

### **Description (11/13/2018)**

An Underground Injection Control (UIC) Class III Solution Mining Injection Well (BW-4) or “Eidson State No. 1” (API# 30-025-26883) Discharge Permit Renewal located at U.L.: M Section 31 Township 16 South, Range 35 East, 567 FSL, 162 FWL, Latitude N 32.87313°, Longitude W 103.50503°, NMPM, Lea County, New Mexico, submitted an application for a “brine well” discharge permit renewal on June 6, 2018. High density brine is used in the drilling of oil and gas wells in New Mexico.

The 7 in. casing shoe depth is at 1,895 ft. below ground level (bgl) and total well depth at the time of completion was 2,461 ft. bgl. The solution mining injection or brine well was later whip stocked to a true vertical depth of 2,555 ft. bgl with tubing (2-3/8 in.) set at a true vertical depth of 2,455 ft. bgl deep into the Salado “Salt” Formation. A Bridge Plug was set at 1,738 ft. bgl in the 7 in. casing before the whip stock construction with top of window at an approximate depth of 1,710 ft. bgl.

The flow regime is “reverse flow” with freshwater injection via 5-1/2 in. flush joint casing to a true vertical depth of 2,100 ft. bgl at least 560 ft. below the top of the Salado “Salt” Formation at 1,895 ft. bgl. Fresh groundwater will be injected into the 5-1/2 in. flush joint casing at an average surface injection rate range of 20 – 30 gpm or approximately 835 bbl./day, and surface injection pressure ranging from 260 – 280 psig. The groundwater table is at a depth of about 75 ft. bgl.

The construction and design of this brine well utilizes a reverse-flow scheme where freshwater is injected through the well annulus (5-1/2 in.) with production of brine through tubing (2-3/8 in.) to surface. Based on the brine well construction, the morphology of the salt cavern is anticipated to be within acceptable standards.