



COG Operating LLC

Eddy Co., NM

Myox 28 State Com

701H

Wellbore #1

Plan: Design #1

Standard Planning Report

22 March, 2019





Nabors Drilling Solutions
Planning Report



Database: RyanUSA_32Bit
Company: COG Operating LLC
Project: Eddy Co., NM
Site: Myox 28 State Com
Well: 701H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 701H
TVD Reference: RT=30 @ 2988.00ft (Nabors 894)
MD Reference: RT=30 @ 2988.00ft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy Co., NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Myox 28 State Com		
Site Position:		Northing:	402,893.686 usft
From:	Lat/Long	Easting:	576,570.363 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 6' 26.746200 N
		Longitude:	104° 5' 9.392961 W
		Grid Convergence:	0.13 °

Well:	701H		
Well Position	+N/-S	0.41 ft	Northing:
	+E/-W	30.04 ft	Easting:
Position Uncertainty	2.00 ft	Wellhead Elevation:	
		Latitude:	32° 6' 26.749615 N
		Longitude:	104° 5' 9.392961 W
		Ground Level:	2,958.00 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	HDGM_FILE	3/21/2019	(°)
			7.00
			59.80
			47,877.20000000

Design:	Design #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			176.87

Plan Survey:	Tool Program	Date	3/22/2019
Depth From	Depth To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
1	0.00	Design #1 (Wellbore #1)	MWD+HRGM
			OWSG MWD + HRGM

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,884.25	7.69	100.04	5,883.10	-4.49	25.34	2.00	2.00	0.00	100.04	
9,023.66	7.69	100.04	8,994.31	-77.67	438.74	0.00	0.00	0.00	0.00	
9,029.40	7.80	100.04	9,000.00	-77.80	439.50	2.00	2.00	0.03	0.10	
9,125.69	7.80	100.04	9,095.40	-80.08	452.37	0.00	0.00	0.00	0.00	
9,867.46	90.40	179.75	9,557.05	-560.46	517.09	12.00	11.14	10.75	79.75	
19,525.34	90.40	179.75	9,489.00	-10,218.02	558.40	0.00	0.00	0.00	0.00	701H - BHL



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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	2.00	100.04	5,599.98	-0.30	1.72	0.40	2.00	2.00	0.00
5,700.00	4.00	100.04	5,699.84	-1.22	6.87	1.59	2.00	2.00	0.00
5,800.00	6.00	100.04	5,799.45	-2.74	15.45	3.57	2.00	2.00	0.00
5,884.25	7.69	100.04	5,883.10	-4.49	25.34	5.86	2.00	2.00	0.00
5,900.00	7.69	100.04	5,898.71	-4.85	27.41	6.34	0.00	0.00	0.00
6,000.00	7.69	100.04	5,997.81	-7.18	40.58	9.39	0.00	0.00	0.00
6,100.00	7.69	100.04	6,096.91	-9.51	53.75	12.43	0.00	0.00	0.00
6,200.00	7.69	100.04	6,196.01	-11.85	66.92	15.48	0.00	0.00	0.00
6,300.00	7.69	100.04	6,295.11	-14.18	80.08	18.53	0.00	0.00	0.00
6,400.00	7.69	100.04	6,394.22	-16.51	93.25	21.57	0.00	0.00	0.00
6,500.00	7.69	100.04	6,493.32	-18.84	106.42	24.62	0.00	0.00	0.00
6,600.00	7.69	100.04	6,592.42	-21.17	119.59	27.66	0.00	0.00	0.00
6,700.00	7.69	100.04	6,691.52	-23.50	132.76	30.71	0.00	0.00	0.00
6,800.00	7.69	100.04	6,790.62	-25.83	145.92	33.76	0.00	0.00	0.00
6,900.00	7.69	100.04	6,889.73	-28.16	159.09	36.80	0.00	0.00	0.00
7,000.00	7.69	100.04	6,988.83	-30.49	172.26	39.85	0.00	0.00	0.00
7,100.00	7.69	100.04	7,087.93	-32.82	185.43	42.89	0.00	0.00	0.00
7,200.00	7.69	100.04	7,187.03	-35.16	198.60	45.94	0.00	0.00	0.00
7,300.00	7.69	100.04	7,286.13	-37.49	211.76	48.99	0.00	0.00	0.00
7,400.00	7.69	100.04	7,385.23	-39.82	224.93	52.03	0.00	0.00	0.00
7,500.00	7.69	100.04	7,484.34	-42.15	238.10	55.08	0.00	0.00	0.00
7,600.00	7.69	100.04	7,583.44	-44.48	251.27	58.12	0.00	0.00	0.00
7,700.00	7.69	100.04	7,682.54	-46.81	264.44	61.17	0.00	0.00	0.00
7,800.00	7.69	100.04	7,781.64	-49.14	277.61	64.22	0.00	0.00	0.00
7,900.00	7.69	100.04	7,880.74	-51.47	290.77	67.26	0.00	0.00	0.00
8,000.00	7.69	100.04	7,979.85	-53.80	303.94	70.31	0.00	0.00	0.00
8,100.00	7.69	100.04	8,078.95	-56.13	317.11	73.35	0.00	0.00	0.00
8,200.00	7.69	100.04	8,178.05	-58.47	330.28	76.40	0.00	0.00	0.00
8,300.00	7.69	100.04	8,277.15	-60.80	343.45	79.45	0.00	0.00	0.00
8,400.00	7.69	100.04	8,376.25	-63.13	356.61	82.49	0.00	0.00	0.00
8,500.00	7.69	100.04	8,475.35	-65.46	369.78	85.54	0.00	0.00	0.00
8,600.00	7.69	100.04	8,574.46	-67.79	382.95	88.59	0.00	0.00	0.00
8,700.00	7.69	100.04	8,673.56	-70.12	396.12	91.63	0.00	0.00	0.00
8,800.00	7.69	100.04	8,772.66	-72.45	409.29	94.68	0.00	0.00	0.00
8,900.00	7.69	100.04	8,871.76	-74.78	422.45	97.72	0.00	0.00	0.00
9,000.00	7.69	100.04	8,970.86	-77.11	435.62	100.77	0.00	0.00	0.00
9,023.66	7.69	100.04	8,994.31	-77.67	438.74	101.49	0.00	0.00	0.00
9,029.40	7.80	100.04	9,000.00	-77.80	439.50	101.67	2.00	2.00	0.03
9,100.00	7.80	100.04	9,069.95	-79.47	448.93	103.85	0.00	0.00	0.00
9,125.69	7.80	100.04	9,095.40	-80.08	452.37	104.64	0.00	0.00	0.00
9,150.00	8.80	119.15	9,119.46	-81.27	455.62	106.01	12.00	4.10	78.63
9,175.00	10.59	133.56	9,144.10	-83.79	458.95	108.70	12.00	7.15	57.62
9,200.00	12.83	143.42	9,168.58	-87.60	462.27	112.69	12.00	8.98	39.46
9,225.00	15.33	150.26	9,192.83	-92.70	465.56	117.96	12.00	10.01	27.35
9,250.00	17.98	155.17	9,216.78	-99.07	468.82	124.51	12.00	10.61	19.65
9,275.00	20.73	158.84	9,240.37	-106.70	472.04	132.30	12.00	10.98	14.67
9,300.00	23.53	161.67	9,263.52	-115.57	475.21	141.33	12.00	11.22	11.34
9,325.00	26.38	163.93	9,286.19	-125.64	478.32	151.56	12.00	11.38	9.03
9,350.00	29.25	165.78	9,308.30	-136.90	481.36	162.97	12.00	11.50	7.38
9,375.00	32.15	167.32	9,329.79	-149.32	484.32	175.52	12.00	11.58	6.16
9,400.00	35.06	168.63	9,350.61	-162.85	487.19	189.19	12.00	11.64	5.24
9,425.00	37.98	169.76	9,370.70	-177.46	489.98	203.93	12.00	11.69	4.53



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9,450.00	40.91	170.76	9,390.01	-193.11	492.66	219.71	12.00	11.73	3.97
9,475.00	43.85	171.64	9,408.47	-209.77	495.24	236.48	12.00	11.76	3.53
9,487.03	45.27	172.03	9,417.04	-218.12	496.43	244.89	12.00	11.78	3.26
701H - FTP									
9,500.00	46.80	172.43	9,426.05	-227.37	497.70	254.19	12.00	11.79	3.09
9,525.00	49.75	173.15	9,442.68	-245.88	500.03	272.80	12.00	11.81	2.88
9,550.00	52.71	173.81	9,458.34	-265.24	502.25	292.26	12.00	11.82	2.64
9,575.00	55.67	174.42	9,472.96	-285.41	504.32	312.50	12.00	11.84	2.44
9,600.00	58.63	174.99	9,486.52	-306.32	506.26	333.49	12.00	11.85	2.27
9,625.00	61.59	175.52	9,498.98	-327.92	508.05	355.15	12.00	11.86	2.13
9,650.00	64.56	176.03	9,510.30	-350.14	509.69	377.43	12.00	11.86	2.02
9,675.00	67.53	176.50	9,520.45	-372.94	511.18	400.28	12.00	11.87	1.92
9,700.00	70.50	176.96	9,529.40	-396.24	512.51	423.62	12.00	11.88	1.84
9,725.00	73.47	177.41	9,537.13	-419.98	513.67	447.39	12.00	11.88	1.77
9,750.00	76.44	177.84	9,543.62	-444.10	514.67	471.52	12.00	11.88	1.72
9,775.00	79.41	178.26	9,548.85	-468.53	515.51	495.96	12.00	11.89	1.68
9,800.00	82.38	178.67	9,552.81	-493.20	516.17	520.64	12.00	11.89	1.64
9,825.00	85.35	179.07	9,555.48	-518.05	516.66	545.47	12.00	11.89	1.62
9,850.00	88.33	179.48	9,556.86	-543.01	516.97	570.41	12.00	11.89	1.61
9,867.46	90.40	179.75	9,557.05	-560.46	517.09	587.85	12.00	11.89	1.60
9,900.00	90.40	179.75	9,556.82	-593.01	517.23	620.35	0.00	0.00	0.00
10,000.00	90.40	179.75	9,556.12	-693.00	517.66	720.22	0.00	0.00	0.00
10,100.00	90.40	179.75	9,555.41	-793.00	518.09	820.09	0.00	0.00	0.00
10,200.00	90.40	179.75	9,554.71	-893.00	518.51	919.96	0.00	0.00	0.00
10,300.00	90.40	179.75	9,554.00	-992.89	518.94	1,019.83	0.00	0.00	0.00
10,400.00	90.40	179.75	9,553.30	-1,092.99	519.37	1,119.70	0.00	0.00	0.00
10,500.00	90.40	179.75	9,552.59	-1,192.99	519.80	1,219.57	0.00	0.00	0.00
10,600.00	90.40	179.75	9,551.89	-1,292.98	520.22	1,319.44	0.00	0.00	0.00
10,700.00	90.40	179.75	9,551.18	-1,392.98	520.65	1,419.32	0.00	0.00	0.00
10,800.00	90.40	179.75	9,550.48	-1,492.98	521.08	1,519.19	0.00	0.00	0.00
10,900.00	90.40	179.75	9,549.77	-1,592.97	521.51	1,619.06	0.00	0.00	0.00
11,000.00	90.40	179.75	9,549.07	-1,692.97	521.94	1,718.93	0.00	0.00	0.00
11,100.00	90.40	179.75	9,548.37	-1,792.97	522.36	1,818.80	0.00	0.00	0.00
11,200.00	90.40	179.75	9,547.66	-1,892.96	522.79	1,918.67	0.00	0.00	0.00
11,300.00	90.40	179.75	9,546.96	-1,992.96	523.22	2,018.54	0.00	0.00	0.00
11,400.00	90.40	179.75	9,546.25	-2,092.96	523.65	2,118.41	0.00	0.00	0.00
11,500.00	90.40	179.75	9,545.55	-2,192.95	524.07	2,218.28	0.00	0.00	0.00
11,600.00	90.40	179.75	9,544.84	-2,292.95	524.50	2,318.15	0.00	0.00	0.00
11,700.00	90.40	179.75	9,544.14	-2,392.95	524.93	2,418.03	0.00	0.00	0.00
11,800.00	90.40	179.75	9,543.43	-2,492.94	525.36	2,517.90	0.00	0.00	0.00
11,900.00	90.40	179.75	9,542.73	-2,592.94	525.79	2,617.77	0.00	0.00	0.00
12,000.00	90.40	179.75	9,542.02	-2,692.94	526.21	2,717.64	0.00	0.00	0.00
12,100.00	90.40	179.75	9,541.32	-2,792.93	526.64	2,817.51	0.00	0.00	0.00
12,200.00	90.40	179.75	9,540.61	-2,892.93	527.07	2,917.38	0.00	0.00	0.00
12,300.00	90.40	179.75	9,539.91	-2,992.93	527.50	3,017.25	0.00	0.00	0.00
12,400.00	90.40	179.75	9,539.21	-3,092.92	527.92	3,117.12	0.00	0.00	0.00
12,500.00	90.40	179.75	9,538.50	-3,192.92	528.35	3,216.99	0.00	0.00	0.00
12,600.00	90.40	179.75	9,537.80	-3,292.92	528.78	3,316.86	0.00	0.00	0.00
12,700.00	90.40	179.75	9,537.09	-3,392.91	529.21	3,416.73	0.00	0.00	0.00
12,800.00	90.40	179.75	9,536.39	-3,492.91	529.63	3,516.61	0.00	0.00	0.00
12,900.00	90.40	179.75	9,535.68	-3,592.91	530.06	3,616.48	0.00	0.00	0.00
13,000.00	90.40	179.75	9,534.98	-3,692.90	530.49	3,716.35	0.00	0.00	0.00
13,100.00	90.40	179.75	9,534.27	-3,792.90	530.92	3,816.22	0.00	0.00	0.00



Nabors Drilling Solutions
Planning Report



Database: RyanUSA_32Bit
Company: COG Operating LLC
Project: Eddy Co., NM
Site: Myox 28 State Com
Well: 701H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 701H
TVD Reference: RT=30 @ 2988.00ft (Nabors 894)
MD Reference: RT=30 @ 2988.00ft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,200.00	90.40	179.75	9,533.57	-3,892.90	531.35	3,916.09	0.00	0.00	0.00
13,300.00	90.40	179.75	9,532.86	-3,992.89	531.77	4,015.96	0.00	0.00	0.00
13,400.00	90.40	179.75	9,532.16	-4,092.89	532.20	4,115.83	0.00	0.00	0.00
13,500.00	90.40	179.75	9,531.45	-4,192.89	532.63	4,215.70	0.00	0.00	0.00
13,600.00	90.40	179.75	9,530.75	-4,292.88	533.06	4,315.57	0.00	0.00	0.00
13,700.00	90.40	179.75	9,530.05	-4,392.88	533.48	4,415.44	0.00	0.00	0.00
13,800.00	90.40	179.75	9,529.34	-4,492.88	533.91	4,515.32	0.00	0.00	0.00
13,900.00	90.40	179.75	9,528.64	-4,592.87	534.34	4,615.19	0.00	0.00	0.00
14,000.00	90.40	179.75	9,527.93	-4,692.87	534.77	4,715.06	0.00	0.00	0.00
14,100.00	90.40	179.75	9,527.23	-4,792.86	535.20	4,814.93	0.00	0.00	0.00
14,200.00	90.40	179.75	9,526.52	-4,892.86	535.62	4,914.80	0.00	0.00	0.00
14,300.00	90.40	179.75	9,525.82	-4,992.86	536.05	5,014.67	0.00	0.00	0.00
14,400.00	90.40	179.75	9,525.11	-5,092.85	536.48	5,114.54	0.00	0.00	0.00
14,500.00	90.40	179.75	9,524.41	-5,192.85	536.91	5,214.41	0.00	0.00	0.00
14,600.00	90.40	179.75	9,523.70	-5,292.85	537.33	5,314.28	0.00	0.00	0.00
14,700.00	90.40	179.75	9,523.00	-5,392.84	537.76	5,414.15	0.00	0.00	0.00
14,800.00	90.40	179.75	9,522.30	-5,492.84	538.19	5,514.02	0.00	0.00	0.00
14,900.00	90.40	179.75	9,521.59	-5,592.84	538.62	5,613.90	0.00	0.00	0.00
15,000.00	90.40	179.75	9,520.89	-5,692.83	539.04	5,713.77	0.00	0.00	0.00
15,100.00	90.40	179.75	9,520.18	-5,792.83	539.47	5,813.64	0.00	0.00	0.00
15,200.00	90.40	179.75	9,519.48	-5,892.83	539.90	5,913.51	0.00	0.00	0.00
15,300.00	90.40	179.75	9,518.77	-5,992.82	540.33	6,013.38	0.00	0.00	0.00
15,400.00	90.40	179.75	9,518.07	-6,092.82	540.76	6,113.25	0.00	0.00	0.00
15,500.00	90.40	179.75	9,517.36	-6,192.82	541.18	6,213.12	0.00	0.00	0.00
15,600.00	90.40	179.75	9,516.66	-6,292.81	541.61	6,312.99	0.00	0.00	0.00
15,700.00	90.40	179.75	9,515.95	-6,392.81	542.04	6,412.86	0.00	0.00	0.00
15,800.00	90.40	179.75	9,515.25	-6,492.81	542.47	6,512.73	0.00	0.00	0.00
15,900.00	90.40	179.75	9,514.54	-6,592.80	542.89	6,612.61	0.00	0.00	0.00
16,000.00	90.40	179.75	9,513.84	-6,692.80	543.32	6,712.48	0.00	0.00	0.00
16,100.00	90.40	179.75	9,513.14	-6,792.80	543.75	6,812.35	0.00	0.00	0.00
16,200.00	90.40	179.75	9,512.43	-6,892.79	544.18	6,912.22	0.00	0.00	0.00
16,300.00	90.40	179.75	9,511.73	-6,992.79	544.61	7,012.09	0.00	0.00	0.00
16,400.00	90.40	179.75	9,511.02	-7,092.79	545.03	7,111.96	0.00	0.00	0.00
16,500.00	90.40	179.75	9,510.32	-7,192.78	545.46	7,211.83	0.00	0.00	0.00
16,600.00	90.40	179.75	9,509.61	-7,292.78	545.89	7,311.70	0.00	0.00	0.00
16,700.00	90.40	179.75	9,508.91	-7,392.78	546.32	7,411.57	0.00	0.00	0.00
16,800.00	90.40	179.75	9,508.20	-7,492.77	546.74	7,511.44	0.00	0.00	0.00
16,900.00	90.40	179.75	9,507.50	-7,592.77	547.17	7,611.32	0.00	0.00	0.00
17,000.00	90.40	179.75	9,506.79	-7,692.77	547.60	7,711.19	0.00	0.00	0.00
17,100.00	90.40	179.75	9,506.09	-7,792.76	548.03	7,811.06	0.00	0.00	0.00
17,200.00	90.40	179.75	9,505.38	-7,892.76	548.45	7,910.93	0.00	0.00	0.00
17,300.00	90.40	179.75	9,504.68	-7,992.76	548.88	8,010.80	0.00	0.00	0.00
17,400.00	90.40	179.75	9,503.98	-8,092.75	549.31	8,110.67	0.00	0.00	0.00
17,500.00	90.40	179.75	9,503.27	-8,192.75	549.74	8,210.54	0.00	0.00	0.00
17,600.00	90.40	179.75	9,502.57	-8,292.75	550.17	8,310.41	0.00	0.00	0.00
17,700.00	90.40	179.75	9,501.86	-8,392.74	550.59	8,410.28	0.00	0.00	0.00
17,800.00	90.40	179.75	9,501.16	-8,492.74	551.02	8,510.15	0.00	0.00	0.00
17,900.00	90.40	179.75	9,500.45	-8,592.74	551.45	8,610.02	0.00	0.00	0.00
18,000.00	90.40	179.75	9,499.75	-8,692.73	551.88	8,709.90	0.00	0.00	0.00
18,100.00	90.40	179.75	9,499.04	-8,792.73	552.30	8,809.77	0.00	0.00	0.00
18,200.00	90.40	179.75	9,498.34	-8,892.73	552.73	8,909.64	0.00	0.00	0.00
18,300.00	90.40	179.75	9,497.63	-8,992.72	553.16	9,009.51	0.00	0.00	0.00
18,400.00	90.40	179.75	9,496.93	-9,092.72	553.59	9,109.38	0.00	0.00	0.00
18,500.00	90.40	179.75	9,496.22	-9,192.72	554.02	9,209.25	0.00	0.00	0.00



Nabors Drilling Solutions Planning Report



Database: RyanUSA_32Bit
Company: COG Operating LLC
Project: Eddy Co., NM
Site: Myox 28 State Com
Well: 701H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 701H
TVD Reference: RT=30 @ 2988.00ft (Nabors 894)
MD Reference: RT=30 @ 2988.00ft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
18,600.00	90.40	179.75	9,495.52	-9,292.71	554.44	9,309.12	0.00	0.00	0.00
18,700.00	90.40	179.75	9,494.82	-9,392.71	554.87	9,408.99	0.00	0.00	0.00
18,800.00	90.40	179.75	9,494.11	-9,492.71	555.30	9,508.86	0.00	0.00	0.00
18,900.00	90.40	179.75	9,493.41	-9,592.70	555.73	9,608.73	0.00	0.00	0.00
19,000.00	90.40	179.75	9,492.70	-9,692.70	556.15	9,708.61	0.00	0.00	0.00
19,100.00	90.40	179.75	9,492.00	-9,792.70	556.58	9,808.48	0.00	0.00	0.00
19,200.00	90.40	179.75	9,491.29	-9,892.69	557.01	9,908.35	0.00	0.00	0.00
19,300.00	90.40	179.75	9,490.59	-9,992.69	557.44	10,008.22	0.00	0.00	0.00
19,395.34	90.40	179.75	9,489.92	-10,088.03	557.85	10,103.44	0.00	0.00	0.00
701H - LTP									
19,400.00	90.40	179.75	9,489.88	-10,092.69	557.87	10,108.09	0.00	0.00	0.00
19,500.00	90.40	179.75	9,489.18	-10,192.68	558.29	10,207.96	0.00	0.00	0.00
19,525.34	90.40	179.75	9,489.00	-10,218.02	558.40	10,233.27	0.00	0.00	0.00
701H - BHL									

Design Targets

Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
701H - BHL	- plan hits target center	0.00	0.00	9,489.00	-10,218.02	558.40	392,676.100	577,158.800	32° 4' 45.614487 N	104° 5' 3.175122 W
- Point										
701H - LTP	- plan misses target center by 1.46ft at 19395.34ft MD (9489.92 TVD, -10088.03 N, 557.85 E)	0.00	0.00	9,490.00	-10,088.02	559.30	392,806.100	577,159.700	32° 4' 46.901014 N	104° 5' 3.161172 W
- Point										
701H - FTP	- plan misses target center by 199.85ft at 9487.03ft MD (9417.04 TVD, -218.12 N, 496.43 E)	0.00	0.00	9,559.00	-77.80	486.50	402,816.300	577,086.900	32° 6' 25.968585 N	104° 5' 3.738724 W
- Point										



Nabors Drilling Solutions
Planning Report



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Local Co-ordinate Reference: Well 701H
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MD Reference: RT=30 @ 2988.00ft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

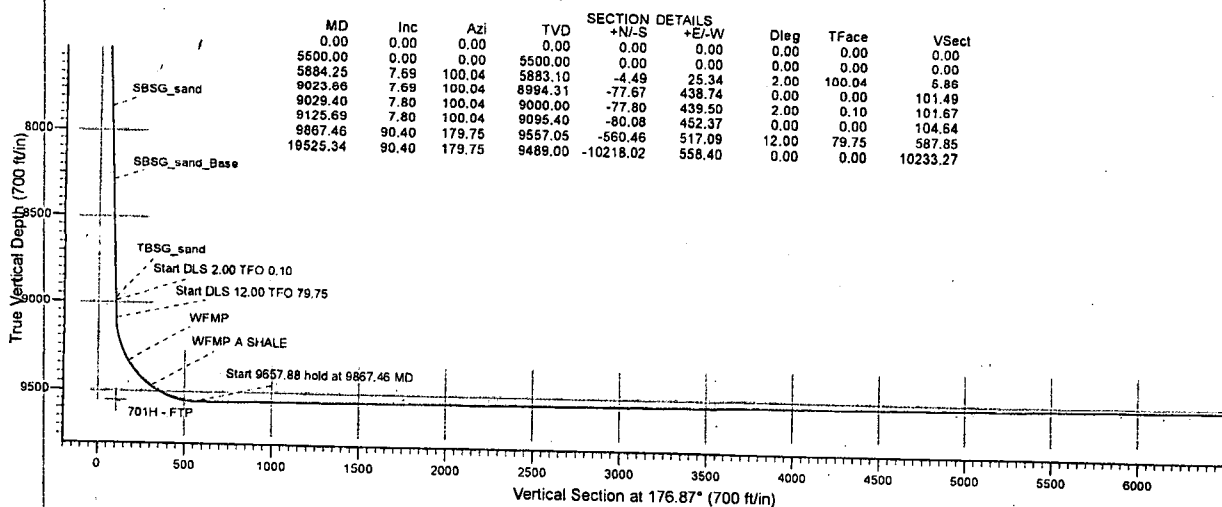
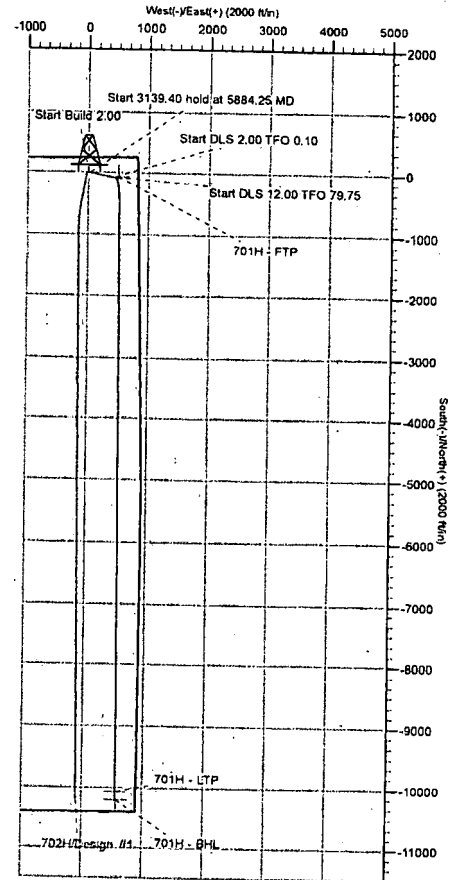
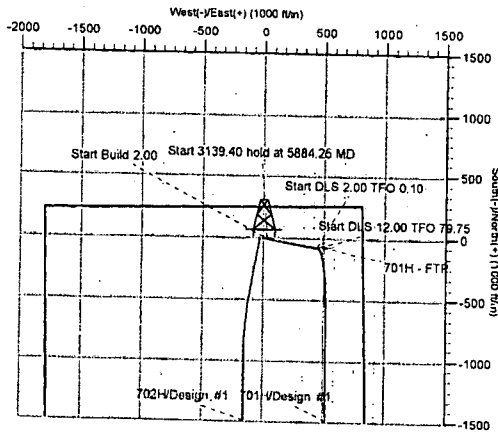
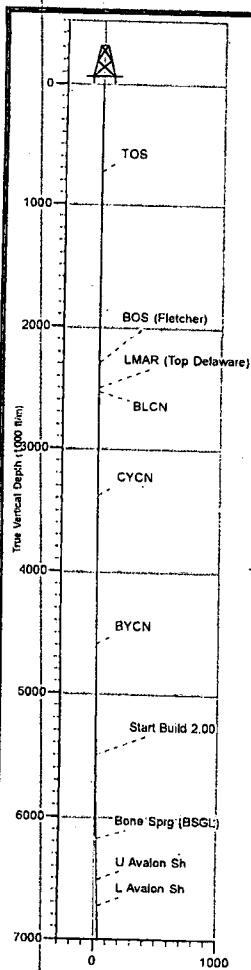
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
734.00	734.00	TOS			
2,293.00	2,293.00	BOS (Fletcher)			
2,498.00	2,498.00	LMAR (Top Delaware)			
2,532.00	2,532.00	BLCN			
3,380.00	3,380.00	CYCN			
4,594.00	4,594.00	BYCN			
6,181.82	6,178.00	Bone Sprg (BSGL)			
6,521.88	6,515.00	U Avalon Sh			
6,739.84	6,731.00	L Avalon Sh			
7,128.33	7,116.00	FBSG_sand			
7,880.08	7,861.00	SBSG_sand			
8,312.97	8,290.00	SBSG_sand_Base			
9,006.19	8,977.00	TBSG_sand			
9,379.98	9,334.00	WFMP			
9,573.30	9,472.00	WFMP A SHALE			



Project: Eddy Co., NM
Site: Myox 28 State Com
Well: 701H
Design: Design #1
Northing: 402894.100
Easting: 576600.400
Rig: Nabors 894



Azimuths to Grid North
True North: -0.13°
Magnetic North: 6.87°
Magnetic Field
Strength: 47877.2nT
Dip Angle: 59.80°
Date: 3/21/2019
Model: HDGM_FILE



		SECTION DETAILS							
MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	0.00	0.00	
5884.25	7.69	100.04	5883.10	-4.49	25.34	2.00	100.04	6.86	
9023.66	7.69	100.04	8994.31	-77.67	438.74	0.00	0.00	101.49	
9029.40	7.80	100.04	9000.00	-77.80	439.50	2.00	0.10	101.67	
9125.69	7.80	100.04	9095.40	-80.08	452.37	0.00	0.00	104.64	
9867.46	90.40	179.75	9557.05	-560.46	517.09	12.00	79.75	587.85	
19525.34	90.40	179.75	9489.00	-10218.02	558.40	0.00	0.00	10233.27	

