## CASE STUDY

### Mining Wash Down Wastewater for Discharge

infinite water



## Client: Copper Miner, Australia

Treatment of industrial wastewater from mining equipment wash down for safe discharge This multinational industrial mining company's North Queensland Division is headquartered in Mt Isa.

Their Mt Isa copper operations comprises a copper refinery, port facilities and logistics operations, employing almost 4,000 people.

#### **The Challenge**

The company needed to treat the raw water from the wash down of mining equipment, collected from several pits, on site to safely and cost-effectively discharge to meet regulatory requirements and Improve global sustainability goals.

The raw water had a high level of heavy metals and hydrocarbons. high conventional cost of treatment and a very high pH level making it difficult to remove heavy metals through conventional processes.

It also had high turbidity and contained high levels of heavy metals including lead, aluminium, copper, iron, manganese, molybdenum, nickel and zinc.

# Mining Wash Down Wastewater for Discharge





Equipment wash bay

### **Our Solution**

Infinite Water designed and installed a field trial water treatment system that successfully removed all heavy metals and achieved exceptional water clarification.

The design process was particularly focused on Lead due to the potential marine impact.

Testing was independently conducted by a NATA accredited laboratory.

The treatment process incorporated the use of a coagulant (co-precipitation), an oxidant and pH adjustment.



Raw water from wash bay

#### **Outcomes**

The field trial testing successfully treated the wash down water to full compliance with the Australian Drinking Water Guidelines and was safely and cost effectively disposed into the ocean.

Turbidity was reduced and all detected metals were removed well below required target thresholds. Results:

Indicators	Raw	Treated	ADWG
Turbidity (NYU)	87	<0.5	1
Aluminium (mg/L)	0.46	0.02	0.2
Copper (mg/L)	1.9	0.059	1
Iron (mg/L)	4.9	<0.01	0.3
Manganese (mg/L)	0.1	<0.1	0.05
Molybdenum (mg/L)	0.04	0.003	0.05
Nickel (mg/L)	0.09	0.005	0.02
Lead (mg/L)	1.7	0.0009	0.01
Zinc (mg/L)	12	0.03	3

