

Submit 1 Copy To Appropriate District Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-025-46257
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☒
2. Name of Operator COG Operating LLC		6. State Oil & Gas Lease No.
3. Address of Operator 600 W. Illinois Ave., Midland, TX 79701		7. Lease Name or Unit Agreement Name Valor State Com
4. Well Location Unit Letter <u>A</u> : <u>210</u> feet from the <u>North</u> line and <u>755</u> feet from the <u>East</u> line Section <u>35</u> Township <u>25S</u> Range <u>33E</u> NMPM County <u>Lea</u>		8. Well Number <u>702H</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3329' GR		9. OGRID Number 229137
		10. Pool name or Wildcat Bobcat Draw; Upper Wolfcamp 98094

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☒
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐
CLOSED-LOOP SYSTEM ☐
OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐
OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

COG Operating LLC respectfully requests to change the BHL of this well

FROM: 2590' FNL 660' FEL, Sec 2, T26S, R33E, Unit H

TO: 2590' FNL 990' FEL, Sec 2, T26S, R33E, Unit H

Attached are the revised C102 and directional plan.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [Signature] TITLE Sr Regulatory Analyst DATE 01/23/2020

Type or print name Robyn M. Russell E-mail address: Rrussell@concho.com PHONE: (432) 685-4385

For State Use Only

APPROVED BY: [Signature] TITLE Petroleum Engineer DATE 01/30/2020

Conditions of Approval (if any):

DISTRICT I

1625 N. FRENCH DR., HOBBES, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II

811 S. FIRST ST., ARTESIA, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III

1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 476-3480 Fax: (505) 476-3482State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

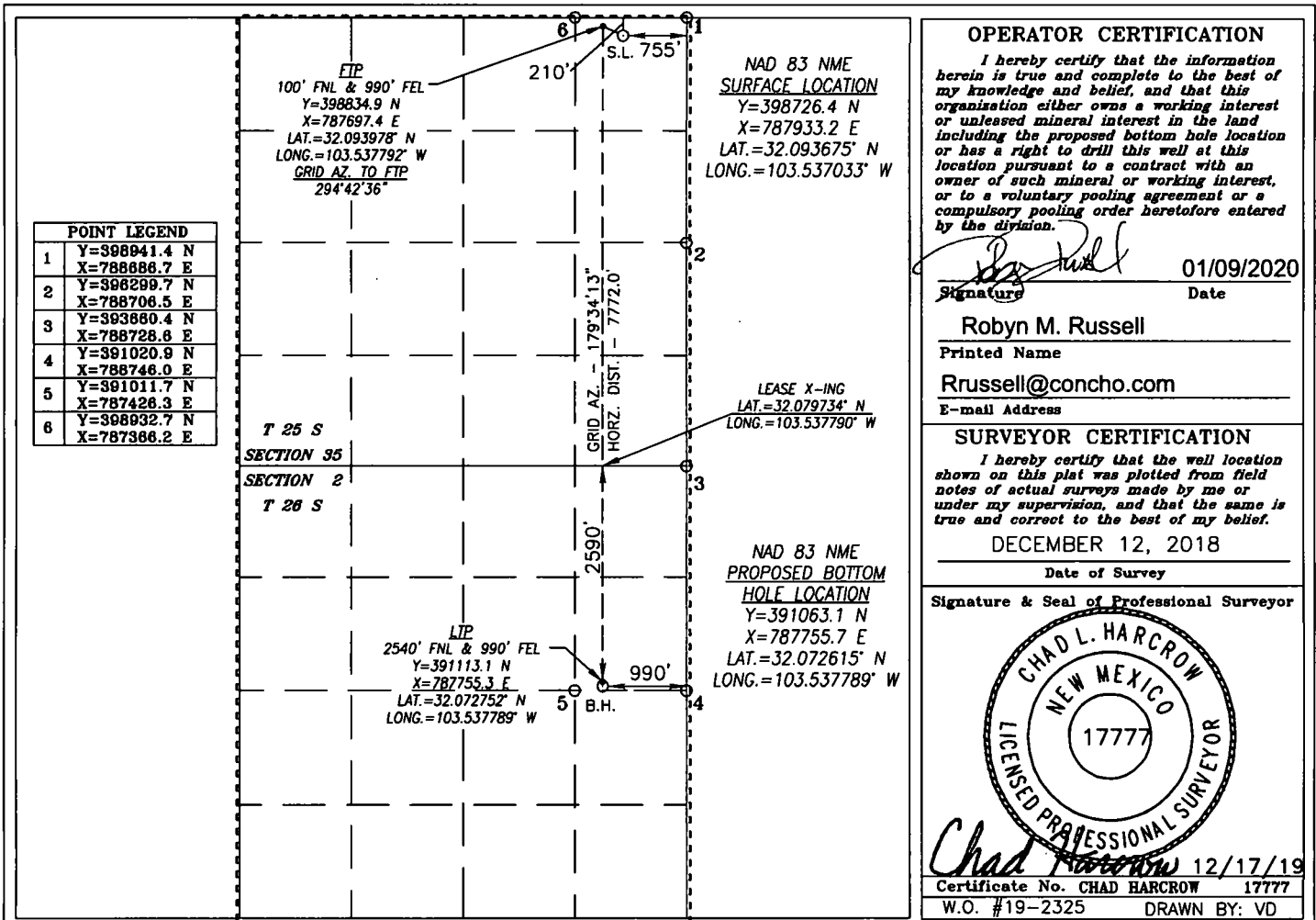
API Number 30-025-46257	Pool Code 98094	Pool Name Bobcat Draw; Upper Wolfcamp
Property Code 325776	Property Name VALOR STATE COM	Well Number 702H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3329.5'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	35	25-S	33-E		210	NORTH	755	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	2	26-S	33-E		2590	NORTH	990	EAST	LEA
Dedicated Acres 960	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



Project: Lea County, NM (NAD27 NME)
Site: Valor State Com
Well: 702H
Wellbore: OH
Design: Plan 1 01-10-20
Rig: Scandril Quest



Azimuths to Grid North
True North: -0.42°
Magnetic North: 6.11°
Magnetic Field
Strength: 47668.2 nT
Dip Angle: 59.71°
Date: 2/19/2020
Model: MVHD

RKB @ 3359.50usft (Scandril Quest)
Ground Level: 3329.50

WELL DETAILS

NU-S	E-W	Northing	Easting	Latitude	Longitude
0.00	0.00	398666.80	746748.80	32° 5' 36.782039 N	103° 32' 11.630910 W

DESIGN TARGET DETAILS

Name	TVD	NU-S	E-W	Northing	Easting	Latitude	Longitude
FTP - Valor State Com 702H	12509.00	108.50	-235.80	398777.30	746510.80	32° 5' 37.87204 N	103° 32' 14.382490 W
LTP - Valor State Com 702H	12528.86	-7613.10	-178.30	391055.70	746568.30	32° 4' 21.458515 N	103° 32' 14.356489 W
BHL - Valor State Com 702H	12529.00	-7683.10	-177.80	391005.70	746568.70	32° 4' 20.963702 N	103° 32' 14.356127 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	NU-S	E-W	Dip	TFace	VFace	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3	5620.94	2.42	306.14	5620.91	1.51	-2.06	2.00	306.14	-1.48		KOP, Begin 2.00°/100' Build
4	11927.68	2.42	306.14	11922.00	158.50	-217.00	0.00	0.00	-153.42		Hold 2.42° Inc at 306.14° Azm
5	12840.48	89.84	179.57	12509.03	-412.83	-232.55	10.00	-128.58	418.12		KOP2, Begin 10.00°/100' Build
6	20090.99	89.84	179.57	12529.00	-7683.10	-177.80	0.00	0.00	7665.18		LP, Hold 89.84° Inc at 179.57° Azm
											TD at 20090.99

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
1121.50	1121.50	Rustler	0.16	181.33
1454.50	1454.50	TOS	0.16	181.33
4870.50	4870.50	BOS (Fletcher)	0.16	181.33
5128.50	5128.50	LMAR (Top Delmar)	0.16	181.33
5158.50	5158.50	BLN	0.16	181.33
6203.46	6204.01	CYCN	0.16	181.33
7784.35	7786.32	BYCN	0.16	181.33
9239.25	9242.51	Bone Sprg (BSGL)	0.16	181.33
9541.23	9544.76	U Avalon Sh	0.16	181.33
9703.22	9708.90	L Avalon Sh	0.16	181.33
10084.20	10088.20	B Avalon Sh	0.16	181.33
10238.18	10242.34	FBSC_sand	0.16	181.33
10638.14	10642.83	SBSC_sand	0.16	181.33
11269.12	11274.10	SBSC_sand_Base	0.16	181.33
11857.08	11862.67	TBSC_sand	0.16	181.33
12319.48	12361.96	WFMP	0.16	181.33

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 702H, Grid North

Latitude: 32° 5' 36.782039 N
Longitude: 103° 32' 11.630910 W

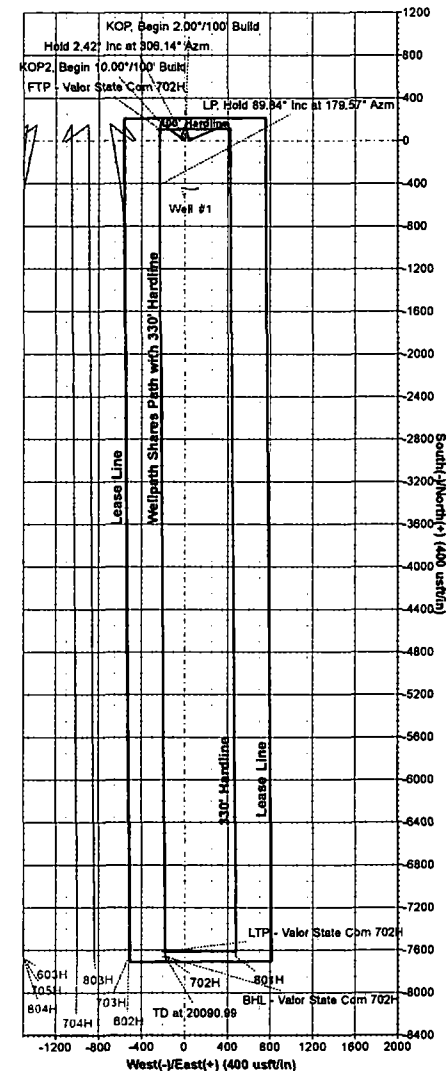
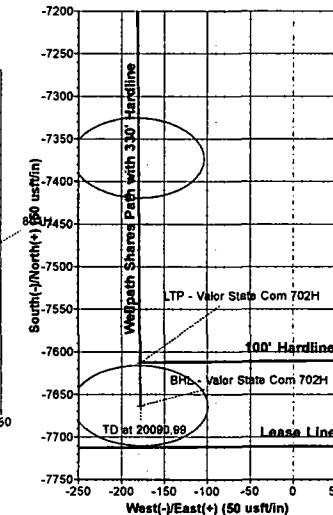
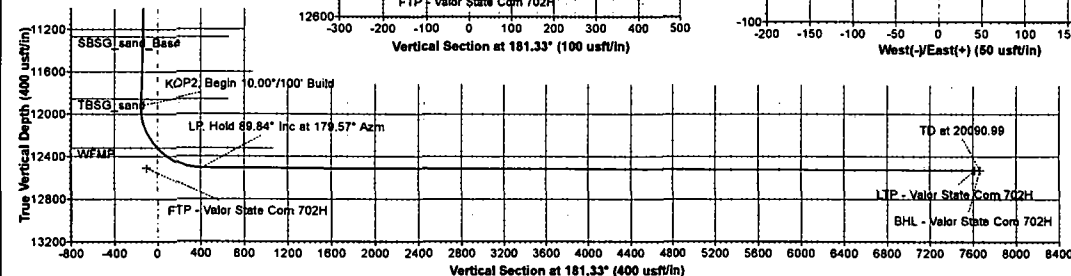
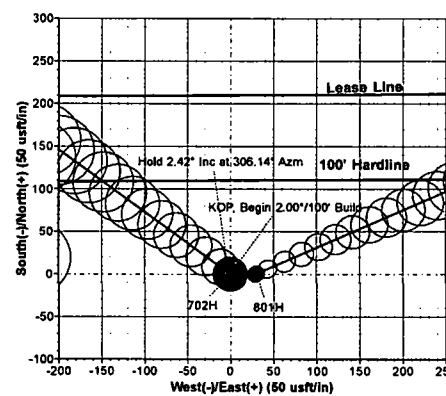
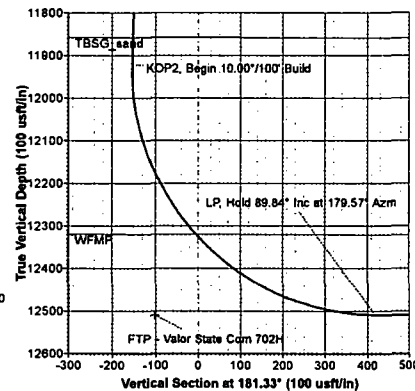
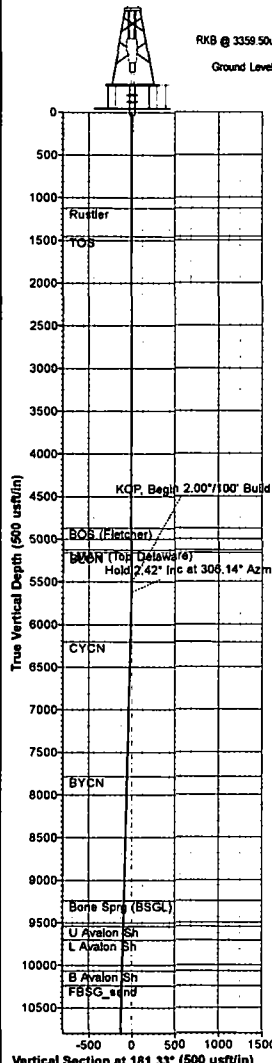
Grid East: 746746.80
Grid North: 398668.80
Scale Factor: 1.000

Geomagnetic Model: MVHD
Sample Date: 19-Feb-20
Magnetic Declination: 6.53°
Dip Angle from Horizontal: 59.71°
Magnetic Field Strength: 47668.1757448 nT

To convert a Magnetic Direction to a Grid Direction, Add 6.11°
To convert a Magnetic Direction to a True Direction, Add 6.53° East
To convert a True Direction to a Grid Direction, Subtract 0.42°

LEGEND

- 801H, OH, Plan 1 01-09-20 V0
- 804H, OH, Plan 1 01-16-19 V0
- 704H, OH, Plan 1 01-15-19 V0
- 705H, OH, Plan 1 01-16-19 V0
- 803H, OH, Plan 1 01-15-19 V0
- 603H, OH, Plan 1 01-16-19 V0
- 602H, OH, Plan 1 01-15-19 V0
- 703H, OH, Plan 1 01-15-19 V0
- Well #1, OH, Surveys V0
- Plan 1 01-10-20





COG Operating LLC

Lea County, NM (NAD27 NME)

Valor State Com

702H

OH

Plan: Plan 1 01-10-20

Standard Planning Report

10 January, 2020





Planning Report



Database: USA Compass
 Company: COG Operating LLC
 Project: Lea County, NM (NAD27 NME)
 Site: Valor State Cor
 Well: 702H
 Wellbore: OH
 Design: Plan 1 01-10-20

Local Co-ordinate Reference: Well 702H
 TVD Reference: RKB @ 3359.50usft (Scandril Quest)
 MD Reference: RKB @ 3359.50usft (Scandril Quest)
 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 Cor				
Site Position:		Northing:	398,658.10 usft	Latitude:	32° 5' 36.794938 N
From:	Map	Easting:	745,116.70 usft	Longitude:	103° 32' 30.577458 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.42 °

Well	702H					
Well Position	+N/-S	10.70 usft	Northing:	398,668.80 usft	Latitude:	32° 5' 36.782039 N
	+E/-W	1,629.90 usft	Easting:	746,746.60 usft	Longitude:	103° 32' 11.630910 W
Position Uncertainty	1.00 usft		Wellhead Elevation:	Ground Level: 3,329.50 usft		

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	2/19/2020	6.53	59.71	47,668.17577448

Design	Plan 1 01-10-20			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	181.33

Plan Survey Tool Program	Date	1/10/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1 0.00	20,090.99	Plan 1 01-10-20 (OH)	MWD+IFR1+FDIR	
			OWSG MWD + IFR1 + FDIR C	

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	
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,620.94	2.42	306.14	5,620.91	1.51	-2.06	2.00	2.00	-44.53	306.14	
11,927.66	2.42	306.14	11,922.00	158.50	-217.00	0.00	0.00	0.00	0.00	
12,840.49	89.84	179.57	12,509.03	-412.83	-232.55	10.00	9.58	-13.87	-126.56	
20,090.99	89.84	179.57	12,529.00	-7,663.10	-177.90	0.00	0.00	0.00	0.00	BHL - Valor State Cor



Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Valor State Com
Well: 702H
Wellbore: OH
Design: Plan 1 01-10-20

Local Co-ordinate Reference: Well 702H
TVD Reference: RKB @ 3359.50usft (Scandril Quest)
MD Reference: RKB @ 3359.50usft (Scandril Quest)
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
1,121.50	0.00	0.00	1,121.50	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,454.50	0.00	0.00	1,454.50	0.00	0.00	0.00	0.00	0.00	0.00
TOS									
4,870.50	0.00	0.00	4,870.50	0.00	0.00	0.00	0.00	0.00	0.00
BOS (Fletcher)									
5,128.50	0.00	0.00	5,128.50	0.00	0.00	0.00	0.00	0.00	0.00
LMAR (Top Delaware)									
5,156.50	0.00	0.00	5,156.50	0.00	0.00	0.00	0.00	0.00	0.00
BLCN									
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 2.00°/100° Build									
5,600.00	2.00	306.14	5,599.98	1.03	-1.41	-1.00	2.00	2.00	0.00
5,620.94	2.42	306.14	5,620.91	1.51	-2.06	-1.46	2.00	2.00	0.00
Hold 2.42° Inc at 306.14° Azm									
5,700.00	2.42	306.14	5,699.89	3.47	-4.76	-3.36	0.00	0.00	0.00
5,800.00	2.42	306.14	5,799.80	5.96	-8.16	-5.77	0.00	0.00	0.00
5,900.00	2.42	306.14	5,899.72	8.45	-11.57	-8.18	0.00	0.00	0.00
6,000.00	2.42	306.14	5,999.63	10.94	-14.98	-10.59	0.00	0.00	0.00
6,100.00	2.42	306.14	6,099.54	13.43	-18.39	-13.00	0.00	0.00	0.00
6,200.00	2.42	306.14	6,199.45	15.92	-21.80	-15.41	0.00	0.00	0.00
6,204.01	2.42	306.14	6,203.46	16.02	-21.93	-15.51	0.00	0.00	0.00
CYCN									
6,300.00	2.42	306.14	6,299.36	18.41	-25.20	-17.82	0.00	0.00	0.00
6,400.00	2.42	306.14	6,399.27	20.90	-28.61	-20.23	0.00	0.00	0.00
6,500.00	2.42	306.14	6,499.18	23.39	-32.02	-22.64	0.00	0.00	0.00
6,600.00	2.42	306.14	6,599.09	25.88	-35.43	-25.05	0.00	0.00	0.00
6,700.00	2.42	306.14	6,699.00	28.37	-38.84	-27.46	0.00	0.00	0.00
6,800.00	2.42	306.14	6,798.91	30.86	-42.24	-29.87	0.00	0.00	0.00
6,900.00	2.42	306.14	6,898.82	33.35	-45.65	-32.28	0.00	0.00	0.00
7,000.00	2.42	306.14	6,998.74	35.83	-49.06	-34.69	0.00	0.00	0.00
7,100.00	2.42	306.14	7,098.65	38.32	-52.47	-37.10	0.00	0.00	0.00
7,200.00	2.42	306.14	7,198.56	40.81	-55.88	-39.51	0.00	0.00	0.00
7,300.00	2.42	306.14	7,298.47	43.30	-59.29	-41.92	0.00	0.00	0.00
7,400.00	2.42	306.14	7,398.38	45.79	-62.69	-44.32	0.00	0.00	0.00
7,500.00	2.42	306.14	7,498.29	48.28	-66.10	-46.73	0.00	0.00	0.00
7,600.00	2.42	306.14	7,598.20	50.77	-69.51	-49.14	0.00	0.00	0.00
7,700.00	2.42	306.14	7,698.11	53.26	-72.92	-51.55	0.00	0.00	0.00
7,786.32	2.42	306.14	7,784.35	55.41	-75.86	-53.63	0.00	0.00	0.00
BYCN									
7,800.00	2.42	306.14	7,798.02	55.75	-76.33	-53.96	0.00	0.00	0.00
7,900.00	2.42	306.14	7,897.93	58.24	-79.73	-56.37	0.00	0.00	0.00
8,000.00	2.42	306.14	7,997.84	60.73	-83.14	-58.78	0.00	0.00	0.00
8,100.00	2.42	306.14	8,097.76	63.22	-86.55	-61.19	0.00	0.00	0.00
8,200.00	2.42	306.14	8,197.67	65.71	-89.96	-63.60	0.00	0.00	0.00
8,300.00	2.42	306.14	8,297.58	68.20	-93.37	-66.01	0.00	0.00	0.00
8,400.00	2.42	306.14	8,397.49	70.69	-96.77	-68.42	0.00	0.00	0.00
8,500.00	2.42	306.14	8,497.40	73.17	-100.18	-70.83	0.00	0.00	0.00
8,600.00	2.42	306.14	8,597.31	75.66	-103.59	-73.24	0.00	0.00	0.00
8,700.00	2.42	306.14	8,697.22	78.15	-107.00	-75.65	0.00	0.00	0.00
8,800.00	2.42	306.14	8,797.13	80.64	-110.41	-78.06	0.00	0.00	0.00
8,900.00	2.42	306.14	8,897.04	83.13	-113.81	-80.47	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: 702H
Wellbore: OH
Design: Plan 1 01-10-20

Local Co-ordinate Reference: Well 702H
TVD Reference: RKB @ 3359.50usft (Scandril Quest)
MD Reference: RKB @ 3359.50usft (Scandril Quest)
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)
9,000.00	2.42	306.14	8,996.95	85.62	-117.22	-82.88	0.00	0.00	0.00
9,100.00	2.42	306.14	9,096.86	88.11	-120.63	-85.29	0.00	0.00	0.00
9,200.00	2.42	306.14	9,196.78	90.60	-124.04	-87.70	0.00	0.00	0.00
9,242.52	2.42	306.14	9,239.25	91.66	-125.49	-88.72	0.00	0.00	0.00
Bone Sprg (BSGL)									
9,300.00	2.42	306.14	9,296.69	93.09	-127.45	-90.11	0.00	0.00	0.00
9,400.00	2.42	306.14	9,396.60	95.58	-130.86	-92.52	0.00	0.00	0.00
9,500.00	2.42	306.14	9,496.51	98.07	-134.26	-94.93	0.00	0.00	0.00
9,544.76	2.42	306.14	9,541.23	99.18	-135.79	-96.00	0.00	0.00	0.00
U Avalon Sh									
9,600.00	2.42	306.14	9,596.42	100.56	-137.67	-97.33	0.00	0.00	0.00
9,700.00	2.42	306.14	9,696.33	103.05	-141.08	-99.74	0.00	0.00	0.00
9,706.90	2.42	306.14	9,703.22	103.22	-141.31	-99.91	0.00	0.00	0.00
L Avalon Sh									
9,800.00	2.42	306.14	9,796.24	105.54	-144.49	-102.15	0.00	0.00	0.00
9,900.00	2.42	306.14	9,896.15	108.03	-147.90	-104.56	0.00	0.00	0.00
10,000.00	2.42	306.14	9,996.06	110.51	-151.30	-106.97	0.00	0.00	0.00
10,068.20	2.42	306.14	10,064.20	112.21	-153.63	-108.62	0.00	0.00	0.00
B Avalon Sh									
10,100.00	2.42	306.14	10,095.97	113.00	-154.71	-109.38	0.00	0.00	0.00
10,200.00	2.42	306.14	10,195.88	115.49	-158.12	-111.79	0.00	0.00	0.00
10,242.34	2.42	306.14	10,238.19	116.55	-159.56	-112.81	0.00	0.00	0.00
FBSG_sand									
10,300.00	2.42	306.14	10,295.80	117.98	-161.53	-114.20	0.00	0.00	0.00
10,400.00	2.42	306.14	10,395.71	120.47	-164.94	-116.61	0.00	0.00	0.00
10,500.00	2.42	306.14	10,495.62	122.96	-168.34	-119.02	0.00	0.00	0.00
10,600.00	2.42	306.14	10,595.53	125.45	-171.75	-121.43	0.00	0.00	0.00
10,700.00	2.42	306.14	10,695.44	127.94	-175.16	-123.84	0.00	0.00	0.00
10,800.00	2.42	306.14	10,795.35	130.43	-178.57	-126.25	0.00	0.00	0.00
10,842.83	2.42	306.14	10,838.14	131.50	-180.03	-127.28	0.00	0.00	0.00
SBSH_sand									
10,900.00	2.42	306.14	10,895.26	132.92	-181.98	-128.66	0.00	0.00	0.00
11,000.00	2.42	306.14	10,995.17	135.41	-185.38	-131.07	0.00	0.00	0.00
11,100.00	2.42	306.14	11,095.08	137.90	-188.79	-133.48	0.00	0.00	0.00
11,200.00	2.42	306.14	11,194.99	140.39	-192.20	-135.89	0.00	0.00	0.00
11,274.19	2.42	306.14	11,269.12	142.23	-194.73	-137.68	0.00	0.00	0.00
SBSG_sand_Base									
11,300.00	2.42	306.14	11,294.90	142.88	-195.61	-138.30	0.00	0.00	0.00
11,400.00	2.42	306.14	11,394.82	145.36	-199.02	-140.71	0.00	0.00	0.00
11,500.00	2.42	306.14	11,494.73	147.85	-202.43	-143.12	0.00	0.00	0.00
11,600.00	2.42	306.14	11,594.64	150.34	-205.83	-145.53	0.00	0.00	0.00
11,700.00	2.42	306.14	11,694.55	152.83	-209.24	-147.94	0.00	0.00	0.00
11,800.00	2.42	306.14	11,794.46	155.32	-212.65	-150.35	0.00	0.00	0.00
11,862.67	2.42	306.14	11,857.08	156.88	-214.79	-151.86	0.00	0.00	0.00
TBSG_sand									
11,900.00	2.42	306.14	11,894.37	157.81	-216.06	-152.75	0.00	0.00	0.00
11,927.66	2.42	306.14	11,922.00	158.50	-217.00	-153.42	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
12,000.00	6.11	198.04	11,994.20	155.74	-219.43	-150.60	10.00	5.10	-149.43
12,100.00	15.91	186.40	12,092.25	137.01	-222.61	-131.81	10.00	9.80	-11.64
12,200.00	25.86	183.58	12,185.57	101.53	-225.51	-96.27	10.00	9.95	-2.82
12,300.00	35.84	182.25	12,271.31	50.38	-228.02	-45.08	10.00	9.98	-1.32
12,361.96	42.03	181.72	12,319.48	11.49	-229.36	-6.16	10.00	9.99	-0.86



Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Valor State Com
Well: 702H
Wellbore: OH
Design: Plan 1 01-10-20

Local Co-ordinate Reference: Well 702H
TVD Reference: RKB @ 3359.50usft (Scandril Quest)
MD Reference: RKB @ 3359.50usft (Scandril Quest)
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)
WFMP									
12,400.00	45.83	181.45	12,346.88	-14.89	-230.09	20.22	10.00	9.99	-0.71
12,500.00	55.82	180.88	12,409.98	-92.29	-231.64	97.64	10.00	9.99	-0.57
12,600.00	65.81	180.44	12,458.68	-179.47	-232.63	184.83	10.00	9.99	-0.45
12,700.00	75.80	180.05	12,491.52	-273.79	-233.02	279.13	10.00	9.99	-0.38
12,800.00	85.80	179.71	12,507.49	-372.38	-232.81	377.69	10.00	9.99	-0.35
12,840.49	89.84	179.57	12,509.03	-412.83	-232.55	418.12	10.00	9.99	-0.34
LP, Hold 89.84° Inc at 179.57° Azm									
12,900.00	89.84	179.57	12,509.19	-472.34	-232.10	477.60	0.00	0.00	0.00
13,000.00	89.84	179.57	12,509.47	-572.34	-231.35	577.55	0.00	0.00	0.00
13,100.00	89.84	179.57	12,509.74	-672.34	-230.60	677.51	0.00	0.00	0.00
13,200.00	89.84	179.57	12,510.02	-772.33	-229.84	777.46	0.00	0.00	0.00
13,300.00	89.84	179.57	12,510.30	-872.33	-229.09	877.41	0.00	0.00	0.00
13,400.00	89.84	179.57	12,510.57	-972.33	-228.34	977.36	0.00	0.00	0.00
13,500.00	89.84	179.57	12,510.85	-1,072.32	-227.58	1,077.32	0.00	0.00	0.00
13,600.00	89.84	179.57	12,511.12	-1,172.32	-226.83	1,177.27	0.00	0.00	0.00
13,700.00	89.84	179.57	12,511.40	-1,272.32	-226.07	1,277.22	0.00	0.00	0.00
13,800.00	89.84	179.57	12,511.67	-1,372.31	-225.32	1,377.17	0.00	0.00	0.00
13,900.00	89.84	179.57	12,511.95	-1,472.31	-224.57	1,477.13	0.00	0.00	0.00
14,000.00	89.84	179.57	12,512.22	-1,572.31	-223.81	1,577.08	0.00	0.00	0.00
14,100.00	89.84	179.57	12,512.50	-1,672.30	-223.06	1,677.03	0.00	0.00	0.00
14,200.00	89.84	179.57	12,512.77	-1,772.30	-222.30	1,776.98	0.00	0.00	0.00
14,300.00	89.84	179.57	12,513.05	-1,872.30	-221.55	1,876.93	0.00	0.00	0.00
14,400.00	89.84	179.57	12,513.33	-1,972.29	-220.80	1,976.89	0.00	0.00	0.00
14,500.00	89.84	179.57	12,513.60	-2,072.29	-220.04	2,076.84	0.00	0.00	0.00
14,600.00	89.84	179.57	12,513.88	-2,172.29	-219.29	2,176.79	0.00	0.00	0.00
14,700.00	89.84	179.57	12,514.15	-2,272.28	-218.54	2,276.74	0.00	0.00	0.00
14,800.00	89.84	179.57	12,514.43	-2,372.28	-217.78	2,376.70	0.00	0.00	0.00
14,900.00	89.84	179.57	12,514.70	-2,472.28	-217.03	2,476.65	0.00	0.00	0.00
15,000.00	89.84	179.57	12,514.98	-2,572.27	-216.27	2,576.60	0.00	0.00	0.00
15,100.00	89.84	179.57	12,515.25	-2,672.27	-215.52	2,676.55	0.00	0.00	0.00
15,200.00	89.84	179.57	12,515.53	-2,772.27	-214.77	2,776.51	0.00	0.00	0.00
15,300.00	89.84	179.57	12,515.80	-2,872.26	-214.01	2,876.46	0.00	0.00	0.00
15,400.00	89.84	179.57	12,516.08	-2,972.26	-213.26	2,976.41	0.00	0.00	0.00
15,500.00	89.84	179.57	12,516.35	-3,072.26	-212.51	3,076.36	0.00	0.00	0.00
15,600.00	89.84	179.57	12,516.63	-3,172.26	-211.75	3,176.32	0.00	0.00	0.00
15,700.00	89.84	179.57	12,516.91	-3,272.25	-211.00	3,276.27	0.00	0.00	0.00
15,800.00	89.84	179.57	12,517.18	-3,372.25	-210.24	3,376.22	0.00	0.00	0.00
15,900.00	89.84	179.57	12,517.46	-3,472.25	-209.49	3,476.17	0.00	0.00	0.00
16,000.00	89.84	179.57	12,517.73	-3,572.24	-208.74	3,576.12	0.00	0.00	0.00
16,100.00	89.84	179.57	12,518.01	-3,672.24	-207.98	3,676.08	0.00	0.00	0.00
16,200.00	89.84	179.57	12,518.28	-3,772.24	-207.23	3,776.03	0.00	0.00	0.00
16,300.00	89.84	179.57	12,518.56	-3,872.23	-206.48	3,875.98	0.00	0.00	0.00
16,400.00	89.84	179.57	12,518.83	-3,972.23	-205.72	3,975.93	0.00	0.00	0.00
16,500.00	89.84	179.57	12,519.11	-4,072.23	-204.97	4,075.89	0.00	0.00	0.00
16,600.00	89.84	179.57	12,519.38	-4,172.22	-204.21	4,175.84	0.00	0.00	0.00
16,700.00	89.84	179.57	12,519.66	-4,272.22	-203.46	4,275.79	0.00	0.00	0.00
16,800.00	89.84	179.57	12,519.94	-4,372.22	-202.71	4,375.74	0.00	0.00	0.00
16,900.00	89.84	179.57	12,520.21	-4,472.21	-201.95	4,475.70	0.00	0.00	0.00
17,000.00	89.84	179.57	12,520.49	-4,572.21	-201.20	4,575.65	0.00	0.00	0.00
17,100.00	89.84	179.57	12,520.76	-4,672.21	-200.45	4,675.60	0.00	0.00	0.00
17,200.00	89.84	179.57	12,521.04	-4,772.20	-199.69	4,775.55	0.00	0.00	0.00
17,300.00	89.84	179.57	12,521.31	-4,872.20	-198.94	4,875.51	0.00	0.00	0.00
17,400.00	89.84	179.57	12,521.59	-4,972.20	-198.18	4,975.46	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: 702H
Wellbore: OH
Design: Plan 1 01-10-20

Local Co-ordinate Reference: Well 702H
TVD Reference: RKB @ 3359.50usft (Scandril Quest)
MD Reference: RKB @ 3359.50usft (Scandril Quest)
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)
17,500.00	89.84	179.57	12,521.86	-5,072.19	-197.43	5,075.41	0.00	0.00	0.00
17,600.00	89.84	179.57	12,522.14	-5,172.19	-196.68	5,175.36	0.00	0.00	0.00
17,700.00	89.84	179.57	12,522.41	-5,272.19	-195.92	5,275.31	0.00	0.00	0.00
17,800.00	89.84	179.57	12,522.69	-5,372.18	-195.17	5,375.27	0.00	0.00	0.00
17,900.00	89.84	179.57	12,522.97	-5,472.18	-194.42	5,475.22	0.00	0.00	0.00
18,000.00	89.84	179.57	12,523.24	-5,572.18	-193.66	5,575.17	0.00	0.00	0.00
18,100.00	89.84	179.57	12,523.52	-5,672.17	-192.91	5,675.12	0.00	0.00	0.00
18,200.00	89.84	179.57	12,523.79	-5,772.17	-192.15	5,775.08	0.00	0.00	0.00
18,300.00	89.84	179.57	12,524.07	-5,872.17	-191.40	5,875.03	0.00	0.00	0.00
18,400.00	89.84	179.57	12,524.34	-5,972.16	-190.65	5,974.98	0.00	0.00	0.00
18,500.00	89.84	179.57	12,524.62	-6,072.16	-189.89	6,074.93	0.00	0.00	0.00
18,600.00	89.84	179.57	12,524.89	-6,172.16	-189.14	6,174.89	0.00	0.00	0.00
18,700.00	89.84	179.57	12,525.17	-6,272.16	-188.38	6,274.84	0.00	0.00	0.00
18,800.00	89.84	179.57	12,525.44	-6,372.15	-187.63	6,374.79	0.00	0.00	0.00
18,900.00	89.84	179.57	12,525.72	-6,472.15	-186.88	6,474.74	0.00	0.00	0.00
19,000.00	89.84	179.57	12,526.00	-6,572.15	-186.12	6,574.70	0.00	0.00	0.00
19,100.00	89.84	179.57	12,526.27	-6,672.14	-185.37	6,674.65	0.00	0.00	0.00
19,200.00	89.84	179.57	12,526.55	-6,772.14	-184.62	6,774.60	0.00	0.00	0.00
19,300.00	89.84	179.57	12,526.82	-6,872.14	-183.86	6,874.55	0.00	0.00	0.00
19,400.00	89.84	179.57	12,527.10	-6,972.13	-183.11	6,974.50	0.00	0.00	0.00
19,500.00	89.84	179.57	12,527.37	-7,072.13	-182.35	7,074.46	0.00	0.00	0.00
19,600.00	89.84	179.57	12,527.65	-7,172.13	-181.60	7,174.41	0.00	0.00	0.00
19,700.00	89.84	179.57	12,527.92	-7,272.12	-180.85	7,274.36	0.00	0.00	0.00
19,800.00	89.84	179.57	12,528.20	-7,372.12	-180.09	7,374.31	0.00	0.00	0.00
19,900.00	89.84	179.57	12,528.47	-7,472.12	-179.34	7,474.27	0.00	0.00	0.00
20,000.00	89.84	179.57	12,528.75	-7,572.11	-178.59	7,574.22	0.00	0.00	0.00
20,090.99	89.84	179.57	12,529.00	-7,663.10	-177.90	7,665.16	0.00	0.00	0.00
TD at 20090.99									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP - Valor State Com 7 - hit/miss target - Shape - Point	0.00	0.00	12,509.00	108.50	-235.80	398,777.30	746,510.80	32° 5' 37.872948 N 103° 32' 14.362491 W	
- plan misses target center by 203.14usft at 12406.89usft MD (12351.65 TVD, -19.86 N, -230.21 E)									
LTP - Valor State Com 7 - plan misses target center by 40.99usft at 20000.00usft MD (12528.75 TVD, -7572.11 N, -178.59 E) - Point	0.00	0.00	12,528.86	-7,613.10	-178.30	391,055.70	746,568.30	32° 4' 21.458515 N 103° 32' 14.356489 W	
BHL - Valor State Com 7 - plan hits target center - Point	0.00	0.00	12,529.00	-7,663.10	-177.90	391,005.70	746,568.70	32° 4' 20.963703 N 103° 32' 14.356127 W	



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 702H
Company:	COG Operating LLC	TVD Reference:	RKB @ 3359.50usft (Scandrift Quest)
Project:	Lea County, NM (NAD27 NME)	MD Reference:	RKB @ 3359.50usft (Scandrift Quest)
Site:	Valor State Com	North Reference:	Grid
Well:	702H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 01-10-20		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,121.50	1,121.50	Rustler		0.16	181.33
1,454.50	1,454.50	TOS		0.16	181.33
4,870.50	4,870.50	BOS (Fletcher)		0.16	181.33
5,128.50	5,128.50	LMAR (Top Delaware)		0.16	181.33
5,156.50	5,156.50	BLCN		0.16	181.33
6,204.01	6,203.46	CYCN		0.16	181.33
7,786.32	7,784.35	BYCN		0.16	181.33
9,242.52	9,239.25	Bone Sprg (BSGL)		0.16	181.33
9,544.76	9,541.23	U Avalon Sh		0.16	181.33
9,706.90	9,703.22	L Avalon Sh		0.16	181.33
10,068.20	10,064.20	B Avalon Sh		0.16	181.33
10,242.34	10,238.19	FBSG_sand		0.16	181.33
10,842.83	10,838.14	SBSH_sand		0.16	181.33
11,274.19	11,269.12	SBSG_sand_Base		0.16	181.33
11,862.67	11,857.08	TBSG_sand		0.16	181.33
12,361.96	12,319.48	WFMP		0.16	181.33

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,500.00	5,500.00	0.00	0.00	KOP, Begin 2.00°/100' Build
5,620.94	5,620.91	1.51	-2.06	Hold 2.42° Inc at 306.14° Azm
11,927.66	11,922.00	158.50	-217.00	KOP2, Begin 10.00°/100' Build
12,840.49	12,509.03	-412.83	-232.55	LP, Hold 89.84° Inc at 179.57° Azm
20,090.99	12,529.00	-7,663.10	-177.90	TD at 20090.99