

Technical Specifications

Drilling of Borewell (Rotary and Compressor Methods):

- The wells should be drilled using Rotary and Compressor drilling machines, as specified in the related BoQs, to the indicated depths.
- The size of the drilling well should not be less than 10-12inch diameter. The well depth may increase or decrease in case of geological conditions, but the final decision will be made by SCI technical team.
- The contractor should have a heavy rod that should be used between the drilling rod and the drilling bit.
- The heavy rod should not be less than 1500 Kg.
- The drilling bit should be according to the well lathe logical layers. Secondly, the drilling bit must be completely stable and free from breakage, looseness, and abrasion, and the contractor can't use welded drilling bit.
- The contractor must install the 6 and 8-inch D class uPVC Casing Pipe and Filter according to the well design.
- The contractor must fill around the filter pipe by 2-6 mm rounded, sorted, and washed river gravel pack according to the design of the well.
- The contractor must fill around the casing pipe and above the water level by impermeable clay according to the design of the well.
- The contractor should have a proper and standard sample box to take the sample from each meter and put it into the sample box.
- The contractor should have the water tanker for the circulation of water to the well during drilling and cleaning of well while gravel packing. The water tanker capacity should not be less than 15 cubic meters.
- Hard stratum cannot be the reason for delaying in the drilling of wells.
- The contractor will be entitled to the cost per meter of the gravel pack and the impervious clay seal.
- The contractor should arrange for helmets, safety shows, overall, safety glasses, and leather gloves for the safety purpose of the working team.
- The work should be carried out in accordance with the specified terms and conditions outlined in the contract, including technical standards, safety protocols, and quality requirements.
- The contractor must clean the area from dust and additional stones after the project.

Compressor Test:

- The well should be cleaned and developed by an air Compressor with three inches GI outlet pipe (with the joint of Flange) and one inch GI air pipe or PE pipe 32mm (10 Bar- PE 80) (one job) until the water of well completely cleaned from mud, silt, and dust. The capacity of the compressor should be 12 atmospheres (output of pressure) and should be able to clean and develop the well to the depth of the maximum well depth. The development of well means closing and opening the gate valve of the water pipe outlet during compressor operation for better cleaning and sorting of gravel and sand around the pipe and screen.

Pump Test:

- It should be performed by an electric submersible pump minimum of 8 hours for finding well hydraulic properties, such as static water table, discharge, dynamic (water table) time draw downed time recovery.
- The minimum and maximum discharge of the pump should be between 3-5 Lit/s and the pump head should not be less than well depth. The power of the generator should be according to the power of water pump and to have stable power during pumping test. The contractor should have a valve and flow meter for control of well discharge during the pumping test of well.

General Specifications:

- The contractor should provide PPE (Helmet, Safety Shoes, Safety Glass, and Leather Gloves) for the Safety of his working team.
- The contractor should provide hard and soft copies of reports for well construction and pumping tests.
- The contractor is responsible for logistic costs during shifting/transportation of equipment between wells in the project area.
- The Contractor should use river-washed sand-sorted gravel (2-6mm) for filling around the filter. The contractor may use impermeable material for backfilling around casing but still, confirmation of the technical staff is necessary on the amount of backfilling for screen and casings.
- The Contractor will be fully responsible for vertical straight boreholes. Where the water table is less than 5 meters then the well should be sealed by impermeable clay to prevent water reaching the top of the filter.
- The contractor does not have the right to make a contract with another party.
- During the backfilling, using the heavy machine is prohibited, only a shovel should be used.
- The transportation cost of machinery, food, and accommodation will be the contractor's responsibility.
- To allow an adequate work follow-up, the Contractor will maintain a construction logbook at all sites in which all information related to the work will be reported. This book will allow the SCI technical staff to precisely know the progress report of drilling work as of his arrival on the construction site. The remarks and reserves of the contractor and/or the person in charge of the program will be notified in the book of the building site. A copy of this field notebook will have to be given to SAVE THE CHILDREN at the end of the project.