



Mine Site Heavy Vehicle Wash Bay

Customer: Downer EDI Mining

Location: Tarong, QLD

Case Study ID: CS-58

Date: December 2015

Overview

Downer EDI Mining [a division of Downer EDI Limited] engaged Dowdens Pumping & Water Treatment Brisbane to design, manufacture, install and commission a Heavy Vehicle Wash Bay and associated plant treatment equipment at the Meandu Coal Mine located in Tarong, South East Queensland.

Since January 2013 Downer EDI Mining has been providing mining services at Meandu Mine as part of their long-term rolling contract with TEC Coal Pty Ltd, a wholly-owned subsidiary of Stanwell Corporation Limited. Downer provides a total mine service to TEC Coal, including mine management, planning, drilling, overburden removal (including dragline and truck-and-shovel operations), coal mining, coal processing, rehabilitation, and maintenance of the mobile and fixed plant.

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The Problem

Downer EDI's Heavy Vehicle Wash Bay project tender was won primarily due to Dowdens ability to expertly design/manufacture/install and commission specialised equipment, built in-house & onsite to meet our specific client's unique requirements. With a history of successful installations over the past 15 years within the Queensland Mining Sector, Dowdens is Queensland's premier pumping & water treatment organisation.

Downer's project brief to Dowdens Brisbane was for the design/manufacture/installation and commissioning of a Heavy Vehicle Wash Bay capable of processing a minimum of 5 vehicles per day, with each vehicle taking approximately 1 hour to wash. Meandu Mine required this new Heavy Vehicle Wash Bay to be constructed after the mine had recently purchased a fleet of new generation trucks (KOMATSU 830E Trucks) which are considerably larger in size compared to their existing fleet.



Our Solution

To ensure Meandu Mine continued to meet their Environmental Discharge requirements Dowdens designed and incorporated 4x Settling Pits and 3x Oily Water Separators into the construction of the Heavy Vehicle Wash Bay. In Queensland, it is a legal requirement for mine sites to treat (separate) any sludge or oil from any wastewater coming from a Heavy Vehicle Wash Bay.

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Pictured below you can see the 4 x large Settling Pits (empty) that are used to catch and store (via gravity feed) wastewater from the Wash Pad area. The wastewater generally contains some grease, oil, coal fine and soil (mud). The coal fine, mud and other solid particles washed off the trucks are allowed to settle to the bottom of the Settling Pits – the pits are then intermittently emptied by a Bobcat excavator.

The wastewater (still containing grease and oil) is pumped from the Settling Pits via progressive cavity pumps into 3 individual 'Oily Water Separators' to remove the remaining contaminants. Once the wastewater has been through this treatment stage it is pumped back into Meandu Mine's network of onsite holding dams to be used in other site extraction and processing applications.

Key Components

- 47kL Poly Tanks for onsite Raw Water storage
- Southern Cross Cannon Pump
- Grundfos 3kW Hose Reel Pump
- Orion Sentinel Water Cannons
- 6x Heavy Duty Hose Reels
- Foaming Units
- 13.5kL Detergent Storage Poly Tank
- 1kL Dilution Poly Tank
- Grundfos 0.55kW Detergent Transfer Pump
- 4x Grundfos 7.5kW & Tsurumi 3kW Submersible Sump Pumps
- 2x Oily Water Separators, Associated Pumps, Instrumentation & Control Board
- 1x Oily Water Hydrocyclone Separator, Instrumentation & Control Board
- Skimmer Pump
- 2x Control Panels
- Custom Built Associated Galvanised Pipework

Project Design Philosophy

Dowdens design philosophy for this project was:

- Cost-Effectiveness
- Current Best Practice
- Ease of Installation
- Simple Plant Operation
- Plant Reliability & Reduced Maintenance

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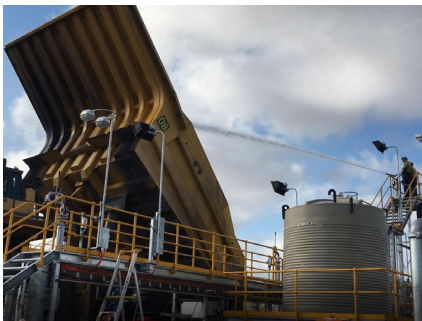
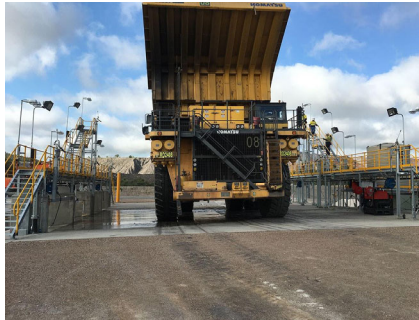
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Brands used in this project



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