

DRILLING PROCEDURE
BIG EDDY UNIT #91

Drilling Island

LOCATION: 250' FNL & 1600' FWL, Sec. 5, T21S, R30E, Eddy County, New Mexico

CONDUCTOR PIPE: 30" conductor pipe should be set @ +40' and cemented to surface with ready-mix.

SURFACE HOLE & CASING: A 24" surface hole should be drilled to +800' (B/Rustler) with fresh spud mud, 8.5 ppg, 40-50 vis. Lost circulation materials should be used to control minor fluid loss. If severe loss circulation occurs, dry drill to TD. The surface casing will be 20" 94#/ft, H-40 ST&C casing run with a guide shoe, stab-in float collar, and three centralizers. The casing should be cemented to the surface with 500 sx HALCO Lite (12.4 ppg, 1.97 ft³/sx). Tailed with 200 sx of Class "C" + 2% CaCl₂ (14.8 ppg, 1.32 ft³/sx) calculated with 50% excess to comply with R-111A. The 20" will be cemented through the drill pipe with stab-in equipment. A drill pipe annulus packoff will be required.

NIPPLING UP: After 12 hours WOC, cut off the casing and install a 20" SW x 20" 600 series casinghead. Test weld with grease gun. Install one annular BOP. WOC 24 hours and test casing to 1000# before drilling out (as per R-111A).

SALT PROTECTION HOLE & CASING: A 17-1/2" intermediate hole will be drilled to 1700'+(100' past the Base of Salt, "Tansil"), using a 10# BW system circulating the reserve pit. The salt protection string must be set more than 100' below the base of salt but not more than 600'. The casing string will be 13-3/8", 54.5#/ft K55 ST&C. Run casing with float guide shoe, 10' shoe joint, stab-in float collar and 6 centralizers. Space centralizers every other collar beginning middle of shoe joint. Cement through drill pipe with 800 sx HALCO Lite + 18% salt + 1/4#/sx Flow seal + 2% CaCl₂ (13.2 ppg, 1.92 ft³/sx). Tailed with 130 gal resinment slurry. NOTE: Be sure to conduct proper tests on additives to ensure desired pumping time. A fluid caliper survey should be run to determine the accurate hole volume. Cement must be circulated. Cement should be allowed to stand a minimum of twelve (12) hours under pressure and a total of twenty-four (24) hours before drilling the plug or initiating tests (as per R-111A). A drill pipe annulus packoff will be required.

NIPPLE UP 13-3/8" CASING: After waiting 12 hours for cement to set, the 20" casinghead can be cut off and 13-3/8" SW x 12" 3000# welded in place. Nipple up the BOP's as per BEPCO Drawing III (attached). Test BOP, casing and choke manifold to 1000 psi before drilling out. WOC a total of 24 hours prior to testing casing (R-111A).

INTERMEDIATE HOLE & CASING: A 12-1/4" OH will be drilled to 4000'+ (First noticeable Delaware sd.) using a fresh water mud system, 8.4 ppg 28-30 vis., and circulating the reserve pit. If severe loss circulation occurs in the Capitan Reef from 1750'-2500', dry drill to TD. The second intermediate casing string will consist of 9-5/8" 40#/ft K-55 ST&C.

The casing is to be run with a guide shoe, float collar, and eight centralizers spaced every other collar, starting 5' above guide shoe. The casing is to be cemented with 1000 sx HALCO Lite + 1/4#/sx Flow seal (12.4 ppg, 1.97 ft³/sx). Tailed with 200 sx Class "C" neat + 1/4#/sx Flow seal + (14.8 ppg, 1.32 ft³/sx). Cement must be circulated. A fluid caliper should be run while drilling last part of hole to determine a more accurate hole volume.

NIPPLING UP THE 9 5/8" CASING: After waiting 12 hours, nipple down the BOPE and set slips. Cut off the 9-5/8" casing and nipple up a 12" 3000# x 10" 5000# RJT casing spool. Nipple up BOPE as per BEPCO IV (attached). Test BOPE, choke manifold, and all valves on stack to 5000 psi. WOC 24 hours before testing casing and drilling out cement (as per R-111A).