5. Injection Zone Fluid Analysis

The composition of the native formation fluid in the proposed Wolfcamp, Cisco, and Canyon injection zone is expected to be similar to that in these formations in other parts of southeastern New Mexico. The salinity of Wolfcamp, Cisco, and Canyon formation brines from hydrocarbon producing areas in northern Lea County, to the east of Eddy County, was reported by Meyer (1966, Table 4). Attachment VII-3 summarizes the salinity data reported by Meyer (1966, Table 4) for Wolfcamp, Cisco, and Canyon formation brines from limestones that were deposited in a shelf environment similar to that of the proposed injection site. The salinity of the formation brines range from 67,098 to 119,909 parts per million (ppm). The formation brines were produced from intervals that occur between 9001 feet and 10742 feet below ground. Also listed in Attachment VII-7 are data from Strawn limestones that were deposited in a platform environment and that occur at 7700 feet below ground; the salinity of the Strawn formation brine is 39,374 ppm. DST data from proposed WDW-1 indicate that the salinity of fluid recovered from the Cisco Formation in DST No. 5 is 25,000 ppm (Attachment VIII-9).

Navajo will attempt to retrieve a sample of formation brine during the proposed well testing operations. Formation brine samples will be retrieved prior to any stimulation treatments or injection into the well. As discussed above, the salinity of the formation brine in the Wolfcamp, Cisco, and Canyon injection zone is expected to be between 25,000 and 120,000 ppm.