Resources Conservation Company Specifies AL-6XN® for Wastewater Service.

Specifications

UNS: N08367 **ASTM:** B 688, A 240, B 675, A 312, B 676, A 249, B 804, B 691, A 479, B 462, A 182, B 564, B 366, B 472
ASME: SB-688, SA-240, SB-6 75, SA-312, SB-276, SA-249, SB-691, SA-479, SB-462, SA-182, SB-564, SB-366 Code Case N-438-3, B-31.1 Case 155-1

Chemical Composition, %

	Ni	Cr	Mo	Mn	Cu	Si	C	N	S	P	Fe
MIN	23.5	20.0	6.0	–	–	–	–	0.18	–	–	–
MAX	25.5	22.0	7.0	2.0	0.75	1.0	0.03	0.25	0.03	0.04	balance

Case History

Resources Conservation Company (RCC) of Bellevue, Washington, designs systems to reclaim saline industrial wastewaters. Among RCC's equipment are Brine Concentrators - specialized evaporators which recover up to 99% of plant wastewater as pure distillate for the operator's reuse. From this process the remaining slurry of salts and minerals can be further reduced to solids in an RCC spray dryer or crystallizer.

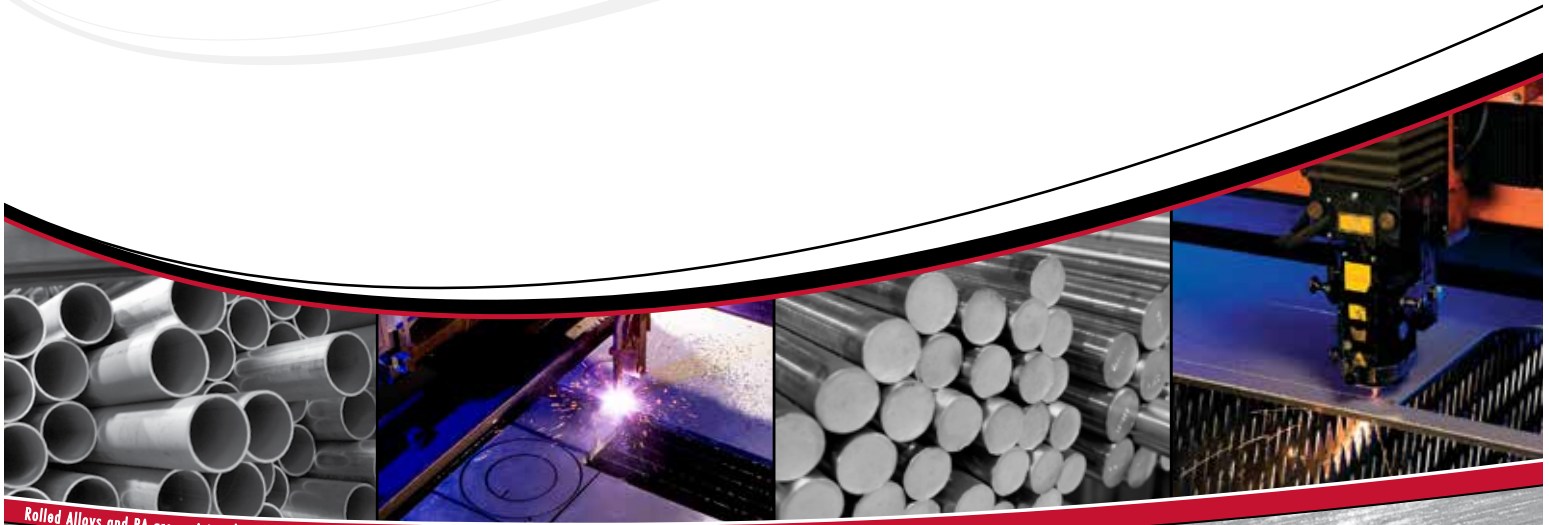
Recently, RCC designed two Brine Concentrators and crystallizer to treat salty drainage from a coal mine in southern Poland. The drainage from the Debiensko mine in Katowice, Poland is highly brackish with a salinity level similar to that of natural seawater. This drainage or wastewater is first concentrated through a reverse osmosis process, therefore, when it reaches the Brine Concentrators the dissolved solids are as high as 80,000 ppm (mg/1). A crystallizer is required to process the slurry discharge from the Brine Concentrators, thereby recovering pure sodium chloride crystals at the rate of 327 tons/day (99.5% NaCl). The slurry as it reaches the crystallizer consists of:

- 26% Dissolved Sodium Chloride
- 8-10% Dissolved Magnesium Chloride
- 30% Suspended Sodium Chloride
- pH 6-8, (a) 230°F

Case History, Continued

With this highly corrosive environment in mind, RCC specified AL-6XN alloy for use in the crystallizer heaters. The selection of AL-6XN alloy was made for a variety of reasons. With its nitrogen enhanced 20% chromium, 6% molybdenum, 24% nickel composition, the alloy is highly resistant to chloride pitting and crevice corrosion. In addition, the material provides excellent resistance to chloride stress corrosion cracking, thus making it an optimal choice for this severe environment. The outstanding fabricability of AL-6XN alloys allows standard manufacturing procedures to be employed, thus eliminating potential problems that would develop when working other materials such as titanium.

On this project Rolled Alloys® supplied RCC with AL-6XN alloy in various plate sizes. AL-6XN alloy is also available in other product forms such as pipe, tubing, fittings, flanges, sheet, bar and billet. Rolled Alloys also supplies welding products and technical support associated with the use of AL-6XN alloy.



ROLLED ALLOYS

The Global Leader in Specialty Metals

Bulletin No. 2007USe 02/15