

Water-level measurements were begun on August 26, 1999 to track the rise and stabilization of the Bell Canyon water level in Cabin Baby-1 (Figure 2). On August 30, 1999, a TROLL memory gage was installed in the tubing to provide a continuous record of Bell Canyon water levels. Westinghouse will measure Culebra and Bell Canyon water levels and download the TROLL on a monthly basis hereafter. Culebra water levels may be offset from their historical levels because the brine left in the casing is more dense than the natural Culebra brine.

The PIP isolating the Bell Canyon was set in the lower Castile Formation in anhydrite, which has always provided excellent packer seats during many years of testing at WIPP. The PIP cannot fail without our quickly becoming aware of it. If the PIP were to fail, the Bell Canyon would be connected to the Salado-Castile portion of the borehole, which has a much higher (100's of feet) head and much denser fluid. The TROLL would immediately register a pressure increase, which would also be reflected in subsequent monthly water-level measurements. Because the Bell Canyon is orders of magnitude more permeable than the Salado and Castile, the water level would eventually come back into equilibrium with the Bell Canyon pressure. However, the increase in the average density of the fluid would cause the new stabilized water level to be at a lower height than before. Thus, a failure of the PIP would be easily detected.

References:

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