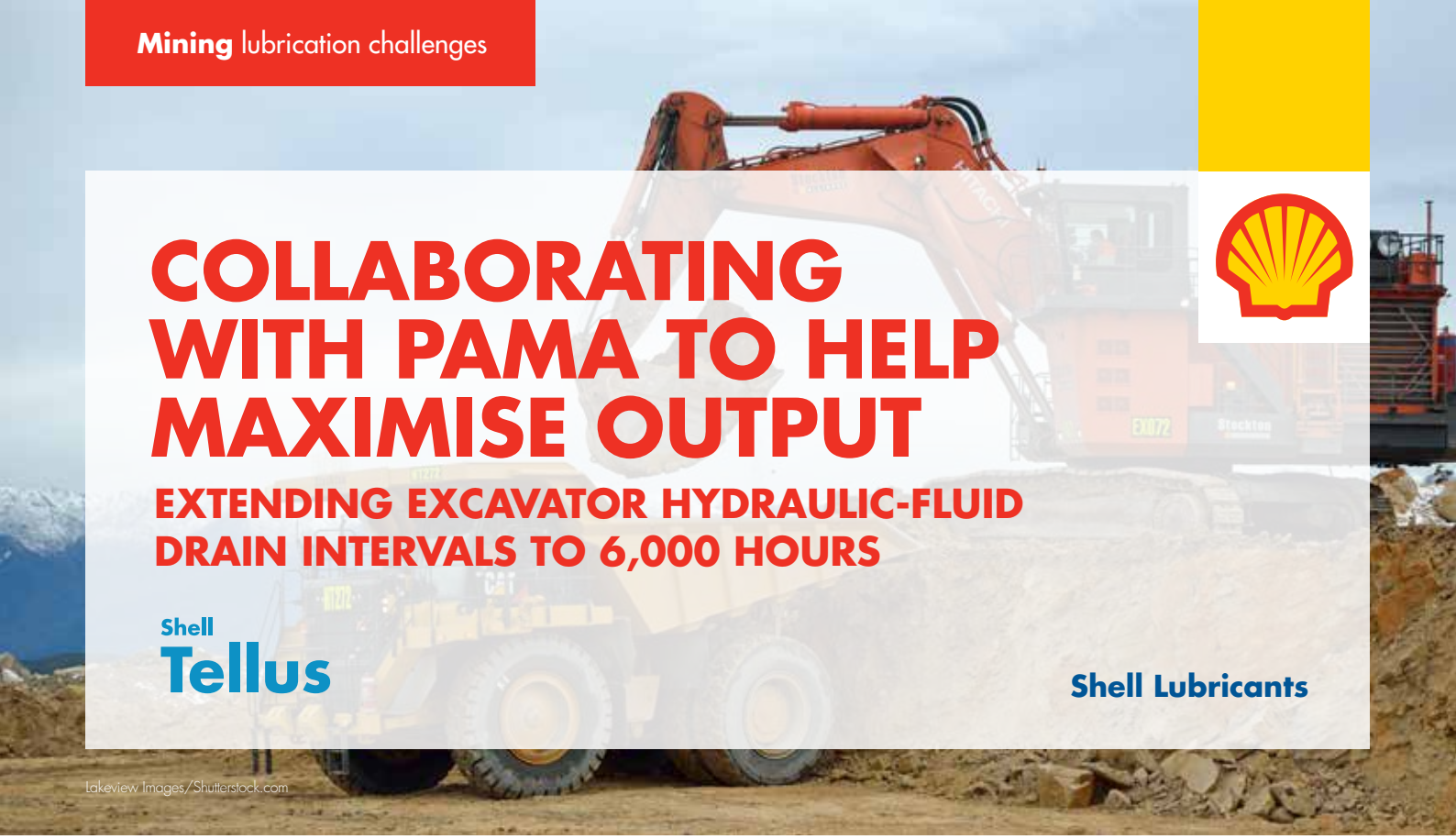


COLLABORATING WITH PAMA TO HELP MAXIMISE OUTPUT

EXTENDING EXCAVATOR HYDRAULIC-FLUID DRAIN INTERVALS TO 6,000 HOURS

Shell Tellus

Shell Lubricants

Lakeview Images/Shutterstock.com

LOCATION

Opencast coal mine in Indonesia

APPLICATION

Excavator hydraulic systems

CHALLENGE

Reduce excavator lubricant and maintenance costs

SOLUTION

Trial a longer-life semi-synthetic lubricant – Shell Tellus S3 M 68

PT Pamapersada Nusantara (PAMA) is a leading Indonesian mining contractor with more than 10 opencast coal mines. The company operates a large fleet of Hitachi excavators. In co-operation with Shell, PAMA decided to target reducing its excavator hydraulic system maintenance costs while improving performance and maintaining high levels of equipment protection. The plan was to extend the hydraulic-fluid-drain interval from the 4,000 hours recommended by the equipment manufacturer to 6,000 hours.

The solution proposed for extending the fluid-drain interval was to trial Shell Tellus S3 M hydraulic fluid. The trial included training for PAMA's maintenance staff, revising operating procedures, sampling and laboratory analysis. The aim was to demonstrate that the target of 6,000 hours could be routinely achieved.

Analysis of hydraulic fluid samples from nine Hitachi EX2500-6 excavators on one site showed that Shell Tellus S3 M was suitable for the extended fluid-drain interval.

By replacing the existing hydraulic oil with Shell Tellus S3 M for a trial period, PAMA has reported total annual savings equivalent to US$44,531[1] for the nine excavators. PAMA has the opportunity to unlock additional value, as it can apply the same method to the Hitachi EX2500-6 excavators used in its other mining sites.

OUTCOME

Shell Tellus S3 M 68 was proven to extend the excavators' fluid-drain interval from 4,000 to 6,000 hours and met all expected performance criteria, which resulted in total reported savings of US$44,531[1] per year.

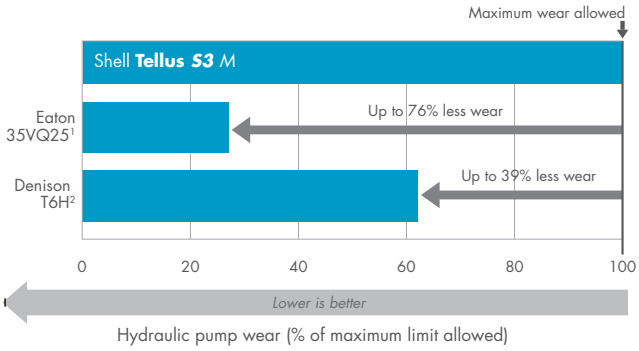
[1]The savings indicated are specific to the calculation date and mentioned site. These calculations may vary from site-to-site and from time-to-time, depending on, for example, the application, the operating conditions, the current products being used, the condition of the equipment and the maintenance practices.

SHELL TELLUS S3 M

PREMIUM ZINC-FREE INDUSTRIAL HYDRAULIC FLUID

DESIGNED TO PROTECT

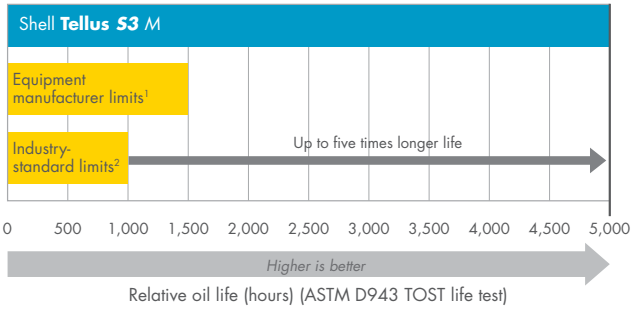
- ***Up to 76% less wear*** *than the maximum allowed in the industry-standard hydraulic pump tests*



[1]Eaton brochure 694 (formerly I-286-S and M-2950-S) [2]Parker Hannifin (formerly Denison Hydraulics) HF0, HF1 and HF2

DESIGNED FOR LONG OIL LIFE

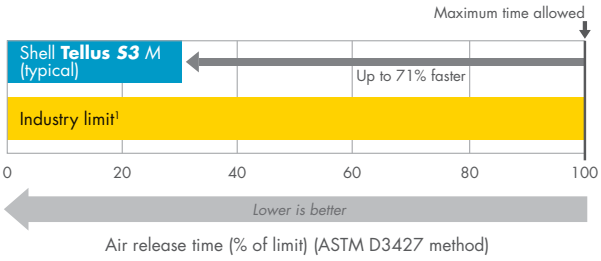
- ***Up to five times longer oil life*** *than the industry minimum*



[1]GM LH-04-2-00 [2]ASTM D6158; ISO 11158 HM; DIN 51524-2 HLP

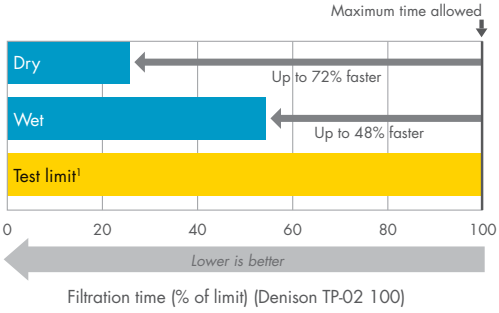
DESIGNED FOR HIGH EFFICIENCY

- ***Up to 71% faster air release***
  for efficient and precise hydraulic power transmission



[1]ISO 11158 HM; DIN 51524-2 HLP – ISO 46

- ***Up to 72% better filterability***
  in the demanding industry standard wet test procedure and excellent resistance to breakdown in the presence of water for more efficient operation

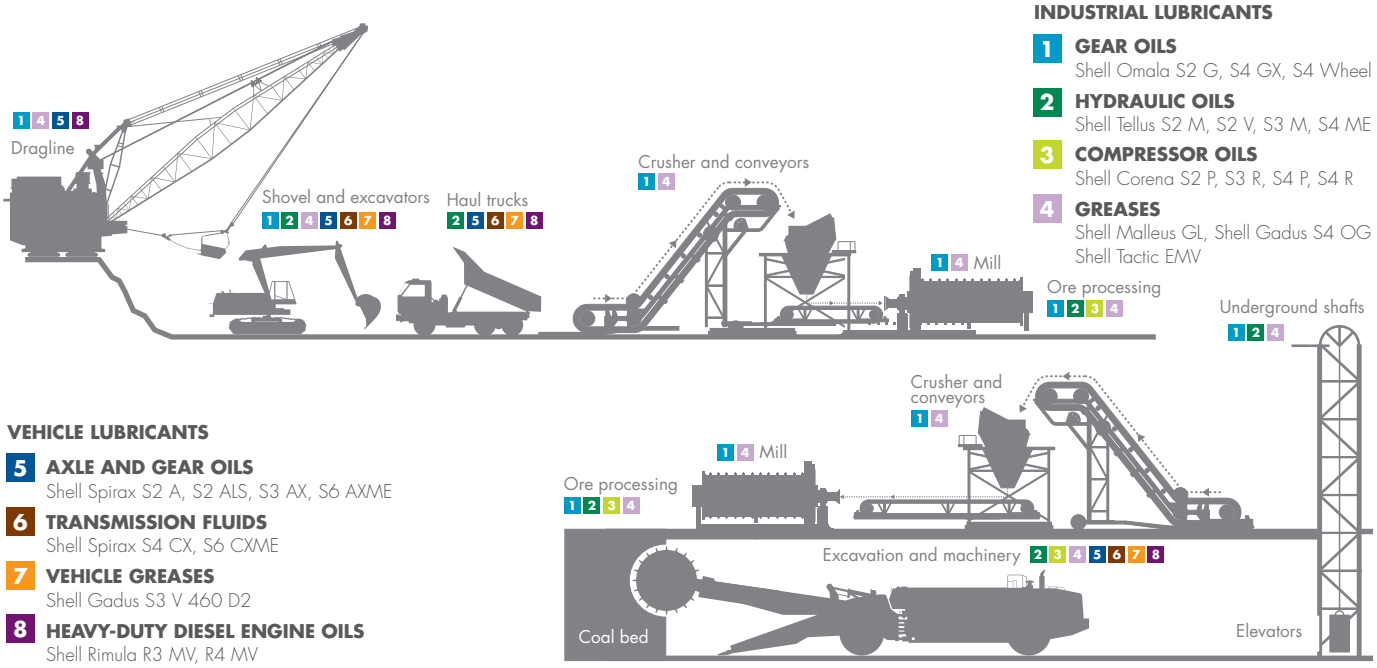


[1]Parker Hannifin (formerly Denison Hydraulics) HF0 and HF2

SPECIFICATIONS AND APPROVALS

Shell Tellus S3 M fluids are approved by Parker Hannifin HF-0, HF-1 and HF-2; Eaton Vickers Brochure 694; and MAG (Cincinnati Machine) P-68, P-70 and P-69. They meet or exceed the requirements of ISO 11158 (HM fluids); DIN 51524-2 (HLP oils); ASTM 6158 (HM mineral oils); and Swedish Standard SS 15 54 34 M.

HOW SHELL LUBRICANTS WORK



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