

## ADVANCED NEW ICP INSTRUMENTS FOR WEARCHECK



Laboratory manager, Paul Swan, with one of the new ICP instruments in the Pinetown laboratory

**Three new state-of-the-art Perkin Elmer ICP instruments with a total value of R3,9 million, believed to be the fastest in the world, are headed WearCheck's way in the next few months.**

One of the instruments has already been installed in the Pinetown laboratory with one more to come. The third unit is destined for the SOS lab in Isando.

'The new instruments employ the very latest sensor technology coupled with groundbreaking advancements in sample introduction. As a result they are 35% faster than anything else currently available,' says laboratory manager, Paul Swan.

'This has major benefits for our customers. It allows us to increase sample volumes through our laboratories, whilst improving turnaround time, all without affecting the accuracy of results or driving up costs.'

'It was time to retire our old machines,' says Paul. 'Although the old ICPs are still going strong - one after 20 years! - it is becoming increasingly difficult to service them and source spare parts.'

The development of the new ICPs is the result of collaborative research involving US-based Perkin Elmer, who are world leaders in instrument manufacturing, Elemental Scientific Inc. (ESI) who are auto sampling specialists in the USA,

and WearCheck.

Paul was invited to give a presentation to a Perkin Elmer conference in Durban on 10 March on the application of the new ICP in an oil analysis environment.

### **VOLVO APPOINTS WEARCHECK AS PREFERRED SUPPLIER**

WearCheck has been appointed as the preferred service provider for Volvo Construction Equipment in Southern Africa.

'This means that WearCheck will perform oil analysis on all samples supplied by Volvo dealerships in the region', says WearCheck managing director, Neil Robinson. 'This will also include fuel and coolant samples. When our Middle East lab comes on stream, the agreement will be extended to cover that region too.'

This partnership also involves WearCheck UK who are the preferred supplier for Volvo Construction Equipment in the United Kingdom and manage their data base internationally.

### **NEWS FLASH!**

WearCheck's new Ruler test predicts the remaining useful life of an oil – read about it on page 3.

# WEARCHECK EXHIBITS IN ABU DHABI



WearCheck diagnostician, Steven Lumley (centre), networks with staff and guests of Precision Machinery at the international oil and gas show in Abu Dhabi



The Precision Machinery stand, incorporating WearCheck, at ADIPEC

WearCheck exhibited at the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) in November last year which was attended by nearly 39 000 people from 89 countries.

According to diagnostician Steven Lumley, who represented WearCheck at the show, 1500 companies from 56 different countries mounted displays at the four-day event.

The WearCheck exhibit was part of the Precision Machinery LLC stand. This Dubai-based engineering

company acts as WearCheck's partner in the United Arab Emirates. A range of WearCheck products and brochures were on display. Steven and AD Bahl, WearCheck's representative in the region, were on hand to explain the benefits of oil analysis.

'We generated a great deal of interest in WearCheck's service and are confident that we have a number of solid leads from the exhibition,' said Bahl. 'There is very little knowledge of oil analysis in the region but, as more and more companies come to appreciate its advantages, we believe that sales will multiply.'

## LUBE TIP

### FILTERING OUT OXIDATION

#### QUESTION:

Can you filter out oxidation, and if so, what is the best method? I have heard that oxidation is a permanent chemical change and can't be filtered out.

#### ANSWER:

Figuratively oxidation can be filtered, that is, it can be slowed or reduced through proactive maintenance best practices. In reality, oxidation cannot be filtered because oxidation is a chemical process of aging in the oil driven by catalysts such as high temperature, water, air, metals (in the form of wear debris and contamination) and other contaminants such as fuels and process chemicals. Therefore, minimizing the ingress of these will reduce or significantly slow the

oxidation rate of the oil, resulting in longer lubricant life.

However, by-products of the oxidation process such as acids and fine insolubles can be filtered out by the use of advanced filtration/separation technologies such as electrostatic separation or vacuum separation. Once these by-products have been removed, depletion of the additive package will have occurred, and this can be sweetened by the addition of additives with the guidance of your lubricant supplier.

Of course, once the oxidation process reaches a certain stage, the viscosity is severely affected and the oil, selected as such for the application, is no longer fit for purpose. This viscosity change is irreversible, and a complete change of the lubricant is required.

- Courtesy of Noria Corporation

## ISO 9001 CERTIFICATION FOR TRANSFORMER ANALYSIS

The transformer section of WearCheck's speciality lab in Isando received ISO 9001 certification in November last year. The fuel analysis section of the lab obtained this certification in 2005.

'This development is part of our ongoing quality management programme,' said managing director, Neil Robinson. 'We are also working towards achieving SANAS 17025 registration later this year.'

## NEW RULER TEST PREDICTS THE REMAINING USEFUL LIFE OF AN OIL

WearCheck's new Ruler instrument – which predicts the remaining useful life of a lubricant more quickly and cheaply than any other method - provides numerous benefits for customers.

'Lubricants do not last forever,' says laboratory chemist, Meshach Govender, who played a major role in developing the new stand-alone Ruler test at WearCheck. 'Using a lubricant until it is no longer useful is cost-effective but potentially catastrophic. However, knowing the rate of ageing and being able to predict the remaining useful life of the oil, enables maintenance managers to schedule oil drain periods cost-effectively.'

'This means that oil drain periods can be extended without risk. By monitoring changes in operating conditions prior to complete degradation of the lubricant and mechanical breakdown, the oil can be used to its full potential,' Meshach explains.

'The Ruler instrument gives maintenance managers a better understanding of a lubricant's chemistry, giving them valuable information for root cause investigation and proactive decision-making. It also enables them to take full advantage of advanced new technology oils.'

The Ruler (remaining useful life evaluation routine) instrument measures the antioxidant concentration in lubricants such as greases, combustion engine oils, gear oils, hydraulic transmission oil and hydraulic oil. It is believed to be the only one in South Africa.

### FASTER AND CHEAPER

'The only reliable alternative to the Ruler test is the rotating pressure vessel oxidation test (RPVOT) which measures the oxidative stability of a lubricant, especially turbine oils,' says Meshach. 'The drawback of this method is that it is expensive and time-consuming. A single RPVOT test can take up to 600 minutes or, with new additive blends, between 800 and 3000 minutes. A Ruler test can be completed in about a minute, excluding sample preparation time, and is therefore much cheaper.'

'Understanding how your lubricant ages and knowing the rate at which it is ageing is an investment that will yield substantial returns,' Meshach adds.



Laboratory chemist, Meshach Govender, examines some of the results generated by WearCheck's new Ruler instrument

## WHERE ARE THEY NOW?



Alistair Geach

Many customers will remember technical manager Alistair Geach and diagnostician Ashley Mayer who worked for WearCheck for several years before heading off to pastures new in North America. Both are still working in the industry, Alistair as operations manager for WearCheck Canada in Burlington, Ontario and Ashley as

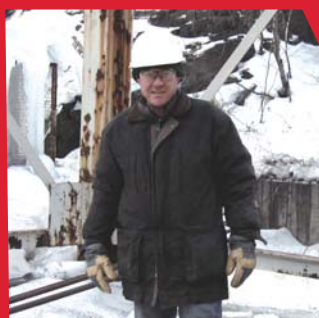
director of applications engineering for Noria Corporation in Philadelphia, USA.

Alistair is responsible for most of the routine operations at WearCheck Canada, which is situated half way between Toronto and Niagara Falls, and involves himself in whatever is necessary to keep the work flowing efficiently.

'Canada has much to offer as it is a vast country with an abundance of natural resources and a diverse population,' says Alistair. 'The quality of life here is good and there is high regard for human life coupled with a healthy respect for the rule of law. I especially like the Canadian people as those that I have got to know are generally very friendly and well educated and have a keen sense of humour. My family and I were made to feel most welcome on our arrival in Canada six years ago and it didn't take long to start feeling safe and secure here. We are now looking forward to becoming Canadian citizens shortly as the final stage in our transition.'

'Although I miss the mild Durban winters and the all year round abundance of green vegetation, it is the people I worked with at WearCheck Africa that I miss the most,' he adds. 'It was a great experience working there and I consider the years I spent at the lab in Durban amongst the most valuable of my career.'

Ashley is responsible for conducting lubrication audits, consulting on lubrication software and programme design for Noria.



Ashley Mayer working in temperatures of minus 40° C

'Philly is one of the oldest cities in the US, with lots of history,' says Ashley. 'It also has the best restaurants in the country, and I travel a lot so I know that for sure.'

What does he miss about South Africa? 'Mutton breyani and meat pies. But not bitong, I make my own.'

# 2009 TRAINING COURSES

Course	Johannesburg	Pinetown	Middelburg
NetCheck: Software	8 June, 12 October	18 May	7 September
WearCheck 1: Oil analysis orientation	9 June, 13 October	19 May	8 September
WearCheck 2: Understanding oil analysis	10 June, 14 October	20 May	9 September
WearCheck 3: Report interpretation	11 June, 15 October	21 May	10 September
WearCheck 4: Management	12 June, 16 October	22 May	11 September
Machinery & Lubrication: Level One	18 - 20 May, 17 - 19 August	1 - 3 June	
Machinery & Lubrication: Level Two	21 - 22 May, 20 - 21 August	4 - 5 June	

The WearCheck courses are full day and cost R1 700 plus VAT with the exception of Course 4, which is half day and costs R600 plus VAT.

The Machinery and Lubrication (MLA) courses are run in joint venture with the ABB School of Maintenance. Level One is a three-day course costing R5456.85 plus VAT. Level Two is a two-day course costing R4354.35 plus VAT.

**For all bookings phone Patrys Huggett on (011) 392-6322.**

## PRODUCT PICK

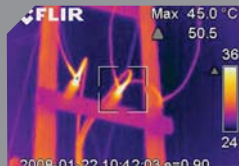
### The Ruler test

WearCheck's new stand-alone Ruler test measures the remaining useful life of a lubricant. Product code: STR - Lab Test : Ruler

### Thermography

WearCheck's new Middelburg lab offers a full on-site thermography service which can include inspections, surveys and evaluations, infrared scanning and filming video footage where needed. Reports feature analysis details, photographs and thermo digital images.

Product code: WTSCAN (Thermographic Scan & Report)



## HIGHLIGHT YOUR SUCCESS

If you have an example of how oil analysis has helped you, we would be happy to feature this in Monitor. Email [melanie@wearcheck.co.za](mailto:melanie@wearcheck.co.za) and we will write the article from information supplied by you.

## TECHNICAL BULLETIN TOPICS?

Is there a particular subject you would like to see featured in a Technical Bulletin? Simply email your suggestion to [melanie@wearcheck.co.za](mailto:melanie@wearcheck.co.za)

Before you do this, why not check out the 44 titles already available on the web site: [www.wearcheck.co.za/bulletins.htm](http://www.wearcheck.co.za/bulletins.htm)

## CONGRATULATIONS TO BELINDA!



Hearty congratulations to Belinda Janse van Rensburg of WearCheck's Johannesburg office for winning the 2008 internal quality auditor of the year award

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