

# Bauxite and Mining Exploration Information



Bauxite Alumina Joint Ventures Pty Ltd (BAJV) is a partnership formed in April 2011 between Bauxite Resources Limited (BRL) and Yankuang Resources Limited. BAJV has two goals, to develop bauxite for export and to develop an alumina refinery in Western Australia.

## WHAT IS BAUXITE?

Bauxite is found in lateritic areas at or near the surface of elevated terrain. It takes the most common form of pisolitic gravel or a hard outcropping surface layer.



## EXPLORATION IN THE DARLING RANGE

BAJV has exploration tenements across the Darling Range. Most of BAJV's areas of interest and activity are on private farmland. No activity can commence unless there is a commercial agreement with the landowner. We are currently looking for opportunities for exploration in Toodyay, Northam and surrounding Shires. If you would like to find out more please contact us.

## THE EXPLORATION PROCESS

The exploration process begins with the analysis of historical information, geological mapping, field observation and sampling. This investigation identifies areas that may have bauxite potential requiring further assessment. This is when a Land Access Officer may contact you as a landowner to discuss any interest in exploration on your property - you have the right to say yes or no to any exploration.

### Ground Validation

Prior to signing a land access agreement, a BAJV geologist may be involved to carry out ground validation. This generally involves a combination of driving or walking over the property to identify the location and type of material present on the surface. During this process, a small sample of rock chips may be taken for analysis.

### Program of Works

Before any exploration work can be carried out, a Programme of Works (PoW) must be lodged and approved by the Department of Mines & Petroleum (DMP). The PoW describes how the exploration will be carried out and recognises areas of environmental and heritage significance. The PoW ensures adherence to strict protocols and can take 3-8 weeks to be approved.

### First Pass Drilling

The exploration team will contact the landowner and/or occupier to schedule the drilling once the PoW has been approved. Drilling is by a tractor-mounted vacuum rig that drills 40 mm diameter holes to a maximum depth of 20 metres. Each drill hole is immediately plugged with a conical concrete plug to a minimum depth of 400 mm and backfilled with drill spoil. A small heap is left over the hole to allow for natural subsidence.



Exploration drilling at Felicitas in Toodyay

### Further Exploration

Following the results of first pass drilling, subsequent drilling and/or sampling may be undertaken to clarify the grade and continuity of bauxite. This process may involve bulk sampling and diamond core drilling. Another PoW must be prepared and approved before any further activity can be carried out.

### Results

All samples collected are sent to the laboratory for analysis. Results can take several months to process. The landowner will be advised of the results of the exploration work and, if encouraging, the prospect of mining will be discussed.

# Bauxite and Mining

## How is bauxite ore separated from gravel?

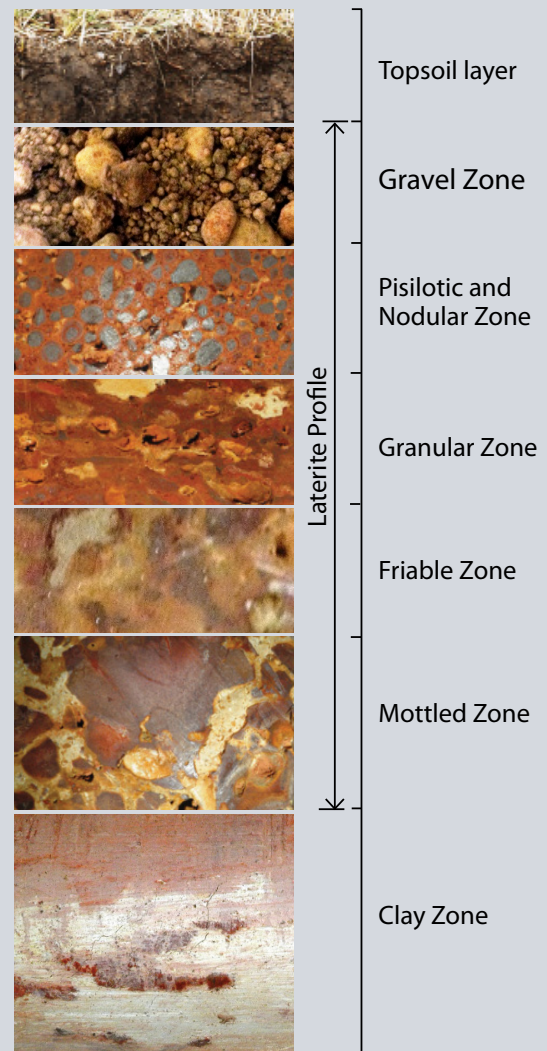
Gravel can be bauxite, it depends on how much available aluminium it has in it. Generally speaking bauxite is found between 1 to 5 metres in depth and is shown in the image adjacent.

Bauxite ore ranges in character from solid hard cap or duricrust, to friable fragmental or nodular material, to unconsolidated finely nodular pisilotic gravel. The bauxite gravel is typically composed of rounded light brown to red brown nodules. These gravels are commonly also bauxite ore grade and could be part of the deposit extracted for crushing and screening. Some darker brown to black gravels are more iron-rich, and may not contain sufficient aluminium to be ore.

The exploration drilling process takes soil samples and maps the various types of soil and overburden, gravel, bauxite and clay in three dimensions. Samples are analysed to determine the content of aluminium, and this is how ore is identified — planning of the mining operation is based entirely on the presence and distribution of economic grade aluminium oxide.

The mining process involves the topsoil being removed and stockpiled adjacent to the disturbed areas for use in rehabilitation at a later date. The overburden material will also be removed and stockpiled (this includes uneconomic gravel) and then the bauxite is mined, which is done to extract only the bauxite with enough aluminium oxide to be of economic value. Overburden, gravel and waste material will not be processed and may be used to construct and maintain haul roads, bunds and infrastructure pads or sold locally. Once operations and construction works are complete, the remaining overburden will be returned to the mined pit for commencement of landform remediation and rehabilitation.

## Bauxite Profile (usually 1-5m depth)



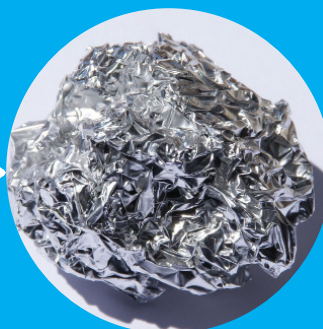
## Bauxite to Alumina to Aluminium



4-8 tonne  
of bauxite feed



Is processed into  
2 tonne of alumina



To make 1 tonne  
of aluminium

**DID YOU KNOW....?**  
Darling Range bauxite has a lower energy requirement for alumina extraction. Making WA one of the most efficient and cost effective alumina producing regions in the world?

**DID YOU KNOW.....?**  
75% of all aluminium ever produced is still in productive use today and it's 100% recyclable.