



WEARCHECK ACQUIRES TRANSFORMER SERVICES COMPANY

WearCheck recently bought out Transformer Chemistry Services (TCS), adding an already-established transformer analysis and maintenance division to the company's condition monitoring portfolio.

Coupled with WearCheck's Africa-wide network, the expertise of TCS and a general growth in the number of transformers across the continent, WearCheck is now poised to provide large-scale and widespread comprehensive transformer reliability services.

The primary function of the newly-formed transformer division is the promotion of transformer health through the regular assessment of insulating fluid and diagnosis of the results.

Transformers are extremely critical apparatus for providing reliable energy. No-one can precisely answer when equipment will fail, but it is essential to manage risk. Compared with the cost of premature or catastrophic failure, regularly scheduled oil testing is a cost-effective and sound maintenance practice that is used to extend the life of transformers.

WearCheck has now added the transformer tests done by TCS to its existing transformer oil analysis programme, increasing the number of available fluid and non-fluid tests, such as Insulation Paper Quality Testing. This test provides a measure of paper aging, and correlates this with important physical properties such as resistance to tearing and bursting. This is a critical factor in estimating the real aging of the main transformer insulation.

TCS was established in Westville, Durban in 1992 by Ian Gray, who has run the company for the past 25 years.

Among some of the large customers serviced by TCS are companies such as Sasol, ArcelorMittal and BHP Billiton. A second TCS laboratory was built in Cape Town two years ago, in response

to the needs of the burgeoning transformer industry in the Western Cape.

Offering the full spectrum of transformer reliability solutions by one condition monitoring company – this is one of the key benefits of the merger of TCS into WearCheck. So says WearCheck MD Neil Robinson, who constantly strives to provide customers with value-for-money services that reliably boost plant availability.

Says Neil, 'The transition of TCS into WearCheck is already underway and is an extremely smooth process, particularly since the two companies share an absolute dedication to the integrity of data and a parallel commitment to customer service excellence.

'From WearCheck's side, we extend a very warm welcome to all the current TCS customers, and we look forward to taking new transformer clients on board to experience our new one-stop transformer monitoring shop.'



Shaking hands on the deal – WearCheck MD Neil Robinson (right) and TCS MD Ian Gray discuss the details of the merger of TCS into WearCheck. For customers operating transformers, the merger means all transformer monitoring needs can now be met under one roof

TECHNICAL TIP: Condition Monitoring breaks the barriers to achieve Total Fluid Management (TFM)

by Annemie Willers



Annemie Willers

In this two-part series, WearCheck's reliability solutions lubrication consultant, Annemie Willers outlines tips for making lubricants work to their optimum efficiency.

WearCheck's Reliability Solutions (RS) division has mastered the development of a holistic approach regarding a practical and effective guide to implementing a world-class fluid management programme that aligns all departments according to a customised Total Fluid Management (TFM) plan with common goals.

The RS division realised that the only way to implement an effective TFM programme was to use condition monitoring technologies to identify sub-standard fluid management practices and the effects these have on component life.

WearCheck Reliability Solutions has implemented similar programmes for several international mining companies including, but not limited to, Rio Tinto, Glencore, South 32, and Tongaat Hulett. We have had success in all types of operations by combining condition monitoring and total fluid management.

The WearCheck RS team believes in a hands-on approach when it comes to our customers. We become part of your team to ensure that when we hand over the programme, your team has the capabilities to manage your world-class programme with trust and confidence. After handover, we are available for after-sales service and product support. We also believe that re-assessment of your programme on a scheduled basis is fundamental to the success of the programme. Our customers become part of our family to ensure ongoing success.

We base our entire approach on the three pillars that ensure Total Fluid Management success.

They are:

- Keep lubricants clean
- Keep lubricants dry
- Keep lubricants cool

WearCheck RS considers all aspects of lubrication and overall fluid management instead of just targeting a single department. This provides value in optimising the function of lubrication and fluid management services, which ultimately enforces better maintenance practice and minimises defects from occurring.

WearCheck's Total Fluid Management programme presents a guide on how to assess, improve and implement an existing service. Once implemented, results should include a cost reduction in lubrication and an improvement in the on-line availability of equipment. During the initial implementation stage, lubrication costs will increase, but once the system is put into operation, savings and increased machine availability can be quantified. Our programme calls for comprehensive data (using condition monitoring) to be collected and stored.

Emphasis will be placed on ensuring procedures are assessed and improved. What should be realised is that in order to successfully accomplish this, we need to re-

assess what is currently being implemented and where there is room for improvement. In other words, our consultants need to become part of your daily operations. To succeed we need buy-in from all stakeholders, including the people within your operations.

WHO MUST BE INVOLVED?

- The customer's reliability engineer/s (The champion that heads up the condition monitoring team)
- The customer's on-site oil laboratory
- The customer's condition monitoring teams
- The reliability lubrication engineer/s (The champion that heads up your TFM team)
- The customer's lubrication teams (lubrication technicians)
- The customer's maintenance teams – electrical and mechanical departments
- The customer's planning teams
- The customer's procurement department
- WearCheck's RS condition monitoring consultant
- WearCheck's RS hydrocarbon manager/consultant

PHASE 1: ASSESSMENT

The assessment phase is the most important phase of the programme. WearCheck RS will assess all departments involved from procurement of lubricants to who is responsible for the application of lubricants. We will assess procedures and predictive maintenance schedules. Audits will be done on type of equipment, the environment in which it operates, as well as operating temperature, load and speed of each application. Vibration data analysis, thermal analysis and oil analysis will be done on all rotating machinery to establish the overall condition of the machines. Condition monitoring helps to enforce the foundation of your TFM programme by pinpointing machines that are already in defect mode and that require urgent attention.

PART TWO TO BE CONTINUED IN THE NEXT ISSUE OF MONITOR

LUBE TIP: Water absorption in fluids

The amount of water that a given fluid will absorb depends upon its base stock, viscosity, additive package, and temperature. The amount of water that can dissolve in a fluid is termed its saturation level. The saturation level for a hydraulic fluid is 200-300 ppm while for a lubricating oil it is around 500-600 ppm. Oil is cloudy when it is above its saturation level. The saturation level for a synthetic fluid is generally much higher than for a mineral base fluid.

- Extract from the Noria Corporation's 'Lube-tips Newsletter'

NEW LAB INSTRUMENTS GENERATE FASTER SAMPLE RESULTS

WearCheck recently invested in excess of R1.7 million in new high-tech equipment in both the transformer and fuel sections of their Joburg-based Speciality laboratory.

The Kruss K11 tensiometer, an ADU 5 distillation unit, a SVM3001 stabinger viscometer as well as the PMA 5 Pensky-Martens closed-cup flash point tester are among the new pieces gracing the countertops in WearCheck's laboratory.

These highly accurate, sophisticated instruments - which have boosted the lab productivity by offering new tests and saving time on existing ones - have also reduced the turnaround time to generate customers' sample results.

The ADU 5, a fully-automated distillation unit which is operated by a touch screen interface, performs distillation tests according to ASTM D86. This is recognised as one of the most reliable methods to determine the boiling range characteristics of petroleum products, and is a critical measurement of the overall performance and safety of fuels.

A given volume of sample is placed in a distillation flask and distilled according to strict guidelines as specified in the standard. The sample is heated and vapourised. This vapour is then cooled in the condenser line and the condensate is collected in a graduated cylinder. The temperature of the recovered volume of condensate is recorded precisely during the test.

The SVM3001 is a Stabinger viscometer which is capable of multiple parameter measurements in a single analysis, eliminating the need for many separate tests.

The instrument can simultaneously measure kinematic viscosity according to ASTM D7042, dynamic viscosity, as well as the density according to ASTM D4052 in lubricating oils, base oils, additives and fuel oils. The sample is simply injected using a syringe and measurement is started via a touch screen panel.

The automatic PMA 5 Pensky-Martens closed-cup tester measures the flash point at the lowest temperature at which the application of an ignition source causes the vapours of a sample to ignite. This instrument is suitable for flammability applications on fuels like diesel, heating oil, kerosene as well as both biodiesel and

biodiesel blended fuels.

The ADU 5, SVM3001 and PMA 5 are upgrades to existing equipment operated by WearCheck. The acquisition of these instruments has boosted our service delivery by yielding highly accurate results and reducing our turnaround time which is of benefit to our customers.

Using the Kruss K11 tensiometer, the analysis of the decomposition product content of transformer oil is done in accordance with ASTM D971. This fully-automated

instrument conducts precise measurement of surface tension and interfacial tension (IFT). The IFT is determined by measuring the force necessary to detach the platinum ring from the surface of the liquid of higher surface tension under rigid conditions based on the fundamental Du Nuöy principle of establishing surface tension.

This data is key in the maintenance of transformers and in making informed decisions on whether to extend the life of the oil – a useful way to save customers money.



Here, senior laboratory technician Lizzy Chabangu operates the brand new PMA5 Pensky Martens closed cup flashpoint tester



WearCheck recently invested in a range of sophisticated new laboratory equipment to boost productivity. Laboratory technician Msutu Nyokana was snapped operating the new Kruss K11 tensiometer



WearCheck continues to lead the way in the condition monitoring arena and boost productivity, this time by investing in the latest international laboratory technology in the form of several new instruments. This new ADU5 distillation unit is operated by senior lab technician Lizzy Chabangu

PRODUCT PICK:

WearCheck pioneers condition monitoring app



WearCheck IT manager Eddie Perumal shows off some of the devices onto which the brand new WearCheck app has been downloaded – it is compatible with Android and Apple (iOS) systems and gives maintenance managers immediate access to crucial data about machinery components, at their fingertips

“Ground-breaking”, “highly innovative” and “revolutionary”...these are some of the reactions to the recent launch of a brand new interactive customer application (app) pioneered by WearCheck.

WearCheck is one of only a handful of condition monitoring companies in the world, and possibly the first in Africa, to develop and launch an app of this nature, according to managing director Neil Robinson. He is confident it will substantially improve customers’ benefits from their condition monitoring programme by allowing them to make virtually instantaneous maintenance decisions based on reliable data which is highly accessible.

WearCheck customers can now download WearCheck Mobile and, at their fingertips via their mobile device, access a host of critical information pertaining to machinery condition. This data is immediately available even while patrolling the factory floor or inspecting mining machinery on-site.

It is no longer necessary to wait until returning to a desktop computer to view test results, and maintenance decisions can be made there and then based on live data.

‘Our investment in the creation of the app is in line with the company’s dedication to technical innovation and continuous improvement,’ says Robinson.

And what, exactly, does the app enable customers to do?

WearCheck’s IT manager Eddie Perumal outlines some of the app’s features.

‘Using the app is straightforward as we have designed it to be intuitive and logical, allowing for ease of use by all generations. The design is an extension of our website look and feel, so the WearCheck branding lends a sense of familiarity.

‘All data is secure and the login process uses the same username/password credentials as our WearCheck Online website. Those customers registered on the website can start using the app immediately.

‘Once the app is downloaded, customers can access reports and view their current samples list. As an optional feature, this keeps track of unread web/app reports, and notifications about items on this list are sent out as reminders.

‘Sample reports can be viewed on the mobile device as either one page (“concise”), or two page (“full”) pdf documents. Single or multiple pdf reports can be emailed to different recipients simultaneously.

‘Sample data can be submitted, either via the equipment/component search option (recommended), or via the “submit samples” option, where equipment/component verification is needed for currently-listed machinery. Where applicable, new equipment/components information is created in the WearCheck system. Customers can also view their five-day submission history.

‘One of the highlights and unique features of the app is the interactive key, where customers can ask a diagnostician about a specific sample, and receive an emailed reply on their mobile device.’

Perumal continues, ‘Another useful feature is the ability to enter feedback about a sample result, component condition or maintenance event.

‘Various search options and filters are available, including sample history and equipment or component searches.’

Why don’t you check it out? The free app is compatible with both Android and Apple (iOS) mobile devices, and is available on Google Play Store or the Apple Store. Simply type “WearCheck Mobile” into the search bar to locate the app.

The WearCheck Mobile app is only about 40mb, so it won’t kill your data usage when you download it, and it uses minimal data when in use.

Need help? Please contact WearCheck software support on softwaresupport@wearcheck.co.za or call (031) 700-5460 or visit www.wearcheck.co.za.





Dennis Swanepoel of WearCheck's reliability solutions division has just made history when he became the very first Master Vibration Analyst in South Africa after he met all certification requirements, and also passed his CAT IV exam recently held through the Mobius Institute in South Africa – with flying colours, to boot.

As a Master Vibration Analyst, Dennis is qualified to lead condition monitoring teams, and has deep insight into the dynamics and failure modes of machines. He can design tests to solve complicated problems, and no rotating machine problem is too difficult for

him to solve. In short, with his qualification, Dennis carries the highest regard in the field of machine condition monitoring.

The Mobius Cat IV course covered advanced measurement signal processing techniques, torsional vibration and cross-channel measurements, dynamics including mass/stiffness/damping and natural frequencies, modal analysis and operating deflection shapes, orbit and centreline analysis, rotor dynamics, correction techniques including isolation, damping, and tuned absorbers, and other advanced topics.

Dennis, you have done WearCheck proud... huge congratulations, we are extremely proud of you!

WearCheck runs a wide selection of training courses. For more info and a training timetable, please see page 7.



Dennis Swanepoel of WearCheck's reliability solutions division

Internal auditor awards

WearCheck has many systems in place to ensure that customers receive their results accurately and as fast as possible. It takes a huge team of dedicated people to ensure that these processes continue unhindered. This team mostly operates back-stage, and perform many duties over and above their normal workload to keep things running smoothly.

For 2016, the recipients of the Internal Auditor of the Year were Wayne Moodley (lab assistant) and Deon Yettian (stock controller) in Johannesburg.



Wayne Moodley received the 2016 Internal Auditor award for Pinetown



Deon Yettian was awarded the 2016 Internal Auditor award for Johannesburg

Your questions answered – WearCheck's new online FAQ facility

Do you know if one oil works in all different makes of engine? And do you know how to take a sample correctly, and when? Or what to do when your sample has a high copper concentration?

These are just some of the questions that we at WearCheck are asked regularly by our customers. So, to help you find quick and easy solutions to the frequently asked questions (FAQs), we have compiled a list of common queries and their answers.

So far, we have over 60 questions and answers, and we add to these on an ongoing basis. You can link directly to the FAQ section of our website at this address: <http://www.wearcheck.co.za/useful-info/faq>

Of course, you're always welcome to contact us directly with any query if you need more information: support@wearcheck.co.za



OUT AND ABOUT

WearCheck staff travel far and wide regularly, to spread the word about oil analysis, condition monitoring and all things reliability solutions. Training manager Ashley Mayer recently presented a paper at the Vivo Energy conference for distributors and field technicians in Accra, Ghana, in West Africa.

WearCheck training manager Ashley Mayer



BOTSWANA AGENT FOR WEARCHECK

WearCheck is pleased to advise customers in Botswana that we now have a local agent: Autopac Projects. Managing director of Autopac, Bakang Tsheboagae, is based at Sebele at Plot no 80, Unit 4, at the Gaborone International Commerce Park.

Customers can purchase sample kits from him as well as drop off oil samples. He can be contacted on telephone +267 392 4171 or via email on bakang@autopac.co.bw

INNOVATION FOR WEARCHECK BLOEM

WearCheck Bloemfontein now has a convenient sample drop box attached to the front gate, making life simpler for local customers. All they need to do is drop off filled sample containers into the box, which is cleared several times per day. The box is extremely secure and sample bottles can only be removed by someone with a key to unlock it.



Seen here is WearCheck consultant Don Geyer next to the sample drop box in Bloemfontein

Management Review

WearCheck's management review committee meets regularly to assess and discuss the company's growth and performance, and chart the way forward.



Spotted at the first meeting of the year outside the company's Pinetown headquarters were (from left) Ashley Mayer, Eddie Perumal, Prinda Narasi, Philip Schutte, Loshini Govender, Meshach Govender, Steven Lumley, John Evans, Michelle Padayachee, Neil Robinson and Phillip Croucamp

Mining Indaba

WearCheck was once again present at Mining Indaba 2017 recently, where many people came to the stand to chat about condition monitoring. This year, WearCheck shared a stand with sister company Set Point Laboratories (SPL), which is also part of holding company Torre Analytical Services.



Standing by to discuss the latest trends in oil analysis and other reliability solutions techniques were (from left) WearCheck MD Neil Robinson and technical manager Steven Lumley. With them (right) is Johan Botes, CEO of Torre Industries, which owns Torre Analytical Services

25 YEAR REUNION FOR CO-WORKERS

A quarter of a century is a jolly long stretch of time in the business world.

So imagine the delight for some of WearCheck's ladies who used to work together in the company's Johannesburg branch in the early 1990s, when they chanced upon a reunion recently. Just for fun, they had a picture taken now, mimicking a picture taken of them in 1992!



Here they are 25 years ago (left picture), and now (right picture). They are, from top left, Amalia Sehane (now Lizemore), Karen Baney, Lin Patterson (now Evans) and Anita MacPherson (now Marshall)

WEARCHECK 2017 TRAINING COURSES

Venue	NetCheck: Software package	Oil Analysis 1: Understanding oil and its analysis	Oil Analysis 2: Report interpretation
Course length	One full day	Two full days	One full day
Rustenburg	On request	20 – 21 June	22 June
Bloemfontein	On request	11 – 12 July	13 July
Pinetown	On request	15 – 16 August	17 August
Namibia	On request	12 – 13 September	14 September
Gauteng	On request	10 – 11 October	12 October
Northern Cape	On request	7 – 8 November	9 November

Oil Analysis One covers two full days and costs R5 540. Oil Analysis Two and the NetCheck course cover one full day each and each costs R2 795. [Please note that the Oil Analysis Three course will not be run this year]. All courses include course material, refreshments, giveaways and certificates. Prices exclude VAT and are subject to change.

For more details on course content, view Training at www.wearcheck.co.za. For bookings phone Kay Meyrick on (031) 700-5460 or email training@wearcheck.co.za.

ON-SITE TRAINING

All courses can also be presented at the customer's premises for a minimum of seven delegates.

WearCheck also offers two more on-site courses:

- WearCheck Practical (in English or Zulu), a half day course costing R685 plus VAT per delegate

RELIABILITY SOLUTIONS TRAINING COURSES

Mobius training is offered in 153 countries, and is recognised the world over as the preferred standard for reliability solutions technicians. Mobius courses are run by WearCheck and presented either on-site or at the ABB School of Training premises.

Courses include Alignment, Balancing, Awareness, and CAT I to III, and costs (excl VAT) are as follows, when presented at the ABB venue at 2 Lake Road, Longmeadow Business Park, Modderfontein, Johannesburg, South Africa.

Courses can be presented on-site, and will be quoted accordingly.

Course	Cost	Jan	Feb	Mar	May	June	July	Aug	Sep	Oct	Nov	Dec
Vibration analysis awareness	R6 370	23	20	27	29	26	25	28	16	23	27	
Vibration analysis ISO CAT one	R14 900		13-16			19-22		14-17				
Mobius ISO certification exams	R4 800		17			23		18				
Vibration analysis ISO CAT two	R17 800			13-16								
Mobius ISO certification exams	R5 750			17								
Vibration analysis ISO CAT three	R20 000										30-2	
Mobius ISO certification exams	R6 720										3	
Vibration analysis ISO CAT four	TBA											
Laser alignment	R12 350	24-26			30-1				19-21			
Balancing	R10 595		21-23			27-29						
Master Vibration Analyst ISO CAT IV				27-31								

To book any of the above courses, or get course dates for the second half of 2017, please contact Dennis Swanepoel on 082 878-1578 or email denniss@wearcheck.co.za, or contact Christene Fourie on (011) 392-6322 or email christenef@wearcheck.co.za

* Prices exclude VAT, and are valid until the end of 2017.

Note: the condition monitoring overview courses do not include any training material, and a minimum of six candidates is required for all training courses. There may be an additional charge for the lecturer's accommodation and travel.

WEARCHECK WELCOMES A VERY SPECIAL VISITOR



From small beginnings as a soil-testing business based in the garage of founder Lesley Crawford and her business partner Gary Brown over 40 years ago, WearCheck has grown into one of the leading condition monitoring companies on the African continent today.

Lesley, who now lives in France, made a special visit to WearCheck on a recent trip back to South Africa. As many of the current employees in the Pinetown branch were already employed by the time Lesley left the company in 2005, her visit was a happy reunion for these folk. Newer staff members enjoyed getting to meet the amazing lady whose foresight, scientific knowledge and business acumen helped set WearCheck onto a growth course that still hasn't ended.

Managing director Neil Robinson presented Lesley with some WearCheck memorabilia to celebrate the company's 40th birthday in 2016, including a book on the history of WearCheck, a commemorative latte glass and, of course, some cake

LONG SERVICE – Committed team members applauded

WearCheck's major assets are the dedicated team members who work hard and give the company many years of faithful service.

HR manager Michelle Padayachee commended the loyalty of all staff members who have served WearCheck for many years. 'Your loyalty and commitment is appreciated. It is your knowledge and expertise that enables WearCheck to provide top class service to our customers.

Michelle singled out several team members who have reached important long service milestones recently. 'This year, Pearl Joseph and Rowan Maartens celebrate 35 years with WearCheck, while Eva Francis is not far behind at 30 years. Congratulations!



Accounts clerk Pearl Joseph has worked at WearCheck for 35 years



Diagnostician Rowan Maartens has worked at WearCheck for 35 years. He has diagnosed over 2.3 million samples



Admin clerk Eva Francis, in the data processing department, has worked at WearCheck for 30 years

HIGHLIGHT YOUR SUCCESS

If oil analysis has helped prevent a major failure or saved your company money, we would like to feature this in Monitor. Our writer will contact you for the details and will write the article for your approval. Simply email prinda@wearcheck.co.za and we will contact you.

TECHNICAL BULLETIN TOPICS?

Is there a particular subject you would like to see featured in a Technical Bulletin? Simply email your suggestion to prinda@wearcheck.co.za. Before you do this, why not check out the more than 60 titles already available on the web site: [www.wearcheck.co.za/info/Technical Bulletins](http://www.wearcheck.co.za/info/Technical%20Bulletins)

JOINING TOGETHER TO SUPPORT THE PLANET



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