

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1320 S St. Francis Dr., Santa Fe, NM 87503
Phone: (505) 476-3469 Fax: (505) 476-3462

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

Form C-101
Revised July 18, 2013

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

¹ Operator Name and Address COG Operating LLC 2208 West Main Street Artesia, NM 88210		² OGRID Number 229137
		³ API Number 30-025-47782
⁴ Property Code 315251	⁵ Property Name Viking Helmet State Com	⁶ Well No 1H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
A	29	24S	35E		190'	North	380'	East	Lea

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
11	32	24S	35E		2310'	North	380'	East	Lea

9. Pool Information

¹⁰ Wildcat Bone Spring WC-025 G-09 5243532M; LWR BONE SPRING	¹¹ Pool Name WC-025 G-09 5243532M; LWR BONE SPRING	¹² Pool Code 96403 98098
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Additional Well Information

¹³ Work Type New Well	¹⁴ Well Type Oil	¹⁵ Cable/Rotary 	¹⁶ Lease Type / State 	¹⁷ Ground Level Elevation 3309.1'
¹⁸ Multiple N	¹⁹ Proposed Depth 19564'	²⁰ Formation Bone Spring	²¹ Contractor 	²² Spud Date 9/18/2015
²³ Depth to Ground water 		²⁴ Distance from nearest fresh water well 		²⁵ Distance to nearest surface water

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

10. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/lb	Setting Depth	Sacks of Cement	Estimated TOC
Surface	20	16	65	875'	650	
Intemd 1	14.75	10.75	45.5	5350'	1900	
Intemd 2	9.825	7.625	29.7	12050'	1725	
Production	6.75	5.5 x 5	20 x 18	19564'	1250	11000'

Casing/Cement Program: Additional Comments

Plan to drill a 20" hole to 875' with Fresh Water. Run 16", 65# J-55 csg and cmt to surface. Drill 14-3/4" hole to 5,350' with Brine, and run 10-3/4", 45.5# HCN-80 csg and cement to surface. Drill 9-7/8" hole to 12,050' with cut brine, and run 7-5/8", 29.7# HCP-110 csg and cement to surface. Drill 6-3/4" curve and lateral with WBM to approximately 19,564' MD. Run 5-1/2", 20#, HCP-110 x 5" 18# HCP-110 tapered csg string and cement to 11,000'.

11. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	3000	3000	Horn

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that I have complied with 19.15.14.9 (A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input checked="" type="checkbox"/> if applicable. Signature: <i>Mayte Reyes</i>		OIL CONSERVATION DIVISION	
Printed name: Mayte Reyes		Approved By: <i>[Signature]</i>	
Title: Regulatory Analyst		Title: Petroleum Engineer	
E-mail Address: mreyes1@concho.com		Approved Date: 09/11/15 Expiration Date: 09/11/17	
Date: 9/11/2015		Phone: 575-748-6945	
Conditions of Approval Attached			

See Attached

Conditions of Approval

SEP 09 2015

CONDITIONS OF APPROVAL

API #	Operator	Well name & Number
30-025-42783	COG OPERATING LLC	VIKING HELMET STATE COM # 002H

Applicable conditions of approval marked with XXXXXX

Administrative Orders Required

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Other wells

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Drilling

XXXXXXX	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string

Casing

XXXXXXX	SURFACE & INTERNEMIATE(1) CASING - Cement must circulate to surface --
XXXXXXX	PRODUCTION CASING - Cement must tie back into intermediate casing --
XXXXXXX	If cement does not circulate to surface, must run temperature survey or other log to determine top of cement
	South Area
XXXXXXX	Surface casing must be set 25' below top of Rustler Anhydrite in order to seal off protectable water

Pits

XXXXXXX	If using a pit for drilling and completions, must have an approved pit form prior to spudding the well

Completion & Production

XXXXXXX	Will require a directional survey with the C-104

Viking Helmet State Com 1H

	Hole Size	Casing	Wt	Depth	Cmt	TOC
Surface	20	16	65	875'	650	0
Intrmd 1	14.75	10.75	45.5	5350'	1900	0
Intrmd 2	9.825	7.625	29.7	12,050'	1725	0
Prod	6.75	5.5 x 5	20 x 18	19,564'	1250	11000'

Plan to drill a 20" hole to 875' with Fresh Water. Run 16", 65# J-55 csg and cmt to surface. Drill 14-3/4" hole to 5,350' with Brine, and run 10-3/4", 45.5# HCN-80 csg and cement to surface. Drill 9-7/8" hole to 12,050' with cut brine, and run 7-5/8", 29.7# HCP-110 csg and cement to surface. Drill 6-3/4" curve and lateral with WBM to approximately 19,564' MD. Run 5-1/2", 20#, HCP-110 x 5" 18# HCP-110 tapered csg string and cement to 11,000'.

Well Control

Type	Pressure	Test	Manufacture
Double Ram	3000	3000	Horn