

LSPI AGING INDUSTRY CONFERENCE CALL

Date: 19 Oct 20

ATTENDANCE

SWRI	Christine Eickstead, Khaled Rais, Travis Kostan, Pat Lang
INTERTEK	Al Lopez, Charles Flores
LUBRIZOL	George Szappanos
AFTON	Christian Porter, Brent Calcut, Todd Dvorak, Bob Campbell, Ashutosh Gupta, Ben Maddock
ORONITE	Robert Stockwell, Josephine Martinez
INFINEUM	Doyle Boese, Charlie Leverett, Andy Ritchie
API	
TMC	
FORD	Ron Romano, Dean Wingert, Mike Deegan
EXXON	Adam Meir, Mike Alessi
GM	Brad Cosgrove
SHELL	Eric Kalberer
VALVOLINE	
CALUMET SPECIALTY	Muibat Gbadamosi
NESTE	
APL	Tim Hadaway
VANDERBILT	Jeremy Styer, Amol Savant
HALTERMAN	Prasad Tumati
F C A GROUP	Haiying Tang
TOYOTA	
NOVVI	Steve Haffner
KLEEN PERFORMANCE	Scott Simmons
PHILIPS 66	Anthony Baldrige, Jonathan Vilaro

Stats Presentation:

Todd Dvorak presented the Stats group's analysis.

Discussion:

Ron – We came up with good aging test. Aging cycle is doing what it's supposed to be doing.

Andy Ritchie – To what extent do these results match Lubrizol findings? Ron – The oils rank the same. Andy – aged oils are more noisy in general. This is a good test but do we need it? The aged oils do not show dramatically higher counts. % increases not really significant. 50%, 60%?

Andy – These results are within repeatability of LSPI test. Aged oils are more noisy, yes, but is this enough justification for a whole new test?

Ron – disagrees. Directional difference seen between aged oils oils. If had more data, might see more of a difference between aged oils A and B. When look at data in non-transformed units, all new oils pass LSPI GF-6 limit. Oil A passes when aged, oil B does not.

Andy – Agrees aged oils have more activity than fresh oils.

Todd – With a more severe oil – *might* see a more severe change between fresh and aged. Need more data to confirm – could be a function of viscosity. Statistically, there is a significant difference between fresh and aged oils.

Ron – think we need this as part of the category. Ca limit would have been fine, but group did not want that, so we did this test instead. The test is successful – we should go forward with it.

Andy – What if LSPI limit was 3 instead of 5? Oil B wouldn't meet it as a fresh oil, so it would go away. **Note: Andy is not saying we should lower LSPI limit.** Just not seeing that this test tells us anything more than what the existing LSPI test tells us – no runaway results. This matrix is good and was the right thing to do.

George – Aged oil A actually broke the engine. This might be the run-away results Andy is looking for. Andy was skeptical... could have been many other reasons for the engine damage.

Ron – Maybe oil needs to be aged more to increase the difference between aged oil A and B? Andy – Aged Oils will have more activity than fresh oils. Ron – We don't know that for sure.

(Brent – What does Andy mean by “noisier”? Andy – More events, not more variability in results.)

Andy – This test is appropriate to be developed into an ASTM procedure (there are worse tests than this in the category). But do we really *need* this test? Appropriate to expect fresh and aged oils to have LSPI protection. Two options:

- 1) Develop this as an ASTM standard
- 2)

No one else has opinion?

Ash – In the absence of a better test, this can only help. As there is limited time to develop a new test, it would be good to implement this now.

Ron – next step = precision matrix

Maybe run another 10 hours of aging cycle, would oil events go up at same rate? Do we want to do this? Group – no advantage to extending the aging cycle.

Ron – Is it worth it to run different formulation oils as opposed to only the two in the matrix?

Andy – Do not change aging cycle, otherwise we would have to start all over. Need to do precision matrix with existing reference oils ~~data~~, not oils A and B. Do precision matrix to get a statement of difference between new and aged oils.

George - Will need to choose ROs correctly, need to consider repeatability of ROs.

Andy – 221 should not be aged, the 10 event target would go to 15. Should focus on lower event ROs, 220 and 224.

Ford – unable to do anything more with this test, additional testing, PM, until next year due to funding. GM – same.

Nest meeting TBD.