Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

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 reverse side.

5. Lease Serial No.
NMNM100316

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
TAMAGO 24 FED 2H

2. Name of Operator
COG OPERATING LLC
Contact: MELANIE PARKER
E-Mail: mparker@concho.com

9. API Well No.
30-015-38955-00-X1

3a. Address
ONE CONCHO CENTER 600 W ILLINOIS AVENUE
MIDLAND, TX 79701

3b. Phone No. (include area code)
Ph: 575-748-6952

10. Field and Pool, or Exploratory
WASHINGTON RANCH

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 24 T26S R24E SENE Lot H 1650FNL 330FEL

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 to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ 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 recomplete 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 recompletion 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 permission to make changes to the approved APD as follows:
Deepen the pilot hole depth from 7000 ft to 8675 ft.
7 7/8 inch pilot hole will be plugged back with the following cement plugs:
5300-6300 ft - 475 sx Class C, 17.2 ppg; 0.98 cuft/sk yield, 4 gal/sk
7675-8675 ft - 400 sx Class H, 16.8 ppg; 0.98 cuft/sk yield, 6 gal/sk
Change TVD from 5000 ft to 6415 ft
Change MD from 9455 ft to 11026 ft
Surface and intermediate hole, casing and cement - as approved in APD
Production Casing:
8 3/4 hole - 5 1/2 inch, 17 lb, P110 LTC csg 0-6927 ft, SF: 1.90 Collapse, 1.33 Burst, 2.37 Tension

7 7/8 hole - 5 1/2 inch, 17 lb, P110 LTC csg 6927-11026 ft, SF: 1.9 Collapse, 1.33 Burst, 6.39

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Accepted for record
NMOCD

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

Electronic Submission #276022 verified by the BLM Well Information System
For COG OPERATING LLC, sent to the Carlsbad
Committed to AFMSS for processing by JENNIFER MASON on 11/17/2014 (15JAM0090SE)

Name *(Printed/Typed)* MELANIE PARKER — Title REGULATORY ANALYST

Signature (Electronic Submission) — Date 11/04/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
NOV 17 2014
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

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 to any department or agency of the United States 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 ****

Additional data for EC transaction #276022 that would not fit on the form

32. Additional remarks, continued

Tension
Cement:
Lead - 925 sx 50:50:10 Class "H" w/8 lb salt + 5 lb Kolseal + 0.5% Halad 322 + 0.25 pps D-AIR 5000 + 0.3% HR-601; 15.0 ppg; 2.60 cuft/sk; 8 gal/sk; 22 hrs comp. strength
Tail - 1750 sx 50:50:2 Class "H" w/1% Salt + 0.4% GasStop + 0.3% CFR-2 + 0.1% HR-601; 14.4 ppg; 1.25 cuft/sk; 5.7 gal/sk; 8 hrs comp. strength
Calculated 35% excess

CONCHO

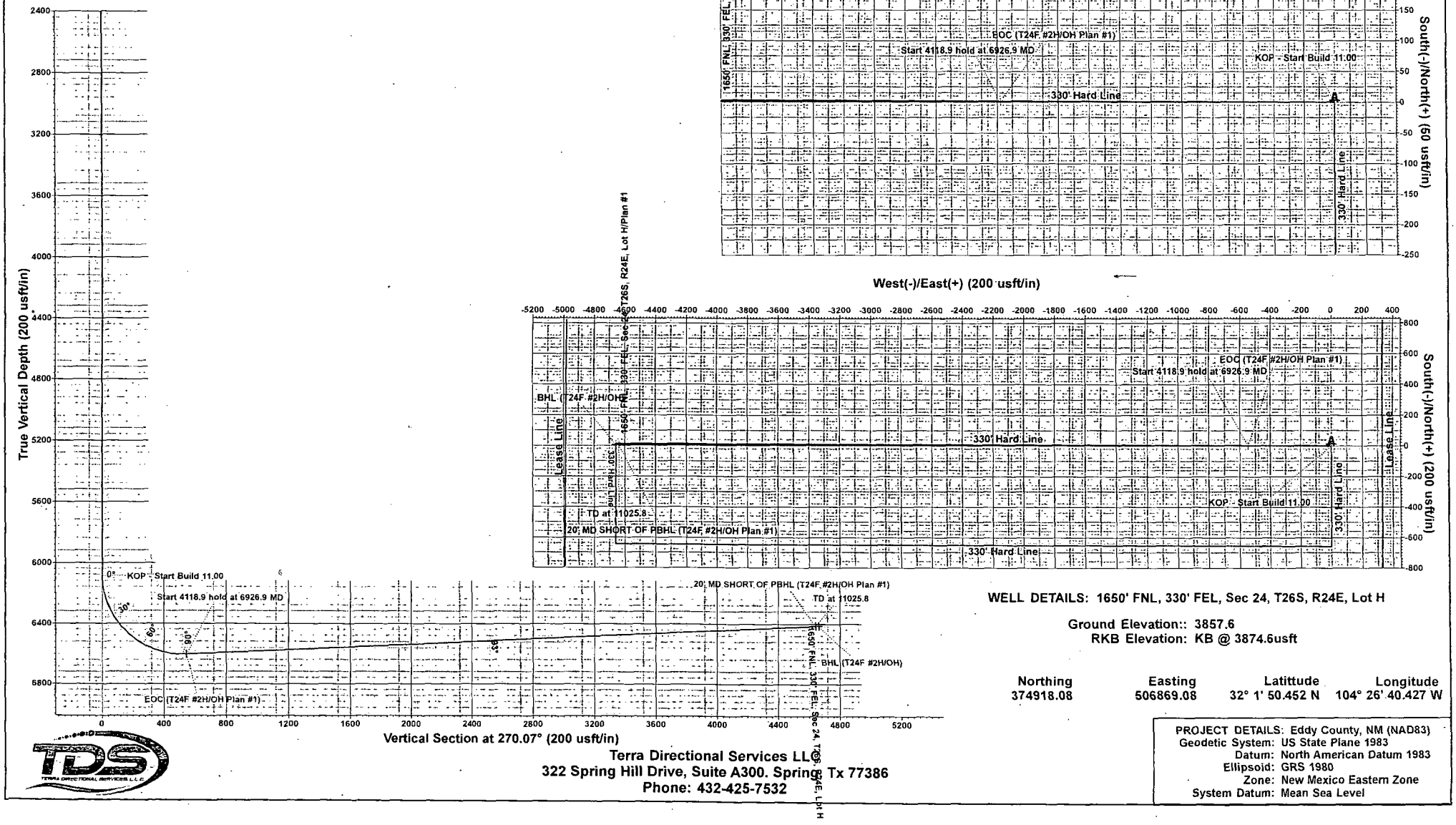
Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	6084.7	0.00	0.00	6084.7	0.0	0.0	0.00	0.00	0.0	
3	6926.9	92.64	270.07	6605.0	0.6	-544.9	11.00	270.07	544.9	
4	11025.8	92.64	270.07	6415.9	5.5	-4639.4	0.00	0.00	4639.4	20' MD SHORT OF PBHL

Azimuths to Grid North
True North: 0.06°
Magnetic North: 7.61°

Magnetic Field
Strength: 48062.8snT
Dip Angle: 59.78°
Date: 11/3/2014
Model: IGRF2010

COG Operating LLC
Project: Eddy County, NM (NAD83)
Site: Tamago 24 Federal #2H
Well: 1650' FNL, 330' FEL, Sec 24, T26S, R24E, Lot H
Wellbore: 1650' FNL, 330' FWL, Sec 24, T26S, R24E, Lot E
Plan: Plan #1 (1650' FNL, 330' FEL, Sec 24, T26S, R24E, Lot H/1650' FNL, 330' FWL, Sec 24, T26S, R24E, Lot E)



WELL DETAILS: 1650' FNL, 330' FEL, Sec 24, T26S, R24E, Lot H

Ground Elevation:: 3857.6
RKB Elevation: KB @ 3874.6usft

Northing	Easting	Latittude	Longitude
374918.08	506869.08	32° 1' 50.452 N	104° 26' 40.427 W

PROJECT DETAILS: Eddy County, NM (NAD83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

Terra Directional Services LLC
322 Spring Hill Drive, Suite A300. Spring Tx 77386
Phone: 432-425-7532

CONCHO

COG Operating LLC

Eddy County, NM (NAD83)
Tamago 24 Federal #2H
SL: 1650' FNL, 330' FEL, Sec 24, T26S, R24E, Lot H
EOC: 6926.9' MD, 6605.0' TVD, 0.6' N/S, -544.9' E/W, 544.9' VS
BHL: 1650' FNL, 330' FWL, Sec 24, T26S, R24E, Lot E

Plan: Plan #1

Standard Planning Report

03 November, 2014

TDS
TERRA DIRECTIONAL SERVICES, L.L.C.

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Tamago 24 Federal #2H
Company:	COG Operating LLC	**TVD Reference:**	KB @ 3874.6usft
Project:	Eddy County, NM (NAD83)	**MD Reference:**	KB @ 3874.6usft
Site:	Tamago 24 Federal #2H	**North Reference:**	Grid
Well:	1650' FNL, 330' FEL, Sec 24, T26S, R24E, Lot H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	1650' FNL, 330' FWL, Sec 24, T26S, R24E, Lot E		
Design:	Plan #1		

Project Eddy County, NM (NAD83)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Tamago 24 Federal #2H

Site Position:		**Northing:**	374,918.08 usft	**Latitude:**	32° 1' 50.452 N
From:	Map	**Easting:**	506,869.08 usft	**Longitude:**	104° 26' 40.427 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.06 °

Well 1650' FNL, 330' FEL, Sec 24, T26S, R24E, Lot H

Well Position	**+N/-S**	0.0 usft	**Northing:**	374,918.08 usft	**Latitude:**	32° 1' 50.452 N
	+E/-W	0.0 usft	**Easting:**	506,869.08 usft	**Longitude:**	104° 26' 40.427 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	3,857.6 usft

Wellbore 1650' FNL, 330' FWL, Sec 24, T26S, R24E, Lot E

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/3/2014	7.55	59.78	48,063

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	270.07

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
6,084.7	0.00	0.00	6,084.7	0.0	0.0	0.00	0.00	0.00	0.00	
6,926.9	92.64	270.07	6,605.0	0.6	-544.9	11.00	11.00	0.00	270.07	
11,025.8	92.64	270.07	6,415.9	5.5	-4,639.4	0.00	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Tamago 24 Federal #2H
Company:	COG Operating LLC	**TVD Reference:**	KB @ 3874.6usft
Project:	Eddy County, NM (NAD83)	**MD Reference:**	KB @ 3874.6usft
Site:	Tamago 24 Federal #2H	**North Reference:**	Grid
Well:	1650' FNL, 330' FEL, Sec 24, T26S, R24E, Lot H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	1650' FNL, 330' FWL, Sec 24, T26S, R24E, Lot E		
Design:	Plan #1		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00

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Wellbore:	1650' FNL, 330' FWL, Sec 24, T26S, R24E, Lot E		
Design:	Plan #1		

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)
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,084.7	0.00	0.00	6,084.7	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 11.00									
6,100.0	1.68	270.07	6,100.0	0.0	-0.2	0.2	11.00	11.00	0.00
6,150.0	7.18	270.07	6,149.8	0.0	-4.1	4.1	11.00	11.00	0.00
6,200.0	12.68	270.07	6,199.1	0.0	-12.7	12.7	11.00	11.00	0.00
6,250.0	18.18	270.07	6,247.2	0.0	-26.0	26.0	11.00	11.00	0.00
6,300.0	23.68	270.07	6,293.9	0.1	-43.9	43.9	11.00	11.00	0.00
6,350.0	29.18	270.07	6,338.7	0.1	-66.1	66.1	11.00	11.00	0.00
6,400.0	34.68	270.07	6,381.1	0.1	-92.6	92.6	11.00	11.00	0.00
6,450.0	40.18	270.07	6,420.8	0.1	-122.9	122.9	11.00	11.00	0.00
6,500.0	45.68	270.07	6,457.4	0.2	-157.0	157.0	11.00	11.00	0.00
6,550.0	51.18	270.07	6,490.5	0.2	-194.4	194.4	11.00	11.00	0.00
6,600.0	56.68	270.07	6,520.0	0.3	-234.8	234.8	11.00	11.00	0.00
6,650.0	62.18	270.07	6,545.4	0.3	-277.8	277.8	11.00	11.00	0.00
6,700.0	67.68	270.07	6,566.6	0.4	-323.1	323.1	11.00	11.00	0.00
6,750.0	73.18	270.07	6,583.3	0.4	-370.2	370.2	11.00	11.00	0.00
6,800.0	78.68	270.07	6,595.4	0.5	-418.7	418.7	11.00	11.00	0.00
6,850.0	84.18	270.07	6,602.9	0.6	-468.1	468.1	11.00	11.00	0.00
6,900.0	89.68	270.07	6,605.6	0.6	-518.0	518.0	11.00	11.00	0.00
6,926.9	92.64	270.07	6,605.0	0.6	-544.9	544.9	11.00	11.00	0.00
EOC - Start 4118.9 hold at 6926.9 MD									
7,000.0	92.64	270.07	6,601.6	0.7	-617.9	617.9	0.00	0.00	0.00
7,100.0	92.64	270.07	6,597.0	0.9	-717.8	717.8	0.00	0.00	0.00
7,200.0	92.64	270.07	6,592.4	1.0	-817.7	817.7	0.00	0.00	0.00
7,300.0	92.64	270.07	6,587.8	1.1	-917.6	917.6	0.00	0.00	0.00
7,400.0	92.64	270.07	6,583.2	1.2	-1,017.5	1,017.5	0.00	0.00	0.00
7,500.0	92.64	270.07	6,578.6	1.3	-1,117.4	1,117.4	0.00	0.00	0.00
7,600.0	92.64	270.07	6,574.0	1.4	-1,217.3	1,217.3	0.00	0.00	0.00
7,700.0	92.64	270.07	6,569.4	1.6	-1,317.2	1,317.2	0.00	0.00	0.00
7,800.0	92.64	270.07	6,564.7	1.7	-1,417.0	1,417.1	0.00	0.00	0.00
7,900.0	92.64	270.07	6,560.1	1.8	-1,516.9	1,516.9	0.00	0.00	0.00
8,000.0	92.64	270.07	6,555.5	1.9	-1,616.8	1,616.8	0.00	0.00	0.00
8,100.0	92.64	270.07	6,550.9	2.0	-1,716.7	1,716.7	0.00	0.00	0.00
8,200.0	92.64	270.07	6,546.3	2.2	-1,816.6	1,816.6	0.00	0.00	0.00
8,300.0	92.64	270.07	6,541.7	2.3	-1,916.5	1,916.5	0.00	0.00	0.00
8,400.0	92.64	270.07	6,537.1	2.4	-2,016.4	2,016.4	0.00	0.00	0.00
8,500.0	92.64	270.07	6,532.4	2.5	-2,116.3	2,116.3	0.00	0.00	0.00
8,600.0	92.64	270.07	6,527.8	2.6	-2,216.2	2,216.2	0.00	0.00	0.00
8,700.0	92.64	270.07	6,523.2	2.7	-2,316.1	2,316.1	0.00	0.00	0.00
8,800.0	92.64	270.07	6,518.6	2.9	-2,416.0	2,416.0	0.00	0.00	0.00
8,900.0	92.64	270.07	6,514.0	3.0	-2,515.9	2,515.9	0.00	0.00	0.00
9,000.0	92.64	270.07	6,509.4	3.1	-2,615.8	2,615.8	0.00	0.00	0.00
9,100.0	92.64	270.07	6,504.8	3.2	-2,715.7	2,715.7	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Tamago 24 Federal #2H
Company:	COG Operating LLC	**TVD Reference:**	KB @ 3874.6usft
Project:	Eddy County, NM (NAD83)	**MD Reference:**	KB @ 3874.6usft
Site:	Tamago 24 Federal #2H	**North Reference:**	Grid
Well:	1650' FNL, 330' FEL, Sec 24, T26S, R24E, Lot H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	1650' FNL, 330' FWL, Sec 24, T26S, R24E, Lot E		
Design:	Plan #1		

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)
9,200.0	92.64	270.07	6,500.2	3.3	-2,815.6	2,815.6	0.00	0.00	0.00
9,300.0	92.64	270.07	6,495.5	3.5	-2,915.5	2,915.5	0.00	0.00	0.00
9,400.0	92.64	270.07	6,490.9	3.6	-3,015.3	3,015.3	0.00	0.00	0.00
9,500.0	92.64	270.07	6,486.3	3.7	-3,115.2	3,115.2	0.00	0.00	0.00
9,600.0	92.64	270.07	6,481.7	3.8	-3,215.1	3,215.1	0.00	0.00	0.00
9,700.0	92.64	270.07	6,477.1	3.9	-3,315.0	3,315.0	0.00	0.00	0.00
9,800.0	92.64	270.07	6,472.5	4.1	-3,414.9	3,414.9	0.00	0.00	0.00
9,900.0	92.64	270.07	6,467.9	4.2	-3,514.8	3,514.8	0.00	0.00	0.00
10,000.0	92.64	270.07	6,463.3	4.3	-3,614.7	3,614.7	0.00	0.00	0.00
10,100.0	92.64	270.07	6,458.6	4.4	-3,714.6	3,714.6	0.00	0.00	0.00
10,200.0	92.64	270.07	6,454.0	4.5	-3,814.5	3,814.5	0.00	0.00	0.00
10,300.0	92.64	270.07	6,449.4	4.6	-3,914.4	3,914.4	0.00	0.00	0.00
10,400.0	92.64	270.07	6,444.8	4.8	-4,014.3	4,014.3	0.00	0.00	0.00
10,500.0	92.64	270.07	6,440.2	4.9	-4,114.2	4,114.2	0.00	0.00	0.00
10,600.0	92.64	270.07	6,435.6	5.0	-4,214.1	4,214.1	0.00	0.00	0.00
10,700.0	92.64	270.07	6,431.0	5.1	-4,314.0	4,314.0	0.00	0.00	0.00
10,800.0	92.64	270.07	6,426.4	5.2	-4,413.9	4,413.9	0.00	0.00	0.00
10,900.0	92.64	270.07	6,421.7	5.4	-4,513.7	4,513.8	0.00	0.00	0.00
11,000.0	92.64	270.07	6,417.1	5.5	-4,613.6	4,613.6	0.00	0.00	0.00
11,025.8	92.64	270.07	6,415.9	5.5	-4,639.4	4,639.4	0.00	0.00	0.00
TD at 11025.8									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL (T24F #2H/OH) - plan misses target center by 20.0usft at 11025.8usft MD (6415.9 TVD, 5.5 N, -4639.4 E) - Point	0.00	0.07	6,415.0	5.5	-4,659.4	374,923.62	502,209.69	32° 1' 50.456 N	104° 27' 34.556 W
20' MD SHORT OF PBH - plan hits target center - Point	0.00	0.07	6,415.9	5.5	-4,639.4	374,923.58	502,229.67	32° 1' 50.456 N	104° 27' 34.324 W
EOC (T24F #2H/OH Pla - plan hits target center - Point	0.00	0.07	6,605.0	0.6	-544.9	374,918.73	506,324.20	32° 1' 50.452 N	104° 26' 46.757 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
6,084.7	6,084.7	0.0	0.0	KOP - Start Build 11.00
6,926.9	6,605.0	0.6	-544.9	EOC - Start 4118.9 hold at 6926.9 MD
11,025.8	6,415.9	5.5	-4,639.4	TD at 11025.8

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating LLC
LEASE NO.:	NM-100316
WELL NAME & NO.:	Tamago 24 Fed. #2H
SURFACE HOLE FOOTAGE:	1650' FNL & 0330' FEL
BOTTOM HOLE FOOTAGE	1650' FNL & 0330' FWL
LOCATION:	Section 24, T. 26 S., R. 24 E., NMPM
COUNTY:	Eddy County, New Mexico
API:	30-015-38955

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

High Cave/Karst
Possible lost circulation In the Delaware and Bone Spring formations.
Possible sulfur water flows in the Castile formation.

A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH.

1. The **13-3/8** inch surface casing shall be set at approximately 350 feet and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst concerns.**

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

Pilot hole is required to have a plug at the bottom of the hole. If two plugs are set, the BLM is to be contacted (575-361-2822) prior to tag of bottom plug, which must be a minimum of 200' in length.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

    ☒ **Cement to surface**. If cement does not circulate, contact the appropriate BLM office.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

    a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **3000 (3M)** psi.

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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