

RECAUST CHEMISTRY PROCESS AUDIT

Kevin Taylor, B.Sc., M.Sc. (Chemistry), PChem

Taylor Industrial Research, Inc.

Tel: 250-418-5705 Fax: 250-361-0099

Email: kevin.taylor@industrialresearch.ca Website: www.industrialresearch.ca

PURPOSE

The purpose of the recaust process audit is to make recommendations to improve operation from the following unit operations, with minimal capital cost:

Dissolving tank: Reduce scale formation in tank and lines.

Green liquor clarifier: Improve clarifier settling efficiency, reduce suspended solids in clarified green liquor.

Causticizers: Improve operation and minimize process upsets.

Purchased lime quality control: Evaluate current purchased lime quality and implement quality control measurements.

Lime mud filtration: Increase lime mud solids content. Reduce sodium content.

Lime kiln: Minimize ring formation by reducing factors that cause kiln rings.

White liquor pressure filters: Improve acid wash performance. Increase interval between acid wash treatments. Reduce or eliminate unplanned filter sock changes.

RESULTS

Recaust process audits at several mills have resulted in improved operation and cost-savings by minor process changes and improved operating procedures.

Improved operating procedures for green liquor clarifiers reduced typical suspended solids content and short term upset conditions. This reduced the deadload from non-process element compounds in the lime mud and reduced lime kiln fuel consumption.

Lime mud evaluation at one mill suggested that solids content of mud to kiln should be higher (80% compared to the current 70%) and that a mechanical problem existed with the lime mud filters. Previously, it was believed that the capacity of the lime mud filters was insufficient but this was not correct. Increased lime mud solids content at this mill will potentially save \$250,000/year in kiln fuel expenses.

Significant improvements were made with dissolving tank scaling, lime kiln ring formation and white liquor pressure filter plugging by changing operating procedures.