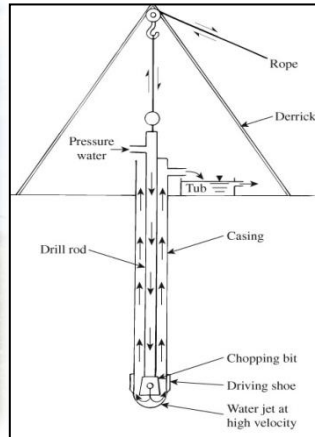
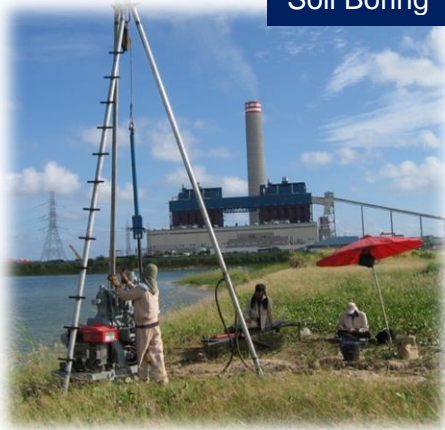


## Soil Boring

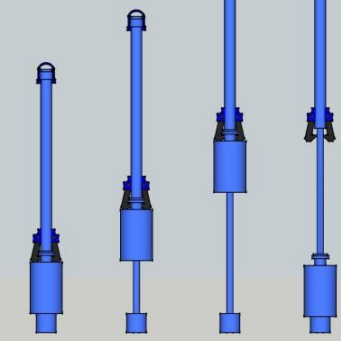


## Soil boring

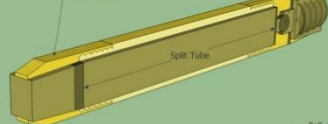
Soil boring is conducted to produce holes at great depths which can be used for installation of instrumentation. Rotary wash boring is used for its higher efficiency, usefulness for any type of soil and minimum disturbance to soil. This method uses the rotation of drill rig by applying the pressure to advance the hole simultaneously. Drilling mud (mostly bentonite) is used for stabilizing the holes and lifting up the large particles during the drilling.

## Standard Penetration Test

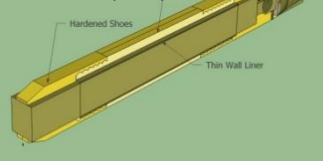
1. Starting Position
2. Lifting of Hammer
3. Releasing of Hammer
4. Returning to Starting position



### Standard Split Spoon Sampler



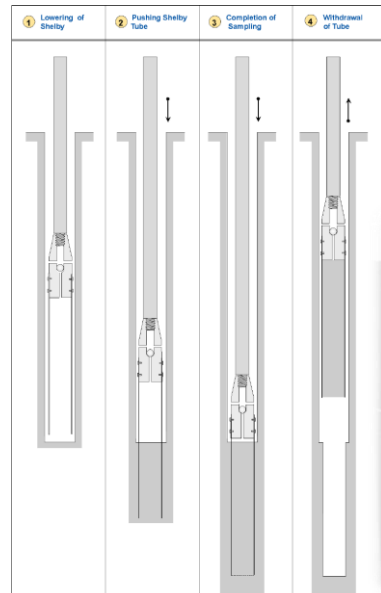
### Modified Split Spoon Sampler



## Standard Penetration Test (SPT)

The standard penetration test (SPT) is widely used to obtain the disturbed soil sample and resistance of the soil with respect to the penetration of sampler (SPT 'N' values) which can be correlated with soil properties and engineering behaviour of earthworks and foundations. SPT is conducted according to the ASTM D-1586 by means of split-barrel sampler.

1. Lowering of Shelby Tube
2. Pushing of Shelby Tube
3. Sampling Complete
4. Withdrawal of Shelby Tube



## Shelby Tube



## Mazier Core Barrel



## Thin-wall tube (Shelby tube)

The undisturbed sampling is conducted according to ASTM D 1587 by means of thin-wall tube (Shelby tube). The Shelby tube is placed at the bottom of the borehole and pushed into undisturbed soil in one continuous, uniform motion without rotation to minimize the potential for damage of the thin-walled tubes and disturbance to the sample. This method is mainly used for medium soft to medium stiff cohesive soil.

## Mazier soil core barrel

Mazier soil core barrel, a double-tube swivel type retractor barrel, is used to obtain the undisturbed samples from stiffer cohesive soil. The core barrel is rotated into the soil either in a cased hole or a hole stabilizer with drilling mud. The inner tube protrudes below the cutting bit connected to the outer barrel the cutting action of rotation bit, water or drilling fluid discharged.