Mack/Volvo Surveillance Panel Meeting
August 12, 2020
1:30 PM – 3:00 PM EST

Attendees:
Afton: Christian Porter, Abaigael Ritzenthaler, Todd Dvorak
ExxonMobil: Steve Jetter
Haltermann: Prasad Tumati
Infineum: David Brass (secretary), Elisa Santos, Jim Gutzwiller, Charlie Leverett
Intertek: Pablo Ramirez, Hung Nguyen, Josh Ward
Lubrizol: Jim Matasic
Oronite: Mark Cooper (chair), David Lee
SWRI: Travis Kostan, Isaac Leer, Bob Warden, Jose Starling
TEI: Derek Grosch
TMC: Sean Moyer

Agenda:
1. Stand-based versus Lab-based LTMS for Mack T-11
2. Combined Fuel Approval Criteria and Fuel Usage Criteria
3. Oil Analysis Round Robin Results

1. Stand-based versus Lab-based LTMS for Mack T-11

- Todd (Afton) provided a presentation (*T11-Lab-Stand-Analysis-081220.pdf*) on the Differences between Labs and Stands Within a Lab for the Mack T-11.
- Looking at all chartable data (4 reference oils) there is no difference between the stands within the lab which would suggest a lab based system.
- If you look at 822-1 and 822-2 (two most recent reblends) there are differences between Lab A Stand 7 and Stand 14. The rest of the stands show no significant difference.
    i. There is one data point heavily influencing the difference seen between Lab A stand 7 and stand 14. Lab A has 6 stands that have been in rotation.
- Looking at Data set 1 (all chartable data)
    i. There are significant differences between the labs and not the stands within the labs for all parameters
- Looking at Data set 2 (Ref Oil 822-1 and 822-2)
    i. Soot at 4 cSt
        1. There are significant differences between the labs
        2. In Lab A, Stand 14 > Stand 7
    ii. Soot at 12 cSt, Soot at 15 cSt
        1. Marginal difference between labs
        2. No difference between stands at a lab
    iii. MRV
        1. There are significant differences between the labs
        2. In Lab A, Stand 7 > Stand 14
    iv. What is special about Lab A, Stand 7 & 14
        1. There is one result that has a very high fuel dilution (>3.5%) where everything else is < 1.75%. This data point seems to be influencing the model.

- **Surveillance Panel agreed that the LTMS for the Mack T-11 should remain as a lab based system. The new fuel acceptance criteria documents will be updated to utilize a lab based system.**

2. **Combined Fuel Approval Criteria and Fuel Usage Criteria**
    - A combined document was put together for the Fuel Approval Criteria and Fuel Usage Criteria. (*T11 Fuel Transition Requirements Final_Draft.pdf*) A draft document that can be introduced as an appendix to the procedure was introduced. (*Updated version in the minutes*)
    - A discussion was had about the nomenclature for the Z_i for the reference test used to start the process for introducing a new fuel. Z_C was decided to be used for the Z_i calculated from the initial calibration test.
    - Travis (SWRI): Is everyone comfortable if using a Severity Adjustment for the lab when a new fuel is brought in?
    - Bob W (SWRI): For parts changes we might change the Correction Factor but use the new Severity Adjustment with the old parts if there are parts remaining from the previous batch.
    - Travis (SWRI): Usually to change hardware, we do coordinated references. For the fuel you might be just running one test to bring it back into a lab. It would have passed the acceptance criteria before this point at the lab to allow its use.
    - Travis (SWRI): A lab bringing in a new but approved fuel could run a single test with level 2 Ei. If it fails calibration you would need to meet level 3 Ei.
    - Christain (Afton): The prove out should really point out if there are any flags. That is why we are setting it up.
    - Elisa (Inf): How do me monitor the fuel used in the future calibration tests.
    - Bob W (SWRI): Fuel supplier and batch fields are already in the data dictionary
    - **ACTION: Sean (TMC) to add fuel supplier (already in data dictionary) to LTMS excel file**.
    - Proposed logistics for phycially bringing in new fuel: If a tank has an unapproved fuel in it then the tank must be emptied and cleaned. If there is an approved fuel in the tank then 5% of the tank could be remaining with the previous fuel and at least one full Mack T-11 test worth of fuel must for added to that supply tank.
    - **Criteria that the Surveillance Panel has for choosing a stand to bring in a new fuel supplier would have to have to be spelled out in the procedure document that is being written.**

3. Oil Analysis Round Robin Results
    - A document (*Round Robin Oil Analysis August 2020.xlsx*) was shared with the Surveillance Panel.
    - UO56/UO58 are Mack T-13 samples
    - UO57/UO59 are Mack T-11 samples
    - There is more variability in this data than in previous round robins
    - Bob W (SWRI): What method was used for the KV measurement D445, T8 method or standard D445? That could be a reason for this very large variability in the KV data and this method needs to be verified. If nothing was specified these were likely run with the standard D445 method then the test was not run properly. If my lab was not told to run a T-11 type D445 then they probably didn't.
    - Mark (Oronite): Do we want to go back to multiple runs on each sample at each lab?

- Sean (TMC): There were multiple runs on each sample. The template only had one box per sample so that was all that was filled in. Back in 2013 we ran multiple iterations on each sample.
- Mark (Oronite): We need to redo this with multiple runs and confirm the methods used.
- Bob W (SWRI): Are these samples still at the lab?
- Sean (TMC): This needs to be confirmed by the labs. I didn't realize that fresh samples were also needed for the oxdiation differential.
- Gallon of used oil was collected for each sample. Samples were shaken for 30 min in paint shaker before splitting and sending out to labs.
- **ACTION: Sean (TMC) to send new samples to the labs by end of month. New Template and a description list of what is to be tested will also be sent out to labs.**
- **ACTION: Labs to analyze samples for round robin and report back by mid to end of September.**

2:47 PM meeting adjourned

Next Meeting: August 26, 1:30 PM – 3:00 PM EST