

**Newpek, LLC**

**Fauver #1-20H Drill Plan**

**October 28, 2015**

**Summary:**

The Fauver #1-20H will be a horizontal lateral sidetracked from the vertical wellbore of the Fauver #1-20 well that tested the Niobrara formation. The current perforations will be plugged off using a Cast Iron Bridge Plug with 175' of cement placed on top. A cased hole whipstock will be set in the 7" casing to allow for a KOP @ 4,557' TVD with a 360° azimuth. The curve and lateral will be drilled using a 6.125" bit to 10,450' MD (5,152' TVD) where a 4.5" production liner will be run and cemented for completion.

**Surface Location:** Section 20-T9N-R56W  
1,400' FSL, 660' FWL  
Weld County, Colorado

**Landing Point:** Section 20-T9N-R56W  
1,973' FSL, 660' FWL  
Weld County, Colorado

**Bottom Hole Location:** Section 17-T9N-R56W  
1,709' FSL, 660' FWL  
Weld County, Colorado

**DRILLING PROGRAM**

**1. ESTIMATED TOPS OF GEOLOGICAL MARKERS:**

Ground Level: 4,520' Estimated KB: 4,540' (20.0')

<b>Formation</b>	<b>MD</b>	<b>Lithology</b>	<b>Hazards</b>
Sharon Springs	4,890'	Shale	Lost Circulation
Niobrara	4,960'	Chalk, Limey Shale, Shale	Oil, Gas, Fractures
<b>Total Depth</b>	<b>10,450'</b>		

## 2. DIRECTIONAL PLAN

KOP: 4,557' MD, 4,557' TVD

BUILD RATE – AZIMUTH: 10.0°/100', 360.00° Azimuth

END OF BUILD: 5,457' MD, 5,130.02 TVD

LANDING POINT COORDINATES: 1,973' FSL & 660' FWL, 20-T9N-R56W

TOTAL DEPTH LATERAL: 10,450' MD, 5,152' TVD @ 89.5° & 359.04° Azimuth

BOTTOM HOLE LOCATION: 1,709' FSL & 660' FWL, 17-T9N-R56W

\*See attached Directional Proposal for more detail.\*

## 3. PRESSURE CONTROL EQUIPMENT

### A. Type:

Eleven (11) inch double gate hydraulic BOP with eleven (11) inch annular preventer with 5,000 psi Casinghead and 5,000 psi Tubinghead wellhead equipment.

### B. Testing Procedure:

The annular preventer will be tested to 50% of the stack rated working pressure for ten (10) minutes or until provisions of test are met, whichever is longer. The BOP, choke manifold and related equipment will be pressure tested to approved BOP stack working pressure (if isolated from surface casing by a test plug) or to 70% of surface casing internal yield strength (if BOP is not isolated by a test plug). Pressure will be maintained for ten (10) minutes or until the requirements of the test are met, whichever is longer. At a minimum, the Annular and Blow-Out Preventer pressure tests will be performed:

1. When the BOPE is initially installed;
2. Whenever any seal that is subject to test pressure is broken;
3. Following related repairs; and
4. At two (2) week intervals.

The Annular preventer will be function tested weekly and pipe and blind rams activated each trip, but not more than once per day. All BOP drills & tests will be recorded in the IADC driller's log.

### 3. PRESSURE CONTROL EQUIPMENT - CONTINUED

#### C. Choke Manifold Equipment:

All choke lines will be straight lines whenever possible at turns, tee blocks will be used or will be targeted with running tees and will be anchored to prevent whip and vibration.

#### D. Accumulator:

The Accumulator will have sufficient capacity to open the hydraulically-controlled choke line valve (if so equipped), close all rams plus the annular preventer and retain a minimum of 200 psi above pre-charge on the closing manifold without the use of the closing unit pumps. The fluid reservoir capacity will be doubled the accumulator's capacity with the fluid level being maintained at manufacturer's recommendations. An Accumulator pre-charge pressure test will be conducted prior to connecting the closing unit to the BOP stack.

#### E. Miscellaneous Information

The choke manifold and BOP extension rods with hand wheels will be located outside the rig's substructure.

The hydraulic BOP closing unit will be located a minimum of twenty-five (25) feet from the wellhead being readily accessible to the driller. The exact location and configuration of the hydraulic BOP closing unit will depend upon the specific rig contracted to drill this well.

A flare line will be installed after the choke manifold with the discharge point of the flare line to be a separate pit located a minimum of 125 feet away from the wellbore and/or any existing production facilities.

A volume monitoring system with alarms, will be used to monitor pit gains and/or losses in conjunction with visual backup.

### 4. PROPOSED CASING TUBULAR PROGRAM

#### A. Casing Program (New/Tested)

Hole Size	Casing Size	Burst (psi)	Collapse (psi)	Tension (Body/Jt) klbs	Depth Set (MD)
6.125"	4.5" 11.6#, L-80 LTC	7,790	6,350	267 / 212	4,200' - 10,450'

#### 4. PROPOSED CASING TUBULAR PROGRAM - CONTINUED

##### 4.5" Production Liner centralizer program:

1. Install one (1) solid standoff centralizer on every second joint from 10,450' MD to 5,500' MD (Horizontal Lateral).
2. Install one (1) solid standoff centralizer on every joint to 4,200' MD (Lateral Curve/7" Casing).

#### B. Casing Design Parameters:

##### Production Liner

Interval	Casing Size	Burst (psi)/SF	Collapse (psi)/SF	Tension (klb)/SF
4,200' – 10,450'	4.5" 11.6#, L-80 LTC	7,790/2.91	6,350/2.37	212/4.47

- a. Based on 6,500 psi frac pressure
- b. Based on full evacuation with 10.0 ppg fluid on backside
- c. Based on casing string weight in air

#### 5. PROPOSED CEMENTING PROGRAM

##### Production Liner

Casing	Slurry	Ft of Fill	Cement Type	XC (%)	Wt (ppg)	Yield (ft <sup>3</sup> /sx)
4.5"	Tail	6,250'	518 sxs (50:50) Poz (Fly Ash): Class G Cement + 0.2% bwoc FL-63 + 0.6% bwoc FL-52 + 0.2% bwoc CD-32 + 0.1% bwoc Sodium Metasilicate + 3.0% bwoc Bentonite II + 52.3% Fresh Water	10	14.5	1.21

Note: Waiting on cement (WOC) time will be sufficient to achieve a minimum of 500 psi compressive strength at the liner top.

#### 6. PROPOSED MUD PROGRAM

Depth (MD)	Mud System	MW	PV	YP	FL
4,500' – 10,450'	LSND/MIL-PAC	9.0 – 10.0	10 - 15	8 - 12	4 - 6

## **7. PROPOSED EVALUATION PROGRAM**

Cores: None Planned

DST: None Planned

Surveys: Deviation surveys every 100' to total depth

Mud Logging 10' or 30' samples to total depth dependent on ROP

Open Hole Logging: Quad Combo from Total Depth to 7" Casing Window  
Formation Scanner from Total Depth to base of Lateral Curve

## **8. ABNORMAL CONDITIONS**

No abnormal pressures or H<sub>2</sub>S anticipated.

Estimated bottom hole pressure is 2,231 psi (0.433 psi/ft) @ 5,152' TVD in the Niobrara Formation.

## **9. Anticipated Operations Starting Dates**

Location Construction: Not Required

Spud: April 15, 2016

Rig Release: April 30, 2016