



CUSTOMER CASE STUDY

AVEVA™ PI System™ helps Aurelia Metals set a new gold standard

Aurelia Metals - www.aureliametals.com

Industry - Mining, metals, and materials

Partner - Convergio

Goals

- Increase gold recovery rate to 85%
- Increase cash flow and capital

Challenges

- Integrating data from multiple processes
- Keeping production processes in optimal ranges

Results

- Increased gold recovery rate from 62.1% to 88.6%
- Saved \$250,000 in manufacturing costs
- Increased share price 145.5%

Something needed to change at Aurelia Metals. At the end of 2015, gold recovery rates were less than 75 percent and throughput was dangerously low. If Aurelia was going to survive, its Perth processing plant needed to increase its recovery rate to 85 percent while simultaneously increasing cash flow and capital. When Peter Smith, metallurgy superintendent at Aurelia Metals, started his role in February 2016, he quickly saw how AVEVA PI System could help remove manual processes and gain the necessary visibility to implement process control. Over the next year, the company did just that and increased profits by \$7.5 million while saving \$250,000 in manufacturing costs.

There's no time (or data) like the present

As Smith came up to speed at Aurelia Metals, he saw nearly unlimited potential in the company's data – if only they could find a way to harness it. “We had a lot of data and a lot of opportunity, but putting it together was very slow,” Smith said. Smith turned to Gavin Stack, the founder of Convergio, a software consulting company for the mineral processing industry, for help turning his vision into reality.

With Convergio's help, AVEVA PI System was up and running just a few weeks later, and Smith's team got to work optimizing the grinding process, which releases the minerals trapped inside rocks. It's the most important part of gold production and impacts every other part of production downstream. Using AVEVA PI System to gather real-time data from the grinding circuit, the team improved the mill feed, discharge rate, and cyclone feed rates. These changes evened out the production process, and recovery rates increased from less than 75 percent to 81 percent.

The gold rush continues

Real-time data from AVEVA PI System also helped streamline the flotation circuits involved in mineral extraction. Similar to giant bubble baths, the circuits separate the good metals from the bad. Quality gold floats to the top and the bubbles are skimmed off. The depth of the bubbles floating on top is important. If it's too small, poor-quality materials get mixed in. If it's too large, bubbles pop, and the quality product sinks. Aurelia's team used AVEVA PI System to retrain and stabilize all of the float loops through basic controls. The rougher con flow and levels were stabilized, and the team waited for the results. Just a few weeks later, the gold recovery rate was up to 83.9 percent while all-in sustaining cost (AISC) was down.

With the flotation circuits in check, the team moved on to cyanide control and management. The cyanide levels need to be just right to achieve maximum extraction. Using the asset framework of AVEVA™ PI Server, Aurelia implemented a traffic light system that allowed it to quickly see which processes were running at optimal levels and which needed attention or intervention. Focusing on only the problem areas allowed Aurelia to gain better control over the process and increase the gold recovery rate to 84.3 percent.

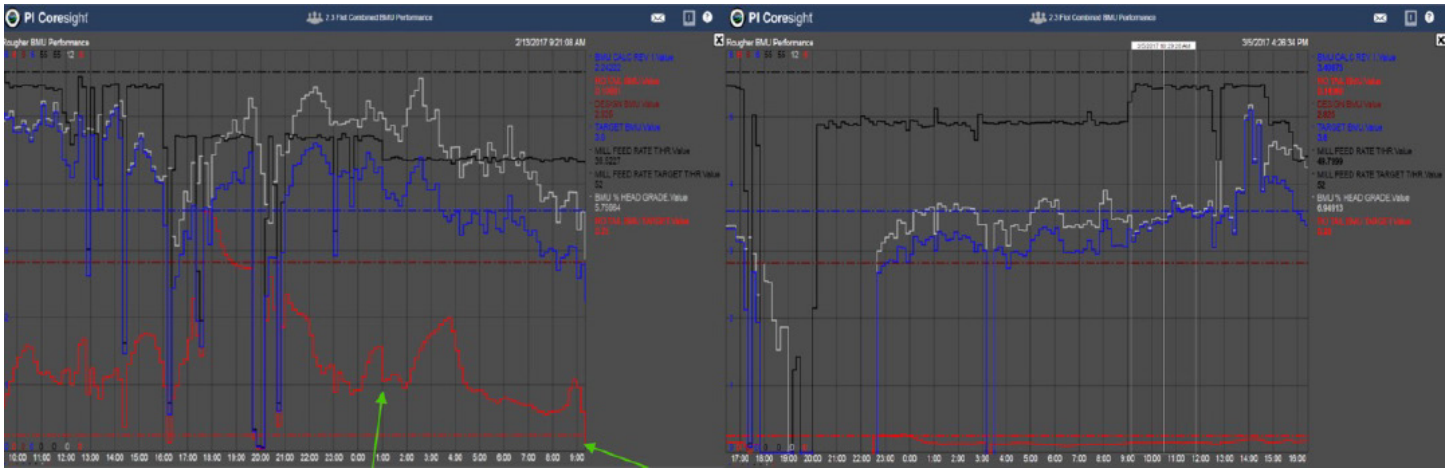
Expanding what's possible

Additional changes to the filtering process boosted the recovery rate even higher, and less than a year after the AVEVA PI System implementation process began, the cumulative rate was up to 88.6 percent – above the original goal and a remarkable transformation in such a short amount of time. AVEVA PI System also showed Aurelia's team that its plant could operate beyond what was previously considered to be its maximum output. The facility was originally designed to produce 85,000 tons of gold per month but got to nearly 100,000 tons by December 2016 without any major issues.

“This is real information, this is what your plant is doing, this is your window into where the dollars are going.”

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Gavin Stack
Founder at Convergio



AVEVA PI System helped Aurelia Metals smooth out inconsistencies in its throughput to increase efficiency and production capacity in less than a year.

The increased output, combined with cost savings from production efficiencies, increased the company's profit by \$7.5 million from 2015 to 2016. The company's stock price also increased by nearly 150 percent during that same time period.

At the end of the day, data proved to be the missing link that brought the entire operation together, just as Smith and Stack hoped when their partnership began. "This is real information," Stack said. "This is what your plant is doing, this is your window into where the dollars are going."

For more information about Aurelia Metals and AVEVA PI System, watch the [full presentation here](#).

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