IntelliSense.io®

Thickener Optimization Application

Datasheet

IntelliSense.io's Thickener Optimization application guides metallurgists, operators and lower level control systems to achieve maximal separation efficiency of the feed stream, while stabilizing the product stream and minimizing the flocculant usage.

The Problems Faced by Thickener Circuits

Thickener circuits are solid-liquid separation processes, sending settling solids to the underflow, and clear water to the overflow. They are used both on concentrate and tailing streams. Some of the problems which arise in the Thickening process are:

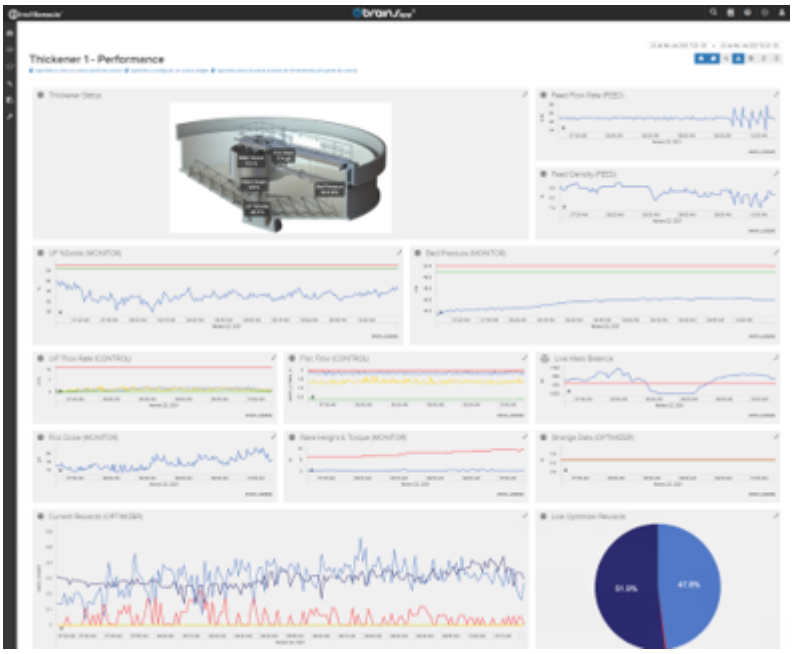
- Constantly changing ore properties
- Operations struggle to consistently achieve their target underflow density or overflow clarity.
- Different operational modes depending on the operator's shifts
- Operators battle with unexpected solids build-up (seen as sharp rises in rake torque or bed pressure) or fines in the overflow (contaminating downstream processes)
- In order to compensate for uncertainties/instability, operators use excess flocculant, which negatively impacts downstream processes

> Knowing the current state of the Thickener circuit enables predictions of future states to meet objectives and adhere to equipment limits, reducing isolation events and increasing thickener performance.

The IntelliSense.io Solution

IntelliSense.io's Thickener Optimization Application, powered by the IntelliSense brains.app platform, has been built for purpose - to address these challenges directly:

1. **Predictive Decision-making:** The Digital Process Model underpinning the Thickener Optimizer provides operators with proactive recommendations on what they need to do to maintain operational stability and desired performance.
2. **A Configurable Value Driver:** Users can stipulate the process objectives and operational limits that guide what “optimal” means for a specific thickener circuit.
3. **Upstream Connection:** IntelliSense.io’s Material Transport & Influence Model can can account for variables like mineralogy and particle size in recommending proactive changes to the process.



The Value Gained from Optimization

The IntelliSense Thickener Optimization Application will:

- **Stabilize and maximise underflow density** and/or overflow clarity
- **Prevent isolation events** and other undesired stoppages
- Ensure **optimal flocculant usage** (often decreasing usage)
- **Protect rakes and pumps** from damage

> 16% reduction in flocculant usage achieved by implementing the Thickener Optimization Application at a Chilean Copper Mine

Mine to Market: Value Chain Optimization

Powered and connected together by the brains.app platform, the Thickener Optimization Application is one of a suite of real-time decision-making applications that uses Artificial Intelligence (AI) to optimize each process; from mine-to-market.

Our Material flow model connects these applications together to drive even greater efficiency gains.

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