

January 10, 2017

Caterpillar Surveillance Panel Teleconference Minutes

Teleconference Attendees:

Jim Gutzwiller (Chairman), Caroline Laufer, Elisa Santos, Bob Salgueiro – Infineum
Jim McCord, Jim Carroll (Secretary) – SwRI
Hind Abi-Akar, Mark Jarrett – Caterpillar
Greg Shank - Volvo
Kevin O'Malley, Alex Ebner, Andrew Stevens, Bill Larch, Greg Miranda – Lubrizol
Sean Moyer – TMC
Jim Moritz, Tim Griffin – Intertek
Bob Campbell – Afton
Jim Rutherford, Mark Cooper – Chevron-Oronite
Dan Lanctot – TEI
Barb Goodrich – John Deere
Jason Bowden – OH Technologies

AGENDA

COAT – Discuss Matrix design to bring in the “NEW” batch of oil filter

Statisticians got together to design a matrix for the NONOUL segregated filter tests. Jim Gutzwiller gave presentation. A test just run with oil 832 came in severe at 11.11%. This had a shallow profile (slow rise) according to Tim Griffin. Did the rise get slow at the end? Yes.
Did it stabilize at 30 hours? Yes it was at 11% at 30 hours.
When he ran before it was at 10.99% 10/21/2015 (may be in LTMS but was run out of the VGRA matrix).
All control parameters were in spec.

The laboratories run 2 833 reference oils to 1 832 reference oil.
833 tends to vary more than 832.

Lubrizol's Micromotion goes out of reference in early February, SwRI's is out now, Intertek just re-referenced. The panel extended the time between Micromotion return to Emerson for calibration requirements a while back. Is that still the case?
July 15, 2016 the panel extended the MM re-calibration requirement without setting a new requirement.

Jim McCord question: Should we continue to use the D4052 generated sp. Gravity?

Tim Griffin: It should not match the MM (Micromotion sensor) due to the compressibility.

Greg Miranda: We have not resolved the MM issue he brought up a year ago (FEB 2016). We have not done anything to correct this.

Hind Abi-Akar: We have not correlated MM to results.

Elisa Santos: There may be confounding between early and late runs at Lab G. She thinks she has all the data needed to analyze.

Jim McCord: We saw shifts at re-cal points. MM came back saying their algorithm changed with the newer sensors.

Comment: Is the data reported in LTMS? Only if it is valid. All labs should report all data relevant to this question.

Comment: Emerson had a few ideas about calibration. Could use a known oil to calibrate.

Comment: Should have a dedicated meeting to come up with a way forward.

Comment: Emerson gave us a list of things to do over time.

Maybe we need a change in the data dictionary to continue collecting data.

Tim Griffin: Intertek has had Emerson come to him. With the new MM it is easy to do on-site calibration.

Jim McCord: I don't see how we can do filter testing until we resolve the MM questions. We may get variations due to different labs. We need consistent calibrations across labs.

Tim Griffin: He always includes the original base density 0.8335 14 months ago 0.8344 with calibrations. Baseline density match between MM and D4052.

Hind Abi-Akar: We have been developing the test for 4 years. It still confounds me that the filter made a difference. We are discussing 2 aspects: MM and filter. Elisa can we segregate the confounding factors to get to a matrix?

Elisa Santos: We will collect new data on the new filters and see what happens. MM situation is the test reality.

Tim Griffin: Biggest thing is going to the same filter. Then we can look at other effects.

Hind Abi-Akar: Is this the first time you ran with the segregated filters? Yes.

Jim Gutzwiller: Infineum can analyze the filters.

Hind: This is a good idea. CAT can't control the media. When?

Jim G: A few weeks possible.

Bob Campbell: We should be able to update the MM and run with new filters.

Jim McCord: Update the MM and run with the new filters was not considered.

Jim Moritz: Labs are not running with the same equipment. We need to resolve this. I don't think we're getting anywhere.

Bob Campbell: Let's specify the same piece of equipment and everyone use it.

Tim Griffin: New processors can use Smart meter verification. We still need to come up with a verification protocol.

Hind: Does everyone have the same MM? Tim said only his flanges are different.
Transmitters are different? Yes.

Jim McCord How are going to calibrate it?

Hind: Tim How did you calibrate? Used a known oil from D4052 and checked it with the MM. (0.0004 last test)

McCord: What do you do if it does not match? Tim I don't know.

McCord: Did you run at multiple temps?

Tim: No, at 50C.

Bob: What do you do Jim?

McCord: Want 2 temp point check.

Tim: Our heated enclosure box will go to 92C.

McCord: We have a number of other items in the box that can't take high temps.

Greg Miranda: Emerson confirms that the new MM did not compensate for T the way the old one.

Bob: Use new style and go to 50C OK?

Greg: Intertek is not doing it the way Emerson does it in house. We need to nail down the procedural changes.

Comment: Someone needs to write it then. One of the labs needs to do it.

Hind: Any volunteers?

Greg: Is it possible to run the calibration/verification before a test or reference?

Tim: Circulate the oil through system. And let it sit for 1-2 days. It should match the D4052.

Comment: Suggest a small group to propose a process to calibrate.

Comment: Don't allow any references until we resolve the MM cal issue.

Tim: If we do this then aren't we going to use new filters?

Comment: Don't want to confound.

Comment: We have to nail down the MM cal.

Greg: Don't allow referencing until the MM cal issue is resolved.

Hind: What would it take to have SwRI and Intertek do this?

McCord: Not much, just follow Intertek work and resolve other issues.

**A motion was made to stop referencing until MM calibration is resolved.
Seconded by Sean Moyer.**

Greg: What about candidate tests?

Sean: We can add reference time and numbers to those who are already have candidates left.

Comment: We must notify specific people when a test is non-available.

Hind: Want to set timelines. Can meet weekly.

Tim: I'm OK with Lubrizol continuing to run candidates.

Gutzwiller: We need a procedure to have all the labs run the same.

Campbell: Tim write it up and we can get going quickly.

Action: Lubrizol, Intertek and SwRI labs to review and discuss Tim's procedure. (See procedure attached to these minutes)

Motion to terminate referencing until successful resolution of a Micromotion hardware and calibration procedure. Seconded by Sean Moyer.
No opposed. No waivers. Motion carried.

Point of order. Need to write a letter (Frank Farber has it) when a test is unavailable.

Question: Do we run the first references once the calibration procedure is resolved with the set aside filters?

COAT – Test Numbering change proposal (Sean Moyer)

New format will be: Test stand- stand run number- engine number – sequential engine run number (see attached proposal)

No reporting of hours in the test number.

Hind: Will this change existing tests?

Sean: No.

What numbers do we use to start now?

Sean: Let's table this until the next meeting.

1N – Hardware effect on TGF (Lubrizol)

Greg: We sent out data from the last test.

We got old parts from SwRI. Should have been severe. But they went mild. There is a plot that was sent out. (Attached with these minutes)

Greg: Quite a bit difference in the surface profile of the top ring.

Next conference call

Next conference set for 1-13-17 10:30 EST for 1.5 hours

Hind will send out the invitation.