METAL PROCESSING APPLICATION

MISCELLANEOUS APPLICATIONS

HEAVY METALS RECOVERY FROM TAILINGS EFFLUENT

Desal membranes successfully recovered a high percentage of heavy metals from the effluent leaving a tailings pond operated by a Copper Company.

Ions	Feed (mg/l)	Permeate (mg/l)	Concentrate (mg/l)	% Rejection
Zn	193	1.35	550	99.6
Fe	210	0.77	710	99.8
Cd	1.98	0.09	7	98.0
Ni	21.5	5.00	0.15	99.7
Mn	625	2.50	2050	99.8
Cu	775	8.55	2060	99.5
Cr	2.2	0.05	3.6	99.5

Benefits include:

- Low capital cost;
- Reduced chemical costs;
- Reduced sludge disposal costs.

ZERO DISCHARGE CHROMIUM RECOVERY

A membrane system was installed to reclaim both chromium and acid from a chrome plating acid rinse tank. The membrane system maintained the chrome concentration consistently below 5000ppm to ensure rinse efficiency. Tangible benefits include:

- Recovery of chrome and acid from rinse water
- Optimisation of rinsing stage
- Reduced wastewater treatment and disposal costs (associated with neutralisation and precipitation plant)
- Reduced environmental liability

SPECIALISTS IN THE TREATMENT OF CHALLENGING INDUSTRIAL EFFLUENTS

METAL/ELECTRONIC INDUSTRY

BENEFIT SUMMARY

Competitive Edge of Membrane Plants versus Conventional Precipitation Plants

MEMBRANE ADVANTAGE	JUSTIFICATION
Low Capital Cost	Smaller Ion Exchange Plant Low civil engineering investment requirement Low earth working investment requirement
Rapid Investment Pay back	Reduced raw material usage Reduced effluent disposal costs Reduced towns water / natural water intake requirement Reduced loading on Ion Exchange Plant
Reduce, Recycle & Re-use	Reduced sludge generation Recycle of residual metals Recycle of spent acid Re-use of high quality treated effluent
Confidence of Environmental Compliance	Robust treatment process that is not affected by temperature, complexing ions, or variations in pH Fixed physical barrier thereby guaranteeing compliance State of the Art Technology (BATNEEC)
Modular System	Discrete process units facilitating incremental upgrading

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