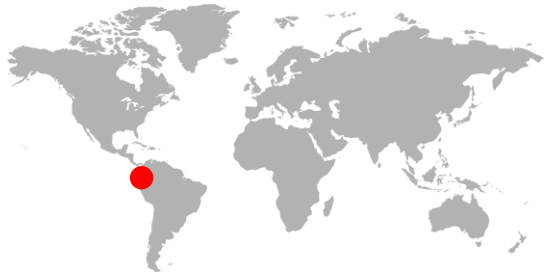
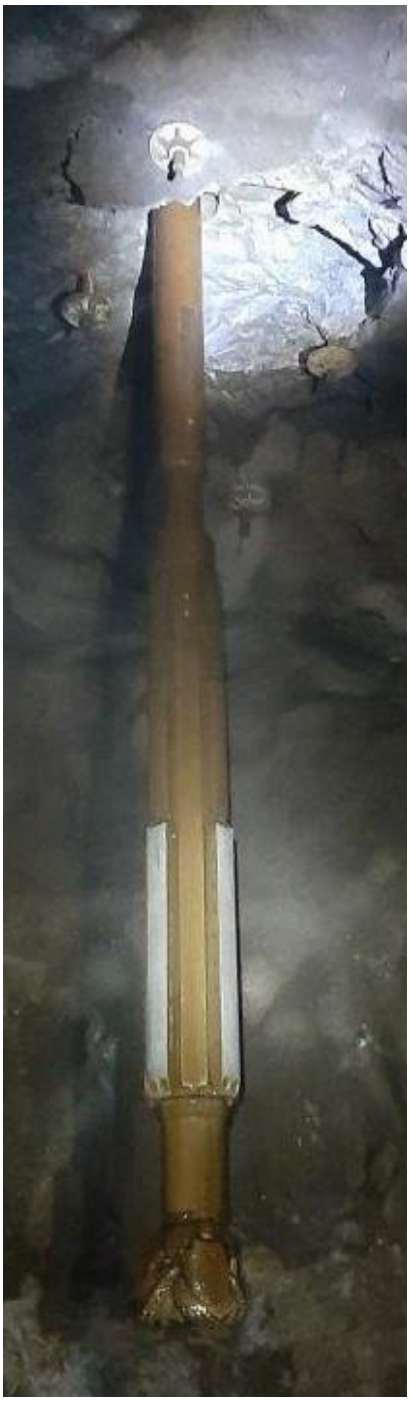


# VectorEXAKT RSS drills a precise vertical borehole in a Ecuadorian mining application



**Technology**

NOV's VectorEXAKT™ 900 rotary steerable system features an extremely accurate vertical hold capability and is especially suited for wells requiring tight vertical tolerance. The VectorEXAKT 900 uses an autonomous, closed-loop steering system with near-bit inclination to maintain verticality.

**Challenge**

A mine in Ecuador needed raise-boring techniques to excavate between surface and an underground tunnel. Raise-boring requires a precisely vertical pilot hole to be drilled along the path of the desired raise, then a large diameter bit would be carried underground into the tunnel and attached to the drill string. The drilling rig at surface then needed to pull tension on the drill string while rotating, causing the large diameter bit to cut a hole from the tunnel to surface.

**Results**

The VectorEXAKT 900 RSS successfully drilled the 16" (406mm) pilot hole and held vertical for the entire interval. The length of the pilot hole was 902' (275m). Gyroscopic tools were used to measure the deviation of the pilot hole afterwards. VectorEXAKT™ 900 demonstrated exceptional precision by holding the entire pilot hole within ¾" (2cm) of rig center.