Sequence V Surveillance Panel Meeting July 15th, 2020 2 PM EST

Roll Call:

Afton: Ben Maddock BP: Jorge Agudelo

Ford: Mike Deegan, Ron Romano

GM: Bradley Cosgrove Haltermann: Prasad Tumati

Infineum: Doyle Boese, Caroline Laufer, Andy Ritchie (Chair)

Intertek: Al Lopez

Lubrizol: Jerry Brys, Jason Gingerich, Joseph Gleason

Oronite: Robert Stockwell

Shell: Jeff Hsu

SwRI: Ankit Chaudhry, Travis Kostan, Pat Lang, Dan Engstrom

TEI: Dan Lanctot TMC: Dylan Beck Valvoline: Amol Savant

Willis Advanced Consulting: Angela Willis

Meeting Summary:

The panel met to discuss the potential introduction of TMC-931 to replace 1009-1. Ford explained that they met with the supplier of TMC-931 and although there is not any data on this specific oil, there was a model prediction based on a number of test results which predicted borderline Sequence VH performance. The panel expressed a desire to not repeat what happened when 1009-1 was tested (see Oct 2019 minutes), and proposed and discussed several options (see meeting details below). A motion was proposed by Ben Maddock (Afton) and seconded by Ron Romano (Ford):

Lab will reference with 931 and will extend previous reference by 3 months. After that, the next one would carry for 9 months on a known reference oil (940 or 1011). However, the panel agreed that another meeting is needed after the actions below have been completed to decide how TMC-931 is introduced.

Actions:

- 1. SwRI to review its stand and reference status and report back to SP.
- 2. TMC and statistician(s) to discuss options and bring proposals back to SP.

Next meeting: Wednesday, July 22nd, 2 PM EST

Meeting was adjourned at approximately 2:55 PM EST

Meeting Details:

Chair's comments: The purpose of this meeting is to review the situation with 931. At the last call, the panel asked the supplier of 931 to talk with Ford about the oil submission.

Ron Romano (Ford) reported that it looked fine. He explained that although there's no data on this specific oil, there is a background dataset based on similar oil compositions and based on the modeling predictions, 931 should be a borderline oil.

Since there are only simulated data points, Jerry Brys (LZ) suggested that perhaps we need to run 1-2 tests before the panel makes a commitment to more runs. Al Lopez (IAR) agreed that we would not want to waste any runs and reminded the panel that our experience with 1009-1 was not something we want to relive. Al requested that if we do test 931, we do not let it go live into the control charts without a target; however, setting a target requires several tests. Given the current situation, Al added that we need to find a compromise as we cannot run 10 tests to establish a target. Jerry agreed that we do not want to make another mistake and stressed that the model can say one thing but until the oil is actually run, we do not know for sure.

The Chair summarized that we have 2 options: 1) as activity levels are low, we do nothing for now, recognizing that one of the current two calibration oils 1011 has a very limited inventory or 2) introduce 931 and given the concerns raised, that we minimize risk of disruption to the labs. Dylan Beck (TMC), filling in for Rich Grundza, added that regarding the second option, it would be ideal to have at least 6 data points but maybe we could go lower. He agreed that having results go into the control chart would carry a lot of risk. Ron Romano (Ford) asked how would we know if the result is severe or mild if we do not run the oil and put the data in the control charts. But he understands, as everyone is saying, that we need data; and asked if TMC would be willing to extend the references. Jerry Brys (LZ) commented that in the past, these kinds of tests have always been done on a lab-donated basis but due to the current situation, this may be an impossibility.

To test this assumption, Jerry Brys (LZ) asked if the labs would be willing to donate 1 test.

- For Lubrizol lab, Jerry would have to inquire and get approval from his management.
- Al Lopez (IAR) proposed an idea: similar to when we removed 1009-1, the stands that calibrated 1009-1 remained calibrated because we went back to the previous data point from the control chart. Al clarified to say that if we run 931, the stand would remain calibrated on the previous data. He furthered that the data point could be used for target setting but would not go live on the control charts. The stand would still be available to run and generate revenue and the test would be considered a semi-donated run. If a test is just donated, we would only get one extra test at the end. But when test activity is low, there would be no payback. Ron Romano (Ford) asked if an option then is to hold off testing until business picks back up. Al concurred that that could be an option; however, with 1011 relatively low in inventory, we would have to assess how long we can last
- Dan Engstrom (SwRI) supported Al's approach. A donated test would be difficult now.
 We'll have to wait to see how it pans out and would have to get approval from management.
- Ben Maddock (Afton) agreed with Al's point on not donating a run, but rather run 931 and extend from the previous run.
- Amol Savant (Valvoline) in agreement.

Ron Romano (Ford) asked if we have ever doubled a reference period without a reference test. Al Lopez (IAR) recalled that when we were short on fuel, we extended by a few months. After some discussion on when each lab's stand(s) would be ready for a reference, Al Lopez (IAR) noted that we might only have 3 tests which would not be enough and reminded the panel that we would need 6 to set the target. Dylan Beck (TMC) confirmed that 6 data points would be needed to set the target, but perhaps fewer could be considered. Doyle Boese (Infineum) cautioned that it would be risky to base all the severity adjustments from only 3 tests. Doyle recommended that TMC comes up with a proposal with a couple of alternatives and that he and the other statisticians can help TMC with this. He suggested that the plan should work in 1011 to make sure we can do this before 1011 depletes.

With test activity very low now, Ron Romano (Ford) commented that we could get 6 months before we get 15 tests and proposed we could extend the reference for at least one of the parameters (6 months OR 15 tests). Jeff Hsu (Shell) asked if 931 does not come out as expected, what would we do to find the root cause to find out what happened. Ron replied that we would need to run a reference test. Jeff commented that that would open up a lot of questions for the sponsor's test. Ron Romano (Ford) suggested that we wait to see what the statisticians and TMC come up with.

The Chair asked if the sponsor could live with taking out 6 months of spend or go with 15 tests. Ron Romano (Ford) said it was a suggestion. He would not be comfortable with 6 months and would prefer to keep it the way it is with donated tests and with the hope that business will pick up by next year. Ben Maddock (Afton) proposed to split the difference: as it seems like no one is comfortable about 6 months, what if we do a 3 month extension. Ben motioned: Lab will reference with 931 and will extend previous reference by 3 months. After that, the next one would carry for 9 months on a known reference oil (940 or 1011). Seconded by Ron. However, an issue was raised by SwRI. Dan Engstrom (SwRI) explained that they have been rotating the stands they reference during these slow times. He would prefer to review offline and to let us know in a week. Ron assured that waiting a week was fine and would like SwRI to be comfortable in this plan. The Chair concluded that we would resume next week and start where we left off with the proposal motioned by Ben.

Jeff Hsu (Shell) added that we should keep in mind that for some of these low reference oils, it may not be possible to get the same low quality components anymore (such as poor quality Gr I base stocks). The Chair agreed that reblending can be an issue especially for old blends as sometimes the original base oils were no longer available.