Sequence V Surveillance Panel Meeting
February 10th, 2022 10 AM EST, via Webex

Roll Call:

Afton:	T. Dvorak, B. Maddock
ExxonMobil:	A. Montufar
Ford:	M. Deegan, R. Zdrodowski
General Motors:	B. Cosgrove, M. Hopp
Haltermann:	P. Tumati
HCS Group:	I. Gabrel
Infineum:	D. Boese, C. Laufer, C. Leverett, A. Ritchie (Chair)
Intertek:	J. Franklin, A. Lopez
Lubrizol:	A. Stevens
OHT:	J. Bowden
Oronite:	D. Lee, J. Martinez
Shell:	J. Hsu
SwRI:	D. Engstrom, T. Kostan, P. Lang
TEI:	D. Lanctot
TMC:	R. Grundza
Valvoline:	A. Savant

Meeting Summary:
The new fuel batch should be ready for lab testing by first week of May. No reasons for delay are foreseen. The group discussed hardware inventory for the life of the test and agreed that the Task Force will reassess the number of parts remaining since the demand peak from dexos has passed. After lengthy discussion about the low RVP values of the fuel, a motion was made: **Labs are to continue measuring RVP as report-only.** The motion passed with 12 approve, 0 negative, and 3 waive.

Open Actions:

1. From March 26th, 2021 meeting: **Lab engineers** to meet to investigate severity shifts (share operational data, build data, ratings, etc.). The TF has been productive and meeting frequently.
2. From Sept 9th, 2021meeting: **Statisticians Group** led by Doyle Boese (Infineum) to provide update around potential ways to improve current lab-based system. Interim recommendation is to not adopt a stand-based system.
3. From Sept 9th, 2021 meeting: **Haltermann** to report monthly inventory via email to V SP. Monthly updates are being provided.
4. From Nov 29th, 2021 meeting: **Haltermann** to include extra column in fuels data to indicate which fuel goes with which test.
5. From February 10th, 2022 meeting: **The VH Task Force** to assess number of parts remaining as it relates to the life of the test.
6. From February 10th, 2022 meeting: **Haltermann** to report average time it takes for them to respond back to the labs with RVP data.
7. From February 10th, 2022 meeting: The **VH Task Force** to discuss the lab responsibility to measure the fuel parameters as received (section 8.2) vs the use of the CoA.

Next call: May 16th, 2022 at 2 PM EST via Webex

Meeting Details:

Agenda Items:

1) Status of new VH fuel batch
2) VH hardware inventory recheck for life of ILSAC GF-6
3) Update on VH Severity Task Force
4) Old Business
5) New Business

Sequence VH SP Minutes. The Chair confirmed there are no objections from the panel to approve these meeting minutes:

11_29_21 VH Minutes
12_13_21 Minutes
12_20_21 VH Minutes

Sequence VH Severity Task Force Minutes

12_13_21 VH Task Force Minutes
12_20_21 VH Task Force Minutes
01_19_22 VH Task Force Minutes
02_02_22 VH Task Force Minutes

1) Status of new VH fuel batch

Prasad Tumati (Haltermann) updated the group that the plan is to finish transferring fuel into ISO tanks by the end of February. Current orders have been filled and future orders will be shipped in ISO tanks, not by truck loads. The new fuel batch should be ready for lab testing by first week of May. No reasons for delay are foreseen.

Edited to add post-meeting email communications from Haltermann:

- *As of 3/27/2022, there are 9 ISO containers of VH fuel remaining (55,800 gallons total). The new fuel batch production is in progress.*
- *As of 4/19/2022, there 7 ISO containers of HF 0295 fuel remaining (48,300 gallons). The new fuel batch production is progressing as planned. Haltermann expect to have the blending process completed and have blend samples for internal analysis in their lab by the end of the first week of May.*

The Chair asked the labs for an update re: activity levels:

- Al Lopez (Intertek) reported activity levels have been low according to ACC registrations.
- Pat Lang (SwRI) concurred activities have been low.
- Ben Maddock (Afton) reported they are operating on 2 stands with standard throughput.
- Andrew Stevens (Lubrizol) shared they also have 2 stands with standard throughput.

2) VH hardware inventory recheck for life of ILSAC GF-6

The Chair reminded the panel about the spreadsheet Angela Willis (TOTAL) shared at PCEOCP at the December ASTM meeting. The projection suggested that we miscalculated the parts we have for GF-6 and her spreadsheet reported that parts would be depleted by 2025.

Al Lopez (Intertek) recommends a TF get together to relook at the number of parts remaining now that the demand peak of dexos has passed. The Chair asked for the TF to include this on their next agenda for the lab engineers to reassess. Pat Lang (SwRI)

recommended that we secure pistons as rings since manufacturing those could be of concern. Al agreed and asked when we think GF-6 will end. Mike Deegan (Ford) stated that ILSAC is working on the next generation specification, targeting 2027. The Chair commented that there'll be a need for the VH as a legacy test.

3) Update on VH Severity Task Force

Charlie Leverett (Infineum) reported that the TF is working on getting more data together and that the group can read about the progress and discussions from the meeting minutes (see TF links above). He would like the panel to be aware that low RVP values are being observed and would like clarity and guidance from the group on resolution. Some differences in how the lab handle the fuel measurements were also reported. The Chair noted that generally the San Antonio labs are trending lower RVP values and that is believed to be due to the warmer temperatures. Rich Grundza (TMC) stated that the labs are doing the analysis quarterly but sometimes there are delays and noted that in the most recent data, he observed that it's not always the San Antonio labs reporting low RVP values. Al Lopez (Intertek) shared some recent analysis of fuel samples recently purchased in cooler months and the RVP values were all lower than the spec limit (60.4, etc) and therefore, does not believe it's directly correlated to the warmer temperatures.

Rich Grundza (TMC) highlighted the key question to answer: what do we do when the RVP values are non-conforming. He laid out 3 options: scrap, repair, or accept as-is. He commented that the procedure does not lay out clear next steps other than to repeat the measurement. The Chair added that although there's no evidence he's seen that says performance is impacted by low RVP fuels, the panel should take action.

A question was raised by Al Lopez (Intertek) re: the timing of fuel analysis from Halterman. Prasad Tumati (Haltermann) replied that generally RVP measurement does not take a lot of time and will take an action to look into the average time it takes to respond back to the labs. The Chair returned to the core topic and asked Prasad what Haltermann would recommend we do about the low RVP values. Prasad said RVP has always been variable and is adjusted in their tanks. Prompted by the Chair's question on how the adjustment is made, Prasad stated there are some models to help make the adjustment. It depends on the empty space, weather, volume, etc. Andrew Stevens (Lubrizol) questioned if the low RVP values affect the results. Jeff Hsu (Shell) added that it seems the group is looking for consistency and unless the tanks have a nitrogen blanket, RVP is going to be variable. He would recommend another test such as boiling point, marked with 50% loss of sample, which could give a better indication of evaporation rate. For this test, we want the medium and heavy ends because it helps create sludge. RVP is a quality check and for this test, RVP is not the culprit. Jeff suggested we look for T50 and commented that T10 is what comes off first (the light ends, where RVP is relevant) and that T90 is the heavier parts of the fuel that antagonize sludge formation. Mike Deegan (Ford) asked if there's an RVP number that we should not go below or is it captured in the distillation curve? Jeff suggested that the group keeps the limit but have the parameter as report. Rich suggested we continue to monitor RVP with no action to be taken when the parameter falls out of spec. Jeff agreed. Al asked how Haltermann will ensure a fuel that is on spec is delivered. Prasad replied that the adjustment is made before putting the fuel into ISO tanks. Once in the ISO tanks, the RVP does not deteriorate due to the limited head space.

Charlie Leverett (Infineum) made the motion, seconded by Amol Savant (Valvoline): **Labs are to continue measuring RVP as report-only.** (to be added to Section 8.2.6).

The motion was voted on and had the following final results: 12 approve, 0 negative, 3 waive. The motion passes.

Intertek	Al Lopez	Approve
Valvoline	Amol Savant	Approve
Lubrizol	Andrew Stevens	Approve
ExxonMobil	Ashley Montufar	Approve
Afton	Ben Maddock	Approve
GM	Brad Cosgrove	Waive
Infineum	Charlie Leverett	Approve
SwRI	Dan Engstrom	Approve
TEI	Dan Lanctot	Waive
Oronite	Jo Martinez filling in for David Lee	Approve
Ford	Mike Deegan	Approve
HCS Group	Izabela Gabrel	--
OHT	Jason Bowden	Waive
Shell	Jeff Hsu	Approve
Haltermann	Prasad Tumati	Approve
TMC	Rich Grundza	Approve

Charlie Leverett (Infineum) also brought up another item is section 8.2 re: the labs' responsibility to measure the fuel as received from the supplier. He reported that only one lab is currently doing the analysis and others are using the CoA and the question is if that is allowable. Both Al Lopez (Intertek) and Amol Savant (Valvoline) raised some practicality issues. Charlie said that most of the labs are checking to make sure the fuel isn't contaminated but suggested that this topic be brought back to the Task Force. It was agreed by the lab engineers that this is brought back to the TF group for further discussion.

Meeting adjourned at 11:32 AM EST.