

Sequence V Surveillance Panel Meeting June 13th, 2022 1 PM EST, via Webex

Roll Call:

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

Meeting Summary:

- Haltermann reported that RVP was slightly off for the new batch of fuel and they will need a few days to correct the issue. They therefore plan to have the fuel batch ready and delivered by early week of June 20th.
- The Chair reported that there are deep concerns about the implications of resetting the 940 RAC targets, particularly with regards to the premise that if the 940 targets were not set correctly, then limits were not set correctly. As the OEMs in the group did not want to entertain the motion to update the 940 targets without an effort to address the deeper concerns, the SP group did not vote on the motion.
- After a lengthy discussion, it was agreed to allow for more time for review and for TMC and others to help explain the issue to ILSAC and to the dexos committee on June 21st. The panel will reconvene on the 22nd to review the feedback, in addition: semi annual report,

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, 2021 meeting](#): **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.
8. From [May 16th, 2022 meeting](#) and [June 2nd, 2022 meeting](#): **Bob Campbell** and **Andrew Stevens** to consider if their labs, Afton and Lubrizol respectively, would be willing to participate in helping Angela come up with a more realistic forecast number for the VH.
9. From [May 16th, 2022 meeting](#): **TMC** to generate new RAC target using the 7 valid, chartable RO 940 data points plus the 14 additional RO 940 results run on the same DJ fuel batch. ← **COMPLETED**, see [June 2nd, 2022 meeting](#)
10. From [May 23rd, 2022 meeting](#): **Haltermann** to communicate the fuel status through the next few weeks. Ex: Labs need to know delivery dates so they can make sure clean tanks are ready.
11. From [May 23rd, 2022 meeting](#): **IAR, SwRI, and Afton labs** to let group know about stand options (as per Amol Savant's comments from prior meeting, see page 4 of [May 16th minutes](#))
12. From [May 23rd, 2022 meeting](#): **Haltermann** to coordinate with the labs to collect RVP data of the new fuel.
13. From [June 2nd, 2022 meeting](#): **Fuel contract team** to discuss the fuel matrix changes and send back to the panel for review by June 13th, the expected date the CoA for the new fuel batch would be ready.
14. From [June 2nd, 2022 meeting](#): **Travis Kostan (SwRI) and Rich Grundza (TMC), and any other volunteers** to take a more careful look and confirm with the labs that the conclusions we quickly reached during the meeting re: the directional change to candidate data from updated severity adjustments remain the conclusions. ← **COMPLETED**, see [June 13th meeting](#)
15. From June 13th, 2022 meeting: **Haltermann** to schedule a meeting with the labs to discuss how the remaining 12k gallons of current batch of fuel is allocated.
16. From June 13th, 2022 meeting: **Haltermann** to send to the group: the CoA of the new batch of fuel when it is available, along with the CoA of the current batch of fuel for comparison.
17. From June 13th, 2022 meeting: **The Chair and TMC** to present the RAC issue to ILSAC at their next meeting on June 21st.
18. From June 13th, 2022 meeting: **TMC** to present the RAC issue to the dexos committee at their next meeting on June 21st.

Next call: Wednesday, June 22nd, 2022 at 1:30 PM EST via Webex

Meeting Details:

Minutes from prior 2 meetings have been posted:

[VMinutes20220523ConferenceCall.pdf \(astmtmc.org\)](#)

[VMinutes20220602ConferenceCall.pdf \(astmtmc.org\)](#)

Meeting Agenda:

- Discuss new fuel batch
- 940 RAC target update

Prasad Tumati (Haltermann) updated that we have 2 ISO tanks (12k gallons) remaining of the current batch of fuel. The blending of the new fuel batch is completed and samples were sent out on Friday the 10th. The analysis was received today and RVP was slightly off and Haltermann will need a couple days to fix it. They plan to have the final CoA soon, which will be posted on the TMC site, and contacted logistics for delivery to the labs for early week of June 20th. Haltermann will send the group the current CoA for side-by-side comparison.

Re: the remaining 12k gallons of the current fuel batch, Amol Savant (Valvoline) inquired if it was going to be rationed or sold as some labs may want to purchase more fuel in the next few weeks. Prasad Tumati (Haltermann) will hold a meeting this week with the labs to decide how the remaining fuel is allocated.

The Chair transitioned to the next topic: RAC. He summarized the key subject raised by Nathan Siebert (GM) and Mike Deegan (Ford) was a reasonable technical question for this panel to answer: what would be the impact of resetting 940 RAC targets on candidate results. The Chair reported that Travis Kostan (SwRI) investigated and came up with a spreadsheet to show the outcomes based on different scenarios. Travis went through a number of examples (one of which is copied below) and showed that the candidate results would be milder, up to about a tenth of a merit. The group did not voice any objections or request to do a peer review of Travis' analysis. The Chair confirmed if this analysis answered the question, to which Nathan Siebert (GM) affirmed. The Chair thanked Travis, Rich, Al, and team for thoroughly investigating this issue.

<u>Current</u>		<u>Proposed</u>				
940 Mean (Merits)	7.50	940 Mean (Merits)	7.77			
940 Mean (Transformed)	0.9155	940 Mean (Transformed)	0.8041			
940 SD (Transformed)	0.2260	940 SD (Transformed)	0.234			
Lab 940 Average (merits)	8.00	Lab 940 Average (merits)	8.00			
Lab 940 Yi Average	-0.98	Lab 940 Yi Average	-0.47			
Other Reference Oil Yi Average	-0.50	Other Reference Oil Yi Average	-0.50			
Lab Zi	-0.74	Lab Zi	-0.49			
Lab SA	0.1628	Lab SA	0.1069			
Candidate Result (Original)	8.9	Candidate Result (Original)	8.9			
Candidate Result (Transformed)	0.0953	Candidate Result (Transformed)	0.0953			
Candidate Result (Transformed with SA)	0.2581	Candidate Result (Transformed with SA)	0.2022			
Final Candidate Result (Merits)	8.71	Final Candidate Result (Merits)	8.78			

Frequencies		
Level	Count	Prob
931	15	0.10274
940	56	0.38356
1009	15	0.10274
1011	50	0.34247
1011-1	10	0.06849
Total	146	1.00000

The Chair reported that prior to this SP call, there was a follow up meeting he had with Al Lopez (Intertek), Travis Kostan (SwRI), Nathan Siebert (GM), and Mike Deegan (Ford). He reported that there are deep concerns about the implications of resetting the 940 RAC targets, particularly with regards to the premise that if the 940 RAC targets were not set correctly, then the specification limits may have been set incorrectly. Nathan confirmed this was an accurate assessment of the concerns raised. The bottom line is that both Mike and Nathan are not prepared to not entertain the motion to reset 940 RAC targets without an effort to address the deeper concerns above. Mike confirmed this statement and stated that we need to do more due diligence on this issue.

The Chair therefore did not support voting on the motion to reset the 940 RAC targets at this meeting unless someone seconds it and insists to take the vote. He recognized that the vote would not be unanimous and even if it carries using Robert's Rules, it would have consequences beyond this SP. He opened up the floor for input on how we can draw

appropriate action items to address the OEMs' concerns. The discussion points are captured below:

- Rich Grundza (TMC) commented that this isn't an easy situation when both sides are right. Pushing forward has the potential to make a bad situation into a worse one so voting on the motion is not the right thing to do.
- Al Lopez (Intertek) offered that we have to make our best effort on these targets as we have a lot more data now. Retroactivity is not in our jurisdiction but fixing an error is in our jurisdiction. Al offered that we should update the 940 RAC targets now ahead of the fuel matrix.
- Pat Lang (SwRI) said that from a process standpoint, it's the SP's due diligence to address these types of things. We recognize targets may not have been set correctly and we're trying to fix it but if there's uncertainty, there's no point in going forward with the motion. In summary, it's the SP's due diligence to address these things and it's been identified statistically, and we need to keep this on the table.
- Ben Maddock (Afton) believed that applying targets retroactively is the correct option.
- Amol Savant (Valvoline) voiced support for the 940 RAC target update.

The Chair summarized the group's options: 1) do nothing, 2) reset 940 RAC targets from day 1, or 3) reset 940 RAC targets from 2 weeks' time going forward. With no support for option 1, that leaves only option 2 and option 3. Discussion points are listed below:

- Amol Savant (Valvoline) commented that panels have done option 3. The option of applying retroactively (option 2) is not in this group's jurisdiction.
- Rich Grundza (TMC) offered that if requested, TMC can re-do the severity adjustments for each of these 940 tests but will not go back and change any status of any stand with respect to calibration status.
- Amol pointed out Appendix G in the LTMS document that states that reference oils should be updated after 10, 20, and 30 tests:

Reference Oil Target Updates

Reference oil targets are updated @ 10, 20, and 30 tests. Updated means at 20 and 30 should not differ by more than 0.25s from the 10 test targets. Where 0.25s is exceeded, a thorough investigation as to the cause should take place before the updated targets are implemented. Results from new labs or stands entering the LTMS should not be used for target updates. Targets are frozen at 30 tests. Reference oil assignment should be equally weighted amongst all reference oils until 15 tests are received on each reference oil.

Amol pointed out another section in Section F:

GUIDELINES FOR DEVELOPING REFERENCE OIL TARGETS AND SEVERITY
ADJUSTMENT STANDARD DEVIATIONS – B.01 & B.02 TESTS

The following are guidelines for developing reference oil targets and severity adjustment standard deviations for B.01 and B.02 tests. Each surveillance panel has discretion over the final process used for their specific test.

Initial Reference Oil Targets

The initial target means and standard deviations for a reference oil should be based on a data set of operationally valid tests run on ASTM calibrated stands. The number of tests needed to establish initial targets is left to the judgment of the surveillance panel; however, every effort should be made to obtain at least five (5) tests. When laboratory bias exists, test results in the target data set should be severity adjusted prior to calculating targets. Target values should be expressed in the metric, i.e. original or transformed units, deemed appropriate by the surveillance panel.

Reference Oil Target Updates

A surveillance panel has the discretion to update reference oil targets at any time. At a minimum, targets for each reference oil should be updated when 10, 20, and 30 tests have been completed. When laboratory bias exists, test results in the target data set should be severity adjusted prior to calculating targets.

- Travis Kostan (SwRI) confirmed we do exceed 0.25s and that a thorough investigation was done. He also stated that option 2 is what we've typically done any time we make a change like this. Option 3 didn't make sense because it would just delay the severity adjustment catching up.
- Rich commented that years ago, the 10, 20, 30 target review guidelines were always applied. But since we went to the new LTMS, one of the edicts was that we shouldn't be updating the targets because it's a line in the sand that tells us everything we need to know. The only things we adjusted in recent history is the standard deviations. He explained that part of the logic behind that is we're not looking at precision as we did with the previous version of LTMS. The Chair asked had we updated 940 targets after 10, 20, 30 tests, would we have reset at test 1 or from that day forward. Rich replied that historically, we calculated targets at those discrete points.
- Doyle Boese (Infineum) commented that the concern with changing the means is that we were concerned about the shifts in the severity since the target was put in place. In this case, we have concerns stemming from how we should allocate the weighting, that the initial target was wrong. He explained that this is different from the problem we're trying to avert by not updating the targets. We're trying to ensure that we don't include severity differences since the onset of the test in the updated targets. Rich agreed with this comment. Rich added the statement is G is a recommendation, not a requirement. The process we're following is right. If we find an issue, we discuss it, and then we do what's right.
- Andrew Stevens (Lubrizol) recalled that in single cylinder diesel testing, they noticed a shift and went back to the date when the new liners were introduced, and then added the new correction going forward. He agreed with others that retroactive application is beyond this group.
- Re: precedents, Amol pointed out that LTMS lists all the standard deviations and targets. VG is shown below as an example, where one can see that targets were updated for RO 1009 several times:

Sequence VG Reference Oil Targets (continued)														
Oil	n	Effective Dates		AES		RCS		AEV		APV		OSCRNSLG ⁷		Hot Stuck Rings
		From ¹	To ²	\bar{X}	S	\bar{X}	s	\bar{X}	s	\bar{X}	s	\bar{X}	s	Maximum Allowable
1009	3	8-1-02	10-4-02	8.00	0.22	9.25	0.09	8.93	0.16	7.80	0.54	1.823	0.739	0
	5	10-5-02	5-14-03	7.78	0.36	9.15	0.22	8.93	0.11	7.84	0.40	2.670	1.303	0
	10	5-15-03	2-16-04	7.82	0.46	9.23	0.19	9.01	0.16	7.85	0.33	2.362	1.337	0
	20	2-17-04	11-02-04	7.87	0.43	9.29	0.19	9.00	0.15	7.80	0.29	2.274	1.044	0
	30	11-03-04	7-28-11	7.94	0.52	9.29	0.18	8.99	0.11	7.79	0.28	2.200	1.038	0
	30	7-29-11	9-24-13	7.94	0.52	9.29	0.18	8.99	0.22 ⁷	7.79	0.43 ⁷	2.200	1.038	0
	30	9-25-13	***	7.94	0.52	9.29	0.27	8.99	0.22 ⁷	7.79	0.43 ⁷	2.200	1.038	0

1 Effective for all tests completed on or after this date.

2 *** = currently in effect.

3 Pooled s from GF-3 matrix analysis.

4 GF-3 matrix n-size

8 See TMC Memo 12-

5 Pooled s from fuel matrix analysis

6 Fuel matrix n-size

7 Updated AEV and APV standard deviations using last 30 tests, including fuel approval results for oil 925-3, 1006-2, 1007 and 1009

- Al Lopez (Intertek) asked why the shift in fuel changed only AES, and not RAC. Doyle Boese (Infineum) reminded him that it was not statistically significant. Rich Grundza (TMC) furthered that if we apply the new targets, it would still not be statistically significant (confirmed by models). Al asked what happens after we gather more data. Doyle said we could use the same data we used to set targets but under a different definition (different weighting of labs) and we would get a result close to what we have now. He explained that this isn't being changed because there's more data, but rather, this is being changed because of the concept of weighting of the various labs. Al thanked him for the reminder.

Nathan Siebert (GM) agreed something has to be done. His concern is that the customer is less protected. ILSAC and GM would have to go back and discuss if we need to make adjustments to our limits to compensate. He stated that nothing can be approved for ILSAC or dexos until we get this sorted out.

- Andrew Stevens (Lubrizol) pointed out that Travis' analysis showed that the customer would be protected. Nathan countered that Travis' analysis showed that customers are not worse off but going forward, customers are not as well protected when this adjustment is in effect.
- Mike Deegan (Ford) confirmed that this will have to be discussed at ILSAC.
- Al Lopez (Intertek) asked the statisticians if we are making the test milder. Doyle Boese (Infineum) answered that we're correcting an adjustment for lab differences that we are making now to be proper. It was not proper based on how it was done originally. The changes we're making now are proper. In Doyle's mind, mathematically, this test had been giving severe results relative to target. Making this correction would correct the severity to the intended position. Travis Kostan (SwRI) was in agreement. Nathan stated that this would be at the detriment to the customer and that dexos and ILSAC customers had targets set based on old targets. Doyle countered that he did not agree but that making an adjustment would now be proper to all parties. Nathan expressed concern that an engine is more likely to sludge and that ultimately, limits were set based on old data. The limits may have been set differently if we had a different set of data. Doyle added that if the labs were not equally weighted, the targets we would have set would be very close to what's recommended now. Al Lopez highlighted there's no change in performance based on what he's seen in the ratings.
- Robert Stockwell (Oronite) remarked that the differences are lost in a couple hundredths but that everyone's points are valid and reasonable. He asked why this and why now when the current batch of fuel will soon be gone. Robert said one could argue that every target for every test is off. He agreed with everyone and suggested that since we have OEMs opposed, the easier path is to align with their wishes and focus carefully on getting the numbers right the next time.

- Travis Kostan (SwRI) noted that while the differences on candidates is small, it can be a big difference for reference tests and calibration.

The Chair asked for guidance from Mike Deegan (Ford) and Nathan Siebert (GM) on what they would like the SP group to do. Mike asked for more time to review with the Chair, Nathan, and Rich Grundza (TMC). He asked the Chair and TMC to present this item to ILSAC at their next meeting on June 21st. Nathan asked TMC to present this item to the dexos committee at their next meeting, also on June 21st. The SP to reconvene on the 22nd to discuss the feedback from ILSAC and GM, the semi-annual report, the CoAs from Haltermann, and stand selection/suggestions for Row 1 of the fuel matrix. The Chair reminded the group that he will present these items to TGC, which will be in the spirit of the group to do things differently in the future.

Meeting adjourned at 2:26 PM EST.