

Brackish Water Desalination & Water Reuse



Yabulu Water Recycling Facility Townsville, Australia

Plant Information

 APPLICATION 	Process Water Recycling
• FEED SOURCE	High concentration mineral water & process
	wastewater
• PRETREATMENT	Artificial Pond \rightarrow CMF
• PERMEATE CAPACITY	10.7 MLD (RO trains 1, 2 = 6MLD; RO trains 5,
	6 = 4.7 MLD)
• ELEMENT MODEL	RE16040-SHN (Seawater); RE8040-BR440 &
	RE8040-BE (Brackish Water); RE8040-BLR
	(Low Pressure Brackish Water)
• RO TRAIN ARRAY	RO-1 trains 1 & 2 > 5:3:2 (2 elements/PV); 4 skids
	R0-2 trains 1 & 2 > 4:2 (2 elements/PV); 2 skids
	R0 trains 5 & 6 > 20:10 (6 elements/PV); 2 skids
SYSTEM RECOVERY	RO-1 trains 1 & 2 > 65 %
	RO-2 trains 1 & 2 > 45 %
	R0 trains 5 & 6 > 65 %
	Total System Recovery > 87.5 %
• CLIENT	Queensland Nickel
SYSTEM SUPPLIER	United Utilities Australia
• COMMISSIONED	RO trains 5 & 6 – April 2009
	R0 trains 1 & 2 – October 2009





General Information

The QNI Yabulu Refinery is one of the world's largest producers of nickel and cobalt. The water recycling facility located within the plant recycles tailings dam water, which is fairly high in salinity, to return water to the refinery for reuse. RO desalination was the choice of technology to meet the water quality demands while reducing the use of bore water and brine discharge. CSM's large diameter (16 inch) Seawater Desalination and 8 inch Brackish Water RO elements are used for this process.

