Gall Zeidler Consultants
Geotechnics | Tunnel Design | Engineering

Solu River Hydropower Project
Solu Hydro Power Private Limited

Location: Tingla Village, Solukumbhu District, Nepal

Date: April, 2022

Structure: Diversion Weir, intake, de-sanding basin, 4.2 Km HRT, Surge Shaft, Valve House and surface Penstock

Length: 1.4 km (0.87 mi)

Geology: The project area is located within Ulleri formations comprising feldspathic schists with augens of feldspar and quartz, Augen Gneisses with muscovite-quartz-feldspar which are mylonitised. The Penstock alignment is located in a slope area with gentle to steep gradients ranging from 10^{o} to 70^{o} The slope material is dominated by colluvial deposits mixed with completely weathered gneiss which is disintegrated into soil.

Cost: INR 1600 Cr (194 Million USD)

Client: Solu Hydro Power Private Limited

Owner: Solu Hydro Power Private Limited

Expert Services:

Solu Hydro Power Private Limited (SHPL) is a subsidiary of Triveni and Vishal Group. The SHPL, herein referred to as the "Client" is structing the 82 MW Lower Solu Hydro Electric Project under Build, Own, Operate and Transfer (BOOT) contract.

About 80% of the civil works of the project have been completed. There was an issue with the Penstock alignment at its site. Significant movement along and across the Penstock alignment was observed with development of tension cracks on the upper part of the Penstock together with displacement of Penstock joint.

The Client sought clarification of the root cause of the slope movements. Furthermore, the Client requested to develop conceptual solutions for repair, replacement, or re-alignment of the penstock to ensure future stability during operation.

Gall Zeidler Consultants (GZ) have been commissioned for site visit and due diligence of the Penstock area. The scope of works included the general external visual inspection of the Penstock alignment, general assessment of the status of the current Penstock installation as well as the general assessment of the logical conditions and the geotechnical investigation carried out at site, and the preparation and submission of Due Diligence Report.

Figure 1. Penstock Alignment.