Summer 2024

OELCHECKER

HOT TOPIC

Standard or long-term?
FAQs about oil change intervals

Q&A

OELCHECK investigates –
Unknown oil types and dirty tricks

INSIDE OELCHECK

OELCHECK sets the course for the future –
The impressive new management team

AND MUCH MORE...

CHECK-UP

In the summer of 2024, I am looking back over 56 years of a fulfilling professional life! I have been a member of the OELCHECK GmbH management team for 33 years. Now it's time to say goodbye to the day-to-day routine of work.

My husband, Peter Weismann, and I founded our company in 1991. At the beginning, we were both our only employees. There was lots of hard work and many challenges to overcome. But we were convinced of our vision and we made progress year after year. We were able to inspire more and more customers with OELCHECK, hire additional employees and continuously increase sales. And our ability to overcome adversity and find solutions to problems also increased steadily over time, too. Today – 33 years after its foundation – OELCHECK is the leading laboratory for lubricant and operating fluid analyses in Europe. What we set out to do in the early years has become a reality: to build a company that focuses on quality, innovation, consistency and success.

These many years have not always been easy, but I look back on them with gratitude. Now the next generation is taking over the leadership of our company. As advisory board members, my husband and I will continue to influence the strategic decisions of OELCHECK GmbH.

Our son Paul and daughter Petra are following in our footsteps. They will continue our family business and develop it further. Both bring with them not only excellent expertise, but also the passion and innovative spirit that this company needs. I firmly believe that: Together, they will lead OELCHECK to a successful future.

Barbara Weismann

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OELCHECK EXPRESSO

OELCHECK online portal LAB.REPORT 3.0 – More benefits than ever before

Comprehensive access to laboratory reports and analysis data +++ Easier management of your machines and components +++ Even faster data entry +++ QR codes and their seamless link to the OELCHECK app +++ Overview of all samples and their status in real-time checks +++ Export of your data in a wide range of formats +++ Translation and forwarding of your laboratory reports.

LAB.REPORT 3.0 – all the benefits, all the news

➔ **Inside OELCHECK | Page 5**

Change intervals for lubricating and hydraulic oils

Q&A session with Dr Christoph Rohbogner and Rüdiger Krethe, Managing Directors of OilDoc GmbH

There are clear rules for the minimum shelf life of lubricating oils and hydraulic fluids. But how long can they be used in machinery? Rüdiger Krethe and Dr Christoph Rohbogner answer the most important questions about oil change intervals. They specifically address the extension of standard intervals and the factors that must be taken into account.

➔ **Hot Topic | Pages 6–7**

That was a close call – How OELCHECK escaped the major disaster

Disaster alarm in Inntal! On the evening of 3 June, heavy rain flooded the basement rooms of OELCHECK GmbH. This meant that not only the servers, and therefore the heart of our IT infrastructure, but also the existence of the entire company was under massive threat.

Managing Director Paul Weismann recalls the tense days and nights battling against the masses of water and fighting for the survival of OELCHECK.

➔ **Inside OELCHECK | Page 10–11**

Unknown oil types and dirty tricks – OELCHECK investigates

Did a vehicle workshop not change the oil in a diesel or petrol engine at all and only charge for it? What type of oil is contained in our industrial plant? In the case of a used machine, for example, the new operator often does not know the type or manufacturer of the oil used. Or has a service employee filled the system with the wrong oil, for example?

OELCHECK providesd clarity in these cases.

➔ **Q&A | Page 13**

THE IMPRESSIVE NEW LEADERSHIP TEAM

OELCHECK SETS THE COURSE FOR THE FUTURE

On 1 July 2024, Petra Bots, the daughter of the company founders Barbara and Peter Weismann, was appointed Managing Director. Together with her brother, Paul Weismann, she is now at the helm of the company:

- **Paul Weismann** (Bachelor of Science) has been working for OELCHECK GmbH for many years. He was appointed to the Management Board back in 2002.
- **Petra Bots** (media designer and marketing expert) has been working in media design and marketing for OELCHECK GmbH since 1998. From 2013 to 2024, she was Managing Director of the partner company OilDoc GmbH, organised the popular OilDoc seminars there and established the OilDoc Conference & Exhibition as an important industry meeting point for maintenance technicians and lubricant experts from all over the world.
- The third member of the group is **Stefan Mitterer** (Graduate Engineer from a University of Applied Sciences). He has been employed by the company since 2009, as an authorised signatory and long-term managing director of the Technology, Service & Sales divisions.

Barbara Weismann withdrew from the active management of OELCHECK GmbH on 1 July 2024.

Peter and Barbara Weismann founded the company in 1991 and in the following years developed it into the leading laboratory for lubricant and operating fluid analysis in Europe. With their wealth of experience from over 33 years of successful entrepreneurship, they now support the young management team in strategic decisions as advisory board members.

With Petra Bots joining the management board of OELCHECK GmbH, the handover to the next generation of entrepreneurs is now complete. This also ensures that OELCHECK will remain 100% family-owned in the future. The company's mission is clear and unchanged: OELCHECK wants to continue offering its customers lubricant and operating fluid analyses of the highest quality, with the greatest possible speed and comprehensible evaluation by experienced tribologists, as well as many other advantages.

MORE RESISTANT TO STRESS

ADVANCED TRAINING FOR OELCHECK EMPLOYEES

At OELCHECK, the mental well-being of employees is one of the central topics of occupational health care. For this reason, a presentation on the topic of "Resilience – Recognising protective factors and strengthening your own resources" was organised in cooperation with the AOK health insurance fund. Resilience – mental strength and the ability to cope well with challenging life situations – is becoming increasingly important. This applies to both private and professional life.

On 17 July 2024, Sabine Cimander from neon, Prävention und Suchthilfe Rosenheim presented basic information about the topic and also shared many helpful strategies for dealing with stress and improving your own resilience.

Employees of ANITA Dr. Helbig GmbH were also invited to the hybrid presentation in the OilDoc training room. ANITA is a direct neighbour of OELCHECK and has been working successfully in the clothing and laundry industry for over 130 years.

The audience on site and behind the screens benefited from the practical tips on how to cope with stress. Because people who know methods to help themselves are generally more confident and experience less stress.

LAB.REPORT 3.0

NEW since August 2024

ONLINE, UNCOMPLICATED AND FULL OF BENEFITS

THE OELCHECK ONLINE PORTAL LAB.REPORT 3.0

For more than 20 years, the OELCHECK customer portal has been a reliable online tool in the world of lubricant and operating fluid analysis. What started as a simple platform at the time has continuously evolved and has always been kept up to date with the latest technology. Now we present to you LAB.REPORT 3.0 – the latest version of our customer portal, now more innovative, powerful and intuitive than ever before.

Discover the most important advantages with our explanatory video!

- **Comprehensive access to lab reports and analytical data.**
  Our customers have always appreciated quick access to laboratory reports and analytical data. With the new dashboard and enhanced search and filter options, you have all previous lab reports at your fingertips, including images, diagrams and trends. See at a glance where there is a need for action, identify developments at an early stage and make informed decisions.

- **Manage your machines and components easily.**
  LAB.REPORT 3.0 gives you an overview of all machines and components from which you take samples.

- **Even faster data entry.**
  Thanks to the optimised user guidance, you can now enter data and information on new samples even faster and more conveniently online. This saves you valuable time and allows you to concentrate on the essentials.

- **Generate QR codes for sample entry with the OELCHECK app.**
  Create individual QR code stickers for your machines and components. This makes online sample entry via the OELCHECK app easier than ever before.

- **Keep an eye on the status of your samples.**
  LAB.REPORT 3.0 allows you to seamlessly track all your samples. Find out in real time what the status of each current sample is and when you can expect test results.

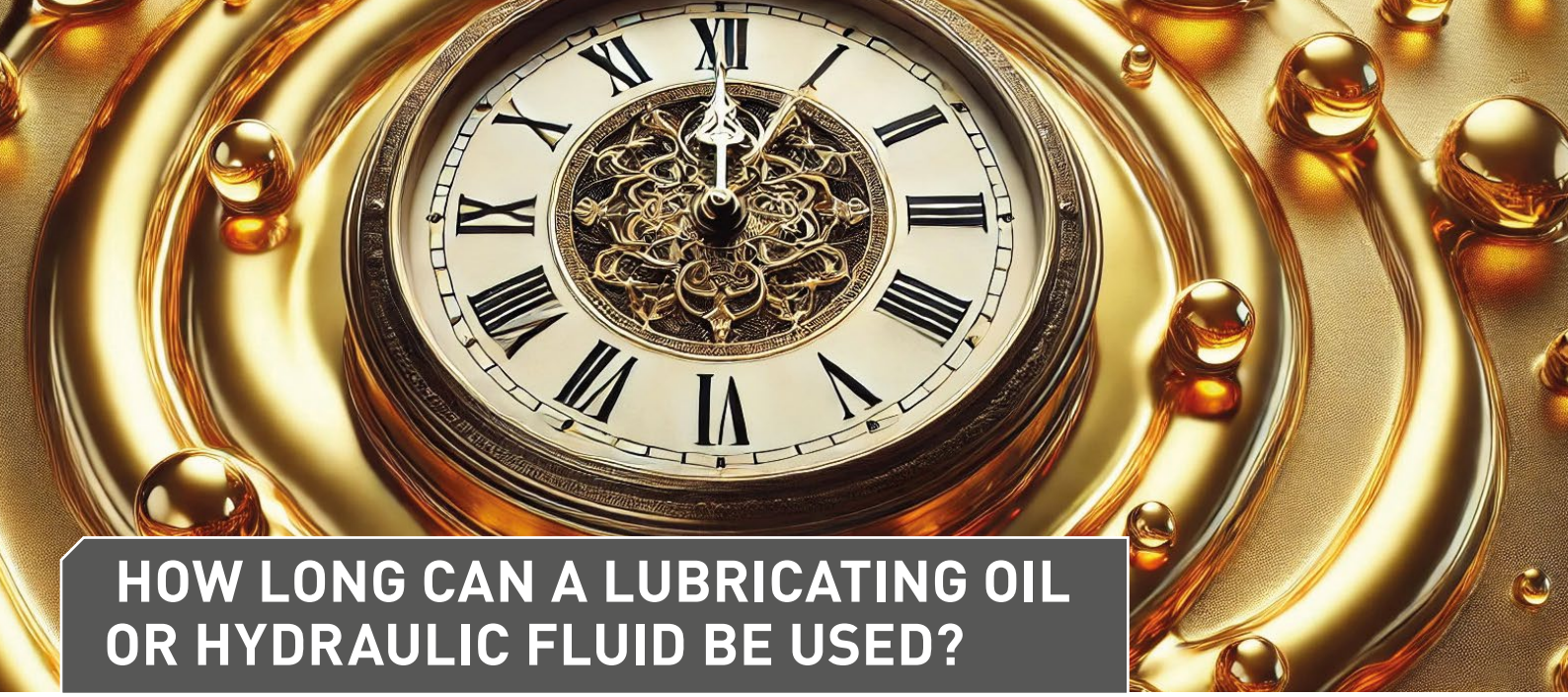
- **Export your data in different formats.**
  Flexibility is a top priority for us: Export in CSV, XLS, XML or JSON formats and integrate the information seamlessly into your work processes.

- **Share and translate your laboratory reports.**
  Collaboration with colleagues, customers and business partners is simple: LAB.REPORT 3.0 automatically translates laboratory reports into the desired language and allows you to forward them with personal comments.

LAB.REPORT 3.0 is the result of decades of experience and continuous innovation – your reliable companion for proactive condition monitoring. Make it one of your favourite tools in your everyday work and experience the smart monitoring of your machinery through oil and operating fluid analyses.

Request your individual access data now under LAB.REPORT!

If you have any questions about our customer portal, please do not hesitate to contact us at +49 8034 9047-250 or sales@oelcheck.de.



HOW LONG CAN A LUBRICATING OIL OR HYDRAULIC FLUID BE USED?

Q&A SESSION WITH DR. CHRISTOPH ROHBOGNER AND RÜDIGER KRETHE

Dr Christoph Rohbogner,
Head of Tribology OELCHECK

Rüdiger Krethe,
Managing Director OilDoc GmbH

? The manufacturers of lubricating oils specify the minimum shelf life of your lubricants with regard to their storage, i.e. before they are used. Is there something similar "for the time after", i.e. once you start using lubricants?

➔ To put it simply: In principle, yes! In many cases, the machine manufacturer writes in its operating manual that oil A in system B of machine C must be changed after X hours, months or years at the latest. With regard to storage, this period of time is appropriately called "minimum shelf life". This can definitely be transferred to the use. Just as a food does not automatically become inedible after the expiry of the minimum shelf life, the lubricating oil does not usually become automatically unusable after this period of time has elapsed. Only the oil change intervals based on these specifications are generally very short.

? So if I understand this correctly, can lubricants remain in use for longer than specified?

➔ Yes, that's exactly how it is in most cases. The minimum shelf life related to storage is linked to specific storage conditions. Information on this can usually be found in the lubricant's data sheet. In addition, as already reported in OELCHECKER, there are other good principles for storage and handling. (Learn more at: https://en.oelcheck.com/wiki/storage-and-handling-of-lubricants/) In principle, this is no different for the time the lubricant is used in the machine. Here it is the loads to which the lubricant is exposed under which environmental influences and operating conditions that make the difference. In addition, even supposedly "equivalent" lubricants show clear differences in long-term behaviour. The actual possible oil level time in the machine is therefore a very individual matter. Here, too, general specifications are "minimum runtimes" that are achieved under the assumed conditions.

? Which factors are decisive for the achievable service life of a lubricating oil?

➔ Lubricating oils and hydraulic fluids are subject to a normal ageing process during their use. At this point, only the oil oxidation or the consumption of additives is mentioned. The simple formula "How many drops of oil must withstand which temperature" suggests how different this can be in practice. Add to this, for example, the annual mileage, more or less adverse environmental conditions such as dust and humidity or even the influence of certain chemicals. The lubricating oil, in turn, has a significant influence via the selected base oil and additives. Even two oils approved by the machine manufacturer can differ significantly in service life. In most cases, the tests required for approval are not able to reflect all facets of a very long oil service life in a practically-oriented manner.

? You mentioned basic rules for the optimum storage and handling of lubricants. Is there something like this for use?

➔ A professional lubrication concept covers all areas, from the procurement of lubricants to storage, use and disposal. With regard to the use of lubricants, application-oriented oil monitoring and oil care based on this should be referred to here. The foundation is already laid during procurement. An oil is selected that meets the minimum requirements defined in classic requirement standards (e.g. DIN, ISO or ASTM) or one that is oriented towards the actual requirements of the machine and economical operation including high machine availability.

Professional machine lubrication is therefore not only sustainable and environmentally friendly, but also economically advantageous.

? So in terms of costs, it's not just about the lubricating oil itself?

➔ No, usually the machine or components to be lubricated are much more expensive than the lubricating oil. Today, the lubricating oil is no longer seen and treated as a "consumable", but as a machine element. If, for example, one of the roller bearings used in a gearbox fails, the entire gearbox or even an entire production unit is affected. Unplanned downtimes in production plants often cause very high downtime or consequential costs, which over the course of an hour amount to many times the cost of a complete oil filling including change.

? Does this mean that, in addition to the oil and oil ageing, more is needed to really get the best out of the system?

➔ As mentioned earlier, a holistic approach is necessary. From oil selection, storage, handling and use, including monitoring supplied lubricants and lubricants already in use, through to proactive oil maintenance based on this, all sub-areas of machine lubrication must be covered in order for these effects to come to fruition. The coordinated, intermeshed measures within the individual sub-areas are what bring about the decisive success.

By the way: For me, reaching the optimum level is more of a journey, a path, as opposed to just a final state.

? Can you give us specific figures on this?

➔ Every machine or system is unique. However, the following table shows, based on a number of proven practical examples, what is already possible with a professional lubrication and maintenance concept today:

Application	Standard interval*	Long-term interval *
Construction machine hydraulics ("Earth movement")	1000–2000 Op. hours	> 5,000 Op. hours
Biogas engine lubricating oil	300–500 Op. hours	> 3,000 Op. hours
Steam turbine lubricating or control oil	2 years	> 10 years
Gas turbine Lubricating/control oil	1 – 2 years	> 5 years
Injection moulding machine "24x7" Hydraulic oil	1 – 2 years	> 4 years
Forming press, hydraulic oil automotive body production	1–2 years	> 5 years
Wind turbines Main gearbox, lubricating oil	2 years	>15 years
Paper machine circulation lubrication	1 – 2 years	> 4 years

*) **Standard interval** means that oils are used according to the manufacturer's recommendations and the usual maintenance work is carried out, but no additional measures are taken.

Long-term interval means optimised conditions. In addition to the factors or measures specified in the previous answers with regard to lubricating oil and maintenance, for example, it also means that the machine is in good condition or that the biogas is cleaned before use in the case of the biogas engine, etc.

The information is based on individual practical cases supported by OELCHECK or OilDoc. The "greater than" for the long-term intervals shows that these figures can certainly be exceeded in practice.

? Well, if I look at it that way: There's still a lot to do...

➔ Yes, we have already achieved so much together with our customers and the extremely positive feedback motivates us to make even greater use of the untapped savings potential. By thinking outside the box, "there's still a lot to do", as you say. In addition to the oil analyses from OELCHECK, OilDoc also teaches more in-depth expertise in its practical seminars and consulting services.

Thank you for speaking to us!

ANALYSE, MAINTAIN AND WIN!

BFS FOR CLEAN OIL, LOWER COSTS, FEWER CO_2 EMISSIONS

BFS – Braun Fluidservice GmbH is still a bit of an insider secret! BFS was not founded until 2020, but after just four years it is already working for many internationally renowned companies in Germany and neighbouring European countries.

BFS is all about oil. The main focus here is on turbine, hydraulic and transformer oils. At first glance, their success seems to be down to a strong team and a high-performance machine park. But the real crux of their success is the approach used by BFS to align all their activities. Oil is not regarded as a consumable but as an asset of a company. And like any other asset, oil must also be maintained and protected – this is precisely what BFS is committed to.

BFS's holistic approach to the care of oils and oil systems results in four major benefits for customers:

- **Oil savings**
  Efficient fluid management and regular maintenance drastically reduce oil consumption and conserve valuable resources.
- **Reduction of CO_2 emissions**
  Less oil consumption means less CO_2 emissions. Each litre less of oil used saves 3.8 kg of CO_2 .*
- **Reduction in operating costs**
  A well-maintained oil system works more efficiently, causes less downtime and significantly reduces operating costs.
- **Longer system service life**
  Continuous maintenance and monitoring of the oil has a positive effect on extending the service life of machines and systems.

Oil is an asset

Managing Director Richard Linz: "Oil is an asset: We can hardly express our attitude any better. BFS is all about oil. And we are constantly on the ball. All our activities are integrated into a large cycle of permanently repeating activities! We combine proven elements of condition monitoring with permanent online monitoring and completely new modules. first and foremost the patented process for drying oil-filled transformers on site during operation!"

Monitoring and analysis

Regular monitoring is an essential part of all maintenance measures. Oil analysis provides information about the condition of the oil and the systems. BFS defines the individual test parameters and records and documents every values from every analysis. The condition of the oil is thus always recognisable and necessary corrective measures can be taken in good time.

On site, the BFS service employees determine the water content and/or the number of particles in the oil, for example. But it doesn't work without extensive and regular laboratory tests. The oil in each of the systems serviced by BFS is analysed by OELCHECK at least once, if not twice a year, as part of preventive maintenance. The individual OELCHECK laboratory report also forms the decisive basis for any further oil care measures or oil changes.

Cleaning and filtration

Solid particles are the most common cause of failures and malfunctions in an oil system. As soon as the system-specific upper limits are reached, trouble-free operation of the system is no longer guaranteed. To maintain or restore the required oil purity, BFS performs targeted oil filtration based on the results of the OELCHECK laboratory analyses. Particularly powerful off-line filter systems are used. – In the case of hydraulic and turbine oil systems, this can usually also prevent the formation of hazardous varnish. However, if the reaction products of oil ageing have accumulated in a system, BFS has reliable methods for removing varnish not only from the oil, but also from the wetted metal surfaces inside machines. OELCHECK checks the success of the measures with the MPC test (Membrane Patch Colorimetry) in combination with other analysis values. The level of the MPC factor is directly related to the potential of the oil to form deposits, which can, among other things, stick to valves and shorten filter service life.

** The calculation factor of 3.8 is made up of 1.22 kg of CO_2 for fresh oil and its production and transport, + 2.58 kg of CO_2 for the disposal and recycling of the used oil.*

A practical example:
System: Hot steam turbine in a biomass power plant
Oil: 8,000 l of turbine oil in use for 8 years

Since 2020 February, the oil has been permanently accompanied by a varnish filter system as a precautionary measure. All OELCHECK analyses during this period showed an MPC value of less than 5. Similarly, other parameters in the laboratory report, such as particle counting or the monitoring of additives and impurities, did not show any abnormalities indicating an increased risk of deposits. The combination of oil maintenance and monitoring of the oil parameters gives the customer assurance of trouble-free operation of the system.

Conclusion: The oil is still in good condition and can continue to be used. Thinking ahead, this also has a positive effect on the cost situation and sustainable operation. An unplanned shutdown of the plant would generate enormous costs. On the other hand, a rigid oil change interval would cause a lot of oil to be changed unnecessarily and thus cause an equally unnecessary increase in the CO_2 balance.

➔ **Hint: Everything you need to know about the MPC test**
en.oelcheck.com/wiki/recommendation-mpc-test/

Preventive maintenance

Regular preventive maintenance measures maximise system efficiency and extend the life of the oil and system. – As a full-service provider, BFS supports the customer with overhauls and all other maintenance measures for lubricating oil systems. All work is carried out, from emptying the tank to refilling and commissioning the system. The company also advises on all issues relating to the new acquisition, maintenance, replacement and disposal of oils as well as the selection of the optimum filter technology. As an official partner of the American manufacturer Donaldson HY-PRO Filtration, more than 450,000 filter upgrades are available from over 320 manufacturers, such as Pall, Parker, Hydac and MP-Filtri.

Regeneration and recycling

Before an oil has to be changed, BFS does everything to regenerate it and extend its service life as long as possible. In this context, BFS is repeatedly called upon to either make an oil fit again by means of targeted post-additisation adapted to the oil type or to remove water from an oil system.

Water is the second most common cause of failures and malfunctions in an oil system after solid contaminants. Whether it enter spontaneously or insidiously, water reduces the performance of the oil, causes corrosion and accelerates oil ageing. Therefore, any water introduced must be removed from the system as quickly as possible, i.e. the oil must be "dried". In general, very small amounts of water are a serious problem for a lubricant. It can have a particularly critical effect for oil in transformers, as the penetration resistance of the oil is significantly reduced by water. In addition to generators, transformers are the most important and expensive parts of the electrical system (power grid). Transformer oils, with their filling capacities of often several thousand or ten thousand litres, are intended to remain in use for decades. A high insulating effect (penetration resistance) and oxidation stability of the oil are therefore particularly important. However, depending on the operating temperature or individual hot spots in the system, oil oxidation increases, which then shortens the usability of the oil filling. Ageing products of the oil and other polar impurities also have a negative effect on the penetration resistance of the oil. In addition, even the smallest amounts of water from the air humidity or decomposition products from the windings' insulating paper significantly reduce the penetration resistance of the oil and endanger the trouble-free operation of a transformer. For this reason, these oils must be regularly checked in the laboratory for their condition, impurities and any abnormalities.

➔ **Hint: OELCHECK provides individual advice on the analysis of insulating and transformer oils!**

If there is too much water in the system, BFS uses HY-PRO TDOS drying systems, which have a globally patented process with a unique effect. The drying systems work in bypass, for several weeks if necessary – but always effectively. In use, they continuously remove other contaminants, gases and acids from the transformer oil as well as from the cellulose insulation in addition to water. The service life of the oil and transformer is extended.

A practical example:
System: Transformer in substation, capacity 100 MVA
Oil: 20,000 l, in use for several years

In the OELCHECK analysis, a relative humidity of about 50% was measured and an increased absolute water content in ppm was determined by means of Karl Fischer titration. BFS remotely monitors the oil regeneration with a HY-PRO TDOS drying system.

Conclusion: After just six weeks, the relative humidity dropped to below 10%. The absolute water content also fell. The penetration resistance and other parameters are therefore at a very good level again. The transformer oil continues to operate trouble-free. And the substation operator invested in its own HY-PRO drying system for its other transformers.

➔ **Hint: Interesting facts about water determination**
https://en.oelcheck.com/analyses/test-methods/

Maintenance measures are extremely important for extending the service life of oils. But at some point, even the best oil has reached its performance limit and must be replaced. BFS also carries out complete oil changes and ensures that used oils are not simply disposed of, but recycled wherever possible. Finally, the base oils contained in the majority of waste oils can be recovered, processed and reused in a recycling process.

Clean oil – professional service
Whether oil filtration, oil drying, varnish treatment, system optimisation or overhaul of complete oil systems – Braun Fluidservice GmbH is your reliable contact partner in all areas of fluid service. 14 experienced employees work competently, quickly and reliably for BFS customers. They have access to an extensive and efficient machine park. The company is headquartered in Raesfeld in western Münsterland. Customers in Germany and neighbouring European countries are served from here.

www.bfs-fluidservice.de

HEAVY RAIN AND FLASH FLOODS

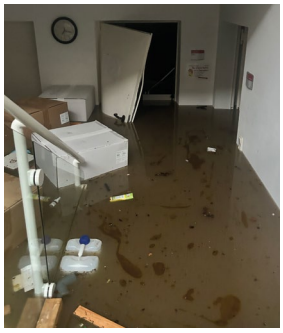
OELCHECK HIT HARD, BUT NOT KNOCKED OUT.

In June 2024, work at OELCHECK stopped completely for a few days. Masses of water had penetrated the basement rooms and brought the entire operation to a standstill. The OELCHECK team, especially Managing Director Paul Weismann, lived through some dramatic days and nights.

Monday evening, 3 June 2023

OELCHECK employees are already enjoying their evenings after a hard day's work. It's been raining for hours and for most people, a cosy evening at home is on the agenda. The weather forecast is extremely bad and more and more rain is on the way. Managing Director Paul Weismann lives in one of the OELCHECK buildings. At 6 p.m., he puts on his wellington boots and sets off for a safety check of the company premises.

At first glance, everything seems to be fine. After all, all gully covers on the site had already been removed in good time so that the rainwater could drain off more easily. But then Paul Weismann reaches the OELCHECK building at Kerschelweg 28! He is stopped in his tracks! A real lake has formed in a very short time in front of Kerschelweg 28. The sewer system is already unable to absorb any more water. Massive amounts of water flood into the basement via the light shafts. The water level in the two basements of Kerschelweg 28 rises within a very short time.



+++ An emergency call is made but no help arrives +++
A clear case for the fire brigade! Paul Weismann calls the emergency services at 6:45 p.m. But the fire brigades throughout the surrounding area are all out on calls. More than 250 basements have already been filled with water. Even though solvents are stored in the OELCHECK basement, there is no quick help in sight.

The water keeps on rising. And the basement of Kerschelweg 28 contains not only solvents, but also the company's vital servers for business operations. Paul Weismann alerts Managing Director Petra Bots, Facility Manager Ben Ludwig, Head of IT Michael Linnerer and Network Administrator Josef Obermaier. A short time later, they are on site, too. Dr Thomas Fischer, the Scientific Director, lives just a few kilometres away, but the sheer amount of water makes it impossible for him to get through.

+++ Head-high water and a friend in need +++
In the meantime, the basement rooms have been completely flooded. The water is 1.7 m high. Impossible to enter and probably life-threatening. Is electricity still being supplied to everything in here? The lights keep flickering. The power fails again and again. But fortunately, our neighbour Bernhard Kreuz, with the help of Großbrannenberg fire brigade, manages to get the first pump up and running with long fire hoses.

+++ Heavy equipment and land in sight +++
The neighbour's pump is running, but is too weak for the vast amounts of water. It's exasperating. Heavy equipment is what was needed! And then it really comes! The volunteer fire brigade from Mühlbach drives up with its large pumps. The Mühlbacher fire brigade is not actually responsible for us – but our emergency call has reached them. The pumps are installed quickly. Land is finally in sight!

+++ Nothing works at OELCHECK without a server +++
The data of our customers and that of the large OELCHECK database is secured (backup) thanks to our central data protection management. But we can't work without the right hardware. And it is all under water in the basement!

Michael Linnerer, the Head of IT, tries in vain to reach our IT partner, Itelio GmbH in Kiefersfelden, by telephone at 10 p.m. He quickly sets out personally, fights his way in his car through the masses of water to Kiefersfelden and rings Managing Director Mr Kurz's doorbell. And he's lucky. Hardly anyone in the Inntal valley can sleep tonight. Michael Linnerer describes our emergency and Itelio starts preparing new servers overnight.

+++ A crisis meeting in the middle of the night +++
The water will soon be pumped out. But what will happen the next morning? What needs to be done? Which employees should appear? Normal work is out of the question. OELCHECK can only be reached to a limited extent by telephone and e-mail. At 11 p.m., there is a crisis meeting with all those involved on site. Dr Thomas Fischer is connected via video. All department managers and employees will be informed at short notice of who should be on site the next morning and when. The 'first responders' from the OELCHECK team keep working until 2.30 a.m. that night to pump the water out of the cellars. Sleep is out of the question.

Tuesday, 4 June 2024

+++ The big clean-up begins +++
The full extent of the damage becomes visible in the early hours of the morning. Not only the room with the servers is affected. The IT storage area, heating, staff changing rooms, the company's own workshop and the storage room for laboratory spare parts are also affected. Hardly anything is still usable. Those who can help with the big clear-out and save what can still be saved. But most of the formerly valuable contents of the basement rooms are gradually disappearing into five large waste containers.

+++ IT is required +++
Something short of a little miracle happens at 11 a.m. Itelio supplies the new server hardware that has already been set up. However, it is not possible to simply get started. Installing the backup restores takes time. Only then will we have access to the databases and software solutions again. Almost all data is backed up. Only the analytical data obtained on 3 June, the day of the disaster, is irretrievably lost. A ray of hope in all the confusion: The telephone server is working again and OELCHECK can be reached by phone and e-mail without any restrictions!

+++ You can rely on the OELCHECK team +++
Now it's time to prepare all operating procedures and the new samples we have received in the meantime so that we can carry out all analyses as quickly as possible once the restore work has been completed. It must also be possible to dispatch the analysis kits that have now been ordered at short notice. The employees in all departments are fully committed and even work voluntarily at weekends!

Monday, 10 June 2024

+++ OELCHECK is back on track+++
After several exhausting and nerve-wracking days, we made it! We can carry out almost all testing procedures as usual again, evaluate them and send the results and laboratory reports to customers via the various channels. Even the API interfaces, the LAB.REPORT customer portal and sample entry via the OELCHECK app are working again. A huge weight has been lifted from everyone's shoulders.

And after the disaster...

+++ The summary of the damage +++
The total damage amounts to approximately 2 million euros. Luckily, we are well insured and the amount of damage should be covered. But we still have a lot of work to do.

Among other things, we need new heating and a workshop. Many laboratory devices need to be replaced. But the biggest challenge is IT. The server landscape has to be completely renewed. But as we all know, you learn from a loss, so we are certain: The server rooms are now set up on the upper floors and no longer in the basement again.

A big thank you to all the helpers!!!

With a big "helper party", OELCHECK would like to thank everyone who has helped us with their tireless efforts to survive one of the most difficult episodes of our company history!

Our employees, their family members, the volunteer fire brigade in Mühlbach and Großbrannenberg, our neighbours in particular Bernhard and Andreas Kreuz, our IT partner Itelio GmbH and the many other helpers will all be visiting OELCHECK in the evening on Monday 1 July. They can enjoy delicacies from the BBQ, fresh salads and cool drinks, while they reflect on the exciting hours and days spent together.

TURBINE OELCHECK

TOGETHER FOR SPORTING SUCCESS

Whatever sporting event the Turbine OELCHECK team members compete at, their efforts are always clear to see! In summer 2024, Turbine OELCHECK took part in two sporting events.

On World Running Day, on 5 June, and thus just two days after the flood disaster at OELCHECK, a dedicated team from Sales, IT, management, media design, facility management and laboratory took part in the **"Teams in Bewegung" company run**.

Together with 500 other runners, they completed the 5.7 km course in Bayrischzell after work. For the Turbine OELCHECK runners, this sporting challenge was just what they needed to work off the adrenaline of the challenging previous days. Out of 121 teams, Turbine OELCHECK finished in a remarkable 31st place. At the 2025 company run, the Turbine team will go back to the starting line – but hopfully well rested and with an even larger team!

The **Brannenburg village football championship** was held on 19 July. Local companies, clubs, institutions and several sections of TSV Brannenburg sports club competed against each other. And, of course, Turbine OELCHECK could not miss out on the action. Our players from the departments, IT, Sales, Sample Collection, Laboratory and Controlling, took part with a great deal of commitment and team spirit. In the end, they were able to celebrate 3rd place in the village championship!

COME AND MEET US!

We will be exhibiting at the following trade fairs and conferences.
Will you be there too? If so, we would be delighted if you could arrange a meeting with us in advance (sales@oelcheck.com), contact us or drop by our stand!

LUBRICANT EXPO
17–19/09/2024 | Düsseldorf

WindEnergy Hamburg
The global on & offshore event
24–27/09/2024 | Hamburg

InnoTrans 2024
Internationale Fachmesse für Verkehrstechnik
24–27/09/2024 | Berlin

EuroTier
First in animal farming.
12–15/11/2024 | Hannover

UNITI Mineralöl-technologie-Forum
UNITI Mineral Oil Technology Congress
08–09/04/2025 | Stuttgart

bauma
07–13/04/2025 | Munich

TRUE OR FALSE: WAS THE OIL REALLY CHANGED? OR WAS THE WRONG OIL FILLED?

Can OELCHECK prove any incorrect filling operations? And can you also determine whether, for example, a vehicle workshop really changed the oil or only charged for it?

Trust is good – control is sometimes better!
In both cases, we can support you.

Oil change – completely or not at all

If we need to investigate whether an oil change has not been performed at all on a diesel or petrol engine from a motor vehicle, please send us an oil sample immediately! The longer an engine oil has been used, the more difficult it will be to answer your question.

When evaluating each oil sample, the OELCHECK tribologists look at the three aspects of wear, contamination and oil condition. If the oil from a diesel or petrol engine from a motor vehicle has not been changed, the oil condition usually already indicates this. The typical indicators of the oxidation, nitration and sulphation of an oil, indicate how far a possible ageing process has already progressed. In the laboratory, oxidation, nitration and sulphation are determined with FT-IR spectroscopy by comparing the spectrum of the oil examined with that of the corresponding fresh oil. Correspondingly large deviations and other values from the analysis, such as high wear, strong viscosity change or increased fuel input, indicate that the oil has not been changed.

Oil change – right or wrong

We are also repeatedly confronted with the question of whether the wrong oil has been filled. Sometimes, for example in the case of a used machine, the new operator is not aware of the type or manufacturer of the oil used.

The majority of oils used in industry can be identified in the laboratory with sufficient accuracy. As an independent laboratory, OELCHECK has more than 10,000 certified lubricant references! This database has grown over the years and is constantly being expanded with new, well-founded references.

When determining which oil type is involved, we use the IR spectra and additives from the element analysis via ICP-OES as well as other values from the oil analysis (e.g. viscosity). We compare the spectra and values determined in the laboratory with the reference values from the large OELCHECK fresh oil database. On this basis, we can make an estimate of the presence of a specific oil type. However, depending on the initial situation with regard to the information provided and the results of the analysis, there is no guarantee of a definitive determination of the oil type.

Especially for oils used in large volumes, such as turbine oils, hydraulic oils (HLP) or industrial gear oils (CLP), we can identify the oil type with sufficient accuracy. We also benefit from the fact that the formulations of such oil types are generally not changed by their manufacturers over a longer period of time. Filling systems with these oils usually results in long service lives. Turbine oils, for example, typically have a service life of more than 15 years.

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Changes in their formulation can also lead to problems such as foam formation when refilling small quantities. For this reason, too, the compositions of such oils are constant over a longer period of time.

Oils from petrol or diesel engines not only differ greatly from industrial gear oils or turbine oils, for example, in terms of their additives, but they are also more difficult to determine. We also use the IR spectra to identify the oil types. However, a change in the oil condition occurs much faster in motor oils than in most industrial oils. Due to the combustion process in engine operation, the low oil filling quantity in a motor vehicle and the very variable use of motor vehicles (long distance, stop-and-go, ambient conditions, etc.), greater changes in the lubricant often occur. So even a short period of use can throw a wrench into our calculations when determining the type. The entry of soot, for example, greatly reduces the quality of the IR spectra and the accuracy of the type determination decreases.

That is why it is often not easy to answer your question as to whether the motor vehicle workshop has filled the correct oil. If you have any doubts about whether a certain oil has actually been used for filling, this can be checked with sufficient accuracy by comparing fresh oil with an oil sample immediately after the workshop visit. Ideally, you should send a fresh oil sample, which you take immediately after taking the vehicle away from the workshop, to OELCHECK and have it examined by us for comparison.

Basic parameters, such as SAE viscosity, can of course still be determined in aged oils. However, there are some restrictions; the classification of winter suitability "W" (e.g. 5W-30) is determined exclusively on fresh oils. In some cases, certain marker substances in the oil also bring us closer to the target. Some oil manufacturers use it to sign their product. They add marker substances to the oils, e.g. based on titanium or zirconium. These are added in defined concentrations and can be determined in the element analysis.

OELCHECK also answers your questions on the topics of lubricant and fuel analyses as well as tribology.
Contact us by e-mail at info@oelcheck.de or by fax on +49 8034 9047 47.

OILDOC SEMINAR PROGRAMME

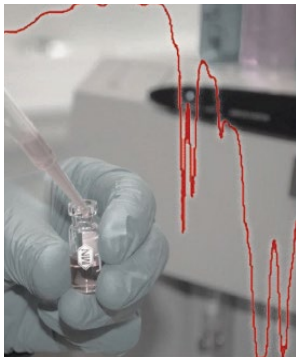
Current dates	
24–25/10/24	Infrared spectroscopy in practice – Understanding and interpreting IR spectra
05–06/11/24	Fundamentals of lubricant application II Module II in the "Certified Lubricant Expert" series. Can be booked individually.
07–08/11/24	Lubrication and oil monitoring for compressors
12–13/11/24	Lubricating greases – Properties, selection and monitoring
14–15/11/24	Lubrication and oil monitoring for hydro power plants
19–21/11/24	Machine monitoring by means of oil analysis, for beginners *MLA I/MLT I certification course*
15–26/11/24	Lubrication and oil monitoring for wind turbines
14–16/01/25	Lubrication and oil monitoring for gears
28–29/01/25	Fundamentals of lubricant management Module III in the "Certified Lubricant Expert" series. Can be booked individually.
04–06/02/25	Lubrication and oil monitoring for turbines and turbo compressors
18–20/02/25	Fundamentals of lubricant application I Module I in the "Certified Lubricant Expert" series. Can be booked individually.
11–12/03/25	Damage to bearings, gears and motors – Causes and solutions Module IV of the "Certified Lubricant Expert" series. Can be booked individually.
18–19/03/25	Lubrication and oil monitoring for stationary gas engines
25–26/03/25	Certified hydraulic oil specialist *OilDoc Certificate Course*
31/03–03/04	Expert knowledge for lubricant professionals *CLS certificate course*
20/05/25	Coolant – The underestimated operating fluid
21–22/05/25	Lubrication and oil monitoring for combustion engines
03–04/06/25	Fundamentals of lubricant application II Module II in the "Certified Lubricant Expert" series. Can be booked individually.
30/06–03/07	Machine monitoring by means of oil analysis, advanced course *MLA/MLT II Certificate Course*

Your contact for further training:
OilDoc GmbH
Rüdiger Krethe
Kerschelweg 29
83098 Brannenburg
Tel. +49 8034 9047700
info@oildoc.de

All of the current dates, detailed seminar content and conditions of participation as well as the links to uncomplicated online registration can be found on our website:

oildoc.com/seminare

SEMINAR HIGHLIGHTS IN THE SPOTLIGHT ...



Infrared Spectroscopy in Practice – Understanding IR Spectra

2-day seminar: 24–25/10/2024

The infrared spectrum of a used oil sample provides information on changes in the oil or impurities compared to the spectrum of a new oil or reference oil. In addition, conclusions can be drawn about oil ageing, the base oil type and any mixtures. Infrared spectroscopy is therefore one of the most important investigations in lubricant analysis, and for good reason. At first glance, infrared spectra often look like a book with seven seals. Yet it's not that difficult to read IR spectra for oils and lubricating greases and to better understand many correlations. For the first time, our seminar gives an overview of the fundamental principles and the practice of FT-IR spectroscopy of new and old lubricants. Real-life examples deepen the newly acquired knowledge. You can use this immediately when viewing IR spectra, as shown in every OELCHECK laboratory report, for example.

Lubrication and oil monitoring for gearboxes

3-day seminar: 14–16/01/2025

Gears – they transmit and transfer energy, movements and forces. Their lubricant influences their performance as well as their service life and thus the efficiency and safety of the connected units. Our speakers will introduce you to the practical basics of lubrication of industrial gears, roller and plain bearings, gears in motor vehicles and the lubrication of circulation systems. Operational lubricant changes will be covered, as will wear mechanisms and typical gearing damage. Rüdiger Krethe devotes himself in detail to the possibilities of lubricant analysis, with which you can determine condition-dependent oil change intervals and reliably detect wear indicators.

Your chance to receive recognised advanced training: The MLA certificate courses from the OilDoc Academy!

Are you ready to deepen your expertise in the area of machine monitoring through oil analysis and prove that knowledge with an internationally recognised qualification? The OilDoc Academy offers you two courses that build on each other. On the one hand, they provide you with up-to-date practical knowledge and, on the other hand, you will be optimally prepared for the challenging ICML Machinery Lubrication Analyst certification exams!

- **Basic Training for Beginners | 19–21 November 2024 – Preparation for MLA/MLT Level 1**
  This course is ideal for service technicians who regularly deal with tasks in the field of lubrication and basic lubricant analysis. You will learn the basic principles of oil analysis, including oil change, practical lubricant management, lubrication of bearings, proper storage and handling of lubricants, as well as oil sampling and contamination control. This course provides you with a solid foundation on which to build your professional career successfully.

- **Advanced Training | 30 June – 3 July 2025 – Preparation for MLA Level 2**
  The Level 2 course offers in-depth training for advanced maintenance technicians. Here you will learn how to handle more extensive tasks in lubricant management, such as taking samples, handling samples, performing simple on-site tests and evaluating test results. This course is ideal for specialists who already have a basic knowledge and want to expand that knowledge. Advanced maintenance technicians can enter the Level 2 course directly without completing the Level 1 course.

Your benefits at a glance:

- **Recognised qualification:** The ICML certificates comply with ISO 18436-1, 18436-4 and 18436-5 standards and are highly regarded internationally.
- **Practical content:** Learn from the OilDoc Academy experts in a practical and user-friendly way.
- **Flexible entry:** Choose the course that suits your level of knowledge – either start with the Level 1 course or enter the Level 2 course directly.

Register now and get started in your career!

Expert knowledge for lubricant professionals

Optional: Certified Lubrication Specialist (CLS) certification

A Certified Lubrication Specialist (CLS) holds the most prestigious certificate on an international level in the lubrication industry. This means the holder has extensive knowledge of lubrication-related relationships as well as in-depth knowledge of lubricant applications. As a CLS, you are in the best company of internationally recognised experts – as there are currently more than 130 Certified Lubrication Specialists in Germany alone.

It is particularly worthwhile for experienced maintenance technicians and lubricant salespeople to obtain this high-level certificate and show off your knowledge. Our 'Expert knowledge for lubricant professionals' course provides the ideal preparation for gaining the certificate. Since 2016, our trainer Rüdiger Krethe has successfully prepared more than 200 international participants for their examination!

31/03–03/04/2025 "Expert knowledge for lubricant professionals" certification course (4 days) *German*
06–09/05/2025 "Expert knowledge for lubricant professionals" certification course (4 days) *English*

Following the certification course, the official CLS examination can be taken optionally in German or English via the STLE online examination portal.

See www.stle.org for more information.

Fundamentals of lubricant application – Compact basic knowledge I

3-day seminar: 18–20/02/2025

We provide you with valuable basic knowledge on the most important topics of mineral oil application technology, such as: Principles of lubrication • Lubricants and their tasks • Base oils and additives • Characteristic values and technical data sheets • Lubricants for the respective elements and special applications • Storage and handling of lubricants • Oil monitoring during operation.

The "Fundamentals of lubricant application I" seminar is just as suitable for beginners as for participants who would like to expand or refresh their knowledge. It is also part of the OilDoc #Machine Lubrication Expert# certification course with a total of four units.

OilDoc Conference & Exhibition

May 13-15, 2025
Bavaria · Germany

Lubricants
Maintenance
Condition Monitoring

SAFE THE BEST PRICE!
EXTRA EARLY BIRD

DEADLINE: November 30, 2024

OilDoc Conference

The trend-setting event - established 2011 - on the topics of sustainable lubrication, lubricants, greases and condition monitoring will again take place on site in Rosenheim from May 13-25, 2025!

At the OilDoc Conference & Exhibition an ambitious program awaits you: On the first two days, you will benefit from 70+ **presentations** by **renowned speakers**, two evening events (e.g. the famous **Baverian Evening**) and a large accompanying **exhibition**.

On the third day, you can choose between various practical workshops or excursions to the surroundings of Rosenheim (50 km south of Munich).

Don't miss the next OilDoc Conference & Exhibition in the Bavarian Spring Season!

Until November 30, 2024 you register at the Extra Early Bird Rate!

Extra Early Bird Rate: 799 € + VAT
(Regular Rate: 995 € + VAT)

You want to be an active part of the Event?

Register for the international **OilDoc exhibition**!
We also offer **sponsorship packages** for every budget.
The Call for Papers runs until 31 October 2024!

TOPICS

Condition Monitoring & Maintenance 4.0
Gears • Turbines • Engines • Hydraulic systems • Rolling and plain bearings • Special applications • KI - Artificial intelligence

Fluid Condition Monitoring – Online • On-Site • Offline
Digitalization • Analysis methods for oils / greases /coolants • Sampling • Evaluation and Interpretation • Oil Sensors • Troubleshooting • Success Stories • On-site Measurement

Asset & Fluid Management – Innovative & Sustainable
Asset & Lubrication Management • Lubrication Schedules & Programs • Professional Oil Maintenance • Lubricators • Lubricant Storage, Transport & Handling • Disposal • Lubrication Methods • Lubrication systems • Sustainability

Tribology – Research targeting Experience
Friction and wear • Materials, surface engineering, contact mechanics • Tribometry • Hydrodynamic and elasto-hydrodynamic Lubrication • Minimal quantity lubrication • Dry lubrication • Tribology of machine parts and components

Lubricants – Latest developments
Base oils • Additives • Lubricating greases & pastes • Bonded coatings • Solid lubricants • Dry lubrication

E-Drive Lubrication
Lubricants & Lubrication for E-Mobiles / powertrain / bearings • Coolants • Concepts & Solutions • Energy Efficiency

Lubricants – Design to Application
Engines • Sewage gas, biogas and wood gas engines • Gears • Hydraulics • Bearings • Turbines • Wind energy plants • Compressors • Fuel & Energy economy • Sustainability

Metal working and forming lubrication
Water based and water free fluids • Multifunctional lubricants • Minimum quantity lubrication and dry processing • Modular systems in lubricant formulation

Lubrication in Special Environments
Environmental and health aspects of lubrication • Vacuum lubrication • Biodegradable fluids • Food grade lubricants • Fire resistant lubricants • High or low temperature lubrication

Functional fluids – Everything but lubrication
Insulating oils • Heat transfer fluids • Coolants • Corrosion protection • Cleaning agents

Supported by

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More information www.oildoc-conference.com

OELCHECK since 1991

OUR ADVANTAGES AT A GLANCE


Quality

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Experience


Customer focus


Innovation


Individuality


Independence


All-inclusive analysis kit


International

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