



Proof of Performance

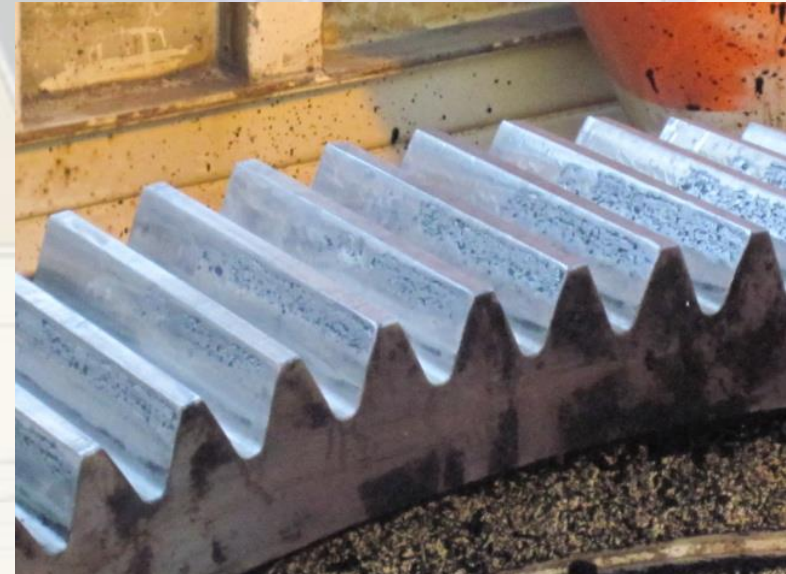
PETROTAC EP PREMIUM 30B ON SHOVEL HOIST RING GEARS

A mine in Chile was facing several problems on their shovel hoist gears. The mine was using a low viscosity grease type product with a very high welding force which was in accordance with OEM requirements.

Different types of damage was appearing on the hoist gear surfaces at varying periods of operating hours. The OEM average gear life is 25,000 working hours.



Shovel # 8



Shovel # 10

Proof of Performance

Shovel # 8



Date: June 2012
Operating hours: 10,000 hours
Status: Pitting over 100% of teeth, 32 broken Teeth

Shovel # 10



Date: August 2012
Operating hours: 3,000 hours
Status: Pitting over 100% Teeth



Proof of Performance

TEST CONDITION AND GOAL

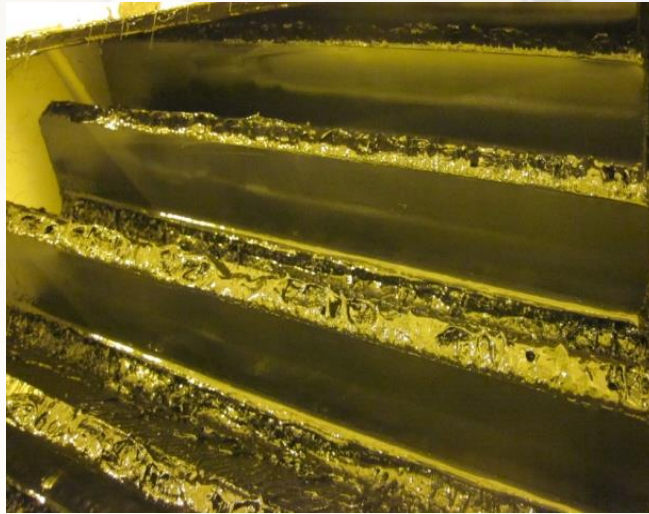
The shovel OEM released a new technical advisory document for OGL lubricants. Our Petrotac EP Premium 30B shovel lubricant fully complied with this technical advisory document .

The mine has a valid contract with the lubricant supplier. The contract includes lubricant filling and automatic lubrication systems services. Because of this contract the user can't replace the lubricant for the complete shovel however due to the prevailing problems it allows it to change it for the Hoist circuit.

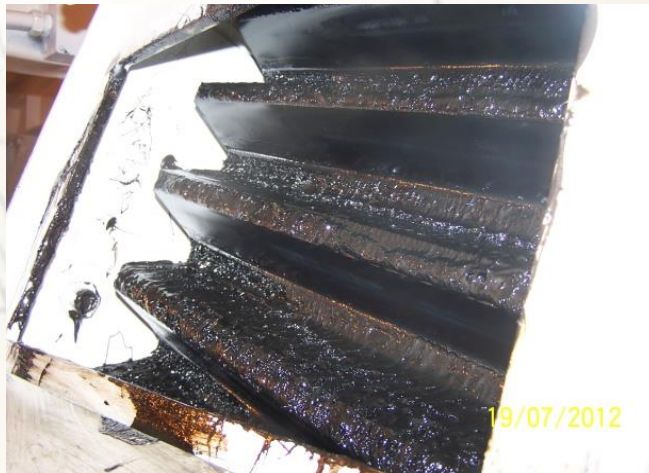
The mine asked to test our lubricant only on the Hoist Gear circuit on a new shovel the mine was erecting. The requirement was we should surpass the actual average life of ring gears which was 12,000 working hours. At this average life the ring gears were replaced due to the bad conditions already shown.

The test started at the new shovel # 11 on June 2012.

FIRST INSPECTIONS 2012

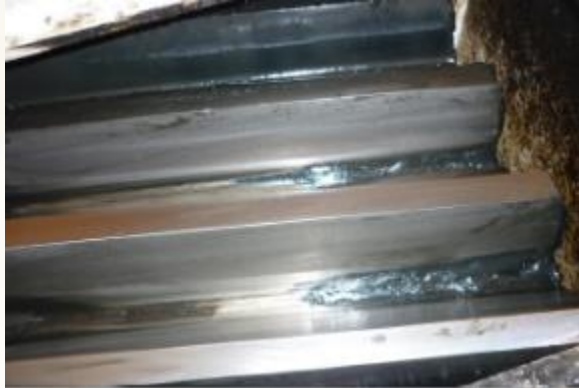


300 operating hours



July 2012, 500 operating hours

Proof of Performance



April 2013, 4,470 operating hours



Nov 2013, 7,600 operating hours



FINAL INSPECTION: April 2014 , 12,000+ operating hours

Final test results

- **Shovel # 11 surpassed the targeted 12,000 operating hours without any surface damage.**
- **Timer setting was: cycle of 8 minutes
Injectors 100 % open**
- **The mine was satisfied with our performance and switched the Hoist Gear lubricant to our Petrotac Premium 30B on the remaining shovels.**

Update

In December 2015 Shovel #11 surpassed 22,000 working hours without any Surface damage.

Petrotac EP Premium 30B continues to protect this very important shovel component.