

VALE MALAYSIA IRON ORE FACILITY

LUMUT, PERAK, MALAYSIA



Key achievements

- Turnkey Design, construction and monitoring solution provided.
- Executed the works within the time schedule and with high safety standards.
- Keller was recognized with 3 awards for best safety practice by the client.

• The project

Vale, a world leader in iron ore mining and distribution, wanted to build a distribution facility in Lumut, Malaysia, having a capacity to handle 200 million tonnes of iron ore per annum. Keller was awarded a design and build contract for the foundation of the iron ore facility.

• The challenge

The main challenge was to design a treatment solution to support 19 m high iron ore stockpile and foundation system for the stacker/reclaimer. The contract milestones were critical. Given the loads the soft soils were expected to exhibit significant settlement and deformation.

The solution

The stockpile and stacker/reclaimer berm were treated using stone columns at different spacing. The spacing was determined from the zoning of soil condition. Whilst the berm were supported by bored piles. To assist Vale with the stacking and surcharging of the stockpile, a staged loading program was adopted. The loading and soil reactions were closely monitored with instrumentation monitoring.

Application

Ground Improvement, Deep Foundations

Technique

Vibro Stone Column, Bored Piling

Market

Iron Ore Facility

Client

Vale Malaysia Minerals Sdn. Bhd.

Main contractor

Keller (M) Sdn. Bhd.

Contract Value

RM 138mio

Keller business unit (s)

Keller ASEAN