

Caterpillar Surveillance Panel

Conference Call 8/11/2014 3:00PM EST

Attendance:

Jim McCord
Mark Jarrett
Gary hammer
Martin Thompson
Hind Abi-Akar
Vince Caliendo
Adam Roig
Jim Moritz
Bob Campbell
Bill Larch
Andrew Stevens
Sean Moyer
Jim Gutzwiller
Jim Rutherford

Agenda Items:

C-13 High Oil Consumption
 Liners
 Valve Guides
 Rings

Uncovered Agenda Items:

1P Liners (labs received liners with a new date code)

1K / 1N No liners available from CAT dealership

1K / 1N 1Y3993 Hose – no longer available from CAT dealer

1N 1Y0728 Piston Ring - rust

Discussion Items:

C13 High Oil Consumption

IAR and SwRI believe the oil consumption is being driven severe by something other than piston deposits for candidate tests. Over approximately the last 12 months, candidate tests seem to be failing oil consumption but have very strong deposit performance. Hardware could potentially be driving it. The severity shift has not been seen in references, however the population is small during this time period and the limits are wide for reference acceptance.

Caterpillar is looking into hardware concerns

-Liners: In May liners were presented to CAT by IAR that showed significant differences in tooling marks and surface finish. There appears to be two different batches. Surface VO was specifically highlighted to be statistically different. CAT has verified that all liner data presented shows were within production limits. Although the limits are with spec there is still a potential for an oil consumption impact. The liner surface finish was/will be further inspected by CAT. It was requested that CAT provide information on the surface finish, including measurements and any available details on difference within production parts. The Test Labs will review their data and see if data can be provided on the effect of VO on oil consumption results. The Test Labs will also provide any historical data that shows a disconnect with deposit and oil consumption severity. Potential experiments on matching liners or using special test parts for references will be investigated. References are waiting to start pending modifications and potential fixes.

**See attached photos of liner differences at IAR



-Liner Seal: The new liner seal does not seem to be solving the oil consumption issue, however it may not have been the cause. There has not been a large amount of data collected and no references have been run. The test labs will continue to monitor this and provide data when enough has been collected.

-Valve Guide: Guides currently used in the field use a sealed valve guide. The original C13 test development was performed on a tapered guide that was phosphate coated. This coating was later removed. The sealed valve guide will be used on the next reference at SwRI to investigate the impact. The sealed valve guide is part number 2682953. The seal that corresponds to this guide is 1632478. Specialty tools may be needed for proper installation due to valve guide height differences. It has not yet been determined how the sealed valve guides will be accepted into candidate testing and whether all labs will need to perform references for acceptance.

-Turbo Seal: single and double seal turbos exist. Currently the single seal is used. CAT believes the double seal turbo will impact blow-by too much and the test should stay with the single seal.

-Piston Rings: Differences in ring measurements including the face profile should be investigated by CAT. Test Labs should investigate the visible differences in wear pattern on tests that have high oil consumption.

Additional Discussion Items:

A follow up conference call will be scheduled for Friday morning 8/22/2014 8:00-10:00 CST

It was mentioned that 1P top rings may be on backorder with limited supplies (1Y3803)

The motions from the previous conference call were modified to reflect what reference would be covered in the change.

Motion Adam Roig, Seconded by Bob Campbell– To change the 1N LTMS document's Acceptance Criteria for a new test stand, existing test stand, reference oil assignment and control charts to the proposed format in the document "Revision to 1N LTMS for New Stand". This will be applied to all reference tests completed on or after 7/12/2014.

Motion Carries- 0 apposed 0 waives

Motion Adam Roig, Seconded by Bob Campbell– To change the 1K LTMS document's Acceptance Criteria for a new test stand, existing test stand, reference oil assignment and control charts to the proposed format in the document "Revision to 1K LTMS for New Stand". This will be applied to all reference tests completed on or after 7/12/2014.

Motion Carries- 0 apposed 0 waives