

TR17 JOA

R.645. Plating plant effluent filtration, Repco Bearing Co.

The effluent from the fluoborate Sn, P, Cu (acid), sodium stannate (alkaline), Watts nickel ($\text{NiSO}_4 \cdot \text{NiCl}_2$) (acid), alkali cleaners and acid etch plating baths is at present treated with soda ash to pH 10 before being discharged into settling ponds where the precipitate is allowed to settle before disposing of the liquor.

A sample of the discharge was taken so that a filtration test could be carried out to obtain data that will enable a filtration unit to be designed for installation in a proposed automatic plating plant at Rocherlea.

The sample of treated plating plant effluent was taken at the Repco Bearing Co. Pty Ltd plating works, Invermay Road, on 6 April 1972.

TEST WORK

One litre of the sample was filtered on a Buchner funnel by vacuum, and the filter cake dried and weighed.

The remainder of the sample was filtered in a Denver laboratory counter-balanced pressure filter using blotting paper as a filtering medium. The filter cake was weighed wet, dried and re-weighed and the moisture in the filter cake calculated. The filter cake was assayed for Cu, Pb, Sn and Ni. The filtrate was also assayed for total dissolved solids, and Cu, Pb, Sn and Ni.

The filtrate from the filter test was perfectly clear.

TEST RESULTS

The treated plating plant effluent carried 0.92 g of suspended solids per litre.

The filter cake carried 63.9% moisture and the filtrate contained 5300 ppm total dissolved solids. The metal assays were as follows:

| | Cu | Sn | Pb | Ni |
|-----------------|------|------|------|------|
| Filter cake (%) | 0.34 | 14.2 | 37.0 | 2.4 |
| Filtrate (ppm) | <0.1 | <0.1 | <0.1 | <0.1 |