

# MINERALS INDUSTRY CAREERS. RICH IN DISCOVERY.

## Geology/Geoscience

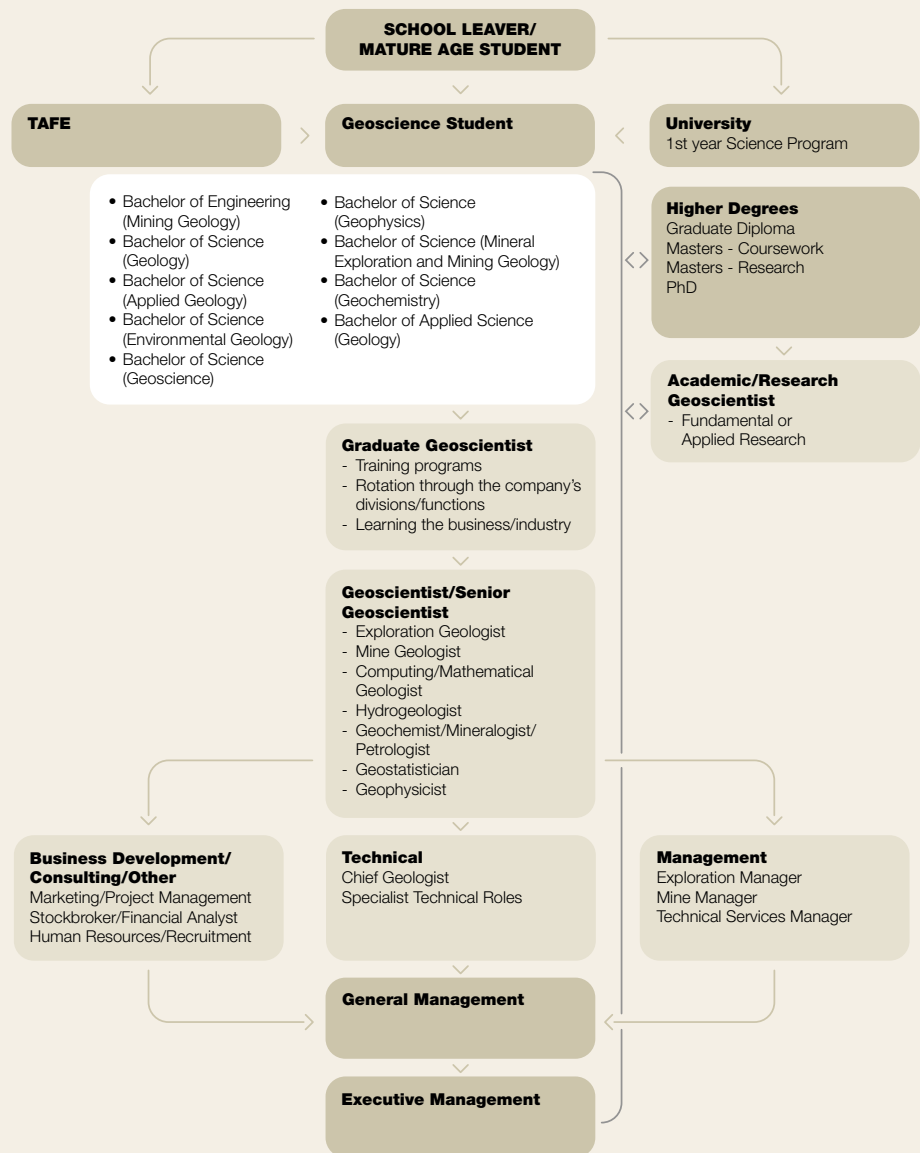
### WHAT DO GEOSCIENTISTS DO?

Geoscientists study the nature, composition and structure of the earth to increase scientific knowledge, locate materials and minerals, and advise on the extraction of minerals, environmental protection and rehabilitation of land after mining. Geoscientists may specialise as a Field/Exploration Geologist, Geochemist/Mineralogist/Petrologist, Geomorphologist, Hydrogeologist/Hydrologist, Mathematical Geologist, Mine Geologist, Palaeontologist, Petroleum, Stratigrapher or a Structural Geologist.

Geoscientists may perform the following tasks:

- explore specific areas of the earth to work out its structure and the types of rocks or minerals that exist
- study rock cores, cuttings and samples
- study geostatistics and sampling theory
- study fossilised life forms and date rock strata
- study the nature and effects of natural events such as erosion, sedimentation, glaciation, earthquakes and volcanic hazards
- locate and manage ground water resources, investigate ground water contamination and land salinity
- undertake geochemical sampling of stream sediment, soils and Rock samples
- undertake and interpret ground magnetic and gravity surveys
- examine geological specimens in laboratories using optical, X-ray and electron microscope, chemical and mechanical techniques
- assist in determining the economics of extracting earth resources
- advise on the geological suitability of sites for structures such as tunnels, roads, coastal installations, bridges and water supply schemes
- contribute to environmental assessments such as land use, planning and rehabilitation, pollution studies and the seabed
- use computers to integrate and interpret data sets of geological information
- prepare geological models to describe processes and predict future situations
- prepare geological reports and maps.

Geoscientists work in laboratories, offices, at mining operations and in the field. They may work independently or as members of a mixed team of professional and non-professional staff. They may have contact with the public, especially if needing permission to go onto private land. Fieldwork can involve spending time in remote desert, tropical or Antarctic/ arctic regions. The hours of work can be irregular and it may be necessary to spend long periods away from home. →



## GEOSCIENTIST CAREERS

- Exploration Geologist
- Mine Geologist - Open Pit
- Mine Geologist - Underground
- Computing/Mathematical Geologist
- Hydrogeologist
- Geochemist/Mineralogist/Petrologist
- Academic/Research Geologist
- Consulting Geologist
- Geostatistician
- Geophysicists
- Recruitment/Human Resources

## → WHAT ARE THE CAREER OPPORTUNITIES?

Geology is a rapidly expanding discipline, and geology graduates are now finding jobs in a variety of different areas. In addition to the traditional areas of mining and exploration, geoscientists are now employed in areas such as water quality, water resources, hazard and pollution monitoring, coastal zone management, urban and rural planning, and rehabilitation of mine sites.

Geologists can go on to specialise in Geological Engineering by completing postgraduate study.

### TIM BERRYMAN

BSc University of Western Australia, MAusIMM, Senior Mine Geologist - Kalgoorlie Consolidated Gold Mines

#### Why did you choose your particular career?

I chose a career in mine geology as I enjoy the challenge of the day to day mining environment where I get to perform not only geology duties, but to have interactions with most aspects of the mining cycle from production to milling. There is a great exposure to geology as pits and underground mines progress, allowing an increasing knowledge about deposits as they are mined.

#### What have you done so far in your career?

So far I have spent most of my career in mine geology, but have also spent a couple of years in exploration and a year in mine planning. These have ranged from small operations where I was the only geologist, to my current job at KCGM where I am part of a team of 20 geologists on site.

The sites have included tantalum mines near Port Headland and Darwin, an exploration camp in Sumatra, and mines in Kalgoorlie with Barrick (formerly Placer Dome) and 6 years at KCGM at the Superpit and Mt Charlotte underground.

#### What have you enjoyed most about your profession?

The best part of the job is being able to work with a wide variety of professionals and to combine both an outdoors element of hands on geology with the indoors element of geological modelling and planning.

#### For someone considering a career in your profession, are there any words of wisdom to pass on to them?

Mine geology is a practical application of geology in the field, and will be rewarding to people who love getting outdoors and working as part of a team with other geologists, engineers and production people.