

Mack/Volvo Surveillance Panel Meeting

July 15, 2020

1:00 PM – 2:30 PM EST

Attendees:

Afton: Bob Campbell, Christian Porter, Abaigael Ritzenthaler, Todd Dvorak

Chevron Phillips Chemical: Jon VanScoyoc

General Motors: Marko Ledjenac

Haltermann : Prasad Tumati

Infineum : David Brass (secretary), Elisa Santos

Intertek: Juan Vega, Pablo Ramirez

Lubrizol: Jim Matasic

Oronite: Mark Cooper (chair)

PSL Services: Chris Taylor

SWRI: Travis Kostan, Isaac Leer, Bob Warden, Jose Starling

TEI: Derek Grosch,

TMC: Sean Moyer

Agenda:

1. Standard deviation updates for T-11
2. Impact of T-11 fuel parameters on operational parameters
3. Alternate fuel criteria

1. Standard deviation updates for T-11

- Todd (Afton) presented the information on the MRV Standard Deviation put together by the statistics group (*T11-MRV-Stdev-Review-071520.pdf*)
- Mack T-11 Currently uses reference oil 822-2
- Looked at all Severity Adjustments for the reference oils
- Looks like the standard deviation is higher for reference oil 822-2 than other blends
- Current standard deviation for 822-2 is listed at 584
- Original standard deviation was based on reference oil 820-2 when test was developed.
- Sean (TMC): Was having a hard time matching the standard deviations listed for 822-2 against the standard deviation that was being modeled. When update from reference oil 822-1 to 822-2 was done only 4 tests were used to set the target using the prior Severity Adjustments from 822-1. The rest of the data around 822-2 was treated as candidate oils.
- Calculated the MRV raw mean and standard deviation for 822-2 using all data points for 822-2 and the recommendation for standard deviation is 1156 for this reference oil blend.
- For lab severity adjustments used all test results from all reference oils. The recommendation is to change from 584 to 1117 for Severity Adjustment as the standard deviation is modelled from all of the reference oils.
- Surveillance agreed that this change should be implemented for tests going forward. Since this change affects LTMS a two week implementation period was utilized in this case.
- **Motion Todd Dvorak (Afton): The MRV Standard Deviation for Reference Oil 822-2 to be updated to 1156 and the MRV Standard Deviation used for Severity Adjustment**

calculations to be updated to 1117. To be implemented on tests that EOT on or after July 29.

- Bob Warden (SWRI) seconds motion
 - i. Opposed: None
 - ii. Waive: None
 - iii. Accepted: All

2. Impact of T-11 fuel parameters on operational parameters

- Todd (Afton) shared some information about the analysis to be conducted
- Mentioned that there is a lot of multi colinearity in the data set
- There are 35 fuels batch data available so far.
- Jon (CP Chem) mentioned that he has access to all data from 2014-2020 that can be provided
- This will allow for 70-80 results in LTMS to be utilized for the analysis
- Looking at the data available David (Infineum) suggested just analyzing 822-2 data as that is a large majority of the data set available and will remove oil blend as a variable in the analysis.
- Both performance parameters and operational parameters to be looked at for the effect of the fuel parameters.

3. Alternate fuel criteria

- For all parameters to meet an $E_i < 1.734$. Probability to pass critical parameter (Soot% at 12 cSt) is an 88% pass. All 3 soot parameters is a 54% pass rate.
- For $E_i < 1.734$ for critical parameter (Soot % at 12 cSt) and $E_i < 2.066$ for non-critical soot parameters (Soot % at 4 cSt and Soot% at 15 cSt). For all 3 soot parameters is 63% pass rate.
- Todd (Afton): Excluding MRV might be the best thing to do since it greatly reduces pass rate and is a non-critical parameter.
- Bob W (SWRI): From a performance stand point, 12 cSt and 15 cSt is important to have, as it is when there is the break in the data.
- David (Infineum): Suggested using level 2 ($E_i < 1.734$) for Soot % at 12 cSt & Soot % at 15 cSt and level 3 ($E_i < 2.066$) for Soot% at 4 cSt
- Prasad (Haltermann): Do we really need the tighter limit on the 15 cSt
- Bob C (Afton): That parameter (15 cSt) is in some of the specifications so is important to have control on it.
- **Surveillance Panel agrees to bring the following forward to use Level 2 ($E_i < 1.734$) for Soot% at 12 cSt, and Soot% at 15 cSt and level 3 ($E_i < 2.066$) for Soot% at 4 cSt. MRV will not be used as a criteria for free pass.**
- The Surveillance Panel Discussed stipulations for the stand that could be used for the testing of the fuel candidates. The following suggestions were made:
 - i. Travis (SWRI): In meeting on the Sequence IIIH, there were requirements for stand selection. Like stand needs to have run a certain number of references to be used.
 - ii. Mark (Oronite): Want a stand that is an active stand, and one that has been run a certain amount of times.
 - iii. Bob W (SWRI): Add in something about having run 3 successful references to get around the new stand criteria

- iv. Travis (SWRI): There should be no reference oil rebins or new parts in a certain time period prior to the testing.
- The Surveillance Panel Discussed stipulations for implementation of the new fuel at the labs. The following useful comments were made by the SP:
 - i. Travis (SWRI): Once a fuel was approved as long as references were run on that stand the fuel would have to be the same as the candidates run on that stand
 - ii. Travis (SWRI): There has typically been a 90/10 rule and a CofA taken on the mixed fuel would be used
 - iii. Mark (Oronite): Let's gather what is done in other places as options to start
 - iv. Travis (SWRI): I have the Sequence VI procedure as they have been working on these items for their introduction of alternate fuels. (***Seq VI document available in the minutes***)
 - v. Bob W (SWRI): This will be a bigger issue in HDD as we go through fuel much faster than PCMO.

2:22 PM meeting adjourned

Next Meeting: July 29, 1:30 PM – 3:00 PM EST