Industry: Mineable Oil Sands

- **Tailings Underflow**

CiDRA® Oilsands

Application Note

SONARtrac® SOLUTIONS

A SONAR-Array Based, Non-Contact Flowmeter That Provides Reliable Measurements in One of the Most Abrasive Slurries: Increases Uptime and Lowers Operating Costs

Benefits

- Clamp-on technology enables quick installation without shutting down the process
- Payback on investment of under one year with *SONARtrac* flowmeter versus high maintenance, short lifecycle, conventional in-line meters
- No signal degradation due to wear or scaling
- *SONARtrac* flowmeter provides accurate, repeatable flow measurement even on chromium-lined, carbon steel pipes
- Enables more accurate mass balance measurements
- Not dependent on other instruments to make measurement

"The SONARtrac flowmeter's performance has been a dream. Nothing ever goes wrong with it!" -- Instrumentation Team Member

Process

Primary Separation Cell tailings, or underflow, consist of mainly coarse sands, some rock chunks, fine clays and water. Slurry temperature can range up to 90°C, flowing at very high velocities of up to, approximately, 9 meters per second. Slurry density is nominally 1,600 kg/m^3. The high velocities and the abrasive nature of the slurry create rapid wear of the pipeline and are particularly abrasive to in-line flow instrumentation.

Challenge

The slurry in an underflow line is an extremely abrasive mixture and travels at a nominal rate of approximately 4.5 meters per second. Pipes are rotated several times a year to even-out the wear on the inside of the pipe caused by the abrasive slurry. In-line flowmeters; Venturi meters, for example, which are typically used to measure volumetric flow of the slurry, require frequent maintenance, repair and replacement resulting in higher operating expenses and increased costs.

SONARtrac Solution

Due to the issues and expense associated with conventional in-line flowmeters, *SONARtrac* flowmeters offer a compelling economic value and a superior technical solution to measuring and monitoring flow in aggressive, tailings underflow applications. *SONARtrac* flowmeters clamp-on to existing pipe, including lined pipe, do not "pinch" the flow and have no wetted parts, thereby maintaining the full integrity of the piping system and ensuring measurement certainty. S*ONARtrac* flowmeters have delivered improved accuracy versus existing Venturi meters, thereby enabling more accurate and reliable mass balance measurements.

The customer's investment in *SONARtrac* flowmeters is expected to deliver a better than one-year payback on the basis of hardware, reduced investment in spares inventory, installation and maintenance cost. This does not include the expected financial and operational benefits associated with increased production uptime.

SONARtrac® Technology

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