

July 11, 1978

- (b) We have confirmed that drill pipe rubbers were in use when the blowout occurred and an analysis of producing pressures indicates that some obstruction exists in the 4-1/2" - 9-5/8" annulus or 4-1/2" - 8-3/4" annulus. We have not produced any well debris--cuttings or cavings--since about the fourth day of production and then only minute amounts. This leads us to believe that the hole is reasonably stable, and the obstruction is probably the accumulated choking effect of the drill pipe rubbers.

Use of mud will tend to carry any accumulated cavings (of which there are undoubtedly some) up the hole, and risk bridging around the drill pipe rubbers (or whatever the restriction). Any such bridging (at present reservoir pressure) would risk an underground blowout into the exposed Bone Springs formation.

- (c) Should the kill attempt be aborted for any reason, the expulsion of water under pressure is much less abrasive than weighted mud and creates less danger to the well head control arrangement.

(2) If salt water is injected at 320 gal/min, the circulating rate which existed prior to the blowout and the maximum injection rate which could be expected, at 500 psi on the surface, the well will continue to produce under end-of-July conditions at 13 MMCF/Day, merely gas-lifting the water to the surface.

(3) To suppress the gas lift phenomenon described above will require the application of pressure on the surface, thereby slowing the velocity and reducing somewhat the flow rate. With 1000 psi on the surface, the gas lift effect will still produce the injected water. With 1500 psi on the surface, the maximum pressure Delta feels could ever be safely used, the well could be killed if it were not for the low fracture gradient in the Bone Springs. In Delta's opinion, the application of 1500 psi plus flowing gradients with water will cause a gradient of 0.682 psi/ft. opposite the Bone Springs before kill can be obtained, a gradient which would easily fracture this zone.

It is the opinion of Delta, however, that by mid-August the static BHP will fall to 5960 psi and the flow rate to 20.25 MMCF/D. The combination of lowered BHP and lower rates (particularly