64	22.86	17.22	-4.37	-264.85	-240.70	488.40	452.77	35.627	13.708		
9,950.00	9,869.75	9,491.90	9,374.87	22.78	17.27	-5.23	-249.24	-249.72	511.51	475.88	35.631	14.356		
10,000.00	9,907.29	9,508.14	9,414.00	22.70	17.74	-13.39	-85.65	-344.16	590.21	553.65	36.555	16.146		
10,050.00	9,942.11	9,526.14	9,414.00	22.61	17.74	-13.21	-85.65	-344.16	599.06	562.68	36.376	16.468		
10,100.00	9,974.02	9,544.14	9,414.00	22.53	17.74	-13.02	-85.65	-344.16	608.18	571.94	36.242	16.781		
10,150.00	10,002.81	9,562.14	9,414.00	22.45	17.74	-12.83	-85.65	-344.16	617.51	581.35	36.160	17.077		
10,200.00	10,028.30	9,580.14	9,414.00	22.38	17.74	-12.63	-85.65	-344.16	626.99	590.86	36.133	17.352		
10,250.00	10,050.35	9,598.14	9,414.00	22.32	17.74	-12.44	-85.65	-344.16	636.55	600.39	36.162	17.603		
10,300.00	10,068.80	9,616.14	9,414.00	22.29	17.74	-12.26	-85.65	-344.16	646.13	609.89	36.246	17.826		
10,350.00	10,083.55	9,634.14	9,414.00	22.27	17.74	-12.07	-85.65	-344.16	655.67	619.29	36.383	18.022		
10,400.00	10,094.51	9,652.14	9,414.00	22.29	17.74	-11.89	-85.65	-344.16	665.12	628.55	36.568	18.188		
10,450.00	10,101.81	9,669.14	9,414.00	22.33	17.74	-11.72	-85.65	-344.16	674.42	637.62	36.797	18.328		
10,500.00	10,104.81	9,716.78	9,414.03	22.42	17.82	-12.77	-58.96	-359.19	682.91	645.83	37.076	18.419		
10,513.95	10,105.00	9,730.78	9,414.04	22.45	17.85	-13.27	-46.65	-365.87	684.74	647.58	37.158	18.428		
10,600.00	10,105.24	9,820.38	9,414.12	22.72	18.09	-16.43	33.58	-405.74	695.52	657.82	37.699	18.449		
10,700.00	10,105.52	9,931.15	9,414.22	23.20	18.40	-19.66	135.95	-447.96	708.06	669.70	38.369	18.454		
10,800.00	10,105.79	10,048.40	9,414.33	23.81	18.74	-22.29	247.52	-483.90	719.36	680.29	39.067	18.413		
10,900.00	10,106.07	10,171.02	9,414.44	24.56	19.10	-24.23	366.93	-511.60	728.30	688.53	39.773	18.312		
11,000.00	10,106.35	10,297.48	9,414.56	25.42	19.49	-25.41	492.10	-529.36	734.05	693.60	40.457	18.144		
11,100.00	10,106.63	10,425.94	9,414.67	26.38	19.88	-25.79	620.35	-536.02	738.09	695.00	41.089	17.914		
11,200.00	10,106.91	10,554.36	9,414.79	27.43	20.29	-25.37	748.63	-531.18	734.25	692.61	41.642	17.632		
11,216.82	10,106.95	10,575.81	9,414.81	27.62	20.36	-25.22	770.00	-529.26	733.57	691.84	41.729	17.579		
11,300.00	10,107.18	10,625.08	9,414.86	28.56	21.41	-25.80	819.47	-537.98	736.52	692.95	43.574	16.903		
11,400.00	10,107.46	10,725.08	9,414.95	29.76	22.20	-25.80	919.47	-538.96	736.74	691.88	44.858	16.424		
11,500.00	10,107.74	10,825.08	9,415.04	31.03	23.00	-25.80	1,019.46	-539.94	736.95	690.77	46.174	15.960		
11,600.00	10,108.02	10,925.08	9,415.13	32.35	23.80	-25.80	1,119.46	-540.92	737.16	689.64	47.519	15.513		
11,700.00	10,108.30	11,025.08	9,415.22	33.73	24.61	-25.80	1,219.45	-541.90	737.38	688.49	48.890	15.082		
11,800.00	10,108.57	11,125.08	9,415.31	35.14	25.42	-25.80	1,319.45	-542.88	737.59	687.30	50.286	14.668		
11,900.00	10,108.85	11,225.08	9,415.40	36.60	26.23	-25.80	1,419.44	-543.86	737.80	686.10	51.706	14.269		
12,000.00	10,109.13	11,325.08	9,415.49	38.09	27.04	-25.80	1,519.44	-544.85	738.02	684.87	53.147	13.886		
12,100.00	10,109.41	11,425.08	9,415.58	39.61	27.86	-25.80	1,619.43	-545.83	738.23	683.62	54.607	13.519		
12,200.00	10,109.69	11,525.08	9,415.67	41.15	28.67	-25.80	1,719.43	-546.81	738.44	682.36	56.086	13.166		
12,300.00	10,109.97	11,625.08	9,415.76	42.73	29.49	-25.80	1,819.42	-547.79	738.66	681.08	57.581	12.828		
12,400.00	10,110.24	11,725.08	9,415.85	44.32	30.31	-25.81	1,919.42	-548.77	738.87	679.78	59.092	12.504		
12,500.00	10,110.52	11,825.08	9,415.94	45.93	31.12	-25.81	2,019.41	-549.75	739.09	678.47	60.618	12.193		
12,600.00	10,110.80	11,925.08	9,416.03	47.56	31.94	-25.81	2,119.41	-550.73	739.30	677.14	62.157	11.894		
12,700.00	10,111.08	12,025.08	9,416.13	49.21	32.76	-25.81	2,219.40	-551.71	739.51	675.80	63.708	11.608		
12,800.00	10,111.36	12,125.08	9,416.22	50.87	33.57	-25.81	2,319.40	-552.69	739.73	674.46	65.271	11.333		
12,900.00	10,111.63	12,225.08	9,416.31	52.54	34.39	-25.81	2,419.39	-553.67	739.94	673.10	66.844	11.070		
13,000.00	10,111.91	12,325.08	9,416.40	54.22	35.21	-25.81	2,519.39	-554.65	740.15	671.73	68.428	10.817		
13,100.00	10,112.19	12,425.08	9,416.49	55.92	36.03	-25.81	2,619.38	-555.63	740.37	670.35	70.020	10.574		
13,200.00	10,112.47	12,525.08	9,416.58	57.62	36.84	-25.81	2,719.38	-556.61	740.58	668.96	71.621	10.340		
13,300.00	10,112.75	12,625.08	9,416.67	59.34	37.66	-25.81	2,819.37	-557.59	740.80	667.56	73.230	10.116		
13,400.00	10,113.03	12,725.07	9,416.76	61.06	38.48	-25.81	2,919.37	-558.57	741.01	666.16	74.847	9.900		
13,500.00	10,113.30	12,825.07	9,416.85	62.79	39.30	-25.82	3,019.36	-559.55	741.22	664.75	76.470	9.693		
13,600.00	10,113.58	12,925.07	9,416.94	64.52	40.12	-25.82	3,119.36	-560.53	741.44	663.34	78.100	9.493		
13,700.00	10,113.86	13,025.07	9,417.03	66.27	40.94	-25.82	3,219.35	-561.51	741.65	661.91	79.737	9.301		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#31H - OH - OH														Offset Site Error: 0.00 usft	
Survey Program: 8937-MWD+IFR1+MS														Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
13,800.00	10,114.14	13,125.07	9,417.12	68.02	41.75	-25.82	3,319.35	-562.49	741.86	660.49	81.378	9.116			
13,900.00	10,114.42	13,225.07	9,417.21	69.77	42.57	-25.82	3,419.34	-563.47	742.08	659.05	83.025	8.938			
14,000.00	10,114.69	13,325.07	9,417.31	71.53	43.39	-25.82	3,519.34	-564.45	742.29	657.61	84.678	8.766			
14,100.00	10,114.97	13,425.07	9,417.40	73.29	44.21	-25.82	3,619.33	-565.43	742.50	656.17	86.334	8.600			
14,200.00	10,115.25	13,525.07	9,417.49	75.06	45.03	-25.82	3,719.33	-566.41	742.72	654.72	87.996	8.440			
14,300.00	10,115.53	13,625.07	9,417.58	76.83	45.85	-25.82	3,819.32	-567.39	742.93	653.27	89.661	8.286			
14,400.00	10,115.81	13,725.07	9,417.67	78.61	46.67	-25.82	3,919.32	-568.37	743.15	651.82	91.330	8.137			
14,500.00	10,116.08	13,825.07	9,417.76	80.39	47.49	-25.82	4,019.31	-569.36	743.36	650.36	93.004	7.993			
14,600.00	10,116.36	13,925.07	9,417.85	82.17	48.30	-25.82	4,119.31	-570.34	743.57	648.89	94.680	7.854			
14,700.00	10,116.64	14,025.07	9,417.94	83.95	49.12	-25.83	4,219.30	-571.32	743.79	647.43	96.360	7.719			
14,800.00	10,116.92	14,125.07	9,418.03	85.74	49.94	-25.83	4,319.30	-572.30	744.00	645.96	98.043	7.589			
14,900.00	10,117.20	14,225.07	9,418.12	87.53	50.76	-25.83	4,419.29	-573.28	744.21	644.48	99.729	7.462			
15,000.00	10,117.48	14,325.07	9,418.21	89.33	51.58	-25.83	4,519.29	-574.26	744.43	643.01	101.418	7.340			
15,100.00	10,117.75	14,425.07	9,418.30	91.12	52.40	-25.83	4,619.28	-575.24	744.64	641.53	103.109	7.222			
15,200.00	10,118.03	14,525.07	9,418.39	92.92	53.22	-25.83	4,719.28	-576.22	744.85	640.05	104.803	7.107			
15,300.00	10,118.31	14,625.07	9,418.49	94.72	54.04	-25.83	4,819.27	-577.20	745.07	638.57	106.499	6.996			
15,400.00	10,118.59	14,725.07	9,418.58	96.52	54.86	-25.83	4,919.27	-578.18	745.28	637.08	108.198	6.888			
15,500.00	10,118.87	14,825.07	9,418.67	98.33	55.68	-25.83	5,019.26	-579.16	745.50	635.60	109.899	6.783			
15,600.00	10,119.14	14,925.07	9,418.76	100.13	56.49	-25.83	5,119.26	-580.14	745.71	634.11	111.602	6.682			
15,700.00	10,119.42	15,025.07	9,418.85	101.94	57.31	-25.83	5,219.25	-581.12	745.92	632.62	113.307	6.583			
15,800.00	10,119.70	15,125.07	9,418.94	103.75	58.13	-25.84	5,319.25	-582.10	746.14	631.12	115.013	6.487			
15,900.00	10,119.98	15,225.07	9,419.03	105.56	58.95	-25.84	5,419.24	-583.08	746.35	629.63	116.722	6.394			
16,000.00	10,120.26	15,325.07	9,419.12	107.37	59.77	-25.84	5,519.24	-584.06	746.56	628.13	118.432	6.304			
16,100.00	10,120.54	15,425.07	9,419.21	109.19	60.59	-25.84	5,619.23	-585.04	746.78	626.63	120.144	6.216			
16,200.00	10,120.81	15,525.07	9,419.30	111.00	61.41	-25.84	5,719.23	-586.02	746.99	625.13	121.857	6.130			
16,300.00	10,121.09	15,625.07	9,419.39	112.82	62.23	-25.84	5,819.22	-587.00	747.21	623.63	123.572	6.047			
16,400.00	10,121.37	15,725.07	9,419.48	114.63	63.05	-25.84	5,919.22	-587.98	747.42	622.13	125.288	5.966			
16,500.00	10,121.65	15,825.07	9,419.57	116.45	63.87	-25.84	6,019.21	-588.96	747.63	620.63	127.006	5.887			
16,600.00	10,121.93	15,925.07	9,419.67	118.27	64.69	-25.84	6,119.21	-589.94	747.85	619.12	128.725	5.810			
16,700.00	10,122.20	16,025.07	9,419.76	120.09	65.51	-25.84	6,219.20	-590.92	748.06	617.62	130.445	5.735			
16,800.00	10,122.48	16,125.07	9,419.85	121.91	66.33	-25.84	6,319.20	-591.90	748.27	616.11	132.166	5.662			
16,900.00	10,122.76	16,225.07	9,419.94	123.74	67.14	-25.84	6,419.19	-592.88	748.49	614.60	133.889	5.590			
17,000.00	10,123.04	16,325.07	9,420.03	125.56	67.96	-25.85	6,519.19	-593.87	748.70	613.09	135.613	5.521			
17,100.00	10,123.32	16,425.07	9,420.12	127.38	68.78	-25.85	6,619.18	-594.85	748.92	611.58	137.337	5.453			
17,200.00	10,123.59	16,525.07	9,420.21	129.21	69.60	-25.85	6,719.18	-595.83	749.13	610.07	139.063	5.387			
17,300.00	10,123.87	16,625.07	9,420.30	131.03	70.42	-25.85	6,819.17	-596.81	749.34	608.55	140.790	5.322			
17,400.00	10,124.15	16,725.07	9,420.39	132.86	71.24	-25.85	6,919.17	-597.79	749.56	607.04	142.518	5.259			
17,500.00	10,124.43	16,825.07	9,420.48	134.69	72.06	-25.85	7,019.16	-598.77	749.77	605.52	144.246	5.198			
17,600.00	10,124.71	16,925.07	9,420.57	136.52	72.88	-25.85	7,119.15	-599.75	749.98	604.01	145.976	5.138			
17,700.00	10,124.99	17,025.07	9,420.66	138.35	73.70	-25.85	7,219.15	-600.73	750.20	602.49	147.706	5.079			
17,800.00	10,125.26	17,125.07	9,420.75	140.18	74.52	-25.85	7,319.14	-601.71	750.41	600.97	149.438	5.022			
17,900.00	10,125.54	17,225.06	9,420.85	142.01	75.34	-25.85	7,419.14	-602.69	750.62	599.45	151.170	4.965			
18,000.00	10,125.82	17,325.06	9,420.94	143.84	76.16	-25.85	7,519.13	-603.67	750.84	597.94	152.902	4.911			
18,100.00	10,126.10	17,425.06	9,421.03	145.67	76.98	-25.86	7,619.13	-604.65	751.05	596.42	154.636	4.857			
18,200.00	10,126.38	17,525.06	9,421.12	147.50	77.79	-25.86	7,719.12	-605.63	751.27	594.90	156.370	4.804			
18,300.00	10,126.65	17,625.06	9,421.21	149.33	78.61	-25.86	7,819.12	-606.61	751.48	593.37	158.105	4.753			
18,400.00	10,126.93	17,725.06	9,421.30	151.16	79.43	-25.86	7,919.11	-607.59	751.69	591.85	159.841	4.703			
18,500.00	10,127.21	17,825.06	9,421.39	153.00	80.25	-25.86	8,019.11	-608.57	751.91	590.33	161.577	4.654			
18,600.00	10,127.49	17,925.06	9,421.48	154.83	81.07	-25.86	8,119.10	-609.55	752.12	588.81	163.314	4.605			
18,700.00	10,127.77	18,025.06	9,421.57	156.66	81.89	-25.86	8,219.10	-610.53	752.33	587.28	165.051	4.558			
18,800.00	10,128.05	18,125.06	9,421.66	158.50	82.71	-25.86	8,319.09	-611.51	752.55	585.76	166.789	4.512			
18,900.00	10,128.32	18,225.06	9,421.75	160.33	83.53	-25.86	8,419.09	-612.49	752.76	584.23	168.528	4.467			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM.	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.000 sigma
Reference Wellbore:	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#31H - OH - OH													Offset Site Error:
Survey Program: 8937-MWD+IFR1+MS													Offset Well Error:
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,000.00	10,128.60	18,325.06	9,421.84	162.17	84.35	-25.86	8,519.08	-613.47	752.98	582.71	170.267	4.422	
19,100.00	10,128.88	18,425.06	9,421.93	164.01	85.17	-25.86	8,619.08	-614.45	753.19	581.18	172.007	4.379	
19,200.00	10,129.16	18,525.06	9,422.02	165.84	85.99	-25.86	8,719.07	-615.43	753.40	579.66	173.747	4.336	
19,300.00	10,129.44	18,625.06	9,422.12	167.68	86.81	-25.87	8,819.07	-616.41	753.62	578.13	175.488	4.294	
19,400.00	10,129.71	18,725.06	9,422.21	169.52	87.63	-25.87	8,919.06	-617.40	753.83	576.60	177.229	4.253	
19,500.00	10,129.99	18,825.06	9,422.30	171.35	88.45	-25.87	9,019.06	-618.38	754.04	575.07	178.971	4.213	
19,600.00	10,130.27	18,925.06	9,422.39	173.19	89.27	-25.87	9,119.05	-619.36	754.26	573.54	180.713	4.174	
19,700.00	10,130.55	19,025.06	9,422.48	175.03	90.08	-25.87	9,219.05	-620.34	754.47	572.02	182.455	4.135	
19,800.00	10,130.83	19,125.06	9,422.57	176.87	90.90	-25.87	9,319.04	-621.32	754.68	570.49	184.198	4.097	
19,900.00	10,131.11	19,225.06	9,422.66	178.71	91.72	-25.87	9,419.04	-622.30	754.90	568.96	185.942	4.060	
20,000.00	10,131.38	19,325.06	9,422.75	180.55	92.54	-25.87	9,519.03	-623.28	755.11	567.43	187.688	4.023	
20,100.00	10,131.66	19,425.06	9,422.84	182.38	93.36	-25.87	9,619.03	-624.26	755.33	565.90	189.430	3.987	
20,200.00	10,131.94	19,525.06	9,422.93	184.22	94.18	-25.87	9,719.02	-625.24	755.54	564.36	191.175	3.952	
20,221.81	10,132.00	19,546.87	9,422.95	184.55	94.36	-25.87	9,740.83	-625.45	755.59	564.11	191.479	3.946	

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#32H - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 9147-MWD+IFR1+MS														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
0.00	0.00	29.70	-29.70	0.00	0.05	-171.38	-498.53	-75.58	504.23						
100.00	100.00	70.30	70.30	0.08	0.13	-171.38	-498.53	-75.58	504.23	504.02	.205	2,461.213			
200.00	200.00	170.30	170.30	0.30	0.31	-171.38	-498.53	-75.58	504.23	503.62	.609	828.138			
300.00	300.00	270.30	270.30	0.53	0.48	-171.38	-498.53	-75.58	504.23	503.21	1.013	497.821			
400.00	400.00	370.30	370.30	0.75	0.66	-171.38	-498.53	-75.58	504.23	502.81	1.417	355.875			
500.00	500.00	470.30	470.30	0.98	0.84	-171.38	-498.53	-75.58	504.23	502.41	1.821	276.916			
600.00	600.00	570.30	570.30	1.20	1.02	-171.38	-498.53	-75.58	504.23	502.00	2.225	226.633			
700.00	700.00	670.30	670.30	1.43	1.20	-171.38	-498.53	-75.58	504.23	501.60	2.629	191.804			
800.00	800.00	770.30	770.30	1.65	1.38	-171.38	-498.53	-75.58	504.23	501.19	3.033	166.254			
900.00	900.00	870.30	870.30	1.88	1.56	-171.38	-498.53	-75.58	504.23	500.79	3.437	146.711			
1,000.00	1,000.00	970.30	970.30	2.10	1.74	-171.38	-498.53	-75.58	504.23	500.39	3.841	131.280			
1,100.00	1,100.00	1,070.30	1,070.30	2.33	1.92	-171.38	-498.53	-75.58	504.23	499.98	4.245	118.785			
1,200.00	1,200.00	1,170.30	1,170.30	2.55	2.10	-171.38	-498.53	-75.58	504.23	499.58	4.649	108.462			
1,300.00	1,300.00	1,270.30	1,270.30	2.78	2.28	-171.38	-498.53	-75.58	504.23	499.17	5.053	99.790			
1,400.00	1,400.00	1,370.30	1,370.30	3.00	2.46	-171.38	-498.53	-75.58	504.23	498.77	5.457	92.402			
1,500.00	1,500.00	1,470.30	1,470.30	3.23	2.64	-171.38	-498.53	-75.58	504.23	498.37	5.861	86.033			
1,600.00	1,600.00	1,570.30	1,570.30	3.45	2.81	-171.38	-498.53	-75.58	504.23	497.96	6.265	80.485			
1,700.00	1,700.00	1,670.30	1,670.30	3.67	2.99	-171.38	-498.53	-75.58	504.23	497.56	6.669	75.609			
1,800.00	1,800.00	1,770.30	1,770.30	3.90	3.17	-171.38	-498.53	-75.58	504.23	497.15	7.073	71.290			
1,900.00	1,900.00	1,870.30	1,870.30	4.12	3.35	-171.38	-498.53	-75.58	504.23	496.75	7.477	67.438			
2,000.00	2,000.00	1,970.30	1,970.30	4.35	3.53	-171.38	-498.53	-75.58	504.23	496.35	7.881	63.981			
2,100.00	2,100.00	2,070.30	2,070.30	4.57	3.71	-171.38	-498.53	-75.58	504.23	495.94	8.285	60.861			
2,200.00	2,200.00	2,170.30	2,170.30	4.80	3.89	-171.38	-498.53	-75.58	504.23	495.54	8.689	58.031			
2,300.00	2,300.00	2,270.30	2,270.30	5.02	4.07	-171.38	-498.53	-75.58	504.23	495.13	9.093	55.453			
2,400.00	2,400.00	2,370.30	2,370.30	5.25	4.25	-171.38	-498.53	-75.58	504.23	494.73	9.497	53.094			
2,500.00	2,500.00	2,470.30	2,470.30	5.47	4.43	-171.38	-498.53	-75.58	504.23	494.33	9.901	50.928			
2,600.00	2,600.00	2,570.30	2,570.30	5.70	4.61	-171.38	-498.53	-75.58	504.23	493.92	10.305	48.931			
2,700.00	2,700.00	2,670.30	2,670.30	5.92	4.79	-171.38	-498.53	-75.58	504.23	493.52	10.709	47.085			
2,800.00	2,800.00	2,770.30	2,770.30	6.15	4.97	-171.38	-498.53	-75.58	504.23	493.11	11.113	45.373			
2,900.00	2,900.00	2,870.30	2,870.30	6.37	5.14	-171.38	-498.53	-75.58	504.23	492.71	11.517	43.782			
3,000.00	3,000.00	2,970.30	2,970.30	6.60	5.32	-171.38	-498.53	-75.58	504.23	492.31	11.921	42.298			
3,100.00	3,100.00	3,070.30	3,070.30	6.82	5.50	-171.38	-498.53	-75.58	504.23	491.90	12.325	40.911			
3,200.00	3,200.00	3,170.30	3,170.30	7.05	5.68	-171.38	-498.53	-75.58	504.23	491.50	12.729	39.613			
3,300.00	3,300.00	3,270.30	3,270.30	7.27	5.86	-171.38	-498.53	-75.58	504.23	491.09	13.133	38.394			
3,400.00	3,400.00	3,370.30	3,370.30	7.50	6.04	-171.38	-498.53	-75.58	504.23	490.69	13.537	37.248			
3,500.00	3,500.00	3,470.30	3,470.30	7.72	6.22	-171.38	-498.53	-75.58	504.23	490.29	13.941	36.169			
3,600.00	3,600.00	3,570.30	3,570.30	7.95	6.40	-171.38	-498.53	-75.58	504.23	489.88	14.345	35.150			
3,700.00	3,700.00	3,670.30	3,670.30	8.17	6.58	-171.38	-498.53	-75.58	504.23	489.48	14.749	34.188			
3,800.00	3,800.00	3,770.30	3,770.30	8.40	6.76	-171.38	-498.53	-75.58	504.23	489.07	15.153	33.276			
3,900.00	3,900.00	3,870.30	3,870.30	8.62	6.94	-171.38	-498.53	-75.58	504.23	488.67	15.557	32.412			
4,000.00	4,000.00	3,970.30	3,970.30	8.84	7.12	-171.38	-498.53	-75.58	504.23	488.27	15.961	31.592			
4,100.00	4,100.00	4,070.30	4,070.30	9.07	7.30	-171.38	-498.53	-75.58	504.23	487.86	16.365	30.812			
4,200.00	4,200.00	4,170.30	4,170.30	9.29	7.47	-171.38	-498.53	-75.58	504.23	487.46	16.769	30.069			
4,300.00	4,300.00	4,270.30	4,270.30	9.52	7.65	-171.38	-498.53	-75.58	504.23	487.05	17.173	29.362			
4,400.00	4,400.00	4,370.30	4,370.30	9.74	7.83	-171.38	-498.53	-75.58	504.23	486.65	17.577	28.687			
4,500.00	4,500.00	4,470.30	4,470.30	9.97	8.01	-171.38	-498.53	-75.58	504.23	486.25	17.981	28.042			
4,600.00	4,599.99	4,570.29	4,570.29	10.16	8.19	-10.31	-498.53	-75.58	502.94	484.58	18.356	27.399			
4,700.00	4,699.91	4,670.21	4,670.21	10.33	8.37	-10.40	-498.53	-75.58	499.08	480.37	18.705	26.681			
4,800.00	4,799.69	4,769.99	4,769.99	10.51	8.55	-10.56	-498.53	-75.58	492.65	473.59	19.056	25.852			
4,900.00	4,899.27	4,869.57	4,869.57	10.68	8.73	-10.78	-498.53	-75.58	483.65	464.24	19.409	24.919			
5,000.00	4,998.57	4,968.87	4,968.87	10.86	8.91	-11.08	-498.53	-75.58	472.11	452.35	19.763	23.888			
5,100.00	5,097.54	5,067.84	5,067.84	11.05	9.08	-11.47	-498.53	-75.58	458.03	437.91	20.120	22.765			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#32H - OH - OH													Offset Site Error:
Survey Program: 9147-MWD+IFR1+MS													Offset Well Error:
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,200.00	5,196.30	5,166.60	5,166.60	11.24	9.28	-11.87	-498.53	-75.58	442.70	422.23	20.478	21.619	
5,300.00	5,295.07	5,265.37	5,265.37	11.45	9.44	-12.30	-498.53	-75.58	427.40	406.56	20.838	20.511	
5,400.00	5,393.84	5,364.14	5,364.14	11.66	9.61	-12.76	-498.53	-75.58	412.12	390.92	21.201	19.439	
5,500.00	5,492.61	5,462.91	5,462.91	11.88	9.79	-13.26	-498.53	-75.58	396.87	375.30	21.567	18.402	
5,600.00	5,591.38	5,561.68	5,561.68	12.11	9.97	-13.80	-498.53	-75.58	381.65	359.71	21.936	17.398	
5,700.00	5,690.15	5,660.45	5,660.45	12.34	10.15	-14.38	-498.53	-75.58	366.46	344.16	22.308	16.427	
5,800.00	5,788.92	5,759.22	5,759.22	12.58	10.32	-15.02	-498.53	-75.58	351.32	328.64	22.683	15.488	
5,900.00	5,887.69	5,857.99	5,857.99	12.83	10.50	-15.71	-498.53	-75.58	336.22	313.16	23.061	14.580	
6,000.00	5,986.46	5,956.76	5,956.76	13.08	10.68	-16.46	-498.53	-75.58	321.18	297.74	23.442	13.701	
6,100.00	6,085.22	6,055.52	6,055.52	13.34	10.85	-17.29	-498.53	-75.58	306.19	282.36	23.827	12.851	
6,200.00	6,183.99	6,154.29	6,154.29	13.60	11.03	-18.20	-498.53	-75.58	291.28	267.06	24.215	12.029	
6,300.00	6,282.76	6,253.06	6,253.06	13.87	11.21	-19.21	-498.53	-75.58	276.44	251.83	24.608	11.234	
6,400.00	6,381.53	6,351.83	6,351.83	14.14	11.38	-20.34	-498.53	-75.58	261.70	236.69	25.004	10.466	
6,500.00	6,480.30	6,450.60	6,450.60	14.42	11.56	-21.60	-498.53	-75.58	247.07	221.66	25.406	9.725	
6,600.00	6,579.07	6,549.37	6,549.37	14.70	11.74	-23.02	-498.53	-75.58	232.57	206.75	25.814	9.009	
6,700.00	6,677.84	6,648.14	6,648.14	14.98	11.92	-24.62	-498.53	-75.58	218.23	192.00	26.230	8.320	
6,800.00	6,776.61	6,746.91	6,746.91	15.27	12.09	-26.44	-498.53	-75.58	204.08	177.42	26.654	7.657	
6,900.00	6,875.37	6,845.67	6,845.67	15.56	12.27	-28.54	-498.53	-75.58	190.16	163.07	27.089	7.020	
7,000.00	6,974.14	6,944.44	6,944.44	15.85	12.45	-30.96	-498.53	-75.58	176.53	149.00	27.537	6.411	
7,100.00	7,072.91	7,043.21	7,043.21	16.15	12.62	-33.77	-498.53	-75.58	163.27	135.27	28.003	5.830	
7,200.00	7,171.68	7,141.98	7,141.98	16.45	12.80	-37.07	-498.53	-75.58	150.46	121.97	28.490	5.281	
7,300.00	7,270.45	7,240.75	7,240.75	16.75	12.98	-40.96	-498.53	-75.58	138.24	109.24	29.003	4.766	
7,400.00	7,369.22	7,339.52	7,339.52	17.05	13.16	-45.57	-498.53	-75.58	126.78	97.23	29.549	4.290	
7,500.00	7,467.99	7,438.29	7,438.29	17.36	13.33	-51.04	-498.53	-75.58	116.29	86.16	30.131	3.859	
7,600.00	7,566.76	7,537.06	7,537.06	17.67	13.51	-57.51	-498.53	-75.58	107.06	76.31	30.749	3.482	
7,700.00	7,665.53	7,635.83	7,635.83	17.98	13.69	-65.05	-498.53	-75.58	99.46	68.07	31.392	3.168	
7,800.00	7,764.29	7,734.59	7,734.59	18.29	13.86	-73.65	-498.53	-75.58	93.87	61.83	32.032	2.930	
7,900.00	7,863.06	7,833.36	7,833.36	18.61	14.04	-83.06	-498.53	-75.58	90.66	58.03	32.627	2.779	
7,970.00	7,933.09	7,903.39	7,903.39	18.83	14.17	-90.00	-498.53	-75.58	89.98	56.98	32.998	2.727 CC	
8,000.00	7,961.83	7,932.13	7,932.13	18.93	14.22	-92.86	-498.53	-75.58	90.09	56.96	33.135	2.719 ES, SF	
8,100.00	8,060.60	8,030.90	8,030.90	19.24	14.39	-102.50	-498.53	-75.58	82.22	58.68	33.534	2.750	
8,200.00	8,159.37	8,129.67	8,129.67	19.56	14.57	-111.48	-498.53	-75.58	96.85	63.02	33.838	2.862	
8,300.00	8,258.14	8,228.44	8,228.44	19.89	14.75	-119.47	-498.53	-75.58	103.67	69.58	34.082	3.042	
8,400.00	8,356.91	8,327.21	8,327.21	20.21	14.93	-126.38	-498.53	-75.58	112.26	77.96	34.304	3.272	
8,500.00	8,455.68	8,425.98	8,425.98	20.53	15.10	-132.26	-498.53	-75.58	122.26	87.73	34.528	3.541	
8,544.88	8,500.00	8,470.30	8,470.30	20.68	15.18	-134.59	-498.53	-75.58	127.12	92.48	34.634	3.670	
8,600.00	8,554.51	8,524.81	8,524.81	20.86	15.28	-137.16	-498.53	-75.58	133.06	98.28	34.772	3.827	
8,700.00	8,653.66	8,623.96	8,623.96	21.16	15.46	-140.77	-498.53	-75.58	142.84	107.79	35.052	4.075	
8,800.00	8,753.13	8,723.43	8,723.43	21.44	15.64	-143.31	-498.53	-75.58	151.00	115.63	35.361	4.270	
8,900.00	8,852.83	8,823.13	8,823.13	21.69	15.81	-145.04	-498.53	-75.58	157.26	121.56	35.694	4.406	
9,000.00	8,952.69	8,922.99	8,922.99	21.92	15.99	-146.11	-498.53	-75.58	161.47	125.42	36.044	4.480	
9,100.00	9,052.66	9,022.96	9,022.96	22.13	16.17	-146.62	-498.53	-75.58	163.53	127.12	36.409	4.492	
9,144.88	9,097.54	9,067.84	9,067.84	22.21	16.25	52.23	-498.53	-75.58	163.75	127.18	36.575	4.477	
9,200.00	9,152.66	9,122.96	9,122.96	22.31	16.35	52.23	-498.53	-75.58	163.75	126.97	36.781	4.452	
9,300.00	9,252.66	9,222.96	9,222.96	22.49	16.53	52.23	-498.53	-75.58	163.75	126.60	37.154	4.407	
9,400.00	9,352.66	9,322.96	9,322.96	22.66	16.71	52.23	-498.53	-75.58	163.75	126.23	37.528	4.364	
9,500.00	9,452.66	9,422.96	9,422.96	22.84	16.89	52.23	-498.53	-75.58	163.75	125.85	37.902	4.320	
9,515.72	9,468.38	9,438.68	9,438.68	22.87	16.92	52.23	-498.53	-75.58	163.75	125.79	37.961	4.314	
9,550.00	9,502.64	9,472.94	9,472.94	22.93	16.98	53.03	-498.53	-75.58	163.20	125.10	38.097	4.284	
9,600.00	9,552.41	9,522.71	9,522.71	22.98	17.07	54.56	-498.53	-75.58	160.44	122.12	38.320	4.187	
9,650.00	9,601.67	9,571.97	9,571.97	23.02	17.16	57.46	-498.53	-75.58	155.62	117.04	38.575	4.034	
9,700.00	9,650.10	9,620.40	9,620.40	23.03	17.24	61.88	-498.53	-75.58	149.21	110.34	38.869	3.839	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#32H - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 9147-MWD+IFR1+MS														Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
9,750.00	9,697.41	9,667.71	9,667.71	23.01	17.33	67.96	-498.53	-75.58	142.05	102.85	39.206	3.623			
9,757.37	9,704.27	9,674.57	9,674.57	23.01	17.34	69.01	-498.53	-75.58	141.00	101.75	39.258	3.592			
9,800.00	9,743.31	9,545.23	9,500.48	22.98	17.23	25.86	-341.52	-77.94	315.74	279.15	36.593	8.628			
9,850.00	9,787.51	9,573.88	9,519.06	22.92	17.29	24.31	-319.73	-78.26	332.63	296.09	36.535	9.104			
9,900.00	9,829.74	9,602.07	9,536.04	22.86	17.35	22.96	-297.22	-78.60	348.85	312.36	36.487	9.561			
9,950.00	9,869.75	9,629.87	9,551.45	22.78	17.41	21.79	-274.09	-78.95	364.32	327.87	36.450	9.995			
10,000.00	9,907.29	9,657.32	9,565.31	22.70	17.47	20.76	-250.41	-79.30	378.97	342.54	36.427	10.403			
10,050.00	9,942.11	9,684.46	9,577.67	22.61	17.53	19.86	-226.26	-79.66	392.73	356.31	36.422	10.783			
10,100.00	9,974.02	9,711.32	9,588.52	22.53	17.58	19.08	-201.69	-80.03	405.55	369.12	36.436	11.131			
10,150.00	10,002.81	9,737.94	9,597.90	22.45	17.64	18.40	-176.79	-80.41	417.39	380.91	36.473	11.444			
10,200.00	10,028.30	9,896.56	9,624.00	22.38	17.98	15.97	-21.08	-82.74	464.30	427.52	36.775	12.625			
10,250.00	10,050.35	9,896.56	9,624.00	22.32	17.98	16.04	-21.08	-82.74	461.29	424.58	36.706	12.567			
10,300.00	10,068.80	9,896.56	9,624.00	22.29	17.98	16.08	-21.08	-82.74	459.91	423.19	36.717	12.526			
10,316.48	10,074.08	9,896.56	9,624.00	22.28	17.98	16.08	-21.08	-82.74	459.82	423.08	36.739	12.516			
10,350.00	10,083.55	9,896.56	9,624.00	22.27	17.98	16.07	-21.08	-82.74	460.19	423.38	36.813	12.501			
10,400.00	10,094.51	9,896.56	9,624.00	22.29	17.98	16.02	-21.08	-82.74	462.13	425.14	36.992	12.493			
10,450.00	10,101.61	9,896.56	9,624.00	22.33	17.98	15.93	-21.08	-82.74	465.69	428.45	37.247	12.503			
10,500.00	10,104.81	9,941.51	9,623.99	22.42	18.33	15.73	23.87	-83.42	468.67	431.03	37.637	12.452			
10,513.95	10,105.00	9,955.46	9,623.99	22.45	18.44	15.71	37.81	-83.63	468.83	431.08	37.751	12.419			
10,600.00	10,105.24	10,041.51	9,623.97	22.72	19.13	15.64	123.85	-84.92	468.93	430.46	38.471	12.189			
10,700.00	10,105.52	10,141.51	9,623.95	23.20	19.93	15.56	223.84	-86.43	469.05	429.71	39.341	11.923			
10,800.00	10,105.79	10,241.51	9,623.93	23.81	20.73	15.47	323.82	-87.93	469.17	428.93	40.246	11.658			
10,900.00	10,106.07	10,341.50	9,623.91	24.56	21.53	15.39	423.81	-89.44	469.29	428.11	41.182	11.396			
11,000.00	10,106.35	10,441.50	9,623.89	25.42	22.33	15.31	523.80	-90.94	469.41	427.26	42.150	11.137			
11,100.00	10,106.63	10,541.50	9,623.87	26.38	23.13	15.22	623.78	-92.44	469.54	426.39	43.147	10.882			
11,200.00	10,106.91	10,641.50	9,623.85	27.43	23.93	15.14	723.77	-93.95	469.66	425.49	44.172	10.633			
11,300.00	10,107.18	10,741.49	9,623.83	28.56	24.73	15.06	823.76	-95.45	469.79	424.57	45.222	10.388			
11,400.00	10,107.46	10,841.49	9,623.81	29.76	25.53	14.97	923.74	-96.96	469.91	423.62	46.298	10.150			
11,500.00	10,107.74	10,941.49	9,623.78	31.03	26.33	14.89	1,023.73	-98.46	470.04	422.65	47.396	9.917			
11,600.00	10,108.02	11,041.49	9,623.76	32.35	27.13	14.81	1,123.71	-99.96	470.17	421.66	48.515	9.691			
11,700.00	10,108.30	11,141.48	9,623.74	33.73	27.93	14.72	1,223.70	-101.47	470.30	420.65	49.654	9.472			
11,800.00	10,108.57	11,241.48	9,623.72	35.14	28.73	14.64	1,323.69	-102.97	470.43	419.62	50.811	9.258			
11,900.00	10,108.85	11,341.48	9,623.70	36.60	29.53	14.56	1,423.67	-104.47	470.56	418.58	51.986	9.052			
12,000.00	10,109.13	11,441.48	9,623.68	38.09	30.33	14.48	1,523.66	-105.98	470.69	417.52	53.176	8.852			
12,100.00	10,109.41	11,541.47	9,623.66	39.61	31.13	14.39	1,623.65	-107.48	470.83	416.45	54.381	8.658			
12,200.00	10,109.69	11,641.47	9,623.64	41.15	31.93	14.31	1,723.63	-108.99	470.96	415.36	55.599	8.471			
12,300.00	10,109.97	11,741.47	9,623.62	42.73	32.73	14.23	1,823.62	-110.49	471.10	414.27	56.829	8.290			
12,400.00	10,110.24	11,841.47	9,623.60	44.32	33.53	14.14	1,923.60	-111.99	471.23	413.16	58.071	8.115			
12,500.00	10,110.52	11,941.46	9,623.58	45.93	34.33	14.06	2,023.59	-113.50	471.37	412.05	59.324	7.946			
12,600.00	10,110.80	12,041.46	9,623.55	47.56	35.13	13.98	2,123.58	-115.00	471.51	410.92	60.586	7.782			
12,700.00	10,111.08	12,141.46	9,623.53	49.21	35.93	13.90	2,223.56	-116.51	471.65	409.79	61.857	7.625			
12,800.00	10,111.36	12,241.46	9,623.51	50.87	36.73	13.81	2,323.55	-118.01	471.79	408.65	63.136	7.473			
12,900.00	10,111.63	12,341.45	9,623.49	52.54	37.53	13.73	2,423.54	-119.51	471.93	407.51	64.423	7.325			
13,000.00	10,111.91	12,441.45	9,623.47	54.22	38.33	13.65	2,523.52	-121.02	472.07	406.36	65.716	7.183			
13,100.00	10,112.19	12,541.45	9,623.45	55.92	39.13	13.57	2,623.51	-122.52	472.22	405.20	67.016	7.046			
13,200.00	10,112.47	12,641.45	9,623.43	57.62	39.93	13.48	2,723.49	-124.03	472.36	404.04	68.322	6.914			
13,300.00	10,112.75	12,741.44	9,623.41	59.34	40.73	13.40	2,823.48	-125.53	472.50	402.87	69.633	6.786			
13,400.00	10,113.03	12,841.44	9,623.39	61.06	41.54	13.32	2,923.47	-127.03	472.65	401.70	70.949	6.662			
13,500.00	10,113.30	12,941.44	9,623.37	62.79	42.34	13.24	3,023.45	-128.54	472.80	400.53	72.269	6.542			
13,600.00	10,113.58	13,041.44	9,623.34	64.52	43.14	13.15	3,123.44	-130.04	472.95	399.35	73.593	6.427			
13,700.00	10,113.86	13,141.44	9,623.32	66.27	43.94	13.07	3,223.43	-131.55	473.10	398.17	74.921	6.315			
13,800.00	10,114.14	13,241.43	9,623.30	68.02	44.74	12.99	3,323.41	-133.05	473.25	396.99	76.252	6.206			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company: COG OPERATING, LLC
 Project: Eddy County, NM (NAD83) NMEZ
 Reference Site: Myox 21 State COM
 Site Error: 0.00 usft
 Reference Well: #41H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1 - PP

Local Co-ordinate Reference: Well #41H
 TVD Reference: RKB @ 3019.80usft (SDQ - KB=30')
 MD Reference: RKB @ 3019.80usft (SDQ - KB=30')
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.000 sigma
 Database: EDM 5000.14 Single User Db
 Offset TVD Reference: Offset Datum

Offset Design Myox 21 State COM - O-#32H - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 9147-MWD+IFR1+MS													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N/S (usft)	Offset Wellbore Centre E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,900.00	10,114.42	13,341.43	9,623.28	69.77	45.54	12.91	3,423.40	-134.55	473.40	395.81	77.586	8.102	
14,000.00	10,114.69	13,441.43	9,623.26	71.63	46.34	12.83	3,523.39	-136.06	473.55	394.63	78.923	6.000	
14,100.00	10,114.97	13,541.43	9,623.24	73.29	47.14	12.74	3,623.37	-137.56	473.70	393.44	80.262	5.902	
14,200.00	10,115.25	13,641.42	9,623.22	75.06	47.94	12.66	3,723.36	-139.07	473.86	392.25	81.604	5.807	
14,300.00	10,115.53	13,741.42	9,623.20	76.83	48.74	12.58	3,823.34	-140.57	474.01	391.06	82.948	5.715	
14,400.00	10,115.81	13,841.42	9,623.18	78.61	49.54	12.50	3,923.33	-142.07	474.17	389.87	84.293	5.625	
14,500.00	10,116.08	13,941.42	9,623.16	80.39	50.34	12.42	4,023.32	-143.58	474.32	388.68	85.640	5.539	
14,600.00	10,116.36	14,041.41	9,623.14	82.17	51.14	12.33	4,123.30	-145.08	474.48	387.49	86.989	5.455	
14,700.00	10,116.64	14,141.41	9,623.11	83.95	51.94	12.25	4,223.29	-146.58	474.64	386.30	88.339	5.373	
14,800.00	10,116.92	14,241.41	9,623.09	85.74	52.74	12.17	4,323.28	-148.09	474.80	385.11	89.690	5.294	
14,900.00	10,117.20	14,341.41	9,623.07	87.53	53.54	12.09	4,423.26	-149.59	474.96	383.92	91.042	5.217	
15,000.00	10,117.48	14,441.40	9,623.05	89.33	54.34	12.01	4,523.25	-151.10	475.12	382.73	92.394	5.142	
15,100.00	10,117.75	14,541.40	9,623.03	91.12	55.14	11.93	4,623.23	-152.60	475.28	381.54	93.748	5.070	
15,200.00	10,118.03	14,641.40	9,623.01	92.92	55.94	11.85	4,723.22	-154.10	475.45	380.35	95.102	4.999	
15,300.00	10,118.31	14,741.40	9,622.99	94.72	56.74	11.76	4,823.21	-155.61	475.61	379.16	96.457	4.931	
15,400.00	10,118.59	14,841.39	9,622.97	96.52	57.54	11.68	4,923.19	-157.11	475.78	377.97	97.812	4.864	
15,500.00	10,118.87	14,941.39	9,622.95	98.33	58.34	11.60	5,023.18	-158.62	475.94	376.78	99.168	4.799	
15,600.00	10,119.14	15,041.39	9,622.93	100.13	59.14	11.52	5,123.17	-160.12	476.11	375.59	100.523	4.736	
15,700.00	10,119.42	15,141.39	9,622.90	101.94	59.94	11.44	5,223.15	-161.62	476.28	374.40	101.879	4.675	
15,800.00	10,119.70	15,241.38	9,622.88	103.75	60.74	11.36	5,323.14	-163.13	476.45	373.21	103.235	4.615	
15,900.00	10,119.98	15,341.38	9,622.86	105.56	61.54	11.28	5,423.12	-164.63	476.62	372.03	104.591	4.557	
16,000.00	10,120.26	15,441.38	9,622.84	107.37	62.34	11.20	5,523.11	-166.14	476.79	370.84	105.947	4.500	
16,100.00	10,120.54	15,541.38	9,622.82	109.19	63.14	11.12	5,623.10	-167.64	476.96	369.66	107.303	4.445	
16,200.00	10,120.81	15,641.37	9,622.80	111.00	63.94	11.04	5,723.08	-169.14	477.14	368.48	108.669	4.391	
16,300.00	10,121.09	15,741.37	9,622.78	112.82	64.74	10.95	5,823.07	-170.65	477.31	367.29	110.015	4.339	
16,400.00	10,121.37	15,841.37	9,622.76	114.63	65.54	10.87	5,923.06	-172.15	477.48	366.11	111.370	4.287	
16,500.00	10,121.65	15,941.37	9,622.74	116.45	66.34	10.79	6,023.04	-173.66	477.66	364.94	112.725	4.237	
16,600.00	10,121.93	16,041.37	9,622.72	118.27	67.14	10.71	6,123.03	-175.16	477.84	363.76	114.080	4.189	
16,700.00	10,122.20	16,141.36	9,622.70	120.09	67.94	10.63	6,223.01	-176.66	478.02	362.58	115.435	4.141	
16,800.00	10,122.48	16,241.36	9,622.67	121.91	68.74	10.55	6,323.00	-178.17	478.19	361.40	116.789	4.095	
16,900.00	10,122.76	16,341.36	9,622.65	123.74	69.54	10.47	6,422.99	-179.67	478.37	360.23	118.143	4.049	
17,000.00	10,123.04	16,441.36	9,622.63	125.56	70.34	10.39	6,522.97	-181.18	478.55	359.06	119.497	4.005	
17,100.00	10,123.32	16,541.35	9,622.61	127.38	71.14	10.31	6,622.96	-182.68	478.74	357.89	120.850	3.961	
17,200.00	10,123.59	16,641.35	9,622.59	129.21	71.94	10.23	6,722.95	-184.18	478.92	356.72	122.202	3.919	
17,300.00	10,123.87	16,741.35	9,622.57	131.03	72.74	10.15	6,822.93	-185.69	479.10	355.55	123.554	3.878	
17,400.00	10,124.15	16,841.35	9,622.55	132.86	73.54	10.07	6,922.92	-187.19	479.29	354.38	124.906	3.837	
17,500.00	10,124.43	16,941.34	9,622.53	134.69	74.34	9.99	7,022.90	-188.69	479.47	353.22	126.257	3.798	
17,600.00	10,124.71	17,041.34	9,622.51	136.52	75.14	9.91	7,122.89	-190.20	479.66	352.05	127.607	3.759	
17,700.00	10,124.99	17,141.34	9,622.49	138.35	75.94	9.83	7,222.88	-191.70	479.85	350.89	128.957	3.721	
17,800.00	10,125.26	17,241.34	9,622.47	140.18	76.75	9.75	7,322.86	-193.21	480.03	349.73	130.307	3.684	
17,900.00	10,125.54	17,341.33	9,622.44	142.01	77.55	9.67	7,422.85	-194.71	480.22	348.57	131.656	3.648	
18,000.00	10,125.82	17,441.33	9,622.42	143.84	78.35	9.59	7,522.84	-196.21	480.41	347.41	133.004	3.612	
18,100.00	10,126.10	17,541.33	9,622.40	145.67	79.15	9.51	7,622.82	-197.72	480.60	346.25	134.352	3.577	
18,200.00	10,126.38	17,641.33	9,622.38	147.50	79.95	9.43	7,722.81	-199.22	480.80	345.10	135.700	3.543	
18,300.00	10,126.65	17,741.32	9,622.36	149.33	80.75	9.35	7,822.80	-200.73	480.99	343.94	137.046	3.510	
18,400.00	10,126.93	17,841.32	9,622.34	151.16	81.55	9.27	7,922.78	-202.23	481.18	342.79	138.393	3.477	
18,500.00	10,127.21	17,941.32	9,622.32	153.00	82.35	9.19	8,022.77	-203.73	481.38	341.64	139.738	3.445	
18,600.00	10,127.49	18,041.32	9,622.30	154.83	83.15	9.11	8,122.75	-205.24	481.57	340.49	141.083	3.413	
18,700.00	10,127.77	18,141.31	9,622.28	156.66	83.95	9.04	8,222.74	-206.74	481.77	339.34	142.428	3.383	
18,800.00	10,128.05	18,241.31	9,622.26	158.50	84.75	8.96	8,322.73	-208.25	481.97	338.19	143.772	3.352	
18,900.00	10,128.32	18,341.31	9,622.23	160.33	85.56	8.88	8,422.71	-209.75	482.16	337.05	145.115	3.323	
19,000.00	10,128.60	18,441.31	9,622.21	162.17	86.35	8.80	8,522.70	-211.25	482.36	335.91	146.458	3.294	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Myox 21 State COM - O-#32H - OH - OH													Offset Well Error:	0.00 usft
Survey Program: 9147-MWD+IFR1+MS														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
19,100.00	10,128.88	18,541.31	9,622.19	164.01	87.15	8.72	8,622.69	-212.76	482.56	334.76	147.800	3.265		
19,200.00	10,129.16	18,641.30	9,622.17	165.84	87.95	8.64	8,722.67	-214.26	482.76	333.62	149.142	3.237		
19,300.00	10,129.44	18,741.30	9,622.15	167.68	88.75	8.56	8,822.66	-215.77	482.97	332.48	150.483	3.209		
19,400.00	10,129.71	18,841.30	9,622.13	169.52	89.55	8.48	8,922.64	-217.27	483.17	331.35	151.824	3.182		
19,500.00	10,129.99	18,941.30	9,622.11	171.35	90.35	8.40	9,022.63	-218.77	483.37	330.21	153.164	3.156		
19,600.00	10,130.27	19,041.29	9,622.09	173.19	91.15	8.32	9,122.62	-220.28	483.58	329.07	154.503	3.130		
19,700.00	10,130.55	19,141.29	9,622.07	175.03	91.95	8.25	9,222.60	-221.78	483.78	327.94	155.843	3.104		
19,800.00	10,130.83	19,241.29	9,622.05	176.87	92.75	8.17	9,322.59	-223.29	483.99	326.81	157.181	3.079		
19,900.00	10,131.11	19,341.29	9,622.03	178.71	93.55	8.09	9,422.58	-224.79	484.20	325.68	158.519	3.055		
20,000.00	10,131.38	19,441.28	9,622.00	180.55	94.35	8.01	9,522.56	-226.29	484.41	324.55	159.857	3.030		
20,100.00	10,131.66	19,541.28	9,621.98	182.38	95.15	7.93	9,622.55	-227.80	484.62	323.42	161.194	3.006		
20,200.00	10,131.94	19,641.28	9,621.96	184.22	95.95	7.85	9,722.53	-229.30	484.83	322.29	162.531	2.983		
20,221.81	10,132.00	19,663.09	9,621.96	184.55	96.13	7.84	9,744.34	-229.63	484.87	322.13	162.739	2.979		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#33H - OH - OH												Offset Site Error:	0.00' usft
Survey Program: 8938-MWD-IFR1+MS												Offset Well Error:	0.00' usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	30.10	-30.10	0.00	0.05	-174.77	-498.28	-45.62	500.36				
100.00	100.00	69.90	69.90	0.08	0.13	-174.77	-498.28	-45.62	500.36	500.16	.204	2,450.935	
200.00	200.00	169.90	169.90	0.30	0.30	-174.77	-498.28	-45.62	500.36	499.76	.608	822.762	
300.00	300.00	269.90	269.90	0.53	0.48	-174.77	-498.28	-45.62	500.36	499.35	1.012	484.357	
400.00	400.00	369.90	369.90	0.75	0.66	-174.77	-498.28	-45.62	500.36	498.95	1.416	353.327	
500.00	500.00	469.90	469.90	0.98	0.84	-174.77	-498.28	-45.62	500.36	498.54	1.820	274.903	
600.00	600.00	569.90	569.90	1.20	1.02	-174.77	-498.28	-45.62	500.36	498.14	2.224	224.969	
700.00	700.00	669.90	669.90	1.43	1.20	-174.77	-498.28	-45.62	500.36	497.74	2.628	190.387	
800.00	800.00	769.90	769.90	1.65	1.38	-174.77	-498.28	-45.62	500.36	497.33	3.032	165.020	
900.00	900.00	869.90	869.90	1.88	1.56	-174.77	-498.28	-45.62	500.36	496.93	3.436	145.618	
1,000.00	1,000.00	969.90	969.90	2.10	1.74	-174.77	-498.28	-45.62	500.36	496.52	3.840	130.298	
1,100.00	1,100.00	1,069.90	1,069.90	2.33	1.92	-174.77	-498.28	-45.62	500.36	496.12	4.244	117.895	
1,200.00	1,200.00	1,169.90	1,169.90	2.55	2.10	-174.77	-498.28	-45.62	500.36	495.72	4.648	107.648	
1,300.00	1,300.00	1,269.90	1,269.90	2.78	2.28	-174.77	-498.28	-45.62	500.36	495.31	5.052	99.040	
1,400.00	1,400.00	1,369.90	1,369.90	3.00	2.46	-174.77	-498.28	-45.62	500.36	494.91	5.456	91.707	
1,500.00	1,500.00	1,469.90	1,469.90	3.23	2.63	-174.77	-498.28	-45.62	500.36	494.50	5.860	85.384	
1,600.00	1,600.00	1,569.90	1,569.90	3.45	2.81	-174.77	-498.28	-45.62	500.36	494.10	6.264	79.878	
1,700.00	1,700.00	1,669.90	1,669.90	3.67	2.99	-174.77	-498.28	-45.62	500.36	493.70	6.668	75.038	
1,800.00	1,800.00	1,769.90	1,769.90	3.90	3.17	-174.77	-498.28	-45.62	500.36	493.29	7.072	70.751	
1,900.00	1,900.00	1,869.90	1,869.90	4.12	3.35	-174.77	-498.28	-45.62	500.36	492.89	7.476	66.928	
2,000.00	2,000.00	1,969.90	1,969.90	4.35	3.53	-174.77	-498.28	-45.62	500.36	492.48	7.880	63.497	
2,100.00	2,100.00	2,069.90	2,069.90	4.57	3.71	-174.77	-498.28	-45.62	500.36	492.08	8.284	60.400	
2,200.00	2,200.00	2,169.90	2,169.90	4.80	3.89	-174.77	-498.28	-45.62	500.36	491.68	8.688	57.592	
2,300.00	2,300.00	2,269.90	2,269.90	5.02	4.07	-174.77	-498.28	-45.62	500.36	491.27	9.092	55.033	
2,400.00	2,400.00	2,369.90	2,369.90	5.25	4.25	-174.77	-498.28	-45.62	500.36	490.87	9.496	52.691	
2,500.00	2,500.00	2,469.90	2,469.90	5.47	4.43	-174.77	-498.28	-45.62	500.36	490.46	9.900	50.541	
2,600.00	2,600.00	2,569.90	2,569.90	5.70	4.61	-174.77	-498.28	-45.62	500.36	490.06	10.304	48.560	
2,700.00	2,700.00	2,669.90	2,669.90	5.92	4.79	-174.77	-498.28	-45.62	500.36	489.66	10.708	46.727	
2,800.00	2,800.00	2,769.90	2,769.90	6.15	4.96	-174.77	-498.28	-45.62	500.36	489.25	11.112	45.029	
2,900.00	2,900.00	2,869.90	2,869.90	6.37	5.14	-174.77	-498.28	-45.62	500.36	488.85	11.516	43.449	
3,000.00	3,000.00	2,969.90	2,969.90	6.60	5.32	-174.77	-498.28	-45.62	500.36	488.44	11.920	41.976	
3,100.00	3,100.00	3,069.90	3,069.90	6.82	5.50	-174.77	-498.28	-45.62	500.36	488.04	12.324	40.600	
3,200.00	3,200.00	3,169.90	3,169.90	7.05	5.68	-174.77	-498.28	-45.62	500.36	487.64	12.728	39.312	
3,300.00	3,300.00	3,269.90	3,269.90	7.27	5.86	-174.77	-498.28	-45.62	500.36	487.23	13.132	38.102	
3,400.00	3,400.00	3,369.90	3,369.90	7.50	6.04	-174.77	-498.28	-45.62	500.36	486.83	13.536	36.965	
3,500.00	3,500.00	3,469.90	3,469.90	7.72	6.22	-174.77	-498.28	-45.62	500.36	486.42	13.940	35.894	
3,600.00	3,600.00	3,569.90	3,569.90	7.95	6.40	-174.77	-498.28	-45.62	500.36	486.02	14.344	34.883	
3,700.00	3,700.00	3,669.90	3,669.90	8.17	6.58	-174.77	-498.28	-45.62	500.36	485.62	14.748	33.927	
3,800.00	3,800.00	3,769.90	3,769.90	8.40	6.76	-174.77	-498.28	-45.62	500.36	485.21	15.152	33.023	
3,900.00	3,900.00	3,869.90	3,869.90	8.62	6.94	-174.77	-498.28	-45.62	500.36	484.81	15.556	32.165	
4,000.00	4,000.00	3,969.90	3,969.90	8.84	7.12	-174.77	-498.28	-45.62	500.36	484.40	15.960	31.351	
4,100.00	4,100.00	4,069.90	4,069.90	9.07	7.29	-174.77	-498.28	-45.62	500.36	484.00	16.364	30.577	
4,200.00	4,200.00	4,169.90	4,169.90	9.29	7.47	-174.77	-498.28	-45.62	500.36	483.60	16.768	29.840	
4,300.00	4,300.00	4,269.90	4,269.90	9.52	7.65	-174.77	-498.28	-45.62	500.36	483.19	17.172	29.138	
4,400.00	4,400.00	4,369.90	4,369.90	9.74	7.83	-174.77	-498.28	-45.62	500.36	482.79	17.576	28.468	
4,500.00	4,500.00	4,469.90	4,469.90	9.97	8.01	-174.77	-498.28	-45.62	500.36	482.38	17.980	27.829	
4,600.00	4,599.99	4,569.89	4,569.89	10.16	8.19	-13.71	-498.28	-45.62	499.09	480.74	18.356	27.190	
4,700.00	4,599.91	4,669.81	4,669.81	10.33	8.37	-13.83	-498.28	-45.62	495.28	476.57	18.705	26.479	
4,800.00	4,799.69	4,769.59	4,769.59	10.51	8.55	-14.04	-498.28	-45.62	488.93	469.88	19.055	25.658	
4,900.00	4,899.27	4,869.17	4,869.17	10.68	8.73	-14.33	-498.28	-45.62	480.06	460.85	19.408	24.735	
5,000.00	4,998.57	4,968.47	4,968.47	10.86	8.91	-14.73	-498.28	-45.62	468.68	448.91	19.763	23.715	
5,100.00	5,097.54	5,067.44	5,067.44	11.05	9.08	-15.25	-498.28	-45.62	454.81	434.69	20.120	22.605	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design													Myox 21 State COM - O-#33H - OH - OH		Offset Site Error:	0.00 usft
Survey Program: 8938-MWD+IFR1+MS													Offset Well Error:	0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
5,200.00	5,196.30	5,166.20	5,166.20	11.24	9.26	-15.78	-498.28	-45.62	439.72	419.24	20.479	21.472				
5,300.00	5,295.07	5,264.97	5,264.97	11.45	9.44	-16.36	-498.28	-45.62	424.67	403.83	20.840	20.378				
5,400.00	5,393.84	5,363.74	5,363.74	11.66	9.61	-16.97	-498.28	-45.62	409.67	388.47	21.204	19.320				
5,500.00	5,492.61	5,462.51	5,462.51	11.88	9.79	-17.64	-498.28	-45.62	394.72	373.15	21.572	18.297				
5,600.00	5,591.38	5,561.28	5,561.28	12.11	9.97	-18.35	-498.28	-45.62	379.82	357.88	21.943	17.309				
5,700.00	5,690.15	5,660.05	5,660.05	12.34	10.14	-19.12	-498.28	-45.62	364.99	342.67	22.318	16.354				
5,800.00	5,788.92	5,758.82	5,758.82	12.58	10.32	-19.96	-498.28	-45.62	350.23	327.53	22.696	15.431				
5,900.00	5,887.69	5,857.59	5,857.59	12.83	10.50	-20.87	-498.28	-45.62	335.54	312.46	23.078	14.539				
6,000.00	5,986.46	5,956.36	5,956.36	13.08	10.68	-21.86	-498.28	-45.62	320.95	297.49	23.464	13.678				
6,100.00	6,085.22	6,055.12	6,055.12	13.34	10.85	-22.95	-498.28	-45.62	306.46	282.61	23.855	12.847				
6,200.00	6,183.99	6,153.89	6,153.89	13.60	11.03	-24.14	-498.28	-45.62	292.09	267.84	24.250	12.045				
6,300.00	6,282.76	6,252.66	6,252.66	13.87	11.21	-25.46	-498.28	-45.62	277.86	253.21	24.651	11.272				
6,400.00	6,381.53	6,351.43	6,351.43	14.14	11.38	-26.92	-498.28	-45.62	263.79	238.73	25.058	10.527				
6,500.00	6,480.30	6,450.20	6,450.20	14.42	11.56	-28.54	-498.28	-45.62	249.90	224.43	25.472	9.811				
6,600.00	6,579.07	6,548.97	6,548.97	14.70	11.74	-30.34	-498.28	-45.62	236.24	210.34	25.894	9.123				
6,700.00	6,677.84	6,647.74	6,647.74	14.98	11.92	-32.37	-498.28	-45.62	222.83	196.50	26.326	8.464				
6,800.00	6,776.61	6,746.51	6,746.51	15.27	12.09	-34.65	-498.28	-45.62	209.74	182.97	26.769	7.835				
6,900.00	6,875.37	6,845.27	6,845.27	15.56	12.27	-37.22	-498.28	-45.62	197.01	169.79	27.227	7.236				
7,000.00	6,974.14	6,944.04	6,944.04	15.85	12.45	-40.15	-498.28	-45.62	184.74	157.04	27.700	6.669				
7,100.00	7,072.91	7,042.81	7,042.81	16.15	12.62	-43.47	-498.28	-45.62	173.01	144.82	28.193	6.137				
7,200.00	7,171.68	7,141.58	7,141.58	16.45	12.80	-47.25	-498.28	-45.62	161.94	133.24	28.707	5.641				
7,300.00	7,270.45	7,240.35	7,240.35	16.75	12.98	-51.56	-498.28	-45.62	151.68	122.44	29.244	5.187				
7,400.00	7,369.22	7,339.12	7,339.12	17.05	13.15	-56.46	-498.28	-45.62	142.41	112.60	29.805	4.778				
7,500.00	7,467.99	7,437.89	7,437.89	17.36	13.33	-61.97	-498.28	-45.62	134.32	103.93	30.385	4.421				
7,600.00	7,566.76	7,536.66	7,536.66	17.67	13.51	-68.12	-498.28	-45.62	127.64	96.67	30.977	4.121				
7,700.00	7,665.53	7,635.43	7,635.43	17.98	13.69	-74.84	-498.28	-45.62	122.61	91.05	31.565	3.884				
7,800.00	7,764.29	7,734.19	7,734.19	18.29	13.86	-82.02	-498.28	-45.62	119.43	87.30	32.128	3.717				
7,900.00	7,863.06	7,832.96	7,832.96	18.61	14.04	-89.45	-498.28	-45.62	118.25	85.60	32.647	3.622				
7,907.34	7,870.32	7,840.22	7,840.22	18.63	14.05	-90.00	-498.28	-45.62	118.24	85.56	32.683	3.618 CC, ES				
8,000.00	7,961.83	7,931.73	7,931.73	18.93	14.22	-96.90	-498.28	-45.62	119.13	86.02	33.108	3.598 SF				
8,100.00	8,060.60	8,030.50	8,030.50	19.24	14.39	-104.13	-498.28	-45.62	122.02	88.52	33.506	3.642				
8,200.00	8,159.37	8,129.27	8,129.27	19.56	14.57	-110.93	-498.28	-45.62	126.80	92.95	33.851	3.746				
8,300.00	8,258.14	8,228.04	8,228.04	19.89	14.75	-117.16	-498.28	-45.62	133.25	99.09	34.157	3.901				
8,400.00	8,356.91	8,326.81	8,326.81	20.21	14.92	-122.77	-498.28	-45.62	141.14	106.70	34.441	4.098				
8,500.00	8,455.68	8,425.58	8,425.58	20.53	15.10	-127.76	-498.28	-45.62	150.26	115.54	34.716	4.328				
8,544.88	8,500.00	8,469.90	8,469.90	20.68	15.18	-129.80	-498.28	-45.62	154.69	119.85	34.840	4.440				
8,600.00	8,554.51	8,524.41	8,524.41	20.86	15.28	-132.11	-498.28	-45.62	160.12	125.12	34.995	4.575				
8,700.00	8,653.66	8,623.56	8,623.56	21.16	15.46	-135.44	-498.28	-45.62	169.10	133.80	35.294	4.791				
8,800.00	8,753.13	8,723.03	8,723.03	21.44	15.63	-137.86	-498.28	-45.62	176.62	141.01	35.612	4.960				
8,900.00	8,852.83	8,822.73	8,822.73	21.69	15.81	-139.54	-498.28	-45.62	182.42	146.47	35.949	5.075				
9,000.00	8,952.69	8,922.59	8,922.59	21.92	15.99	-140.59	-498.28	-45.62	186.34	150.04	36.299	5.133				
9,100.00	9,052.66	9,022.56	9,022.56	22.13	16.17	-141.09	-498.28	-45.62	188.26	151.60	36.662	5.135				
9,144.88	9,097.54	9,067.44	9,067.44	22.21	16.25	57.76	-498.28	-45.62	188.47	151.64	36.828	5.117				
9,200.00	9,152.66	9,122.56	9,122.56	22.31	16.35	57.76	-498.28	-45.62	188.47	151.43	37.032	5.089				
9,300.00	9,252.66	9,222.56	9,222.56	22.49	16.53	57.76	-498.28	-45.62	188.47	151.06	37.403	5.039				
9,400.00	9,352.66	9,322.56	9,322.56	22.66	16.71	57.76	-498.28	-45.62	188.47	150.69	37.774	4.989				
9,500.00	9,452.66	9,422.56	9,422.56	22.84	16.89	57.76	-498.28	-45.62	188.47	150.32	38.146	4.941				
9,515.72	9,468.38	9,438.28	9,438.28	22.87	16.92	57.76	-498.28	-45.62	188.47	150.26	38.205	4.933				
9,550.00	9,502.64	9,472.54	9,472.54	22.93	16.98	58.54	-498.28	-45.62	187.98	149.64	38.338	4.903				
9,600.00	9,552.41	9,522.31	9,522.31	22.98	17.07	59.94	-498.28	-45.62	185.60	147.04	38.556	4.814				
9,625.37	9,577.49	9,547.39	9,547.39	23.00	17.11	61.12	-498.28	-45.62	183.69	145.01	38.674	4.750				
9,650.00	9,601.67	9,571.63	9,571.63	23.02	16.83	39.33	-368.89	14.72	425.54	389.55	35.994	11.822				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design: Myox 21 State COM - O-#33H - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 8938-MWD-IFRT-MS														Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
9,700.00	9,850.10	9,338.47	9,292.98	23.03	16.88	37.29		-354.46	21.45	453.66	417.69	35.967	12.613		
9,750.00	9,897.41	9,359.96	9,306.97	23.01	16.92	35.55		-339.67	28.34	481.01	445.06	35.949	13.380		
9,800.00	9,743.31	9,381.12	9,320.00	22.98	16.97	34.08		-324.57	35.39	507.49	471.55	35.940	14.120		
9,850.00	9,787.51	9,401.99	9,332.12	22.92	17.01	32.83		-309.18	42.56	533.02	497.08	35.941	14.830		
9,900.00	9,829.74	9,422.58	9,343.35	22.86	17.06	31.77		-293.53	49.86	557.54	521.58	35.953	15.507		
9,950.00	9,869.75	9,442.91	9,353.69	22.78	17.10	30.88		-277.67	57.26	580.98	545.00	35.976	16.149		
10,000.00	9,907.29	9,463.02	9,363.18	22.70	17.15	30.13		-261.60	64.75	603.31	567.29	36.013	16.752		
10,050.00	9,942.11	9,482.92	9,371.82	22.61	17.19	29.52		-245.36	72.32	624.47	588.41	36.065	17.315		
10,100.00	9,974.02	9,685.81	9,415.00	22.53	17.65	31.78		-67.10	155.45	700.54	663.96	36.574	19.154		
10,150.00	10,002.81	9,685.81	9,415.00	22.45	17.65	31.43		-67.10	155.45	707.76	671.22	36.541	19.369		
10,200.00	10,028.30	9,685.81	9,415.00	22.38	17.65	31.08		-67.10	155.45	715.13	678.58	36.545	19.568		
10,250.00	10,050.35	9,685.81	9,415.00	22.32	17.65	30.73		-67.10	155.45	722.59	686.00	36.589	19.749		
10,300.00	10,068.80	9,685.81	9,415.00	22.29	17.65	30.39		-67.10	155.45	730.09	693.42	36.672	19.908		
10,350.00	10,083.55	9,685.81	9,415.00	22.27	17.65	30.04		-67.10	155.45	737.59	700.80	36.795	20.046		
10,400.00	10,094.51	9,685.81	9,415.00	22.29	17.65	29.71		-67.10	155.45	745.05	708.09	36.955	20.161		
10,450.00	10,101.61	9,685.81	9,415.00	22.33	17.65	29.38		-67.10	155.45	752.41	715.26	37.149	20.254		
10,500.00	10,104.81	9,685.81	9,415.00	22.42	17.65	29.05		-67.10	155.45	759.64	722.27	37.372	20.327		
10,513.95	10,105.00	9,685.81	9,415.00	22.45	17.65	28.97		-67.10	155.45	761.63	724.19	37.438	20.344		
10,600.00	10,105.24	9,712.27	9,415.10	22.72	17.70	29.71		-43.02	166.40	778.20	740.30	37.901	20.532		
10,700.00	10,105.52	9,845.20	9,415.59	23.20	18.00	32.84		80.80	214.64	798.45	759.91	38.545	20.715		
10,800.00	10,105.79	9,987.25	9,416.13	23.81	18.33	35.22		217.44	253.26	814.53	775.29	39.236	20.760		
10,900.00	10,106.07	10,136.35	9,416.70	24.56	18.69	36.77		364.22	279.04	825.26	785.30	39.957	20.854		
11,000.00	10,106.35	10,289.62	9,417.28	25.42	19.06	37.43		517.05	289.50	829.84	789.17	40.666	20.406		
11,100.00	10,106.63	10,443.66	9,417.86	26.38	19.44	37.18		670.91	283.50	827.93	786.62	41.311	20.042		
11,113.47	10,106.67	10,464.28	9,417.94	26.52	19.50	37.07		691.42	281.44	827.17	785.78	41.392	19.984		
11,200.00	10,106.91	10,503.83	9,418.09	27.43	20.50	37.41		731.25	287.20	829.34	786.17	43.172	19.210		
11,300.00	10,107.18	10,603.83	9,418.47	28.56	21.30	37.39		831.24	285.86	828.98	784.40	44.581	18.595		
11,400.00	10,107.46	10,703.83	9,418.85	29.76	22.10	37.37		931.23	284.52	826.62	782.59	46.035	18.000		
11,500.00	10,107.74	10,803.83	9,419.22	31.03	22.91	37.35		1,031.22	283.18	828.26	780.73	47.531	17.426		
11,600.00	10,108.02	10,903.83	9,419.60	32.35	23.72	37.33		1,131.21	281.84	827.91	778.84	49.065	16.874		
11,700.00	10,108.30	11,003.83	9,419.98	33.73	24.53	37.31		1,231.20	280.50	827.55	776.91	50.634	16.344		
11,800.00	10,108.57	11,103.83	9,420.35	35.14	25.34	37.29		1,331.19	279.16	827.19	774.95	52.234	15.836		
11,900.00	10,108.85	11,203.83	9,420.73	36.60	26.15	37.26		1,431.18	277.82	826.83	772.97	53.862	15.351		
12,000.00	10,109.13	11,303.82	9,421.11	38.09	26.97	37.24		1,531.17	276.48	826.47	770.95	55.516	14.887		
12,100.00	10,109.41	11,403.82	9,421.48	39.61	27.78	37.22		1,631.16	275.14	826.11	768.92	57.194	14.444		
12,200.00	10,109.69	11,503.82	9,421.86	41.15	28.60	37.20		1,731.15	273.80	825.75	766.86	58.893	14.021		
12,300.00	10,109.97	11,603.82	9,422.24	42.73	29.41	37.18		1,831.14	272.46	825.39	764.78	60.611	13.618		
12,400.00	10,110.24	11,703.82	9,422.62	44.32	30.23	37.16		1,931.12	271.12	825.03	762.69	62.347	13.233		
12,500.00	10,110.52	11,803.82	9,422.99	45.93	31.04	37.14		2,031.11	269.78	824.68	760.58	64.099	12.866		
12,600.00	10,110.80	11,903.82	9,423.37	47.56	31.86	37.11		2,131.10	268.44	824.32	758.45	65.865	12.515		
12,700.00	10,111.08	12,003.82	9,423.75	49.21	32.67	37.09		2,231.09	267.10	823.96	756.32	67.644	12.181		
12,800.00	10,111.36	12,103.82	9,424.12	50.87	33.49	37.07		2,331.08	265.76	823.60	754.17	69.436	11.861		
12,900.00	10,111.63	12,203.81	9,424.50	52.54	34.30	37.05		2,431.07	264.42	823.24	752.01	71.238	11.556		
13,000.00	10,111.91	12,303.81	9,424.88	54.22	35.12	37.03		2,531.06	263.08	822.89	749.84	73.050	11.265		
13,100.00	10,112.19	12,403.81	9,425.25	55.92	35.93	37.01		2,631.05	261.74	822.53	747.66	74.871	10.986		
13,200.00	10,112.47	12,503.81	9,425.63	57.62	36.75	36.98		2,731.04	260.40	822.17	745.47	76.700	10.719		
13,300.00	10,112.75	12,603.81	9,426.01	59.34	37.56	36.96		2,831.03	259.06	821.81	743.28	78.537	10.464		
13,400.00	10,113.03	12,703.81	9,426.39	61.06	38.38	36.94		2,931.02	257.72	821.46	741.08	80.381	10.220		
13,500.00	10,113.30	12,803.81	9,426.76	62.79	39.20	36.92		3,031.01	256.38	821.10	738.87	82.231	9.985		
13,600.00	10,113.58	12,903.81	9,427.14	64.52	40.01	36.90		3,130.99	255.04	820.74	736.66	84.087	9.761		
13,700.00	10,113.86	13,003.81	9,427.52	66.27	40.83	36.88		3,230.98	253.70	820.39	734.44	85.949	9.545		
13,800.00	10,114.14	13,103.80	9,427.89	68.02	41.64	36.85		3,330.97	252.36	820.03	732.21	87.815	9.338		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#33H - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 8938-MWD+IFR1+MS													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
13,900.00	10,114.42	13,203.80	9,428.27	69.77	42.46	36.83	3,430.96	251.02	819.67	729.99	89.685	9.139	
14,000.00	10,114.69	13,303.80	9,428.65	71.53	43.27	36.81	3,530.95	249.68	819.32	727.76	91.560	8.948	
14,100.00	10,114.97	13,403.80	9,429.02	73.29	44.09	36.79	3,630.94	248.34	818.96	725.52	93.439	8.765	
14,200.00	10,115.25	13,503.80	9,429.40	75.06	44.91	36.77	3,730.93	247.00	818.60	723.28	95.320	8.588	
14,300.00	10,115.53	13,603.80	9,429.78	76.83	45.72	36.75	3,830.92	245.66	818.25	721.04	97.206	8.418	
14,400.00	10,115.81	13,703.80	9,430.16	78.61	46.54	36.72	3,930.91	244.32	817.89	718.80	99.093	8.254	
14,500.00	10,116.08	13,803.80	9,430.53	80.39	47.35	36.70	4,030.90	242.98	817.54	716.55	100.984	8.096	
14,600.00	10,116.36	13,903.80	9,430.91	82.17	48.17	36.68	4,130.89	241.64	817.18	714.30	102.877	7.943	
14,700.00	10,116.64	14,003.79	9,431.29	83.95	48.98	36.66	4,230.88	240.30	816.82	712.05	104.772	7.796	
14,800.00	10,116.92	14,103.79	9,431.66	85.74	49.80	36.64	4,330.86	238.96	816.47	709.80	106.670	7.654	
14,900.00	10,117.20	14,203.79	9,432.04	87.53	50.62	36.61	4,430.85	237.62	816.11	707.54	108.569	7.517	
15,000.00	10,117.48	14,303.79	9,432.42	89.33	51.43	36.59	4,530.84	236.28	815.76	705.29	110.470	7.384	
15,100.00	10,117.75	14,403.79	9,432.79	91.12	52.25	36.57	4,630.83	234.94	815.40	703.03	112.372	7.256	
15,200.00	10,118.03	14,503.79	9,433.17	92.92	53.06	36.55	4,730.82	233.60	815.05	700.77	114.276	7.132	
15,300.00	10,118.31	14,603.79	9,433.55	94.72	53.88	36.53	4,830.81	232.26	814.69	698.51	116.181	7.012	
15,400.00	10,118.59	14,703.79	9,433.92	96.52	54.70	36.50	4,930.80	230.92	814.34	696.25	118.087	6.896	
15,500.00	10,118.87	14,803.79	9,434.30	98.33	55.51	36.48	5,030.79	229.58	813.98	693.99	119.994	6.784	
15,600.00	10,119.14	14,903.78	9,434.68	100.13	56.33	36.46	5,130.78	228.24	813.63	691.73	121.903	6.674	
15,700.00	10,119.42	15,003.78	9,435.06	101.94	57.14	36.44	5,230.77	226.90	813.27	689.46	123.812	6.569	
15,800.00	10,119.70	15,103.78	9,435.43	103.75	57.96	36.42	5,330.76	225.56	812.92	687.20	125.721	6.466	
15,900.00	10,119.98	15,203.78	9,435.81	105.56	58.78	36.39	5,430.75	224.22	812.57	684.93	127.632	6.366	
16,000.00	10,120.26	15,303.78	9,436.19	107.37	59.59	36.37	5,530.74	222.88	812.21	682.67	129.543	6.270	
16,100.00	10,120.54	15,403.78	9,436.56	109.19	60.41	36.35	5,630.72	221.54	811.86	680.40	131.454	6.176	
16,200.00	10,120.81	15,503.78	9,436.94	111.00	61.22	36.33	5,730.71	220.20	811.50	678.14	133.366	6.085	
16,300.00	10,121.09	15,603.78	9,437.32	112.82	62.04	36.30	5,830.70	218.86	811.15	675.87	135.279	5.996	
16,400.00	10,121.37	15,703.78	9,437.69	114.63	62.85	36.28	5,930.69	217.52	810.80	673.60	137.192	5.910	
16,500.00	10,121.65	15,803.77	9,438.07	116.45	63.67	36.26	6,030.68	216.18	810.44	671.34	139.105	5.826	
16,600.00	10,121.93	15,903.77	9,438.45	118.27	64.49	36.24	6,130.67	214.84	810.09	669.07	141.019	5.745	
16,700.00	10,122.20	16,003.77	9,438.83	120.09	65.30	36.22	6,230.66	213.50	809.74	666.80	142.933	5.665	
16,800.00	10,122.48	16,103.77	9,439.20	121.91	66.12	36.19	6,330.65	212.16	809.38	664.54	144.847	5.588	
16,900.00	10,122.76	16,203.77	9,439.58	123.74	66.93	36.17	6,430.64	210.82	809.03	662.27	146.761	5.513	
17,000.00	10,123.04	16,303.77	9,439.96	125.56	67.75	36.15	6,530.63	209.48	808.68	660.00	148.675	5.439	
17,100.00	10,123.32	16,403.77	9,440.33	127.38	68.57	36.13	6,630.62	208.14	808.32	657.73	150.589	5.368	
17,200.00	10,123.59	16,503.77	9,440.71	129.21	69.38	36.10	6,730.61	206.80	807.97	655.47	152.504	5.298	
17,300.00	10,123.87	16,603.77	9,441.09	131.03	70.20	36.08	6,830.59	205.46	807.62	653.20	154.418	5.230	
17,400.00	10,124.15	16,703.76	9,441.46	132.86	71.01	36.06	6,930.58	204.12	807.27	650.93	156.332	5.164	
17,500.00	10,124.43	16,803.76	9,441.84	134.69	71.83	36.04	7,030.57	202.78	806.91	648.67	158.246	5.099	
17,600.00	10,124.71	16,903.76	9,442.22	136.52	72.65	36.01	7,130.56	201.44	806.56	646.40	160.160	5.036	
17,700.00	10,124.99	17,003.76	9,442.60	138.35	73.46	35.99	7,230.55	200.10	806.21	644.14	162.074	4.974	
17,800.00	10,125.26	17,103.76	9,442.97	140.18	74.28	35.97	7,330.54	198.76	805.86	641.87	163.987	4.914	
17,900.00	10,125.54	17,203.76	9,443.35	142.01	75.09	35.95	7,430.53	197.42	805.51	639.61	165.900	4.855	
18,000.00	10,125.82	17,303.76	9,443.73	143.84	75.91	35.92	7,530.52	196.08	805.15	637.34	167.813	4.798	
18,100.00	10,126.10	17,403.76	9,444.10	145.67	76.73	35.90	7,630.51	194.74	804.80	635.08	169.726	4.742	
18,200.00	10,126.38	17,503.76	9,444.48	147.50	77.54	35.88	7,730.50	193.40	804.45	632.81	171.638	4.687	
18,300.00	10,126.65	17,603.75	9,444.86	149.33	78.36	35.86	7,830.49	192.06	804.10	630.55	173.550	4.633	
18,400.00	10,126.93	17,703.75	9,445.23	151.16	79.17	35.83	7,930.48	190.72	803.75	628.29	175.462	4.581	
18,500.00	10,127.21	17,803.75	9,445.61	153.00	79.99	35.81	8,030.47	189.38	803.40	626.03	177.373	4.529	
18,600.00	10,127.49	17,903.75	9,445.99	154.83	80.80	35.79	8,130.45	188.04	803.05	623.76	179.283	4.479	
18,700.00	10,127.77	18,003.75	9,446.37	156.66	81.62	35.77	8,230.44	186.70	802.70	621.50	181.194	4.430	
18,800.00	10,128.05	18,103.75	9,446.74	158.50	82.44	35.74	8,330.43	185.36	802.35	619.24	183.104	4.382	
18,900.00	10,128.32	18,203.75	9,447.12	160.33	83.25	35.72	8,430.42	184.02	802.00	616.98	185.013	4.335	
19,000.00	10,128.60	18,303.75	9,447.50	162.17	84.07	35.70	8,530.41	182.68	801.64	614.72	186.922	4.289	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company: COG OPERATING, LLC
Project: Eddy County, NM (NAD83) NMEZ
Reference Site: Myox 21 State COM
Site Error: 0.00 usft
Reference Well: #41H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1 - PP

Local Co-ordinate Reference: Well #41H
TVD Reference: RKB @ 3019.80usft (SDQ - KB=30')
MD Reference: RKB @ 3019.80usft (SDQ - KB=30')
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.000 sigma
Database: EDM 5000.14 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Myox 21 State COM - O-#33H - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 8938-MWD-IFR1+MS												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toothface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,100.00	10,128.88	18,403.75	9,447.87	164.01	84.88	35.68	8,630.40	181.34	801.29	612.46	188.830	4.243	
19,200.00	10,129.16	18,503.74	9,448.25	165.84	85.70	35.65	8,730.39	180.00	800.94	610.21	190.738	4.199	
19,300.00	10,129.44	18,603.74	9,448.63	167.68	86.52	35.63	8,830.38	178.66	800.59	607.95	192.645	4.156	
19,400.00	10,129.71	18,703.74	9,449.00	169.52	87.33	35.61	8,930.37	177.32	800.24	605.69	194.551	4.113	
19,500.00	10,129.99	18,803.74	9,449.38	171.35	88.15	35.58	9,030.36	175.98	799.89	603.44	196.457	4.072	
19,600.00	10,130.27	18,903.74	9,449.76	173.19	88.96	35.56	9,130.35	174.64	799.55	601.18	198.363	4.031	
19,700.00	10,130.55	19,003.74	9,450.14	175.03	89.78	35.54	9,230.34	173.31	799.20	598.93	200.267	3.991	
19,800.00	10,130.83	19,103.74	9,450.51	176.87	90.60	35.52	9,330.32	171.97	798.85	596.67	202.172	3.951	
19,900.00	10,131.11	19,203.74	9,450.89	178.71	91.41	35.49	9,430.31	170.63	798.50	594.42	204.075	3.913	
20,000.00	10,131.38	19,303.74	9,451.27	180.55	92.23	35.47	9,530.30	169.29	798.15	592.17	205.978	3.875	
20,100.00	10,131.66	19,403.73	9,451.64	182.38	93.04	35.45	9,630.29	167.95	797.80	589.92	207.880	3.838	
20,200.00	10,131.94	19,503.73	9,452.02	184.22	93.86	35.42	9,730.28	166.61	797.45	587.67	209.781	3.801	
20,221.81	10,132.00	19,525.55	9,452.10	184.55	94.04	35.42	9,752.09	166.31	797.37	587.24	210.130	3.795	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#8H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 179-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-8.32	3,908.09	-571.40	3,949.68					
100.00	100.00	60.24	60.24	0.08	0.07	-8.32	3,908.27	-571.40	3,949.88	3,949.73	.148	N/A		
200.00	200.00	132.65	132.64	0.30	0.15	-8.32	3,908.95	-571.40	3,950.81	3,950.36	.454	8,695.272		
300.00	300.00	214.96	214.95	0.53	0.28	-8.31	3,910.28	-571.40	3,952.40	3,951.58	.813	4,863.662		
400.00	400.00	317.47	317.44	0.75	0.52	-8.31	3,912.05	-571.40	3,954.11	3,952.84	1.268	3,118.977		
500.00	500.00	422.82	422.78	0.98	0.75	-8.31	3,913.75	-571.40	3,955.70	3,953.97	1.729	2,287.510		
600.00	600.00	528.19	528.13	1.20	0.99	-8.30	3,915.30	-571.40	3,957.16	3,954.97	2.191	1,806.413		
700.00	700.00	633.55	633.49	1.43	1.23	-8.30	3,916.71	-571.40	3,958.49	3,955.84	2.652	1,492.674		
800.00	800.00	731.98	731.91	1.65	1.45	-8.30	3,918.01	-571.40	3,959.79	3,956.69	3.098	1,278.095		
900.00	900.00	831.98	831.89	1.88	1.68	-8.29	3,919.32	-571.40	3,961.08	3,957.54	3.548	1,116.495		
1,000.00	1,000.00	921.86	921.77	2.10	1.88	-8.29	3,920.60	-571.40	3,962.50	3,958.52	3.975	996.903		
1,100.00	1,100.00	1,008.57	1,008.47	2.33	2.07	-8.29	3,922.09	-571.40	3,964.20	3,959.80	4.395	902.030		
1,200.00	1,200.00	1,090.56	1,090.43	2.55	2.26	-8.29	3,923.84	-571.40	3,966.31	3,961.50	4.804	825.602		
1,300.00	1,300.00	1,205.68	1,205.53	2.78	2.52	-8.28	3,926.57	-571.40	3,968.69	3,963.40	5.288	750.483		
1,400.00	1,400.00	1,299.93	1,299.76	3.00	2.74	-8.28	3,928.37	-571.40	3,970.59	3,964.86	5.725	693.528		
1,500.00	1,500.00	1,382.17	1,381.97	3.23	2.92	-8.27	3,930.31	-571.40	3,972.91	3,966.78	6.135	647.579		
1,600.00	1,600.00	1,513.95	1,513.72	3.45	3.22	-8.27	3,933.23	-571.40	3,975.12	3,968.46	6.657	597.153		
1,700.00	1,700.00	1,614.76	1,614.52	3.67	3.45	-8.26	3,934.99	-571.40	3,976.85	3,969.74	7.108	559.454		
1,800.00	1,800.00	1,767.61	1,767.35	3.90	3.79	-8.26	3,936.66	-571.40	3,977.95	3,970.27	7.677	518.169		
1,900.00	1,900.00	1,831.95	1,831.69	4.12	3.94	-8.26	3,937.21	-571.40	3,978.79	3,970.75	8.046	494.483		
2,000.00	2,000.00	1,882.81	1,882.54	4.35	4.05	-8.26	3,938.11	-571.40	3,980.62	3,972.24	8.385	474.724		
2,100.00	2,100.00	1,933.10	1,932.80	4.57	4.17	-8.25	3,939.76	-571.40	3,983.82	3,975.10	8.722	456.745		
2,200.00	2,200.00	1,988.96	1,988.61	4.80	4.30	-8.25	3,942.21	-571.40	3,988.15	3,979.08	9.071	439.645		
2,300.00	2,300.00	2,059.58	2,059.13	5.02	4.46	-8.24	3,946.07	-571.40	3,993.52	3,984.06	9.454	422.418		
2,400.00	2,400.00	2,298.23	2,297.53	5.25	5.02	-8.22	3,956.54	-571.40	3,998.51	3,988.28	10.224	391.074		
2,500.00	2,500.00	2,359.56	2,327.72	5.47	5.16	-8.22	3,957.33	-571.40	4,001.39	3,990.80	10.586	378.004		
2,600.00	2,600.00	2,428.36	2,427.56	5.70	5.32	-8.21	3,961.25	-571.40	4,005.27	3,994.31	10.966	365.250		
2,700.00	2,700.00	2,528.28	2,527.41	5.92	5.55	-8.20	3,965.17	-571.40	4,009.16	3,997.74	11.416	351.173		
2,800.00	2,800.00	10,450.51	6,719.40	6.15	74.47	-81.08	43.02	-274.15	3,945.97	3,911.28	34.688	113.758		
2,900.00	2,900.00	10,452.74	6,719.44	6.37	74.51	-81.53	40.80	-273.98	3,846.22	3,811.39	34.836	110.408		
3,000.00	3,000.00	10,454.93	6,719.47	6.60	74.55	-81.97	38.61	-273.81	3,746.49	3,711.50	34.989	107.075		
3,100.00	3,100.00	10,457.08	6,719.51	6.82	74.59	-82.41	36.48	-273.65	3,646.77	3,611.62	35.147	103.759		
3,200.00	3,200.00	10,459.54	6,719.54	7.05	74.64	-82.91	34.02	-273.46	3,547.07	3,511.75	35.311	100.453		
3,300.00	3,300.00	10,462.20	6,719.59	7.27	74.69	-83.45	31.37	-273.25	3,447.38	3,411.89	35.481	97.161		
3,400.00	3,400.00	10,464.77	6,719.63	7.50	74.73	-83.98	28.80	-273.05	3,347.70	3,312.05	35.656	93.889		
3,500.00	3,500.00	10,467.27	6,719.66	7.72	74.78	-84.49	26.31	-272.85	3,248.05	3,212.21	35.836	90.637		
3,600.00	3,600.00	10,469.70	6,719.70	7.95	74.82	-84.99	23.90	-272.66	3,148.42	3,112.40	36.021	87.405		
3,700.00	3,700.00	10,472.05	6,719.73	8.17	74.87	-85.48	21.55	-272.46	3,048.81	3,012.60	36.212	84.194		
3,800.00	3,800.00	10,474.33	6,719.77	8.40	74.91	-85.95	19.28	-272.28	2,949.22	2,912.81	36.409	81.003		
3,900.00	3,900.00	10,476.55	6,719.80	8.62	74.95	-86.41	17.07	-272.09	2,849.67	2,813.05	36.612	77.833		
4,000.00	4,000.00	10,478.71	6,719.83	8.84	74.99	-86.86	14.92	-271.91	2,750.14	2,713.32	36.823	74.684		
4,100.00	4,100.00	10,480.80	6,719.86	9.07	75.03	-87.30	12.83	-271.73	2,650.65	2,613.61	37.043	71.556		
4,200.00	4,200.00	10,482.84	6,719.88	9.29	75.07	-87.72	10.80	-271.56	2,551.20	2,513.93	37.271	68.449		
4,300.00	4,300.00	10,484.82	6,719.91	9.52	75.10	-88.14	8.82	-271.39	2,451.79	2,414.28	37.510	65.363		
4,400.00	4,400.00	10,486.75	6,719.93	9.74	75.14	-88.54	6.90	-271.22	2,352.43	2,314.67	37.761	62.298		
4,500.00	4,500.00	10,488.63	6,719.96	9.97	75.17	-88.94	5.03	-271.06	2,253.13	2,215.10	38.025	59.254		
4,600.00	4,599.99	10,492.16	6,720.00	10.16	75.24	83.56	1.52	-270.74	2,153.85	2,115.54	38.312	56.219		
4,700.00	4,699.91	10,498.93	6,720.09	10.33	75.37	94.40	-5.23	-270.13	2,054.59	2,015.96	38.627	53.190		
4,800.00	4,799.69	10,508.81	6,720.20	10.51	75.55	104.07	-15.06	-269.21	1,955.41	1,916.43	38.972	50.175		
4,900.00	4,899.27	10,521.64	6,720.33	10.68	75.79	112.33	-27.83	-267.95	1,856.35	1,817.00	39.343	47.184		
5,000.00	4,998.57	10,537.27	6,720.48	10.86	76.08	119.23	-43.37	-266.35	1,757.46	1,717.72	39.738	44.226		
5,100.00	5,097.54	10,555.54	6,720.62	11.05	76.41	124.96	-61.53	-264.35	1,658.78	1,618.63	40.156	41.308		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company: COG OPERATING, LLC
Project: Eddy County, NM (NAD83) NMEZ
Reference Site: Myox 21 State COM
Site Error: 0.00 usft
Reference Well: #41H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1 - PP

Local Co-ordinate Reference: Well #41H
TVD Reference: RKB @ 3019.80usft (SDQ - KB=30')
MD Reference: RKB @ 3019.80usft (SDQ - KB=30')
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.000 sigma
Database: EDM 5000.14 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Myox 21 State COM - O-#8H - OH - OH													Offset Site Error:
Survey Program: 179-MWD													Offset Well Error:
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.30	10,570.74	6,720.73	11.24	76.70	123.39	-76.63	-262.59	1,560.25	1,519.68	40.564	38.484	
5,300.00	5,295.07	10,568.45	6,720.85	11.45	76.99	121.62	-92.23	-260.65	1,461.75	1,420.75	41.000	35.652	
5,400.00	5,393.84	10,602.19	6,720.99	11.66	77.29	119.68	-107.82	-258.60	1,363.31	1,321.84	41.465	32.879	
5,500.00	5,492.61	10,617.94	6,721.13	11.88	77.58	117.55	-123.42	-256.43	1,264.92	1,222.95	41.965	30.142	
5,600.00	5,591.38	10,633.70	6,721.28	12.11	77.87	115.18	-139.01	-254.14	1,166.60	1,124.09	42.511	27.442	
5,700.00	5,690.15	10,649.47	6,721.45	12.34	78.17	112.55	-154.60	-251.74	1,068.38	1,025.27	43.116	24.779	
5,800.00	5,788.92	10,664.20	6,721.60	12.58	78.45	109.80	-169.15	-249.47	970.29	926.49	43.797	22.154	
5,900.00	5,887.69	10,679.07	6,721.75	12.83	78.72	106.70	-183.84	-247.17	872.38	827.79	44.594	19.563	
6,000.00	5,986.46	10,693.94	6,721.91	13.08	79.00	103.22	-198.54	-244.87	774.72	729.16	45.559	17.005	
6,100.00	6,085.22	10,695.00	6,721.92	13.34	79.02	102.96	-199.58	-244.70	677.55	630.84	46.712	14.505	
6,200.00	6,183.99	10,695.00	6,721.92	13.60	79.02	102.96	-199.58	-244.70	581.35	533.08	48.267	12.044	
6,300.00	6,282.76	10,695.00	6,721.92	13.87	79.02	102.96	-199.58	-244.70	486.68	436.18	50.492	9.639	
6,400.00	6,381.53	10,695.00	6,721.92	14.14	79.02	102.96	-199.58	-244.70	394.64	340.77	53.874	7.325	
6,500.00	6,480.30	10,695.00	6,721.92	14.42	79.02	102.96	-199.58	-244.70	307.62	248.31	59.311	5.187	
6,600.00	6,579.07	10,695.00	6,721.92	14.70	79.02	102.96	-199.58	-244.70	231.34	163.32	68.012	3.401	
6,700.00	6,677.84	10,695.00	6,721.92	14.98	79.02	102.96	-199.58	-244.70	160.01	101.96	78.047	2.306	
6,755.56	6,732.71	10,695.00	6,721.92	15.14	79.02	102.96	-199.58	-244.70	171.22	91.73	79.488	2.154 CC, ES, SF	
6,800.00	6,776.61	10,695.00	6,721.92	15.27	79.02	102.96	-199.58	-244.70	176.89	100.27	76.624	2.309	
6,900.00	6,875.37	10,695.00	6,721.92	15.56	79.02	102.96	-199.58	-244.70	224.01	159.76	64.247	3.487	
7,000.00	6,974.14	10,695.00	6,721.92	15.85	79.02	102.96	-199.58	-244.70	298.44	243.58	54.860	5.440	
7,100.00	7,072.91	10,695.00	6,721.92	16.15	79.02	102.96	-199.58	-244.70	384.65	334.80	49.847	7.717	
7,200.00	7,171.68	10,695.00	6,721.92	16.45	79.02	102.96	-199.58	-244.70	476.28	428.99	47.286	10.072	
7,300.00	7,270.45	10,695.00	6,721.92	16.75	79.02	102.96	-199.58	-244.70	570.73	524.76	45.965	12.416	
7,400.00	7,369.22	10,695.00	6,721.92	17.05	79.02	102.96	-199.58	-244.70	666.80	621.51	45.290	14.723	
7,500.00	7,467.99	10,695.00	6,721.92	17.36	79.02	102.96	-199.58	-244.70	763.88	718.91	44.968	16.987	
7,600.00	7,566.76	10,695.00	6,721.92	17.67	79.02	102.96	-199.58	-244.70	861.62	816.77	44.851	19.211	
7,700.00	7,665.53	10,695.00	6,721.92	17.98	79.02	102.96	-199.58	-244.70	959.83	914.98	44.859	21.397	
7,800.00	7,764.29	10,695.00	6,721.92	18.29	79.02	102.96	-199.58	-244.70	1,058.38	1,013.43	44.945	23.548	
7,900.00	7,863.06	10,695.00	6,721.92	18.61	79.02	102.96	-199.58	-244.70	1,157.18	1,112.09	45.084	25.667	
8,000.00	7,961.83	10,695.00	6,721.92	18.93	79.02	102.96	-199.58	-244.70	1,256.16	1,210.90	45.259	27.755	
8,100.00	8,060.60	10,695.00	6,721.92	19.24	79.02	102.96	-199.58	-244.70	1,355.30	1,309.84	45.459	29.813	
8,200.00	8,159.37	10,695.00	6,721.92	19.56	79.02	102.96	-199.58	-244.70	1,454.55	1,408.87	45.678	31.843	
8,300.00	8,258.14	10,695.00	6,721.92	19.89	79.02	102.96	-199.58	-244.70	1,553.90	1,507.99	45.911	33.846	
8,400.00	8,356.91	10,695.00	6,721.92	20.21	79.02	102.96	-199.58	-244.70	1,653.33	1,607.17	46.155	35.822	
8,500.00	8,455.68	10,695.00	6,721.92	20.53	79.02	102.96	-199.58	-244.70	1,752.82	1,706.41	46.407	37.771	
8,544.88	8,500.00	10,695.00	6,721.92	20.68	79.02	102.96	-199.58	-244.70	1,797.49	1,750.97	46.522	38.637	
8,600.00	8,554.51	10,695.00	6,721.92	20.86	79.02	111.17	-199.58	-244.70	1,852.36	1,805.69	46.667	39.693	
8,700.00	8,653.66	10,695.00	6,721.92	21.16	79.02	124.38	-199.58	-244.70	1,951.86	1,904.92	46.937	41.585	
8,800.00	8,753.13	10,695.00	6,721.92	21.44	79.02	134.90	-199.58	-244.70	2,051.27	2,004.05	47.215	43.445	
8,900.00	8,852.83	10,695.00	6,721.92	21.69	79.02	142.93	-199.58	-244.70	2,150.52	2,103.02	47.499	45.275	
9,000.00	8,952.69	10,695.00	6,721.92	21.92	79.02	149.02	-199.58	-244.70	2,249.59	2,201.80	47.788	47.074	
9,100.00	9,052.66	10,695.00	6,721.92	22.13	79.02	153.68	-199.58	-244.70	2,348.42	2,300.34	48.082	48.843	
9,144.88	9,097.54	10,695.00	6,721.92	22.21	79.02	-5.68	-199.58	-244.70	2,392.69	2,344.48	48.214	49.626	
9,200.00	9,152.66	10,695.00	6,721.92	22.31	79.02	-5.68	-199.58	-244.70	2,447.05	2,398.67	48.378	50.582	
9,300.00	9,252.66	10,695.00	6,721.92	22.49	79.02	-5.68	-199.58	-244.70	2,545.75	2,497.07	48.678	52.298	
9,400.00	9,352.66	10,695.00	6,721.92	22.66	79.02	-5.68	-199.58	-244.70	2,644.55	2,595.57	48.979	53.994	
9,500.00	9,452.66	10,695.00	6,721.92	22.84	79.02	-5.68	-199.58	-244.70	2,743.43	2,694.15	49.281	55.669	
9,515.72	9,468.38	10,695.00	6,721.92	22.87	79.02	-5.68	-199.58	-244.70	2,758.99	2,709.66	49.329	55.930	
9,550.00	9,502.64	10,695.00	6,721.92	22.93	79.02	-3.78	-199.58	-244.70	2,792.76	2,743.32	49.432	56.497	
9,600.00	9,552.41	10,695.00	6,721.92	22.98	79.02	-2.72	-199.58	-244.70	2,841.37	2,791.79	49.582	57.307	
9,650.00	9,601.67	10,695.00	6,721.92	23.02	79.02	-2.12	-199.58	-244.70	2,889.00	2,839.27	49.730	58.094	
9,700.00	9,650.10	10,695.00	6,721.92	23.03	79.02	-1.74	-199.58	-244.70	2,935.41	2,885.53	49.876	58.855	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#8H - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 179-MWD														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
9,750.00	9,697.41	10,695.00	6,721.92	23.01	79.02	-1.48	-199.58	-244.70	2,980.36	2,930.34	50.017	59.587			
9,800.00	9,743.31	10,695.00	6,721.92	22.98	79.02	-1.29	-199.58	-244.70	3,023.66	2,973.50	50.154	60.287			
9,850.00	9,787.51	10,695.00	6,721.92	22.92	79.02	-1.15	-199.58	-244.70	3,065.11	3,014.82	50.286	60.954			
9,900.00	9,829.74	10,695.00	6,721.92	22.86	79.02	-1.04	-199.58	-244.70	3,104.54	3,054.12	50.411	61.584			
9,950.00	9,869.75	10,695.00	6,721.92	22.78	79.02	-0.95	-199.58	-244.70	3,141.78	3,091.25	50.530	62.176			
10,000.00	9,907.29	10,695.00	6,721.92	22.70	79.02	-0.88	-199.58	-244.70	3,176.68	3,126.04	50.643	62.727			
10,050.00	9,942.11	10,695.00	6,721.92	22.61	79.02	-0.83	-199.58	-244.70	3,209.12	3,158.37	50.749	63.235			
10,100.00	9,974.02	10,695.00	6,721.92	22.53	79.02	-0.78	-199.58	-244.70	3,238.96	3,188.11	50.850	63.696			
10,150.00	10,002.81	10,695.00	6,721.92	22.45	79.02	-0.74	-199.58	-244.70	3,266.10	3,215.16	50.945	64.110			
10,200.00	10,028.30	10,695.00	6,721.92	22.38	79.02	-0.71	-199.58	-244.70	3,290.44	3,239.40	51.036	64.473			
10,250.00	10,050.35	10,695.00	6,721.92	22.32	79.02	-0.68	-199.58	-244.70	3,311.89	3,260.76	51.123	64.782			
10,300.00	10,068.80	10,695.00	6,721.92	22.29	79.02	-0.66	-199.58	-244.70	3,330.37	3,279.16	51.207	65.037			
10,350.00	10,083.55	10,665.62	6,721.62	22.27	78.47	-0.72	-170.54	-249.17	3,345.67	3,294.58	51.086	65.490			
10,400.00	10,094.51	10,609.13	6,721.05	22.29	77.42	-0.84	-114.70	-257.66	3,357.21	3,306.43	50.780	66.113			
10,450.00	10,101.61	10,553.00	6,720.60	22.33	76.37	-0.94	-59.01	-264.64	3,364.80	3,314.32	50.475	66.662			
10,500.00	10,104.81	10,513.35	6,720.25	22.42	75.63	-1.00	-19.58	-268.77	3,368.52	3,318.23	50.288	66.985			
10,513.95	10,105.00	10,502.55	6,720.13	22.45	75.43	-1.01	-8.83	-269.80	3,368.89	3,318.65	50.237	67.059			
10,600.00	10,105.24	10,435.18	6,719.14	22.72	74.19	-1.10	58.31	-275.34	3,370.50	3,320.57	49.933	67.500			
10,700.00	10,105.52	10,352.83	6,717.47	23.20	72.67	-1.20	140.38	-281.85	3,372.96	3,323.38	49.578	68.033			
10,800.00	10,105.79	10,245.95	6,715.19	23.81	70.70	-1.33	246.84	-291.02	3,375.54	3,326.46	49.079	68.778			
10,900.00	10,106.07	10,153.23	6,713.32	24.56	68.98	-1.47	339.14	-299.67	3,378.06	3,329.35	48.707	69.355			
11,000.00	10,106.35	10,071.49	6,711.32	25.42	67.47	-1.59	420.48	-307.52	3,381.02	3,332.58	48.441	69.797			
11,100.00	10,106.63	11,100.00	6,708.06	26.38	86.49	-1.79	535.61	-320.59	3,384.50	3,328.73	55.770	60.687			
11,200.00	10,106.91	9,804.02	6,706.64	27.43	62.54	-2.04	686.27	-336.88	3,385.79	3,338.55	47.240	71.672			
11,300.00	10,107.18	9,746.73	6,705.89	28.56	61.49	-2.11	743.34	-341.69	3,387.68	3,340.46	47.227	71.732			
11,400.00	10,107.46	9,687.93	6,704.32	29.76	60.41	-2.19	801.88	-347.01	3,390.92	3,343.69	47.226	71.801			
11,500.00	10,107.74	9,596.46	6,701.26	31.03	58.74	-2.31	892.99	-354.58	3,394.83	3,347.82	47.009	72.217			
11,600.00	10,108.02	9,496.00	6,697.66	32.35	56.92	-2.42	993.08	-362.23	3,398.97	3,352.23	46.746	72.712			
11,700.00	10,108.30	9,324.69	6,693.92	33.73	53.82	-2.58	1,163.99	-373.37	3,401.48	3,355.50	45.980	73.977			
11,800.00	10,108.57	9,222.57	6,692.50	35.14	51.98	-2.66	1,265.94	-379.09	3,403.37	3,357.63	45.743	74.402			
11,900.00	10,108.85	11,900.00	6,690.73	36.60	99.97	-2.76	1,384.34	-386.52	3,405.48	3,341.92	63.551	53.586			
12,000.00	10,109.13	8,899.56	6,693.26	38.09	46.20	-2.95	1,588.27	-399.14	3,404.24	3,359.79	44.456	76.576			
12,100.00	10,109.41	8,841.00	6,693.88	39.61	45.15	-3.02	1,646.62	-403.85	3,403.54	3,358.93	44.610	76.295			
12,116.76	10,109.46	8,841.00	6,693.88	39.87	45.15	-3.02	1,646.62	-403.85	3,403.50	3,358.79	44.711	76.123			
12,200.00	10,109.69	8,799.86	6,693.73	41.15	44.42	-3.07	1,687.60	-407.52	3,404.20	3,359.29	44.910	75.801			
12,300.00	10,109.97	8,719.86	6,693.02	42.73	43.00	-3.17	1,767.34	-413.88	3,405.76	3,360.82	44.939	75.786			
12,400.00	10,110.24	8,645.61	6,691.91	44.32	41.69	-3.24	1,841.39	-419.19	3,407.90	3,362.88	45.026	75.688			
12,500.00	10,110.52	8,428.00	6,690.10	45.93	37.93	-3.33	2,058.83	-426.65	3,409.62	3,365.53	44.085	77.341			
12,558.66	10,110.68	8,398.47	6,690.36	46.89	37.42	-3.34	2,088.35	-427.38	3,409.33	3,365.07	44.260	77.031			
12,600.00	10,110.80	8,379.95	6,690.38	47.56	37.10	-3.35	2,106.86	-428.06	3,409.47	3,365.07	44.399	76.791			
12,700.00	10,111.08	8,328.11	6,689.91	49.21	36.21	-3.39	2,158.63	-430.74	3,410.88	3,366.18	44.700	76.306			
12,800.00	10,111.36	8,268.90	6,688.65	50.87	35.20	-3.44	2,217.71	-434.47	3,413.59	3,368.63	44.962	75.921			
12,900.00	10,111.63	12,900.00	6,685.08	52.54	112.96	-3.52	2,340.04	-440.43	3,417.13	3,345.55	71.577	47.741			
13,000.00	10,111.91	8,004.62	6,683.76	54.22	30.77	-3.64	2,481.51	-449.01	3,418.47	3,373.92	44.549	76.736			
13,100.00	10,112.19	13,100.00	6,682.79	55.92	113.47	-3.75	2,600.52	-456.97	3,419.99	3,348.44	71.545	47.802			
13,200.00	10,112.47	7,730.00	6,683.96	57.62	26.34	-3.89	2,755.55	-466.56	3,419.78	3,375.55	44.223	77.330			
13,277.17	10,112.68	7,678.85	6,684.59	58.95	25.54	-3.96	2,806.52	-470.86	3,419.46	3,374.98	44.483	76.871			
13,300.00	10,112.75	7,667.00	6,684.68	59.34	25.36	-3.97	2,818.31	-472.00	3,419.49	3,374.91	44.581	76.704			
13,400.00	10,113.03	7,604.00	6,684.68	61.06	24.39	-4.07	2,880.96	-478.58	3,420.41	3,375.46	44.957	76.082			
13,500.00	10,113.30	7,554.02	6,684.03	62.79	23.64	-4.16	2,930.64	-484.01	3,422.63	3,377.21	45.426	75.346			
13,600.00	10,113.58	7,400.71	6,681.59	64.52	21.42	-4.36	3,083.31	-497.63	3,425.29	3,379.94	45.349	75.532			
13,700.00	10,113.86	7,351.94	6,681.13	66.27	20.76	-4.42	3,131.91	-501.78	3,427.24	3,381.37	45.864	74.726			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company: COG OPERATING, LLC
 Project: Eddy County, NM (NAD83) NMEZ
 Reference Site: Myox 21 State COM
 Site Error: 0.00 usft
 Reference Well: #41H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1 - PP

Local Co-ordinate Reference:
 TVD Reference: RKB @ 3019.80usft (SDQ - KB=30')
 MD Reference: RKB @ 3019.80usft (SDQ - KB=30')
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.000 sigma
 Database: EDM 5000.14 Single User Db
 Offset TVD Reference: Offset Datum

Offset Design Myox 21 State COM - O-#8H - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 170-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)					
13,800.00	10,114.14	7,310.82	6,679.97	68.02	20.21	-4.48	3,172.78	-506.03	3,431.00	3,384.57	46.429	73.897	
13,900.00	10,114.42	7,127.00	6,674.96	69.77	17.96	-4.73	3,355.72	-523.14	3,434.96	3,388.58	46.374	74.071	
14,000.00	10,114.69	7,064.00	6,673.86	71.53	17.28	-4.80	3,418.55	-527.64	3,437.55	3,390.65	46.901	73.293	
14,100.00	10,114.97	7,001.00	6,671.97	73.29	16.67	-4.84	3,481.43	-530.89	3,441.22	3,393.78	47.445	72.530	
14,200.00	10,115.25	6,987.93	6,671.25	75.06	16.55	-4.85	3,494.47	-531.51	3,446.84	3,398.66	48.182	71.537	
14,300.00	10,115.53	6,962.71	6,669.40	76.83	16.32	-4.87	3,519.57	-533.12	3,454.77	3,405.89	48.873	70.689	
14,400.00	10,115.81	6,906.00	6,664.45	78.61	15.85	-4.93	3,575.86	-537.91	3,464.38	3,414.91	49.470	70.029	
14,500.00	10,116.08	6,874.00	6,661.30	80.39	15.61	-4.98	3,607.52	-541.33	3,475.48	3,425.33	50.150	69.302	
14,600.00	10,116.36	6,842.00	6,657.23	82.17	15.39	-5.03	3,639.05	-544.89	3,488.82	3,437.99	50.829	68.639	
14,700.00	10,116.64	6,842.00	6,657.23	83.95	15.39	-5.03	3,639.05	-544.89	3,504.25	3,452.68	51.570	67.952	
14,800.00	10,116.92	6,825.66	6,654.54	85.74	15.28	-5.05	3,655.06	-546.71	3,522.18	3,469.92	52.261	67.396	
14,900.00	10,117.20	6,810.00	6,651.51	87.53	15.18	-5.07	3,670.33	-548.48	3,542.50	3,489.56	52.939	66.916	
15,000.00	10,117.48	6,810.00	6,651.51	89.33	15.18	-5.07	3,670.33	-548.48	3,565.25	3,511.62	53.624	66.486	
15,100.00	10,117.75	6,779.00	6,643.91	91.12	15.00	-5.11	3,700.18	-551.91	3,590.45	3,536.20	54.249	66.184	
15,200.00	10,118.03	6,779.00	6,643.91	92.92	15.00	-5.11	3,700.18	-551.91	3,617.60	3,562.71	54.893	65.903	
15,300.00	10,118.31	6,779.00	6,643.91	94.72	15.00	-5.11	3,700.18	-551.91	3,647.30	3,591.78	55.511	65.703	
15,400.00	10,118.59	6,779.00	6,643.91	96.52	15.00	-5.11	3,700.18	-551.91	3,679.47	3,623.36	56.104	65.583	
15,500.00	10,118.87	6,761.92	6,638.56	98.33	14.92	-5.13	3,716.30	-553.65	3,713.48	3,656.81	56.666	65.533	
15,600.00	10,119.14	6,743.00	6,631.43	100.13	14.82	-5.15	3,733.74	-555.38	3,750.23	3,693.02	57.208	65.555	
15,700.00	10,119.42	6,743.00	6,631.43	101.94	14.82	-5.15	3,733.74	-555.38	3,788.56	3,730.83	57.729	65.627	
15,800.00	10,119.70	6,743.00	6,631.43	103.75	14.82	-5.15	3,733.74	-555.38	3,829.13	3,770.90	58.224	65.766	
15,900.00	10,119.98	6,743.00	6,631.43	105.56	14.82	-5.15	3,733.74	-555.38	3,871.85	3,813.16	58.693	65.968	
16,000.00	10,120.26	6,743.00	6,631.43	107.37	14.82	-5.15	3,733.74	-555.38	3,916.66	3,857.53	59.136	66.232	
16,100.00	10,120.54	6,726.22	6,624.06	109.19	14.75	-5.16	3,748.74	-556.75	3,962.93	3,903.36	59.571	66.524	
16,200.00	10,120.81	6,711.00	6,616.56	111.00	14.68	-5.16	3,761.94	-557.86	4,011.46	3,951.48	59.986	66.873	
16,300.00	10,121.09	6,711.00	6,616.56	112.82	14.68	-5.16	3,761.94	-557.86	4,061.43	4,001.07	60.363	67.283	
16,400.00	10,121.37	6,711.00	6,616.56	114.63	14.68	-5.16	3,761.94	-557.86	4,113.22	4,052.51	60.717	67.744	
16,500.00	10,121.65	6,711.00	6,616.56	116.45	14.68	-5.16	3,761.94	-557.86	4,166.77	4,105.72	61.048	68.254	
16,600.00	10,121.93	6,711.00	6,616.56	118.27	14.68	-5.16	3,761.94	-557.86	4,222.01	4,160.85	61.358	68.809	
16,700.00	10,122.20	6,679.00	6,598.47	120.09	14.56	-5.16	3,788.27	-559.33	4,278.71	4,216.99	61.715	69.330	
16,800.00	10,122.48	6,679.00	6,598.47	121.91	14.56	-5.16	3,788.27	-559.33	4,336.53	4,274.53	61.992	69.953	
16,900.00	10,122.76	6,679.00	6,598.47	123.74	14.56	-5.16	3,788.27	-559.33	4,395.86	4,333.61	62.251	70.616	
17,000.00	10,123.04	6,679.00	6,598.47	125.56	14.56	-5.16	3,788.27	-559.33	4,456.65	4,394.15	62.491	71.316	
17,100.00	10,123.32	6,679.00	6,598.47	127.38	14.56	-5.16	3,788.27	-559.33	4,518.83	4,456.11	62.715	72.053	
17,200.00	10,123.59	6,661.09	6,587.28	129.21	14.50	-5.15	3,802.26	-569.81	4,582.02	4,519.05	62.975	72.759	
17,300.00	10,123.87	6,647.00	6,578.18	131.03	14.46	-5.14	3,812.99	-560.26	4,646.50	4,583.29	63.215	73.504	
17,400.00	10,124.15	6,647.00	6,578.18	132.86	14.46	-5.14	3,812.99	-560.26	4,712.02	4,648.62	63.400	74.323	
17,500.00	10,124.43	6,647.00	6,578.18	134.69	14.46	-5.14	3,812.99	-560.26	4,778.74	4,715.17	63.571	75.171	
17,600.00	10,124.71	6,618.00	6,558.59	136.52	14.37	-5.13	3,834.33	-561.54	4,846.46	4,782.83	63.833	75.924	
17,700.00	10,124.99	6,618.00	6,558.59	138.35	14.37	-5.13	3,834.33	-561.54	4,914.99	4,851.00	63.985	76.815	
17,800.00	10,125.26	6,618.00	6,558.59	140.18	14.37	-5.13	3,834.33	-561.54	4,984.58	4,920.45	64.126	77.731	
17,900.00	10,125.54	6,618.00	6,558.59	142.01	14.37	-5.13	3,834.33	-561.54	5,055.19	4,990.93	64.257	78.672	
18,000.00	10,125.82	6,587.00	6,536.57	143.84	14.30	-5.13	3,856.03	-563.84	5,126.65	5,062.14	64.507	79.474	
18,100.00	10,126.10	6,587.00	6,536.57	145.67	14.30	-5.13	3,856.03	-563.84	5,198.76	5,134.14	64.623	80.447	
18,200.00	10,126.38	6,587.00	6,536.57	147.50	14.30	-5.13	3,856.03	-563.84	5,271.78	5,207.05	64.731	81.442	
18,300.00	10,126.65	6,587.00	6,536.57	149.33	14.30	-5.13	3,856.03	-563.84	5,345.68	5,280.85	64.831	82.456	
18,400.00	10,126.93	6,571.04	6,524.87	151.16	14.28	-5.14	3,866.76	-565.42	5,420.19	5,355.19	64.998	83.389	
18,500.00	10,127.21	6,554.00	6,512.09	153.00	14.25	-5.15	3,877.88	-567.27	5,495.58	5,430.42	65.168	84.329	
18,600.00	10,127.49	6,554.00	6,512.09	154.83	14.25	-5.15	3,877.88	-567.27	5,571.51	5,506.25	65.251	85.385	
18,700.00	10,127.77	6,554.00	6,512.09	156.66	14.25	-5.15	3,877.88	-567.27	5,648.18	5,582.85	65.329	86.457	
18,800.00	10,128.05	6,541.02	6,502.18	158.50	14.24	-5.15	3,886.15	-568.68	5,725.46	5,660.00	65.467	87.456	
18,900.00	10,128.32	6,523.00	6,488.22	160.33	14.22	-5.16	3,897.40	-570.47	5,803.41	5,737.79	65.626	88.431	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#8H - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 179-MWD													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,000.00	10,128.60	6,523.00	6,488.22	162.17	14.22	-5.16	3,897.40	-570.47	5,881.83	5,816.14	65.692	89.537	
19,100.00	10,128.88	6,523.00	6,488.22	164.01	14.22	-5.16	3,897.40	-570.47	5,960.89	5,895.14	65.753	90.656	
19,200.00	10,129.16	6,504.48	6,473.63	165.84	14.19	-5.16	3,908.70	-571.93	6,040.40	5,974.49	65.906	91.652	
19,300.00	10,129.44	6,491.00	6,462.86	167.68	14.18	-5.15	3,916.78	-572.66	6,120.46	6,054.43	66.029	92.693	
19,400.00	10,129.71	6,491.00	6,462.86	169.52	14.18	-5.15	3,916.78	-572.66	6,201.01	6,134.93	66.082	93.838	
19,500.00	10,129.99	6,491.00	6,462.86	171.35	14.18	-5.15	3,916.78	-572.66	6,282.12	6,215.98	66.132	94.994	
19,600.00	10,130.27	6,475.44	6,450.27	173.19	14.16	-5.14	3,925.90	-573.19	6,363.57	6,297.32	66.259	96.041	
19,700.00	10,130.55	6,459.00	6,436.73	175.03	14.13	-5.13	3,935.23	-573.44	6,445.66	6,379.27	66.387	97.092	
19,800.00	10,130.83	6,459.00	6,436.73	176.87	14.13	-5.13	3,935.23	-573.44	6,528.04	6,461.61	66.431	98.267	
19,900.00	10,131.11	6,459.00	6,436.73	178.71	14.13	-5.13	3,935.23	-573.44	6,610.91	6,544.43	66.474	99.452	
20,000.00	10,131.38	6,459.00	6,436.73	180.55	14.13	-5.13	3,935.23	-573.44	6,694.24	6,627.73	66.514	100.644	
20,100.00	10,131.66	6,459.00	6,436.73	182.38	14.13	-5.13	3,935.23	-573.44	6,778.03	6,711.48	66.553	101.844	
20,200.00	10,131.94	6,444.00	6,424.18	184.22	14.11	-5.11	3,943.45	-573.54	6,862.06	6,795.39	66.668	102.929	
20,221.81	10,132.00	6,442.99	6,423.33	184.55	14.11	-5.11	3,944.00	-573.55	6,880.46	6,812.47	67.995	101.190	

Anticollision Report

Company: COG OPERATING, LLC
 Project: Eddy County, NM (NAD83) NMEZ
 Reference Site: Myox 21 State COM
 Site Error: 0.00 usft
 Reference Well: #41H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1 - PP

Local Co-ordinate Reference: Well #41H
 TVD Reference: RKB @ 3019.80usft (SDQ - KB=30')
 MD Reference: RKB @ 3019.80usft (SDQ - KB=30')
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.000 sigma
 Database: EDM 5000.14 Single User Db
 Offset TVD Reference: Offset Datum

Offset Design Myox 21 State COM - O-#9H - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 100-GYD.DP.MS												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
							N-S (usft)	E-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	-93.48	-32.78	-539.62	541.05				
100.00	100.00	91.21	91.20	0.08	0.10	-93.44	-32.36	-538.54	539.67	539.48	.196	2,759.807	
200.00	200.00	194.21	194.16	0.30	0.24	-93.35	-31.35	-535.73	536.89	536.34	.545	985.168	
300.00	300.00	293.30	293.21	0.53	0.33	-93.27	-30.43	-532.90	533.98	533.13	.853	626.053	
400.00	400.00	391.55	391.41	0.75	0.40	-93.22	-29.81	-530.33	531.33	530.18	1.145	464.059	
500.00	500.00	486.30	486.15	0.98	0.45	-93.20	-29.50	-528.42	529.31	527.88	1.427	370.867	
600.00	600.00	584.01	583.85	1.20	0.51	-93.15	-29.00	-527.24	528.07	526.36	1.706	309.535	
700.00	700.00	683.37	683.20	1.43	0.56	-93.09	-28.37	-526.29	527.07	525.09	1.982	265.940	
800.00	800.00	779.43	779.25	1.65	0.60	-92.99	-27.45	-525.73	526.44	524.20	2.242	234.801	
827.61	827.61	805.99	805.81	1.71	0.61	-92.94	-27.03	-525.73	526.42	524.11	2.313	227.568	
900.00	900.00	877.86	877.67	1.88	0.64	-92.81	-25.80	-525.82	526.46	523.95	2.501	210.474	
1,000.00	1,000.00	978.80	978.60	2.10	0.68	-92.63	-24.12	-525.95	526.50	523.74	2.760	190.737	
1,057.79	1,057.79	1,036.20	1,035.99	2.23	0.70	-92.55	-23.38	-525.94	526.46	523.55	2.907	181.125	
1,100.00	1,100.00	1,077.62	1,077.41	2.33	0.71	-92.51	-23.06	-525.98	526.49	523.48	3.012	174.796	
1,200.00	1,200.00	1,176.08	1,175.87	2.55	0.73	-92.49	-22.90	-526.29	526.79	523.54	3.252	162.003	
1,300.00	1,300.00	1,276.52	1,276.31	2.78	0.74	-92.52	-23.16	-526.72	527.24	523.74	3.497	150.762	
1,400.00	1,400.00	1,376.84	1,376.63	3.00	0.76	-92.56	-23.53	-527.02	527.55	523.80	3.747	140.798	
1,500.00	1,500.00	1,478.39	1,478.18	3.23	0.78	-92.59	-23.88	-527.19	527.73	523.74	3.994	132.125	
1,600.00	1,600.00	1,579.64	1,579.43	3.45	0.80	-92.61	-24.07	-527.05	527.60	523.36	4.247	124.222	
1,700.00	1,700.00	1,685.18	1,684.96	3.67	0.83	-92.65	-24.36	-526.32	526.93	522.42	4.505	116.955	
1,800.00	1,800.00	1,793.77	1,793.52	3.90	0.87	-92.71	-24.82	-524.04	524.85	520.09	4.766	110.115	
1,900.00	1,900.00	1,895.14	1,894.84	4.12	0.91	-92.77	-25.19	-520.89	521.76	516.73	5.025	103.830	
2,000.00	2,000.00	1,994.72	1,994.37	4.35	0.94	-92.81	-25.38	-517.72	518.60	513.32	5.283	98.155	
2,100.00	2,100.00	2,095.02	2,094.63	4.57	0.97	-92.83	-25.42	-514.56	515.45	509.91	5.542	93.007	
2,200.00	2,200.00	2,199.06	2,198.60	4.80	1.01	-92.83	-25.24	-510.85	511.88	506.08	5.802	88.231	
2,300.00	2,300.00	2,296.63	2,296.10	5.02	1.04	-92.82	-24.94	-507.19	508.12	502.06	6.060	83.852	
2,400.00	2,400.00	2,395.17	2,394.58	5.25	1.08	-92.82	-24.84	-503.86	504.74	498.42	6.318	79.888	
2,500.00	2,500.00	2,493.06	2,492.43	5.47	1.11	-92.85	-24.80	-500.88	501.70	495.12	6.576	76.288	
2,600.00	2,600.00	2,591.51	2,590.84	5.70	1.14	-92.86	-24.91	-498.23	499.02	492.18	6.835	73.013	
2,700.00	2,700.00	2,690.78	2,690.09	5.92	1.17	-92.86	-24.80	-495.80	496.56	489.47	7.093	70.009	
2,800.00	2,800.00	2,790.39	2,789.67	6.15	1.21	-92.86	-24.64	-493.46	494.20	486.85	7.351	67.229	
2,900.00	2,900.00	2,888.68	2,887.93	6.37	1.24	-92.88	-24.69	-491.33	492.04	484.43	7.609	64.665	
3,000.00	3,000.00	2,985.55	2,984.79	6.60	1.27	-92.89	-24.73	-489.70	490.37	482.50	7.867	62.334	
3,100.00	3,100.00	3,085.45	3,084.68	6.82	1.30	-92.91	-24.81	-488.41	489.08	480.96	8.125	60.196	
3,200.00	3,200.00	3,184.45	3,183.68	7.05	1.34	-92.93	-24.89	-487.17	487.84	479.45	8.383	58.196	
3,300.00	3,300.00	3,282.15	3,281.37	7.27	1.37	-92.96	-25.12	-486.27	486.93	478.29	8.638	56.373	
3,400.00	3,400.00	3,379.97	3,379.18	7.50	1.39	-93.02	-25.66	-485.83	486.51	477.63	8.885	54.754	
3,500.00	3,500.00	3,479.16	3,478.37	7.72	1.41	-93.11	-26.39	-485.70	486.42	477.29	9.128	53.289	
3,530.44	3,530.44	3,509.46	3,508.67	7.79	1.41	-93.13	-26.57	-485.69	486.41	477.21	9.202	52.862	
3,600.00	3,600.00	3,577.68	3,576.89	7.95	1.42	-93.18	-27.02	-485.76	486.51	477.15	9.365	51.950	
3,700.00	3,700.00	3,676.55	3,675.75	8.17	1.43	-93.26	-27.72	-486.12	486.91	477.32	9.597	50.736	
3,800.00	3,800.00	3,775.96	3,775.16	8.40	1.44	-93.34	-28.41	-486.65	487.49	477.66	9.826	49.610	
3,900.00	3,900.00	3,875.85	3,875.05	8.62	1.44	-93.41	-29.01	-487.26	488.13	478.08	10.054	48.549	
4,000.00	4,000.00	3,975.45	3,974.65	8.84	1.45	-93.46	-29.51	-487.90	488.81	478.52	10.282	47.539	
4,100.00	4,100.00	4,075.19	4,074.38	9.07	1.45	-93.52	-30.10	-488.63	489.57	479.06	10.510	46.580	
4,200.00	4,200.00	4,175.02	4,174.21	9.29	1.46	-93.58	-30.65	-489.39	490.36	479.63	10.739	45.664	
4,300.00	4,300.00	4,275.79	4,274.98	9.52	1.46	-93.63	-31.08	-490.13	491.12	480.16	10.967	44.784	
4,400.00	4,400.00	4,375.55	4,374.73	9.74	1.47	-93.65	-31.31	-490.76	491.77	480.58	11.195	43.929	
4,500.00	4,500.00	4,475.36	4,474.54	9.97	1.47	-93.68	-31.62	-491.48	492.51	481.09	11.424	43.113	
4,600.00	4,599.99	4,575.86	4,575.04	10.16	1.48	67.51	-32.06	-492.16	492.71	481.09	11.625	42.383	
4,700.00	4,699.91	4,675.73	4,674.90	10.33	1.49	67.86	-32.79	-492.75	491.85	480.05	11.801	41.679	
4,800.00	4,799.69	4,775.33	4,774.49	10.51	1.51	68.45	-34.07	-493.35	490.09	478.11	11.981	40.905	

CC- Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#9H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-GYD_DP_MS													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,900.00	4,899.27	4,874.15	4,873.30	10.68	1.52	69.34	-35.24	-494.06	487.54	475.38	12.165	40.077		
5,000.00	4,998.57	4,973.26	4,972.40	10.86	1.54	70.53	-36.54	-494.92	484.39	472.03	12.355	39.206		
5,100.00	5,097.54	5,072.70	5,071.83	11.05	1.55	72.04	-37.78	-495.78	480.61	468.06	12.552	38.289		
5,200.00	5,196.30	5,171.62	5,170.74	11.24	1.57	73.69	-38.78	-496.59	476.75	463.99	12.759	37.365		
5,300.00	5,295.07	5,271.10	5,270.20	11.45	1.58	75.34	-40.07	-497.41	473.27	460.30	12.976	36.473		
5,400.00	5,393.84	5,370.65	5,369.74	11.66	1.60	76.98	-41.65	-498.10	470.06	456.85	13.202	35.605		
5,500.00	5,492.61	5,470.66	5,469.74	11.88	1.62	78.65	-43.25	-498.67	467.10	453.66	13.437	34.761		
5,600.00	5,591.38	5,570.36	5,569.43	12.11	1.64	80.34	-44.86	-499.02	464.33	450.64	13.682	33.938		
5,700.00	5,690.15	5,669.49	5,668.53	12.34	1.67	82.00	-46.72	-499.33	461.88	447.95	13.934	33.148		
5,800.00	5,788.92	5,768.51	5,767.53	12.58	1.69	83.62	-49.13	-499.76	459.84	445.64	14.193	32.399		
5,900.00	5,887.69	5,867.44	5,866.42	12.83	1.71	85.22	-51.64	-500.25	458.19	443.73	14.459	31.689		
6,000.00	5,986.46	5,966.24	5,965.18	13.08	1.74	86.80	-54.41	-500.86	456.97	442.24	14.730	31.022		
6,100.00	6,085.22	6,065.06	6,063.96	13.34	1.76	88.38	-57.18	-501.56	456.18	441.18	15.007	30.398		
6,200.00	6,183.99	6,172.20	6,171.05	13.60	1.78	90.12	-60.26	-501.74	455.25	439.96	15.292	29.770		
6,300.00	6,282.76	6,277.71	6,276.49	13.87	1.81	91.85	-63.95	-499.87	452.64	437.05	15.589	29.036		
6,400.00	6,381.53	6,376.73	6,375.41	14.14	1.84	93.54	-67.32	-497.39	449.77	433.89	15.888	28.310		
6,500.00	6,480.30	6,472.15	6,470.77	14.42	1.87	95.23	-70.00	-495.24	447.77	431.58	16.188	27.661		
6,560.60	6,540.16	6,527.35	6,525.95	14.59	1.88	96.23	-71.30	-494.41	447.29	430.93	16.367	27.329 CC, ES		
6,600.00	6,579.07	6,561.88	6,560.48	14.70	1.88	96.85	-71.91	-494.24	447.52	431.04	16.482	27.152		
6,700.00	6,677.84	6,661.70	6,660.27	14.98	1.90	98.59	-73.68	-494.86	449.41	432.63	16.778	26.786		
6,800.00	6,776.61	6,765.32	6,763.81	15.27	1.93	100.15	-77.89	-495.13	450.26	433.18	17.080	26.361		
6,900.00	6,875.37	6,863.27	6,861.69	15.56	1.96	101.68	-81.49	-494.94	451.25	433.86	17.385	25.956		
7,000.00	6,974.14	6,958.83	6,957.21	15.85	1.98	103.22	-84.32	-495.01	453.16	435.47	17.689	25.619		
7,100.00	7,072.91	7,055.65	7,054.00	16.15	2.01	104.79	-86.60	-495.62	456.22	438.23	17.991	25.359		
7,200.00	7,171.68	7,153.04	7,151.37	16.45	2.03	106.41	-88.36	-496.21	459.95	441.66	18.291	25.147		
7,300.00	7,270.45	7,249.33	7,247.65	16.75	2.05	108.06	-89.26	-496.79	464.57	445.99	18.585	24.997		
7,400.00	7,369.22	7,347.01	7,345.34	17.05	2.06	109.74	-89.64	-497.62	470.12	451.25	18.872	24.912		
7,500.00	7,467.99	7,450.73	7,449.04	17.36	2.08	111.48	-90.21	-498.29	475.84	456.68	19.155	24.842		
7,600.00	7,566.76	7,557.34	7,555.63	17.67	2.10	113.16	-92.34	-498.03	480.33	460.87	19.452	24.693		
7,700.00	7,665.53	7,657.48	7,655.72	17.98	2.13	114.66	-95.36	-497.35	484.16	464.41	19.750	24.514		
7,800.00	7,764.29	7,753.97	7,752.14	18.29	2.16	115.91	-99.05	-497.92	488.65	468.60	20.044	24.379		
7,900.00	7,863.06	7,850.42	7,848.49	18.61	2.19	117.02	-103.08	-499.67	493.97	473.63	20.336	24.290		
8,000.00	7,961.83	7,946.99	7,945.01	18.93	2.21	118.21	-106.06	-501.11	500.05	479.43	20.625	24.246		
8,100.00	8,060.60	8,043.51	8,041.49	19.24	2.23	119.44	-108.27	-502.46	506.89	485.99	20.909	24.243		
8,200.00	8,159.37	8,140.83	8,138.79	19.56	2.25	120.70	-109.80	-503.75	514.48	493.29	21.188	24.282		
8,300.00	8,258.14	8,240.14	8,238.08	19.89	2.28	121.99	-111.01	-504.82	522.43	500.97	21.463	24.341		
8,400.00	8,356.91	8,342.21	8,340.14	20.21	2.30	123.28	-112.46	-505.77	530.40	508.66	21.738	24.400		
8,500.00	8,455.68	8,442.99	8,440.90	20.53	2.33	124.53	-114.45	-506.19	537.86	515.85	22.015	24.432		
8,544.88	8,500.00	8,485.98	8,483.88	20.68	2.34	125.05	-115.25	-506.42	541.37	519.23	22.139	24.454		
8,600.00	8,554.51	8,540.39	8,538.28	20.86	2.36	125.71	-116.20	-506.83	545.62	523.33	22.288	24.480		
8,700.00	8,653.66	8,640.46	8,638.33	21.16	2.38	126.68	-118.17	-507.75	552.20	529.65	22.552	24.486		
8,800.00	8,753.13	8,739.36	8,737.20	21.44	2.41	127.37	-120.32	-508.83	557.24	534.43	22.804	24.435		
8,900.00	8,852.83	8,837.28	8,835.09	21.69	2.43	127.80	-122.21	-510.22	561.12	538.08	23.046	24.348		
9,000.00	8,952.69	8,937.41	8,935.19	21.92	2.46	128.02	-124.04	-511.69	563.53	540.25	23.277	24.209		
9,100.00	9,052.66	9,037.62	9,035.38	22.13	2.48	128.01	-125.88	-513.04	564.26	540.76	23.499	24.012		
9,144.88	9,097.54	9,082.36	9,080.11	22.21	2.50	-33.17	-126.69	-513.64	564.07	540.47	23.595	23.907		
9,200.00	9,152.66	9,137.36	9,135.09	22.31	2.51	-33.29	-127.66	-514.36	563.65	539.94	23.709	23.773		
9,300.00	9,252.66	9,236.49	9,234.20	22.49	2.54	-33.46	-129.17	-515.37	562.94	539.02	23.920	23.534		
9,384.81	9,337.47	9,317.96	9,315.67	22.64	2.55	-33.57	-130.08	-516.14	562.59	538.50	24.096	23.348		
9,400.00	9,352.66	9,331.61	9,329.31	22.66	2.56	-33.59	-130.17	-516.31	562.61	538.49	24.127	23.318		
9,500.00	9,452.66	9,425.56	9,423.25	22.84	2.57	-33.74	-130.09	-518.06	563.70	539.37	24.334	23.165		
9,515.72	9,468.38	9,442.40	9,440.08	22.87	2.57	-33.77	-130.09	-518.44	563.90	539.54	24.362	23.147		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company: COG OPERATING, LLC
 Project: Eddy County, NM (NAD83) NMEZ
 Reference Site: Myox 21 State COM
 Site Error: 0.00 usft
 Reference Well: #41H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1 - PP

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:
 Output errors are at
 Database:
 Offset TVD Reference:

Well #41H
 RKB @ 3019.80usft (SDQ - KB=30')
 RKB @ 3019.80usft (SDQ - KB=30')
 Grid
 Minimum Curvature
 2.000 sigma
 EDM 5000.14 Single User Db
 Offset Datum

Offset Design Myox 21 State COM - O-#9H - OH - OH														Offset Site Error: 0.00 usft
Survey Program: 100-GYD_DP_MS														Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Footface (ft)	Offset Wellbore Centre -N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,550.00	9,502.64	9,479.08	9,476.75	22.93	2.57	-33.42	-130.24	-519.29	563.45	539.03	24.422	23.072		
9,600.00	9,552.41	9,531.35	9,529.01	22.98	2.58	-34.02	-130.80	-520.55	559.82	535.31	24.508	22.844		
9,650.00	9,601.67	9,535.00	9,532.65	23.02	2.58	-34.31	-130.85	-520.64	554.76	529.92	24.843	22.331		
9,700.00	9,650.10	9,535.00	9,532.65	23.03	2.58	-34.51	-130.85	-520.64	550.94	525.44	25.499	21.606		
9,750.00	9,697.41	9,535.00	9,532.65	23.01	2.58	-34.64	-130.85	-520.64	548.40	522.12	26.277	20.870		
9,800.00	9,743.31	9,535.00	9,532.65	22.98	2.58	-34.70	-130.85	-520.64	547.18	520.12	27.065	20.217		
9,820.42	9,761.58	9,535.00	9,532.65	22.95	2.58	-34.71	-130.85	-520.64	547.07	519.70	27.374	19.985		
9,850.00	9,787.51	9,535.00	9,532.65	22.92	2.58	-34.70	-130.85	-520.64	547.31	519.50	27.809	19.681		
9,900.00	9,829.74	9,535.00	9,532.65	22.86	2.58	-34.62	-130.85	-520.64	548.76	520.28	28.487	19.263		
9,950.00	9,869.75	9,535.00	9,532.65	22.78	2.58	-34.48	-130.85	-520.64	551.54	522.45	29.089	18.960		
10,000.00	9,907.29	9,535.00	9,532.65	22.70	2.58	-34.27	-130.85	-520.64	555.60	525.99	29.614	18.761		
10,050.00	9,942.11	9,535.00	9,532.65	22.61	2.58	-34.00	-130.85	-520.64	560.89	530.82	30.066	18.655		
10,100.00	9,974.02	9,535.00	9,532.65	22.53	2.58	-33.68	-130.85	-520.64	567.33	536.88	30.452	18.630 SF		
10,150.00	10,002.81	9,535.00	9,532.65	22.45	2.58	-33.30	-130.85	-520.64	574.86	544.09	30.779	18.677		
10,200.00	10,028.30	9,535.00	9,532.65	22.38	2.58	-32.87	-130.85	-520.64	583.39	552.34	31.054	18.786		
10,250.00	10,050.35	9,535.00	9,532.65	22.32	2.58	-32.41	-130.85	-520.64	592.82	561.54	31.284	18.950		
10,300.00	10,068.80	9,535.00	9,532.65	22.29	2.58	-31.91	-130.85	-520.64	603.05	571.58	31.472	19.161		
10,350.00	10,083.55	9,535.00	9,532.65	22.27	2.58	-31.38	-130.85	-520.64	613.99	582.36	31.623	19.416		
10,400.00	10,094.51	9,535.00	9,532.65	22.29	2.58	-30.83	-130.85	-520.64	625.52	593.78	31.736	19.710		
10,450.00	10,101.61	9,535.00	9,532.65	22.33	2.58	-30.26	-130.85	-520.64	637.55	605.74	31.812	20.041		
10,500.00	10,104.81	9,535.00	9,532.65	22.42	2.58	-29.68	-130.85	-520.64	649.98	618.13	31.847	20.409		
10,513.95	10,105.00	9,535.00	9,532.65	22.45	2.58	-29.52	-130.85	-520.64	653.50	621.65	31.848	20.519		
10,600.00	10,105.24	9,535.00	9,532.65	22.72	2.58	-29.52	-130.85	-520.64	680.42	648.60	31.826	21.380		
10,700.00	10,105.52	9,535.00	9,532.65	23.20	2.58	-29.52	-130.85	-520.64	723.41	691.89	31.712	22.812		
10,800.00	10,105.79	9,535.00	9,532.65	23.81	2.58	-29.52	-130.85	-520.64	776.95	745.43	31.520	24.650		
10,900.00	10,106.07	9,535.00	9,532.65	24.56	2.58	-29.52	-130.85	-520.64	839.05	807.77	31.273	26.830		
11,000.00	10,106.35	9,535.00	9,532.65	25.42	2.58	-29.52	-130.85	-520.64	907.93	876.93	30.999	29.289		
11,100.00	10,106.63	9,535.00	9,532.65	26.38	2.58	-29.52	-130.85	-520.64	982.18	951.46	30.717	31.975		
11,200.00	10,106.91	9,535.00	9,532.65	27.43	2.58	-29.52	-130.85	-520.64	1,060.67	1,030.23	30.442	34.842		
11,300.00	10,107.18	9,535.00	9,532.65	28.58	2.58	-29.52	-130.85	-520.64	1,142.52	1,112.34	30.183	37.853		
11,400.00	10,107.46	9,535.00	9,532.65	29.76	2.58	-29.52	-130.85	-520.64	1,227.07	1,197.13	29.943	40.980		
11,500.00	10,107.74	9,535.00	9,532.65	31.03	2.58	-29.52	-130.85	-520.64	1,313.79	1,284.06	29.724	44.199		
11,600.00	10,108.02	9,535.00	9,532.65	32.35	2.58	-29.52	-130.85	-520.64	1,402.28	1,372.75	29.527	47.491		
11,700.00	10,108.30	9,535.00	9,532.65	33.73	2.58	-29.52	-130.85	-520.64	1,492.22	1,462.87	29.351	50.841		
11,800.00	10,108.57	9,535.00	9,532.65	35.14	2.58	-29.52	-130.85	-520.64	1,583.37	1,554.18	29.194	54.237		
11,900.00	10,108.85	9,535.00	9,532.65	36.60	2.58	-29.52	-130.85	-520.64	1,675.53	1,646.47	29.055	57.688		
12,000.00	10,109.13	9,535.00	9,532.65	38.09	2.58	-29.52	-130.85	-520.64	1,768.54	1,739.61	28.932	61.128		
12,100.00	10,109.41	9,535.00	9,532.65	39.61	2.58	-29.52	-130.85	-520.64	1,862.28	1,833.45	28.824	64.608		
12,200.00	10,109.69	9,535.00	9,532.65	41.15	2.58	-29.52	-130.85	-520.64	1,956.63	1,927.90	28.730	68.104		
12,300.00	10,109.97	9,535.00	9,532.65	42.73	2.58	-29.52	-130.85	-520.64	2,051.53	2,022.88	28.648	71.611		
12,400.00	10,110.24	9,535.00	9,532.65	44.32	2.58	-29.52	-130.85	-520.64	2,146.88	2,118.30	28.578	75.124		
12,500.00	10,110.52	9,535.00	9,532.65	45.93	2.58	-29.52	-130.85	-520.64	2,242.64	2,214.12	28.518	78.641		
12,600.00	10,110.80	9,535.00	9,532.65	47.56	2.58	-29.52	-130.85	-520.64	2,338.76	2,310.29	28.467	82.158		
12,700.00	10,111.08	9,535.00	9,532.65	49.21	2.58	-29.52	-130.85	-520.64	2,435.18	2,406.76	28.424	85.673		
12,800.00	10,111.36	9,535.00	9,532.65	50.87	2.58	-29.52	-130.85	-520.64	2,531.89	2,503.50	28.389	89.184		
12,900.00	10,111.63	9,535.00	9,532.65	52.54	2.58	-29.52	-130.85	-520.64	2,628.84	2,600.48	28.362	92.689		
13,000.00	10,111.91	9,535.00	9,532.65	54.22	2.58	-29.52	-130.85	-520.64	2,726.01	2,697.67	28.341	96.187		
13,100.00	10,112.19	9,535.00	9,532.65	55.92	2.58	-29.52	-130.85	-520.64	2,823.38	2,795.06	28.326	99.675		
13,200.00	10,112.47	9,535.00	9,532.65	57.62	2.58	-29.52	-130.85	-520.64	2,920.93	2,892.61	28.316	103.153		
13,300.00	10,112.75	9,535.00	9,532.65	59.34	2.58	-29.52	-130.85	-520.64	3,018.64	2,990.32	28.312	106.620		
13,400.00	10,113.03	9,535.00	9,532.65	61.06	2.58	-29.52	-130.85	-520.64	3,116.49	3,088.18	28.313	110.074		
13,500.00	10,113.30	9,535.00	9,532.65	62.79	2.58	-29.52	-130.85	-520.64	3,214.47	3,186.16	28.318	113.514		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#9H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 100-GYD_DP_MS													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
13,600.00	10,113.58	9,535.00	9,532.65	64.52	2.58	-29.52	-130.85	-520.64	3,312.58	3,284.25	28.327	116.940		
13,700.00	10,113.86	9,535.00	9,532.65	66.27	2.58	-29.52	-130.85	-520.64	3,410.79	3,382.45	28.340	120.351		
13,800.00	10,114.14	9,535.00	9,532.65	68.02	2.58	-29.52	-130.85	-520.64	3,509.11	3,480.75	28.357	123.746		
13,900.00	10,114.42	9,535.00	9,532.65	69.77	2.58	-29.52	-130.85	-520.64	3,607.52	3,579.14	28.378	127.124		
14,000.00	10,114.69	9,535.00	9,532.65	71.53	2.58	-29.52	-130.85	-520.64	3,706.01	3,677.61	28.402	130.485		
14,100.00	10,114.97	9,535.00	9,532.65	73.29	2.58	-29.52	-130.85	-520.64	3,804.59	3,776.16	28.429	133.829		
14,200.00	10,115.25	9,535.00	9,532.65	75.06	2.58	-29.52	-130.85	-520.64	3,903.23	3,874.77	28.459	137.154		
14,300.00	10,115.53	9,535.00	9,532.65	76.83	2.58	-29.52	-130.85	-520.64	4,001.94	3,973.45	28.491	140.461		
14,400.00	10,115.81	9,535.00	9,532.65	78.61	2.58	-29.52	-130.85	-520.64	4,100.72	4,072.19	28.527	143.749		
14,500.00	10,116.08	9,535.00	9,532.65	80.39	2.58	-29.52	-130.85	-520.64	4,199.55	4,170.99	28.565	147.017		
14,600.00	10,116.36	9,535.00	9,532.65	82.17	2.58	-29.52	-130.85	-520.64	4,298.44	4,269.83	28.606	150.265		
14,700.00	10,116.64	9,535.00	9,532.65	83.95	2.58	-29.52	-130.85	-520.64	4,397.38	4,368.73	28.649	153.493		
14,800.00	10,116.92	9,535.00	9,532.65	85.74	2.58	-29.52	-130.85	-520.64	4,496.36	4,467.67	28.694	156.701		
14,900.00	10,117.20	9,535.00	9,532.65	87.53	2.58	-29.52	-130.85	-520.64	4,595.39	4,566.65	28.741	159.887		
15,000.00	10,117.48	9,535.00	9,532.65	89.33	2.58	-29.52	-130.85	-520.64	4,694.46	4,665.67	28.791	163.052		
15,100.00	10,117.75	9,535.00	9,532.65	91.12	2.58	-29.52	-130.85	-520.64	4,793.57	4,764.72	28.843	166.196		
15,200.00	10,118.03	9,535.00	9,532.65	92.92	2.58	-29.52	-130.85	-520.64	4,892.71	4,863.81	28.897	169.318		
15,300.00	10,118.31	9,535.00	9,532.65	94.72	2.58	-29.52	-130.85	-520.64	4,991.89	4,962.94	28.952	172.418		
15,400.00	10,118.59	9,535.00	9,532.65	96.52	2.58	-29.52	-130.85	-520.64	5,091.10	5,062.09	29.010	175.496		
15,500.00	10,118.87	9,535.00	9,532.65	98.33	2.58	-29.52	-130.85	-520.64	5,190.34	5,161.27	29.069	178.552		
15,600.00	10,119.14	9,535.00	9,532.65	100.13	2.58	-29.52	-130.85	-520.64	5,289.61	5,260.48	29.130	181.585		
15,700.00	10,119.42	9,535.00	9,532.65	101.94	2.58	-29.52	-130.85	-520.64	5,388.91	5,359.71	29.193	184.595		
15,800.00	10,119.70	9,535.00	9,532.65	103.75	2.58	-29.52	-130.85	-520.64	5,488.23	5,458.97	29.258	187.583		
15,900.00	10,119.98	9,535.00	9,532.65	105.56	2.58	-29.52	-130.85	-520.64	5,587.58	5,558.25	29.324	190.548		
16,000.00	10,120.26	9,535.00	9,532.65	107.37	2.58	-29.52	-130.85	-520.64	5,686.95	5,657.55	29.392	193.489		
16,100.00	10,120.54	9,535.00	9,532.65	109.19	2.58	-29.52	-130.85	-520.64	5,786.34	5,756.88	29.461	196.407		
16,200.00	10,120.81	9,535.00	9,532.65	111.00	2.58	-29.52	-130.85	-520.64	5,885.75	5,856.22	29.532	199.302		
16,300.00	10,121.09	9,535.00	9,532.65	112.82	2.58	-29.52	-130.85	-520.64	5,985.18	5,955.57	29.604	202.173		
16,400.00	10,121.37	9,535.00	9,532.65	114.63	2.58	-29.52	-130.85	-520.64	6,084.63	6,054.95	29.678	205.021		
16,500.00	10,121.65	9,535.00	9,532.65	116.45	2.58	-29.52	-130.85	-520.64	6,184.10	6,154.34	29.753	207.845		
16,600.00	10,121.93	9,535.00	9,532.65	118.27	2.58	-29.52	-130.85	-520.64	6,283.58	6,253.75	29.830	210.646		
16,700.00	10,122.20	9,535.00	9,532.65	120.09	2.58	-29.52	-130.85	-520.64	6,383.08	6,353.17	29.908	213.422		
16,800.00	10,122.48	9,535.00	9,532.65	121.91	2.58	-29.52	-130.85	-520.64	6,482.60	6,452.61	29.988	216.176		
16,900.00	10,122.76	9,535.00	9,532.65	123.74	2.58	-29.52	-130.85	-520.64	6,582.13	6,552.06	30.068	218.905		
17,000.00	10,123.04	9,535.00	9,532.65	125.56	2.58	-29.52	-130.85	-520.64	6,681.67	6,651.52	30.151	221.611		
17,100.00	10,123.32	9,535.00	9,532.65	127.38	2.58	-29.52	-130.85	-520.64	6,781.23	6,751.00	30.234	224.292		
17,200.00	10,123.59	9,535.00	9,532.65	129.21	2.58	-29.52	-130.85	-520.64	6,880.80	6,850.48	30.319	226.951		
17,300.00	10,123.87	9,535.00	9,532.65	131.03	2.58	-29.52	-130.85	-520.64	6,980.38	6,949.98	30.404	229.585		
17,400.00	10,124.15	9,535.00	9,532.65	132.86	2.58	-29.52	-130.85	-520.64	7,079.98	7,049.49	30.491	232.195		
17,500.00	10,124.43	9,535.00	9,532.65	134.69	2.58	-29.52	-130.85	-520.64	7,179.59	7,149.01	30.580	234.782		
17,600.00	10,124.71	9,535.00	9,532.65	136.52	2.58	-29.52	-130.85	-520.64	7,279.20	7,248.53	30.669	237.346		
17,700.00	10,124.99	9,535.00	9,532.65	138.35	2.58	-29.52	-130.85	-520.64	7,378.83	7,348.07	30.760	239.885		
17,800.00	10,125.26	9,535.00	9,532.65	140.18	2.58	-29.52	-130.85	-520.64	7,478.47	7,447.62	30.852	242.401		
17,900.00	10,125.54	9,535.00	9,532.65	142.01	2.58	-29.52	-130.85	-520.64	7,578.11	7,547.17	30.945	244.894		
18,000.00	10,125.82	9,535.00	9,532.65	143.84	2.58	-29.52	-130.85	-520.64	7,677.77	7,646.73	31.039	247.363		
18,100.00	10,126.10	9,535.00	9,532.65	145.67	2.58	-29.52	-130.85	-520.64	7,777.43	7,746.30	31.134	249.808		
18,200.00	10,126.38	9,535.00	9,532.65	147.50	2.58	-29.52	-130.85	-520.64	7,877.11	7,845.88	31.230	252.230		
18,300.00	10,126.65	9,535.00	9,532.65	149.33	2.58	-29.52	-130.85	-520.64	7,976.79	7,945.46	31.327	254.630		
18,400.00	10,126.93	9,535.00	9,532.65	151.16	2.58	-29.52	-130.85	-520.64	8,076.48	8,045.05	31.425	257.006		
18,500.00	10,127.21	9,535.00	9,532.65	153.00	2.58	-29.52	-130.85	-520.64	8,176.18	8,144.65	31.525	259.358		
18,600.00	10,127.49	9,535.00	9,532.65	154.83	2.58	-29.52	-130.85	-520.64	8,275.88	8,244.26	31.625	261.688		
18,700.00	10,127.77	9,535.00	9,532.65	156.66	2.58	-29.52	-130.85	-520.64	8,375.59	8,343.87	31.726	263.996		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore:	OH	Database:	EDM 5000.14 Single User.Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#9H - OH - OH													Offset Site Error:
Survey Program: 100-GYD-DP.MS													Offset Well Error:
Reference		Offset		Semi Major Axis		Distance		Minimum		Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toeface (")	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
18,800.00	10,128.05	9,535.00	9,532.65	158.50	2.58	-29.52	-130.85	-520.64	8,475.31	8,443.48	31.829	266.280	
18,900.00	10,128.32	9,535.00	9,532.65	160.33	2.58	-29.52	-130.85	-520.64	8,575.03	8,543.10	31.932	268.542	
19,000.00	10,128.60	9,535.00	9,532.65	162.17	2.58	-29.52	-130.85	-520.64	8,674.77	8,642.73	32.036	270.781	
19,100.00	10,128.88	9,535.00	9,532.65	164.01	2.58	-29.52	-130.85	-520.64	8,774.50	8,742.36	32.141	272.998	
19,200.00	10,129.16	9,535.00	9,532.65	165.84	2.58	-29.52	-130.85	-520.64	8,874.25	8,842.00	32.247	275.193	
19,300.00	10,129.44	9,535.00	9,532.65	167.68	2.58	-29.52	-130.85	-520.64	8,973.99	8,941.64	32.354	277.365	
19,400.00	10,129.71	9,535.00	9,532.65	169.52	2.58	-29.52	-130.85	-520.64	9,073.75	9,041.29	32.462	279.516	
19,500.00	10,129.99	9,535.00	9,532.65	171.35	2.58	-29.52	-130.85	-520.64	9,173.51	9,140.94	32.571	281.645	
19,600.00	10,130.27	9,535.00	9,532.65	173.19	2.58	-29.52	-130.85	-520.64	9,273.27	9,240.59	32.681	283.752	
19,700.00	10,130.55	9,535.00	9,532.65	175.03	2.58	-29.52	-130.85	-520.64	9,373.04	9,340.25	32.792	285.837	
19,800.00	10,130.83	9,535.00	9,532.65	176.87	2.58	-29.52	-130.85	-520.64	9,472.82	9,439.91	32.903	287.902	
19,900.00	10,131.11	9,535.00	9,532.65	178.71	2.58	-29.52	-130.85	-520.64	9,572.60	9,539.58	33.015	289.944	
20,000.00	10,131.38	9,535.00	9,532.65	180.55	2.58	-29.52	-130.85	-520.64	9,672.38	9,639.25	33.128	291.966	
20,100.00	10,131.66	9,535.00	9,532.65	182.38	2.58	-29.52	-130.85	-520.64	9,772.17	9,738.93	33.242	293.967	
20,200.00	10,131.94	9,535.00	9,532.65	184.22	2.58	-29.52	-130.85	-520.64	9,871.96	9,838.60	33.357	295.947	
20,221.81	10,132.00	9,535.00	9,532.65	184.55	2.58	-29.52	-130.85	-520.64	9,893.73	9,853.08	40.849	243.394	

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#9H - ST1 - ST1													Offset Site Error:	0.00 usft
Survey Program: 100-GYD_DP_MS, 6586-MWD													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-93.48	-32.78	-539.62	541.05					
100.00	100.00	91.21	91.20	0.08	0.10	-93.44	-32.36	-538.54	539.67	539.48	.196	2,759.807		
200.00	200.00	194.21	194.16	0.30	0.24	-93.35	-31.35	-535.73	536.89	536.34	.545	985.168		
300.00	300.00	293.30	293.21	0.53	0.33	-93.27	-30.43	-532.90	533.98	533.13	.853	626.053		
400.00	400.00	391.55	391.41	0.75	0.40	-93.22	-29.81	-530.33	531.33	530.18	1.145	464.059		
500.00	500.00	486.30	486.15	0.98	0.45	-93.20	-29.50	-528.42	529.31	527.88	1.427	370.867		
600.00	600.00	584.01	583.85	1.20	0.51	-93.15	-29.00	-527.24	528.07	526.36	1.706	309.535		
700.00	700.00	683.37	683.20	1.43	0.56	-93.09	-28.37	-526.29	527.07	525.09	1.982	265.940		
800.00	800.00	779.43	779.25	1.65	0.60	-92.99	-27.45	-525.73	526.44	524.20	2.242	234.801		
827.61	827.61	805.99	805.81	1.71	0.61	-92.94	-27.03	-525.73	526.42	524.11	2.313	227.568		
900.00	900.00	877.86	877.67	1.88	0.64	-92.81	-25.80	-525.82	526.46	523.95	2.501	210.474		
1,000.00	1,000.00	978.80	978.60	2.10	0.68	-92.63	-24.12	-525.95	526.50	523.74	2.760	190.737		
1,057.79	1,057.79	1,036.20	1,035.99	2.23	0.70	-92.55	-23.38	-525.94	526.46	523.55	2.907	181.125		
1,100.00	1,100.00	1,077.62	1,077.41	2.33	0.71	-92.51	-23.06	-525.98	526.49	523.48	3.012	174.796		
1,200.00	1,200.00	1,176.08	1,175.87	2.55	0.73	-92.49	-22.90	-526.29	526.79	523.54	3.252	162.003		
1,300.00	1,300.00	1,276.52	1,276.31	2.78	0.74	-92.52	-23.16	-526.72	527.24	523.74	3.497	150.762		
1,400.00	1,400.00	1,376.84	1,376.63	3.00	0.76	-92.56	-23.53	-527.02	527.55	523.80	3.747	140.798		
1,500.00	1,500.00	1,478.39	1,478.18	3.23	0.78	-92.59	-23.88	-527.19	527.73	523.74	3.994	132.125		
1,600.00	1,600.00	1,579.64	1,579.43	3.45	0.80	-92.61	-24.07	-527.05	527.60	523.36	4.247	124.222		
1,700.00	1,700.00	1,685.18	1,684.96	3.67	0.83	-92.65	-24.36	-526.32	526.93	522.42	4.505	116.955		
1,800.00	1,800.00	1,793.77	1,793.52	3.90	0.87	-92.71	-24.82	-524.04	524.85	520.09	4.766	110.115		
1,900.00	1,900.00	1,895.14	1,894.84	4.12	0.91	-92.77	-25.19	-520.89	521.76	516.73	5.025	103.830		
2,000.00	2,000.00	1,994.72	1,994.37	4.35	0.94	-92.81	-25.38	-517.72	518.60	513.32	5.283	98.155		
2,100.00	2,100.00	2,095.02	2,094.63	4.57	0.97	-92.83	-25.42	-514.56	515.45	509.91	5.542	93.007		
2,200.00	2,200.00	2,199.06	2,198.60	4.80	1.01	-92.83	-25.24	-510.85	511.88	506.08	5.802	88.231		
2,300.00	2,300.00	2,296.63	2,296.10	5.02	1.04	-92.82	-24.94	-507.19	508.12	502.06	6.060	83.852		
2,400.00	2,400.00	2,395.17	2,394.58	5.25	1.08	-92.82	-24.84	-503.86	504.74	498.42	6.318	79.888		
2,500.00	2,500.00	2,493.06	2,492.43	5.47	1.11	-92.85	-24.90	-500.88	501.70	495.12	6.576	76.288		
2,600.00	2,600.00	2,591.51	2,590.84	5.70	1.14	-92.86	-24.91	-498.23	499.02	492.18	6.835	73.013		
2,700.00	2,700.00	2,690.78	2,690.09	5.92	1.17	-92.86	-24.80	-495.80	496.56	489.47	7.093	70.009		
2,800.00	2,800.00	2,790.39	2,789.67	6.15	1.21	-92.86	-24.64	-493.46	494.20	486.85	7.351	67.229		
2,900.00	2,900.00	2,888.68	2,887.93	6.37	1.24	-92.88	-24.69	-491.33	492.04	484.43	7.609	64.665		
3,000.00	3,000.00	2,985.55	2,984.79	6.60	1.27	-92.89	-24.73	-489.70	490.37	482.50	7.867	62.334		
3,100.00	3,100.00	3,085.45	3,084.68	6.82	1.30	-92.91	-24.81	-488.41	489.08	480.96	8.125	60.196		
3,200.00	3,200.00	3,184.45	3,183.68	7.05	1.34	-92.93	-24.89	-487.17	487.84	479.45	8.383	58.196		
3,300.00	3,300.00	3,282.15	3,281.37	7.27	1.37	-92.96	-25.12	-486.27	486.93	478.29	8.638	56.373		
3,400.00	3,400.00	3,379.97	3,379.18	7.50	1.39	-93.02	-25.66	-485.83	486.51	477.63	8.885	54.754		
3,500.00	3,500.00	3,479.16	3,478.37	7.72	1.41	-93.11	-26.39	-485.70	486.42	477.29	9.128	53.289		
3,530.44	3,530.44	3,509.46	3,508.67	7.79	1.41	-93.13	-26.57	-485.69	486.41	477.21	9.202	52.862		
3,600.00	3,600.00	3,577.68	3,576.89	7.95	1.42	-93.18	-27.02	-485.76	486.51	477.15	9.365	51.950		
3,700.00	3,700.00	3,676.55	3,675.75	8.17	1.43	-93.26	-27.72	-486.12	486.91	477.32	9.597	50.736		
3,800.00	3,800.00	3,775.96	3,775.16	8.40	1.44	-93.34	-28.41	-486.65	487.49	477.66	9.826	49.610		
3,900.00	3,900.00	3,875.85	3,875.05	8.62	1.44	-93.41	-29.01	-487.26	488.13	478.08	10.054	48.549		
4,000.00	4,000.00	3,975.45	3,974.65	8.84	1.45	-93.46	-29.51	-487.90	488.81	478.52	10.282	47.539		
4,100.00	4,100.00	4,075.19	4,074.38	9.07	1.45	-93.52	-30.10	-488.63	489.57	479.06	10.510	46.580		
4,200.00	4,200.00	4,175.02	4,174.21	9.29	1.46	-93.58	-30.65	-489.39	490.36	479.63	10.739	45.664		
4,300.00	4,300.00	4,275.79	4,274.98	9.52	1.46	-93.63	-31.08	-490.13	491.12	480.16	10.967	44.784		
4,400.00	4,400.00	4,375.55	4,374.73	9.74	1.47	-93.65	-31.31	-490.76	491.77	480.58	11.195	43.929		
4,500.00	4,500.00	4,475.36	4,474.54	9.97	1.47	-93.68	-31.62	-491.48	492.51	481.09	11.424	43.113		
4,600.00	4,599.99	4,575.86	4,575.04	10.16	1.48	67.51	-32.06	-492.16	492.71	481.09	11.625	42.383		
4,700.00	4,699.91	4,675.73	4,674.90	10.33	1.49	67.86	-32.79	-492.75	491.85	480.05	11.801	41.679		
4,800.00	4,799.69	4,775.33	4,774.49	10.51	1.51	68.45	-34.07	-493.35	490.09	478.11	11.981	40.905		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore:	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#9H - ST1 - ST1												Offset Site Error:	0.00 usft
Survey Program: 100-GYD_DP_MS/6588-MWD												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Footface (")	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,900.00	4,999.27	4,874.15	4,873.30	10.68	1.52	69.34	-35.24	-494.06	487.54	475.38	12.165	40.077	
5,000.00	4,998.57	4,973.26	4,972.40	10.86	1.54	70.53	-36.54	-494.92	484.39	472.03	12.355	39.206	
5,100.00	5,097.54	5,072.70	5,071.83	11.05	1.55	72.04	-37.78	-495.78	480.61	468.06	12.552	38.289	
5,200.00	5,196.30	5,171.62	5,170.74	11.24	1.57	73.69	-38.78	-496.59	476.75	463.99	12.759	37.365	
5,300.00	5,295.07	5,271.10	5,270.20	11.45	1.58	75.34	-40.07	-497.41	473.27	460.30	12.976	36.473	
5,400.00	5,393.84	5,370.65	5,369.74	11.66	1.60	76.98	-41.65	-498.10	470.06	456.85	13.202	35.605	
5,500.00	5,492.61	5,470.66	5,469.74	11.88	1.62	78.65	-43.25	-498.67	467.10	453.66	13.437	34.761	
5,600.00	5,591.38	5,570.36	5,569.43	12.11	1.64	80.34	-44.86	-499.02	464.33	450.64	13.682	33.938	
5,700.00	5,690.15	5,669.49	5,668.53	12.34	1.67	82.00	-46.72	-499.33	461.88	447.95	13.934	33.148	
5,800.00	5,788.92	5,768.51	5,767.53	12.58	1.69	83.62	-49.13	-499.76	459.84	445.64	14.193	32.399	
5,900.00	5,887.69	5,867.44	5,866.42	12.83	1.71	85.22	-51.64	-500.25	458.19	443.73	14.459	31.689	
6,000.00	5,986.46	5,966.24	5,965.18	13.08	1.74	86.80	-54.41	-500.86	456.97	442.24	14.730	31.022	
6,100.00	6,085.22	6,065.06	6,063.96	13.34	1.76	88.38	-57.18	-501.56	456.18	441.18	15.007	30.398	
6,200.00	6,183.99	6,172.20	6,171.05	13.60	1.78	90.12	-60.26	-501.74	455.25	439.96	15.292	29.770	
6,300.00	6,282.76	6,277.71	6,276.49	13.87	1.81	91.85	-63.95	-499.87	452.64	437.05	15.589	29.036	
6,400.00	6,381.53	6,376.73	6,375.41	14.14	1.84	93.54	-67.32	-497.39	449.77	433.89	15.888	28.310	
6,500.00	6,480.30	6,472.15	6,470.77	14.42	1.87	95.23	-70.00	-495.24	447.77	431.58	16.188	27.661	
6,548.25	6,527.96	6,514.88	6,513.49	14.55	1.88	96.01	-70.92	-494.52	447.35	431.02	16.332	27.391 CC, ES	
6,600.00	6,579.07	6,555.40	6,553.99	14.70	1.89	96.92	-70.28	-494.01	448.03	431.54	16.487	27.175	
6,700.00	6,677.84	6,623.46	6,621.62	14.98	1.94	99.08	-63.41	-493.16	454.03	437.11	16.916	26.841	
6,800.00	6,776.61	6,693.17	6,688.66	15.27	2.06	102.54	-44.68	-490.68	468.12	450.62	17.509	26.736 SF	
6,900.00	6,875.37	6,771.42	6,761.90	15.56	2.19	106.92	-17.46	-486.44	488.78	470.66	18.115	26.982	
7,000.00	6,974.14	6,819.27	6,805.33	15.85	2.34	109.75	2.34	-483.55	517.33	498.35	18.979	27.258	
7,100.00	7,072.91	6,856.85	6,837.71	16.15	2.55	112.12	21.27	-481.47	556.38	536.55	19.833	28.053	
7,200.00	7,171.68	6,888.61	6,863.49	16.45	2.78	114.19	39.73	-479.85	605.29	584.71	20.580	29.412	
7,300.00	7,270.45	6,915.56	6,884.04	16.75	3.02	115.98	57.11	-478.46	662.70	641.50	21.205	31.252	
7,400.00	7,369.22	6,935.00	6,898.13	17.05	3.21	117.26	70.48	-477.66	727.22	705.49	21.735	33.459	
7,500.00	7,467.99	6,967.00	6,919.99	17.36	3.56	119.30	93.82	-476.63	797.43	775.28	22.148	36.005	
7,600.00	7,566.76	6,982.34	6,929.90	17.67	3.75	120.26	105.52	-476.20	872.04	849.50	22.540	38.689	
7,700.00	7,665.53	6,998.00	6,939.69	17.98	3.94	121.22	117.73	-475.72	950.24	927.36	22.896	41.521	
7,800.00	7,764.29	7,030.00	6,958.90	18.29	4.35	123.10	143.30	-474.69	1,031.09	1,007.90	23.197	44.450	
7,900.00	7,863.06	7,051.51	6,971.30	18.61	4.64	124.33	160.85	-473.79	1,114.10	1,090.59	23.503	47.402	
8,000.00	7,961.83	7,074.51	6,984.13	18.93	4.96	125.62	179.90	-472.46	1,198.83	1,175.03	23.801	50.369	
8,100.00	8,060.60	7,093.00	6,994.16	19.24	5.22	126.62	195.38	-471.24	1,285.05	1,260.96	24.094	53.336	
8,200.00	8,159.37	7,110.30	7,003.25	19.56	5.48	127.54	210.03	-469.94	1,372.62	1,348.24	24.384	56.292	
8,300.00	8,258.14	7,125.00	7,010.70	19.89	5.69	128.31	222.65	-468.68	1,461.42	1,436.75	24.670	59.238	
8,400.00	8,356.91	7,125.00	7,010.70	20.21	5.69	128.31	222.65	-468.68	1,551.40	1,526.45	24.948	62.184	
8,500.00	8,455.68	7,144.28	7,020.02	20.53	5.98	129.30	239.43	-466.88	1,642.13	1,616.89	25.238	65.066	
8,544.88	8,500.00	7,156.00	7,025.42	20.68	6.16	129.89	249.76	-465.71	1,683.23	1,657.86	25.370	66.347	
8,600.00	8,554.51	7,156.00	7,025.42	20.86	6.16	131.32	249.76	-465.71	1,733.70	1,708.18	25.522	67.929	
8,700.00	8,653.66	7,156.00	7,025.42	21.16	6.16	133.86	249.76	-465.71	1,825.43	1,799.64	25.799	70.756	
8,800.00	8,753.13	7,168.96	7,031.13	21.44	6.37	136.80	261.32	-464.36	1,917.11	1,891.02	26.089	73.484	
8,900.00	8,852.83	7,188.00	7,039.00	21.69	6.67	139.72	278.53	-462.30	2,008.90	1,982.51	26.386	76.134	
9,000.00	8,952.69	7,188.00	7,039.00	21.92	6.67	141.85	278.53	-462.30	2,100.27	2,073.60	26.669	78.752	
9,100.00	9,052.66	7,188.00	7,039.00	22.13	6.67	143.88	278.53	-462.30	2,191.59	2,164.64	26.954	81.307	
9,144.88	9,097.54	7,188.00	7,039.00	22.21	6.67	-16.34	278.53	-462.30	2,232.55	2,205.46	27.083	82.434	
9,200.00	9,152.66	7,188.00	7,039.00	22.31	6.67	-16.34	278.53	-462.30	2,282.95	2,255.70	27.243	83.799	
9,300.00	9,252.66	7,205.11	7,045.50	22.49	6.94	-15.96	294.24	-460.39	2,374.56	2,347.01	27.555	86.175	
9,400.00	9,352.66	7,220.00	7,050.72	22.66	7.18	-15.63	308.08	-458.67	2,466.95	2,439.08	27.868	88.523	
9,500.00	9,452.66	7,220.00	7,050.72	22.84	7.18	-15.63	308.08	-458.67	2,559.66	2,531.50	28.167	90.874	
9,515.72	9,468.38	7,220.00	7,050.72	22.87	7.18	-15.63	308.08	-458.67	2,574.29	2,546.07	28.215	91.240	
9,550.00	9,502.64	7,220.00	7,050.72	22.93	7.18	-13.32	308.08	-458.67	2,605.88	2,577.57	28.315	92.031	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#9H - ST1 - ST1														Offset Site Error:	0.00 usft
Survey Program: 100-GYD_DP_MS, 6586-MWD														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
9,600.00	9,552.41	7,220.00	7,050.72	22.98	7.18	-11.36	308.08	-458.67	2,650.77	2,622.31	28.459	93.144			
9,650.00	9,601.67	7,220.00	7,050.72	23.02	7.18	-9.92	308.08	-458.67	2,694.06	2,665.46	28.600	94.199			
9,700.00	9,650.10	7,220.00	7,050.72	23.03	7.18	-8.83	308.08	-458.67	2,735.55	2,706.82	28.737	95.192			
9,750.00	9,697.41	7,235.23	7,055.61	23.01	7.44	-7.87	322.39	-456.91	2,774.81	2,745.92	28.889	96.051			
9,800.00	9,743.31	7,252.00	7,060.46	22.98	7.72	-7.10	338.33	-454.98	2,812.21	2,783.18	29.038	96.846			
9,850.00	9,787.51	7,252.00	7,060.46	22.92	7.72	-6.58	338.33	-454.98	2,846.99	2,817.83	29.162	97.626			
9,900.00	9,829.74	7,252.00	7,060.46	22.86	7.72	-6.16	338.33	-454.98	2,879.37	2,850.08	29.282	98.333			
9,950.00	9,869.75	7,252.00	7,060.46	22.78	7.72	-5.81	338.33	-454.98	2,909.21	2,879.82	29.396	98.965			
10,000.00	9,907.29	7,252.00	7,060.46	22.70	7.72	-5.52	338.33	-454.98	2,936.44	2,906.93	29.507	99.517			
10,050.00	9,942.11	7,283.00	7,068.13	22.61	8.25	-5.17	368.16	-451.52	2,960.71	2,931.06	29.651	99.853			
10,100.00	9,974.02	7,283.00	7,068.13	22.53	8.25	-4.99	368.16	-451.52	2,981.95	2,952.19	29.754	100.222			
10,150.00	10,002.81	7,283.00	7,068.13	22.45	8.25	-4.83	368.16	-451.52	3,000.30	2,970.44	29.854	100.499			
10,200.00	10,028.30	7,299.74	7,071.72	22.38	8.54	-4.67	384.41	-449.72	3,015.52	2,985.54	29.974	100.603			
10,250.00	10,050.35	7,315.00	7,074.76	22.32	8.80	-4.54	399.28	-448.11	3,027.58	2,997.48	30.092	100.611			
10,300.00	10,068.80	7,315.00	7,074.76	22.29	8.80	-4.47	399.28	-448.11	3,036.44	3,006.25	30.190	100.576			
10,350.00	10,083.55	7,332.37	7,077.90	22.27	9.11	-4.40	416.27	-446.33	3,042.00	3,011.69	30.313	100.352			
10,400.00	10,094.51	7,347.00	7,080.26	22.29	9.36	-4.35	430.64	-444.88	3,044.36	3,013.93	30.434	100.033			
10,450.00	10,101.61	7,347.00	7,080.26	22.33	9.36	-4.35	430.64	-444.88	3,043.46	3,012.93	30.537	99.666			
10,500.00	10,104.81	7,361.27	7,082.28	22.42	9.62	-4.36	444.70	-443.52	3,039.29	3,008.63	30.662	99.123			
10,513.95	10,105.00	7,363.80	7,082.61	22.45	9.66	-4.36	447.19	-443.29	3,037.55	3,006.86	30.696	98.956			
10,600.00	10,105.24	7,379.00	7,084.40	22.72	9.93	-4.34	462.23	-441.92	3,027.07	2,996.16	30.911	97.928			
10,700.00	10,105.52	7,411.00	7,087.22	23.20	10.50	-4.29	493.99	-439.25	3,017.37	2,986.15	31.217	96.656			
10,800.00	10,105.79	7,431.76	7,088.55	23.81	10.87	-4.25	514.65	-437.65	3,010.02	2,978.47	31.546	95.415			
10,900.00	10,106.07	7,474.00	7,090.71	24.56	11.63	-4.19	556.72	-434.67	3,004.71	2,972.76	31.943	94.066			
11,000.00	10,106.35	7,526.07	7,092.41	25.42	12.57	-4.13	608.67	-431.53	3,001.23	2,968.84	32.393	92.651			
11,100.00	10,106.63	7,592.78	7,093.87	26.38	13.77	-4.05	675.26	-427.77	2,998.93	2,966.03	32.907	91.132			
11,200.00	10,106.91	7,658.36	7,094.29	27.43	14.96	-3.95	740.68	-423.32	2,998.01	2,964.55	33.460	89.599			
11,300.00	10,107.18	7,748.82	7,094.46	28.56	16.60	-3.81	830.92	-416.88	2,997.58	2,963.47	34.108	87.884			
11,305.14	10,107.20	7,751.65	7,094.45	28.62	16.66	-3.81	833.73	-416.66	2,997.58	2,963.44	34.139	87.805			
11,400.00	10,107.46	7,808.86	7,093.82	29.76	17.70	-3.70	890.71	-411.63	2,998.24	2,963.51	34.724	86.344			
11,500.00	10,107.74	7,899.82	7,092.06	31.03	19.35	-3.52	981.24	-402.94	2,999.79	2,964.34	35.453	84.614			
11,600.00	10,108.02	8,013.57	7,090.51	32.35	21.43	-3.32	1,094.61	-393.79	3,000.86	2,964.57	36.291	82.689			
11,700.00	10,108.30	8,186.85	7,091.30	33.73	24.59	-3.17	1,267.74	-387.28	3,000.16	2,962.78	37.378	80.266			
11,800.00	10,108.57	8,269.34	7,092.09	35.14	26.10	-3.11	1,350.18	-384.71	2,999.24	2,961.02	38.222	78.469			
11,900.00	10,108.85	8,356.56	7,092.68	36.60	27.70	-3.05	1,437.38	-382.49	2,998.67	2,959.56	39.112	76.669			
11,937.00	10,108.96	8,385.12	7,092.75	37.15	28.22	-3.03	1,465.93	-381.85	2,998.62	2,959.18	39.437	76.036			
12,000.00	10,109.13	8,437.06	7,092.69	38.09	29.17	-3.00	1,517.86	-380.75	2,998.76	2,958.76	40.005	74.959			
12,100.00	10,109.41	8,542.60	7,092.49	39.61	31.11	-2.98	1,623.39	-380.30	2,999.17	2,958.15	41.024	73.108			
12,200.00	10,109.69	8,684.53	7,093.58	41.15	33.72	-2.93	1,765.31	-378.85	2,998.55	2,956.33	42.214	71.031			
12,300.00	10,109.97	8,767.65	7,094.51	42.73	35.24	-2.90	1,848.42	-378.03	2,997.62	2,954.41	43.202	69.386			
12,400.00	10,110.24	9,000.91	7,102.41	44.32	39.53	-2.76	2,081.42	-372.38	2,993.82	2,949.00	44.813	66.807			
12,500.00	10,110.52	9,082.79	7,106.32	45.93	41.03	-2.67	2,163.12	-368.49	2,989.05	2,943.20	45.845	65.199			
12,600.00	10,110.80	9,178.26	7,110.52	47.56	42.78	-2.59	2,258.42	-365.00	2,984.71	2,937.76	46.949	63.574			
12,700.00	10,111.08	9,244.00	7,113.01	49.21	43.99	-2.52	2,324.04	-361.86	2,980.95	2,933.00	47.947	62.171			
12,800.00	10,111.36	9,306.00	7,114.58	50.87	45.12	-2.44	2,385.91	-358.06	2,978.39	2,929.46	48.939	60.860			
12,900.00	10,111.63	9,355.87	7,115.09	52.54	46.04	-2.36	2,435.63	-354.32	2,977.31	2,927.43	49.883	59.685			
12,920.56	10,111.69	9,370.00	7,115.07	52.89	46.29	-2.34	2,449.71	-353.15	2,977.31	2,927.22	50.095	59.433			
13,000.00	10,111.91	9,424.32	7,114.72	54.22	47.29	-2.24	2,503.85	-348.75	2,977.73	2,926.81	50.912	58.487			
13,100.00	10,112.19	9,497.00	7,113.65	55.92	48.62	-2.13	2,576.33	-343.42	2,979.13	2,927.16	51.969	57.325			
13,200.00	10,112.47	9,670.99	7,113.09	57.62	51.82	-1.96	2,750.14	-336.11	2,979.46	2,925.95	53.505	55.685			
13,300.00	10,112.75	9,750.11	7,113.45	59.34	53.27	-1.87	2,829.17	-332.33	2,979.10	2,924.47	54.625	54.537			
13,349.70	10,112.89	9,821.06	7,113.80	60.19	54.58	-1.78	2,900.00	-328.23	2,978.87	2,923.54	55.327	53.841			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design: Myox 21 State COM - O-#9H - ST1 - ST1													Offset Site Error:	0.00 usft
Survey Program: 100-GYD-OP-MS-6888-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Bore Major Axis		Distance		Minimum		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre (usft)	+N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
13,400.00	10,113.03	9,859.88	7,114.00	61.08	55.29	-1.72	2,938.71	-325.35	2,978.61	2,922.72	55.890	53.294		
13,439.68	10,113.14	9,890.42	7,114.04	61.75	55.85	-1.66	2,969.13	-322.80	2,978.55	2,922.22	56.335	52.872		
13,500.00	10,113.30	9,928.87	7,113.92	62.79	56.55	-1.58	3,007.37	-318.62	2,978.75	2,921.77	56.975	52.282		
13,600.00	10,113.58	9,987.46	7,113.02	64.52	57.62	-1.44	3,065.61	-312.29	2,980.23	2,922.21	58.013	51.372		
13,700.00	10,113.86	10,056.08	7,111.21	66.27	58.87	-1.30	3,133.88	-305.62	2,982.91	2,923.80	59.102	50.471		
13,800.00	10,114.14	10,256.51	7,108.97	68.02	62.55	-1.02	3,333.85	-292.72	2,983.87	2,923.02	60.843	49.042		
13,812.28	10,114.17	10,264.70	7,108.99	68.23	62.70	-1.01	3,342.03	-292.21	2,983.86	2,922.88	60.980	48.932		
13,900.00	10,114.42	13,900.00	7,108.88	69.77	129.47	-0.86	3,449.31	-285.46	2,984.21	2,898.30	85.911	34.736		
14,000.00	10,114.69	10,511.72	7,111.80	71.53	67.24	-0.70	3,588.61	-278.28	2,982.07	2,918.42	63.645	46.855		
14,100.00	10,114.97	10,565.77	7,112.58	73.29	68.23	-0.61	3,642.48	-274.02	2,980.83	2,916.11	64.725	46.054		
14,124.91	10,115.04	10,578.17	7,112.63	73.73	68.45	-0.59	3,654.83	-272.93	2,980.78	2,915.79	64.988	45.866		
14,200.00	10,115.25	10,639.57	7,112.39	75.06	69.58	-0.47	3,715.97	-267.37	2,981.17	2,915.27	65.894	45.242		
14,300.00	10,115.53	10,732.78	7,112.23	76.83	71.29	-0.33	3,808.96	-261.00	2,981.57	2,914.41	67.164	44.393		
14,400.00	10,115.81	10,825.69	7,111.62	78.61	72.99	-0.21	3,901.71	-255.47	2,982.48	2,914.04	68.439	43.579		
14,500.00	10,116.08	10,902.34	7,110.90	80.39	74.40	-0.10	3,978.19	-250.44	2,983.71	2,914.07	69.638	42.846		
14,600.00	10,116.36	10,980.88	7,109.33	82.17	75.84	0.01	4,056.57	-245.54	2,985.95	2,915.10	70.850	42.145		
14,700.00	10,116.64	11,069.10	7,107.40	83.95	77.47	0.11	4,144.64	-240.85	2,988.44	2,916.33	72.116	41.439		
14,800.00	10,116.92	11,151.80	7,104.89	85.74	78.99	0.20	4,227.20	-236.70	2,991.75	2,918.40	73.356	40.784		
14,900.00	10,117.20	11,150.00	7,104.94	87.53	78.95	0.20	4,225.40	-236.79	2,996.93	2,922.82	74.105	40.442		
15,000.00	10,117.48	11,150.00	7,104.94	89.33	78.95	0.20	4,225.40	-236.79	3,005.42	2,930.62	74.798	40.180		
15,100.00	10,117.75	11,150.00	7,104.94	91.12	78.95	0.20	4,225.40	-236.79	3,017.20	2,941.78	75.424	40.003		
15,200.00	10,118.03	11,150.00	7,104.94	92.92	78.95	0.20	4,225.40	-236.79	3,032.24	2,956.26	75.983	39.907		
15,300.00	10,118.31	11,150.00	7,104.94	94.72	78.95	0.20	4,225.40	-236.79	3,050.49	2,974.01	76.473	39.890		
15,400.00	10,118.59	11,150.00	7,104.94	96.52	78.95	0.20	4,225.40	-236.79	3,071.88	2,994.98	76.895	39.949		
15,500.00	10,118.87	11,150.00	7,104.94	98.33	78.95	0.20	4,225.40	-236.79	3,096.36	3,019.11	77.251	40.082		
15,600.00	10,119.14	11,150.00	7,104.94	100.13	78.95	0.20	4,225.40	-236.79	3,123.84	3,046.30	77.542	40.286		
15,700.00	10,119.42	11,150.00	7,104.94	101.94	78.95	0.20	4,225.40	-236.79	3,154.26	3,076.49	77.771	40.558		
15,800.00	10,119.70	11,150.00	7,104.94	103.75	78.95	0.20	4,225.40	-236.79	3,187.53	3,109.59	77.940	40.897		
15,900.00	10,119.98	11,150.00	7,104.94	105.56	78.95	0.20	4,225.40	-236.79	3,223.56	3,145.51	78.053	41.300		
16,000.00	10,120.26	11,150.00	7,104.94	107.37	78.95	0.20	4,225.40	-236.79	3,262.25	3,184.14	78.113	41.763		
16,100.00	10,120.54	11,150.00	7,104.94	109.19	78.95	0.20	4,225.40	-236.79	3,303.53	3,225.40	78.123	42.286		
16,200.00	10,120.81	11,150.00	7,104.94	111.00	78.95	0.20	4,225.40	-236.79	3,347.28	3,269.19	78.087	42.866		
16,300.00	10,121.09	11,150.00	7,104.94	112.82	78.95	0.20	4,225.40	-236.79	3,393.41	3,315.40	78.010	43.500		
16,400.00	10,121.37	11,150.00	7,104.94	114.63	78.95	0.20	4,225.40	-236.79	3,441.83	3,363.94	77.894	44.186		
16,500.00	10,121.65	11,150.00	7,104.94	116.45	78.95	0.20	4,225.40	-236.79	3,492.45	3,414.70	77.744	44.922		
16,600.00	10,121.93	11,150.00	7,104.94	118.27	78.95	0.20	4,225.40	-236.79	3,545.16	3,467.60	77.563	45.707		
16,700.00	10,122.20	11,150.00	7,104.94	120.09	78.95	0.20	4,225.40	-236.79	3,599.88	3,522.53	77.355	46.537		
16,800.00	10,122.48	11,150.00	7,104.94	121.91	78.95	0.20	4,225.40	-236.79	3,656.52	3,579.39	77.123	47.412		
16,900.00	10,122.76	11,150.00	7,104.94	123.74	78.95	0.20	4,225.40	-236.79	3,714.98	3,638.11	76.869	48.329		
17,000.00	10,123.04	11,150.00	7,104.94	125.56	78.95	0.20	4,225.40	-236.79	3,775.19	3,698.59	76.598	49.286		
17,100.00	10,123.32	11,150.00	7,104.94	127.38	78.95	0.20	4,225.40	-236.79	3,837.06	3,760.75	76.311	50.282		
17,200.00	10,123.59	11,150.00	7,104.94	129.21	78.95	0.20	4,225.40	-236.79	3,900.52	3,824.50	76.011	51.315		
17,300.00	10,123.87	11,150.00	7,104.94	131.03	78.95	0.20	4,225.40	-236.79	3,965.48	3,889.78	75.701	52.383		
17,400.00	10,124.15	11,150.00	7,104.94	132.86	78.95	0.20	4,225.40	-236.79	4,031.87	3,956.49	75.383	53.485		
17,500.00	10,124.43	11,150.00	7,104.94	134.69	78.95	0.20	4,225.40	-236.79	4,099.63	4,024.57	75.058	54.619		
17,600.00	10,124.71	11,150.00	7,104.94	136.52	78.95	0.20	4,225.40	-236.79	4,168.68	4,093.96	74.728	55.784		
17,700.00	10,124.99	11,150.00	7,104.94	138.35	78.95	0.20	4,225.40	-236.79	4,238.97	4,164.58	74.396	56.979		
17,800.00	10,125.26	11,150.00	7,104.94	140.18	78.95	0.20	4,225.40	-236.79	4,310.44	4,236.38	74.062	58.201		
17,900.00	10,125.54	11,150.00	7,104.94	142.01	78.95	0.20	4,225.40	-236.79	4,383.02	4,309.29	73.727	59.449		
18,000.00	10,125.82	11,150.00	7,104.94	143.84	78.95	0.20	4,225.40	-236.79	4,456.66	4,383.27	73.393	60.723		
18,100.00	10,126.10	11,150.00	7,104.94	145.67	78.95	0.20	4,225.40	-236.79	4,531.31	4,458.25	73.061	62.021		
18,200.00	10,126.38	11,150.00	7,104.94	147.50	78.95	0.20	4,225.40	-236.79	4,606.93	4,534.20	72.731	63.342		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21 State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.000 sigma
Reference Wellbore	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Offset Design Myox 21 State COM - O-#9H - ST1 - ST1												Offset Site Error:	0.00 usft
Survey Program: 100-GYD_DP_MS, 6586-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
18,300.00	10,126.65	11,150.00	7,104.94	149.33	78.95	0.20	4,225.40	-236.79	4,683.46	4,611.05	72.404	64.685	
18,400.00	10,126.93	11,150.00	7,104.94	151.16	78.95	0.20	4,225.40	-236.79	4,760.86	4,688.77	72.082	66.048	
18,500.00	10,127.21	11,150.00	7,104.94	153.00	78.95	0.20	4,225.40	-236.79	4,839.08	4,767.32	71.764	67.430	
18,600.00	10,127.49	11,150.00	7,104.94	154.83	78.95	0.20	4,225.40	-236.79	4,918.10	4,846.65	71.451	68.831	
18,700.00	10,127.77	11,150.00	7,104.94	156.66	78.95	0.20	4,225.40	-236.79	4,997.87	4,926.72	71.144	70.250	
18,800.00	10,128.05	11,150.00	7,104.94	158.50	78.95	0.20	4,225.40	-236.79	5,078.35	5,007.51	70.843	71.685	
18,900.00	10,128.32	11,150.00	7,104.94	160.33	78.95	0.20	4,225.40	-236.79	5,159.52	5,088.97	70.547	73.136	
19,000.00	10,128.60	11,150.00	7,104.94	162.17	78.95	0.20	4,225.40	-236.79	5,241.34	5,171.08	70.258	74.601	
19,100.00	10,128.88	11,150.00	7,104.94	164.01	78.95	0.20	4,225.40	-236.79	5,323.77	5,253.80	69.976	76.080	
19,200.00	10,129.16	11,150.00	7,104.94	165.84	78.95	0.20	4,225.40	-236.79	5,406.81	5,337.11	69.700	77.572	
19,300.00	10,129.44	11,150.00	7,104.94	167.68	78.95	0.20	4,225.40	-236.79	5,490.40	5,420.97	69.431	79.077	
19,400.00	10,129.71	11,150.00	7,104.94	169.52	78.95	0.20	4,225.40	-236.79	5,574.54	5,505.37	69.170	80.592	
19,500.00	10,129.99	11,150.00	7,104.94	171.35	78.95	0.20	4,225.40	-236.79	5,659.19	5,590.28	68.915	82.119	
19,600.00	10,130.27	11,150.00	7,104.94	173.19	78.95	0.20	4,225.40	-236.79	5,744.34	5,675.68	68.667	83.655	
19,700.00	10,130.55	11,150.00	7,104.94	175.03	78.95	0.20	4,225.40	-236.79	5,829.96	5,761.53	68.426	85.201	
19,800.00	10,130.83	11,150.00	7,104.94	176.87	78.95	0.20	4,225.40	-236.79	5,916.03	5,847.84	68.192	86.756	
19,900.00	10,131.11	11,150.00	7,104.94	178.71	78.95	0.20	4,225.40	-236.79	6,002.53	5,934.57	67.965	88.318	
20,000.00	10,131.38	11,150.00	7,104.94	180.55	78.95	0.20	4,225.40	-236.79	6,089.45	6,021.70	67.745	89.888	
20,100.00	10,131.66	11,150.00	7,104.94	182.38	78.95	0.20	4,225.40	-236.79	6,176.76	6,109.23	67.532	91.465	
20,200.00	10,131.94	11,150.00	7,104.94	184.22	78.95	0.20	4,225.40	-236.79	6,264.45	6,197.12	67.325	93.048	
20,221.81	10,132.00	11,150.00	7,104.94	184.55	78.95	0.20	4,225.40	-236.79	6,283.63	6,214.43	69.197	90.808	

Anticollision Report

Company: COG OPERATING, LLC
Project: Eddy County, NM (NAD83) NMEZ
Reference Site: Myox 21 State COM
Site Error: 0.00 usft
Reference Well: #41H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1 - PP

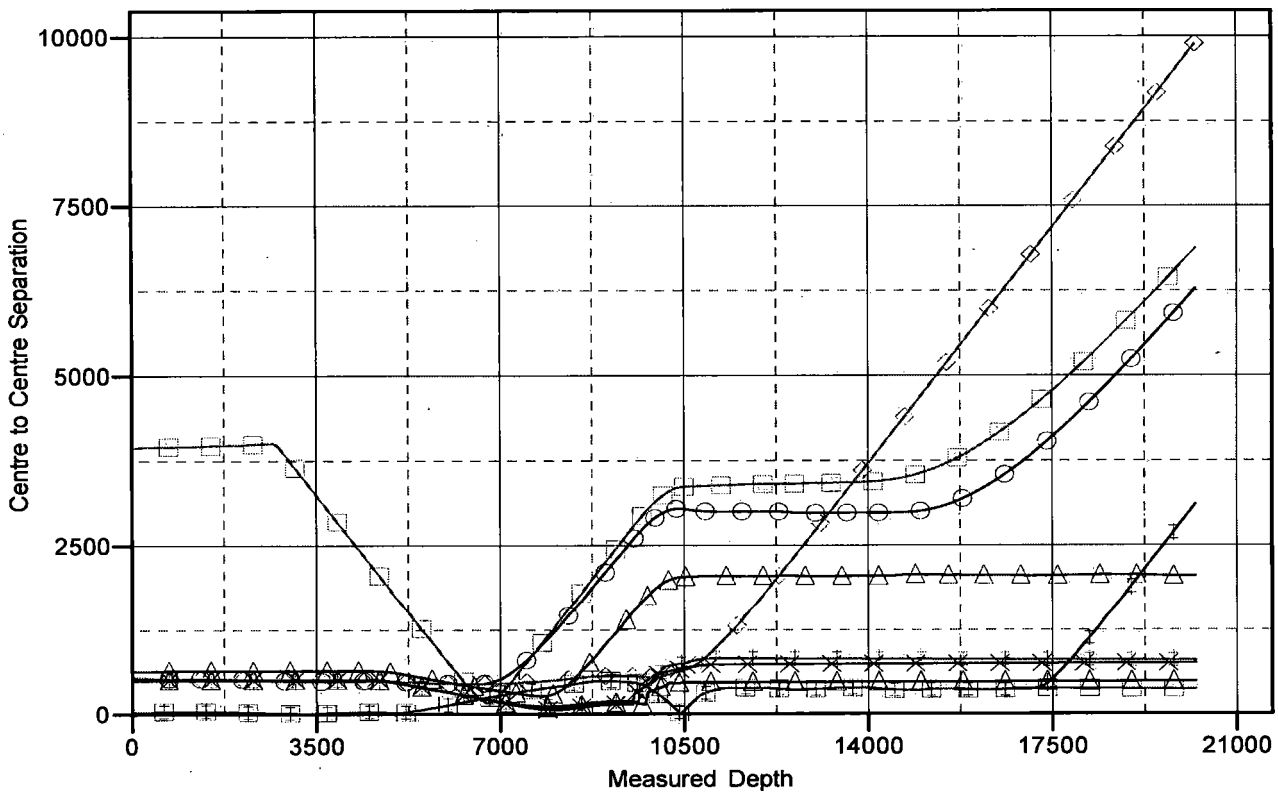
Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Output errors are at
Database:
Offset TVD Reference:

Well #41H
 RKB @ 3019.80usft (SDQ - KB=30')
 RKB @ 3019.80usft (SDQ - KB=30')
 Grid
 Minimum Curvature
 2.000 sigma
 EDM 5000.14 Single User Db
 Offset Datum

Reference Depths are relative to RKB @ 3019.80usft (SDQ - KB=30')
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: #41H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.13°

Ladder Plot



LEGEND

O-#1H, OH, OHV0 O-#33H, OH, OHV0 O-#31H, OH, OHV0
 #51H, OH, OHV0 O-#9H, ST1, ST1V0 O-#32H, OH, OHV0
 #51H, OH, Plan88-T3V0 O-#8H, OH, OHV0 O-#8H, OH, OHV0

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well #41H
Project:	Eddy County, NM (NAD83) NMEZ	TVD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Reference Site:	Myox 21, State COM	MD Reference:	RKB @ 3019.80usft (SDQ - KB=30')
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#41H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.000 sigma
Reference Wellbore:	OH	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1 - PP	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3019.80usft (SDQ - KB=30')

Offset Depths are relative to Offset Datum

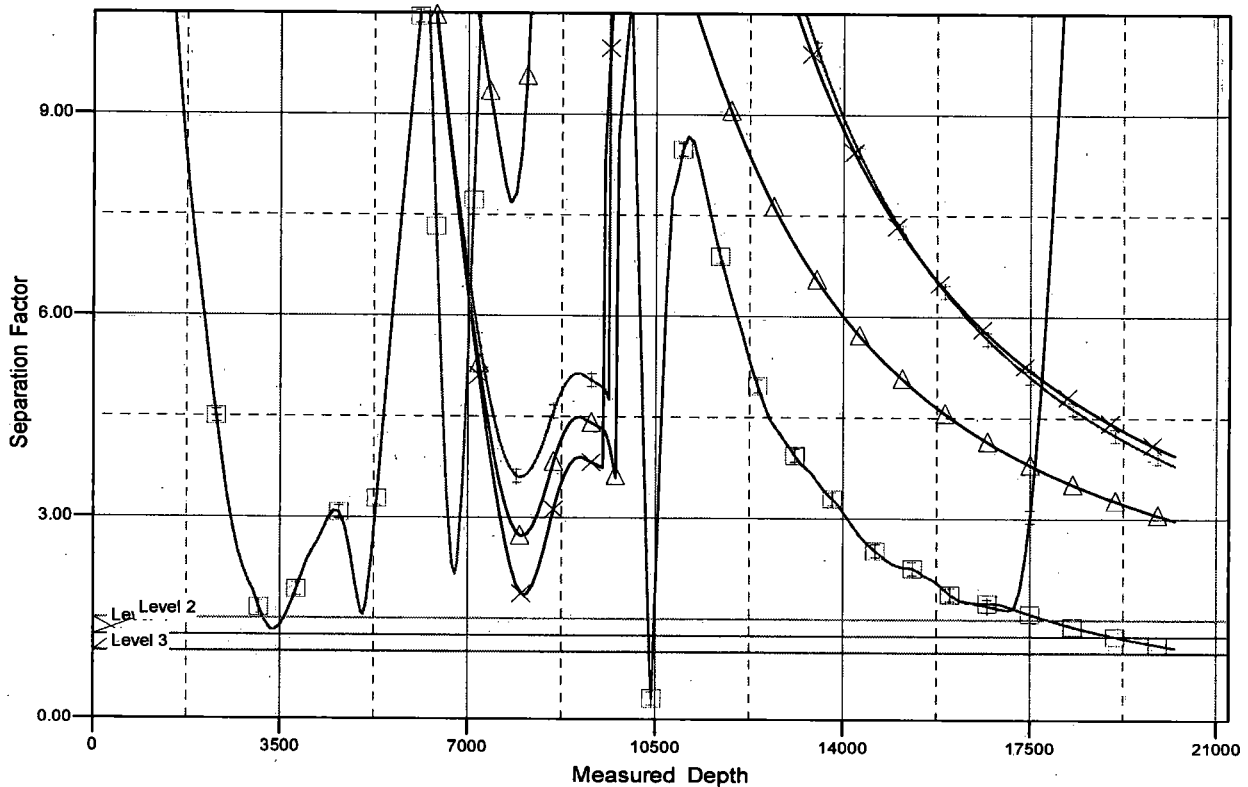
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: #41H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.13°

Separation Factor Plot



LEGEND

O-#1H, OH, OH V0	O-#33H, OH, OH V0	O-#31H, OH, OH V0
#51H, OH, OH V0	O-#8H, BT1, BT1 V0	O-#32H, OH, OH V0
#51H, OH, Plan#8 - T3 V0	O-#8H, OH, OH V0	O-#8H, OH, OH V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation