- Page 2 Drilling Program Collins & Ware Spike Federal No. 1
- 5. <u>PRESSURE CONTROL EQUIPMENT</u>: Blowout prevention equipment, while drilling below surface casing will be a 3000 psi working pressure stack. The BOP sketch is shown as Exhibit 1.
- 6. CIRCULATING MEDIUM:

CIRCULATING MEDIUM:	
Surface to 400'	Fresh water spud mud - Viscosity 30 to 36 as
	required for hole cleaning; 8.8-9.0#/gal.
400' to 3000'	Fresh water system Weight 8.7-9.2#, pH 9-10,
	viscosity 28-30. Mud sweeps as required.
3000' to TD	Drill ahead with cut brine system circulating
	reserve pit conditioned as necessary for control
	of viscosity(35-40), water loss(10-15), weight
	(9.4-10#), and $pH(9-10)$.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

- A. A kelly cock will be used.
- B. A full-opening stabbing valve with proper drill pipe connections will be on the rig floor at all times.
- C. The drilling fluids system will be visually monitored at all times.
- D. A mud-logging unit will monitor drilling penetration rate and hydrocarbon shows from 3000'.
- 8. TESTING, LOGGING, AND CORING PROGRAMS:
 - A. No drill stem tests are planned.
 - B. Compensated Neutron/LDT Log GR and Dual Laterolog w/ MSFL. The Gamma Ray log will be continued back to surface.
 - C. Mud-logging unit will be used below 3000'.

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- D. No cores anticipated.
- E. Other testing procedures may be used after the production casing has been set depending on shows and other testing indicators.
- 9. <u>ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES, & POTENTIAL HAZARDS:</u> No abnormal pressures or temperatures are anticipated. The estimated bottom hole temperature (BHT) at TD is 125 F and the estimated maximum bottom hole pressure (BHP) is about 2500 psi. No hydrogen sulphide (H2S) or other hazardous fluids are known to exist at this depth in this area. Possible lost circulation zones in the Artesia Group, Capitan Reef, Delaware, and Bone Springs.