Ground Water Services
In line with the Sustainable Development Goal 6. “Clean Water and Sanitation”, the Service aims to support the Agenda 2030 for Sustainable Development adopted by the UN General Assembly in 2015.

**Groundwater Services**

**Our vision**

**Impacts and partnership**

- Positively influence Mission mandates and reduce security risk to personnel by making access to safe water possible
- Advocates and enables sustainability from borehole siting through to abstraction
- Contributes to peacebuilding initiatives and paves the way for positive legacy
Groundwater Services Description

The global groundwater service aims at **supplying Mission’s water requirements** while simultaneously **protecting critical water resources** to limit adverse environmental impacts and effects on long-term livelihoods in conflict areas.

The Service includes:
- **Groundwater Exploration**
- **Groundwater Drilling Supervision**
- **Well Assessment and Rehabilitation**
- **Groundwater Monitoring**

[Learn More](https://geoportal.un.org/arcgis/apps/sites/#/groundwater)
1. Desk Study
Analysis of hydrological and geological data sources to identify areas of interest and orientation of survey lines

2. Field Survey
Field work using a geo-resistivity meter to confirm presence of aquifer identified by the Desk Study, and identification of drilling targets

3. Interpretation
Analysis and post-processing of collected data collected and recommendations for drilling sites

4. Drilling Supervision
Follow up process of well design and construction procedures

5. Well Assessment
Interpreted assessment of existing well results and status, including recommended options for their rehabilitation.

6. Monitoring
Long-term, systematic measurements of water levels and monitoring of groundwater management measures.

Groundwater Services Process
### Desk Study

Analysis of multispectral and radar imagery to map geological features and groundwater indicators

+ Augmentation with hydrogeological information to identify areas of interest and orientation of survey lines

Environmental appraisal of the project and stakeholder engagement

Analysis of environmental impacts of additional groundwater resource development

Evaluation of water supply alternatives

### Field Survey

Field work using a geo-resistivity meter to confirm presence of aquifer identified by the Desk Study

+ Interpretation of collected data to identify drilling targets

- Environmental baseline;
- Mitigation of the negative and enhancing of the positive aspects;
- Development of an environmental management and monitoring plan

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**3d Representation of the aquifer**
**Groundwater Services Process**

**BOREHOLE DRILLING**

- Drilling operations
  - Preparation of tender documents for contracting
  - Drilling supervision to ensure proper borehole construction and compliance with environmental policies
  - Estimation of well capacities and assessment of water quality

*The water source chosen for development shall be both reliable and sustainable*
41 boreholes successfully drilled (MINURSO, MINUSMA, UNSOS) with a success rate of 97% and an average yield of 68,000 litres per day
Well Assessment & Rehabilitation - Ensuring Return on Investment

- Pumping tests, including step-test, long duration constant rate test and recovery test.
- Analysis of pumping test results to find **current sustainable yield and max. pumping period duration**.
- Borehole inspection camera survey to check well construction meets original well design and to check for fouling/clogging of well screens and **other issues which effect well efficiency**.
- Report detailing **rehabilitation options and recommendations**.
- Groundwater Team can organize and **supervise well rehabilitation** on-site, according to their recommendations.
Well Assessment & Rehabilitation - Ensuring Return on Investment

Borehole Inspection Camera Video