

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTCarlsbad Field Office
OCD ArtesiaFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS OF OIL AND GAS OPERATIONS**
*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 reverse side.**

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM114969
2. Name of Operator COG OPERATING LLC		6. If Indian, Allottee or Tribe Name
Contact: DEBORA WILBOURN E-Mail: dwilbourn@concho.com		7. If Unit or CA/Agreement, Name and/or No.
3a. Address ONE CONCHO CENTER 600 W ILLINOIS AVENUE MIDLAND, TX 79701	3b. Phone No. (include area code) Ph: 575-748-6958	8. Well Name and No. BARN OWL FEDERAL 2H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 19 T26S R27E NWNE 0520FNL 1450FEL 32.035550 N Lat, 104.224861 W Lon		9. API Well No. 30-015-42472-00-X1
		10. Field and Pool, or Exploratory WELCH
		11. County or Parish, and State EDDY COUNTY, NM

12. CHECK 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	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original APD
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 shall 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 shall be filed once testing has been completed. Final Abandonment Notices shall 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 LLC respectfully requests the following changes:

Kick off and drill 8-3/4" curve & lateral to 14,041' MD/8716' TVD (see attached directional plan).

Run 5-1/2" 17# P-110 csg to TD

Cmt in 1 stage with:
Lead: 1100 sx 50:50:10 H + Salt + Gilsonite + CF + CFR-3 @ 11.9 ppg/2.5 yield
Tail: 1650 sx 50:50:2 H + Salt + GasStop + CFR-3 @ 14.4 ppg/1.25 yield
35% excess on OH

Designed to circulate cement to surface

Original corrs Apply

Accepted for record
NMOCD 8/11/2014NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 11 2014

RECEIVED

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #255881 verified by the BLM Well Information System For COG OPERATING LLC, sent to the Carlsbad Committed to AFMSS for processing by CHRISTOPHER WALLS on 08/07/2014 (14CRW0310SE)	
Name (Printed/Typed) SETH WILD	Title DRILLING ENGINEER
Signature (Electronic Submission)	Date 08/05/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____	Title _____	Date _____
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 _____		

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 or cause to be made any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

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



COG Operating LLC
 Well: Barn Owl Fed Well 2H
 Site: Barn Owl Fed
 Project: Eddy County, New Mexico
 Design: rev3
 Rig: Patriot 2

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	8208.54	0.00	0.00	8208.54	0.00	0.00	0.00	0.00	0.00	KOP Begin 12 deg./100' build
3	8250.21	5.00	343.00	8250.15	1.74	-0.53	12.00	343.00	1.78	
4	8955.71	89.66	343.00	8686.00	453.89	-138.77	12.00	0.00	464.11	Begin 2 deg./100' turn
5	9665.42	89.66	357.19	8690.21	1151.24	-260.51	2.00	90.03	1169.32	Begin 89.66° lateral
6	14041.81	89.66	357.19	8716.00	5522.30	-474.70	0.00	0.00	5542.67	PBHL/TD

Surface Location: RKB=3318.5+17 @ 3335.50usft (Patriot 2)
 US State Plane 1927 (Exact solution)
 New Mexico East 3001

Northing: 375965.70 Easting: 533617.30 Latitude: 32.033598 Longitude: -104.224849

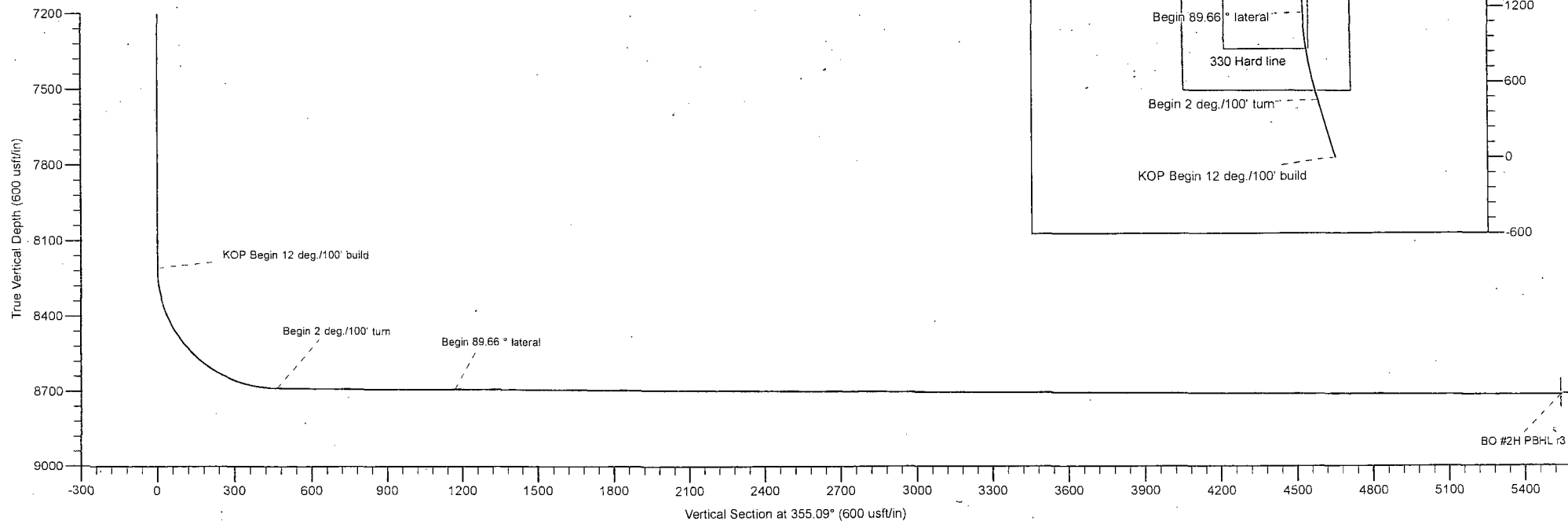
Total Correction (M → G) To convert a Magnetic Direction to a Grid Direction, Add 7.51°



Azimuths to Grid North
 True North: -0.06°
 Magnetic North: 7.51°

Magnetic Field
 Strength: 48181.6snT
 Dip Angle: 59.84°
 Date: 12/11/2013
 Model: IGRF2010

N-ONE





COG Operating LLC

Eddy County, New Mexico

Barn Owl Fed

Barn Owl Fed Well 2H

Original Hole

SHL: 520 FNL 1450 FEL

BHL: 330 FNL 1850 FEL

Plan: rev3

Standard_report

04 August, 2014

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well: Barn Owl Fed Well 2H
Project:	Eddy County New Mexico	TVD Reference:	RKB=3318.5+17 @ 3335.50usft (Patriot 2)
Site:	Barn Owl Fed	MD Reference:	RKB=3318.5+17 @ 3335.50usft (Patriot 2)
Well:	Barn Owl Fed Well 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev3	Database:	EDM 5000.1 Single User Db

Project: Eddy County, New Mexico			
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:		Barn Owl Fed				
Site Position:		Northing:	376,675.80	usft	Latitude:	32.035550
From:	Map	Easting:	533,613.00	usft	Longitude:	-104.224861
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.06 °

Well:		Barn Owl Fed Well 2H				
Well Position	+N/-S	0.00 usft	Northing:	375,965.70 usft	Latitude:	32.033598
	+E/-W	0.00 usft	Easting:	533,617.30 usft	Longitude:	-104.224849
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,318.50 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/11/2013	7.56	59.84	48,182

Design:	rev3			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	355.09



Standard_report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Barn Owl Fed Well 2H
Project:	Eddy County New Mexico	TVD Reference:	RKB=3318.5+17 @ 3335.50usft (Patriot 2)
Site:	Barn Owl Fed	MD Reference:	RKB=3318.5+17 @ 3335.50usft (Patriot 2)
Well:	Barn Owl Fed Well 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev3	Database:	EDM 5000.1 Single User Db

Survey Tool Program		Date: 8/4/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	6,000.00	rev3 (Original Hole)	NS-GYRO-MS	North sensing gyrocompassing m/s
8,200.00	14,041.65	rev3 (Original Hole)	MWD	MWD - Standard

Planned Survey										
MD (usft)	Inc (%)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V_Sec (usft)	Northing (usft)	Easting (usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	



Standard_report

Company:	COC Operating LLC	Local Co-ordinate Reference:	Well: Barn Owl Fed Well 2H
Project:	Eddy County New Mexico	TVD Reference:	RKB=3318.5+17 @ 3335.50usft (Patriot 2)
Site:	Barn Owl Fed	MD Reference:	RKB=3318.5+17 @ 3335.50usft (Patriot 2)
Well:	Barn Owl Fed Well 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev3	Database:	EDM15000.1 Single User Db

Planned Survey											
MD (usft)	Inc (%)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)		
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		



Standard_report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Barn Owl Fed Well 2H
Project:	Eddy County, New Mexico	TVD Reference:	RKB=3318.5+17 @ 3335.50usft (Patrol-2)
Site:	Barn Owl Fed	MD Reference:	RKB=3318.5+17 @ 3335.50usft (Patrol-2)
Well:	Barn Owl Fed Well 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev3	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	D Leg (°/100usft)	V Sec (usft)	Northing (usft)	Easting (usft)		
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30		



Standard_report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well: Barn Owl Fed Well 2H
Project:	Eddy County, New Mexico	TVD Reference:	RKB=3318.5+17 @ 3335.50usft (Patriot 2)
Site:	Barn Owl Fed	MD Reference:	RKB=3318.5+17 @ 3335.50usft (Patriot 2)
Well:	Barn Owl Fed Well 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev3	Database:	EDM 5000.1 Single User Db

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (%/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
8,208.54	0.00	0.00	8,208.54	0.00	0.00	0.00	0.00	375,965.70	533,617.30	
KOP Begin 12 deg/100 build										
8,250.21	5.00	343.00	8,250.15	1.74	-0.53	12.00	1.78	375,967.44	533,616.77	
8,300.00	10.98	343.00	8,299.44	8.35	-2.55	12.00	8.54	375,974.05	533,614.75	
8,400.00	22.98	343.00	8,394.91	36.22	-11.07	12.00	37.04	376,001.92	533,606.23	
8,500.00	34.98	343.00	8,482.23	82.46	-25.21	12.00	84.32	376,048.16	533,592.09	
8,600.00	46.98	343.00	8,557.59	145.06	-44.35	12.00	148.32	376,110.76	533,572.95	
8,700.00	58.98	343.00	8,617.70	221.27	-67.65	12.00	226.25	376,186.97	533,549.65	
8,800.00	70.98	343.00	8,659.92	307.76	-94.09	12.00	314.69	376,273.46	533,523.21	
8,900.00	82.98	343.00	8,682.42	400.76	-122.52	12.00	409.78	376,366.46	533,494.78	
8,955.71	89.66	343.00	8,686.00	453.90	-138.77	12.00	464.11	376,419.60	533,478.53	
Begin 2 deg/100 turn										
9,000.00	89.66	343.89	8,686.26	496.35	-151.39	2.00	507.49	376,462.05	533,465.91	
9,100.00	89.66	345.89	8,686.85	592.88	-177.46	2.00	605.90	376,558.58	533,439.84	
9,200.00	89.66	347.89	8,687.45	690.27	-200.15	2.00	704.87	376,655.97	533,417.15	
9,300.00	89.66	349.89	8,688.05	788.39	-219.43	2.00	804.28	376,754.09	533,397.87	
9,400.00	89.66	351.89	8,688.64	887.12	-235.26	2.00	904.01	376,852.82	533,382.04	
9,500.00	89.66	353.89	8,689.24	986.34	-247.65	2.00	1,003.93	376,952.04	533,369.65	
9,600.00	89.66	355.89	8,689.83	1,085.94	-256.56	2.00	1,103.92	377,051.64	533,360.74	



Standard_report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well: Barn Owl Fed Well 2H
Project:	Eddy County, New Mexico	TVD Reference:	RKB=3318.5+17 @ 3335.50usft (Patriot 2)
Site:	Barn Owl Fed	MD Reference:	RKB=3318.5+17 @ 3335.50usft (Patriot 2)
Well:	Barn Owl Fed Well 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev3	Database:	EDM 5000.1 Single User Db

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	D Leg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
9,665.42	89.66	357.19	8,690.21	1,151.23	-260.51	2.00	1,169.31	377,116.93	533,356.79	
Begin 89.66° lateral										
9,700.00	89.66	357.19	8,690.42	1,185.77	-262.20	0.00	1,203.87	377,151.47	533,355.10	
9,800.00	89.66	357.19	8,691.01	1,285.65	-267.09	0.00	1,303.80	377,251.35	533,350.21	
9,900.00	89.66	357.19	8,691.60	1,385.53	-271.99	0.00	1,403.73	377,351.23	533,345.31	
10,000.00	89.66	357.19	8,692.19	1,485.41	-276.88	0.00	1,503.66	377,451.11	533,340.42	
10,100.00	89.66	357.19	8,692.77	1,585.29	-281.78	0.00	1,603.59	377,550.99	533,335.52	
10,200.00	89.66	357.19	8,693.36	1,685.16	-286.67	0.00	1,703.52	377,650.86	533,330.63	
10,300.00	89.66	357.19	8,693.95	1,785.04	-291.57	0.00	1,803.45	377,750.74	533,325.73	
10,400.00	89.66	357.19	8,694.54	1,884.92	-296.46	0.00	1,903.38	377,850.62	533,320.84	
10,500.00	89.66	357.19	8,695.13	1,984.80	-301.35	0.00	2,003.32	377,950.50	533,315.95	
10,600.00	89.66	357.19	8,695.72	2,084.68	-306.25	0.00	2,103.25	378,050.38	533,311.05	
10,700.00	89.66	357.19	8,696.31	2,184.56	-311.14	0.00	2,203.18	378,150.26	533,306.16	
10,800.00	89.66	357.19	8,696.90	2,284.43	-316.04	0.00	2,303.11	378,250.13	533,301.26	
10,900.00	89.66	357.19	8,697.49	2,384.31	-320.93	0.00	2,403.04	378,350.01	533,296.37	
11,000.00	89.66	357.19	8,698.08	2,484.19	-325.83	0.00	2,502.97	378,449.89	533,291.47	
11,100.00	89.66	357.19	8,698.67	2,584.07	-330.72	0.00	2,602.90	378,549.77	533,286.58	
11,200.00	89.66	357.19	8,699.26	2,683.95	-335.61	0.00	2,702.83	378,649.65	533,281.69	
11,300.00	89.66	357.19	8,699.84	2,783.83	-340.51	0.00	2,802.76	378,749.53	533,276.79	
11,400.00	89.66	357.19	8,700.43	2,883.70	-345.40	0.00	2,902.69	378,849.40	533,271.90	
11,500.00	89.66	357.19	8,701.02	2,983.58	-350.30	0.00	3,002.62	378,949.28	533,267.00	
11,600.00	89.66	357.19	8,701.61	3,083.46	-355.19	0.00	3,102.55	379,049.16	533,262.11	
11,700.00	89.66	357.19	8,702.20	3,183.34	-360.09	0.00	3,202.48	379,149.04	533,257.21	
11,800.00	89.66	357.19	8,702.79	3,283.22	-364.98	0.00	3,302.41	379,248.92	533,252.32	
11,900.00	89.66	357.19	8,703.38	3,383.10	-369.87	0.00	3,402.34	379,348.80	533,247.43	
12,000.00	89.66	357.19	8,703.97	3,482.98	-374.77	0.00	3,502.27	379,448.68	533,242.53	
12,100.00	89.66	357.19	8,704.56	3,582.85	-379.66	0.00	3,602.21	379,548.55	533,237.64	

Company:	COC Operating LLC	Local Co-ordinate Reference:	Well: Barn Owl Fed Well 2H
Project:	Eddy County, New Mexico	TVD Reference:	RKB=33,18.5+17 @ 3335.50usft (Patriot 2)
Site:	Barn Owl Fed	MD Reference:	RKB=33,18.5+17 @ 3335.50usft (Patriot 2)
Well:	Barn Owl Fed Well 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev3	Database:	EDM 5000-1 Single User Db

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
12,200.00	89.66	357.19	8,705.15	3,682.73	-384.56	0.00	3,702.14	379,648.43	533,232.74	
12,300.00	89.66	357.19	8,705.74	3,782.61	-389.45	0.00	3,802.07	379,748.31	533,227.85	
12,400.00	89.66	357.19	8,706.33	3,882.49	-394.35	0.00	3,902.00	379,848.19	533,222.95	
12,500.00	89.66	357.19	8,706.92	3,982.37	-399.24	0.00	4,001.93	379,948.07	533,218.06	
12,600.00	89.66	357.19	8,707.50	4,082.25	-404.13	0.00	4,101.86	380,047.95	533,213.17	
12,700.00	89.66	357.19	8,708.09	4,182.12	-409.03	0.00	4,201.79	380,147.82	533,208.27	
12,800.00	89.66	357.19	8,708.68	4,282.00	-413.92	0.00	4,301.72	380,247.70	533,203.38	
12,900.00	89.66	357.19	8,709.27	4,381.88	-418.82	0.00	4,401.65	380,347.58	533,198.48	
13,000.00	89.66	357.19	8,709.86	4,481.76	-423.71	0.00	4,501.58	380,447.46	533,193.59	
13,100.00	89.66	357.19	8,710.45	4,581.64	-428.61	0.00	4,601.51	380,547.34	533,188.69	
13,200.00	89.66	357.19	8,711.04	4,681.52	-433.50	0.00	4,701.44	380,647.22	533,183.80	
13,300.00	89.66	357.19	8,711.63	4,781.39	-438.39	0.00	4,801.37	380,747.09	533,178.91	
13,400.00	89.66	357.19	8,712.22	4,881.27	-443.29	0.00	4,901.30	380,846.97	533,174.01	
13,500.00	89.66	357.19	8,712.81	4,981.15	-448.18	0.00	5,001.23	380,946.85	533,169.12	
13,600.00	89.66	357.19	8,713.40	5,081.03	-453.08	0.00	5,101.16	381,046.73	533,164.22	
13,700.00	89.66	357.19	8,713.99	5,180.91	-457.97	0.00	5,201.10	381,146.61	533,159.33	
13,800.00	89.66	357.19	8,714.58	5,280.79	-462.87	0.00	5,301.03	381,246.49	533,154.43	
13,900.00	89.66	357.19	8,715.16	5,380.67	-467.76	0.00	5,400.96	381,346.37	533,149.54	
14,000.00	89.66	357.19	8,715.75	5,480.54	-472.65	0.00	5,500.89	381,446.24	533,144.65	
14,041.81	89.66	357.19	8,716.00	5,522.30	-474.70	0.00	5,542.67	381,488.00	533,142.60	



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well: Barn Owl Fed Well 2H
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Site:	Barn Owl Fed	MD Reference:	RKB=3318.5+17 @ 3335.50usft (Patriot 2)
Well:	Barn Owl Fed Well 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	rev3	Database:	EDM 5000.1 Single User Db

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,208.54	8,208.54	0.00	0.00	KOP Begin 12 deg./100' build
8,955.71	8,686.00	453.90	-138.77	Begin 2 deg./100' turn
9,665.42	8,690.21	1,151.23	-260.51	Begin 89.66 ° lateral
14,041.81	8,716.00	5,522.30	-474.70	PBHL/TD

Checked By: _____ Approved By: _____ Date: _____