

**APPLICATION FOR DRILLING**

**CHI OPERATING, INC.**  
 Land Rush "12" Federal, Well No. 2  
 660' FNL & 660' FEL, Sec. 12-T19S-R30E  
 Eddy County, New Mexico  
 Lease No.: NM-100561  
 (Development Well)

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Chi Operating, Inc. submits the following items of pertinent information in accordance with BLM requirements:

- The geologic surface formation is recent Permian with quaternary alluvium and other surficial deposits.
- The estimated tops of geologic markers are as follows:

Yates	2,200'	Strawn	10,800'
Queen	3,100'	Atoka	11,000'
Delaware	4,050'	Morrow Clastic	11,600'
Bone Spring	6,210'	Lower Morrow	12,000'
Avalon SD	6,400'	T.D.	12,400'
Wolfcamp	9,900'		

- The estimated depths at which water, oil or gas formations are anticipated to be encountered:

Water: Surface water between 100' - 300'.  
 Oil: Possible in the Queen, Delaware and Bone Spring  
 Gas: Possible in the Atoka below 11,000' and the Morrow below 11,600'.

- Proposed Casing Program:

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	48.0#	J-55	ST&C	450' <del>475'</del>	Circ. 450 sx "C" + add.
11"	8 5/8"	32.0#	J-55	ST&C	3,200'	Circ. 1300 sx "C" cement.
7 7/8"	5 1/2"	17.0#	N-80	LT&C	12,400'	1500 sx of "H" + add.

**WITNESS  
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- Proposed Control Equipment: A 12" 5000 psi wp Shaffer Type LWS Double Gate BOP will be installed on the 13 3/8" casing. Casing and BOP will be tested before drilling out with 11" and will be tested daily. See Exhibit "E".

6. MUD PROGRAM:	MUD WEIGHT	VIS.	W/L CONTROL
0' - <del>450'</del> <sup>475'</sup> : Fresh water mud:	8.4 - 8.5 ppg	32 - 38	No W/L control
<del>450'</del> <sup>475'</sup> - 3200': Brine mud:	10.0 - 10.1 ppg	32 - 38	No W/L control
3200' - 9700': Fresh water mud:	8.4 - 8.5 ppg	32 - 38	No W/L control
9700' - 10,600': Cut Brine mud:	9.2 - 9.5 ppg	32 - 38	No W/L control
10,600' - 11,500': Brine (starch) mud:	9.5 - 9.7 ppg	35 - 38	W/L control 12 cc +/-
11,500' - 12,400': Controlled Brine	9.5 - 9.7 ppg	38 - 42	W/L control 8 cc +/-

- Auxiliary Equipment: Blowout Preventer, gas detector, Kelly cock, pit level monitor, flow sensors and stabbing valve.

- Testing, Logging, and Coring Program:

Drill Stem Tests: As deemed necessary.  
 Logging: Run #1: Pending shows: 2000' - 3000': GR/CAL/CNL/LDT/DLL/MSFL  
 Run #2: Pending shows: 3200' - 6450': GR/CAL/CNL/LDT/DLL/MSFL  
 Run #3: T.D. - 6450': GR/CAL/CNL/LDT/DLL/MSFL  
 T.D. - 6450: GR/CNL if runs 1 and/or 2 not performed.  
 Coring: As dictated by logs.