Unapproved Minutes of the December 11, 2012
Sequence VG Surveillance Panel
Conference Call

The meeting was called to order by Chairman Andy Ritchie at 2:00 PM EST.

A list of the attendees on the call is included as Attachment 1.

Chairman Richie reiterated his intention to hold Sequence VG Surveillance Panel Meetings each month, at least until the fuel approval matrix is completed, and perhaps beyond that to address VH development issues. These monthly meetings will be held on the second Tuesday of each month beginning at 2:00 pm EST.

Chairman Ritchie listed the agenda items he would like to cover in this call:

1) Review and approval of minutes from November 27, 2012 call
2) Status of the new VG fuel batch preparation
3) Review of Statistical Group's design for approval of the new fuel batch
4) Old Business.
5) New business

Chairman Ritchie asked if there were any corrections to the minutes from the November 27, 2012 VG Panel conference call. There being none, it was moved by Ed Altman and seconded by Matthew Bowden that the minutes be approved. The motion passed unanimously.

Chairman Ritchie asked Mark Overaker to provide an update on the status of development of the new fuel batch. Mark indicated that the blending was almost completed (or in his words "98% done"), and that they will certainly be able to meet the timetable laid out during the last VG call, and may actually be ahead of schedule, possibly by as much as one week. This should enable Haltermann to ship fuel to the labs by the first week in January. This should also enable the matrix testing to begin by the week of January 7 with completion targeted for early February 2013.

Chairman Ritchie then asked Rich Grundza to discuss the process he used to select which labs would participate in the matrix testing. Rich indicated

that, after talking to all of the labs, he had received commitments from 3 of them to participate – the two San Antonio labs, and one of the dependent labs (Afton). Doyle Boese then went through the Statistical Group's presentation describing the design of the matrix (See Attachment 2). The proposed design includes 3 labs, 5 stands (2 at each of the San Antonio labs and 1 at Afton), and 3 test oils. There would be 3 runs on each stand for a total of 15 runs, which would allow lab/stand and oil differences to be estimated. The 3 reference oils would include Oils 1009, 1006-2, and either 925-3 or 940, whichever of the last two oils the VG Panel decides would be best to use. According to the matrix design, the VG Panel would decide after the first run (5 tests) and the second run (5 more tests) whether and how to continue.

Al Lopez asked why the design called for 3 tests on Oil 925-3/940 in Lab A and 3 tests on Oil 1009 in Lab G during the first 2 runs, instead of 2 tests on each oil in those first two runs. Jo Martinez responded that the Statistical Group wanted to be able to determine repeatability in those first two runs, and that the proposed design was the best way to accomplish that. As for choosing between Oil 925-3 and Oil 940, Ed Altman argued that, since this was very likely the last chance to establish the equivalency between the two oils, Oil 925-3 should be chosen because data on Oil 940 with the new fuel batch would become available later, as reference testing proceeded. Rich Grundza indicated there was probably enough 925-3 to run the first row of testing using containers of unopened 925-3. There is also approximately 49 gallons of 925-3 available from retains in their original cans which had been stored inside. These retains have been homogenized by TMC. Following further discussion, it was agreed unanimously that the Oil 925-3 required to conduct the complete matrix should be obtained from this homogenized source. At this point, Ed Altman moved that the Panel accept the matrix design proposed by the Statistical Group, and that Oil 925-3 be the third oil in the matrix, along with 1006-2 and 1009. Bill Buscher seconded this motion. A roll call vote was conducted, and the motion passed unanimously.

Old Business: No items of old business were brought up.

New Business: Ed Altman reiterated his concern about introducing a new reference oil 940 at the same time that a new fuel batch is introduced. He proposed modifying the way oils for stand references are chosen, to increase the speed as to when calibration data with Oil 940 become available. While

not making any commitment to do so, Rich Grundza agreed to consider such an action.

Ron Romano provided an update on Sequence VH development. Thus far, two results have been obtained with the new engine using test conditions similar to VG conditions. Both results were mild on sludge by ~0.75 merits. The test development group is reconsidering the choice of conditions, stage times, etc., in an effort to modify the test conditions to increase severity, particularly on sludge. They have also encountered plugging of screens, particularly with some of the smaller screens used for different purposes in the VH engine. Ron commented that it is now looking as if the test development phase of the project will not be completed by the end of 2012 as originally anticipated.

Al Lopez, going back to the fuel approval matrix design, suggested first running the 3 Oil 925-3 tests listed for Run 1 in the third row of Slide 3 in Attachment 2, to be certain that this oil is providing sufficient sludge with the new fuel. It seemed to be generally agreed that this was a good idea, particularly given the not-so-pressing need to approve the new fuel batch rapidly. Chairman Ritchie suggested that all labs review their supply of the existing fuel batch, and come to the next VG conference call prepared to act on this suggestion.

Al Lopez also questioned how the new fuel batch will be distributed to the labs (i.e., what quantity, shipping date, etc.). Raham Kirkwood pointed out that for the last fuel batch approval matrix, oil samples were taken at the fuel delivery truck, from the holding tank at the lab, and at the stand, for comparison with fuel analyses data from Haltermann. Bill Buscher suggested shipping a full tanker to the two San Antonio labs to split. Afton indicated they couldn't start until after January 8. Intertek indicated they could run as soon as they receive the new fuel, if given enough notice in advance. SwRI agreed they could also be ready to run almost immediately upon receiving the new fuel. The stats group recommendations are included as attachment 2.

Next Meeting: The next regularly scheduled conference call will be Tuesday, January 8, 2013 at 2:00 PM ET.

Attachment 1

Attendees during 12/11/2012 Sequence VG Surveillance Panel Call

Afton – Ed Altman, Christian Porter

Ford - Ron Romano

GM –Bruce Mathews

Ashland - Timothy Caudill

BP Castrol - Timothy Miranda

Haltermann – Mark Overaker

Infineum – Andy Ritchie, Doyle Boese , Mike McMillan, Gordon Farnsworth

Intertek – Al Lopez

Lubrizol – Jerome Brys, Chris Mileti, Jessica Buchanan

OHT – Matthew Bowden

Oronite– Jo Martinez

SwRI – Bill Buscher, Raham Kirkwood, Janet Buckingham

TEI – Clayton Knight

TMC – Rich Grundza

Seq VG Fuel Approval Matrix Design

VG Stats Group

December 5, 2012

Matrix Design Assumptions

- Lab(Stand): A(2), G(2), D(1)
- RO: 925-3/940, 1006-2 and 1009
- 3 runs each stand
- Lab/stand and oil differences estimated
- Error DOF: 8

Matrix Design

Lab	A		G		D
Stand	1	2	1	2	1
Run 1*	1009	925-3	925-3	1009	925-3
Run 2*	925-3	925-3	1009	1009	1009
Run 3	1006-2	1009	1006-2	925-3	1006-2

* Decision point, Surveillance Panel to evaluate after completion of tests