

Cummins Surveillance Panel Meeting Minutes

August 15, 2023 14:00-16:00 CST

Participants:

Afton – Joe Hoehn

Chevron Oronite – Josephine Martinez, David Lee

Cummins – Ryan Denton, Phillip Shelton

ExxonMobil – Steve Jetter

Infineum – James Gutzwiller, Elisa Santos, Jacob Goodale

Intertek – Andrew Smith (Chairman)

Lubrizol – Robert Slocum, Austin Brininger, Alex Ebner

SwRI – Joe Moore, Jose Starling, Bob Warden, Travis Kostan

TEI – Dan Lanctot

TMC – Sean Moyer

Amanda Stone

Agenda:

Discussion on new reference oils for both the ISB and ISM tests.

Update on the development of the ISB Viscosity test.

Discussion of reference oil(s) for the ISB viscosity test and stand visits.

ISB and ISM Reference Oil Discussion:

- **ISB Low Viscosity Reference Oil**

	ATWL	ACML
Expected	58	90
Result	81	107

- Possible that the deviation is due to an exceptionally high average TGA soot (4.4%) for the test.
- Decision must be reached before September 28th NCDT meeting.
 - Current data available is not sufficient to make the decision.

- Discussion
 - Can we see the operational data for the test?
 - Can operational data be provided for the similar chemistries the oil was based on?
 - Can the oil be run again to better evaluate the fluid?
 - Potentially at another lab, running at the same lab is more likely due to tight timeline.
- **The panel recommends a rerun on the fluid due to the high average TGA value and camshaft wear. The panel would also like to see operational and chemistry for both the initial test and the rerun.**
- **ISM Low Viscosity Reference Oil**
 - Same fluid/similar chemistry as the proposed ISB oil.

	ASR	ACML	IASW	OFDP	TRWL
Expected	8.9	6.4	43	7.1	44
Result	9.3	5.6	153.6	14	38

- Discussion
 - Can operational and chemistry data from the similar chemistries be provided?
 - The significantly high injector screw wear is not ideal for a reference oil.
 - If the oil is rerun, a similar TGA profile to the first run is preferred.
- **The panel recommends a rerun on the fluid due to the high injector adjusting screw wear. The panel would also like to see operational and chemistry for both the initial test and the rerun.**

ISB Viscosity test Discussion:

- REV 4 procedure is available on the TMC site
 - REV 5 of the procedure will be posted to the TMC site today
- 4 labs are participating with 5 total stands to be available
- C-Category performance targets in CK-4 T11 range:
 - Soot% at 4, 12, and 15 cSt; 3.5, 6 and 6.7
- F-Category performance targets in CH-4 T8 range:
 - Max viscosity increase at tentatively 3.8% soot, 11.5 cSt
- Concern around significant viscosity increase for F category oils
 - Possible solution discussed is to have 2 test lengths
 - F category tests end at 108 hours and include MRV
 - C category tests end at 156 hours

Potential ISB Viscosity Reference Oil

- Two suppliers have offered oils
- Both oils have been run in the ISB
 - Supplier 1 oil was very mild of the CH-4 range for F category

- Supplier 3 oil was in range for CH-4 range for F category but hooked up sharply after 108 hours
- Supplier 3 oil has been accepted by the Mack/Volvo SP on August 1st.

Motion: Accept the Supplier 3 Oil as the ISB Viscosity test oil moving into the test matrix.

Andrew Smith motions, Bob Warden seconds.

No negatives, no waves. Motion passes unanimously.

Next steps on the ISB Viscosity test:

- Continue discussion on how to run test with 2 different performance levels and reference oils
- Update procedure to reflect above decisions
- Matrix design and how it changes based upon above decisions
- Precision matrix targeted to begin in Q4 2023, 20 tests
- Anyone who wants to be included in the ISB viscosity taskforce should reach out to Bob Warden (robert.warden@swri.org)
- Currently not planning for a build workshop as the engine is the same as for the ISB wear test
 - There is a possibility for an ISB wear test build workshop, if that happens the ISB viscosity test would be covered as well

Stand Visits for the ISB Viscosity Test:

- IAR/SwRI targeted Sept. 13th
- Lubrizol targeted for Sept. 27th right before the Detroit NCDT meeting
- Afton targeted Sept. 19th

Industry ISB ATWL Action Alarm triggered:

- The alarm may be due to outdated CF on previous references.

Next Steps:

- Bob Warden and Andrew Smith will recommend to NCDT that a build workshop is not needed for the ISB wear test.
- All labs will need to check that all references have been updated with the recent CF change.
- Andrew Smith will communicate the panel's recommendations to NCDT and bring the results back to the panel.

Next Meeting: TBD, likely short notice due to NCDT time constraints.