



Multilec® Industrial Oil (6803)

Oxygen Manufacturing Plant – NZ

Atlas Copco & Mikuni Compressors

- Saved thousands of dollars annually in oil replacement and disposal costs
- Significantly reduced maintenance costs by extending oil change intervals and reducing downtime
- Saved \$390,000 in repair costs by extending life of compressors' screw elements

Customer Profile

An LE customer since 1993, this plant manufactures up to 35 tonnes of oxygen per day for the bleaching process of a nearby pulp and paper mill.

Application

The plant has two Atlas Copco ZA6 compressors to supply the many tonnes of air needed to manufacture 35 tonnes of oxygen daily. The process works continuously, 24 hours per day, every day the paper mill operates. The plant also uses two Mikuni Y-type gas compressors to deliver the oxygen to the mill as needed.

Challenge

The OEM-recommended oil change frequency for the first Mikuni compressor was 5,000 hours, and it was decided to try and extend the change frequency so that the service schedule would be aligned with the routine shutdown of the paper mill. However, at 8,000 hours an oil analysis report on the commercial oil in the crankcase showed the lubricant had oxidised and failed.

LE Solution

The local LE representative recommended LE's Multilec Industrial Oil (6803), a multifunctional oil that is designed to meet the requirements of air compressors, hydraulics and industrial turbines, as well as R&O industrial and R&O gear applications. After changing to Multilec, the plant has continued to use oil analysis to monitor the oil and assess its condition. The performance of Multilec Industrial Oil in



the Mikuni was so impressive that the engineers decided to convert all the compressors in the plant, including two Atlas Copco ZA6 compressors, to Multilec.

Results

In May 2000, oil analysis on the Mikuni showed a slight lowering in the viscosity of the crankcase oil, so it was changed for the first time. The compressor had completed 35,700 hours with Multilec – more than *seven times* the OEM recommendation of 5,000 hours. In 2003 LE's Multilec 6803 was installed in the second Mikuni compressor, which had been commissioned as a backup.

As of April 2010, the two Mikuni compressors had run a combined total of 112,000 hours on LE's Multilec, with only **three** oil changes. According to the OEM recommendation, the machines should have needed 22 oil changes for this period. By switching to Multilec, the plant was able to reduce the oil consumption and disposal for these compressors by seven times.

The two Atlas Copco ZA6 compressors had run a combined total of 128,000 hours on Multilec oil,



Customer Testimonial

averaging 28,000 hours per oil change. One ran 49,000 hours, with only one oil change. As of April 2010, the other was still running at 79,000 hours with only two oil changes. The OEM recommendation is 8,000 hours per oil change. This means LE's Multilec reduced oil consumption and disposal on these compressors by more than three times.

The OEM also recommends that the screw elements of ZA6 compressors be removed for service and cleared of varnish deposits every 40,000 hours. This service must be completed overseas by the OEM, with a cost per service of approximately \$130,000. With LE's Multilec oil providing superior lubrication and reducing heat and friction, the ZA6 compressors are still running with their original elements. The elements are free of varnish deposits and still in excellent order. The engineers expect – based on analysis of the oil – that Multilec will more than double the life of the screw elements. This benefit alone represents a savings of \$390,000 since Multilec was installed.

In addition to these benefits, LE advises that the users of LE lubricants who have documented power consumption on various pieces of equipment have generally seen a 5 to 20 percent reduction in power requirements. The average documented savings using LE lubricants in air compressors is 12 percent. Unfortunately, prior to installing Multilec in these compressors, the power consumption was not documented, so it is not possible to show this plant's energy savings.

Other LE Products Used

- Oil Analysis
- Oil storage dispensers

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