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Redesigning a sewage pump for Qalqilya municipality in Palestine

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Abstract

In this project, a modification process made for a submersible sewage pump of Qalqilya Municipality in the West Bank of Palestine. This is a serious problem of sustaining the sewage drainage service that the Municipality faced. The failure of the submersible sewage pump is costly and sometimes it cannot be repaired. Also, some parts of the pump are expensive or not available in the local market. The idea of this project is to modify the design of the pump in which to overcome a common problem that faced the submersible sewage pumps which is motor failure. The submersible motor removed from the pump body and connect the pump with pipes and line shafts to the ground surface. A general induction motor was attached with the pump from the ground surface. When the pump is submerged and the motor is on the ground surface, the pump in this case is a semi-submersible. The project worked successfully and sustained the sewage drainage service. The operation and maintenance of the sewage pump with this configuration are powerful and reduce corresponding costs as well as associated risks. A dual sewage pump station is recommended to solve the problem in the long-run.