

# BEST WISHES FOR THE FESTIVE SEASON



As the end of 2011 approaches, we review a very busy and successful year, in spite of lingering global economic difficulties. We are grateful for the support from you, our valued customers, which has enabled WearCheck to expand and trade internationally in Namibia, Dubai, India and Zambia, whilst maintaining our South African laboratories and staff at the forefront of technology. From the whole team at WearCheck, we wish you peace and prosperity over the festive season and a fruitful 2012.

*Neil Robinson, managing director*



## NEW UNDERGROUND SAMPLING SERVICE IS IN DEMAND

WearCheck's innovative new service – where trained technicians go underground to take samples from mining machinery – has proved popular, with several large mines signing up for the service.

Customers have the option of either basing WearCheck personnel on their site, or WearCheck can provide daily sampling services to mines where the workload does not require a full-time mine employee to do the actual sampling.

During an intensive three month training course, the specialised sampling technicians undergo an obligatory "induction", which qualifies them for sample collection, both underground and on machines that are brought to the surface for routine maintenance.

Once samples are taken, they are delivered directly to the nearest WearCheck laboratory for testing, analysis and diagnosis, and, where necessary, clients are alerted to potential machine component concerns.

Neil Robinson, managing director of WearCheck, believes that this new service will become increasingly popular in the mining industry.

'By using our resources to do the sampling, it removes responsibility from the site engineer and his team, thus enabling our clients to remain focused on their core business, which is mining,' he said.

'Another benefit is the increased consistency it brings to the sampling process by reducing the inevitable

variables that occur when there are multiple "sample takers", and this can assist in optimising the accuracy and validity of the analysis.

'On one of our recent contracts, we invested in a specially modified vehicle that complies with mining regulations. This vehicle is certified to navigate underground in a major coal mine collecting samples as per the mine maintenance schedule. Without the vehicle, the sampling technician would be required to walk up to 8 kms to collect the samples.

'Several mining giants have signed up for this service, with many others poised to follow,' said Neil.

In addition to underground sampling, WearCheck provides on-site sampling services to many other industries, including oil refineries, sugar mills, factories, process plants, paper mills and the petrochemical industry. Included in this service is thermography and vibration service if required.



*As part of their new underground sampling service, WearCheck has invested in a specially modified vehicle that complies with mining regulations, and is licensed to navigate directly to the underground work area. WearCheck technicians Kenneth Khwacha (left) and Sampa Phiri are pictured with the new vehicle. WearCheck offers on-site sampling to a variety of industries.*

# CUSTOMER SURVEY YIELDS CONSTRUCTIVE FEEDBACK

'A hearty thank you to all the customers who completed the WearCheck 2011 customer survey. We appreciate the time you invested to provide invaluable feedback, which we implement in our ongoing endeavours to fine-tune our service to you,' says managing director Neil Robinson.

'Keeping our customers happy and providing the service they need and expect is critically important to all of us at WearCheck, and we encourage regular dialogue with our clients to enable us to address any issues immediately.'

The following positive comments from survey respondents were appreciated:

- Very good technical backup. There has not been a question that I have not been

given an answer to.

- Very happy. Questions not a problem and answered promptly even if they need to check and come back to us!!!
- It is a good experience and lots of inputs come from WearCheck – the response for any concerns is very fast and accurate.
- Very dependable and professional service.
- Absolutely Brilliant.
- Excellent services and all staff always willing to assist.

As a token of WearCheck's appreciation for your input, each year the name of one of the survey respondents is drawn from a hat to win a prize. This year, the prize – a Mecer laptop valued at R5000 – was won by Hoffman Makgalem from Kleinkopje Colliery.



*WearCheck customer survey winner Hoffman Makgalem from Kleinkopje Colliery collects his prize – a Mecer lap top valued at R5000 – from Chris Hattingh, operations/technical support for WearCheck.*

At the time of going to press, we received tragic news that Hoffman Makgalem passed away just a few weeks after this picture was taken. Hoffman liaised with WearCheck on Kleinkopje Colliery's oil analysis programme for over 20 years, and will be sadly missed. We extend our deepest condolences to Hoffman's family, friends and colleagues.

## SWEET TREAT



*Diwali, the traditional Hindu Festival of Lights, was celebrated by WearCheck Pinetown office recently. Dressed in beautiful saris for the occasion, Kay Meyrick (left, customer services) and Pinky Singh (reception) handed out delicious Diwali sweetmeats made by their colleagues.*

## PRODUCT PICK: CORROSIVE SULPHUR TEST

Corrosive sulphur was first identified about ten years ago, as the culprit causing the previously inexplicable failures of both new and old transformers around the world. Corrosive sulphur is the elemental and thermally unstable sulphur compounds in electrical insulating oil (crude oil) that can cause corrosion of certain metals such as copper and silver.

Crude oil generally has five groups of sulphur in it: elemental sulphur, mercaptans and sulphides (these three are the reactive groups), and disulphides and thiophenes. Disulphides and thiophenes can become reactive at elevated temperatures on hot metal surfaces. In other words, at elevated temperatures, transformer oil can change conformity from a non-corrosive sulphur to a corrosive sulphur oil. Corrosive sulphur should be tested on an annual basis especially if the transformer is performing at elevated temperatures.

WearCheck uses ASTM D1275 copper strip standard to determine whether a transformer oil contains corrosive sulphur or not. This is done by mimicking corrosive conditions and determining if a copper strip corrodes or tarnishes in the transformer oil being tested.

Corrosive sulphur is detrimental to transformers because it reacts with copper surfaces on contact to form copper-sulphur compounds. These copper-sulphur compounds deposit onto the paper insulation resulting in a decrease in its dielectric strength. This could lead to arching between windings resulting in a failure.

Once an oil is discovered to contain corrosive sulphur, it can be refined to remove the corrosive sulphur. Refining of the oil either converts the reactive groups of sulphur to non-reactive groups or removes the sulphur altogether. However, the refining process is not always totally successful, resulting in residual reactive sulphur groups remaining in the oil. A safer option is to replace the oil.

## NEW LAB FOR WEARCHECK INDIA

The instruments in WearCheck India's new laboratory tested their first oil samples in July this year, and business for the new Chennai-based branch of WearCheck has been growing steadily ever since.

One of the key focus areas of WearCheck India is running predictive maintenance solutions in the wind turbine industry, which is a burgeoning business on the subcontinent.



*The official opening of WearCheck India in Chennai, in July was attended by several WearCheck dignitaries from South Africa. Among them were Set Point CEO Graeme Horsfield (second from left), and next to him, WearCheck MD Neil Robinson.*

## LOCAL IS LEKKER



WearCheck Africa is steadily expanding into new markets where the need for oil analysis has arisen as various industries develop in the areas, which include Southern and West Africa, India and the Middle East. While it is always refreshing to explore new horizons, the WearCheck South Africa "family" of customers and staff can rest assured that our heart and roots remain firmly in our home base, South Africa, where we started operating 38 years ago.

# OIL ANALYSIS PREVENTS EQUIPMENT FAILURE FOR MIDDELBURG MINING CONTRACTOR

Oil analysis by WearCheck proved instrumental in avoiding machine failure on two of Atlantis Mining's earthmoving units recently by detecting component wear in time.

All of the Middelburg-based mining contractors' fleet of Caterpillar, Komatsu, Hitachi, Volvo and Terex equipment have been on WearCheck's oil analysis programme for the past 12 years.

On this occasion, one of the machines was a Caterpillar D9T bulldozer where samples on both final drives were diagnosed by WearCheck as borderline. The oil was resampled and drained but the samples came back as borderline again. Atlantis resampled the new oil after 100 hours in use and submitted this to WearCheck. Again the sample was borderline.

'The misleading factor on this machine was that the magnetic plugs showed no signs of contamination,' said Mark Johnstone, managing director of Atlantis Mining. 'We continued to run the machine whilst monitoring the final drive oil samples until we were advised of a critical sample at 9028 hours. Again the magnetic plug showed no signs of contamination, but it was decided that the final drives should be opened.'

Three weeks later the machine was brought into the workshop and the final drives removed at 9192 hours. On disassembly it was found that the inner bearing had started to 'pit' and that the wear was starting to go through the hard facing. All the bearings were replaced and a major failure was avoided.

'This was thanks to our successful oil sampling programme, accurate diagnosis by WearCheck technicians and timeous action,' Johnstone said.

A second unit was a Volvo A40D articulated dump truck whose engine had returned normal oil samples up until its mid-June service at 14753 hours, when WearCheck identified a sample as borderline with diagnostic remarks relating to bearing wear rates and oil pressure. The oil had been changed at the service, so the machine was inspected and put back to work.

At the next service in early July at 14981 hours, the oil was drained again and a sample submitted for analysis. Once more, WearCheck classified the sample as borderline with increased bearing wear, but this time recommended that the oil filter be cut open for analysis. This was found to contain traces of brass-like material so the engine was removed and sent to Babcock for repair. When stripped, it was found that the thrust washers on the crankshaft were worn, which was where the debris was being generated, but not to the extent where the block was damaged.

'The engine was removed before failure once again as a result of WearCheck's oil analysis and informative feedback, and because we acted on the results as soon as possible,' Johnstone said.

'Knowing that we can rely on our oil analysis programme gives us peace of mind, particularly as we are working with machines that are costly to replace and where equipment downtime quickly eats into profits. It is a cost-effective conditioning monitoring tool that has proved its worth time and time again.'

Atlantis Mining offers mining services for various mining houses in Mpumalanga.

WearCheck's oil and speciality laboratories serve a cross section of industry sectors



*Middelburg-based mining contractor Atlantis Mining has their fleet of earth-moving vehicles on WearCheck's oil analysis programme. The engine of this Volvo A40D was recently saved through the early discovery of component wear during WearCheck's analysis of oil samples from the vehicle.*



*The final drives on one of Atlantis Mining's Caterpillar D9T bulldozers were recently repaired before failure thanks to timely detection of bearing wear through WearCheck's oil analysis programme.*

including mining, earthmoving, aviation, marine, transport and electrical organisations, and major industrial plants such as paper mills and refineries.

## LUBE TIP: SAMPLING TECHNIQUE

*[Extract from the book "Oil Analysis Basics" – Second Edition, by The Noria Corporation (The book has many contributors)]*

Oil sampling is the most critical aspect of oil analysis. Errors in obtaining a representative sample impair all further oil analysis efforts. There are two primary goals in obtaining a representative oil sample:

**Maximize Data Density** – simply stated, samples should be taken in such a way that there is the most possible information per millilitre of oil. This information relates to such criteria as cleanliness and dryness of the oil, depletion of additives, and the presence of wear particles being generated by the machine. For instance, taking

samples downstream of filters would be contrary to this sampling goal since the filter would effectively remove much of the data before it could get to the sample bottle.

**Minimize Data Disturbance** – Samples should be extracted in such a way that the concentration of information is uniform, consistent and unaltered by the sampling process. It is important to make sure that the sample does not become contaminated during the sampling process. This can distort the data, making it difficult to distinguish what was originally in the oil from what has come into the oil during the sampling process. For example, sampling oil with a dirty sample bottle can result in data disturbance (a false positive in this case).

# NEW INTERNAL TRAINING CENTRE BOOSTS STAFF SKILLS

The air is abuzz with learning in the new training centre at WearCheck Pinetown, as workers from all departments brush up on a range of computer-based skills.

Equipped with six new internet-linked PCs, the centre provides an opportunity for staffers to engage in continuous education and to stay ahead of the game in a variety of fields through access to the computers.

HR manager Michelle Padayachee believes that WearCheck's training philosophy – to upskill workers wherever the need arises – helps maintain a high level of staff retention by creating opportunities for internal promotion.

Says Michelle, 'Promoting from within the company means better understanding of our customers' needs throughout the business – a key element in our customer-centred service ethic.'

She outlines the available courses: 'We offer a variety of e-learning modules, including those in the MS office suite, and computer training on all levels from basic to intermediate and advanced; as well as weekly sessions in ABET (Adult Basic Education and Training).

'There are currently more than 60 Pinetown staff members undergoing training courses to further the skills which will enhance their daily tasks, including power point, word and excel, amongst others.



*WearCheck Pinetown staff members are embracing the opportunity to further their skills through the new internal training centre. Hard at work on the computers are (from left) Preshnie Govender (accounts), Elizabeth Mbambo (cleaner), Charmaine Pillai (bookkeeper) and Tamryn Dearlove (accounts).*

## GRADUATION DAY



*Driver Joel Masedo of WearCheck Johannesburg is presented with his graduation certificate from the ABET course by Lorain de Bruin, branch co-ordinator of WearCheck Johannesburg.*



*The Set Point group offers ongoing Adult Basic Education Training (ABET) courses for all staff. One of the latest graduates is temporary worker Gloria Modiehi Likotsi from WearCheck Johannesburg.*

## IT'S A SMALL WORLD

Technical enquiries about oil analysis were recently received from:

- Management of the copper and gold mining industries in Mauritania
- A predictive maintenance laboratory in Haifa, Israel

# TECHNICAL TIP: MANAGING SULPHUR CONTAMINATION THROUGH OIL ANALYSIS



John Evans, diagnostic manager

Sulphur is bad for engines, oil and the environment, and knowing the sulphur content of lubricants is a cost-effective way to manage the contamination and maintain engines at their peak performance.

So says John Evans, WearCheck's diagnostic manager. Here he discusses the importance of spectrometric analysis of sulphur in an oil analysis programme:

One of the most familiar tests associated with oil analysis is the Spectrometric Oil Analysis Programme (SOAP). During this process, the oil sample is analysed for a variety of elements using a laboratory instrument called a spectrophotometer. The elements that are detected can all be found in the periodic table of elements, which you may remember from matric chemistry lessons.

Most oil analysis programmes will analyse at least a dozen elements depending on the sophistication of the spectrophotometer. WearCheck analyses more than 30 elements on each sample and they can be placed into three broad categories: wear metals like copper and iron; contaminants such as silicon and sodium; and oil additives comprising zinc or phosphorus.

One element that is often not analysed is sulphur. This is because the spectrophotometer needs to be specially tuned to detect it. Sulphur is both an oil additive and a contaminant.

In oil analysis, it is important to be able to identify the oil in use, check that it agrees with that which the customer thinks he is using and that it is suitable for the particular application. Viscosity is probably the most important physical property of an oil, however, the chemistry which includes magnesium, calcium, zinc, boron,

phosphorus and sulphur also needs to be known in order to properly identify an oil.

## Sulphur levels determine extreme pressure ratings of oil

In terms of engine and hydraulic oils, sulphur is part of a series of compounds (called dithiophosphates) which make up the anti-wear and anti-oxidant part of the oil additive package. In gear oils sulphur is reacted with other chemicals (fatty acids) to impart the EP or extreme pressure properties of the gear oil. In the case of gear oils, the level of sulphur can be used to estimate the GL (Gear Lubricant) rating of the oil; the more sulphur there is, the more EP additive is present.

Sulphur is also found as a naturally occurring constituent of most mineral base oils. A typical mineral engine oil might have a sulphur content of around 8000 ppm – roughly half of this will be in the base oil and the other half will be part of the additive package. As a general rule of thumb, higher viscosity base stocks have higher sulphur contents. The oil refineries can remove this contaminant but only at a cost.

Synthetic oils, where the base stocks are manufactured in a laboratory, do not contain any sulphur before additives are blended in. Therefore, knowing the sulphur content of the oil can help distinguish mineral oils from synthetic oils, although this method is not foolproof.

Sulphur is also a contaminant found in fossil fuels, after all, diesel and petrol are simply lighter fractions of heavier lubricating oils.

## Legislation for lower sulphur content

The sulphur content of diesel has received much attention over the past few months, as the government has legislated that the sulphur content of diesel must be lowered from 3000 ppm to 500 ppm. This follows on a drop from 5000 ppm to 3000 ppm some years ago.

Simply put, sulphur is bad for the engine, the oil and the environment. Being able to spectrophotometrically analyse sulphur is an easy and effective way to determine how much sulphur is actually present in the diesel. (Note: 1% = 10000 ppm.)

## WEARCHECK RIDERS HIT THE ROAD

An intrepid team of WearCheck colleagues, family members and friends from around South Africa entered the popular, but daunting, 94.7 cycle race in Johannesburg recently. Some of the team members gathered to show off their snazzy WearCheck cycling kit just before the start of the race.



# WEARCHECK GETS THE BALL ROLLING FOR YOUNG SOCCER STARS



Four players from the Highway u13 soccer team were selected to represent KZN at the annual Bill Steward Interprovincial Football Tournament in Port Elizabeth recently.

Pictured here after soccer practice are (from left to right): Francis Berner of WearCheck (back). Standing: Peter Stone (team manager), Liam Sequiera, Luke Bakke, Kuhle Bophela, Sakhile Khanyile, Thobani Gcwensa, Dumisani Lembethe (coach).

Second Row: Nikolai Klewinghaus; Khumbu Khayelihle; Siya Jali; Jake Stangroom; Shahien Maharaj. Front: Wandile Dlamini (Absent: Mvelo Ndaba)

Four young soccer stars from the Highway Invitational under 13 soccer team, supported by WearCheck, were selected to represent KwaZulu-Natal at the annual Bill Steward Interprovincial Football Tournament, which took place in Port Elizabeth recently.

They are Mvelo Ndaba, Sakhile Khanyile, Liam Sequiera and Nikolai Klewinghaus.

The Highway team was formed this year to give the top under 13 football players from the Highway region the opportunity to represent their province, with assistance from team sponsor, WearCheck.

The team is drawn from several schools, including Highbury, Pitlochry, Forest View, Hillcrest, Lyndhurst, Thomas More, Winston Park and Kainon.

Proud team manager, Knowledge Vilakazi, is also a teacher and coach at Highbury Preparatory School. He said, 'The provincial selection process was tough, as there was plenty of talent from which to choose. We are honoured to have four players from Highway selected, and we supported them throughout the challenge, where KZN was represented again for the first time after a decade long absence.

The KZN team played 10 of the 12 scheduled matches, with two called off due to rain. They won three, drew two and lost five. It was a very successful experience, with the team coming away richer for experience and memories, and looking forward to future tournaments.

The 2012 tournament will be in Johannesburg, while the 2013 tournament will be hosted in KZN.

## COMMUNICATION IS KEY AT WEARCHECK

A central objective in WearCheck's business model is to stay at the forefront of the very latest technology – particularly in the labs – to optimise service delivery.

In keeping with this philosophy, which applies to all aspects of the business, WearCheck customers now have a wide variety of convenient options when it comes to receiving sample reports and communicating with the WearCheck team.

You can now follow WearCheck on Facebook and Twitter, and read the WearCheck Blog on [www.wearcheck.co.za/blog](http://www.wearcheck.co.za/blog)

These are in addition to the usual communication methods: telephone, fax, email, sms, post and via WearCheck's customer website <https://online.wearcheck.co.za>



# TECHNOLOGY TALENT BOOST FOR ASPIRING ADULTS

Buckle up, Vosloorus! Students enrolled at the local Thuto-Mfundo Adult Centre are speeding down the information super-highway, thanks to a recent donation of educational equipment worth R150 000 by staff from WearCheck and Set Point Laboratories, both members of the Set Point Group.

Featuring a new computer lab, computers, computer training courses, stationery, sewing machines and other items, the donated goods will assist close to 700 Thuto-Mfundo students - many of whom are from impoverished households – to earn a living.

Cash was raised as part of an inaugural project in a Set Point Group staff mentorship programme, which includes a rigorous one year mentoring and personal development projects.

WearCheck laboratory chemist Meshach Govender was honoured to be selected for the course. He explains, 'Our group of ten mentees (students on the mentoring programme) had to devise a community project as part of the course. We identified the Thuto-Mfundo Adult Centre as a worthy beneficiary, and then pooled our energy and resources to raise money to meet their immediate needs as well as some longer-term requirements.'

'We raised money for the EMAD (Education Making a Difference) project through various means, including a successful golf day in Johannesburg. Our head office, the Set Point Group, matched the money we raised Rand for Rand, and we called in many favours in purchasing and installing the computers for the best possible price.

'Knowing that we are helping people to develop skills to empower them to get jobs and thereby support their families, makes all our hard work worth it a hundred times over!

'In addition, as a group, the mentees gained invaluable skills ourselves via this project, such as setting and achieving goals, developing competencies, networking, and the value of working as a team towards a common goal.'

Thuto-Mfundo Centre principal Ms Tshidi Kalaka is over the moon with the donations and partnership from the Set Point mentees. 'They met with us in June to discuss our needs, and shortly thereafter the Set Point mentees arrived with boxes of urgently-required stationery that enabled our students to sit their June exams. Without the stationery, the exams would have been impossible for many students to write.

'The computers and the sewing machines will revolutionise both teaching and learning at our centre, and give a real boost to the students, the majority of whom are destitute and have no means of changing their circumstances. In particular, the computer training courses, which are installed on a server, will ensure that the donated computers are put to use, and don't just sit there gathering dust while we wait for instructors.'

The 20 brand new computers and sewing machines were switched on at an official opening at Thuto-Mfundo recently, which was attended by staff from WearCheck and members of the Set Point Group.



Staff from Set Point Laboratories and WearCheck raised R150 000 towards computers and other skills-developing equipment to aid over 700 students at the Thuto-Mfundo Adult Centre in Vosloorus. Pictured at the recent handover are, from left: Meshach Govender (a chemist at WearCheck's Pinetown laboratory, Gerald Chiloane (Set Point Central Services), Nozibele Mbangula (African Mineral Standards), Ilze Swanepoel (Mentoring for Success).



Ladies at the Thuto-Mfundo Adult Centre in Vosloorus experiment with their new sewing machines – part of a donation of training equipment by WearCheck and the Set Point Laboratories – at the handover recently.



Gleaming new computers line the desks at the Thuto-Mfundo Adult Centre's brand new computer centre, which was recently donated by staff from the Set Point Laboratories and WearCheck – both members of the Set Point Group.

# 2012 TRAINING COURSES

GAUTENG Kempton Park	WESTERN PROVINCE Cape Town	NAMIBIA	MPUMALANGA Middelburg/Steelpoort	KWAZULU-NATAL Pinetown	NORTH WEST PROVINCE Rustenburg
13-17 February 15-19 October	13-16 March	15-18 May	17-20 July (Middelburg) 24-17 July (Steelpoort)	13-17 August	17-21 September
<b>NetCheck</b> One full day course Software package				<b>NetCheck</b> One full day course Software package	
<b>Oil Analysis 1</b> One full day course Understanding oil and its analysis	<b>Oil Analysis 1</b> One full day course Understanding oil and its analysis	<b>Oil Analysis 1</b> One full day course Understanding oil and its analysis	<b>Oil Analysis 1</b> One full day course Understanding oil and its analysis	<b>Oil Analysis 1</b> One full day course Understanding oil and its analysis	<b>Oil Analysis 1</b> One full day course Understanding oil and its analysis
<b>Oil Analysis 2</b> One full day course Report interpretation					
<b>Oil Analysis 3</b> Half day course Management					

## COSTS

Oil Analysis One covers two full days and costs R4 182. Oil Analysis Two and the NetCheck course cover one full day each and each costs R2 091. Oil Analysis Three is a half-day course and costs R891. All courses include course material, refreshments, giveaways and certificates. Prices exclude VAT and are subject to change. Courses attended after May 2012 are subject to an annual price increase.

For more details on course content, view Training at [www.wearcheck.co.za](http://www.wearcheck.co.za).

## BOOKINGS

For more details on course content, view Training at [www.wearcheck.co.za](http://www.wearcheck.co.za). For bookings phone Michelle van Dyk on (011) 392-6322 or email [training@wearcheck.co.za](mailto: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 R498.00 plus VAT per delegate
- WearCheck Customised – oil analysis for workshop technicians, a full day course costing R1217.50 plus VAT per delegate.

For on-site training, there may be an additional charge for the lecturer's travel and accommodation, if needed.

## ARRANGE A TRAINING COURSE NEAR YOU

Training courses can also be arranged in any of the following areas:

Bloemfontein	Rustenburg
Cape Town	Steelpoort
Kimberley	
Makopane	Botswana
Middelburg	Namibia
Nelspruit	Tanzania (Mwanza)
Port Elizabeth	Zambia (Kitwe)

## 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 [melanie@wearcheck.co.za](mailto:melanie@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 [melanie@wearcheck.co.za](mailto:melanie@wearcheck.co.za). Before you do this, why not check out the 52 titles already available on the website: [www.wearcheck.co.za](http://www.wearcheck.co.za)

## JOINING TOGETHER TO SUPPORT THE PLANET ♻️

If you would prefer to receive future issues of WearCheck Monitor and Technical Bulletin via email in pdf format instead of in printed form, please email a request to: [support@wearcheck.co.za](mailto:support@wearcheck.co.za). This option also applies to printed reports.

**Head Office KwaZulu-Natal**  
9 Le Mans Place,  
Westmead, KZN, 3610  
PO Box 15108,  
Westmead, KZN, 3608  
t +27 (0) 31 700 5460  
f +27 (0) 31 700 5471  
e [support@wearcheck.co.za](mailto:support@wearcheck.co.za)  
w [www.wearcheck.co.za](http://www.wearcheck.co.za)

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UAE	+971 (0) 55 221 6671
India	+91 (0) 44 4557 5039



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