

Major Gold Mining Producer Increases Gold Production While Decreasing Operating Expenditures With Conditioning Orifice Technology

RESULTS

- Decreased operating costs with improved accuracy
- Improved process throughput
- Decreased oxygen use by 5-10%
- Reduced overall installation costs



APPLICATION

Measurement of externally supplied oxygen for autoclave process

CUSTOMER

Barrick Goldstrike Goldmine Co.

CHALLENGE

Barrick Goldstrike needed to measure and balance oxygen flow into multiple chambers within their plant's autoclave system to optimize throughput and reduce oxygen consumption. They could not achieve stable and accurate measurements with their existing flowmeter due to insufficient piping requirements. Their existing installed technology consisted of a regulator and five fixed orifice plates, installed in locations with insufficient straight pipe runs.

They determined that they needed to measure and control oxygen flow into each chamber to see if they could save oxygen and increase throughput. The current measurement caused Barrick to consume twice as much oxygen for their process. Additionally, there were multiple flow points which had to add up accurately to the total incoming flow rate in order to audit the oxygen supplier.

SOLUTION

The Rosemount 3095MFC Conditioning Orifice Mass Flowmeter was installed to accurately measure the flow of oxygen within the existing piping. The 3095MFC allowed Barrick to keep installation costs down because the pre-assembled flowmeter allowed for quick and easy installation. While combined with a control valve and controller to convert the flow to closed loop control, the 3095MFC achieved an accuracy of +/- 0.7%. Because the Conditioning Orifice flowmeter technology was familiar to the technicians, the installation and startup went as planned during the scheduled shutdown with no problems.

“The difference between the +/-5% old metering technology and the +/-0.5% new Conditioning Orifice metering is amazing to us.”

Bill Skinner
E & I Supervisor
Barrick Goldstrike Goldmine Co.



Rosemount 3095MFC installation between multiple elbows, valves and limited straight pipe.

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www.rosemount.com


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Additionally, the sum of five flowmeters was within +/-0.5% of the sales meter rate and it was determined that flow could be equalized and flow rate control could run in automatic mode.

The unique flowmeter technology provided accurate measurement of oxygen flow between multiple elbows in a very short pipe run. Because the flowmeter was able to provide accurate measurement of externally supplied oxygen, which decreased oxygen use by 50% for each injection point on the autoclave. As a result, overall operating costs were reduced, and at the same time, process throughput was improved.

RESOURCES

Metals and Mining

<http://www.emersonprocess.com/rosemount/document/applications.html#MetalsMining>

Rosemount 405 Compact Orifice Flowmeter Series

<http://www.emersonprocess.com/rosemount/products/flow/m405p.html>



*Rosemount 3095MFC Compact
Conditioning Orifice Mass Flowmeter*

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Emerson Process Management

Rosemount Division
8200 Market Boulevard
Chanhassen, MN 55317 USA
T (U.S.) 1-800-999-9307
T (International) (952) 906-8888
F (952) 949-7001

www.rosemount.com

Emerson Process Management

Blegistrasse 23
P.O. Box 1046
CH 6341 Baar
Switzerland
Tel +41 (0) 41 768 6111
Fax +41 (0) 41 768 6300

Emerson Process Management Asia Pacific Pte Ltd

1 Pandan Crescent
Singapore 128461
Tel +65 6777 8211
Fax +65 6777 0947
Service Support Hotline : +65 6770 8711
Email :
Enquiries@AP.EmersonProcess.com

Emerson Process Management

Emerson Process Management Asia Pacific
Private Limited
1 Pandan Crescent
Singapore 128461
T (65) 6777 8211
F (65) 6777 0947
Enquiries@AP.EmersonProcess.com

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