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Client: **Plastics Manufacturing – Central, NZ**
Service: **Compressed Air Leak Survey carried out 7th – 10th August**

The compressed air leak survey under-taken on the above mentioned dates resulted in **193** air leaks being identified.

The attached Log provides comprehensive information pertaining to the location of each leak and a brief description of the nature of the leak. All leaks exceeding 80dB have been logged as Urgent and are also listed in a separate worksheet sorted by location to assist you with prioritising your maintenance program. Further information on individual leaks is written on a Green high visibility "Leak" identification tag supplied by ULDS Ltd and is attached to the source of each leak.

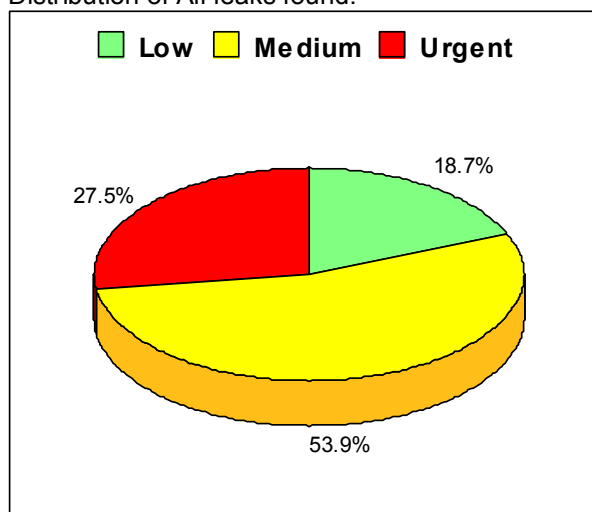
Estimate of Air Loss:

Our survey estimates an air loss of approximate **384.3 CFM** which equates to about **22.8%**
The cost of that loss based on your current \$p/KWH of 0.150c is **\$47,585 pa.**

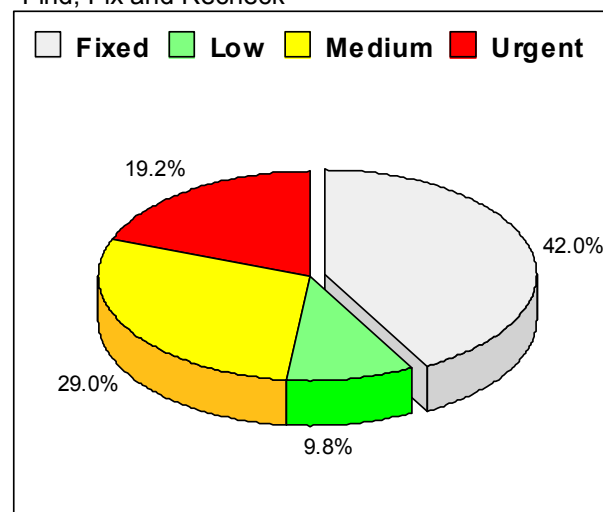
Immediate Savings:

During the survey we used the "Find, Fix and Recheck" method which resulted in **42.0%** of the leaks found being repaired. This is an excellent result and equates to an estimated immediate saving of **\$19,986 pa.**

Distribution of All leaks found:



"Find, Fix and Recheck"



Observations:

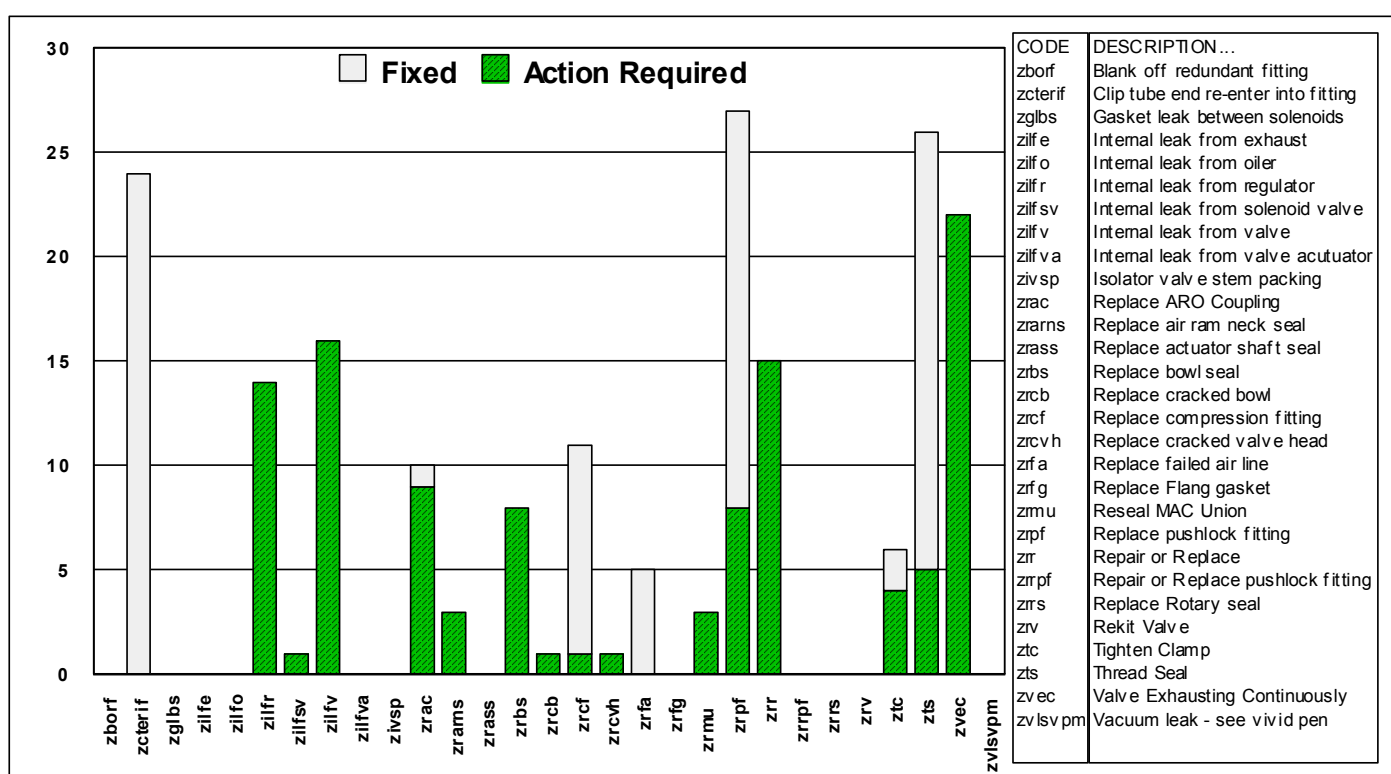
During the survey there were two types of air operated valves found to be exhausting air continuously - Keystone Actuator (F79U 006) & Rosemount valves (331DS1K18). I appreciate that in some cases this air loss is by design and can't be avoided; however the amount of air being lost accumulatively is considerable ie estimated cost \$9,150 pa. It may therefore warrant closer inspection / assessment of these valves. These valves are listed by location in a separate worksheet labelled "K&R".

I would also like to note that the 10 Vacuum pumps in the DS plant appear to be very active in drawing large amounts of external air via the nylon relief valves. This looks to be normal operation but may require closer inspection / assessment also.

In summary:

| Hours of Operation | Full Capacity (CFM) | Loss Assessment | Estimate of Air Loss (CFM) | Annual Loss (kWhrs) | Cost per kWhr | Annual Cost of Loss | Fix Rate | Estimated Immediate Savings |
|--------------------|---------------------|-----------------|----------------------------|---------------------|---------------|---------------------|----------|-----------------------------|
| 6500 | 1683 | 22.8% | 384.3 | 317,234 | \$0.150 | \$47,585 | 42.0% | \$19,986 |

To assist you further in your ongoing maintenance program, you will see below a count of all the fix codes that appear in the attached log. This is to help your engineering staff in identifying common causes which could be included in your preventive maintenance program.



ULDS Ltd would like to thank staff and management who were directly involved during this survey for their assistance and full co operation.

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