

Aluminum Blower Replacement

CIF #656.2



Performance
Report,
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Ottawa Valley
Waste
Recovery
Centre
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1. Background Information and Project Objective

The Ottawa Valley Waste Recovery Centre operates a dual stream MRF with container and fibre lines. The MRF runs a two shift operation, days and afternoons, five days a week. The container line at OVWRC uses an EC belt at the end of the line to separate out aluminum containers. The aluminum containers fall into a blower system where they are blown into a bunker for storage. The old blower system was undersized for the material collected and sorted. The material jammed in the small diameter piping (12" diameter) and the container line had to be shut down to clean the material out of the pipe. It takes approximately 15 minutes to clean the piping and this happens on average 4 times per day. This was 60 minutes per day of lost sorting time for containers.

The project replaced the smaller blower system with a larger system which includes a short conveyor, 24" diameter piping and a larger CFM blower. The objective of the project was to prevent blower blockages and increase the container sorting time by 1 hour per 7 hours processing time. This would be a 14% increase in processing time on the container line. Overall this would amount to an annual savings of \$32,500 in labour costs.

2. Operations Monitoring and Measuring

The data in this section was taken between the time period February 15, 2012 to August 24, 2012.

2.1 Number of Blower Blockages

Baseline – Average 4 blockages per shift resulting in 15 minutes downtime per blockage or 1 hour downtime per 7 hours processing time.

New Blower – There have been no blower blockages in the first 6 months. Therefore there is no downtime due to a blocked blower.

2.2 Maintenance

There have been no maintenance issues or increased cost due to the new blower system. Preventative maintenance is done on a regular basis and the system is performing well.

2.3 Power Consumption

The power consumption number is only available for the total MRF. Detailed numbers are not available for specific areas in the MRF.

Month	2011 Power Consumption (kWh)	2012 Power Consumption (kWh)
February	28,647	29,793
March	22,054	21,390
April	30,175	24,827
May	22,154	16,424
June	25,973	31,321
Average	25,801	24,751

Comparing a 5 month period in 2011 to 2012, the average power consumption has decreased by 1050 kWh/month. There are many factors that affect the power consumption number in the MRF including many pieces of equipment so the decrease cannot be solely attributed to the new blower system. The old blower was 5 HP motor and the new blower is a high efficiency 10 HP motor. The fact that the consumption did not increase is positive.

2.4 Container Line Productivity

The container line productivity increased from an average of 1.3 MT/hr to 1.5 MT/hr over the 5 month period from March to July 2012.

Month	Container Tonnage Received (MT)	Processing Hours
March	182.29	114
April	171.15	129
May	185.84	122
June	183.71	120
July	211.59	147
Total	934.58	632

Average MT processed per hour – 1.5

This is a 15% increase in container line productivity.

2.5 Aluminum UBC Quality Comments

Since the installation of the new blower system on February 13 & 14, there have been no quality complaints with reference to the aluminum bales. There have been two positive comments from the aluminum buyer with respect to the loads that were shipped. Audits were performed on two of the loads and both loads scored 100% which is definitely a positive step forward with respect to aluminum quality. With the new system there are not as many contaminants going into the aluminum bunker.

2.6 Health and Safety

There have been no health and safety issues with respect to the new aluminum blower system. The positive aspects of the new system are:

- Employees do not have to open pipe access ports and reach awkwardly into tight spots and unblock piping.
- There is no longer a housekeeping issue at the blower system. When piping was continuously being cleaned, there was always material all over the mezzanine and floor which was a big housekeeping issue.
- The average sound readings from the new blower system have decreased from 83.2 decibels to 80.2 decibels taking readings from six different locations. This is good considering the size of the blower system has doubled.

Location	Old Blower System (Decibels)	New Blower System (Decibels)
Baler	85	80
MRF Entrance	73	72
Corner of Container Line Mezzanine	88	83
Container Line Glass Spot	85	84
Container Line Magnet	85	82
Baler Conveyor Control Panel	83	80
Average	83.2	80.2

3. Summary

Overall the aluminum blower replacement project has gone very well and it is a positive step forward in every aspect. If the system continues to work well, the total project payback of 1.9 years will be met and the facility will realize \$32,500/year in labour savings.

A final report will be issued in October 2012 summarizing the project including overall performance, impact and learnings.