

**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) 748-0720

**District III**  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

**District IV**  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 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**

<sup>1</sup> Operator Name and Address <b>COG Operating LLC</b> <b>2208 West Main Street</b> <b>Artesia, NM 88210</b>		<sup>2</sup> OGRID Number <b>229137</b>
<sup>3</sup> Property Code <b>316251</b>		<sup>4</sup> Property Name <b>Viking Helmet State Com</b>
		<sup>5</sup> API Number <b>70025-42783</b>
		<sup>6</sup> Well No <b>2H</b>

**7. Surface Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
B	29	24S	35E		190'	North	1980'	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
6	32	24S	35E		2310'	North	1980'	East	Lea

**9. Pool Information**

<sup>10</sup> Wellcat: Bone Spring <b>WG-025 G-09 5243532M; LWR BONE SPRING</b>	<sup>11</sup> Pool Name <b>WG-025 G-09 5243532M; LWR BONE SPRING</b>	<sup>12</sup> Pool Code <b>96403-98098</b>
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**Additional Well Information**

<sup>13</sup> Work Type <b>New Well</b>	<sup>14</sup> Well Type <b>Oil</b>	<sup>15</sup> Cable/Rotary 	<sup>16</sup> Lease Type <b>State</b>	<sup>17</sup> Ground Level Elevation <b>3320.4'</b>
<sup>18</sup> Multiple <b>N</b>	<sup>19</sup> Proposed Depth <b>19602'</b>	<sup>20</sup> Formation <b>Bone Spring</b>	<sup>21</sup> Contractor 	<sup>22</sup> Spud Date <b>9/18/2015</b>
<sup>23</sup> Depth to Ground water 		<sup>24</sup> Distance from nearest fresh water well 		<sup>25</sup> Distance to nearest surface water 

☒ 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
Surface	20	16	65	875'	650	
Intemd 1	14.75	10.75	45.5	5380'	1900	
Intemd 2	9.825	7.625	29.7	12050'	1725	
Production	6.75	5.5 x 5	20 x 18	19602'	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 5,380' 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" pilot hole to 12,750'. Plug back with cement and drill 6-3/4" curve and lateral with WBM to approximately 19,602' MD. Run 5-1/2", 20#, HCP-110 x 5" 18# HCP-110 tapered csg string and cement to 11,000'.

**22. Proposed Blowout Prevention Program**

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	3000	3000	Horn

<sup>23</sup> 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>		<b>OIL CONSERVATION DIVISION</b>	
Printed name: <b>Mayte Reyes</b>		Approved By: <i>[Signature]</i>	
Title: <b>Regulatory Analyst</b>		Title: <b>Petroleum Engineer</b>	
E-mail Address: <b>mreyes1@concho.com</b>		Approved Date: <b>09/11/15</b> Expiration Date: <b>09/11/17</b>	
Date: <b>9/11/2015</b>		Phone: <b>575-748-6945</b>	
Conditions of Approval Attached			

**See Attached**  
**Conditions of Approval**

SEP 09 2015

# CONDITIONS OF APPROVAL

API #	Operator	Well name & Number
30-025-42782	COG OPERATING LLC	VIKING HELMET STATE COM # 001H

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 2H

	Hole Size	Casing	Wt	Depth	Cmt	TOC
Surface	20	16	65	875'	650	0
Intrmd 1	14.75	10.75	45.5	5380'	1900	0
Intrmd 2	9.825	7.625	29.7	12,050'	1725	0
Prod	6.75	5.5 x 5	20 x 18	19,602'	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 5,380' 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" pilot hole to 12,750'. Plug back with cement and drill 6-3/4" curve and lateral with WBM to approximately 19,602' 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