



PETRON CORPORATION, New Berlin, Wisconsin, USA

Cement Industry - Proof of Performance
Using Petro Kleen 140 and Pensolv L945 on a
dry sump kiln

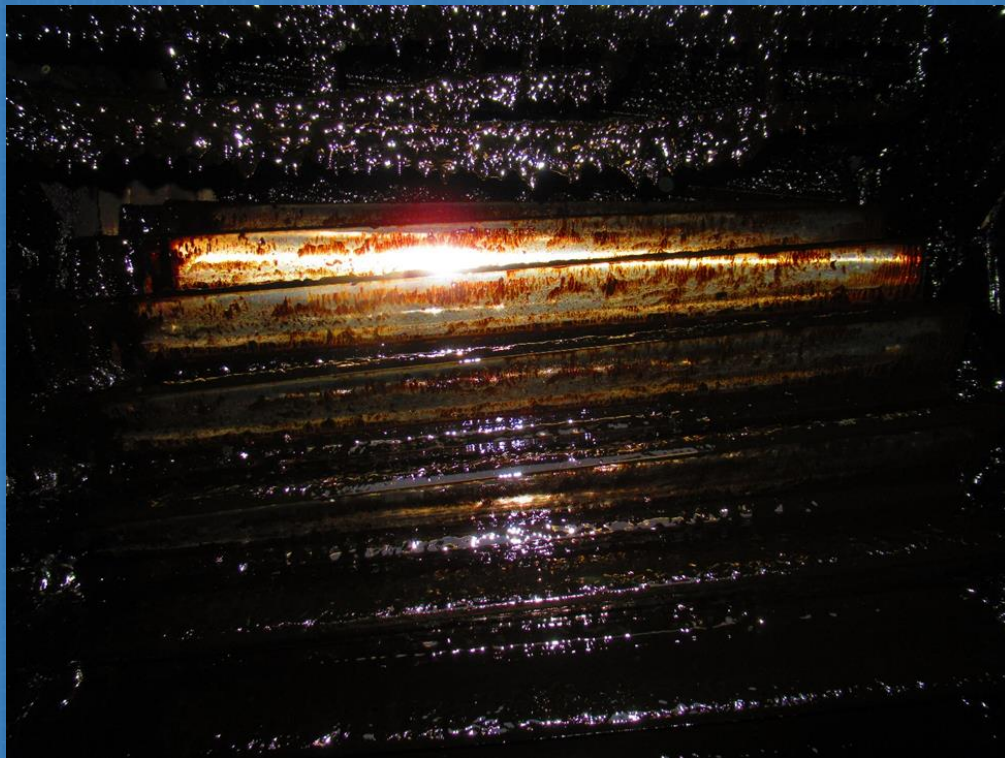
Objective: On-site service to clean the open gearing and guarding of a dry sump kiln using a combination two Petron Products, Petro Kleen 140 and Pensolv L945.

Executive Summary: Petron Corporation provided the open gear & guard cleaning service for the Kiln. Service was completed during (2) separate site visits.

1. Integrate the Petro Kleen 140 into the automatic spray systems to allow product be applied to the pinion and bull gear during normal operation.
2. Manual application of Pensolv L945 to finish removing any residual debris and OGL after the kiln was shut down for maintenance.



Original pinion gear condition after 10 years of operation without cleaning.



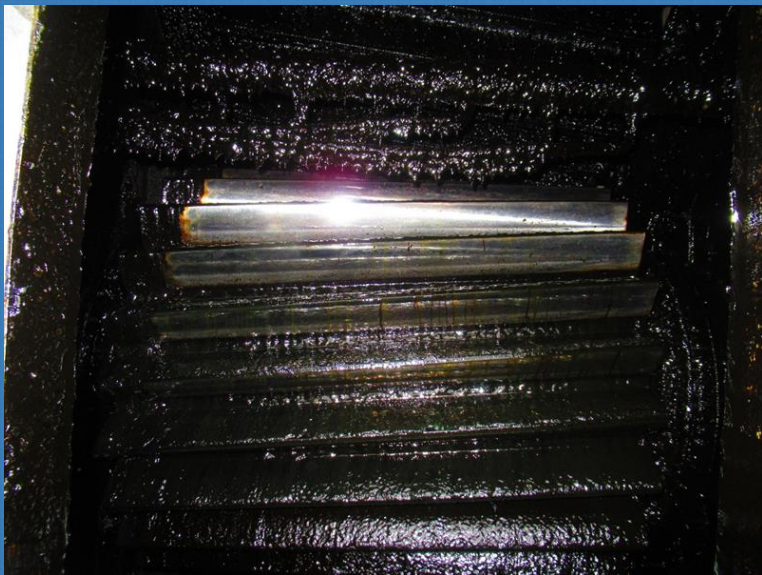
During the first 24 hours of use, Petro Kleen 140 penetrates to the bare metal surface underneath the hardened debris. By forming a lubricant film in-between the gear surface and the debris it greatly reduces the debris ability to adhere to the gear. Centrifugal force will typically dislodge any remaining debris from the gear face and gear root.

Applying Petro Kleen 140 for a longer duration will promote additional softening and cleaning. After 48 hours of soaking, typically the entire gear is free from debris and spent lubricant and some of the guarding will start to clean.



The photo on the left shows the Kiln Pinion non-contact side softening the clinker fines build-up and debris after 48 hrs of Petro Kleen 140 during kiln operation.

Since this side of the gear does not make contact in the gear mesh it relies on the ability of the Petro Kleen 140 to penetrate to the bare metal surface for the cleaning to take place.



Initial Pensolv L945 cleaning



Final Pensolv L945 cleaning

By using the Petro Kleen 140 first, the final cleaning takes much less time and generates much less mess from over-spray.



Benefits of Petro Kleen 140 cleaning process:

- No lost production during cleaning process, done under normal load and throughput
- Contains high levels of Extreme Pressure and Anti-Wear additives to protect the gearing until the scheduled shutdown, while softening gear mesh debris
- Petro Kleen 140 is applied through existing auto lube system
- Cleans auto lube system during gear cleaning process, including lube lines, injectors, and spray heads
- High flash point > 300° F
- User friendly / no irritating odor
- Forms a protective lubricant film on the gearset to prevent damage when operating the mill
- Greatly reduces the amount of solvent cleaning solution needed for complete bare steel gear mesh





Benefits of Pensolv L945 cleaning process:

- Pensolv L945 is manually applied to the open gear to quickly dissolve all debris and lubricants down to the bare metal surface
- Superior cleaning compared to mineral spirits
- Safer for user than most solvent cleaners
- Pleasant odor
- Safe on all metals
- Low vapor pressure
- Free of chlorinates
- Fast cleaning to improve productivity
- User friendly compared to kerosene and mineral spirits





Benefits of using Petro Kleen 140 and Pensolv L945 cleaning process:

- By softening all debris and spent OGL first with Petro Kleen 140 and then applying Pensolv L945 the amount of solvent required to clean to bare metal is greatly reduced
- The lost production time is greatly reduced as the initial cleaning is conducted under load during normal operation
- The duration that the Petro Kleen can 140 be applied can be adjusted if plant operation requires it without issue, allowing for more flexibility prior to the equipment being taken offline. Please note that PetroKleen can be used only up to 48 hours of mill operation





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