

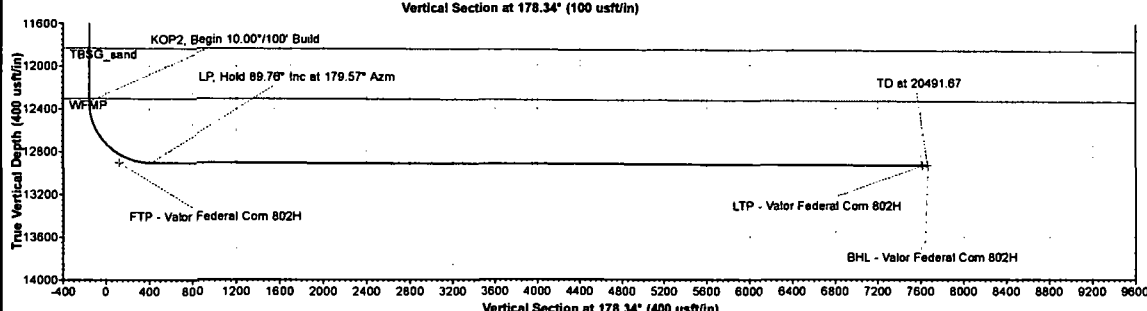
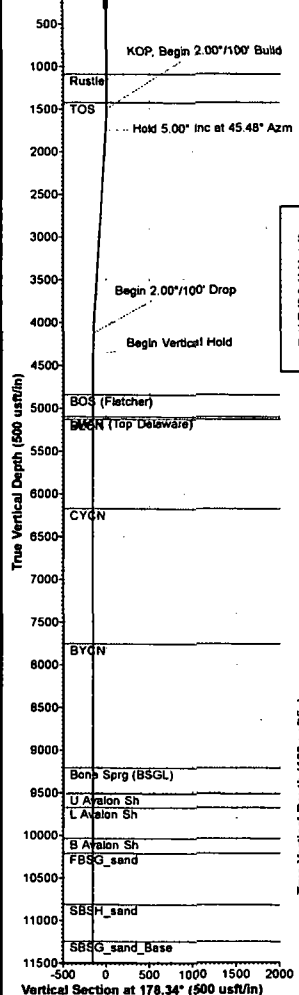
Project: Lea County, NM (NAD27 NME)
 Site: Valor State Com
 Well: 802H
 Wellbore: OH
 Design: Plan 1 01-15-19
 Rig: Precision 595



PHOENIX
 TECHNOLOGY SERVICES



Azimuths to Grid North
 True North: -0.42°
 Magnetic North: 6.22°
 Magnetic Field
 Strength: 47770.2nT
 Dip Angle: 59.76°
 Date: 2/15/2019
 Model: MVHD



WELL DETAILS									
				3330.80					
+N-S	+E-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	38666.20	746348.60	32° 5' 36.78553 N	103° 32' 16.28065 W				

DESIGN TARGET DETAILS									
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude		
FTP - Valor Federal Com 802H	12908.00	-118.80	165.90	389547.30	746512.50	32° 5' 35.59683 N	103° 32' 14.36247 W		
LTP - Valor Federal Com 802H	12935.79	-7810.50	221.70	391055.70	746588.30	32° 4' 21.45851 N	103° 32' 14.35649 W		
BHL - Valor Federal Com 802H	12936.00	-7660.50	222.10	391005.70	746568.70	32° 4' 20.96370 N	103° 32' 14.35613 W		

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSecl
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
3	1750.12	5.00	45.48	1749.80	7.65	7.78	2.00	45.48	-7.42
4	4134.60	5.00	45.48	4125.20	153.43	156.03	0.00	0.00	-148.84
5	4384.72	0.00	0.00	4375.00	161.08	163.81	2.00	180.00	-156.26
6	12342.77	0.00	0.00	12333.05	161.08	163.81	0.00	0.00	-156.26
7	13240.40	69.78	178.57	12906.00	-409.49	168.06	10.00	178.57	414.19
8	20491.67	69.78	178.57	12936.00	-7660.50	222.10	0.00	0.00	7663.72

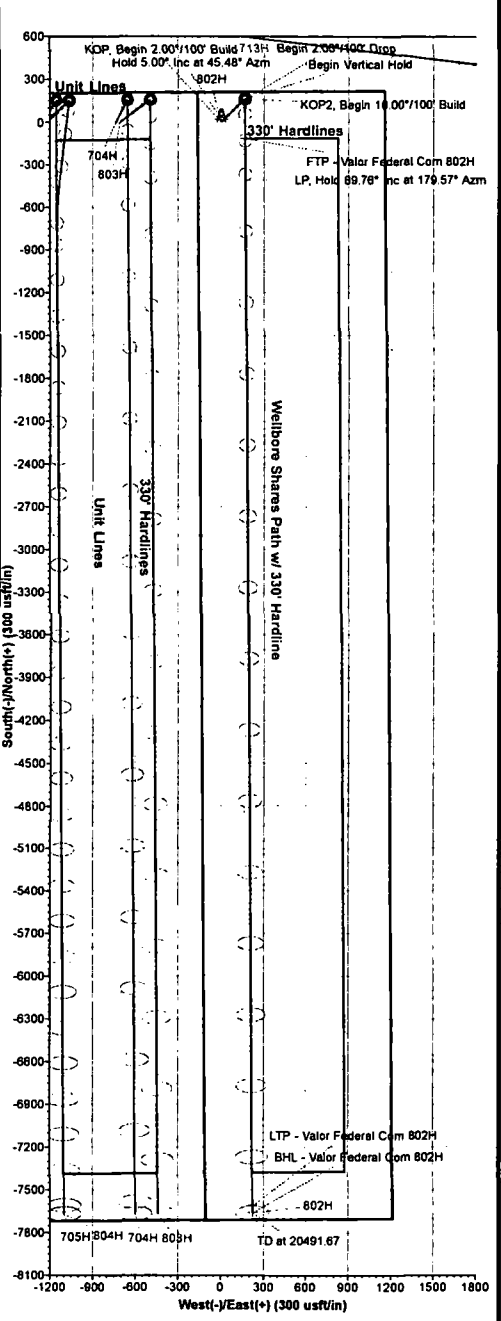
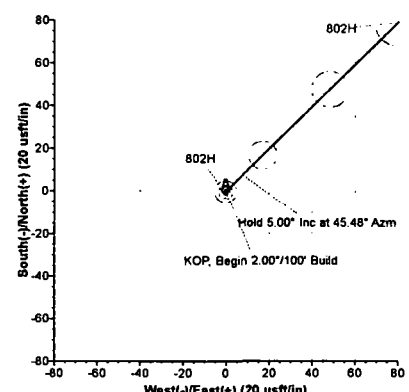
LEGEND

- 804H, OH, Plan 1 01-18-19 V0
- 704H, OH, Plan 1 01-15-19 V0
- 705H, OH, Plan 1 01-15-19 V0
- 803H, OH, Plan 1 01-15-19 V0
- 713H, OH / 63135 / 63140, Plan 3 10-8-18 V0
- 713H, OH / 63135 / 63140, Plan 1 06-14-18 V0
- Plan 1 01-15-19

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 802H, Grid North
 Latitude: 32° 5' 36.78553 N
 Longitude: 103° 32' 16.28065 W
 Grid East: 746348.60
 Grid North: 389668.20
 Scale Factor: 1.000
 Geomagnetic Model: MVHD
 Sample Date: 15-Feb-19
 Magnetic Declination: 6.65°
 Dip Angle from Horizontal: 59.76°
 Magnetic Field Strength: 47770.16088064nT
 To convert a Magnetic Direction to a Grid Direction, Add 6.22°
 To convert a Magnetic Direction to a True Direction, Add 6.65° East
 To convert a True Direction to a Grid Direction, Subtract 0.42°

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DpDr
1097.80	1097.80	Rustle	0.24	178.34
1430.80	1430.80	TOS	0.24	178.34
4848.15	4855.88	BOS (Fletcher)	0.24	178.34
5104.15	5113.88	LMAR (Top Delaware)	0.24	178.34
5132.15	5141.88	BLCN	0.24	178.34
6179.15	6188.88	CYCN	0.24	178.34
7768.15	7769.88	BYCN	0.24	178.34
8215.15	9224.88	Bone Sprg (BSGL)	0.24	178.34
9517.15	9526.88	U Avalon Sh	0.24	178.34
9678.15	9686.88	L Avalon Sh	0.24	178.34
10040.15	10049.88	B Avalon Sh	0.24	178.34
10214.15	10223.88	FBSSG_sand	0.24	178.34
10614.15	10623.88	SSSG_sand	0.24	178.34
11245.15	11254.88	SSSG_sand_Base	0.24	178.34
11833.15	11842.88	TBSG_sand	0.24	178.34
12305.15	12314.88	WFMP	0.24	178.34





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TECHNOLOGY SERVICES

COG Operating LLC

Lea County, NM (NAD27 NME)

Valor State Com

802H

OH

Plan: Plan 1 01-15-19

Standard Planning Report

01 February, 2019





Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Valor State Com
Well: 802H
Wellbore: OH
Design: Plan 1 01-15-19

Local Co-ordinate Reference: Well 802H
TVD Reference: RKB @ 3355.80usft (Precision 595)
MD Reference: RKB @ 3355.80usft (Precision 595)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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		Valor State Com			
Site Position:		Northing:	398,658.10 usft	Latitude:	32° 5' 36.79494 N
From:	Map	Easting:	745,116.70 usft	Longitude:	103° 32' 30.57746 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.42 °

Well	802H					
Well Position	+N/-S	8.10 usft	Northing:	398,666.20 usft	Latitude:	32° 5' 36.78554 N
	+E/-W	1,229.90 usft	Easting:	746,346.60 usft	Longitude:	103° 32' 16.28065 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	3,330.80 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	2/15/2019	6.65	59.76	47,770.16088065

Design	Plan 1 01-15-19			
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	178.34

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	
1,750.12	5.00	45.48	1,749.80	7.65	7.78	2.00	2.00	0.00	45.48	
4,134.60	5.00	45.48	4,125.20	153.43	156.03	0.00	0.00	0.00	0.00	
4,384.72	0.00	0.00	4,375.00	161.08	163.81	2.00	-2.00	0.00	180.00	
12,342.77	0.00	0.00	12,333.05	161.08	163.81	0.00	0.00	0.00	0.00	
13,240.40	89.76	179.57	12,906.00	-409.49	168.06	10.00	10.00	20.01	179.57	
20,491.67	89.76	179.57	12,936.00	-7,660.50	222.10	0.00	0.00	0.00	0.00	BHL - Valor Federa

Database: USA Compass
 Company: COG Operating LLC
 Project: Lea County, NM (NAD27 NME)
 Site: Valor State Com
 Well: 802H
 Wellbore: OH
 Design: Plan 1 01-15-19

Local Co-ordinate Reference: Well 802H
 TVD Reference: RKB @ 3355.80usft (Precision 595)
 MD Reference: RKB @ 3355.80usft (Precision 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,097.80	0.00	0.00	1,097.80	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,430.80	0.00	0.00	1,430.80	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	45.48	1,599.98	1.22	1.24	-1.19	2.00	2.00	0.00
1,700.00	4.00	45.48	1,699.84	4.89	4.98	-4.75	2.00	2.00	0.00
1,750.12	5.00	45.48	1,749.80	7.65	7.78	-7.42	2.00	2.00	0.00
Hold 5.00° Inc at 45.48° Azm									
1,800.00	5.00	45.48	1,799.49	10.70	10.88	-10.38	0.00	0.00	0.00
1,900.00	5.00	45.48	1,899.11	16.81	17.10	-16.31	0.00	0.00	0.00
2,000.00	5.00	45.48	1,998.73	22.93	23.32	-22.24	0.00	0.00	0.00
2,100.00	5.00	45.48	2,098.35	29.04	29.53	-28.17	0.00	0.00	0.00
2,200.00	5.00	45.48	2,197.97	35.15	35.75	-34.10	0.00	0.00	0.00
2,300.00	5.00	45.48	2,297.59	41.27	41.97	-40.03	0.00	0.00	0.00
2,400.00	5.00	45.48	2,397.21	47.38	48.19	-45.97	0.00	0.00	0.00
2,500.00	5.00	45.48	2,496.83	53.50	54.40	-51.90	0.00	0.00	0.00
2,600.00	5.00	45.48	2,596.45	59.61	60.62	-57.83	0.00	0.00	0.00
2,700.00	5.00	45.48	2,696.06	65.72	66.84	-63.76	0.00	0.00	0.00
2,800.00	5.00	45.48	2,795.68	71.84	73.06	-69.69	0.00	0.00	0.00
2,900.00	5.00	45.48	2,895.30	77.95	79.27	-75.62	0.00	0.00	0.00
3,000.00	5.00	45.48	2,994.92	84.06	85.49	-81.55	0.00	0.00	0.00
3,100.00	5.00	45.48	3,094.54	90.18	91.71	-87.48	0.00	0.00	0.00
3,200.00	5.00	45.48	3,194.16	96.29	97.93	-93.41	0.00	0.00	0.00
3,300.00	5.00	45.48	3,293.78	102.40	104.14	-99.34	0.00	0.00	0.00
3,400.00	5.00	45.48	3,393.40	108.52	110.36	-105.27	0.00	0.00	0.00
3,500.00	5.00	45.48	3,493.02	114.63	116.58	-111.20	0.00	0.00	0.00
3,600.00	5.00	45.48	3,592.64	120.74	122.79	-117.13	0.00	0.00	0.00
3,700.00	5.00	45.48	3,692.26	126.86	129.01	-123.07	0.00	0.00	0.00
3,800.00	5.00	45.48	3,791.87	132.97	135.23	-129.00	0.00	0.00	0.00
3,900.00	5.00	45.48	3,891.49	139.09	141.45	-134.93	0.00	0.00	0.00
4,000.00	5.00	45.48	3,991.11	145.20	147.66	-140.86	0.00	0.00	0.00
4,100.00	5.00	45.48	4,090.73	151.31	153.88	-146.79	0.00	0.00	0.00
4,134.60	5.00	45.48	4,125.20	153.43	156.03	-148.84	0.00	0.00	0.00
Begin 2.00°/100' Drop									
4,200.00	3.69	45.48	4,190.41	156.90	159.57	-152.21	2.00	-2.00	0.00
4,300.00	1.69	45.48	4,290.30	160.20	162.92	-155.41	2.00	-2.00	0.00
4,384.72	0.00	0.00	4,375.00	161.08	163.81	-156.26	2.00	-2.00	0.00
Begin Vertical Hold									
4,855.86	0.00	0.00	4,846.15	161.08	163.81	-156.26	0.00	0.00	0.00
BOS (Fletcher)									
5,113.86	0.00	0.00	5,104.15	161.08	163.81	-156.26	0.00	0.00	0.00
LMAR (Top Delaware)									
5,141.86	0.00	0.00	5,132.15	161.08	163.81	-156.26	0.00	0.00	0.00
BLCN									
6,188.86	0.00	0.00	6,179.15	161.08	163.81	-156.26	0.00	0.00	0.00
CYCN									
7,769.86	0.00	0.00	7,760.15	161.08	163.81	-156.26	0.00	0.00	0.00
BYCN									
9,224.86	0.00	0.00	9,215.15	161.08	163.81	-156.26	0.00	0.00	0.00



Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Valor State Com
Well: 802H
Wellbore: OH
Design: Plan 1 01-15-19

Local Co-ordinate Reference: Well 802H
TVD Reference: RKB @ 3355.80usft (Precision 595)
MD Reference: RKB @ 3355.80usft (Precision 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)
Bone Sprg (BSGL)									
9,526.86	0.00	0.00	9,517.15	161.08	163.81	-156.26	0.00	0.00	0.00
U Avalon Sh									
9,688.86	0.00	0.00	9,679.15	161.08	163.81	-156.26	0.00	0.00	0.00
L Avalon Sh									
10,049.86	0.00	0.00	10,040.15	161.08	163.81	-156.26	0.00	0.00	0.00
B Avalon Sh									
10,223.86	0.00	0.00	10,214.15	161.08	163.81	-156.26	0.00	0.00	0.00
FBSG_sand									
10,823.86	0.00	0.00	10,814.15	161.08	163.81	-156.26	0.00	0.00	0.00
SBSH_sand									
11,254.86	0.00	0.00	11,245.15	161.08	163.81	-156.26	0.00	0.00	0.00
SBSG_sand_Base									
11,842.86	0.00	0.00	11,833.15	161.08	163.81	-156.26	0.00	0.00	0.00
TBSG_sand									
12,314.86	0.00	0.00	12,305.15	161.08	163.81	-156.26	0.00	0.00	0.00
WFMP									
12,342.77	0.00	0.00	12,333.05	161.08	163.81	-156.26	0.00	0.00	0.00
KOP2, Begin 10.00°/100° Build									
12,400.00	5.72	179.57	12,390.19	158.22	163.83	-153.41	10.00	10.00	0.00
12,500.00	15.72	179.57	12,488.32	139.64	163.97	-134.83	10.00	10.00	0.00
12,600.00	25.72	179.57	12,581.73	104.30	164.24	-99.50	10.00	10.00	0.00
12,700.00	35.72	179.57	12,667.58	53.28	164.62	-48.48	10.00	10.00	0.00
12,800.00	45.72	179.57	12,743.27	-11.88	165.10	16.66	10.00	10.00	0.00
12,900.00	55.72	179.57	12,806.50	-89.19	165.68	93.95	10.00	10.00	0.00
13,000.00	65.72	179.57	12,855.34	-176.30	166.33	181.05	10.00	10.00	0.00
13,100.00	75.72	179.57	12,888.31	-270.57	167.03	275.30	10.00	10.00	0.00
13,200.00	85.72	179.57	12,904.41	-369.14	167.76	373.84	10.00	10.00	0.00
13,240.40	89.76	179.57	12,906.00	-409.49	168.06	414.19	10.00	10.00	0.00
LP, Hold 89.76° Inc at 179.57° Azm									
13,300.00	89.76	179.57	12,906.25	-469.09	168.51	473.78	0.00	0.00	0.00
13,400.00	89.76	179.57	12,906.66	-569.09	169.25	573.76	0.00	0.00	0.00
13,500.00	89.76	179.57	12,907.08	-669.09	170.00	673.73	0.00	0.00	0.00
13,600.00	89.76	179.57	12,907.49	-769.08	170.74	773.71	0.00	0.00	0.00
13,700.00	89.76	179.57	12,907.90	-869.08	171.49	873.68	0.00	0.00	0.00
13,800.00	89.76	179.57	12,908.32	-969.08	172.23	973.66	0.00	0.00	0.00
13,900.00	89.76	179.57	12,908.73	-1,069.07	172.98	1,073.64	0.00	0.00	0.00
14,000.00	89.76	179.57	12,909.15	-1,169.07	173.73	1,173.61	0.00	0.00	0.00
14,100.00	89.76	179.57	12,909.56	-1,269.07	174.47	1,273.59	0.00	0.00	0.00
14,200.00	89.76	179.57	12,909.97	-1,369.06	175.22	1,373.56	0.00	0.00	0.00
14,300.00	89.76	179.57	12,910.39	-1,469.06	175.96	1,473.54	0.00	0.00	0.00
14,400.00	89.76	179.57	12,910.80	-1,569.05	176.71	1,573.52	0.00	0.00	0.00
14,500.00	89.76	179.57	12,911.21	-1,669.05	177.45	1,673.49	0.00	0.00	0.00
14,600.00	89.76	179.57	12,911.63	-1,769.05	178.20	1,773.47	0.00	0.00	0.00
14,700.00	89.76	179.57	12,912.04	-1,869.04	178.94	1,873.44	0.00	0.00	0.00
14,800.00	89.76	179.57	12,912.45	-1,969.04	179.69	1,973.42	0.00	0.00	0.00
14,900.00	89.76	179.57	12,912.87	-2,069.04	180.43	2,073.40	0.00	0.00	0.00
15,000.00	89.76	179.57	12,913.28	-2,169.03	181.18	2,173.37	0.00	0.00	0.00
15,100.00	89.76	179.57	12,913.70	-2,269.03	181.92	2,273.35	0.00	0.00	0.00
15,200.00	89.76	179.57	12,914.11	-2,369.03	182.67	2,373.32	0.00	0.00	0.00
15,300.00	89.76	179.57	12,914.52	-2,469.02	183.41	2,473.30	0.00	0.00	0.00
15,400.00	89.76	179.57	12,914.94	-2,569.02	184.16	2,573.28	0.00	0.00	0.00
15,500.00	89.76	179.57	12,915.35	-2,669.01	184.90	2,673.25	0.00	0.00	0.00



Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
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Local Co-ordinate Reference: Well 802H
TVD Reference: RKB @ 3355.80usft (Precision 595)
MD Reference: RKB @ 3355.80usft (Precision 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)
15,600.00	89.76	179.57	12,915.76	-2,769.01	185.65	2,773.23	0.00	0.00	0.00
15,700.00	89.76	179.57	12,916.18	-2,869.01	186.39	2,873.20	0.00	0.00	0.00
15,800.00	89.76	179.57	12,916.59	-2,969.00	187.14	2,973.18	0.00	0.00	0.00
15,900.00	89.76	179.57	12,917.01	-3,069.00	187.88	3,073.16	0.00	0.00	0.00
16,000.00	89.76	179.57	12,917.42	-3,169.00	188.63	3,173.13	0.00	0.00	0.00
16,100.00	89.76	179.57	12,917.83	-3,268.99	189.37	3,273.11	0.00	0.00	0.00
16,200.00	89.76	179.57	12,918.25	-3,368.99	190.12	3,373.08	0.00	0.00	0.00
16,300.00	89.76	179.57	12,918.66	-3,468.99	190.86	3,473.06	0.00	0.00	0.00
16,400.00	89.76	179.57	12,919.07	-3,568.98	191.61	3,573.04	0.00	0.00	0.00
16,500.00	89.76	179.57	12,919.49	-3,668.98	192.35	3,673.01	0.00	0.00	0.00
16,600.00	89.76	179.57	12,919.90	-3,768.97	193.10	3,772.99	0.00	0.00	0.00
16,700.00	89.76	179.57	12,920.31	-3,868.97	193.85	3,872.96	0.00	0.00	0.00
16,800.00	89.76	179.57	12,920.73	-3,968.97	194.59	3,972.94	0.00	0.00	0.00
16,900.00	89.76	179.57	12,921.14	-4,068.96	195.34	4,072.92	0.00	0.00	0.00
17,000.00	89.76	179.57	12,921.56	-4,168.96	196.08	4,172.89	0.00	0.00	0.00
17,100.00	89.76	179.57	12,921.97	-4,268.96	196.83	4,272.87	0.00	0.00	0.00
17,200.00	89.76	179.57	12,922.38	-4,368.95	197.57	4,372.84	0.00	0.00	0.00
17,300.00	89.76	179.57	12,922.80	-4,468.95	198.32	4,472.82	0.00	0.00	0.00
17,400.00	89.76	179.57	12,923.21	-4,568.95	199.06	4,572.80	0.00	0.00	0.00
17,500.00	89.76	179.57	12,923.62	-4,668.94	199.81	4,672.77	0.00	0.00	0.00
17,600.00	89.76	179.57	12,924.04	-4,768.94	200.55	4,772.75	0.00	0.00	0.00
17,700.00	89.76	179.57	12,924.45	-4,868.93	201.30	4,872.72	0.00	0.00	0.00
17,800.00	89.76	179.57	12,924.87	-4,968.93	202.04	4,972.70	0.00	0.00	0.00
17,900.00	89.76	179.57	12,925.28	-5,068.93	202.79	5,072.68	0.00	0.00	0.00
18,000.00	89.76	179.57	12,925.69	-5,168.92	203.53	5,172.65	0.00	0.00	0.00
18,100.00	89.76	179.57	12,926.11	-5,268.92	204.28	5,272.63	0.00	0.00	0.00
18,200.00	89.76	179.57	12,926.52	-5,368.92	205.02	5,372.60	0.00	0.00	0.00
18,300.00	89.76	179.57	12,926.93	-5,468.91	205.77	5,472.58	0.00	0.00	0.00
18,400.00	89.76	179.57	12,927.35	-5,568.91	206.51	5,572.56	0.00	0.00	0.00
18,500.00	89.76	179.57	12,927.76	-5,668.91	207.26	5,672.53	0.00	0.00	0.00
18,600.00	89.76	179.57	12,928.17	-5,768.90	208.00	5,772.51	0.00	0.00	0.00
18,700.00	89.76	179.57	12,928.59	-5,868.90	208.75	5,872.48	0.00	0.00	0.00
18,800.00	89.76	179.57	12,929.00	-5,968.89	209.49	5,972.46	0.00	0.00	0.00
18,900.00	89.76	179.57	12,929.42	-6,068.89	210.24	6,072.43	0.00	0.00	0.00
19,000.00	89.76	179.57	12,929.83	-6,168.89	210.98	6,172.41	0.00	0.00	0.00
19,100.00	89.76	179.57	12,930.24	-6,268.88	211.73	6,272.39	0.00	0.00	0.00
19,200.00	89.76	179.57	12,930.66	-6,368.88	212.47	6,372.36	0.00	0.00	0.00
19,300.00	89.76	179.57	12,931.07	-6,468.88	213.22	6,472.34	0.00	0.00	0.00
19,400.00	89.76	179.57	12,931.48	-6,568.87	213.97	6,572.31	0.00	0.00	0.00
19,500.00	89.76	179.57	12,931.90	-6,668.87	214.71	6,672.29	0.00	0.00	0.00
19,600.00	89.76	179.57	12,932.31	-6,768.87	215.46	6,772.27	0.00	0.00	0.00
19,700.00	89.76	179.57	12,932.73	-6,868.86	216.20	6,872.24	0.00	0.00	0.00
19,800.00	89.76	179.57	12,933.14	-6,968.86	216.95	6,972.22	0.00	0.00	0.00
19,900.00	89.76	179.57	12,933.55	-7,068.85	217.69	7,072.19	0.00	0.00	0.00
20,000.00	89.76	179.57	12,933.97	-7,168.85	218.44	7,172.17	0.00	0.00	0.00
20,100.00	89.76	179.57	12,934.38	-7,268.85	219.18	7,272.15	0.00	0.00	0.00
20,200.00	89.76	179.57	12,934.79	-7,368.84	219.93	7,372.12	0.00	0.00	0.00
20,300.00	89.76	179.57	12,935.21	-7,468.84	220.67	7,472.10	0.00	0.00	0.00
20,400.00	89.76	179.57	12,935.62	-7,568.84	221.42	7,572.07	0.00	0.00	0.00
20,491.67	89.76	179.57	12,936.00	-7,660.50	222.10	7,663.72	0.00	0.00	0.00

TD at 20491.67

Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Valor State Com
Well: 802H
Wellbore: OH
Design: Plan 1 01-15-19

Local Co-ordinate Reference: Well 802H
TVD Reference: RKB @ 3355.80usft (Precision 595)
MD Reference: RKB @ 3355.80usft (Precision 595)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Design Targets
Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP - Valor Federal C	0.00	0.00	12,906.00	-118.90	165.90	398,547.30	746,512.50	32° 5' 35.59683 N 03° 32' 14.36247 W	
- plan misses target center by 70.61usft at 12974.67usft MD (12844.42 TVD, -153.45 N, 166.16 E)									
- Point									
LTP - Valor Federal C	0.00	0.00	12,935.79	-7,610.50	221.70	391,055.70	746,568.30	32° 4' 21.45852 N 03° 32' 14.35649 W	
- plan misses target center by 41.66usft at 20400.00usft MD (12935.62 TVD, -7568.84 N, 221.42 E)									
- Point									
BHL - Valor Federal C	0.00	0.00	12,936.00	-7,660.50	222.10	391,005.70	746,568.70	32° 4' 20.96370 N 03° 32' 14.35613 W	
- plan hits target center									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,097.80	1,097.80	Rustler		0.24	178.34
1,430.80	1,430.80	TOS		0.24	178.34
4,855.86	4,846.15	BOS (Fletcher)		0.24	178.34
5,113.86	5,104.15	LMAR (Top Delaware)		0.24	178.34
5,141.86	5,132.15	BLCN		0.24	178.34
6,188.86	6,179.15	CYCN		0.24	178.34
7,769.86	7,760.15	BYCN		0.24	178.34
9,224.86	9,215.15	Bone Sprg (BSGL)		0.24	178.34
9,526.86	9,517.15	U Avalon Sh		0.24	178.34
9,688.86	9,679.15	L Avalon Sh		0.24	178.34
10,049.86	10,040.15	B Avalon Sh		0.24	178.34
10,223.86	10,214.15	FBSG_sand		0.24	178.34
10,823.86	10,814.15	SBSH_sand		0.24	178.34
11,254.86	11,245.15	SBSG_sand_Base		0.24	178.34
11,842.86	11,833.15	TBSG_sand		0.24	178.34
12,314.86	12,305.15	WFMP		0.24	178.34

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,500.00	1,500.00	0.00	0.00	KOP, Begin 2.00°/100' Build
1,750.12	1,749.80	7.65	7.78	Hold 5.00° Inc at 45.48° Azm
4,134.60	4,125.20	153.43	156.03	Begin 2.00°/100' Drop
4,384.72	4,375.00	161.08	163.81	Begin Vertical Hold
12,342.77	12,333.05	161.08	163.81	KOP2, Begin 10.00°/100' Build
13,240.40	12,906.00	-409.49	168.06	LP, Hold 89.76° Inc at 179.57° Azm
20,491.67	12,936.00	-7,660.50	222.10	TD at 20491.67