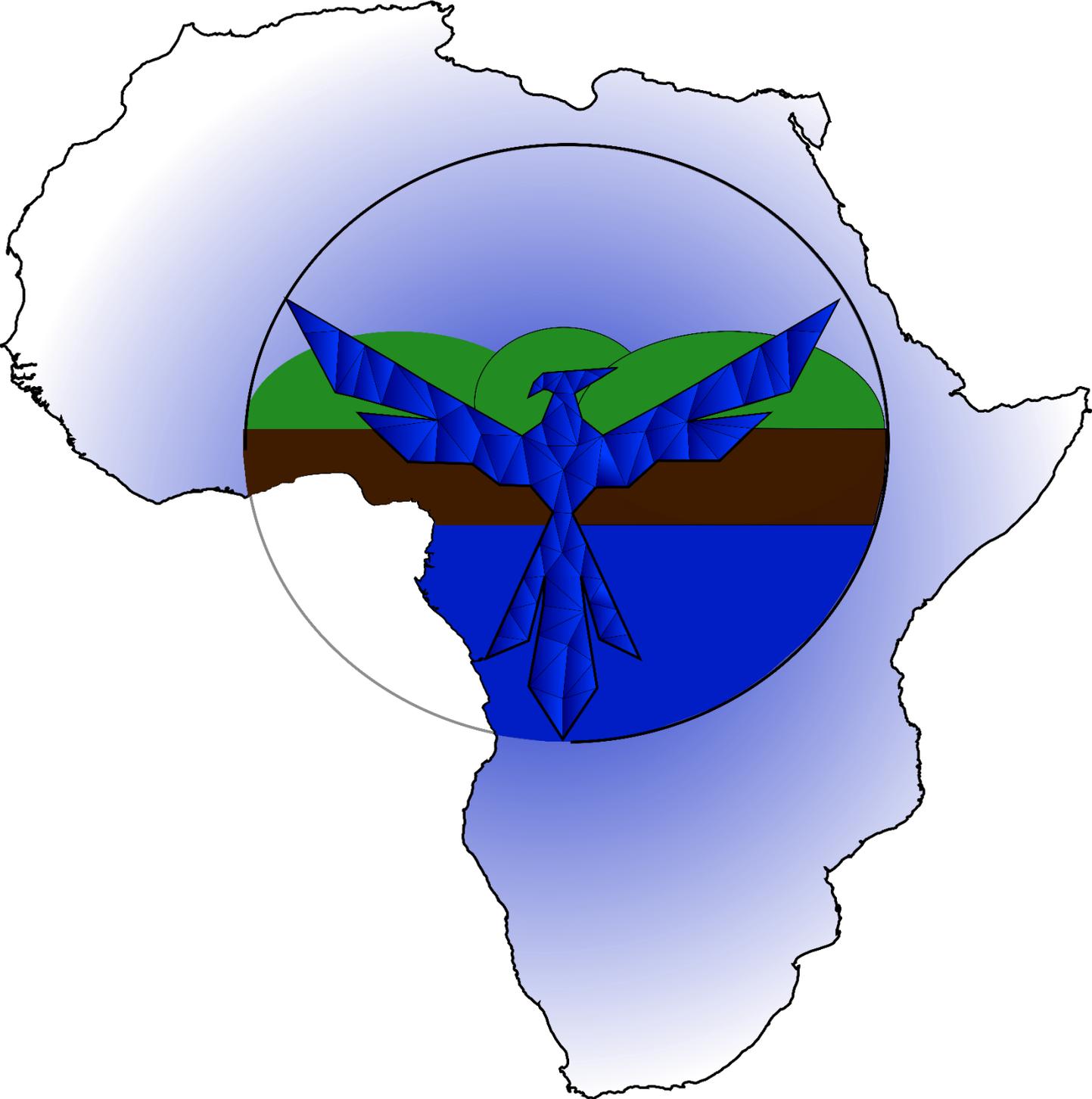


ALICANTO GROUNDWATER SOLUTIONS





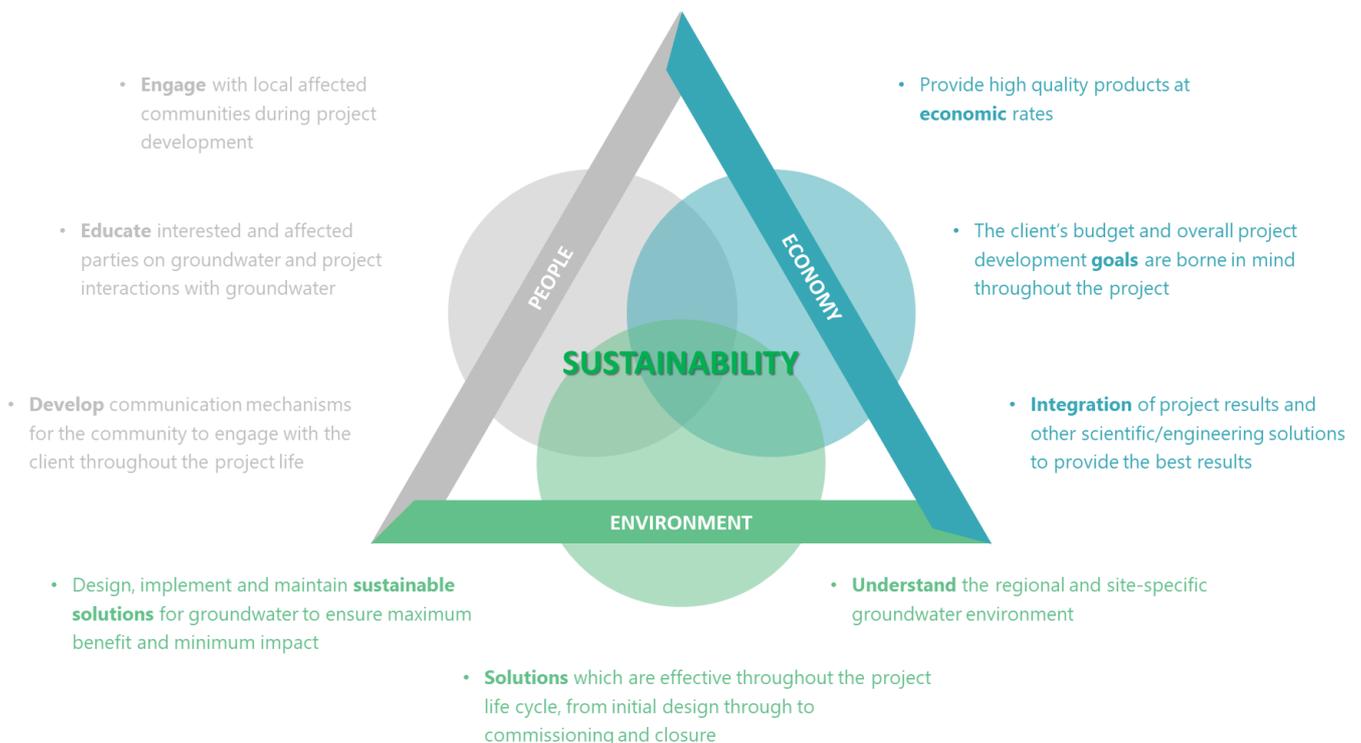
About Us

Alicanto Groundwater Solutions (Pty) Ltd was founded in 2018 with the vision of providing high quality and cost-effective groundwater solutions for South Africa and African stakeholders and industries. We believe that the management and development of groundwater resources is critical in providing water security for both current and future generations and plays a key role in the economic success of projects.

Our core values and principles under which we operate are honesty, quality, accountability and, most importantly, the sustainability of our solutions we provide. Our aim is to provide the highest level of quality to our clients at economic rates while ensuring our solutions are sustainable in the long term.

Alicanto Groundwater Solutions has developed working relationships with multiple partners across the environmental and engineering sectors and believes that integrating our solutions with our partners provides high quality, economic and sustainable solutions for our clients.

Using our experience, partnerships and passion for groundwater we can assist our clients in every phase of the project life cycle, from initial design and feasibility investigations up to final commissioning and closure phases of the project. All our projects are tailored to meet our client's specific needs and requirements, allowing us to successfully support clients from domestic, municipal, industrial, commercial and mining sectors.





Our Services

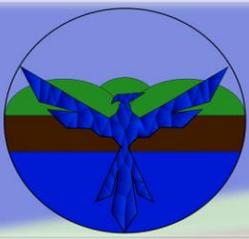
GROUNDWATER RESOURCE DEVELOPMENT

MINING HYDROGEOLOGY

WATER MANAGEMENT SOLUTIONS

GROUNDWATER NUMERICAL MODELLING

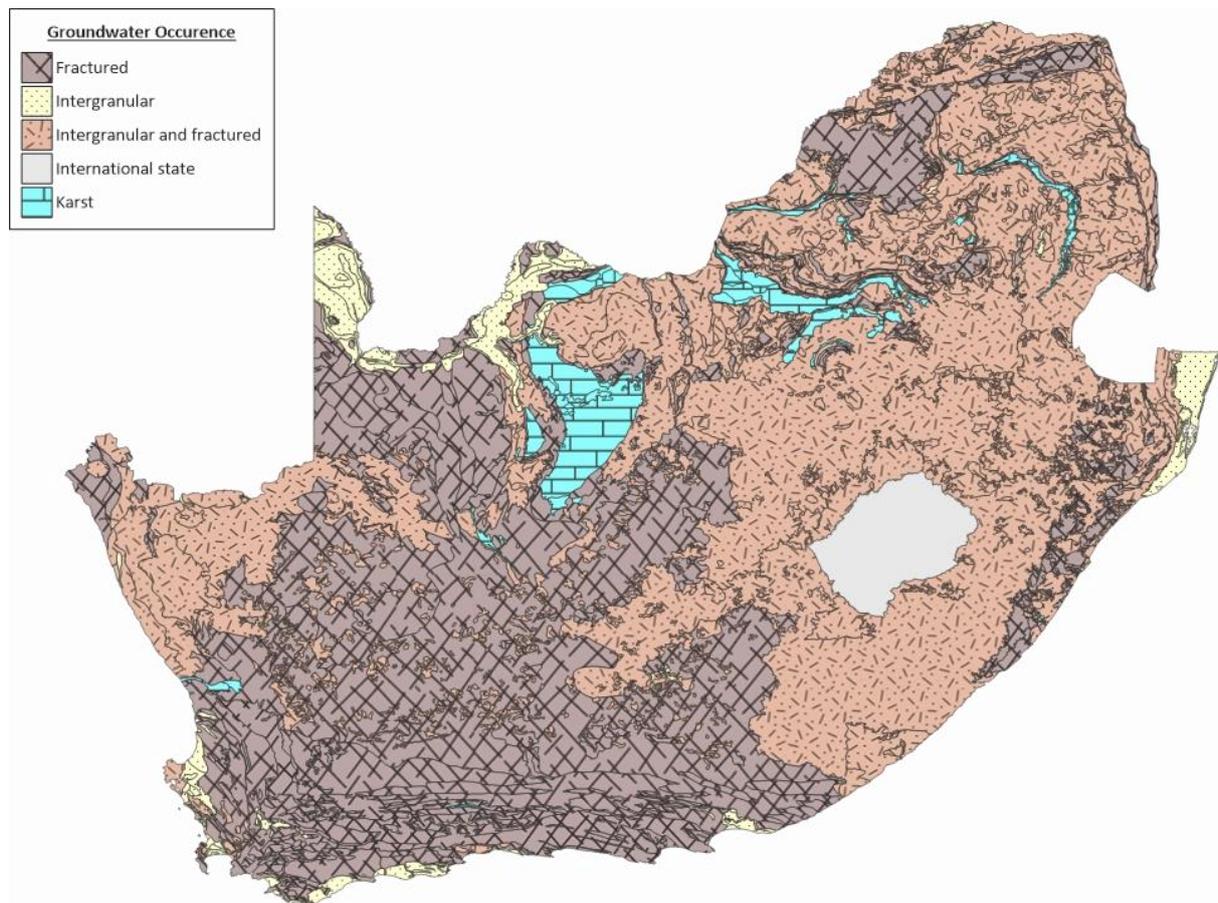




GROUNDWATER CHARACTERISATION

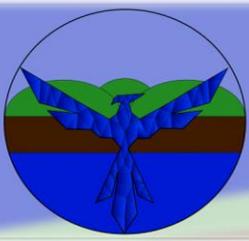
Characterising the groundwater environment at a site is an essential part of both the development and management of groundwater resources. Combining experience with AGS's knowledge databases and scientific procedure, AGS can assist our clients in determining baseline groundwater conditions at their site anywhere in Africa.

The data acquired during the groundwater characterisation study is used to develop a site conceptual model, which shows potential sources, pathways and receptors of groundwater. The conceptual model plays a vital role in further decision-making processes at the site and provides a good overview of the groundwater processes and components present at the site.



In terms of Groundwater Characterisation, AGS can assist our client with the following services:

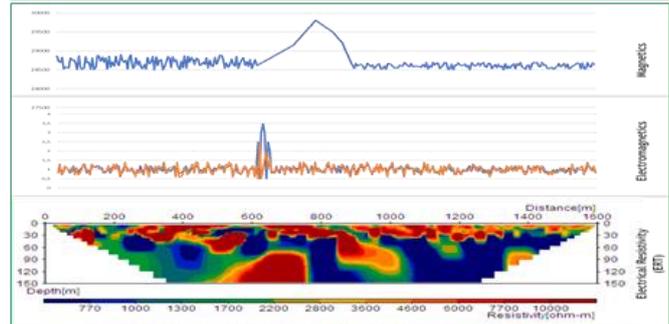
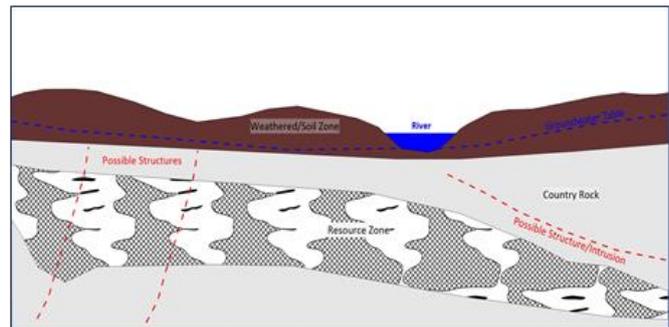
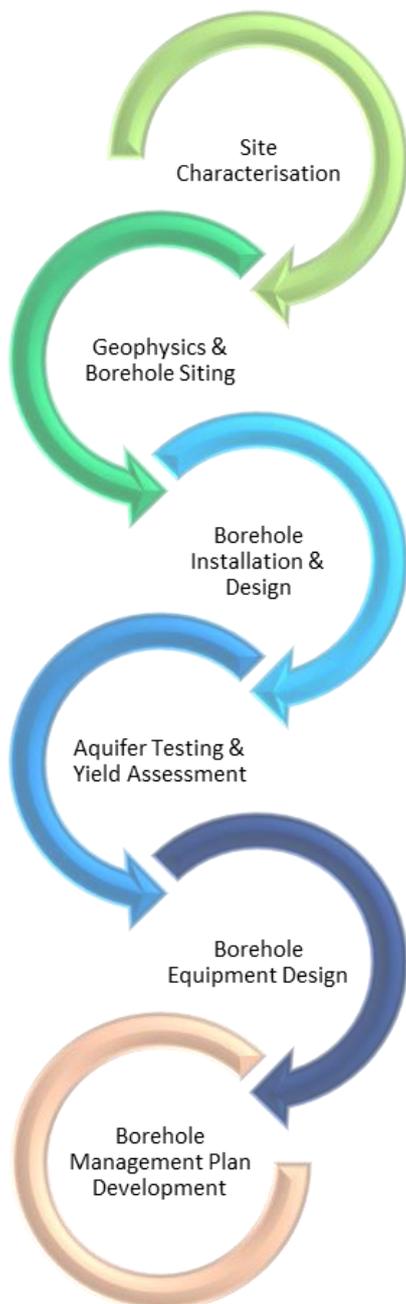
- Desktop Data Collection and Review;
- Surface Geophysical Surveys;
- Down-hole Geophysical Surveys;
- Borehole Siting, Installation Supervision and Development;
- Aquifer Testing;
- Double-Ring Infiltrometer Testing;
- Water Quality Sampling and Interpretation; and
- Analytical Flow and Transport Modelling.

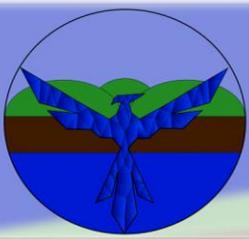


GROUNDWATER RESOURCE DEVELOPMENT

AGS has been successful in developing groundwater resources in several African countries, including South Africa. By using a combination of sound scientific knowledge and principles combined with experience and the latest technologies, AGS can assist our clients throughout the groundwater development process.

Our groundwater resource development services include:





MINING HYDROGEOLOGY

AGS can assist our clients throughout the mining life cycle, from exploration to closure and post-closure groundwater development and management. Drawing from multiple mining environments and varied groundwater conditions and mining methods, AGS can design, execute and maintain sustainable and beneficial solutions for our clients.

EXPLORATION

- Baseline Groundwater Characterization
- Geophysical Surveying (Surface & Down-Hole)
- Groundwater Supply Development
- Groundwater Management Plan Development
- Dewatering System Design, Implementation & Management
- Numerical Modelling
- Water Monitoring Network Design, Implementation & Management
- Specialist Studies (EIA, EMP, WULA, P/BFS)

OPERATIONAL

- Groundwater Characterization
- Contaminant Source Characterization
- Geochemical Characterization
- ARD/AMD Management Strategy
- Groundwater Management Plan Development
- Dewatering System Design, Implementation & Management
- Numerical Modelling
- Water Monitoring Network Design, Implementation & Management
- Specialist Studies (EIA, EMP, WULA, P/BFS)

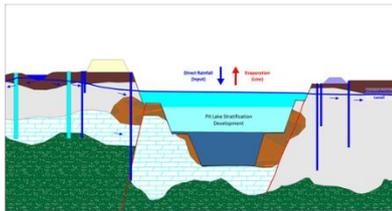
CLOSURE

- Contaminant Source Characterization
- Geophysical Surveying (Surface & Down-Hole)
- AMD/ARD Management Plan Development
- Numerical Modelling
- Water Monitoring Network Design, Implementation & Management
- Rehabilitation Plan Development
- Specialist Studies (Closure Planning)
- Water Liability Assessment
- Water Treatment Solutions

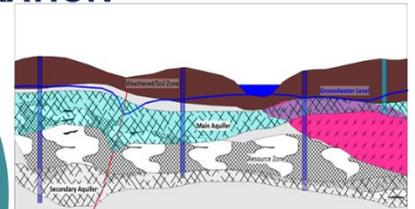
POST-CLOSURE

- Contaminant Source Characterization
- AMD/ARD Management Plan Development
- Numerical Modelling
- Water Monitoring Network Design, Implementation & Management
- Specialist Studies (Closure Planning)
- Water Liability Assessment
- Water Treatment Solutions

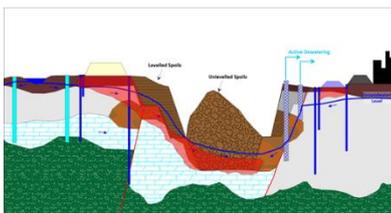
POST-CLOSURE



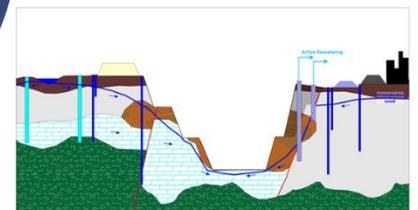
EXPLORATION

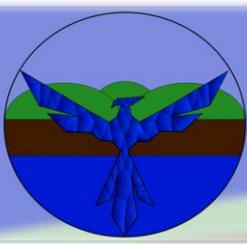


CLOSURE



OPERATIONAL



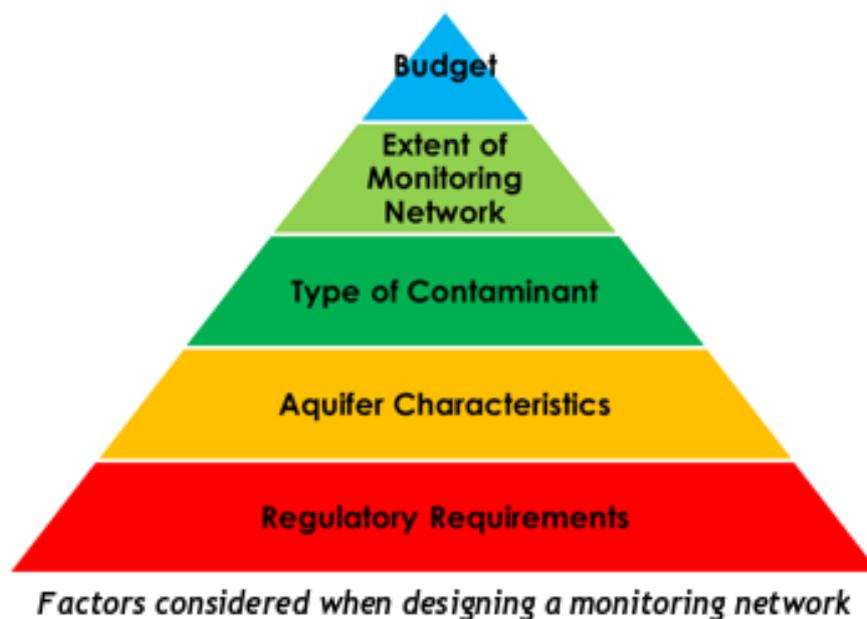


WATER MANAGEMENT SOLUTIONS

AGS uses international and local best practice guidelines, including legislation, to assist our clients in designing, installing and operating the most appropriate and efficient water management system for their site. All our solutions are tailored to meet site specific management criteria and are designed to be efficient, economic and sustainable in their operation and management.

During the system design process, multiple options are evaluated in terms of their cost, applicability and operation and maintenance requirements using a decision-making tree (as shown below). The process is indicated clearly to the client to allow them to make an informed decision and select the best option for their site. Major factors considered during the design process include:

- Management Efficiency (i.e. how good is the system at managing the site water?)
- System Compliance with Objectives and/or Legal Obligations
- Capital Cost of the System
- Operational and Maintenance Cost of the System
- System Data Collection Accuracy and Frequency



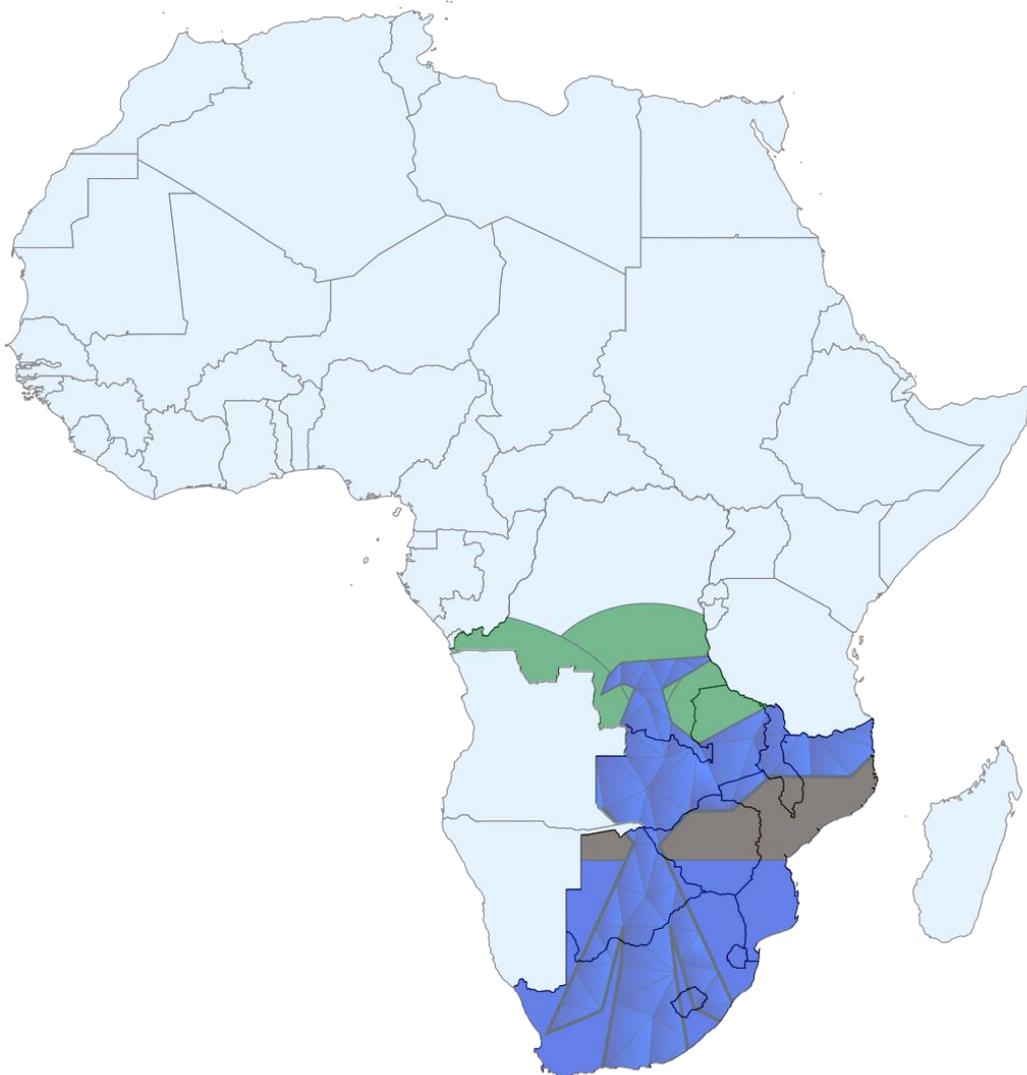
Some of the water management solutions offered by AGS include:

- Water Monitoring Network Design and Operation (Ground and Surface Water)
- Automated Water Management Systems
- Water Efficiency Plan Design
- Integrated Water and Waste Management Plan Development
- Source Characterisation Studies
- Site Groundwater Rehabilitation Solution Design



Key Project Experience

Project Year	Project Name	Client	Country of Work
2018	Black Rock Mine Hydrogeology	Envass	RSA
2018	Clydesdale Colliery Hydrogeology - Stage 1	Onicalite (Pty) Ltd	RSA
2019	Welgedacht & Bloemendal Mine Hydrogeology	Insa Coal Holdings (Pty) Ltd	RSA
2019	Meyerton Fuel Station Hydrogeology	Amazing Heights Investments (Pty) Ltd	RSA
2019	Brikor Hydrogeology Update	Environmental Assurance (Pty) Ltd	RSA
2019	Ambrose Dewatering Assessment	GIBB (Pty) Ltd	RSA
2019	SADC Groundwater Supply Desktop Reviews	CRIDF	DRC, Zambia, Malawi, Mozambique
2019	Vaalbank Colliery Hydrogeology	Fortitude Mining Holdings (Pty) Ltd	RSA
2019	Vaalbank Colliery PFS Groundwater Modelling	Fortitude Mining Holdings (Pty) Ltd	RSA
2019	Dunbar Coal Mine Hydrogeology	Insa Coal Holdings (Pty) Ltd	RSA
2019	Samancor Geophysical Survey	Environmental Assurance (Pty) Ltd	RSA
2019	Machipanda Groundwater Development	CRIDF	Mozambique
2020	Ocon Brick Hydrogeology	Ocon Brick (Pty) Ltd	RSA





**ALICANTO GROUNDWATER
SOLUTIONS**

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ALICANTO GROUNDWATER SOLUTIONS

SOLUTION DRIVEN SUSTAINABILITY

ALICANTO GROUNDWATER SOLUTIONS

