

PAPTAC

Energy Conservation Opportunity

Compressed Air Dryer Replacement (new technology)

Date: November 11, 2009

SUBJECT:

As most people know, compressed air is a very important part of an industrial plant control scheme. It's most critical use is on instrumentation and control systems within the plant. Naturally formed moisture poses a serious concern to a plant by interfering with these controls. Most plants use traditional purge type air dryers to dry their compressed air. This comes at a great cost with traditional air drying equipment. Purge air dryers run on timed cycles where they blow expensive compressed air outside to the atmosphere to shed off the water, and use electric heaters to assist in the drying process which is also expensive. The purge air loss was 450cfm.

This traditional air drying equipment was replaced with Atlas Copco Regenerative Air dryers, a new technology. It works using adsorption process which allows water to automatically drain from the dryer chamber without the loss of expensive compressed air. To assist in drying, it used waste heat off of the compressors intercooler stage rather than expensive electrical power.

DEPARTMENT:

Steam Plant/Project Team – St. Marys Paper Corp.

SUMMARY:

Compressed Air Dryer Replacement (new technology)

We removed the old air dryers and replaced them with the new MD units on two of our main screw type air compressors which have a combined capacity of 3,000 CFM. These units have been in service, trouble free for over 4 years.

RESULTS:

Eliminated 450 cfm of air being wasted by regenerating the current air dryer on PM 5 Atlas Copco Compressors.

Eliminated downtime due to water in the compressed air. To ensure dry air at all times. The useable data for down time related to “water in the air” was a cost of \$44,000 per year. This is not included in the savings.

We gained this 450 cfm to our plant air capacity. This will keep us from being fully loaded on every compressor and eliminate risk of compressed air shortage. A 450 cfm compressor would cost \$92,000.

Requires 90% less maintenance than the old air drying system. This cost is not included in this ROI.

The savings are **\$98,490** per year with a payback of **405 days**.

CAPITAL COST:

\$109,490

SUBMITTED BY:

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