



Pumping and Pipeline System for Clermont Coal Mine

Customer: Rio Tinto – Clermont Coal Mine

Location: Clermont, QLD

Case Study ID: CS-75

Date: February 2013

Overview

Dowdens Pumping and Water Treatment successfully installed and commissioned a unique containerised pumping pipeline system for the In-Pit Crushing Conveyor (IPCC) and dump conveyor system at Rio Tinto's Clermont Thermal Coal Mine.

The Problem

Rio Tinto required washdown points at the dump conveyor and IPCC, dust suppression at the conveyor pivot point and IPCC, and future water cart filling points.

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Our Solution

The plant's critical requirements include a pumping capability of 10L up to 60L/sec, an outlet every 100m for washdown purposes with the ability to be relocated, for the pumping capabilities to operate within the guidelines set by Rio Tinto, and for large storage containers.

These were all met by the contracted staff at Dowdens Pumping and Water Treatment.

Key Components & Features

- Grundfos CR64 x 4 EDF Hydro system
- The pump station includes two VFD controls and two soft starters with 37kw motors
- Control Cabinet mounted inside a shipping container and built to Rio Tinto specifications
- The pump operates on-demand and can add additional pumps as the demand increases
- Grundfos EDF Control system allows for variable speed and fixed speed controls, which reduced costs on pumpset
- 2x 45,000L poly tanks to supply the Grundfos pump station
 - 200mm outlets allowing for equal balancing between tanks
- Bermad level control valve with sustaining and flow control pilots fitted for tanks supply:
 - Tank fill rate matches maximum Grundfos pump flow of 60L/sec
 - Sustaining and flow control points allows for the system upstream of the Bermad valve to operate within in operating range
- 2.1km of 200mm poly pipe installed at the dump conveyor with outlets every 100m for washdown purposes.
- Manual isolation valves fitted to control the water demand.

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Project Design Philosophy

Dowdens Pumping & Water Treatment's Rockhampton branches design philosophy for this project was:

- Cost-Effectiveness
- Innovation
- Ease of Installation
- Simple & Effective Pump Operation
- Pump Longevity
- System Reliability & Reduced Ongoing Maintenance



Brands used in this project



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