

**Sequence VH Surveillance Panel Meeting
January 26th 2023, 2 PM EST, via Webex**

Roll Call:

Afton: B. Maddock, A. Stone, B. Campbell
bp: J. Agudelo
ExxonMobil: P. Rubas
Ford: M. Deegan, R. Zdrodowski
General Motors: B, Cosgrove, T, Cushing, M. Hopp
Haltermann: W. Hairston, I. Mathur
Infineum: T. Dvorak, C. Laufer, A. Ritchie (Chair)
Intertek: J. Franklin, A. Lopez
Lubrizol: T. Catanese, G. Szappanos, P. Scinto
OHT: J. Bowden
Oronite: R. Affinito, J. Martinez, R. Stockwell
SwRI: D. Engstrom, T. Kostan, M. Lochte
TEI: D. Lanctot
TMC: R. Grundza

Meeting Summary:

After reviewing the statisticians' analysis and recommendations, the group had a lengthy discussion and passed the following motions.

Panel approves fuel N-000010-1 with no correction factors as recommended by the statisticians group. Approve assignment of 50/50 of 1011-1/931 and panel will reconsider the performance of the new fuel no later than mid-August.

Result: 12 approve, 0 negative, 2 waive. Motion passes.

Stands which ran the new fuel N-000010-1 will be granted calibration status either on their EOT date or January 26th, 2023 (the date of fuel approval).

Result: 8 approve, 1 negative, 5 waive. Motion passes.

Meeting Details:

Representing the Statisticians Group, Todd Dvorak (Infineum) summarized the analysis and recommendations (full presentation in Appendix). He highlighted that the team looked at the data several different ways and unanimously arrived at the same conclusions.

Executive Summary

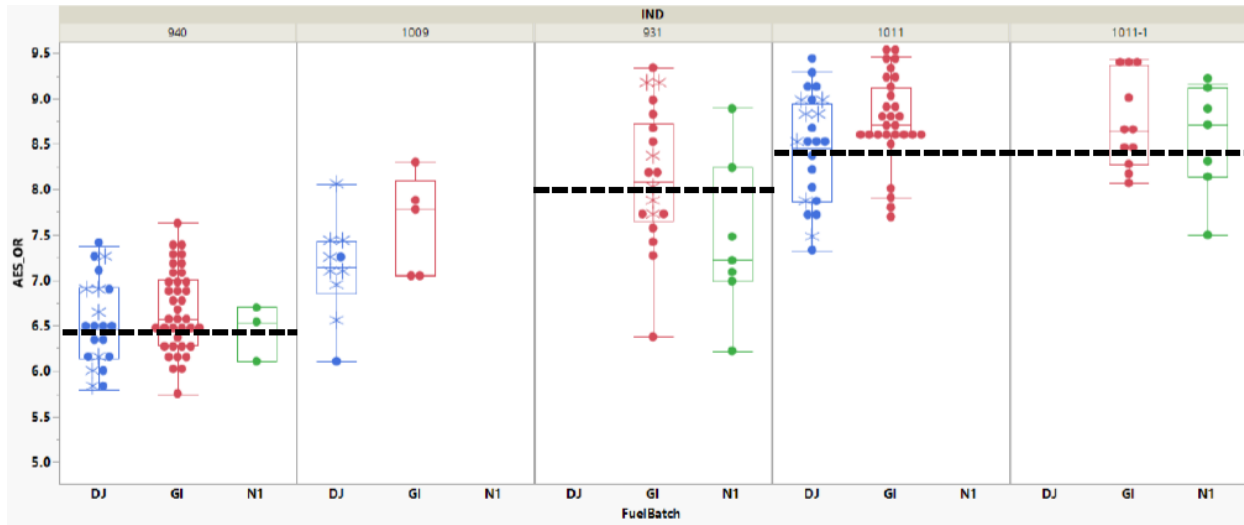
- Analysis of data on new fuel batch N-000010-1 suggests that there's not enough statistical evidence suggesting that there's a difference in the test results when compared to the DJ fuel batch.
- Recommend no Fuel Batch adjustments for any of the four Sequence VH critical parameters.
- Recommend Surveillance Panel to formally schedule a follow-up analyses (at a future date) to determine if additional data warrants a correction factor for any of the 4 parameters
- Surveillance Panel to decide if changes to the reference oil assignment (e.g., 940) are necessary moving forward

The fuel batch (N-000010-1, aka "N1" in this analysis) matrix dataset consisted of 17 tests: three 940s, seven 931s, and seven 1011-1s.

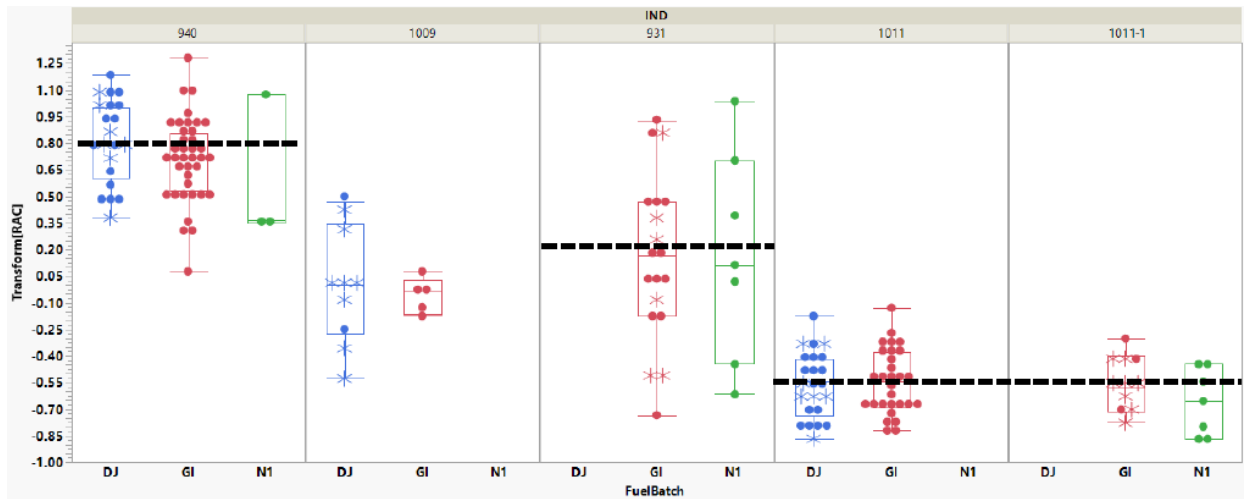
<i>Order</i>	<i>SwRI[2]</i>	<i>SwRI[3]</i>	<i>Afton[2]</i>	<i>IAR[2]</i>	<i>IAR[3]</i>	<i>IAR[1]*</i>	<i>IAR[5]*</i>
1	931 166515-VH	1011-1 172583-VH	1011-1 172259-VH	931 172589-VH	1011-1 169623-VH		
2	1011-1 172584-VH	940 172582-VH	931 166686-VH	940 175643-VH	931 172588-VH		
3	1011-1 172585-VH	931 175648-VH	931 171799-VH	1011-1 169622-VH	940 172587-VH		
						1011-1 175637-VH	931 175640-VH

Plots of the key parameters (AES_OR, ln(10-RAC), AE50, and AP50) were shared, noting that 940 is the only reference oil that had data with all 3 batches of fuel: DJ (blue), GI (red), and N1 (green). The plots include Chartable=Y for all fuel batches and all reference oil tests. The *s correspond with the data used to set reference oil targets, which are represented by the black dashed lines. Details of the analyses can be found in the Appendices of the pdf document attached to these minutes.

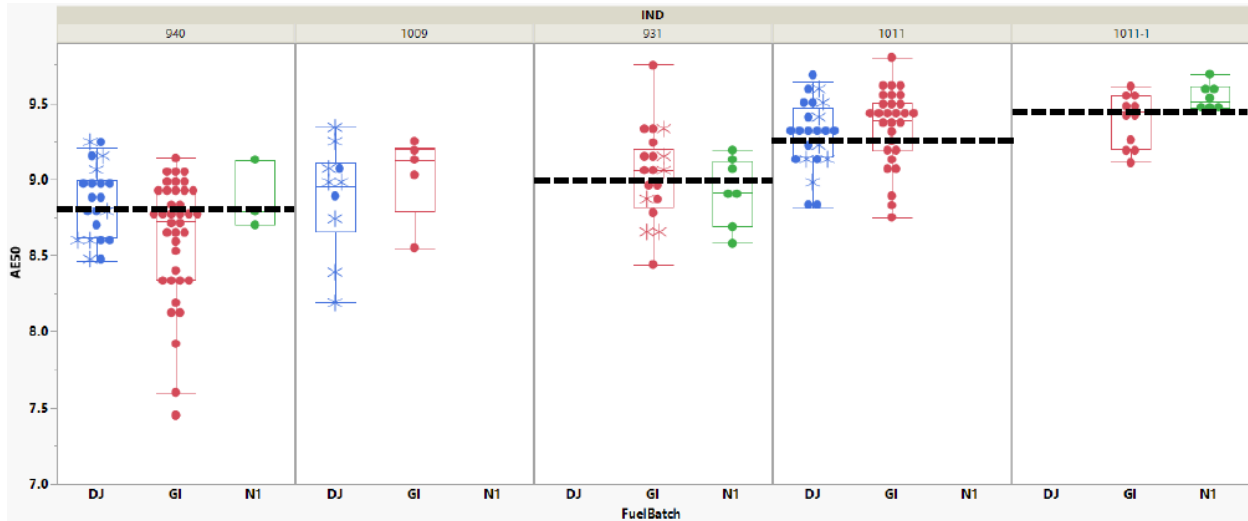
AES_OR:



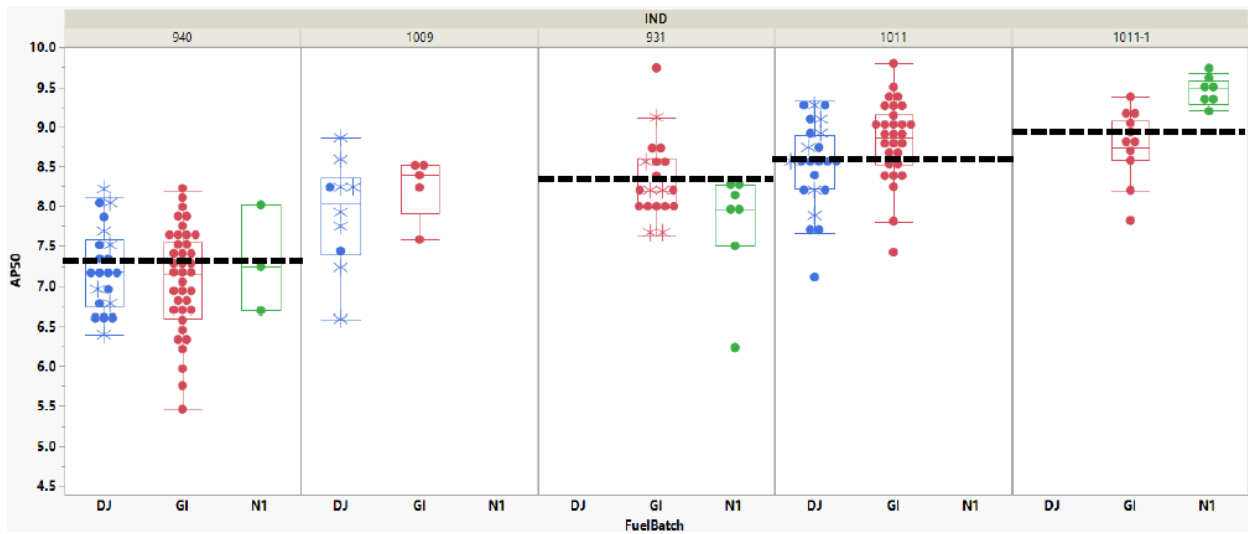
Ln(10-RAC):



AE50:



AP50:



Todd Dvorak (Infineum) highlighted that there was some discussion about a possible correction factor (noting the shift you see for 931 and 1011-1) but there wasn't enough data to justify the change. Mike Deegan (Ford) noted the shift observed in the 931 and 1011-1 data and would like to incorporate how we address this in the motion. As recommended by the statisticians group, one way to address this is to allocate more tests to 931 and 1011-1 (offered the idea of allocated 40/40/20 to 931/1011-1/940) and reassess when more data is collected. Al Lopez (Intertek) agreed with Mike in that there's a shift with the new fuel batch for RO 931 and 1011-1, commenting that a clean oil (referring to 1011-1) got cleaner and dirty oil (referring to 931) got dirtier. He asked how this could be handled from a correction factor point of view. Todd stated that the group can explore this further as more data is collected but at this point, without enough data, it's difficult to come to a consensus about a correction factor or a way of accounting for Al's observations. He advocated for more 931 and 1011-1 data than 940 data to help resolve

the issue. Phil Scinto (Lubrizol) added that another complication is that the labs are different. Rich Grundza (TMC) shared that although it doesn't address AI's concerns, every stand eligible for calibration would meet calibration criteria and industry charts are all in control; and that it would take about 4-6 months for the stands to be ready to run calibration tests and suggested that we may have about 8 datapoints by mid-August. The group agreed we'll need to reassess when more data is available. Discussion ensued about how the oils are allocated (40/40/20, 50/50, or 50/30/20) and a motion was ultimately made by AI (Intertek), 2nd by Robert Stockwell (Oronite):

Motion: Panel approves fuel N-000010-1 with no correction factors as recommended by the statisticians group. Approve assignment of 50/50 of 1011-1/931 and panel will reconsider the performance of the new fuel no later than mid-August.

Result: 12 approve, 0 negative, 2 waive. Motion passes.

Bill Hairston	Haltermann	Approve
Mike Deegan	Ford	Approve
AI Lopez	Intertek	Approve
Dan Engstrom	SwRI	Approve
Ben Maddock	Afton	Approve
Tony Catanese	Lubrizol	Approve
Meryn Hopp	GM	Approve
Rich Grundza	TMC	Approve
Caroline Laufer	Infineum	Approve
Jorge Agudelo	BP	Approve
Paul Rubas	ExxonMobil	Approve
Robert Stockwell	Oronite	Approve
Dan Lanctot	TEI	Waive
Jason Bowden	OHT	Waive

Bob Campbell (Afton) reminded the group that we need to pick an effective date for the severity adjustments. Once it was confirmed by Rich Grundza (TMC) that the effective date of the calibration period of the stands would be the LTMS date (which is the date it's calibrated, when we put it in the charts, which is Jan 26th, 2023), AI Lopez (Intertek) had to disclose that he has a test in jeopardy; In light of the delays and the test not being available, he was not objected to to running a registered test. Concerns were raised by Rich Grundza (TMC) and others that we may be setting a bad precedent as it looks like not everything is being treated the same. After lengthy discussion about this special circumstance, a motion was made to address the effective date, by AI Lopez (Intertek), 2nd by Bill Hairston (Haltermann).

Motion: Stands which ran the new fuel N-000010-1 will be granted calibration status either on their EOT date or January 26th, 2023 (the date of fuel approval).

Result: 8 approve, 1 negative, 6 waive. Motion passes.

Ben Maddock	Afton	Approve
Tony Catanese	Lubrizol	Approve
Dan Engstrom	SwRI	Approve
Mike Deegan	Ford	Approve

Jorge Agudelo	BP	Approve
Caroline Laufer	Infineum	Approve
Al Lopez	Intertek	Approve
Bill Hairston	Haltermann	Approve
Rich Grundza	TMC	Negative
Dan Lanctot	TEI	Waive
Jason Bowden	OHT	Waive
Paul Rubas	ExxonMobil	Waive
Dan Lanctot	TEI	Waive
Jason Bowden	OHT	Waive
Robert Stockwell	Oronite	Waive

Rich Grundza (TMC) said that in the future, if this happens again, the recommendation is to not do this. Al Lopez (Intertek) thanked the group and said that if in the future, we have a test that's unavailable and we have the opportunity to run unregistered before something is approved, it makes sense for him to do this, especially for this test that's a big hold up in the industry.

Meeting adjourned at 3:13 pm est.

Appendix: Statistics Group VH Fuel Batch Matrix Data Analysis



SG_VH_Fuel_Matrix
_Analysis 012623.pdf