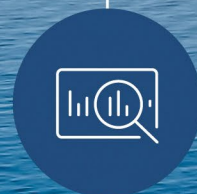
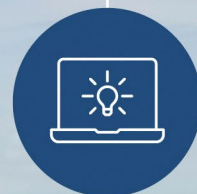




Shell
Lube**Monitor**

Your go-to solution for two-stroke engine cylinder condition monitoring



Shell Marine

With regulations changing and engines becoming more complex, two-stroke engine manufacturers recommend onboard oil monitoring and cylinder inspection in addition to laboratory oil testing.

Begin engine cylinder condition monitoring today

- Create a baseline for your engine performance.
- Understand the impact of new operational procedures, engines, fuels and lubricants on your engine.
- Manage challenges across different engine-fuel combinations, such as deposit or corrosion control.
- Identify engine-related issues before they become costly.
- Demonstrate compliance in the event of investigations, lawsuits or insurance claims.
- Discover opportunities to optimise cylinder oil selection and feed rate.

Shell LubeMonitor

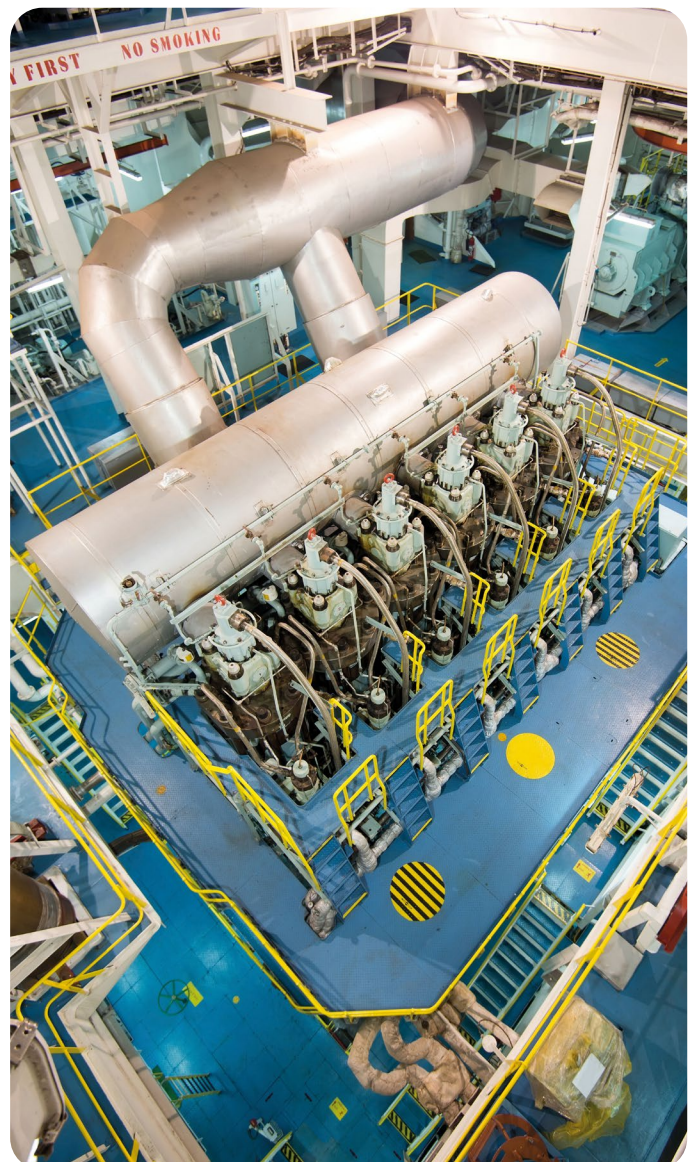
A premium service for two-stroke engines, which includes

- a system to guide engine inspections*
- an online portal and app for 24/7 access to data and insights, and other useful features
- an offline logbook for easy submission of data, regardless of connectivity status
- support from a dedicated Shell Technical Advisor

Shell LubeMonitor can help you to

- save time and money
- meet the latest original equipment manufacturer (OEM) requirements
- simplify onboard processes
- make informed decisions
- have greater peace of mind

*Supporting onboard tools are also available as an add-on.





Technical expertise

Shell LubeMonitor is **designed collaboratively** between

- Shell's in-house lubrication and engine experts, and
- customers, who have provided inputs into features and the user experience

In addition, the **latest OEM guidelines** are embedded into its functionality, reports and advice.



Digital innovation

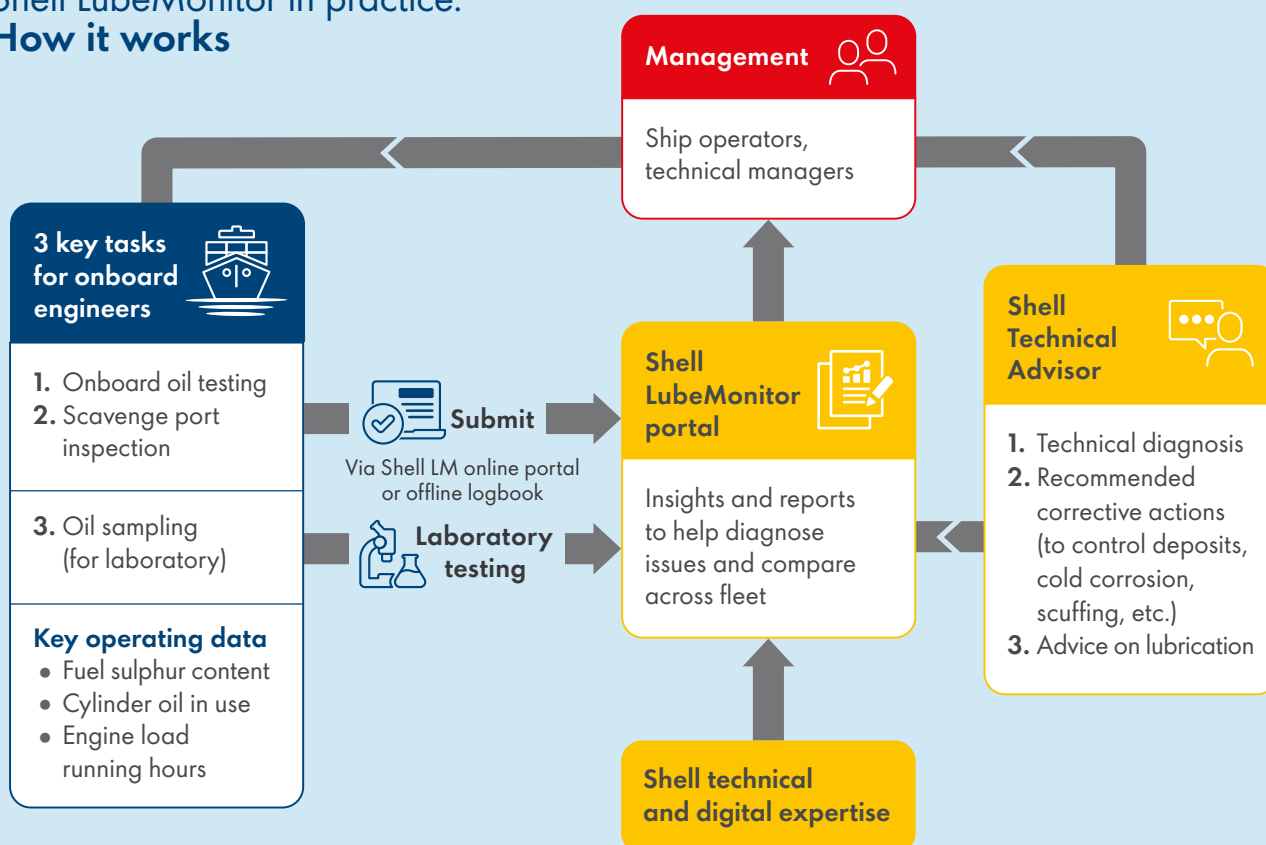
Shell LubeMonitor goes **beyond traditional cylinder condition monitoring programmes**, using digital technology to

- automatically consolidate data across different tests, cylinders and vessels
- compare onboard and Shell LubeAnalyst laboratory test results
- alert you to potential engine issues

Its **cloud-based portal and app** offer useful features including

- the ability to upload engine inspection photos and measurements
- a dashboard with insights at fleet, vessel and cylinder levels
- a wear calculator

Shell LubeMonitor in practice: How it works



The graphic is a flow diagram explaining how Shell LubeMonitor works in practice. The left-hand box lists the three key tasks for onboard engineers, being onboard oil testing, scavenge port inspection and oil sampling (which will be analysed by a laboratory). These tasks are based on key operating data, being fuel sulphur content, cylinder oil in use and engine load running hours. The results of this are submitted via the Shell online portal or offline logbook. The bottom box shows that Shell's technical and digital expertise will use this information to generate insights and reports to help diagnose issues and to make comparisons across the fleet. Helping this, as represented by the right-hand box, is Shell Technical Advisor, which will make a technical diagnosis, recommend corrective actions and give advice on lubrication. All of this is fed to management, represented in the top central box, comprising ship operators and technical managers. They in turn, following the flow of the diagram, will feed back their recommendations to the onboard engineers, starting the process all over again.

Optional add-on: Shell onboard tools*



Shell Onboard Ferrous Wear Meter: measurement and monitoring of the elemental iron content in cylinder drain oil



Shell Onboard Plus: measurement of total base number (TBN) and water content



Shell Onboard Cold Corrosion Test Kit: measurement of the corrosive elements present in cylinder oil

Shell LubeAnalyst

Shell LubeMonitor is a complement to the Shell LubeAnalyst technical support programme

Shell LubeAnalyst is a comprehensive programme designed to generate insights that can help improve the lubrication and maintenance of a vessel's engine and equipment. For two-stroke engines, the ISO 4407 particle count test (for system oils) is included as part of the service, and these results can be input to Shell LubeMonitor for further analysis.

To learn more about Shell LubeAnalyst, visit www.shell.com/marine/lubeanalyst.

*Subject to stock availability



For more information, contact your Shell Marine Technical Advisor.

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