ASBAR
GEOSCIENCES & ENVIRONMENT

COMPANY PROFILE

ASBAR Geosciences

Geoscience consulting for the Kingdom’s mining, water and construction sectors: exploration, surveys, drilling, groundwater, testing, environment and training.

WHO WE ARE

ASBAR Geosciences is a Saudi geoscience consultancy serving the mining, water and construction sectors with fieldwork, analysis and reporting.

We serve government bodies and water utilities, mining companies and exploration licence holders, drilling contractors, construction and geotechnical firms, international consultancies and agencies, and industry. Our work covers exploration fieldwork, geophysical and geomatic surveys, drilling with our own rigs, logging of boreholes and wells, groundwater and geothermal studies, and training.

Our own teams plan each programme, run the surveys, carry out and supervise the drilling, log the boreholes and take the samples, so each report is based on data that the company collected and is accountable for.

ASBAR builds on the geoscience work of the Technology Experts group, where its teams began as a division before becoming a company in its own right within the group.

Recent work includes logging of geotechnical boreholes for construction projects in Riyadh, Qiddiya, Makkah and Najran; condition surveys of water wells for a government water utility in the Tabuk region; alluvial-aquifer surveys in AlUla; core drilling at Dawadmi; and exploration fieldwork on licences in the Arabian Shield.

Environmental permits, impact assessment and audit are delivered with the environment department of the Technology Experts group, and laboratory and radiological analysis with the group's accredited laboratories and radiation department.



Wireline logging at a water well



Monitoring-well construction

CAPABILITIES

Our capabilities

Our own field capability

The company owns its drilling rigs, its logging units — optical and acoustic televiewers among them — and survey instruments that include induced-polarisation and resistivity equipment. Its own teams drill, log, survey, take the samples and interpret the results.

Borehole logging for construction

Optical and acoustic televiewer imaging, density, natural gamma and caliper logging of geotechnical boreholes, for construction and geotechnical firms in Riyadh, Qiddiya, Makkah and Najran.

Water and geothermal work

Condition surveys of water wells for a government water utility, alluvial-aquifer surveys and monitoring-network design in AlUla, aquifer-recharge work in Abha, and pumping and injection tests for geothermal development.

Part of the Technology Experts group

As a Technology Experts company, we deliver environmental permits and studies with the group's environment department, and laboratory and radiological work with its accredited laboratories and radiation department. We also work with established international geoscience institutions.

METHOD

Working method

01

Define

Each programme begins by defining what the client needs to know, such as the location of groundwater, the composition of the ground or the condition of the rock beneath a planned structure. The survey is then designed accordingly.

02

Measure

Our field teams survey, drill, log and sample under documented procedures, so every reading can be traced to where and how it was taken.

03

Analyse

Samples go to the Technology Experts group's accredited laboratories; logs and survey data are processed, modelled and checked against the geology.

04

Report

Reports set out the measurements, their interpretation and any questions the data do not yet resolve, with the maps and models required for decision-making.

DIRECTION

Vision, mission and values

VISION

To be a recognised Saudi geoscience consultancy serving the mining, water and construction sectors, within the Kingdom and internationally.

MISSION

To give every client measured evidence about their ground, gathered in the field by our own teams, analysed to international standards and reported plainly, and to deliver it sustainably, with lasting value for our clients, our people and the Kingdom.

Integrity

We report results as measured, including results that differ from the client's expectations.

Rigour

Every reading is traceable, every method documented and every result checked before it reaches a report.

Safety and the environment

We place the safety of our staff before any measurement, and we leave each site in a condition no worse than we found it.

Saudi talent

We build Saudi geoscience capability in the field and through our training programmes.

RESPONSIBILITY

Health, safety and the environment

Our crews work at remote desert sites, at drilling rigs and on active construction and mining sites. We protect them with qualified supervision, appropriate protective equipment and procedures applied on every site, under a management system certified to ISO 45001:2018, and we give our people a secure workplace that encourages diversity and inclusion.

We keep the places we work in clean: waste and chemicals are handled in accordance with best practice, sites are left safe, and we share health and safety awareness with the communities around our work.



SERVICES

SERVICE 01

Mineral Exploration

We plan and run exploration programmes for mining-licence holders: generating targets, mapping the geology, tracing quartz veins, trenching and sampling, and following up with drilling, with daily reporting from the field and geology, geochemistry and geophysics interpreted together.

SCOPE

- Target generation and mineral-system modelling
- Remote sensing and geophysics for exploration targeting
- Airborne and ground magnetic surveys and VLF for targeting
- Geological and structural field mapping
- Quartz-vein tracing, regolith mapping and ancient-workings reviews
- Trenching and trench mapping
- Soil and rock geochemistry, sample logging and QA/QC
- Petrographic services
- Resource estimation and technical audits
- Exploration work programmes for licence holders, with daily field reporting
- Project planning, permitting and implementation
- Drilling management and on-site staff training

IN THE FIELD

Exploration fieldwork programme, Nabitah–Ad Duwayhi belt

Related exploration licence holder

Diamond-core drilling programme, Dawadmi

Exploration drilling contractor

Geological studies — two model mining complexes, Al Jouf

Government body, mining sector



SERVICE 02

Surveys & GIS

Ground geophysical surveys (magnetic, VLF, resistivity, induced polarisation and electromagnetic), geomatic surveying licensed by the General Authority for Survey and Geospatial Information (GEOSA), and GIS services from acquisition and processing to databases, cartography and 3D/4D terrain models.

SCOPE

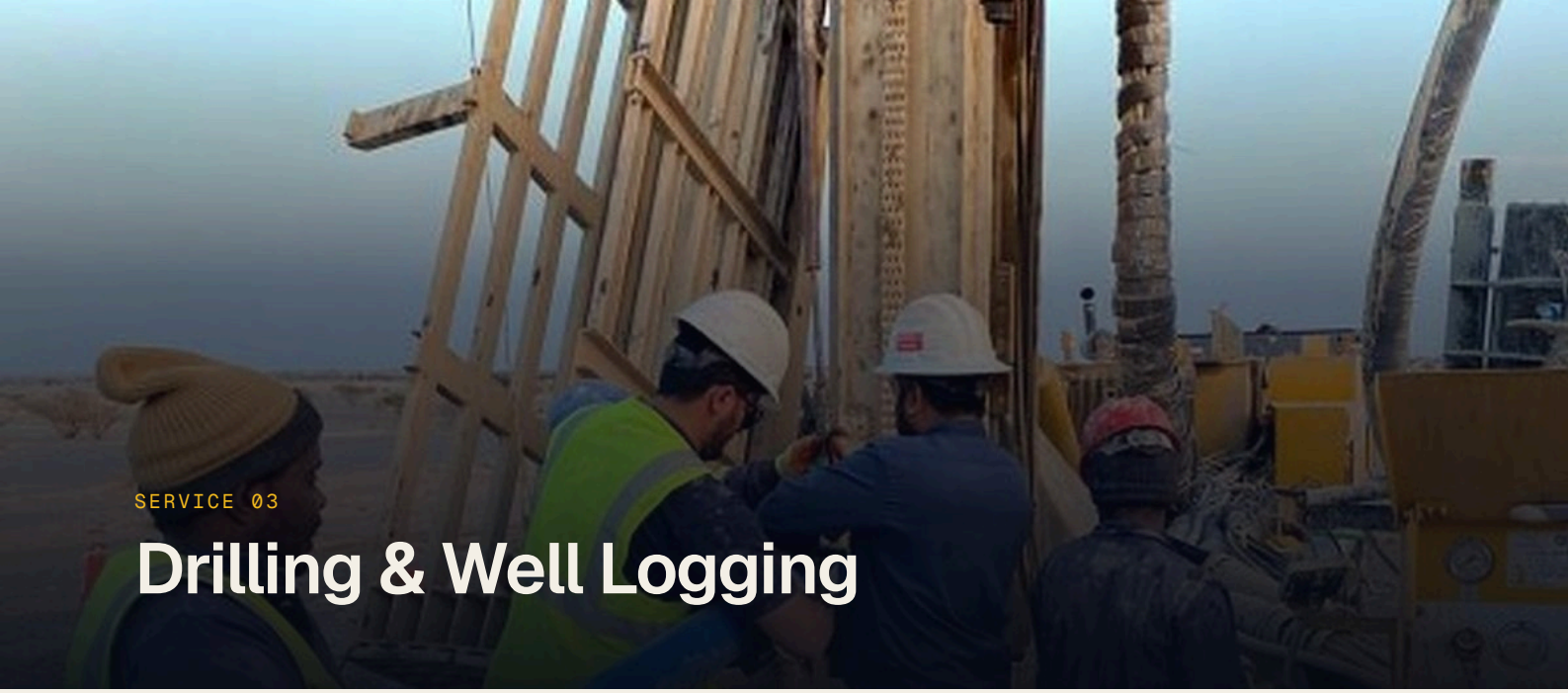
- Ground magnetic and VLF surveys
- Airborne magnetic surveys
- Resistivity (VES and ERT) and induced polarisation (IP) surveys
- Electromagnetic, ground-penetrating radar and gravity surveys
- Seismic surveys
- Geomatic surveying licensed by GEOSA — DGPS, topographic and boundary surveys
- DGPS surveys of wells and boreholes
- Aerial mapping and lidar acquisition
- Aerial and satellite imagery interpretation
- GIS needs assessment, planning and implementation
- Geodatabase design and development
- GIS data development, maintenance, updating and formatting
- Map creation and cartographic design
- Spatial data management and analysis
- 3D/4D terrain modelling
- Hydraulic and hydrological modelling

IN THE FIELD

Well-integrity logging and DGPS well survey, Al Jouf
Food producer

Groundwater exploration and assessment, Al Majma'ah compound
Contracting company

Alluvial-aquifer survey and monitoring-network design, AlUla
International geological survey agency



SERVICE 03

Drilling & Well Logging

Exploration core drilling, DTH drilling, water wells and piezometers with the company's own rigs, and the full downhole record: cuttings and core described, boreholes logged with geophysical tools and imaged with optical and acoustic televiewers, and wells checked for cement bond and flow.

SCOPE

- Preliminary site assessment
- Exploration diamond-core drilling, with core boxed and logged on site
- Down-the-hole hammer (DTH) and reverse-circulation drilling
- Water-well drilling — air and mud rotary, down-the-hole hammer
- Piezometer and monitoring-well construction
- Drilling in mine tailings
- Geotechnical and environmental mine-site drilling
- Rock coring and overburden sampling
- Heap-leach sampling and mine-expansion investigations
- Geophysical logging of geotechnical boreholes for construction projects
- Optical (OPTV) and acoustic (ATV) televiewer imaging
- Gamma-gamma density, natural and spectral gamma, and caliper logging
- Cement-bond and casing-collar logging (CBL/CCL)
- Flowmeter and dynamic flow logging
- Video-camera inspection of water wells
- Core logging and borehole data interpretation

IN THE FIELD

Geophysical logging of geotechnical boreholes
Construction and geotechnical firms

Well-integrity logging and DGPS well survey, Al Jouf
Food producer

Diamond-core drilling programme, Dawadmi
Exploration drilling contractor

Mahd open-pit hydrogeology drilling programme
National mining company



SERVICE 04

Groundwater

Hydrogeology for water supply, mining, construction and geothermal development: assessing aquifers, surveying the condition of existing wells, drilling and testing wells, designing monitoring networks and modelling groundwater flow.

SCOPE

- Groundwater exploration and aquifer assessment
- Alluvial-aquifer surveys and aquifer-recharge studies
- Geo-electrical surveys (VES and ERT) for aquifer mapping
- Water-well condition surveys — reopening closed wells and downhole camera inspection
- Water sampling, with chemical, radiological and microbiological analysis in the group's laboratories
- Feasibility reports on treating well water
- Pumping, injection, airlift and slug tests
- Geothermal hydrogeology — desk studies and well testing
- Design of groundwater and water-level monitoring networks
- Hydrological and hydraulic studies — catchments and flows
- Flood-risk and drainage-impact assessment
- Design of diversion and retention structures
- Hydrogeological and contaminant-transport modelling

IN THE FIELD

Water-well condition surveys, Tabuk region
Government water utility

Alluvial-aquifer survey and monitoring-network design, AlUla
International geological survey agency

Geothermal hydrogeology, Riyadh
Geothermal developer

Hydrogeological study, Hawiyah prospect
Mining company



SERVICE 05

Testing & Analysis

ASBAR takes the samples in the field. Chemical, geochemical and radiological analysis, and NORM work, are delivered by the Technology Experts group's accredited laboratories and its radiation department.

SCOPE

- Sampling of water, soil, rock, sludge and aerosols
- Geochemical analysis — XRF, ICP-MS, isotope geochemistry — in the group's laboratories
- Geochemical modelling and certified reference materials for QA/QC
- Environmental geochemistry — water–rock interaction and heavy metals
- Geophysical well logging for groundwater, contamination, geothermal and hydrocarbon studies
- Water quality — chemical, radiological and microbiological — in the group's laboratories
- Soil characterisation and contamination testing
- Radiological analysis — radium, uranium, thorium, radon — by the group's radiation department
- Spectral-gamma surveys and dose-rate mapping
- NORM investigation, treatment and volume reduction, delivered by the group
- Radiological risk assessment and RESRAD dose modelling

IN THE FIELD

Water-well condition surveys, Tabuk region
Government water utility

Radiological survey, phosphogypsum site
National mining company · Delivered by the Technology Experts group

Radioactivity in irrigation water and agricultural products
Government body, water sector · Delivered by the Technology Experts group

NORM management services
National oil and gas company · Delivered by the Technology Experts group



SERVICE 06

Environment & Rehabilitation

Permit applications, impact assessment and audit, and plans that return disturbed ground to a stable, safe state, delivered with the environment department of the Technology Experts group; ASBAR contributes the geological, hydrogeological and field data.

SCOPE

- Environmental permit applications and renewals
- Environmental impact assessment
- Environmental audits
- Environmental management plans and reporting
- Rehabilitation plans for degraded sites
- Contaminated-soil treatment
- Environmental consulting for mining and industry

FROM THE GROUP'S EXPERIENCE

Waste management in water-treatment plants

Government body, water sector · Delivered by the Technology Experts group

NORM volume reduction, Dhahran water utility

National oil and gas company · Delivered by the Technology Experts group

Supplementary radioactivity study, AlUla

International geological survey agency · Delivered by the Technology Experts group



SERVICE 07

Training

Courses built by practitioners — field mapping, geophysical processing and inversion, well logging and GIS — delivered in partnership with international geoscience institutions, online or face to face, and tailored to each organisation.

SCOPE

- Basic concepts of geology; geology in the field
- Field investigation — boreholes, surveys and trenches
- Superficial deposits and their interaction with human activity
- Rock alteration
- Geological maps — use, design, limitations and insights
- Engineering geology and geotechnics of the subsurface
- Geology and economics of mineral resources
- Analytical characterisation of rocks and minerals
- Applying geophysical methods
- 2D and 3D electrical resistivity — acquisition, processing and interpretation
- Electromagnetic data — acquisition, processing and interpretation
- 2D and 3D GPR processing
- Gravity and magnetic data — processing and modelling
- Oasis montaj (Geosoft) for geophysical and geological data
- Basics of geophysical well logging and borehole imaging
- Joint inversion of ERT and TEM data sets
- Remote sensing applied to geology and land movement
- Geostatistics for interpolation in geosciences
- Surveying with GNSS; advanced network adjustment and geoid modelling
- Advanced GIS processing and applications
- Geoscientific document management

IN THE FIELD

Medical-geology mapping, Al Madinah and Ha'il

Government geoscience agency

SELECTED WORK

ASBAR projects

PROJECT	CLIENT	LOCATION	DISCIPLINE
Geophysical logging of geotechnical boreholes	Construction and geotechnical firms	Riyadh, Qiddiya, Makkah and Najran	Geophysics & Imaging
Water-well condition surveys, Tabuk region	Government water utility	Tabuk	Groundwater
Alluvial-aquifer survey and monitoring-network design, AlUla	International geological survey agency	AlUla	Groundwater
Exploration fieldwork programme, Nabitah–Ad Duwayhi belt	Related exploration licence holder	Nabitah–Ad Duwayhi belt, Arabian Shield	Mining & Geology
Diamond-core drilling programme, Dawadmi	Exploration drilling contractor	Dawadmi	Mining & Geology
Well-integrity logging and DGPS well survey, Al Jouf	Food producer	Al Jouf	Geophysics & Imaging
Geothermal hydrogeology, Riyadh	Geothermal developer	Riyadh	Groundwater
Aquifer-recharge project, Abha	Engineering consultancy	Abha	Groundwater
Medical-geology mapping, Al Madinah and Ha'il	Government geoscience agency	Al Madinah and Ha'il	Mining & Geology
Geological studies — two model mining complexes, Al Jouf	Government body, mining sector	Al Jouf	Mining & Geology
Hydrogeological study, Hawiyah prospect	Mining company	Arabian Shield	Groundwater
Supervision of border monitoring wells	Government body, water sector	Across the Kingdom	Groundwater
Hydrogeological works, Ar Rjum	National mining company	Arabian Shield	Groundwater
Mahd open-pit hydrogeology drilling programme	National mining company	Mahd Ad Dahab	Groundwater
Water-well drilling and testing	Contracting company	Saudi Arabia	Groundwater
Groundwater exploration and assessment, Al Majma'ah compound	Contracting company	Al Majma'ah	Groundwater

SELECTED WORK

The group’s experience

Projects delivered by the Technology Experts group: by its geophysics department before ASBAR was formed from it, and by its radiation department and laboratories. They are shown as the group’s track record, not as ASBAR contracts.

PROJECT	CLIENT	LOCATION	DISCIPLINE
Wireline logging of water wells and mineral exploration boreholes	Government body, water sector	Across the Kingdom	Geophysics & Imaging
Geotechnical borehole logging for the Riyadh Metro	Geotechnical contractors, Riyadh Metro project	Riyadh	Geophysics & Imaging
Phosphate 3 supplementary fieldwork, Al Jalamid	International consulting firm	Al Jalamid	Geophysics & Imaging
As Siham ground magnetic survey	National mining company	Arabian Shield	Geophysics & Imaging
Alternative and future water sources in areas of low radioactivity	Government body, water sector	Across the Kingdom	Groundwater
NORM management services	National oil and gas company	Dhahran	Radiological & NORM
NORM volume reduction, Dhahran water utility	National oil and gas company	Dhahran	Radiological & NORM
Radiological survey, phosphogypsum site	National mining company	Wa’ad Al Shamal	Radiological & NORM
Waste management in water-treatment plants	Government body, water sector	Across the Kingdom	Radiological & NORM
Supplementary radioactivity study, AlUla	International geological survey agency	AlUla	Radiological & NORM
Radiological baseline survey, Ar Rjum gold project	National mining company	Arabian Shield	Radiological & NORM
Radiological survey, Bir Tawilah and Jabal Ghadarah	National mining company	Arabian Shield	Radiological & NORM
Radioactivity in irrigation water and agricultural products	Government body, water sector	Across the Kingdom	Radiological & NORM
Operation and maintenance of central laboratories	Government body, water sector	Riyadh	Laboratories

PROJECTS

Project locations in the Kingdom



CLIENTS

Selected clients

وزارة البيئة والمياه والزراعة
Ministry of Environment Water & Agriculture

وزارة الصناعة والثروة المعدنية
Ministry of Industry and Mineral Resources

هيئة المساحة الجيولوجية السعودية
Saudi Geological Survey

شركة المياه الوطنية
National Water Company

MA'ADEN معادن
Saudi Arabian Mining Company شركة التعدين العربية السعودية

معادن للذهب
MA'ADEN GOLD

gold & minerals

Géosciences pour une Terre durable
brgm

AC GC
شركة القلاع العربية للمقاولات العامة
Arabian Castles
For General Contracting Co.

ASBAR
GEOSCIENCES & ENVIRONMENT

Project enquiries

Please describe the site and the question to be answered. We will reply with a proposed scope, method and schedule.

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A Saudi geoscience consultancy for the mining, water and construction sectors, and a Technology Experts company.

ASBAR Geosciences is the trading name of Asbar Environmental Services Co., a limited liability company (CR 7017447926) and a Technology Experts company.

ISO 9001:2015 · ISO 45001:2018 · Geospatial licence · Commercial drone registration · ISO certificates valid to November 2027