

Ground Level 3316.40



Project: Lea County, NM (NAD27 NME)
Site: Coonskin Fee
Well: 601H
Wellbore: OH
Design: Plan 1 07-26-18
Rig: Patterson 595

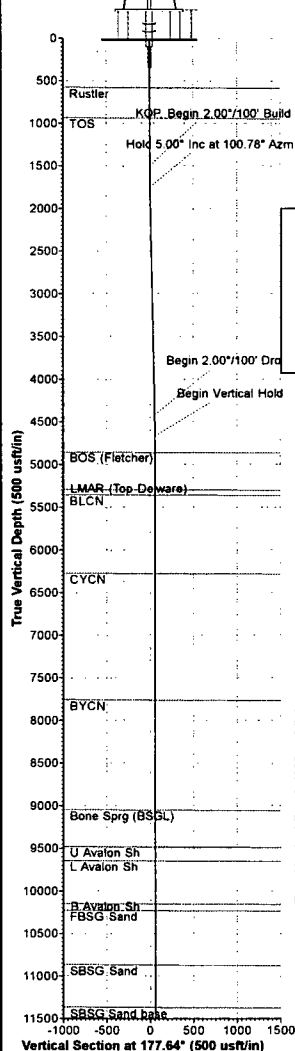


PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: -0.51°
Magnetic North: 6.21°

Magnetic Field
Strength: 47904.5nT
Dip Angle: 59.86°
Date: 9/26/2018
Model: MVHD



WELL DETAILS																					
3316.40																					
+N/S			+E/W			Northing		Easting		Latitude		Longitude									
0.00			0.00			436159.30		796231.00		32° 11' 43.77433 N		103° 22' 32.57448 W									
DESIGN TARGET DETAILS																					
Name						TVD		+N/S		+E/W		Northing		Easting		Latitude		Longitude			
FTP - Coorskin Fee 601H						12266.00		-277.70				435801.50		796483.30		32° 11' 41.00423 N		103° 22' 29.66748 W			
LTP - Coorskin Fee 601H						12295.45		-7539.30				314.50		428620.20		796545.50		32° 10' 29.14679 N		103° 22' 29.69651 W	
BHL - Coorskin Fee 601H						12296.00		-7669.10				315.60		428490.20		796546.60		32° 10' 27.88033 N		103° 22' 29.69729 W	
SECTION DETAILS																					
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Diag	TFace	V/Sect	Target	Annotation										
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00												
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00		KOP, Begin 2.00°/100' Build										
3	1750.24	0.00	100.78	1749.93	-2.04	10.73	2.00	100.78	2.48		Hold 5.00° Inc at 100.78° Azm										
4	4428.60	5.00	100.78	4418.07	-45.74	240.27	0.00	0.00	55.58		Begin 2.00°/100' Drop										
5	4678.85	0.00	0.00	4688.00	-47.78	251.00	0.00	180.00	58.06		Begin Vertical Hold										
6	11703.90	0.00	0.00	11693.05	-47.78	251.00	0.00	0.00	58.06		KOP2, Begin 10.00°/100' Build										
7	12601.46	89.76	179.51	12266.00	-618.28	255.84	0.00	179.51	628.28		LP, Hold 89.76° Inc at 179.51° Azm										
8	19652.60	89.76	179.51	12296.00	-7689.10	315.60	0.00	0.00	7675.59	BHL - Coorskin Fee 601H	TD at 19652.60										

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

Local Origin: Well 601H, Grid North

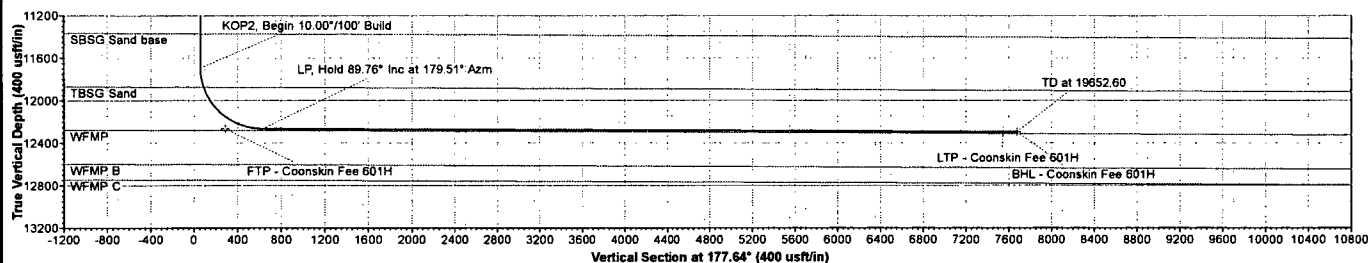
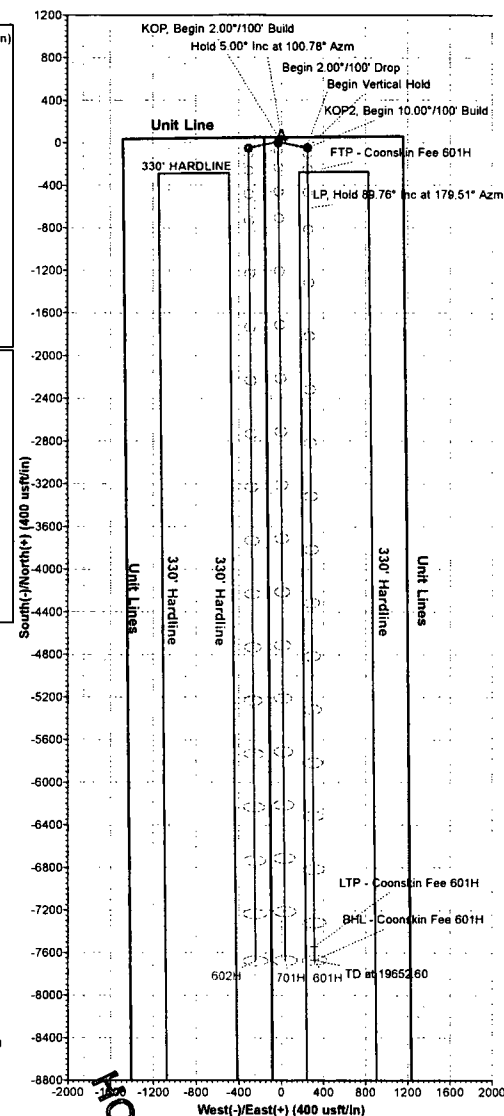
Latitude: 32° 11' 43.77433 N
Longitude: 103° 22' 32.57448 W

Grid East: 796231.00
Grid North: 436159.30
Scale Factor: 1.000

Geomagnetic Model: MVHD
Sample Date: 26-Sep-18
Magnetic Declination: 6.72°
Dip Angle from Horizontal: 59.86°
Magnetic Field Strength: 47904.51253293nT

To convert a Magnetic Direction to a Grid Direction, Add 6.21°
To convert a Magnetic Direction to a True Direction, Add 6.72° East
To convert a True Direction to a Grid Direction, Subtract 0.51°

FORMATION TOP DETAILS				
TVDepth	MDPath	Formation	DipAngle	DipDir
581.00	9400	Fertiler	0.24	177.64
940.00	9400	TOS	0.24	177.64
4859.24	4870.09	Bos Fletcher	0.24	177.64
5292.24	5307.09	LMAR (Top Delwara)	0.24	177.64
5358.00	5358.09	BYCN	0.24	177.64
6276.24	6287.09	CYC/C	0.24	177.64
7761.24	7761.24	BYCN	0.24	177.64
9051.24	9062.09	Bone Spgr (BSGL)	0.24	177.64
9463.24	9494.09	U Avation Sh	0.24	177.64
9644.00	9659.09	U Avation Sh	0.24	177.64
10153.24	10164.09	B Avation Sh	0.24	177.64
10232.24	10243.09	FBSS Sand	0.24	177.64
10874.24	10885.09	SBSS Sand	0.24	177.64
11371.24	11382.09	SBSS Sand base	0.24	177.64
11817.37	11839.39	TBSS Sand	0.24	177.64



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COG Operating LLC

Lea County, NM (NAD27 NME)

Coonskin Fee

601H

OH

Plan: Plan 1 07-26-18

Standard Planning Report

26 July, 2018

HOBBS OCD
AUG 07 2018
RECEIVED





Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 601H
Company:	COG Operating LLC	TVD Reference:	RKB @ 3341.40usft (Patterson 595)
Project:	Lea County, NM (NAD27 NME)	MD Reference:	RKB @ 3341.40usft (Patterson 595)
Site:	Coonskin Fee	North Reference:	Grid
Well:	601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 07-26-18		

Project	Lea County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		Coonskin Fee				
Site Position:		Northing:	436,159.30 usft	Latitude:	32° 11' 43.77433 N	
From:	Map	Easting:	796,231.00 usft	Longitude:	103° 22' 32.57448 W	
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.51 °

Well	601H					
Well Position	+N/-S	0.00 usft	Northing:	436,159.30 usft	Latitude:	32° 11' 43.77433 N
	+E/-W	0.00 usft	Easting:	796,231.00 usft	Longitude:	103° 22' 32.57448 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,316.40 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	9/26/2018	6.72	59.86	47,904.51253293

Design	Plan 1 07-26-18			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	177.64

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	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	
1,750.24	5.00	100.78	1,749.93	-2.04	10.73	2.00	2.00	0.00	100.78	
4,428.60	5.00	100.78	4,418.07	-45.74	240.27	0.00	0.00	0.00	0.00	
4,678.85	0.00	0.00	4,668.00	-47.78	251.00	2.00	-2.00	0.00	180.00	
11,703.90	0.00	0.00	11,693.05	-47.78	251.00	0.00	0.00	0.00	0.00	
12,601.46	89.76	179.51	12,266.00	-618.28	255.84	10.00	10.00	20.00	179.51	
19,652.60	89.76	179.51	12,296.00	-7,669.10	315.60	0.00	0.00	0.00	0.00	BHL - Coonskin Fee



Planning Report



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Project:	Lea County, NM (NAD27 NME)	MD Reference:	RKB @ 3341.40usft (Patterson 595)
Site:	Coonskin Fee	North Reference:	Grid
Well:	601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 07-26-18		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
581.00	0.00	0.00	581.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
940.00	0.00	0.00	940.00	0.00	0.00	0.00	0.00	0.00	0.00
TOS									
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 2.00°/100' Build									
1,600.00	2.00	100.78	1,599.98	-0.33	1.71	0.40	2.00	2.00	0.00
1,700.00	4.00	100.78	1,699.84	-1.30	6.86	1.59	2.00	2.00	0.00
1,750.24	5.00	100.78	1,749.93	-2.04	10.73	2.48	2.00	2.00	0.00
Hold 5.00° Inc at 100.78° Azm									
1,800.00	5.00	100.78	1,799.49	-2.85	14.99	3.47	0.00	0.00	0.00
1,900.00	5.00	100.78	1,899.11	-4.49	23.56	5.45	0.00	0.00	0.00
2,000.00	5.00	100.78	1,998.73	-6.12	32.13	7.43	0.00	0.00	0.00
2,100.00	5.00	100.78	2,098.35	-7.75	40.70	9.42	0.00	0.00	0.00
2,200.00	5.00	100.78	2,197.97	-9.38	49.27	11.40	0.00	0.00	0.00
2,300.00	5.00	100.78	2,297.59	-11.01	57.85	13.38	0.00	0.00	0.00
2,400.00	5.00	100.78	2,397.20	-12.64	66.42	15.36	0.00	0.00	0.00
2,500.00	5.00	100.78	2,496.82	-14.27	74.99	17.35	0.00	0.00	0.00
2,600.00	5.00	100.78	2,596.44	-15.91	83.56	19.33	0.00	0.00	0.00
2,700.00	5.00	100.78	2,696.06	-17.54	92.13	21.31	0.00	0.00	0.00
2,800.00	5.00	100.78	2,795.68	-19.17	100.70	23.29	0.00	0.00	0.00
2,900.00	5.00	100.78	2,895.30	-20.80	109.27	25.27	0.00	0.00	0.00
3,000.00	5.00	100.78	2,994.92	-22.43	117.84	27.26	0.00	0.00	0.00
3,100.00	5.00	100.78	3,094.54	-24.06	126.41	29.24	0.00	0.00	0.00
3,200.00	5.00	100.78	3,194.15	-25.69	134.98	31.22	0.00	0.00	0.00
3,300.00	5.00	100.78	3,293.77	-27.33	143.55	33.20	0.00	0.00	0.00
3,400.00	5.00	100.78	3,393.39	-28.96	152.12	35.19	0.00	0.00	0.00
3,500.00	5.00	100.78	3,493.01	-30.59	160.69	37.17	0.00	0.00	0.00
3,600.00	5.00	100.78	3,592.63	-32.22	169.26	39.15	0.00	0.00	0.00
3,700.00	5.00	100.78	3,692.25	-33.85	177.83	41.13	0.00	0.00	0.00
3,800.00	5.00	100.78	3,791.87	-35.48	186.40	43.12	0.00	0.00	0.00
3,900.00	5.00	100.78	3,891.49	-37.11	194.97	45.10	0.00	0.00	0.00
4,000.00	5.00	100.78	3,991.10	-38.75	203.54	47.08	0.00	0.00	0.00
4,100.00	5.00	100.78	4,090.72	-40.38	212.11	49.06	0.00	0.00	0.00
4,200.00	5.00	100.78	4,190.34	-42.01	220.68	51.05	0.00	0.00	0.00
4,300.00	5.00	100.78	4,289.96	-43.64	229.25	53.03	0.00	0.00	0.00
4,400.00	5.00	100.78	4,389.58	-45.27	237.82	55.01	0.00	0.00	0.00
4,428.60	5.00	100.78	4,418.07	-45.74	240.27	55.58	0.00	0.00	0.00
Begin 2.00°/100' Drop									
4,500.00	3.58	100.78	4,489.27	-46.74	245.52	56.79	2.00	-2.00	0.00
4,600.00	1.58	100.78	4,589.16	-47.58	249.93	57.81	2.00	-2.00	0.00
4,678.85	0.00	0.00	4,668.00	-47.78	251.00	58.06	2.00	-2.00	-127.81
Begin Vertical Hold									
4,870.09	0.00	0.00	4,859.24	-47.78	251.00	58.06	0.00	0.00	0.00
BOS (Fletcher)									
5,307.09	0.00	0.00	5,296.24	-47.78	251.00	58.06	0.00	0.00	0.00
LMAR (Top Delaware)									
5,368.09	0.00	0.00	5,357.24	-47.78	251.00	58.06	0.00	0.00	0.00
BLCN									
6,287.09	0.00	0.00	6,276.24	-47.78	251.00	58.06	0.00	0.00	0.00
CYCN									
7,772.09	0.00	0.00	7,761.24	-47.78	251.00	58.06	0.00	0.00	0.00



Planning Report



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Company:	COG Operating LLC	TVD Reference:	RKB @ 3341.40usft (Patterson 595)
Project:	Lea County, NM (NAD27 NME)	MD Reference:	RKB @ 3341.40usft (Patterson 595)
Site:	Coonskin Fee	North Reference:	Grid
Well:	601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 07-26-18		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
BYCN									
9,062.09	0.00	0.00	9,051.24	-47.78	251.00	58.06	0.00	0.00	0.00
Bone Sprg (BSGL)									
9,494.09	0.00	0.00	9,483.24	-47.78	251.00	58.06	0.00	0.00	0.00
U Avalon Sh									
9,659.09	0.00	0.00	9,648.24	-47.78	251.00	58.06	0.00	0.00	0.00
L Avalon Sh									
10,164.09	0.00	0.00	10,153.24	-47.78	251.00	58.06	0.00	0.00	0.00
B Avalon Sh									
10,243.09	0.00	0.00	10,232.24	-47.78	251.00	58.06	0.00	0.00	0.00
FBSG Sand									
10,883.09	0.00	0.00	10,872.24	-47.78	251.00	58.06	0.00	0.00	0.00
SBSG Sand									
11,382.09	0.00	0.00	11,371.24	-47.78	251.00	58.06	0.00	0.00	0.00
SBSG Sand base									
11,703.90	0.00	0.00	11,693.05	-47.78	251.00	58.06	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
11,800.00	9.61	179.51	11,788.70	-55.82	251.07	66.10	10.00	10.00	0.00
11,888.39	18.45	179.51	11,874.37	-77.23	251.25	87.49	10.00	10.00	0.00
TBSG Sand									
11,900.00	19.61	179.51	11,885.35	-81.01	251.28	91.28	10.00	10.00	0.00
12,000.00	29.61	179.51	11,976.15	-122.60	251.63	132.84	10.00	10.00	0.00
12,100.00	39.61	179.51	12,058.35	-179.33	252.12	189.54	10.00	10.00	0.00
12,200.00	49.61	179.51	12,129.45	-249.46	252.71	259.64	10.00	10.00	0.00
12,300.00	59.61	179.51	12,187.29	-330.88	253.40	341.02	10.00	10.00	0.00
12,400.00	69.61	179.51	12,230.11	-421.10	254.16	431.20	10.00	10.00	0.00
12,500.00	79.61	179.51	12,256.61	-517.39	254.98	527.44	10.00	10.00	0.00
12,600.00	89.61	179.51	12,265.99	-616.82	255.82	626.82	10.00	10.00	0.00
12,601.46	89.76	179.51	12,266.00	-618.28	255.84	628.28	10.00	10.00	0.00
LP, Hold 89.76° Inc at 179.51° Azm									
12,700.00	89.76	179.51	12,266.42	-716.81	256.67	726.76	0.00	0.00	0.00
12,800.00	89.76	179.51	12,266.85	-816.81	257.52	826.71	0.00	0.00	0.00
12,900.00	89.76	179.51	12,267.27	-916.81	258.37	926.65	0.00	0.00	0.00
13,000.00	89.76	179.51	12,267.70	-1,016.80	259.21	1,026.60	0.00	0.00	0.00
13,100.00	89.76	179.51	12,268.12	-1,116.80	260.06	1,126.55	0.00	0.00	0.00
13,200.00	89.76	179.51	12,268.55	-1,216.79	260.91	1,226.49	0.00	0.00	0.00
13,300.00	89.76	179.51	12,268.97	-1,316.79	261.76	1,326.44	0.00	0.00	0.00
13,400.00	89.76	179.51	12,269.40	-1,416.78	262.60	1,426.38	0.00	0.00	0.00
13,500.00	89.76	179.51	12,269.83	-1,516.78	263.45	1,526.33	0.00	0.00	0.00
13,600.00	89.76	179.51	12,270.25	-1,616.77	264.30	1,626.27	0.00	0.00	0.00
13,700.00	89.76	179.51	12,270.68	-1,716.77	265.15	1,726.22	0.00	0.00	0.00
13,800.00	89.76	179.51	12,271.10	-1,816.77	265.99	1,826.17	0.00	0.00	0.00
13,900.00	89.76	179.51	12,271.53	-1,916.76	266.84	1,926.11	0.00	0.00	0.00
14,000.00	89.76	179.51	12,271.95	-2,016.76	267.69	2,026.06	0.00	0.00	0.00
14,100.00	89.76	179.51	12,272.38	-2,116.75	268.54	2,126.00	0.00	0.00	0.00
14,200.00	89.76	179.51	12,272.80	-2,216.75	269.38	2,225.95	0.00	0.00	0.00
14,300.00	89.76	179.51	12,273.23	-2,316.74	270.23	2,325.89	0.00	0.00	0.00
14,400.00	89.76	179.51	12,273.65	-2,416.74	271.08	2,425.84	0.00	0.00	0.00
14,500.00	89.76	179.51	12,274.08	-2,516.73	271.93	2,525.79	0.00	0.00	0.00
14,600.00	89.76	179.51	12,274.51	-2,616.73	272.77	2,625.73	0.00	0.00	0.00
14,700.00	89.76	179.51	12,274.93	-2,716.72	273.62	2,725.68	0.00	0.00	0.00
14,800.00	89.76	179.51	12,275.36	-2,816.72	274.47	2,825.62	0.00	0.00	0.00
14,900.00	89.76	179.51	12,275.78	-2,916.72	275.32	2,925.57	0.00	0.00	0.00



Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Coonskin Fee
Well: 601H
Wellbore: OH
Design: Plan 1 07-26-18

Local Co-ordinate Reference: Well 601H
TVD Reference: RKB @ 3341.40usft (Patterson 595)
MD Reference: RKB @ 3341.40usft (Patterson 595)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,000.00	89.76	179.51	12,276.21	-3,016.71	276.17	3,025.52	0.00	0.00	0.00
15,100.00	89.76	179.51	12,276.63	-3,116.71	277.01	3,125.46	0.00	0.00	0.00
15,200.00	89.76	179.51	12,277.06	-3,216.70	277.86	3,225.41	0.00	0.00	0.00
15,300.00	89.76	179.51	12,277.48	-3,316.70	278.71	3,325.35	0.00	0.00	0.00
15,400.00	89.76	179.51	12,277.91	-3,416.69	279.56	3,425.30	0.00	0.00	0.00
15,500.00	89.76	179.51	12,278.33	-3,516.69	280.40	3,525.24	0.00	0.00	0.00
15,600.00	89.76	179.51	12,278.76	-3,616.68	281.25	3,625.19	0.00	0.00	0.00
15,700.00	89.76	179.51	12,279.18	-3,716.68	282.10	3,725.14	0.00	0.00	0.00
15,800.00	89.76	179.51	12,279.61	-3,816.68	282.95	3,825.08	0.00	0.00	0.00
15,900.00	89.76	179.51	12,280.04	-3,916.67	283.79	3,925.03	0.00	0.00	0.00
16,000.00	89.76	179.51	12,280.46	-4,016.67	284.64	4,024.97	0.00	0.00	0.00
16,100.00	89.76	179.51	12,280.89	-4,116.66	285.49	4,124.92	0.00	0.00	0.00
16,200.00	89.76	179.51	12,281.31	-4,216.66	286.34	4,224.86	0.00	0.00	0.00
16,300.00	89.76	179.51	12,281.74	-4,316.65	287.18	4,324.81	0.00	0.00	0.00
16,400.00	89.76	179.51	12,282.16	-4,416.65	288.03	4,424.76	0.00	0.00	0.00
16,500.00	89.76	179.51	12,282.59	-4,516.64	288.88	4,524.70	0.00	0.00	0.00
16,600.00	89.76	179.51	12,283.01	-4,616.64	289.73	4,624.65	0.00	0.00	0.00
16,700.00	89.76	179.51	12,283.44	-4,716.63	290.57	4,724.59	0.00	0.00	0.00
16,800.00	89.76	179.51	12,283.86	-4,816.63	291.42	4,824.54	0.00	0.00	0.00
16,900.00	89.76	179.51	12,284.29	-4,916.63	292.27	4,924.49	0.00	0.00	0.00
17,000.00	89.76	179.51	12,284.72	-5,016.62	293.12	5,024.43	0.00	0.00	0.00
17,100.00	89.76	179.51	12,285.14	-5,116.62	293.96	5,124.38	0.00	0.00	0.00
17,200.00	89.76	179.51	12,285.57	-5,216.61	294.81	5,224.32	0.00	0.00	0.00
17,300.00	89.76	179.51	12,285.99	-5,316.61	295.66	5,324.27	0.00	0.00	0.00
17,400.00	89.76	179.51	12,286.42	-5,416.60	296.51	5,424.21	0.00	0.00	0.00
17,500.00	89.76	179.51	12,286.84	-5,516.60	297.35	5,524.16	0.00	0.00	0.00
17,600.00	89.76	179.51	12,287.27	-5,616.59	298.20	5,624.11	0.00	0.00	0.00
17,700.00	89.76	179.51	12,287.69	-5,716.59	299.05	5,724.05	0.00	0.00	0.00
17,800.00	89.76	179.51	12,288.12	-5,816.59	299.90	5,824.00	0.00	0.00	0.00
17,900.00	89.76	179.51	12,288.54	-5,916.58	300.75	5,923.94	0.00	0.00	0.00
18,000.00	89.76	179.51	12,288.97	-6,016.58	301.59	6,023.89	0.00	0.00	0.00
18,100.00	89.76	179.51	12,289.40	-6,116.57	302.44	6,123.83	0.00	0.00	0.00
18,200.00	89.76	179.51	12,289.82	-6,216.57	303.29	6,223.78	0.00	0.00	0.00
18,300.00	89.76	179.51	12,290.25	-6,316.56	304.14	6,323.73	0.00	0.00	0.00
18,400.00	89.76	179.51	12,290.67	-6,416.56	304.98	6,423.67	0.00	0.00	0.00
18,500.00	89.76	179.51	12,291.10	-6,516.55	305.83	6,523.62	0.00	0.00	0.00
18,600.00	89.76	179.51	12,291.52	-6,616.55	306.68	6,623.56	0.00	0.00	0.00
18,700.00	89.76	179.51	12,291.95	-6,716.55	307.53	6,723.51	0.00	0.00	0.00
18,800.00	89.76	179.51	12,292.37	-6,816.54	308.37	6,823.46	0.00	0.00	0.00
18,900.00	89.76	179.51	12,292.80	-6,916.54	309.22	6,923.40	0.00	0.00	0.00
19,000.00	89.76	179.51	12,293.22	-7,016.53	310.07	7,023.35	0.00	0.00	0.00
19,100.00	89.76	179.51	12,293.65	-7,116.53	310.92	7,123.29	0.00	0.00	0.00
19,200.00	89.76	179.51	12,294.07	-7,216.52	311.76	7,223.24	0.00	0.00	0.00
19,300.00	89.76	179.51	12,294.50	-7,316.52	312.61	7,323.18	0.00	0.00	0.00
19,400.00	89.76	179.51	12,294.93	-7,416.51	313.46	7,423.13	0.00	0.00	0.00
19,500.00	89.76	179.51	12,295.35	-7,516.51	314.31	7,523.08	0.00	0.00	0.00
19,600.00	89.76	179.51	12,295.78	-7,616.50	315.15	7,623.02	0.00	0.00	0.00
19,652.60	89.76	179.51	12,296.00	-7,669.10	315.60	7,675.59	0.00	0.00	0.00
TD at 19652.60									



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 601H
Company:	COG Operating LLC	TVD Reference:	RKB @ 3341.40usft (Patterson 595)
Project:	Lea County, NM (NAD27 NME)	MD Reference:	RKB @ 3341.40usft (Patterson 595)
Site:	Coonskin Fee	North Reference:	Grid
Well:	601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 07-26-18		

Design Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
FTP - Coonskin Fee 6	0.00	0.00	12,266.00	-277.70	252.30	435,881.60	796,483.30	32° 11' 41.00423 N 03° 22' 29.66747 W	
- plan misses target center by 95.00usft at 12300.00usft MD (12187.29 TVD, -330.88 N, 253.40 E)									
- Point									
LTP - Coonskin Fee 6	0.00	0.00	12,295.45	-7,539.10	314.50	428,620.20	796,545.50	32° 10' 29.14679 N 03° 22' 29.69661 W	
- plan hits target center									
- Point									
BHL - Coonskin Fee 6	0.00	0.00	12,296.00	-7,669.10	315.60	428,490.20	796,546.60	32° 10' 27.86033 N 03° 22' 29.69729 W	
- plan hits target center									
- Point									

Formations

Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(usft)	(usft)			(°)	(°)
581.00	581.00	Rustler		0.24	177.64
940.00	940.00	TOS		0.24	177.64
4,870.09	4,859.24	BOS (Fletcher)		0.24	177.64
5,307.09	5,296.24	LMAR (Top Delaware)		0.24	177.64
5,368.09	5,357.24	BLCN		0.24	177.64
6,287.09	6,276.24	CYCN		0.24	177.64
7,772.09	7,761.24	BYCN		0.24	177.64
9,062.09	9,051.24	Bone Sprg (BSGL)		0.24	177.64
9,494.09	9,483.24	U Avalon Sh		0.24	177.64
9,659.09	9,648.24	L Avalon Sh		0.24	177.64
10,164.09	10,153.24	B Avalon Sh		0.24	177.64
10,243.09	10,232.24	FBSG Sand		0.24	177.64
10,883.09	10,872.24	SBSG Sand		0.24	177.64
11,382.09	11,371.24	SBSG Sand base		0.24	177.64
11,888.39	11,874.37	TBSG Sand		0.24	177.64

Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S	+E/-W	
(usft)	(usft)	(usft)	(usft)	
1,500.00	1,500.00	0.00	0.00	KOP, Begin 2.00°/100' Build
1,750.24	1,749.93	-2.04	10.73	Hold 5.00° Inc at 100.78° Azm
4,428.60	4,418.07	-45.74	240.27	Begin 2.00°/100' Drop
4,678.85	4,668.00	-47.78	251.00	Begin Vertical Hold
11,703.90	11,693.05	-47.78	251.00	KOP2, Begin 10.00°/100' Build
12,601.46	12,266.00	-618.28	255.84	LP, Hold 89.76° Inc at 179.51° Azm
19,652.60	12,296.00	-7,669.10	315.60	TD at 19652.60