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DRILLING PROGNOSIS

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ARTESIA, OFFICE

LEASE: Jones Federal Unit

WELL NO.: ~~1780~~ # /

DISTRICT: Midland

FIELD: Lusk Strawn

PROJECTED T.D.: 11,500'

EST. ELEVATION: 3540' G.L.

LOCATION: ~~1780~~ 1780 FEL & 1980' PNL of Sec. 24, T-19-S, R-31-E, Eddy Co., New Mexico

DRILLING, CASING AND CEMENTING

1. Drill 17 1/2" hole to 600'.
 2. Cement 13 3/8", 48#/ft., H-40, STAC casing at 600' with sufficient 50-50 Incor Pozmix 2/2% CaCl₂ to circulate. Run bar centralizers on float shoe and bottom two joints. Use a guide shoe and insert float.
 3. If float holds, release pressure immediately, WOC 6 hrs., install BOP and nipple up.
 4. After 12 hrs. WOC, pressure test casing to 1000 psi for 30 min. and drill out if o.k.
 5. Drill 11" hole to 4000'.
- NOTE: Loss of circulation may be encountered between 2800' and 3500'. If severe at this location, hole may be dry drilled to intermediate points. Do not exceed 20000# bit weight and 60 RPM until first three drill collars are below casing shoe.
6. At intermediate point, run 8 5/8" casing (OD) as follows:
0 - 4000'; 32#/ft., J-55, STAC
- Use a guide shoe with insert float in second collar. Use weld-on bar centralizers on shoe and first two collars. Run D.V. cementing tool at a point 150' below the base of the salt section. Base of salt is estimated at 2250' in this well. Run metal petal cement basket 1 joint below D.V. tool.
7. Cement in two stages as follows:
1st Stage - 200 sx 50-50 Pozmix-Incor w/6% gel followed by 100 sx Incor containing 2% CaCl₂.
2nd Stage - 1200 sx 50-50 Pozmix-Incor with 6% gel followed by 100 sx Incor containing 2% CaCl₂. Cement should circulate. Condition mud ahead of cement with 1# sodium Bichromate and 0.2# caustic soda per barrel.
 8. If float holds, land casing as cemented, release pressure and nipple up BOP. WOC 8 hrs. and run temperature survey. Pressure test D.V. tool before drilling out and casing to 1000 psi for 30 min. after 12 hrs. WOC and drill out with 7 7/8" bit. Do not exceed 20000 # weight and 60 RPM until first three drill collars are below casing shoe.
 9. Drill 7 7/8" hole to 11500'.
 10. Run 4 1/2" casing as follows:

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0 - 3300': 11.6#/ft., N-80, LT&C
3300 - 8000': 11.6#/ft., J-55, ST&C
8000 - 11500': 11.6#/ft., N-80, LT&C

Use float shoe, differential fill-up collar. Use reciprocating scratchers and centralizers to cover productive interval.

11. Cement with sufficient 50-50 Pozmix S cement w/0.4% HR-4 to cover zones of interest. Tail in with enough Latex cement to cover 150' above pay zone. Approximately 60 sx required. Use 2 sx line in 10 barrels water ahead of cement. Add 2 sx sodium Bichromate to mud system prior to running casing.
12. If float holds, land casing as cemented, release pressure immediately, WOC 8 hrs. and run temperature survey and release rig.

DRILLING FLUIDS PROGRAM

1. Surface hole: 0 - 600' - Spud mud add gal and lime as needed to clean hole. Use fiber for loss of circulation as needed.
2. Intermediate hole: 600 - 4000' - Saturated brine water. Add water to maintain minimum viscosity needed. Pre-treat system w/fiber 6 to 8 lbs. per barrel at 2800'. If hole gives trouble, lower water loss to 20 cc. to run casing.
NOTE: If severe loss of circulation is encountered below 2800', hole will be dry drilled to intermediate point. Drilling should not be stopped to combat loss of circulation.
3. Below intermediate: 4000 - 11100' - clear water treated with surfactant, some treatment w/paper may be required to reduce losses. Lime should be added to keep pH above 10 for corrosion control.
11100 to T.D.: Use low solids, CMC system with the following properties:

Weight - 9.5 to 9.8
Viscosity - 38 to 42
Water Loss - 20-25

Add chemicals and barite as required to maintain good hole conditions to T.D.

DRILLING TIME:

1. A recorder with torque, hook load, pump pressure and rate of penetration will be used.
2. Record 10' drilling time from surface to T.D. on company forms

DRILL PIPE MEASUREMENTS: Strap drill pipe at all casing and coring points and at T.D.

DRILLING SAMPLES

1. Two sets of 10' samples will be caught, washed, sacked and labeled in bundles of 100' from surface to T.D.
2. Circulating and additional samples will be obtained as directed.
3. Quart samples will be obtained of all fluids recovered on DST.

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- DEVIATION:
1. Deviation surveys shall be taken on every trip or every 500', whichever is first.
 2. Deviation should not change more than $1\frac{1}{2}^{\circ}$ in any 100' interval. If deviation change exceeds $1\frac{1}{2}^{\circ}$ per 100' a string reamer shall be run to wipe out dogleg. If deviation exceeds 2° per 100', hole shall be plucked back and straightened.
 3. Maximum deviation shall be allowed as follows:

Deviation in the surface hole shall not exceed 1° .

0 - 2000'	2°
2000 - 4000'	3°
4000 - 6000'	4°
6000 - 8000'	5°
8000 - 10000'	6°
10000 - T.D.	7°

BLOW OUT PREVENTORS

1. Series 900 or better, double ram, manual, and remote control preventors shall be used from base of surface to T.D.
2. B.O.P. shall be checked daily and reported on drilling report.
3. A rotating drilling head shall be used during any air or gas drilling.

DAILY DRILLING REPORT

1. The AADC report will be used.
2. This report shall be completely filled out.
3. Morning reports shall be made to the Midland District Office each weekday morning between 8:00 a.m. and 8:30 a.m. (CST).

DRILL STEM TESTING: Tests to be taken at discretion of wellsite geologist.

- LOGGING:
1. Gamma Ray-Sonic from T.D. to base of intermediate casing.
 2. Dual-induction-laterolog through sections as specified by wellsite geologist.


FORMATION TOPS

Top Anhydrite	720'
Top Salt	960'
Base Salt	2250'
Top Yates	2430'
Top Seven Rivers	2660'
Delaware	4570'
Bone Springs	7050'
1st Sand	8300'
2nd Sand	9050'
3rd Sand	9840'
Wolfcamp Lime	10460'
Cisco Shale	10700'
Strawn Lime	11220'
Strawn Reef	11350'
T.D.	11500'

APPROVED:


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