Table 3-1: Tools for Drilling in Soils and Rock

Soil or Rock Type	Tools	Remarks
Very soft & loose soils to very dense & stiff soils and conglomerates.	Casings or hollow stem auger with minimum diameter of 150mm	No water or drilling mud to be added.
Cemented soils or very weak rock	Casings or hollow stem auger or rotary coring (minimum double tube) methods to obtain cores not less than 76mm in diameter. Wire line drilling is preferred.	Double tube core barrel (split type) accepted as a minimum. See items C., D. & E.
Rock	Rotary core methods to obtain cores not less than 76mm in diameter. Wire line drilling is preferred.	Double tube core barrel (split type) accepted as a minimum. Wash boring technique may be used if GWT is less than or equal 1.5m below ground level.

C. Use split type triple tube core barrels.

D. Use potable water when water is drilling medium while coring.

E. Use compressed air as drilling medium in cemented soils/weak rock that are sensitive to water such as weathered sandstone, mudstone and marl.

F. Select a rotation speed and cutting blade materials (diamond, tungsten or carbide) to ensure a minimum sample recovery ratio of 95%.

G. Smaller size boreholes can be considered where a continuous sampling machine is used.

H. Commence coring only once refusal of auger drilling and/or Standard Penetration Test refusal (50 blows in less than 25mm penetration) are reached. Core to the depth required by the Engineer to prove the continuity and engineering characteristics of the formation.

I. Prevent hammering and shaking of the core barrel or upending of core barrels.

J. Log and colour photograph the recovered cored samples prior to removal from the split spoon barrel.

K. Do not terminate borings before reaching the required depth except with the written approval from the Engineer/Department.