

District I

1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3470 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural
Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101
August 1, 2011

Permit 194545

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address COG OPERATING LLC One Concho Center Midland, TX 79701		2. OGRID Number 229137 3. API Number 30-015-42786 6. Well No. 005H
4. Property Code 39962	5. Property Name BRAGG 10 FEE	

7. Surface Location

UL - Lot M	Section 10	Township 19S	Range 26E	Lot Idn	Feet From 150	N/S Line S	Feet From 990	EW Line W	County EDDY
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8. Proposed Bottom Hole Location

UL - Lot D	Section 10	Township 19S	Range 26E	Lot Idn D	Feet From 330	N/S Line N	Feet From 990	EW Line W	County Eddy
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9. Pool Information

ATOKA; GLORIETA-YESO	3250
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type Private	15. Ground Level Elevation 3335
16. Multiple N	17. Proposed Depth 8051	18. Formation Yeso Formation	19. Contractor	20. Spud Date 1/30/2015
Depth to Ground water 110		Distance from nearest fresh water well > 1000		Distance to nearest surface water > 1000

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	11	8.625	32	1200	700	0
Prod	7.875	5.5	17	8051	800	0

Casing/Cement Program: Additional Comments

COG proposes to drill an 11" hole to 1200' w/fresh water, run 8-5/8" 32# J-55 and cement to surface. Drill a 7-7/8" hole to 2865' MD and kick off and drill curve to 3386' TVD 3693' MD. Drill a 7-7/8" lateral to new BHL @ 3310' TVD 8051' MD. Run a 5 1/2" 17# L-80 casing to TD cement to surface with 800 sacks.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	2000	2000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐, if applicable.

Signature: *[Signature]*

Printed Name: **Kelly Holly**

Title: **Permitting Tech**

Email Address: **choley@concho.com**

Date: **11-4-14**

Phone: **432**

685-4384

OIL CONSERVATION DIVISION

Approved By: *[Signature]*

Title:

Approved Date: **11-6-2014**

Conditions of Approval Attached

"Geologist"

Expiration Date: **4-16-2016**

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Phone: (505) 476-3460 Fax: (505) 476-3462

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 30-015- 42 786	Pool Code 3250	Pool Name Atoka; Glorieta Yeso
Property Code 39962	Property Name BRAGG 10 FEE	Well Number 5H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3335'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	10	19-S	26-E		150	SOUTH	990	WEST	EDDY

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
D	10	19-S	26-E		330	NORTH	990	WEST	EDDY

Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.
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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

Producing Area Project Area GRD AZ = 358°25'39" HORIZ. DIST. = 4889.4' 990' 330' 150' 990'	NAD 27 NME BOTTOM HOLE LOCATION Y= 611670.6 N X= 487252.3 E LAT.=32.681575' N LONG.=104.374765' W	NAD 83 NME BOTTOM HOLE LOCATION Y= 611732.3 N X= 528431.3 E LAT.=32.681689' N LONG.=104.375281' W	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 unleased 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. 10-23-14 Signature Date Kelly J. Holly Printed Name kholly@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. SEPTEMBER 13, 2014 Date of Survey Signature & Seal of Professional Surveyor: Certificate Number Gary C. Eidson 12641 Ronald J. Eidson 3239 LSL JWS W.O.: 14.11.0917
	CORNER COORDINATES TABLE A - Y=612008.6 N, X=486253.0 E B - Y=611997.9 N, X=487588.9 E C - Y=606633.0 N, X=487722.8 E D - Y=606638.7 N, X=486400.3 E		
	GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y= 606784.4 N X= 487386.5 E LAT.=32.668144' N LONG.=104.374323' W	GEODETIC COORDINATES NAD 83 NME SURFACE LOCATION Y= 606846.0 N X= 528565.4 E LAT.=32.668259' N LONG.=104.374839' W	

Estimated
Completed
Interval:
330 FSL
990 FWL



COG Operating LLC

Eddy County, NM (NAD27 NME)

Bragg 10 Fee

#5H

WB1

Plan: Plan #1 10-16-14

Surface: 150' FSL, 990' FWL, Sec 10, T19S, R26E, Unit M

PP: 330' FSL, 990' FWL, Sec 10, T19S, R26E, Unit M

BHL: 330' FNL, 990' FWL, Sec 10, T19S, R26E, Unit D

Standard Planning Report

16 October, 2014





Phoenix Technology Services
Planning Report



Database:	Compass 5000 GCR DB	Local Co-ordinate Reference:	Well #5H
Company:	COG Operating LLC	TVD Reference:	KB @ 3353.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3353.00usft (Silver Oak 3)
Site:	Bragg 10 Fee	North Reference:	Grid
Well:	#5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #1 10-16-14		

Project:	Eddy 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:	Bragg 10 Fee		
Site Position:		Northing:	606,787.30 usft
From:	Map	Easting:	486,726.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 40' 5.34496 N
		Longitude:	104° 22' 35.28540 W
		Grid Convergence:	-0.02 °

Well:	#5H		
Well Position	+N-S	-2.90 usft	Northing:
	+E-W	660.20 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 40' 5.31885 N
		Longitude:	104° 22' 27.56189 W
		Ground Level:	3,335.00 usft

Wellbore:	WB1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010_14	10/16/2014	7.58
			Dip Angle
			(°)
			60.38
			Field Strength
			(nT)
			48,462

Design:	Plan #1 10-16-14		
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
			(°)
			358.43

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/S	+E/W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,865.28	0.00	0.00	2,865.28	0.00	0.00	0.00	0.00	0.00	0.00	
3,692.55	91.00	358.43	3,386.07	529.76	-14.55	11.00	11.00	0.00	358.43	
8,051.30	91.00	358.43	3,310.00	4,886.20	-134.20	0.00	0.00	0.00	0.00	PBHL-Bragg 10 Fee #



Phoenix Technology Services
Planning Report



Database:	Compass 5000 GCR DB	Local Co-ordinate Reference:	Well #5H
Company:	COG Operating LLC	TVD Reference:	KB @ 3353.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3353.00usft (Silver Oak 3)
Site:	Bragg 10 Fee	North Reference:	Grid
Well:	#5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #1 10-16-14		

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
2,865.28	0.00	0.00	2,865.28	0.00	0.00	0.00	0.00	0.00	0.00
KOP: 11°/100: Build									
2,900.00	3.82	358.43	2,899.97	1.16	-0.03	1.16	11.00	11.00	0.00
3,000.00	14.82	358.43	2,998.50	17.32	-0.48	17.33	11.00	11.00	0.00
3,100.00	25.82	358.43	3,092.14	51.98	-1.43	52.00	11.00	11.00	0.00
3,200.00	36.82	358.43	3,177.43	103.86	-2.85	103.90	11.00	11.00	0.00
3,300.00	47.82	358.43	3,251.26	171.06	-4.70	171.12	11.00	11.00	0.00
3,311.93	49.13	358.43	3,259.17	179.98	-4.94	180.05	11.00	11.00	0.00
PP-Bragg 10 Fee #5H									
3,400.00	58.82	358.43	3,310.90	251.10	-6.90	251.20	11.00	11.00	0.00
3,500.00	69.82	358.43	3,354.17	341.05	-9.37	341.18	11.00	11.00	0.00
3,600.00	80.82	358.43	3,379.48	437.60	-12.02	437.77	11.00	11.00	0.00
3,674.27	88.99	358.43	3,386.07	511.48	-14.05	511.68	11.00	11.00	0.00
TL 3395° TVD @ 0 VZ 91.0° Inc									
3,692.55	91.00	358.43	3,386.07	529.76	-14.55	529.96	11.00	11.00	0.00
LP Hold 91° Inc 358.43 Azm									
3,700.00	91.00	358.43	3,385.94	537.21	-14.75	537.41	0.00	0.00	0.00
3,800.00	91.00	358.43	3,384.20	637.15	-17.50	637.39	0.00	0.00	0.00
3,900.00	91.00	358.43	3,382.45	737.10	-20.24	737.38	0.00	0.00	0.00
4,000.00	91.00	358.43	3,380.70	837.05	-22.99	837.36	0.00	0.00	0.00
4,100.00	91.00	358.43	3,378.96	936.99	-25.73	937.35	0.00	0.00	0.00
4,200.00	91.00	358.43	3,377.21	1,036.94	-28.48	1,037.33	0.00	0.00	0.00
4,300.00	91.00	358.43	3,375.47	1,136.89	-31.22	1,137.32	0.00	0.00	0.00
4,400.00	91.00	358.43	3,373.72	1,236.84	-33.97	1,237.30	0.00	0.00	0.00
4,500.00	91.00	358.43	3,371.98	1,336.78	-36.71	1,337.29	0.00	0.00	0.00
4,600.00	91.00	358.43	3,370.23	1,436.73	-39.46	1,437.27	0.00	0.00	0.00
4,700.00	91.00	358.43	3,368.49	1,536.68	-42.20	1,537.26	0.00	0.00	0.00
4,800.00	91.00	358.43	3,366.74	1,636.62	-44.95	1,637.24	0.00	0.00	0.00
4,900.00	91.00	358.43	3,365.00	1,736.57	-47.70	1,737.23	0.00	0.00	0.00
5,000.00	91.00	358.43	3,363.25	1,836.52	-50.44	1,837.21	0.00	0.00	0.00
5,100.00	91.00	358.43	3,361.51	1,936.46	-53.19	1,937.19	0.00	0.00	0.00
5,200.00	91.00	358.43	3,359.76	2,036.41	-55.93	2,037.18	0.00	0.00	0.00
5,300.00	91.00	358.43	3,358.02	2,136.36	-58.68	2,137.16	0.00	0.00	0.00
5,400.00	91.00	358.43	3,356.27	2,236.31	-61.42	2,237.15	0.00	0.00	0.00
5,500.00	91.00	358.43	3,354.53	2,336.25	-64.17	2,337.13	0.00	0.00	0.00
5,600.00	91.00	358.43	3,352.78	2,436.20	-66.91	2,437.12	0.00	0.00	0.00
5,700.00	91.00	358.43	3,351.04	2,536.15	-69.66	2,537.10	0.00	0.00	0.00
5,800.00	91.00	358.43	3,349.29	2,636.09	-72.40	2,637.09	0.00	0.00	0.00
5,900.00	91.00	358.43	3,347.55	2,736.04	-75.15	2,737.07	0.00	0.00	0.00
6,000.00	91.00	358.43	3,345.80	2,835.99	-77.89	2,837.06	0.00	0.00	0.00
6,100.00	91.00	358.43	3,344.05	2,935.94	-80.64	2,937.04	0.00	0.00	0.00
6,200.00	91.00	358.43	3,342.31	3,035.88	-83.38	3,037.03	0.00	0.00	0.00
6,300.00	91.00	358.43	3,340.56	3,135.83	-86.13	3,137.01	0.00	0.00	0.00
6,400.00	91.00	358.43	3,338.82	3,235.78	-88.87	3,237.00	0.00	0.00	0.00
6,500.00	91.00	358.43	3,337.07	3,335.72	-91.62	3,336.98	0.00	0.00	0.00
6,600.00	91.00	358.43	3,335.33	3,435.67	-94.36	3,436.97	0.00	0.00	0.00
6,700.00	91.00	358.43	3,333.58	3,535.62	-97.11	3,536.95	0.00	0.00	0.00
6,800.00	91.00	358.43	3,331.84	3,635.57	-99.85	3,636.94	0.00	0.00	0.00
6,900.00	91.00	358.43	3,330.09	3,735.51	-102.60	3,736.92	0.00	0.00	0.00
7,000.00	91.00	358.43	3,328.35	3,835.46	-105.34	3,836.91	0.00	0.00	0.00
7,100.00	91.00	358.43	3,326.60	3,935.41	-108.09	3,936.89	0.00	0.00	0.00
7,200.00	91.00	358.43	3,324.86	4,035.35	-110.83	4,036.88	0.00	0.00	0.00
7,300.00	91.00	358.43	3,323.11	4,135.30	-113.58	4,136.86	0.00	0.00	0.00



Phoenix Technology Services
Planning Report



Database:	Compass 5000 GCR DB	Local Co-ordinate Reference:	Well #5H
Company:	COG Operating LLC	TVD Reference:	KB @ 3353.00usft (Silver Oak 3)
Project:	Eddy County NM (NAD27 NME)	MD Reference:	KB @ 3353.00usft (Silver Oak 3)
Site:	Bragg 10 Fee	North Reference:	Grid
Well:	#5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WVB1		
Design:	Plan #1, 10-16-14		

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)
7,400.00	91.00	358.43	3,321.37	4,235.25	-116.32	4,236.84	0.00	0.00	0.00
7,500.00	91.00	358.43	3,319.62	4,335.19	-119.07	4,336.83	0.00	0.00	0.00
7,600.00	91.00	358.43	3,317.88	4,435.14	-121.81	4,436.81	0.00	0.00	0.00
7,700.00	91.00	358.43	3,316.13	4,535.09	-124.56	4,536.80	0.00	0.00	0.00
7,800.00	91.00	358.43	3,314.39	4,635.04	-127.30	4,636.78	0.00	0.00	0.00
7,900.00	91.00	358.43	3,312.64	4,734.98	-130.05	4,736.77	0.00	0.00	0.00
8,000.00	91.00	358.43	3,310.90	4,834.93	-132.79	4,836.75	0.00	0.00	0.00
8,051.30	91.00	358.43	3,310.00	4,886.20	-134.20	4,888.04	0.00	0.00	0.00

TD at 8051.30' MD - PBHL Bragg 10 Fee #5H

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/S (usft)	+E/W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PP-Bragg 10 Fee #5H - hit/miss target - Shape - Point	0.00	360.00	3,259.18	180.00	-4.94	606,964.40	487,381.56	32° 40' 7.10006 N	104° 22' 27.62054 W
PBHL-Bragg 10 Fee #5H - plan hits target center - Point	0.00	360.00	3,310.00	4,886.20	-134.20	611,670.60	487,252.30	32° 40' 53.67053 N	104° 22' 29.15418 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,674.27	3,386.07	TL, 3395' TVD @ 0 VZ, 91.0° Inc		-1.00	358.15

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Comment
2,865.28	2,865.28	0.00	0.00	KOP, 11°/100' Build
3,692.55	3,386.07	529.76	-14.55	LP, Hold 91° Inc, 358.43 Azm
8,051.30	3,310.00	4,886.20	-134.20	TD at 8051.30' MD



Project: Eddy County, NM (NAD27 NME)
Site: Bragg 10 Fee
Well: #5H
Wellbore: WB1
Design: Plan #1 10-16-14
Rig: Silver Oak 3



PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: 0.02°
Magnetic North: 7.60°
Magnetic Field
Strength: 48462.2nT
Dip Angle: 60.38°
Date: 10/16/2014
Model: IGRF2010_14

WELL DETAILS

+N/-S	+E/-W	Northing	Ground Level	3335.00	Latitude	Longitude
0.00	0.00	606784.40	Easting	487386.50	32° 40' 5.31885 N	104° 22' 27.56189 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecd	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	2865.28	0.00	0.00	2865.28	0.00	0.00	0.00	0.00	0.00		KOP: 11°/100' Build
3	3692.55	91.00	358.43	3386.07	529.76	-14.55	11.00	358.43	529.96		LP: Hold 91° Inc: 358.43 Azm
4	8051.30	91.00	358.43	3310.00	4886.20	-134.20	0.00	0.00	4888.04	PBHL-Bragg 10 Fee #5H	TD at 8051.30' MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PP-Bragg 10 Fee #5H	3259.18	180.00	-4.94	606964.40	487381.56	32° 40' 7.10006 N	104° 22' 27.62054 W	Point
- plan hits target center								
PBHL-Bragg 10 Fee #5H	3310.00	4886.20	-134.20	611670.60	487252.30	32° 40' 53.67053 N	104° 22' 28.15418 W	Point
- plan hits target center								

LEGEND

— Plan #1 10-16-14

