

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

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.

SUBMIT IN TRIPLICATE - Other Instructions on page 2

MAR 10 2020

RECEIVED

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM136223
2. Name of Operator COG OPERATING LLC Contact: MAYTE X REYES E-Mail: mreyes1@concho.com		6. If Indian, Allottee or Tribe Name
3a. Address ONE CONCHO CENTER 600 W ILLINOIS AVENUE MIDLAND, TX 79701-4287	3b. Phone No. (include area code) Ph: 575-748-6945	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 19 T25S R35E 250FNL 1955FEL 32.121922 N Lat, 103.404327 W Lon		8. Well Name and No. PITCHBLEND FED 19-30 457H
		9. API Well No. 30-025-45662-00-X1
		10. Field and Pool or Exploratory Area WILDCAT;WOLFCAMP
		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: 2539' FNL & 1955' FEL Section 30. T25S. R35E.
To: 2590' FNL & 1590' FEL Section 30. T25S. R35E.

C102 attached.

Directional plan attached.
AC report attached.

All previous Conditions of Approval still apply. DR

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #498695 verified by the BLM Well Information System For COG OPERATING LLC, sent to the Hobbs Committed to AFMSS for processing by PRISCILLA PEREZ on 01/13/2020 (20PP0933SE)	
Name (Printed/Typed) MAYTE X REYES	Title SENIOR REGULATORY ANALYST
Signature (Electronic Submission)	Date 01/09/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

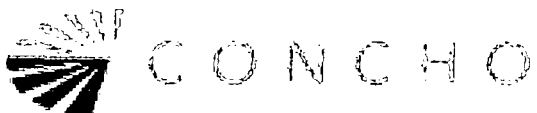
Approved By <u>DYLAN ROSSMANGO</u>	Title <u>PETROLEUM ENGINEER</u>	Date <u>01/16/2020</u>
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant 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 ****

Handwritten signature/initials.



COG Operating LLC

Lea Co., NM

Pitchblende Federal

19-30 457H

Wellbore #1

Plan: Design #1

Standard Planning Report

07 January, 2020





Nabors Drilling Solutions

Planning Report



Database: RyanUSA_32Bit
Company: COG Operating LLC

Local Co-ordinate Reference:
TVD Reference:

Well 19-30 457H
RT=27(Nabors 893) @ 3364.70ft (Nabors 893)

Project: Lea Co., NM

MD Reference:

RT=27(Nabors 893) @ 3364.70ft (Nabors 893)

Site: Pitchblende Federal

North Reference:

Grid

Well: 19-30 457H

Survey Calculation Method:

Minimum Curvature

Wellbore: Wellbore #1

Design: Design #1

Project	Lea Co., NM, Test		
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	Pitchblende Federal		
Site Position:		Northing:	409,474.100 usft
From:	Map	Easting:	787,678.000 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 7' 20.462348 N
		Longitude:	103° 24' 14.780437 W
		Grid Convergence:	0.49 °

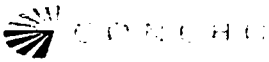
Well	19-30 457H		
Well Position	+N/-S	0.30 ft	Northing:
	+E/-W	50.00 ft	Easting:
Position Uncertainty	2.00 ft	Wellhead Elevation:	
		Latitude:	32° 7' 20.461049 N
		Longitude:	103° 24' 14.199055 W
		Ground Level:	3,337.70 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM_FILE	12/31/2019	6.55	59.75	47,676.20000000

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	179.45

Plan Survey Tool Program Date 1/7/2020

Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,294.00 Design #1 (Wellbore #1)	MWD+HRGM	
			OWSG MWD + HRGM	



Nabors Drilling Solutions
Planning Report

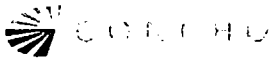


Database: RyanUSA_32Bit
Company: COG Operating LLC
Project: Lea Co., NM
Site: Pitchblende Federal
Well: 19-30 457H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 19-30 457H
TVD Reference: RT=27(Nabors 893) @ 3364.70ft (Nabors 893)
MD Reference: RT=27(Nabors 893) @ 3364.70ft (Nabors 893)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,542.32	8.13	67.33	2,540.50	14.82	35.46	1.50	1.50	0.00	67.33	
4,783.87	8.13	67.33	4,759.50	137.08	328.14	0.00	0.00	0.00	0.00	
5,326.20	0.00	0.00	5,300.00	151.90	363.60	1.50	-1.50	0.00	180.00	
12,247.75	0.00	0.00	12,221.55	151.90	363.60	0.00	0.00	0.00	0.00	
12,993.82	89.53	179.45	12,699.00	-321.62	368.11	12.00	12.00	24.05	179.45	
20,294.00	89.53	179.45	12,759.00	-7,621.22	437.70	0.00	0.00	0.00	0.00	Pitch Fed 19-30 457H



Nabors Drilling Solutions
Planning Report



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Company: COG Operating LLC

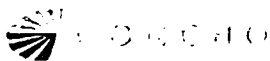
Project: Lea Co., NM

Site: Pitchblende Federal
Well: 19-30 457H
Wellbore: Wellbore #1
Design: Design #1

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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	1.50	67.33	2,099.99	0.50	1.21	-0.49	1.50	1.50	0.00
2,200.00	3.00	67.33	2,199.91	2.02	4.83	-1.97	1.50	1.50	0.00
2,300.00	4.50	67.33	2,299.69	4.54	10.86	-4.43	1.50	1.50	0.00
2,400.00	6.00	67.33	2,399.27	8.07	19.31	-7.88	1.50	1.50	0.00
2,500.00	7.50	67.33	2,498.57	12.60	30.15	-12.31	1.50	1.50	0.00
2,542.32	8.13	67.33	2,540.50	14.82	35.46	-14.47	1.50	1.50	0.00
2,600.00	8.13	67.33	2,597.60	17.96	43.00	-17.55	0.00	0.00	0.00
2,700.00	8.13	67.33	2,696.59	23.42	56.05	-22.88	0.00	0.00	0.00
2,800.00	8.13	67.33	2,795.59	28.87	69.11	-28.21	0.00	0.00	0.00
2,900.00	8.13	67.33	2,894.58	34.33	82.17	-33.54	0.00	0.00	0.00
3,000.00	8.13	67.33	2,993.57	39.78	95.22	-38.86	0.00	0.00	0.00
3,100.00	8.13	67.33	3,092.57	45.24	108.28	-44.19	0.00	0.00	0.00
3,200.00	8.13	67.33	3,191.56	50.69	121.34	-49.52	0.00	0.00	0.00
3,300.00	8.13	67.33	3,290.56	56.14	134.39	-54.85	0.00	0.00	0.00
3,400.00	8.13	67.33	3,389.55	61.60	147.45	-60.18	0.00	0.00	0.00
3,500.00	8.13	67.33	3,488.54	67.05	160.51	-65.51	0.00	0.00	0.00
3,600.00	8.13	67.33	3,587.54	72.51	173.56	-70.84	0.00	0.00	0.00
3,700.00	8.13	67.33	3,686.53	77.96	186.62	-76.17	0.00	0.00	0.00
3,800.00	8.13	67.33	3,785.52	83.42	199.68	-81.50	0.00	0.00	0.00
3,900.00	8.13	67.33	3,884.52	88.87	212.73	-86.83	0.00	0.00	0.00
4,000.00	8.13	67.33	3,983.51	94.33	225.79	-92.16	0.00	0.00	0.00
4,100.00	8.13	67.33	-4,082.51	99.78	238.85	-97.48	0.00	0.00	0.00
4,200.00	8.13	67.33	4,181.50	105.24	251.90	-102.81	0.00	0.00	0.00
4,300.00	8.13	67.33	4,280.49	110.69	264.96	-108.14	0.00	0.00	0.00
4,400.00	8.13	67.33	4,379.49	116.15	278.02	-113.47	0.00	0.00	0.00
4,500.00	8.13	67.33	4,478.48	121.60	291.07	-118.80	0.00	0.00	0.00
4,600.00	8.13	67.33	4,577.48	127.05	304.13	-124.13	0.00	0.00	0.00
4,700.00	8.13	67.33	4,676.47	132.51	317.19	-129.46	0.00	0.00	0.00
4,783.87	8.13	67.33	4,759.50	137.08	328.14	-133.93	0.00	0.00	0.00
4,800.00	7.89	67.33	4,775.47	137.95	330.21	-134.78	1.50	-1.50	0.00
4,900.00	6.39	67.33	4,874.69	142.74	341.68	-139.46	1.50	-1.50	0.00



Nabors Drilling Solutions
Planning Report



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Local Co-ordinate Reference:
TVD Reference:

Well 19-30 457H
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Project: Lea Co., NM

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Site: Pitchblende Federal

North Reference:

Grid

Well: 19-30 457H

Survey Calculation Method:

Minimum Curvature

Wellbore: Wellbore #1

Design: Design #1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.00	4.89	67.33	4,974.20	146.53	350.76	-143.16	1.50	-1.50	0.00
5,100.00	3.39	67.33	5,073.94	149.32	357.42	-145.88	1.50	-1.50	0.00
5,200.00	1.89	67.33	5,173.83	151.10	361.68	-147.62	1.50	-1.50	0.00
5,300.00	0.39	67.33	5,273.81	151.87	363.52	-148.37	1.50	-1.50	0.00
5,326.20	0.00	0.00	5,300.00	151.90	363.60	-148.40	1.50	-1.50	0.00
5,400.00	0.00	0.00	5,373.80	151.90	363.60	-148.40	0.00	0.00	0.00
5,500.00	0.00	0.00	5,473.80	151.90	363.60	-148.40	0.00	0.00	0.00
5,600.00	0.00	0.00	5,573.80	151.90	363.60	-148.40	0.00	0.00	0.00
5,700.00	0.00	0.00	5,673.80	151.90	363.60	-148.40	0.00	0.00	0.00
5,800.00	0.00	0.00	5,773.80	151.90	363.60	-148.40	0.00	0.00	0.00
5,900.00	0.00	0.00	5,873.80	151.90	363.60	-148.40	0.00	0.00	0.00
6,000.00	0.00	0.00	5,973.80	151.90	363.60	-148.40	0.00	0.00	0.00
6,100.00	0.00	0.00	6,073.80	151.90	363.60	-148.40	0.00	0.00	0.00
6,200.00	0.00	0.00	6,173.80	151.90	363.60	-148.40	0.00	0.00	0.00
6,300.00	0.00	0.00	6,273.80	151.90	363.60	-148.40	0.00	0.00	0.00
6,400.00	0.00	0.00	6,373.80	151.90	363.60	-148.40	0.00	0.00	0.00
6,500.00	0.00	0.00	6,473.80	151.90	363.60	-148.40	0.00	0.00	0.00
6,600.00	0.00	0.00	6,573.80	151.90	363.60	-148.40	0.00	0.00	0.00
6,700.00	0.00	0.00	6,673.80	151.90	363.60	-148.40	0.00	0.00	0.00
6,800.00	0.00	0.00	6,773.80	151.90	363.60	-148.40	0.00	0.00	0.00
6,900.00	0.00	0.00	6,873.80	151.90	363.60	-148.40	0.00	0.00	0.00
7,000.00	0.00	0.00	6,973.80	151.90	363.60	-148.40	0.00	0.00	0.00
7,100.00	0.00	0.00	7,073.80	151.90	363.60	-148.40	0.00	0.00	0.00
7,200.00	0.00	0.00	7,173.80	151.90	363.60	-148.40	0.00	0.00	0.00
7,300.00	0.00	0.00	7,273.80	151.90	363.60	-148.40	0.00	0.00	0.00
7,400.00	0.00	0.00	7,373.80	151.90	363.60	-148.40	0.00	0.00	0.00
7,500.00	0.00	0.00	7,473.80	151.90	363.60	-148.40	0.00	0.00	0.00
7,600.00	0.00	0.00	7,573.80	151.90	363.60	-148.40	0.00	0.00	0.00
7,700.00	0.00	0.00	7,673.80	151.90	363.60	-148.40	0.00	0.00	0.00
7,800.00	0.00	0.00	7,773.80	151.90	363.60	-148.40	0.00	0.00	0.00
7,900.00	0.00	0.00	7,873.80	151.90	363.60	-148.40	0.00	0.00	0.00
8,000.00	0.00	0.00	7,973.80	151.90	363.60	-148.40	0.00	0.00	0.00
8,100.00	0.00	0.00	8,073.80	151.90	363.60	-148.40	0.00	0.00	0.00
8,200.00	0.00	0.00	8,173.80	151.90	363.60	-148.40	0.00	0.00	0.00
8,300.00	0.00	0.00	8,273.80	151.90	363.60	-148.40	0.00	0.00	0.00
8,400.00	0.00	0.00	8,373.80	151.90	363.60	-148.40	0.00	0.00	0.00
8,500.00	0.00	0.00	8,473.80	151.90	363.60	-148.40	0.00	0.00	0.00
8,600.00	0.00	0.00	8,573.80	151.90	363.60	-148.40	0.00	0.00	0.00
8,700.00	0.00	0.00	8,673.80	151.90	363.60	-148.40	0.00	0.00	0.00
8,800.00	0.00	0.00	8,773.80	151.90	363.60	-148.40	0.00	0.00	0.00
8,900.00	0.00	0.00	8,873.81	151.90	363.60	-148.40	0.00	0.00	0.00
9,000.00	0.00	0.00	8,973.81	151.90	363.60	-148.40	0.00	0.00	0.00
9,100.00	0.00	0.00	9,073.81	151.90	363.60	-148.40	0.00	0.00	0.00
9,200.00	0.00	0.00	9,173.81	151.90	363.60	-148.40	0.00	0.00	0.00
9,300.00	0.00	0.00	9,273.81	151.90	363.60	-148.40	0.00	0.00	0.00
9,400.00	0.00	0.00	9,373.81	151.90	363.60	-148.40	0.00	0.00	0.00
9,500.00	0.00	0.00	9,473.81	151.90	363.60	-148.40	0.00	0.00	0.00
9,600.00	0.00	0.00	9,573.81	151.90	363.60	-148.40	0.00	0.00	0.00
9,700.00	0.00	0.00	9,673.81	151.90	363.60	-148.40	0.00	0.00	0.00
9,800.00	0.00	0.00	9,773.81	151.90	363.60	-148.40	0.00	0.00	0.00
9,900.00	0.00	0.00	9,873.81	151.90	363.60	-148.40	0.00	0.00	0.00
10,000.00	0.00	0.00	9,973.81	151.90	363.60	-148.40	0.00	0.00	0.00



Nabors Drilling Solutions

Planning Report



Database: RyanUSA_32Bit
Company: COG Operating LLC

Local Co-ordinate Reference:
TVD Reference:

Well 19-30 457H
RT=27(Nabors 893) @ 3364.70ft (Nabors 893)

Project: Lea Co., NM

MD Reference:

RT=27(Nabors 893) @ 3364.70ft (Nabors 893)

Site: Pitchblende Federal

North Reference:

Grid

Well: 19-30 457H

Survey Calculation Method:

Minimum Curvature

Wellbore: Wellbore #1

Design: Design #1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,100.00	0.00	0.00	10,073.81	151.90	363.60	-148.40	0.00	0.00	0.00
10,200.00	0.00	0.00	10,173.81	151.90	363.60	-148.40	0.00	0.00	0.00
10,300.00	0.00	0.00	10,273.81	151.90	363.60	-148.40	0.00	0.00	0.00
10,400.00	0.00	0.00	10,373.81	151.90	363.60	-148.40	0.00	0.00	0.00
10,500.00	0.00	0.00	10,473.81	151.90	363.60	-148.40	0.00	0.00	0.00
10,600.00	0.00	0.00	10,573.81	151.90	363.60	-148.40	0.00	0.00	0.00
10,700.00	0.00	0.00	10,673.81	151.90	363.60	-148.40	0.00	0.00	0.00
10,800.00	0.00	0.00	10,773.81	151.90	363.60	-148.40	0.00	0.00	0.00
10,900.00	0.00	0.00	10,873.81	151.90	363.60	-148.40	0.00	0.00	0.00
11,000.00	0.00	0.00	10,973.81	151.90	363.60	-148.40	0.00	0.00	0.00
11,100.00	0.00	0.00	11,073.81	151.90	363.60	-148.40	0.00	0.00	0.00
11,200.00	0.00	0.00	11,173.81	151.90	363.60	-148.40	0.00	0.00	0.00
11,300.00	0.00	0.00	11,273.81	151.90	363.60	-148.40	0.00	0.00	0.00
11,400.00	0.00	0.00	11,373.81	151.90	363.60	-148.40	0.00	0.00	0.00
11,500.00	0.00	0.00	11,473.81	151.90	363.60	-148.40	0.00	0.00	0.00
11,600.00	0.00	0.00	11,573.81	151.90	363.60	-148.40	0.00	0.00	0.00
11,700.00	0.00	0.00	11,673.81	151.90	363.60	-148.40	0.00	0.00	0.00
11,800.00	0.00	0.00	11,773.81	151.90	363.60	-148.40	0.00	0.00	0.00
11,900.00	0.00	0.00	11,873.81	151.90	363.60	-148.40	0.00	0.00	0.00
12,000.00	0.00	0.00	11,973.81	151.90	363.60	-148.40	0.00	0.00	0.00
12,100.00	0.00	0.00	12,073.81	151.90	363.60	-148.40	0.00	0.00	0.00
12,200.00	0.00	0.00	12,173.81	151.90	363.60	-148.40	0.00	0.00	0.00
12,247.75	0.00	0.00	12,221.55	151.90	363.60	-148.40	0.00	0.00	0.00
12,250.00	0.27	179.45	12,223.81	151.89	363.60	-148.40	12.00	12.00	0.00
12,275.00	3.27	179.45	12,248.79	151.12	363.61	-147.63	12.00	12.00	0.00
12,300.00	6.27	179.45	12,273.70	149.04	363.63	-145.55	12.00	12.00	0.00
12,325.00	9.27	179.45	12,298.47	145.66	363.66	-142.17	12.00	12.00	0.00
12,350.00	12.27	179.45	12,323.03	140.99	363.70	-137.50	12.00	12.00	0.00
12,375.00	15.27	179.45	12,347.30	135.04	363.76	-131.55	12.00	12.00	0.00
12,400.00	18.27	179.45	12,371.24	127.83	363.83	-124.33	12.00	12.00	0.00
12,425.00	21.27	179.45	12,394.76	119.38	363.91	-115.88	12.00	12.00	0.00
12,450.00	24.27	179.45	12,417.81	109.70	364.00	-106.20	12.00	12.00	0.00
12,475.00	27.27	179.45	12,440.32	98.83	364.11	-95.33	12.00	12.00	0.00
12,500.00	30.27	179.45	12,462.23	86.80	364.22	-83.30	12.00	12.00	0.00
12,525.00	33.27	179.45	12,483.48	73.64	364.35	-70.14	12.00	12.00	0.00
12,550.00	36.27	179.45	12,504.02	59.39	364.48	-55.89	12.00	12.00	0.00
12,575.00	39.27	179.45	12,523.78	44.08	364.63	-40.57	12.00	12.00	0.00
12,600.00	42.27	179.45	12,542.71	27.75	364.78	-24.25	12.00	12.00	0.00
12,625.00	45.27	179.45	12,560.76	10.46	364.95	-6.96	12.00	12.00	0.00
Pitch Fed 19-30 457H - FTP									
12,650.00	48.27	179.45	12,577.88	-7.75	365.12	11.25	12.00	12.00	0.00
12,675.00	51.27	179.45	12,594.02	-26.83	365.30	30.34	12.00	12.00	0.00
12,700.00	54.27	179.45	12,609.15	-46.74	365.49	50.24	12.00	12.00	0.00
12,725.00	57.27	179.45	12,623.21	-67.40	365.69	70.91	12.00	12.00	0.00
12,750.00	60.27	179.45	12,636.17	-88.78	365.90	92.28	12.00	12.00	0.00
12,775.00	63.27	179.45	12,647.99	-110.80	366.11	114.31	12.00	12.00	0.00
12,800.00	66.27	179.45	12,658.65	-133.41	366.32	136.92	12.00	12.00	0.00
12,825.00	69.27	179.45	12,668.11	-156.55	366.54	160.06	12.00	12.00	0.00
12,850.00	72.27	179.45	12,676.34	-180.15	366.77	183.66	12.00	12.00	0.00
12,875.00	75.27	179.45	12,683.32	-204.15	366.99	207.66	12.00	12.00	0.00
12,900.00	78.27	179.45	12,689.04	-228.48	367.23	232.00	12.00	12.00	0.00
12,925.00	81.27	179.45	12,693.48	-253.08	367.46	256.60	12.00	12.00	0.00



Nabors Drilling Solutions

Planning Report



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Company: COG Operating LLC

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Well 19-30 457H
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Project: Lea Co., NM

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Site: Pitchblende Federal

North Reference:

Grid

Well: 19-30 457H

Survey Calculation Method:

Minimum Curvature

Wellbore: Wellbore #1

Design: Design #1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,950.00	84.27	179.45	12,696.63	-277.88	367.70	281.40	12.00	12.00	0.00
12,975.00	87.27	179.45	12,698.47	-302.81	367.94	306.33	12.00	12.00	0.00
12,993.82	89.53	179.45	12,699.00	-321.62	368.11	325.14	12.00	12.00	0.00
13,000.00	89.53	179.45	12,699.05	-327.80	368.17	331.32	0.00	0.00	0.00
13,100.00	89.53	179.45	12,699.87	-427.79	369.13	431.31	0.00	0.00	0.00
13,200.00	89.53	179.45	12,700.69	-527.78	370.08	531.31	0.00	0.00	0.00
13,300.00	89.53	179.45	12,701.52	-627.77	371.03	631.31	0.00	0.00	0.00
13,400.00	89.53	179.45	12,702.34	-727.77	371.99	731.30	0.00	0.00	0.00
13,500.00	89.53	179.45	12,703.16	-827.76	372.94	831.30	0.00	0.00	0.00
13,600.00	89.53	179.45	12,703.98	-927.75	373.89	931.30	0.00	0.00	0.00
13,700.00	89.53	179.45	12,704.80	-1,027.74	374.85	1,031.29	0.00	0.00	0.00
13,800.00	89.53	179.45	12,705.63	-1,127.73	375.80	1,131.29	0.00	0.00	0.00
13,900.00	89.53	179.45	12,706.45	-1,227.73	376.75	1,231.29	0.00	0.00	0.00
14,000.00	89.53	179.45	12,707.27	-1,327.72	377.71	1,331.28	0.00	0.00	0.00
14,100.00	89.53	179.45	12,708.09	-1,427.71	378.66	1,431.28	0.00	0.00	0.00
14,200.00	89.53	179.45	12,708.91	-1,527.70	379.61	1,531.28	0.00	0.00	0.00
14,300.00	89.53	179.45	12,709.73	-1,627.69	380.57	1,631.27	0.00	0.00	0.00
14,400.00	89.53	179.45	12,710.56	-1,727.69	381.52	1,731.27	0.00	0.00	0.00
14,500.00	89.53	179.45	12,711.38	-1,827.68	382.47	1,831.27	0.00	0.00	0.00
14,600.00	89.53	179.45	12,712.20	-1,927.67	383.43	1,931.26	0.00	0.00	0.00
14,700.00	89.53	179.45	12,713.02	-2,027.66	384.38	2,031.26	0.00	0.00	0.00
14,800.00	89.53	179.45	12,713.84	-2,127.65	385.33	2,131.26	0.00	0.00	0.00
14,900.00	89.53	179.45	12,714.67	-2,227.65	386.28	2,231.25	0.00	0.00	0.00
15,000.00	89.53	179.45	12,715.49	-2,327.64	387.24	2,331.25	0.00	0.00	0.00
15,100.00	89.53	179.45	12,716.31	-2,427.63	388.19	2,431.25	0.00	0.00	0.00
15,200.00	89.53	179.45	12,717.13	-2,527.62	389.14	2,531.24	0.00	0.00	0.00
15,300.00	89.53	179.45	12,717.95	-2,627.62	390.10	2,631.24	0.00	0.00	0.00
15,400.00	89.53	179.45	12,718.78	-2,727.61	391.05	2,731.24	0.00	0.00	0.00
15,500.00	89.53	179.45	12,719.60	-2,827.60	392.00	2,831.23	0.00	0.00	0.00
15,600.00	89.53	179.45	12,720.42	-2,927.59	392.96	2,931.23	0.00	0.00	0.00
15,700.00	89.53	179.45	12,721.24	-3,027.58	393.91	3,031.23	0.00	0.00	0.00
15,800.00	89.53	179.45	12,722.06	-3,127.58	394.86	3,131.22	0.00	0.00	0.00
15,900.00	89.53	179.45	12,722.89	-3,227.57	395.82	3,231.22	0.00	0.00	0.00
16,000.00	89.53	179.45	12,723.71	-3,327.56	396.77	3,331.22	0.00	0.00	0.00
16,100.00	89.53	179.45	12,724.53	-3,427.55	397.72	3,431.21	0.00	0.00	0.00
16,200.00	89.53	179.45	12,725.35	-3,527.54	398.68	3,531.21	0.00	0.00	0.00
16,300.00	89.53	179.45	12,726.17	-3,627.54	399.63	3,631.21	0.00	0.00	0.00
16,400.00	89.53	179.45	12,726.99	-3,727.53	400.58	3,731.20	0.00	0.00	0.00
16,500.00	89.53	179.45	12,727.82	-3,827.52	401.54	3,831.20	0.00	0.00	0.00
16,600.00	89.53	179.45	12,728.64	-3,927.51	402.49	3,931.19	0.00	0.00	0.00
16,700.00	89.53	179.45	12,729.46	-4,027.50	403.44	4,031.19	0.00	0.00	0.00
16,800.00	89.53	179.45	12,730.28	-4,127.50	404.40	4,131.19	0.00	0.00	0.00
16,900.00	89.53	179.45	12,731.10	-4,227.49	405.35	4,231.18	0.00	0.00	0.00
17,000.00	89.53	179.45	12,731.93	-4,327.48	406.30	4,331.18	0.00	0.00	0.00
17,100.00	89.53	179.45	12,732.75	-4,427.47	407.26	4,431.18	0.00	0.00	0.00
17,200.00	89.53	179.45	12,733.57	-4,527.46	408.21	4,531.17	0.00	0.00	0.00
17,300.00	89.53	179.45	12,734.39	-4,627.46	409.16	4,631.17	0.00	0.00	0.00
17,400.00	89.53	179.45	12,735.21	-4,727.45	410.11	4,731.17	0.00	0.00	0.00
17,500.00	89.53	179.45	12,736.04	-4,827.44	411.07	4,831.16	0.00	0.00	0.00
17,600.00	89.53	179.45	12,736.86	-4,927.43	412.02	4,931.16	0.00	0.00	0.00
17,700.00	89.53	179.45	12,737.68	-5,027.43	412.97	5,031.16	0.00	0.00	0.00
17,800.00	89.53	179.45	12,738.50	-5,127.42	413.93	5,131.15	0.00	0.00	0.00



Nabors Drilling Solutions

Planning Report



Database: RyanUSA_32Bit
Company: COG Operating LLC

Local Co-ordinate Reference:
TVD Reference:

Well 19-30 457H
RT=27(Nabors 893) @ 3364.70ft (Nabors 893)

Project: Lea Co., NM

MD Reference:

RT=27(Nabors 893) @ 3364.70ft (Nabors 893)

Site: Pitchblende Federal

North Reference:

Grid

Well: 19-30 457H

Survey Calculation Method:

Minimum Curvature

Wellbore: Wellbore #1

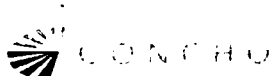
Design: Design #1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
17,900.00	89.53	179.45	12,739.32	-5,227.41	414.88	5,231.15	0.00	0.00	0.00
18,000.00	89.53	179.45	12,740.15	-5,327.40	415.83	5,331.15	0.00	0.00	0.00
18,100.00	89.53	179.45	12,740.97	-5,427.39	416.79	5,431.14	0.00	0.00	0.00
18,200.00	89.53	179.45	12,741.79	-5,527.39	417.74	5,531.14	0.00	0.00	0.00
18,300.00	89.53	179.45	12,742.61	-5,627.38	418.69	5,631.14	0.00	0.00	0.00
18,400.00	89.53	179.45	12,743.43	-5,727.37	419.65	5,731.13	0.00	0.00	0.00
18,500.00	89.53	179.45	12,744.26	-5,827.36	420.60	5,831.13	0.00	0.00	0.00
18,600.00	89.53	179.45	12,745.08	-5,927.35	421.55	5,931.13	0.00	0.00	0.00
18,700.00	89.53	179.45	12,745.90	-6,027.35	422.51	6,031.12	0.00	0.00	0.00
18,800.00	89.53	179.45	12,746.72	-6,127.34	423.46	6,131.12	0.00	0.00	0.00
18,900.00	89.53	179.45	12,747.54	-6,227.33	424.41	6,231.12	0.00	0.00	0.00
19,000.00	89.53	179.45	12,748.36	-6,327.32	425.37	6,331.11	0.00	0.00	0.00
19,100.00	89.53	179.45	12,749.19	-6,427.31	426.32	6,431.11	0.00	0.00	0.00
19,200.00	89.53	179.45	12,750.01	-6,527.31	427.27	6,531.11	0.00	0.00	0.00
19,300.00	89.53	179.45	12,750.83	-6,627.30	428.23	6,631.10	0.00	0.00	0.00
19,400.00	89.53	179.45	12,751.65	-6,727.29	429.18	6,731.10	0.00	0.00	0.00
19,500.00	89.53	179.45	12,752.47	-6,827.28	430.13	6,831.10	0.00	0.00	0.00
19,600.00	89.53	179.45	12,753.30	-6,927.27	431.09	6,931.09	0.00	0.00	0.00
19,700.00	89.53	179.45	12,754.12	-7,027.27	432.04	7,031.09	0.00	0.00	0.00
19,800.00	89.53	179.45	12,754.94	-7,127.26	432.99	7,131.09	0.00	0.00	0.00
19,900.00	89.53	179.45	12,755.76	-7,227.25	433.95	7,231.08	0.00	0.00	0.00
20,000.00	89.53	179.45	12,756.58	-7,327.24	434.90	7,331.08	0.00	0.00	0.00
20,100.00	89.53	179.45	12,757.41	-7,427.24	435.85	7,431.08	0.00	0.00	0.00
20,200.00	89.53	179.45	12,758.23	-7,527.23	436.80	7,531.07	0.00	0.00	0.00
Pitch Fed 19-30 457H - LTP									
20,294.00	89.53	179.45	12,759.00	-7,621.22	437.70	7,625.07	0.00	0.00	0.00
Pitch Fed 19-30 457H - BHL									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Pitch Fed 19-30 457H - I	0.00	179.45	12,699.00	151.90	363.60	409,626.300	788,091.600	32° 7' 21.933081 N	103° 24' 9.956212 W
- plan misses target center by 197.78ft at 12625.00ft MD (12560.76 TVD, 10.46 N, 364.95 E)									
- Rectangle (sides W100.00 H7,774.07 D0.00)									
Pitch Fed 19-30 457H - I	0.00	0.00	12,758.00	-7,571.22	437.20	401,903.200	788,165.200	32° 6' 5.504782 N	103° 24' 9.875820 W
- plan misses target center by 43.99ft at 20200.00ft MD (12758.23 TVD, -7527.23 N, 436.80 E)									
- Point									
Pitch Fed 19-30 457H - I	0.00	0.00	12,759.00	-7,621.22	437.70	401,853.200	788,165.700	32° 6' 5.009975 N	103° 24' 9.875025 W
- plan hits target center									
- Point									



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Site: Pitchblende Federal

North Reference:

Grid

Well: 19-30 457H

Survey Calculation Method:

Minimum Curvature

Wellbore: Wellbore #1

Design: Design #1

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
959.00	959.00	Rustler			
1,466.00	1,466.00	TOS			
5,198.17	5,172.00	BOS			
5,492.20	5,466.00	LMAR (Top Delaware)			
5,520.20	5,494.00	BLCN			
6,473.20	6,447.00	CYCN			
8,016.20	7,990.00	BYCN			
9,310.20	9,284.00	Bone Sprg (BSGL)			
10,505.20	10,479.00	FBSG_sand			
11,035.20	11,009.00	SBSG_sand			
11,505.20	11,479.00	SBSG_sand_Base			
12,143.98	12,117.78	TBSG_sand		0.47	179.45
12,530.97	12,488.45	WFMP		0.47	179.45

DISTRICT I
1825 N. FRENCH DR., HOBBES, NM 88240
Phone: (505) 398-8151 Fax: (505) 398-0720

DISTRICT II
511 E. FIRST ST., ARTESIA, NM 88210
Phone: (505) 334-8178 Fax: (505) 334-8170

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-8178 Fax: (505) 334-8170

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 478-3480 Fax: (505) 478-3482

State 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 30-025-45662	Pool Code 96340	Pool Name Fairview Mills; Bone Spring
Property Code	Property Name PITCHBLEND FEDERAL 19-30	Well Number 457H
GRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3337.7'

Surface Location

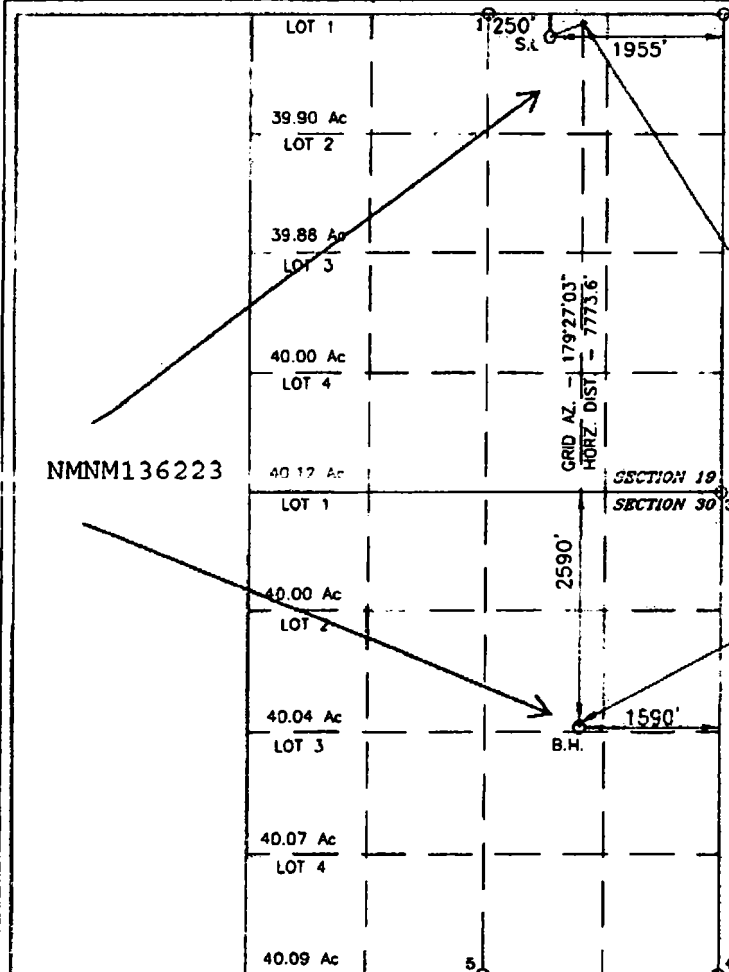
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	19	25-S	35-E		250	NORTH	1955	EAST	LEA

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
G	30	25-S	35-E		2590	NORTH	1590	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
240			

**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**

	NAD 83 NME SURFACE LOCATION Y=409532.4 N X=828914.7 E LAT.=32.122476° N LONG.=103.404410° W FIP 100' FNL & 1590' FEL Y=409684.3 N X=829278.2 E LAT.=32.122885° N LONG.=103.403232° W GRID AZ. TO FIP 67°19'21" POINT LEGEND <table border="1"><tr><td>1</td><td>Y=408778.8 N X=828228.8 E</td></tr><tr><td>2</td><td>Y=408782.8 N X=830887.3 E</td></tr><tr><td>3</td><td>Y=404513.1 N X=830818.0 E</td></tr><tr><td>4</td><td>Y=398234.4 N X=830968.3 E</td></tr><tr><td>5</td><td>Y=399219.8 N X=828328.2 E</td></tr></table> LTP 2540' FNL & 1590' FEL Y=401961.1 N X=829352.3 E LAT.=32.101655° N LONG.=103.403208° W NAD 83 NME PROPOSED BOTTOM HOLE LOCATION Y=401911.1 N X=829352.8 E LAT.=32.101518° N LONG.=103.403208° W	1	Y=408778.8 N X=828228.8 E	2	Y=408782.8 N X=830887.3 E	3	Y=404513.1 N X=830818.0 E	4	Y=398234.4 N X=830968.3 E	5	Y=399219.8 N X=828328.2 E	OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unless mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Mayte Reyes</i> Signature Date Mayte Reyes Printed Name mreyes1@concho.com E-mail Address SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. DECEMBER 5, 2019 Date of Survey Signature & Seal of Professional Surveyor  Chad L. Harcrow 12/20/19 Certificate No. CHAD HARCROW 17777 W.O. # 19-2289 DRAWN BY: AH
	1	Y=408778.8 N X=828228.8 E										
2	Y=408782.8 N X=830887.3 E											
3	Y=404513.1 N X=830818.0 E											
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5	Y=399219.8 N X=828328.2 E											