

## ASAF KHAN

### Geologist

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## SUMMARY

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I'm a Geologist with 5+ years of experience in hydropower, infrastructure, and energy projects in Pakistan and Saudi Arabia, specializing in grouting expertise (consolidation, curtain, compaction, contact, and jet/high-pressure injection) etc. for dam foundations, diversion tunnels, retaining walls, and slopes tunnels, using ART Level 3 technology, advanced Chinese instruments, sample recorders, and various mix designs. single/double pickers, Skilled in Geotechnical Engineering core drilling Sampling, TV logging, rock mass classification (RMR, Q-system, GSI), slope stability, anchors/rock bolts, and geological mapping, with proficiency in Grouting Expert analysis HR Recorder AutoCAD, Civil 3D, GIS, and water pressure tests, Soil and rock testing and supporting design/drawings and field layout preparation lab/field supervision.

## TECHNICAL SKILLS

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- AutoCAD, Civil 3D, GIS, Google Earth • Grouting Expert Analysis System, TDMS, Tunnels TV Logging Software • Slide 6.0, Unwedge, Swedge, DIPS • MS Office (Excel, Word, PowerPoint)

## GEOTECHNICAL INVESTIGATION FIELD & LAB TESTING SKILLS

- SPT • CPT • WPT • TCR • RQD • SCR • FDT • Trial Pits • Gradation • Proctor Compaction • Atterberg Limits, • Asphalt, Concrete, Cylinder, Temperature Tests, Density, Viscosity, Bleeding test

## PROFESSIONAL EXPERIENCE

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### 1. China Gezhouba Group Company (CGGC) — Mohmand Dam Project, Senior Geotechnical Engineer |

*Chinese Project*  
09/2022- 11/2023

- Led geotechnical investigations including drilling, logging, TV logging and sampling, collecting subsurface data essential for foundation design tunneling and slope stability analysis. ground strengthening solutions
- Supervised Art Level 3 technology for grouting and drilling using micro-fine cement. Managed high-pressure (5 MPa) 120m Holes grouting in 5 m stages at powerhouse and tunnel sites controlled water ingress with surface sealing and completed grout tests (viscosity, bleed, density)
- Completed hydro testing, hydro jacking, probe drilling, endoscopic surveys, and MWD interpretation for the main dam and tunnels.
- Supervision in curtain, consolidation, contact, and injection grouting etc. for dams, tunnels, penstocks, retaining walls, and slopes.
- Oversaw installation of bolts, shotcrete, mesh, and anchors, and supervised slope stabilization, strand anchors, and using CMD and Art Level 3 grouting technology, penstock, and powerhouse zones.
- Geological mapping of tunnels and slopes, foundation stability evaluation use (RMR, Q-system, GSI), and digitizing site maps in AutoCAD. supervising shotcrete, mesh, rock bolts, and anchors,
- Carried out RQD assessment and in-situ tests WPT (SPT, CPT FDT,) to evaluate soil and rock conditions.
- Prepared geotechnical reports, borehole logs, lab data, and design maps in AutoCAD/Excel, coordinating with consultants and managing site quality and progress.

## 2. Pakhtunkhwa Energy Development Organization (PEDO)

08/2022 - 07/2021

### *Grouting Engineer |*

*Pakistan*

#### **Koto Hydro Power project.**

- Supervision in curtain, consolidation, contact, and injection grouting etc. for dams, tunnels, penstocks, retaining walls, and slopes.
- Managed full drilling-to-injection operations, including holes layout, spacing, depth, type selection, and WPT/Lugeon tests.
- Skilled in ART Level-3 intelligent grouting technology and HR Recorder / Grouting Expert Analysis System software.
- Proficient in mix design, quality control, and grout monitoring, ensuring density, viscosity, stability, and refusal criteria.
- Advanced TV logging, borehole correlation, and reporting, including AutoCAD/Civil 3D drawings.
- Proficient in rock mechanics & classification (RMR, Q-system, GSI), slope stability, anchors, and rock bolts.
- Skilled in geological mapping, AutoCAD, Civil 3D, and GIS for cross-sections, borehole logs, and site layouts.
- Experienced in lab and field supervision, including soil and rock testing, WPT/Lugeon tests, and monitoring of grouting operations.

**I also work in Tenda dam kohat in Geotechnical Sits**

## 3. Environmental Support Science & Testing Company Project 01

12/2023- 08/2025

### **Engineering Geologist |**

*Saudi Arabia*

Geotechnical investigation of Alwajh to Umluj transmission line (Client L&T)

Prepared and digitized borehole logs for soil and rock investigations, supporting efficient drilling operations. Field tests SPT, ERT, TRT, permeability, and packer tests. And Grouting involves introducing hard-setting slurries and solutions into fractures, cavities and gaps in soil or rock. A distinction is made between injections with and without modification of the construction soil. The choice of grouting agent depends on the purpose of the activity and the geological characteristics of the construction soil. Executed site investigations, soil testing, and environmental sampling (water and soil). Digitized and directed borehole and lab test data in Excel and Word,

## 4. Environmental Support Science & Testing Company Project 02

### **Field Geologist |**

*Saudi Arabia*

*Geotechnical investigation of transmission line, Duba to Alwajh. (Client L&T)*

Drilling operations, core sampling, and borehole stabilization.

Measured soil permeability (variable/constant head) and assessed soil stability Foundation for design planning.

Performed ground tests including ERT, TRT, permeability, and packer tests.

Digitized and managed borehole and lab test data in Excel and Word, improving project data accuracy. Used GIS, AutoCAD, and mapping tools for digital geological maps and terrain models

Ensured sample quality and data integrity through proper labeling, preservation, and QA/QC procedures.

## 5. Natural Resources Exploration Company

(12/2018 – 11/2019)

### Site Geologist |

Pakistan

Conducted geological mapping and exploration across 10+ mineral sites, identifying optimal drilling targets, logging core samples, and evaluating mineral content and structure to support resource development planning. Executed geochemical and geophysical surveys, stratigraphic and structural analyses to optimize resource evaluation and extraction strategies. Ensured environmental and safety compliance during field operations and prepared detailed reports and presentations on exploration results.

## EDUCATION

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### Bachelor of Science in Geology (Engineering Geology Specialization)

Bacha Khan University, Charsadda, Pakistan |

CGPA: 3.66/4.00

### Diploma in Information Technology

Khyber Pakhtunkhwa Board of Technical Education 

Final grade: 1095/1400

## TRAINING & CERTIFICATION

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- Google Data Analytics Certificate — Coursera (2024)
- OSHA Safety Certification — Occupational Safety and Health Administration
- Best Year Project Award — Energy China (CGGC)

## LABORATORY & FIELD TESTING

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**Concrete:** Slump, Cylinder, Cube, Temperature Tests, Density, Viscosity, Bleeding test

**Soil & Sand:** Sieve Analysis, Proctor, CBR (ASTM D1883)

**Aggregate:** Soundness, Specific Gravity, Water Absorption

**Asphalt:** Bitumen Extraction, Marshall, GMM, GMB

## ACHIEVEMENTS

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Published research on Mohmand Dam and Murree landslides; created digital maps of tunnels, slopes, and boreholes using AutoCAD; applied Q-System, RMR, SMR, GSI, and geotechnical software (Slide, Unwedge, Swedge, Google Earth, Illustrator) for rock mass and slope stability analysis.

## LANGUAGES:

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### English

Advanced



### Arabic

Advanced

