MMG Golden Grove, Gossan Hill & Scuddles Mine Water Treatment Plant

Background

The Golden Grove Mine site consists of 2 underground mines, Gossan Hill and Scuddles and a processing facility producing 140,000 tonnes of copper, zinc and precious metals in concentrate annually. The mine also operates a 720 room accommodation village for employees and contractors.

MMG Golden Grove mine sites required a new reverse osmosis water treatment plant to replace its previously hired units to ensure sustainable, clean and safe potable water for its mine and its accommodation village.

Snapshot	
Location	Golden Grove, Western Australia
Source	Bore Water
Scope	Design, factory testing, supply, site supervision, commissioning, performance testing, final documentation, training.
Technology	PTI Filters, RO Skids, Chemical Dosing Skids, Transfer Pump Skids, CIP Skid.
	Ancillary Work: Control Panel with Siemens S7-300 PLC, SIMATIC HMI, Safety Shower & Eye Wash.
Total Plant Capacity	600 KLD
Commissioned	2011

Image: Installed 2x 300KLD M83 RO racks, and PTI filters.

Details	
Specific Information	2 x M83 Vantage RO, 32x60 Duplex PTI filters fitted with DMI-65 media, Siemens Chem Ad XL Series B Dosing Pumps for Pre-chlorination, Chlorination, Antiscalant dosing skids, and Sodium Hydroxide dosing skids. Grundfos CRNE series Transfer Pumps.
Engineering Scope	Preparation of P&ID, FDS, O&M Manual, Electrical Drawings, GA Drawings, Schedules,

Image: Antiscalant, Sodium Hydroxide, and chlorination dosing panels.

Solution

Siemens provided Minerals & Metals group with 2 x M83 Vantage RO units operating in parallel to provide total supply of 600KL/day (25m^3/h) of treated water (permeate) complying with Australian drinking water guidelines.

PTI filters were recommended by Siemens Water Technologies and installed prior to the RO skids and the overall system to produced permeate of TDS less than 500mg/l. DMI-65 media can be used to remove Iron (Fe), Manganese (Mn) & Arsenic to improve membrane life and improved plant availability.

These skids are all factory tested for ease of start-up.

Results

Operating Water Treatment Plant capable of providing 600KL/day potable water was provided inside a shed for protection from elements. Major ancillaries include 2 RO skids with CIP clean, 2 PTI filters, Chemical dosing systems, and control panel.

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