



COMPRESSED AIR PROJECT





BACKGROUND



dentsu canada inc.
SAPPORO
SAPPORO

"LEGENDARY BIRU HD"
SAP-002-10T60E
:60 SECONDS ENGLISH

MAY 28, 2010

CRUSHINC.COM 416. 345. 1936





BACKGROUND



- Project started to purchase a back-up compressor
- System would fail 2-3 times per year
- Annual Hydro spend of \$100K / year
- Original system consisted of
 - One 200 HP comp (Oil Free Rotary Screw)
 - One non-cycling refrigerant dryer
 - One 350 Gallon receiver tank



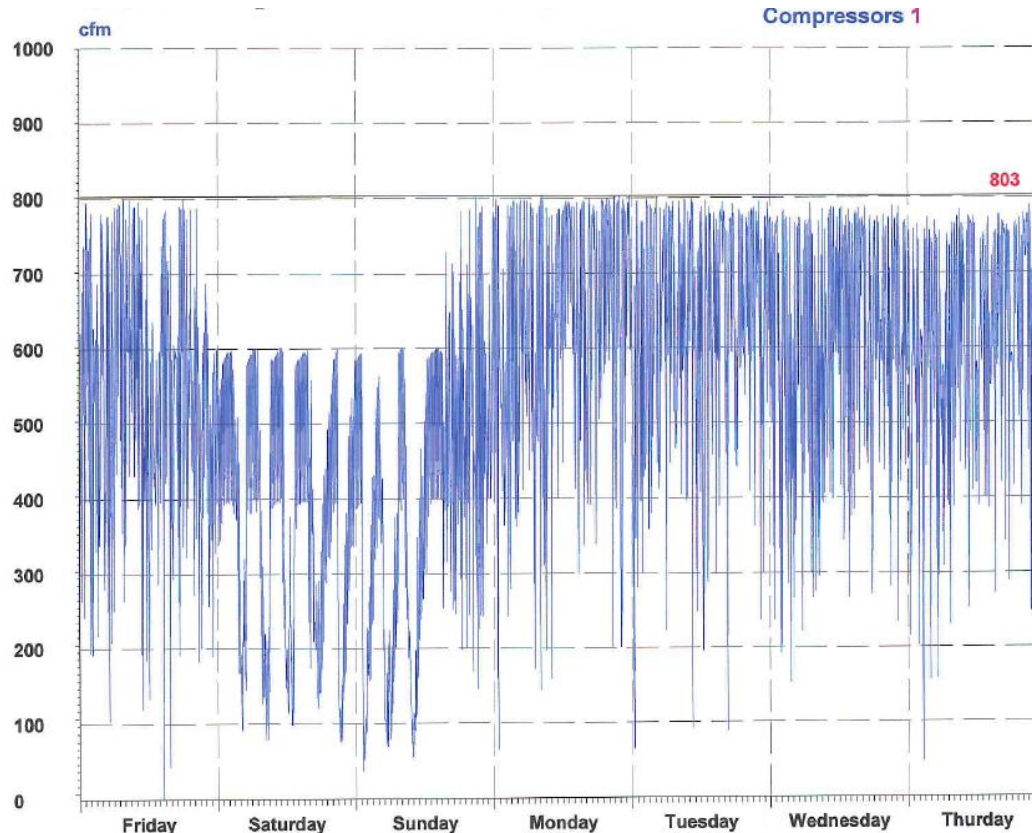


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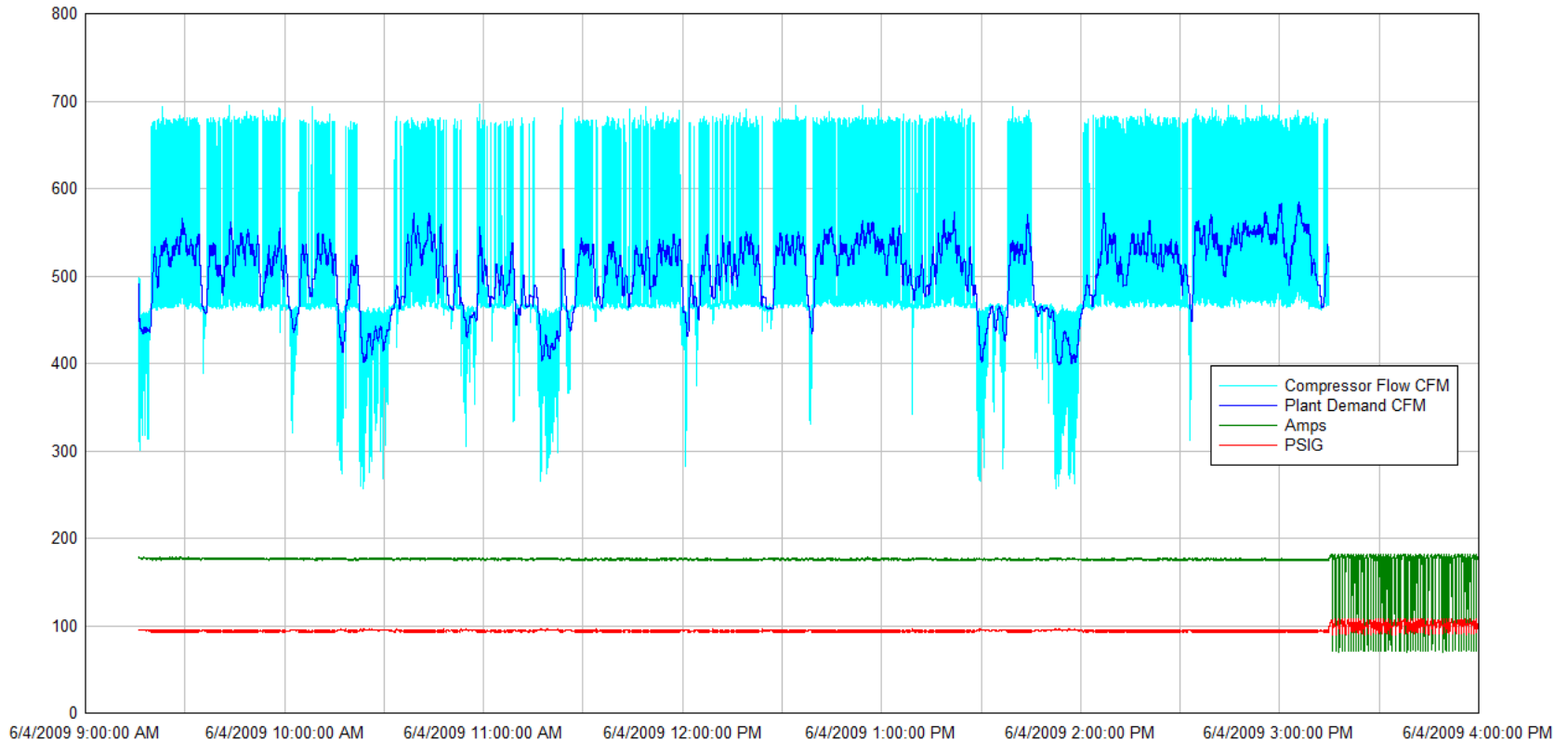




- Are we sized properly?
- Can you tell by looking at the following?



Sleeman Breweries Ltd. Plant Air Consumption - Day shift



- Measured compressor supply and plant demand
 - Found compressor oversized by 30%
 - Fixing air leaks meant we would simply blow-off more air





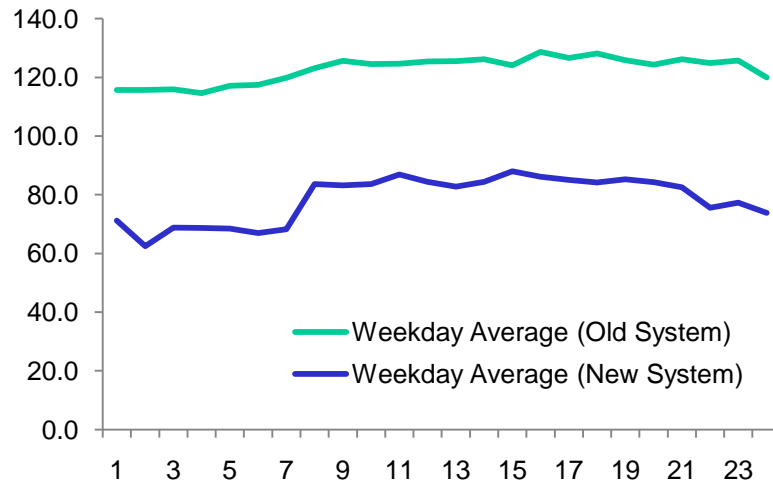
SOLUTION



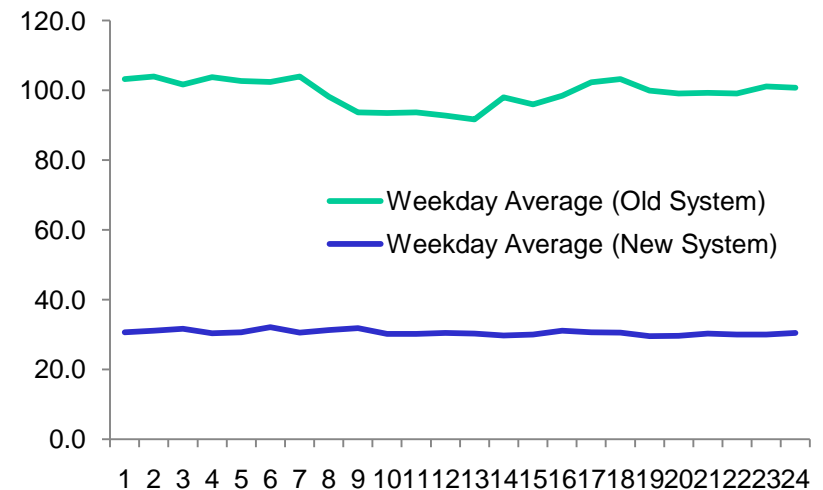
- Installed two 75HP compressors (30KW Saving)
 - One fixed speed and one variable
 - Best suited our demand variation between various shifts and days
 - Variable will allow us to save on repairing leaks
- Installed 3000 gallon tank and flow control valve (10 KW Savings)
 - Increased storage capacity.
 - Went from 4 seconds to 30 seconds of buffer
 - Helps with load spikes
 - Able to reduce overall system pressure
- Installed a cycling refrig. dryer (5 KW Saving)
 - Runs based on demand
 - 3 psi drop versus 10 psi across dryer



Weekday Compressor Profile (KW)



Weekend Compressor Profile (KW)



- 42 KW savings during the week
- 70 KW savings on weekends (variable runs alone)
- Estimated annual Hydro savings of \$45,000
- Simple payback of 5.4 year in Hydro alone
- Applied for ERIP and obtained \$10,500



- Implement leak program to further improve savings
- Identify poor uses of air and eliminate
 - Bottle blow-off improvements
 - Compressed air lines in electrical panels for cooling
 - Air nozzles for directing corrugated
- Project has got plant thinking about energy and recognizing the cost of waste
- Looking at other services in a similar manner (steam and refrigeration)



- Old compressor cycling every few minutes as a result of inadequate storage and an oversized system.
 - Likely cause of increased failure rate
 - Major cause of waste
- Cost of running compressor exceeds capital purchase
- Savings on leaks are only realized when a compressor can be turned off (multiple installs), supply matched to demand (variable speed) or adequate storage capacity exists
- It makes financial sense to conserve energy
- Measure, Measure, Measure !!





FURTHER INFO



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