

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*FORM APPROVED
OMB NO. 1004-0137
EPA Form 31, 2018

NMNM43565

B. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator
COG PRODUCTION LLCContact: MAYTE X REYES
E-Mail: mreyes1@concho.com3a. Address
2208 W MAIN STREET
ARTESIA, NM 882103b. Phone No. (include area code)
Ph: 575-748-6945

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.
SQUINTS FEDERAL COM 8H9. API Well No.
30-025-43168-00-X110. Field and Pool or Exploratory Area
OJO CHISO

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 27 T22S R34E SWSW 220FSL 690FWL

11. County or Parish, State

LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

COG Operating respectfully requests approval for the following changes to the originally approved APD.

BHL Change

From: 330' FNL & 660' FWL Section 22. T22S. R34E
To: 50' FNL & 660' FWL Section 22. T22S. R34E.

C102 attached.

Directional plan attached.

All previous conditions of Approval still apply. DR

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #478028 verified by the BLM Well Information System

For COG PRODUCTION LLC, sent to the Hobbs

Committed to AFMSS for processing by PRISCILLA PEREZ on 08/15/2019 (19PP2859SE)

Name (Printed/Typed) MAYTE X REYES

Title SENIOR REGULATORY ANALYST

Signature (Electronic Submission)

Date 08/14/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By DYLAN ROSSMANGO

Title PETROLEUM ENGINEER

Date 08/16/2019

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Hobbs

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

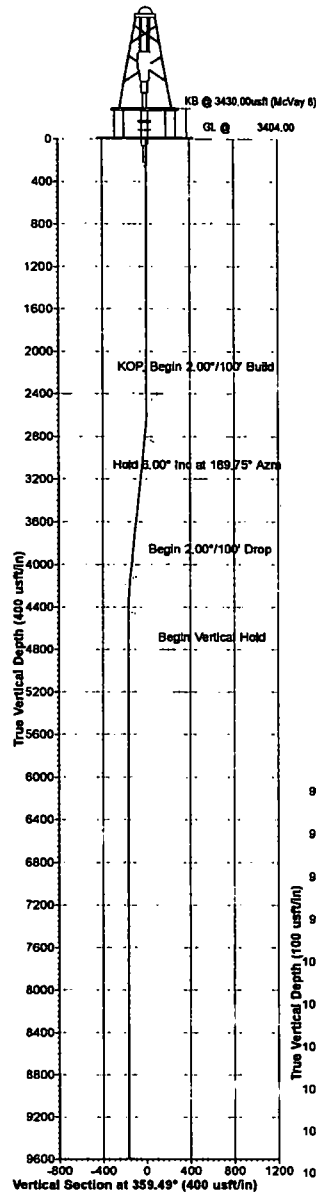
**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****



Project: Lea County, NM (NAD27 NME)
Site: Squints Federal Com
Well: 8H
Wellbore: OH
Design: Plan 1 08-06-19
Rig: McVay 8



Azimuths to Grid North
True North: -0.47°
Magnetic North: 6.14°
Magnetic Field
Strength: 47969.1nT
Dip Angle: 60.03°
Date: 10/8/2019
Model: MVHD



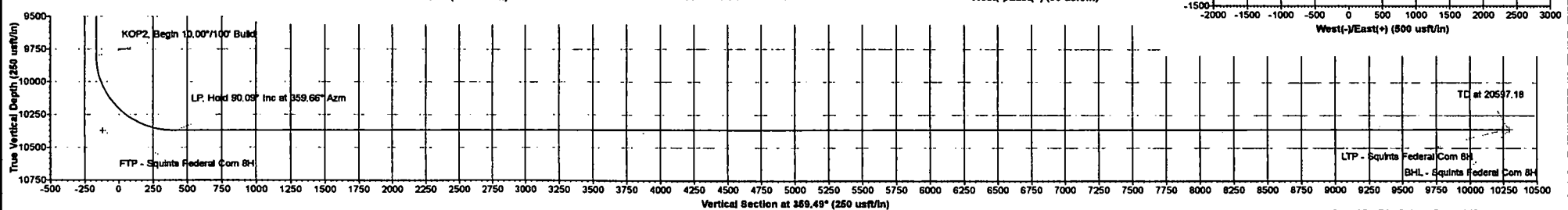
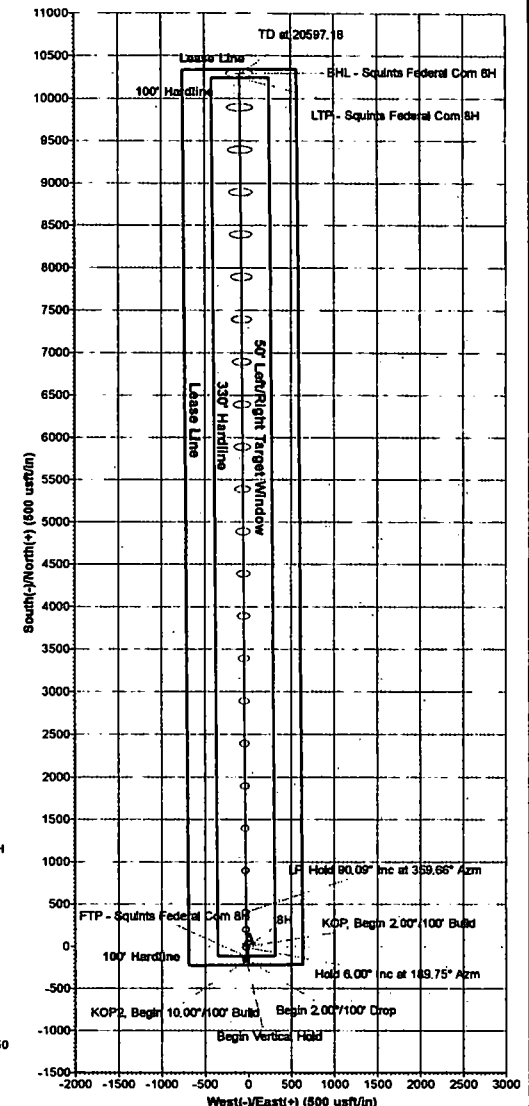
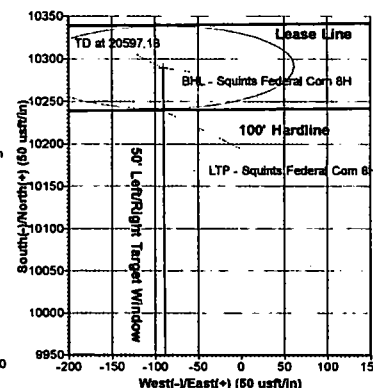
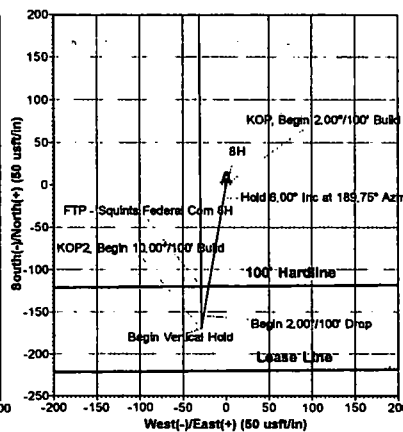
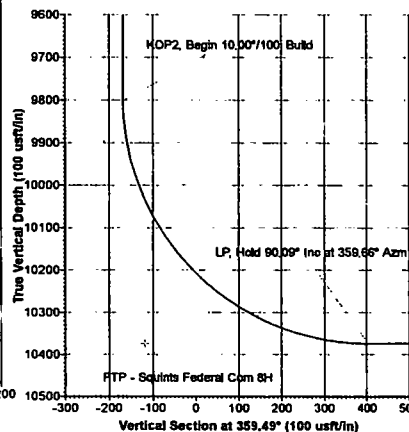
WELL DETAILS						
			Ground Elevation:	3404.00		
+N-S	+E-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	494283.00	768518.70	32° 21' 21.245557 N	103° 27' 49.564538 W	

DESIGN TARGET DETAILS						
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude
BHL - Squints Federal Com BH	10360.00	10289.40	-41.10	504572.40	768427.80	32° 27' 3.268577 N
LTP - Squints Federal Com BH	10360.00	10239.40	-40.80	504522.40	768427.80	32° 27' 49.563990 W
FTP - Squints Federal Com BH	10375.00	-120.30	-29.40	494162.70	768483.30	32° 21' 20.057548 N

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Oleg	TFace	VSec	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP, Begin 2.00°/100' Build
2	2500.00	0.00	0.00	2500.00	-1.00	0.00	0.00	0.00	0.00	0.00	Hold 8.00° Inc at 189.75° Azm
3	2800.00	6.00	189.75	2799.45	-15.47	-2.85	2.00	189.75	-15.44	0.00	Begin 2.00°/100' Drop
4	4150.00	6.00	189.75	4142.00	-154.54	-26.56	0.00	0.00	-154.30	0.00	Begin Vertical Hold
5	4450.00	0.00	0.00	4441.51	-170.91	-20.21	2.00	180.00	-169.74	0.00	KOP2, Begin 10.00°/100' Build
6	8810.53	0.00	0.00	8802.04	-170.91	-29.21	0.00	0.00	-169.74	0.00	LP, Hold 90.09° Inc at 359.66° Azm
7	10711.40	90.09	359.66	10375.00	403.81	-32.81	10.00	359.66	404.08	0.00	TD at 20597.18
8	20597.18	90.09	359.66	10360.00	10289.40	-41.10	0.00	0.00	0.00	0.00	BHL - Squints Federal Com BH

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 8H, Grid North
Latitude: 32° 21' 21.245557 N
Longitude: 103° 27' 49.564538 W
Grid East: 768518.70
Grid North: 494283.00
Scale Factor: 1.000
Geomagnetic Model: MVHD
Sample Date: 08-Oct-19
Magnetic Declination: 6.61°
Dip Angle from Horizontal: 60.03°
Magnetic Field Strength: 47969.0826632nT
To convert a Magnetic Direction to a Grid Direction, Add 6.14°
To convert a Magnetic Direction to a True Direction, Add 6.61° East
To convert a True Direction to a Grid Direction, Subtract 0.47°

LEGEND
Plan 1 08-06-19
FORMATION TOP DETAILS
No formation data is available





COG Operating LLC

Lea County, NM (NAD27 NME)

Squints Federal Com

8H

OH

Plan: Plan 1 08-06-19

Standard Planning Report

06 August, 2019





Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Squints Federal Com
Well: 8H
Wellbore: OH
Design: Plan 1 08-06-19

Local Co-ordinate Reference: Well 8H
TVD Reference: KB @ 3430.00usft (McVay 8)
MD Reference: KB @ 3430.00usft (McVay 8)
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	Squints Federal Com		
Site Position:		Northing:	494,283.00 usft
From:	Map	Easting:	768,518.70 usft
Position Uncertainty:	1.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 21' 21.245557 N
		Longitude:	103° 27' 49.564536 W
		Grid Convergence:	0.47 °

Well	8H		
Well Position	+N-S	0.00 usft	Northing: 494,283.00 usft
	+E-W	0.00 usft	Easting: 768,518.70 usft
Position Uncertainty	1.00 usft	Wellhead Elevation:	Latitude: 32° 21' 21.245557 N
			Longitude: 103° 27' 49.564536 W
			Ground Level: 3,404.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	MVHD	10/8/2019	6.61
			Dip Angle (°)
			60.03
			Field Strength (nT)
			47,969.08296832

Design	Plan 1 08-06-19		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			359.49

Plan Survey Tool Program Date 8/6/2019

Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,597.18 Plan 1 08-06-19 (OH)	MWD+HRGM	
			OWSG MWD + HRGM	

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	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,800.00	6.00	189.75	2,799.45	-15.47	-2.66	2.00	2.00	0.00	189.75	
4,150.00	6.00	189.75	4,142.06	-154.54	-26.56	0.00	0.00	0.00	0.00	
4,450.00	0.00	0.00	4,441.51	-170.01	-29.21	2.00	-2.00	0.00	180.00	
9,810.53	0.00	0.00	9,802.04	-170.01	-29.21	0.00	0.00	0.00	0.00	
10,711.40	90.09	359.66	10,375.00	403.81	-32.61	10.00	10.00	-0.04	359.66	
20,597.18	90.09	359.66	10,360.00	10,289.40	-91.10	0.00	0.00	0.00	0.00	BHL - Squints Federa

Database: USA Compass
 Company: COG Operating LLC
 Project: Lea County, NM (NAD27 NME)
 Site: Squints Federal Com
 Well: 8H
 Wellbore: OH
 Design: Plan 1 08-06-19

Local Co-ordinate Reference: Well 8H
 TVD Reference: KB @ 3430.00usft (McVay 8)
 MD Reference: KB @ 3430.00usft (McVay 8)
 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
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 2.00°/100° Build									
2,600.00	2.00	189.75	2,599.98	-1.72	-0.30	-1.72	2.00	2.00	0.00
2,700.00	4.00	189.75	2,699.84	-6.88	-1.18	-6.87	2.00	2.00	0.00
2,800.00	6.00	189.75	2,799.45	-15.47	-2.66	-15.44	2.00	2.00	0.00
Hold 6.00° Inc at 189.75° Azm									
2,900.00	6.00	189.75	2,898.90	-25.77	-4.43	-25.73	0.00	0.00	0.00
3,000.00	6.00	189.75	2,998.36	-36.07	-6.20	-36.01	0.00	0.00	0.00
3,100.00	6.00	189.75	3,097.81	-46.37	-7.97	-46.30	0.00	0.00	0.00
3,200.00	6.00	189.75	3,197.26	-56.67	-9.74	-56.59	0.00	0.00	0.00
3,300.00	6.00	189.75	3,296.71	-66.98	-11.51	-66.87	0.00	0.00	0.00
3,400.00	6.00	189.75	3,396.17	-77.28	-13.28	-77.16	0.00	0.00	0.00
3,500.00	6.00	189.75	3,495.62	-87.58	-15.05	-87.44	0.00	0.00	0.00
3,600.00	6.00	189.75	3,595.07	-97.88	-16.82	-97.73	0.00	0.00	0.00
3,700.00	6.00	189.75	3,694.52	-108.18	-18.59	-108.01	0.00	0.00	0.00
3,800.00	6.00	189.75	3,793.97	-118.49	-20.36	-118.30	0.00	0.00	0.00
3,900.00	6.00	189.75	3,893.43	-128.79	-22.13	-128.59	0.00	0.00	0.00
4,000.00	6.00	189.75	3,992.88	-139.09	-23.90	-138.87	0.00	0.00	0.00
4,100.00	6.00	189.75	4,092.33	-149.39	-25.67	-149.16	0.00	0.00	0.00
4,150.00	6.00	189.75	4,142.06	-154.54	-26.56	-154.30	0.00	0.00	0.00
Begin 2.00°/100° Drop									
4,200.00	5.00	189.75	4,191.83	-159.27	-27.37	-159.02	2.00	-2.00	0.00
4,300.00	3.00	189.75	4,291.58	-166.14	-28.55	-165.88	2.00	-2.00	0.00
4,400.00	1.00	189.75	4,391.51	-169.58	-29.14	-169.31	2.00	-2.00	0.00
4,450.00	0.00	0.00	4,441.51	-170.01	-29.21	-169.74	2.00	-2.00	340.50
Begin Vertical Hold									
4,500.00	0.00	0.00	4,491.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
4,600.00	0.00	0.00	4,591.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
4,700.00	0.00	0.00	4,691.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
4,800.00	0.00	0.00	4,791.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
4,900.00	0.00	0.00	4,891.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
5,000.00	0.00	0.00	4,991.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
5,100.00	0.00	0.00	5,091.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
5,200.00	0.00	0.00	5,191.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
5,300.00	0.00	0.00	5,291.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
5,400.00	0.00	0.00	5,391.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
5,500.00	0.00	0.00	5,491.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
5,600.00	0.00	0.00	5,591.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
5,700.00	0.00	0.00	5,691.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
5,800.00	0.00	0.00	5,791.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
5,900.00	0.00	0.00	5,891.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
6,000.00	0.00	0.00	5,991.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
6,100.00	0.00	0.00	6,091.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
6,200.00	0.00	0.00	6,191.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
6,300.00	0.00	0.00	6,291.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
6,400.00	0.00	0.00	6,391.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
6,500.00	0.00	0.00	6,491.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
6,600.00	0.00	0.00	6,591.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
6,700.00	0.00	0.00	6,691.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
6,800.00	0.00	0.00	6,791.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
6,900.00	0.00	0.00	6,891.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
7,000.00	0.00	0.00	6,991.51	-170.01	-29.21	-169.74	0.00	0.00	0.00



Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Squints Federal Com
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Wellbore: OH
Design: Plan 1 08-06-19

Local Co-ordinate Reference: Well 8H
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MD Reference: KB @ 3430.00usft (McVay 8)
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)
7,100.00	0.00	0.00	7,091.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
7,200.00	0.00	0.00	7,191.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
7,300.00	0.00	0.00	7,291.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
7,400.00	0.00	0.00	7,391.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
7,500.00	0.00	0.00	7,491.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
7,600.00	0.00	0.00	7,591.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
7,700.00	0.00	0.00	7,691.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
7,800.00	0.00	0.00	7,791.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
7,900.00	0.00	0.00	7,891.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
8,000.00	0.00	0.00	7,991.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
8,100.00	0.00	0.00	8,091.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
8,200.00	0.00	0.00	8,191.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
8,300.00	0.00	0.00	8,291.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
8,400.00	0.00	0.00	8,391.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
8,500.00	0.00	0.00	8,491.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
8,600.00	0.00	0.00	8,591.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
8,700.00	0.00	0.00	8,691.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
8,800.00	0.00	0.00	8,791.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
8,900.00	0.00	0.00	8,891.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
9,000.00	0.00	0.00	8,991.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
9,100.00	0.00	0.00	9,091.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
9,200.00	0.00	0.00	9,191.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
9,300.00	0.00	0.00	9,291.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
9,400.00	0.00	0.00	9,391.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
9,500.00	0.00	0.00	9,491.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
9,600.00	0.00	0.00	9,591.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
9,700.00	0.00	0.00	9,691.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
9,800.00	0.00	0.00	9,791.51	-170.01	-29.21	-169.74	0.00	0.00	0.00
9,810.53	0.00	0.00	9,802.04	-170.01	-29.21	-169.74	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
9,900.00	8.95	359.66	9,891.15	-163.04	-29.25	-162.77	10.00	10.00	0.00
10,000.00	18.95	359.66	9,988.07	-138.97	-29.40	-138.70	10.00	10.00	0.00
10,100.00	28.95	359.66	10,079.35	-98.43	-29.64	-98.16	10.00	10.00	0.00
10,200.00	38.95	359.66	10,162.20	-42.66	-29.97	-42.39	10.00	10.00	0.00
10,300.00	48.95	359.66	10,234.11	26.65	-30.38	26.92	10.00	10.00	0.00
10,400.00	58.95	359.66	10,292.89	107.39	-30.85	107.66	10.00	10.00	0.00
10,500.00	68.95	359.66	10,336.75	197.12	-31.39	197.39	10.00	10.00	0.00
10,600.00	78.95	359.66	10,364.37	293.09	-31.95	293.36	10.00	10.00	0.00
10,700.00	88.95	359.66	10,374.90	392.41	-32.54	392.68	10.00	10.00	0.00
10,711.40	90.09	359.66	10,375.00	403.81	-32.61	404.08	10.00	10.00	0.00
LP, Hold 90.09° Inc at 359.66° Azm									
10,800.00	90.09	359.66	10,374.86	492.41	-33.13	492.68	0.00	0.00	0.00
10,900.00	90.09	359.66	10,374.71	592.40	-33.72	592.68	0.00	0.00	0.00
11,000.00	90.09	359.66	10,374.56	692.40	-34.32	692.68	0.00	0.00	0.00
11,100.00	90.09	359.66	10,374.41	792.40	-34.91	792.68	0.00	0.00	0.00
11,200.00	90.09	359.66	10,374.26	892.40	-35.50	892.68	0.00	0.00	0.00
11,300.00	90.09	359.66	10,374.10	992.40	-36.09	992.68	0.00	0.00	0.00
11,400.00	90.09	359.66	10,373.95	1,092.39	-36.68	1,092.68	0.00	0.00	0.00
11,500.00	90.09	359.66	10,373.80	1,192.39	-37.27	1,192.68	0.00	0.00	0.00
11,600.00	90.09	359.66	10,373.65	1,292.39	-37.87	1,292.68	0.00	0.00	0.00
11,700.00	90.09	359.66	10,373.50	1,392.39	-38.46	1,392.67	0.00	0.00	0.00
11,800.00	90.09	359.66	10,373.35	1,492.39	-39.05	1,492.67	0.00	0.00	0.00
11,900.00	90.09	359.66	10,373.19	1,592.39	-39.64	1,592.67	0.00	0.00	0.00



Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Squints Federal Com
Well: 8H
Wellbore: OH
Design: Plan 1 08-06-19

Local Co-ordinate Reference: Well 8H
TVD Reference: KB @ 3430.00usft (McVay 8)
MD Reference: KB @ 3430.00usft (McVay 8)
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)
12,000.00	90.09	359.66	10,373.04	1,692.38	-40.23	1,692.67	0.00	0.00	0.00
12,100.00	90.09	359.66	10,372.89	1,792.38	-40.82	1,792.67	0.00	0.00	0.00
12,200.00	90.09	359.66	10,372.74	1,892.38	-41.42	1,892.67	0.00	0.00	0.00
12,300.00	90.09	359.66	10,372.59	1,992.38	-42.01	1,992.67	0.00	0.00	0.00
12,400.00	90.09	359.66	10,372.44	2,092.38	-42.60	2,092.67	0.00	0.00	0.00
12,500.00	90.09	359.66	10,372.28	2,192.37	-43.19	2,192.67	0.00	0.00	0.00
12,600.00	90.09	359.66	10,372.13	2,292.37	-43.78	2,292.67	0.00	0.00	0.00
12,700.00	90.09	359.66	10,371.98	2,392.37	-44.37	2,392.67	0.00	0.00	0.00
12,800.00	90.09	359.66	10,371.83	2,492.37	-44.97	2,492.67	0.00	0.00	0.00
12,900.00	90.09	359.66	10,371.68	2,592.37	-45.56	2,592.67	0.00	0.00	0.00
13,000.00	90.09	359.66	10,371.53	2,692.36	-46.15	2,692.67	0.00	0.00	0.00
13,100.00	90.09	359.66	10,371.37	2,792.36	-46.74	2,792.67	0.00	0.00	0.00
13,200.00	90.09	359.66	10,371.22	2,892.36	-47.33	2,892.67	0.00	0.00	0.00
13,300.00	90.09	359.66	10,371.07	2,992.36	-47.92	2,992.67	0.00	0.00	0.00
13,400.00	90.09	359.66	10,370.92	3,092.36	-48.52	3,092.67	0.00	0.00	0.00
13,500.00	90.09	359.66	10,370.77	3,192.36	-49.11	3,192.66	0.00	0.00	0.00
13,600.00	90.09	359.66	10,370.62	3,292.35	-49.70	3,292.66	0.00	0.00	0.00
13,700.00	90.09	359.66	10,370.46	3,392.35	-50.29	3,392.66	0.00	0.00	0.00
13,800.00	90.09	359.66	10,370.31	3,492.35	-50.88	3,492.66	0.00	0.00	0.00
13,900.00	90.09	359.66	10,370.16	3,592.35	-51.47	3,592.66	0.00	0.00	0.00
14,000.00	90.09	359.66	10,370.01	3,692.35	-52.07	3,692.66	0.00	0.00	0.00
14,100.00	90.09	359.66	10,369.86	3,792.34	-52.66	3,792.66	0.00	0.00	0.00
14,200.00	90.09	359.66	10,369.71	3,892.34	-53.25	3,892.66	0.00	0.00	0.00
14,300.00	90.09	359.66	10,369.55	3,992.34	-53.84	3,992.66	0.00	0.00	0.00
14,400.00	90.09	359.66	10,369.40	4,092.34	-54.43	4,092.66	0.00	0.00	0.00
14,500.00	90.09	359.66	10,369.25	4,192.34	-55.02	4,192.66	0.00	0.00	0.00
14,600.00	90.09	359.66	10,369.10	4,292.33	-55.62	4,292.66	0.00	0.00	0.00
14,700.00	90.09	359.66	10,368.95	4,392.33	-56.21	4,392.66	0.00	0.00	0.00
14,800.00	90.09	359.66	10,368.79	4,492.33	-56.80	4,492.66	0.00	0.00	0.00
14,900.00	90.09	359.66	10,368.64	4,592.33	-57.39	4,592.66	0.00	0.00	0.00
15,000.00	90.09	359.66	10,368.49	4,692.33	-57.98	4,692.66	0.00	0.00	0.00
15,100.00	90.09	359.66	10,368.34	4,792.33	-58.57	4,792.66	0.00	0.00	0.00
15,200.00	90.09	359.66	10,368.19	4,892.32	-59.17	4,892.66	0.00	0.00	0.00
15,300.00	90.09	359.66	10,368.04	4,992.32	-59.76	4,992.66	0.00	0.00	0.00
15,400.00	90.09	359.66	10,367.88	5,092.32	-60.35	5,092.65	0.00	0.00	0.00
15,500.00	90.09	359.66	10,367.73	5,192.32	-60.94	5,192.65	0.00	0.00	0.00
15,600.00	90.09	359.66	10,367.58	5,292.32	-61.53	5,292.65	0.00	0.00	0.00
15,700.00	90.09	359.66	10,367.43	5,392.31	-62.12	5,392.65	0.00	0.00	0.00
15,800.00	90.09	359.66	10,367.28	5,492.31	-62.72	5,492.65	0.00	0.00	0.00
15,900.00	90.09	359.66	10,367.13	5,592.31	-63.31	5,592.65	0.00	0.00	0.00
16,000.00	90.09	359.66	10,366.97	5,692.31	-63.90	5,692.65	0.00	0.00	0.00
16,100.00	90.09	359.66	10,366.82	5,792.31	-64.49	5,792.65	0.00	0.00	0.00
16,200.00	90.09	359.66	10,366.67	5,892.30	-65.08	5,892.65	0.00	0.00	0.00
16,300.00	90.09	359.66	10,366.52	5,992.30	-65.67	5,992.65	0.00	0.00	0.00
16,400.00	90.09	359.66	10,366.37	6,092.30	-66.27	6,092.65	0.00	0.00	0.00
16,500.00	90.09	359.66	10,366.22	6,192.30	-66.86	6,192.65	0.00	0.00	0.00
16,600.00	90.09	359.66	10,366.06	6,292.30	-67.45	6,292.65	0.00	0.00	0.00
16,700.00	90.09	359.66	10,365.91	6,392.30	-68.04	6,392.65	0.00	0.00	0.00
16,800.00	90.09	359.66	10,365.76	6,492.29	-68.63	6,492.65	0.00	0.00	0.00
16,900.00	90.09	359.66	10,365.61	6,592.29	-69.22	6,592.65	0.00	0.00	0.00
17,000.00	90.09	359.66	10,365.46	6,692.29	-69.82	6,692.65	0.00	0.00	0.00
17,100.00	90.09	359.66	10,365.31	6,792.29	-70.41	6,792.65	0.00	0.00	0.00
17,200.00	90.09	359.66	10,365.15	6,892.29	-71.00	6,892.64	0.00	0.00	0.00
17,300.00	90.09	359.66	10,365.00	6,992.28	-71.59	6,992.64	0.00	0.00	0.00



Planning Report



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Design: Plan 1 08-06-19

Local Co-ordinate Reference: Well 8H
TVD Reference: KB @ 3430.00usft (McVay 8)
MD Reference: KB @ 3430.00usft (McVay 8)
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)
17,400.00	90.09	359.66	10,364.85	7,092.28	-72.18	7,092.64	0.00	0.00	0.00
17,500.00	90.09	359.66	10,364.70	7,192.28	-72.77	7,192.64	0.00	0.00	0.00
17,600.00	90.09	359.66	10,364.55	7,292.28	-73.37	7,292.64	0.00	0.00	0.00
17,700.00	90.09	359.66	10,364.40	7,392.28	-73.96	7,392.64	0.00	0.00	0.00
17,800.00	90.09	359.66	10,364.24	7,492.28	-74.55	7,492.64	0.00	0.00	0.00
17,900.00	90.09	359.66	10,364.09	7,592.27	-75.14	7,592.64	0.00	0.00	0.00
18,000.00	90.09	359.66	10,363.94	7,692.27	-75.73	7,692.64	0.00	0.00	0.00
18,100.00	90.09	359.66	10,363.79	7,792.27	-76.32	7,792.64	0.00	0.00	0.00
18,200.00	90.09	359.66	10,363.64	7,892.27	-76.92	7,892.64	0.00	0.00	0.00
18,300.00	90.09	359.66	10,363.49	7,992.27	-77.51	7,992.64	0.00	0.00	0.00
18,400.00	90.09	359.66	10,363.33	8,092.26	-78.10	8,092.64	0.00	0.00	0.00
18,500.00	90.09	359.66	10,363.18	8,192.26	-78.69	8,192.64	0.00	0.00	0.00
18,600.00	90.09	359.66	10,363.03	8,292.26	-79.28	8,292.64	0.00	0.00	0.00
18,700.00	90.09	359.66	10,362.88	8,392.26	-79.87	8,392.64	0.00	0.00	0.00
18,800.00	90.09	359.66	10,362.73	8,492.26	-80.47	8,492.64	0.00	0.00	0.00
18,900.00	90.09	359.66	10,362.57	8,592.25	-81.06	8,592.64	0.00	0.00	0.00
19,000.00	90.09	359.66	10,362.42	8,692.25	-81.65	8,692.64	0.00	0.00	0.00
19,100.00	90.09	359.66	10,362.27	8,792.25	-82.24	8,792.63	0.00	0.00	0.00
19,200.00	90.09	359.66	10,362.12	8,892.25	-82.83	8,892.63	0.00	0.00	0.00
19,300.00	90.09	359.66	10,361.97	8,992.25	-83.42	8,992.63	0.00	0.00	0.00
19,400.00	90.09	359.66	10,361.82	9,092.25	-84.02	9,092.63	0.00	0.00	0.00
19,500.00	90.09	359.66	10,361.66	9,192.24	-84.61	9,192.63	0.00	0.00	0.00
19,600.00	90.09	359.66	10,361.51	9,292.24	-85.20	9,292.63	0.00	0.00	0.00
19,700.00	90.09	359.66	10,361.36	9,392.24	-85.79	9,392.63	0.00	0.00	0.00
19,800.00	90.09	359.66	10,361.21	9,492.24	-86.38	9,492.63	0.00	0.00	0.00
19,900.00	90.09	359.66	10,361.06	9,592.24	-86.97	9,592.63	0.00	0.00	0.00
20,000.00	90.09	359.66	10,360.91	9,692.23	-87.57	9,692.63	0.00	0.00	0.00
20,100.00	90.09	359.66	10,360.75	9,792.23	-88.16	9,792.63	0.00	0.00	0.00
20,200.00	90.09	359.66	10,360.60	9,892.23	-88.75	9,892.63	0.00	0.00	0.00
20,300.00	90.09	359.66	10,360.45	9,992.23	-89.34	9,992.63	0.00	0.00	0.00
20,400.00	90.09	359.66	10,360.30	10,092.23	-89.93	10,092.63	0.00	0.00	0.00
20,500.00	90.09	359.66	10,360.15	10,192.22	-90.53	10,192.63	0.00	0.00	0.00
20,597.18	90.09	359.66	10,360.00	10,289.40	-91.10	10,289.80	0.00	0.00	0.00

TD at 20597.18

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL - Squints Federal C	0.00	0.00	10,360.00	10,289.40	-91.10	504,572.40	768,427.60	32° 23' 3.066577 N	103° 27' 49.651848 W
- plan hits target center									
- Point									
LTP - Squints Federal C	0.00	0.00	10,360.08	10,239.40	-90.80	504,522.40	768,427.90	32° 23' 2.571804 N	103° 27' 49.653090 W
- plan misses target center by 47.18usft at 20500.00usft MD (10360.15 TVD, 10192.22 N, -90.53 E)									
- Point									
FTP - Squints Federal C	0.00	0.00	10,375.00	-120.30	-29.40	494,162.70	768,489.30	32° 21' 20.057548 N	103° 27' 49.918642 W
- plan misses target center by 203.53usft at 10299.46usft MD (10233.75 TVD, 26.24 N, -30.37 E)									
- Point									



Planning Report



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Local Co-ordinate Reference: Well 8H
TVD Reference: KB @ 3430.00usft (McVay 8)
MD Reference: KB @ 3430.00usft (McVay 8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,500.00	2,500.00	0.00	0.00	KOP, Begin 2.00°/100' Build
2,800.00	2,799.45	-15.47	-2.66	Hold 6.00° Inc at 189.75° Azm
4,150.00	4,142.06	-154.54	-26.56	Begin 2.00°/100' Drop
4,450.00	4,441.51	-170.01	-29.21	Begin Vertical Hold
9,810.53	9,802.04	-170.01	-29.21	KOP2, Begin 10.00°/100' Build
10,711.40	10,375.00	403.81	-32.61	LP, Hold 90.09° Inc at 359.66° Azm
20,597.18	10,360.00	10,289.40	-91.10	TD at 20597.18