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## Esperance Mineral Concentrate Circuit Enhancement Project

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### BACKGROUND

Esperance Port has been handling bulk nickel concentrates since 1967. Much of the circuit currently used to handle the product is old and has been used for other purposes, including the loading of iron ore.

Concerns about the environmental performance of the circuit have generated the need to develop a world-class bulk sealed system for the export of nickel sulphide concentrate from Esperance Port.

A working group convened by the Office of Development Approval Coordination (ODAC) assessed all the technically feasible options for upgrading the existing circuit to manage the handling of bulk nickel concentrates at the Port. Six options were defined by the group.

The project selected includes the upgrade of existing assets to continue to handle nickel concentrates in the short term (Stage 1) until a new storage facility and handling circuit can be built (Stage 2), which has a time frame of about two years.

An Alliance – known as the ESP Alliance – has been formed comprising representatives of the Esperance Port Authority and Bilfinger Berger Services (Australia) who will be responsible for delivering the project.

### OBJECTIVES OF THE ESP ALLIANCE

- Improve environmental compliance during the handling of concentrates at the Port of Esperance to meet the targets provided in the Port's Environmental License.
- Establish an alliance between the Esperance Port Authority and engineering consultant Bilfinger Berger Services to accelerate the delivery of the project and overcome high risk situations where there is time constraints that present challenges for traditional contract approaches.
- Deliver the project on time and budget.

### COMPLETED WORKS

Works undertaken by the Alliance that met the requirements of the Port's Environmental License and were completed by the Licence's deadline of March 31 included:

- Air management system installed in Black Swan shed to provide negative pressure;
- Black Swan shed structure repaired;
- Concentrate conveyor galleries repaired;
- Conveyor galleries skirts, curtains and scrapers replaced on all inloading and outloading conveyors;
- Transfer towers upgraded to manage or eliminate dust emissions;

- Compliant plant and equipment operating in Black Swan shed;
- Remedial works carried out on kibble inloading infrastructure; and
- Upgrade of the dust management system on the concentrate circuit.

Works completed by the August 31 deadline include:

- Connecting pins changed to strengthen boom on Berth 2 shiploader;
- Wind guards constructed and fitted to the Berth 2 shiploader following the strengthening of the boom;
- Telescopic chute fitted to the ship loader on berth two;
- Conveyor three on berth two enclosed;
- New tippler constructed to handle half height 30-tonne sealed containers; and
- Ventilation system in the Black Swan Shed upgraded.

Dry commissioning of the Stage One upgraded concentrate circuit occurred in August, and the circuit was used for the first time to load BHP Billiton's Nickel West product on Thursday, September 10. Loading was initially slow, but the rate increased after minor issues were resolved

Problems were encountered with the new telescopic chute, which was expected because of the width of the ship being loaded, particularly the ability to spread the load around the cargo hold.

No dust or odour problems were experienced during the loading, although the dust monitors will be checked and samples analysed. Results will not be known for about a month.

The new dust extraction system on the Black Swan Shed worked extremely well with no issues being experienced in the shed during loading operations.

The *African Kookaburra* departed on Friday morning, September 11, after loading 10,000 tonnes of nickel concentrate.

## **OUTSTANDING WORKS**

Although all dust emission reduction works were completed by the August 31 deadline to satisfy DEC Licence requirements, there are a number of projects still being progressed to finalise Stage One of the Mineral Concentrate Upgrade Project.

The remaining works include:

- Construction of a container hardstand area adjacent to the new container tippler;
- Structural modifications to the iron ore conveyor supports to enable access to tippler from the new hardstand area; and
- Upgrade of the Port's waste water system.

The Alliance continues to progress these works.

## **New Nickel Concentrate Storage Facility (Stage Two)**

This project will deliver a new concentrate storage facility that will enable a number of customers to discharge mineral concentrates by road and rail in 30 tonne half height containers and to load the product on ships to Panamax size in all weather conditions.

The works include:

- Developing a design for an integrated storage facility that will receive, store and outload concentrates to a ship on Berth 2;
- Constructing the state-of-the art facility and associated conveyor systems that will eliminate fugitive dust emissions.
- Arranging the shed bay configuration to suit the in-go, out-go logistics as well as the permutations of product mix of five types of concentrate over a client base of at least seven parties.
- Installing a new shiploader.

## **Progress to September 11, 2009**

A task force, comprising project management specialists Evans and Peck, engineering consultants BBS, business consultants KPMG and the Esperance Port Authority, has completed the Business Case study for the world-class mineral concentrate facility.

The business case study has been submitted to the State Government for its consideration, and the Port has requested an opportunity to make a representation of the Report findings.

**OUTLOOK:** The Business Case has been delivered to the State Government.