Layne assesses each drilling project independently and can deploy a number of techniques to get the desired results in the shortest amount of time.

As a sub-set of air rotary drilling, a down the hole hammer (DTH) can be used in consolidated and unconsolidated formations. This method can be done conventionally or with reverse circulation.

In unconsolidated formations, a DTH can be used with a casing advance system to drill through formations that will not stay open once the hole has been drilled. The casing provides the borehole stability as the hole is advanced. The DTH is used with an eccentric reamer so that a slightly larger hole is drilled which enables the casing to follow behind the DTH. Using a DTH with a casing advance system can be more effective in alluvial formations where cobbles and boulders will be encountered.

Traditionally, DTH are used in open hole bedrock applications. A DTH is more effective than standard rotary operations in bedrock applications as more energy is transferred to the formation through the bit.

**ADVANTAGES OF DOWNHOLE HAMMER METHOD**

- Fast penetration in hard rock formations
- No drilling mud is needed
- Rapid cuttings removal
- Clean cuttings can be analyzed accurately