



COMMITTEE D02 on PETROLEUM PRODUCTS, LIQUID FUELS, AND LUBRICANTS

CHAIRMAN – Scott Fenwick, National Biodiesel Board, PO Box 104848, Jefferson City, MO 65110-4898, United States (800) 841-5849, Fax – (537) 635-7913, e-mail – sfenwick@biodiesel.org

FIRST VICE CHAIRMAN – Gregory C Miiller, Tannas Co, 4800 James Savage Rd, Midland, MI 48642, United States (989) 496-2309, Fax – (989) 496-3438, e-mail – gmiiller@savantgroup.com

SECOND VICE CHAIRMAN – James J Simnick, Bp Global Fuels Technology, 150 Warrenville Rd, BP Technology Center Mail Stop 603-2W, Naperville, IL 60563, United States (331) 702-4071, Fax – (630) 420-4831, e-mail – simnicij@bp.com

MEMBERSHIP SECRETARY – Ian P Mylrea, Stanhope-Seta, 70 Bramley Drive, Hampshire, RG27 8ZF, United Kingdom (193) 2 5-4589, e-mail – im@stanhope-seta.co.uk

STAFF MANAGER – Alyson Fick, (610) 832-9710, e-mail – afick@astm.org

SEQUENCE VI SURVEILLANCE PANEL

Date – 15 Dec 22

ATTENDANCE

SWRI	Dan Engstrom, Christine Eickstead, Pat Lang, Travis Kostan, Mike Lochte
INTERTEK	Adrian Alfonso
LUBRIZOL	Andrew Stevens, George Szappanos
AFTON	Bob Campbell, Ben Maddock, Amanda Stone
ORONITE	Robert Stockwell, Ricardo Affinito, Jo Martinez
INFINEUM	Andy Ritchie
TMC	Rich Grundza
GM	
TOYOTA	
OHT	Jason Bowden
TEI	Dan Lanctot
FORD	
VALVOLINE	
HALTERMANN	William Hairston
GAGE PRODUCTS	
BP	
EXXONMOBIL	Paul Rubas
SHELL	
IMTS	
HALTERMANN CARLESS	Izabela Gabrel

1. **Attendance. See table above.**

2. **Approve minutes from 12/2 meeting**

Motion to approve – Andrew Stevens

Seconded – Adrian Alfonso

Motion passes unanimously

3. **New business**

3.1 HF 20003 Update

- *Off-spec*

- *Shipping delays*

Paul – We wanted to purchase a batch of test fuel, and were aiming for delivery at the end of October. Received a note that the fuel was off-spec and needed some adjustment. Haltermann was not able to offer a delivery date.

Eventually we got a delivery scheduled for mid-November. The fuel was delivered with a CoA that was issued back last year. There was no indication that any adjustment had been made or fuel really met specs with the adjustment. Have been communicating with Haltermann to show that fuel meets spec or an updated CoA and haven't gotten documentation back.

Adrian – Is this the current batch?

Paul – We asked for batch N-00007 in early October, landed on an Oct. 31st desired delivery date. Eventual delivery date was 14 Nov. The fuel came with the original CoA, and nothing reflects that fuel may have been changed

Adrian – We agreed on blending a big batch, and believe we're approaching a need for another batch. Wasn't sure when the new batch is going to be introduced.

Paul – That's another issue that we should figure out (when another batch is needed).

William – I think it's a terminology issue rather than a fuel problem. We didn't adjust the batch, but rather used the wrong terminology. This was routine maintenance of RVP; every so often RVP will creep down. We add butane in routine RVP maintenance, not really an adjustment for off-spec.

Paul – Nonetheless, when adding a new component, vapor pressure, etc. may be slightly different than the new spec. There is no evidence of tests to show that the adjusted fuel is on spec

William – There's a window that it stays within. As long as it stays in that window we don't issue a new CoA for vapor pressure adjustments. That's something we've never done. We don't run a full analysis every time we add butane. In summer this happens once a month

Bob – Contractually, any time that the batch is adjusted it gets a new CoA and gets a suffix added to batch. That way there's a clear distinction of when it was tampered with. Any time you have to adjust the batch, you have to increase the suffix and have to send new CoA with updated analysis

William – That's fair, I can do that

Rich – In addition, you have to notify TMC so that the TMC can review and the website can be updated. Also, Haltermann needs to do a quarterly analysis. If you're bumping RVPs every month, that should solve this problem. Quarterly analyses become meaningless if you having to adjust that frequently.

William – I will make sure that it's in place. Who are you working with at Haltermann?

Rich – Been interacting with Jarvis Brown

Paul – Been interacting with Erissa Deanda

William – There has been lots of turnover in CSR, but you should see communications get a lot better. I'll make sure it gets taken care of.

Andrew – Just to be clear, it's too much to do CoA every month but you have to adjust the fuel every month in summer?

William – We're going to do a new CoA every time batch is adjusted.

Paul – Are we approaching the need to make new batch of fuel or not? Do we have any information?

William – I'm reaching out to see inventory levels and will circle back later in the meeting.

Rich – I think that the new batch should be available

Mike – I think that the new batch is already produced

William – I haven't heard that we've been asked to make another batch yet

Andrew – When putting together the ASTM update for last week, I called and was told it's already available. I thought I spoke with William.

William – We make one batch at a time and have never started a new batch until the current batch is down to the last bit. I may have misspoken, but we have this batch available and have not started new batch.

Mike – We went through the bidding process and awarded the next batch to Haltermann

William – I will get with Ian; I was not aware that we were awarded the next batch

Mike – The new batch was supposed to be finished March 2023 and ready for purchase

Andrew – Shared email with batch details

William – Sorry, I didn't understand. Yes, we have batch -00008 available.

Paul – The supply that was just sent to ExxonMobil in mid-November, was that still -00007?

William – No, that was -0008

Adrian – We're all still on the current batch, not the new batch. But it would be a good exercise to double check.

Ben – The current batch is batch -00007? We just got in an order and -000013 is the CoA that was given

Adrian – Was that for EEE or EEE w/ DCA?

Ben – EEE with DCA

Rich – The recent data entry with the fuel CoA that's going up on TMC website is the 8th (a week ago). Batch N-000013

Ben – That's what Afton received and CoA shows analysis date of 12/4

William – We should be on the new batch. The batches are built on top of each other after reaching minimum heel, and there's only one tank. We're on the new batch now and going to make sure we have everything right. I'm trying to get some answers while we're on the call here. Sorry, I was on the wrong fuel. We just completed this batch.

Paul – If batch -00008 was already built on top of batch -00007, we may not be able to get an updated CoA for batch 7 that was just sent.

William – We may have data, but not sure. Likely have retains and will work with Paul to see what data can be provided.

Paul – Going forward, next batches should all be batch -00008?

William – Yes

Ben – So it's batch -00008, but we received -000013?

William – No, it's not batch -00008. It's -000013.

Paul – So the batch numbers are not sequential, skipped from -00008 to -000013?

Rich – Yes, seems to be not sequential. The new VH batch is N-000010. N-000011 is out right now for regular EEE. Ideally we should not see -000013 in a IIH test. If we do, then something's amiss

William – It sounds like our numbering system doesn't match yours, something is confusing. I will look into it.

Andrew – Any more questions or comments? Thanks for bringing up this topic Paul. William is going to get new information/updated information as quickly as we can. Don't need to put timeframe on it?

William – No, I'm going to start working on it this afternoon and supply information as quickly as possible.

3.2 Reblends of reference oils

- Status of 1011-1

- 543-1, 1010-2, and 542-5 introductions

Rich – I updated the information as of this morning. Not a lot but a few more slides. I want to talk about some things I saw in VIE. We rolled in 1011-1 roughly around April 2022. Means for FEI1 and FEI2 comparing 1011 and 1011-1. When compared to target, current results for FEI1 are .15% higher but dealing with a mild trend with 1011. All data on 1011 looks much closer to where 1011-1 is. Appears that, at least for FEI1, may not be too far off.

For FEI2 on 1011, all data is very close to on target. FEI2 is .1% milder for 1011-1

Standard deviations appear to be reasonable for FEI1 and variability is somewhat higher than original targets but slightly less than overall. FEI2 is somewhat lower than target variability but around what we saw when moving forward with 1011.

Showed whisker plots to show comparison. One thing that's apparent with both reference oils is that we have the extreme low results with 1011-1 that we see with 1011. Means look fairly similar when looking at all data. I don't know whether it's appropriate to do anything at this time.

Showed two cusum plots showing both oils. Out of the last 20 data points, 19 are 1011-1. Otherwise, all data is from the original blend. Appears that the original blend had been going milder for FEI1. A similar behavior is seen for FEI2. In this case, we're on the mild side of EWMA but not quite as mild as we saw with FEI1.

Data points for 1011-1 start around April 2022. Given its performance, I don't think it's appropriate to do anything other than continue on with original targets for 1011. All in VIF test.

Andrew – Any questions or commentary regarding this oil?

Rich – So, we're at a point where we're going to need to introduce 1010-2 and 542-5. Not quite there with 543; we still have some left at TMC and decent inventory at labs. Suspect we won't need to get into that until sometime later in next year Q3. I don't believe this test is conducive to trying to move references around and wait for calibration status and line up 6 tests, etc. Our only option we have is to go ahead and run them in and keep up. We'll get as much data as we can as quickly as we can. Then we can see how different they are and if we have to come up with a change in targets. We'll do it in expeditious manner.

Andrew – Any questions or commentary to Rich's statements?

Rich – The current VIE chart is for FEI1 and a similar one is below for FEI2. If we look at periods where leveling occurs, the areas are quite interesting. I'm trying to understand them, it's the same oil distribution that we specify. In the last case, the distribution is (6) 1011, (4) 542-4, and (2) 544. If we go to the previous leveling period (Oct 2021 – April 2022), the distribution is (9) 542, (9) 1011, and (3) 544. That's the mandated distribution per the LTMS document.

Yet, we know that 544 is close to target and 1011 is kind of mild and 542 is mildest. I tried to look at stand distribution and that changes some, but for the most part, in two large labs, it has been pretty much the same distribution. A little different period to period, but not significantly. This is extremely puzzling, but it seems like in the cooler months the data comes closer to target. I can't prove that, and don't have any data that confirms that, but it's really interesting. The stand mix doesn't change all that much, but number of stands dropping because of activity levels.

We see the same type of behavior in FEI2, though the leveling that occurred towards Sept./Oct. 2021 doesn't seem to show up in FEI2. My gut feel is that this may be our best shot at getting a reasonable estimate at how these reblends look, but I can't tell when or how that leveling is going to change. We're still slightly severe on the EWMA chart but much closer to 0. Same can be said of FEI1.

Andrew – Do you have a suggested follow-up for this? What’s the outcome from reviewing this data?

Rich – I’m at a loss to explain it, and not coincident with fuel changes or BL changes. If you model BL, you see a difference between BL3 vs. BL4 and BL5, but don’t see a difference between BL4 and BL5. Maybe a little bit of stand distribution, but in one case, the stands were completely different for one lab than other periods. Really bothering me, but can’t put a handle on it. Literally like looking for a needle in a haystack.

Andrew – Why is this bothering?

Rich – Bothering because leveling occurs in the data and I can’t find an explanation for it.

Andrew – This sounds like a pretty thorough analysis. Others can look into it and see if they see anything additional. Anything that you’re looking to result from this?

Rich – If we’re trying to introduce reblends, and this looks like relatively stable period, this would be the best time to do it.

Travis – I see what you’re saying with fluctuations, but you may not find anything there. In general, it seems like the test is stable and we have reblends to introduce. It’s a good time to do it since the test is stable. Just need to make sure after running a few of these we check to see if we need to adjust something

Andy – That’s what we’ve already done, business as usual.

Travis – Yes, with the exception of not looking as much as we should at it.

Rich – Yes, I agree with that. If we don’t see a drastic change, we don’t jump on it. I think we learned that lesson in the Seq. VH because I think we misdiagnosed something there. Generally speaking, we have had one or two oils that didn’t match but for the most part we haven’t seen huge differences between blends

Andrew – Your point’s well taken, we have to keep close eye on the reblends when they’re introduced. Rich, will you make announcement when moving to reblends?

Rich – Yes, I will also update the timeline as soon as the first runs go in to capture that as well.

Andrew – That’s the end of official agenda items, but Mike, can you provide an update on funding of tests for BL?

3.3 Review of BL meeting

Mike – We’re making a request to TMC to ASTM to fund the test. Don’t know whether that will be funded or not. Since the last time we met, ExxonMobil has offered to run one. Looking at 5 labs to do this.

Adrian shared his procedure for doing BL-BL testing and Rich’s spreadsheet of where data is recorded has been circulated too.

Andrew – Thanks, I wanted to make sure the full panel knew where going with the BL proveout. This is an opportunity to address it now.

Paul – Is there a round of testing for VIE and a round of testing for VIF? Or will VIE results transfer to VIF? Plan made for that yet?

Andy – VIE should read to VIF. As long as we do our due diligence, should be sufficient.

Rich – First off, historically when BL is approved for use, we authorize payment for tests run for comparison purposes. Not going to happen for a while and we’re sitting on the payment for these tests for BL2-BL6. I would like the panel to say those tests were acceptable for use and can go ahead and pay those.

Andy – I think those are acceptable to pay, the labs provided results

Andrew – Yes, I don’t see why those payments wouldn’t be authorized.

Rich – Yes, think that’s all we need

Andrew – Any objections? None. Good to go Rich.

Rich – Another thing I’m questioning – I’m not convinced that trying to develop a correction factor based on differences in weighted fuel consumed is the best way to determine the correction factor. My gut feel is that perhaps we need to see BL6 run as reference data and see where that falls to determine if we need a correction and what that correction should be.

Andy – Not sure that I understand what you’re asking.

Rich – I believe right now that where we're going is to run some tests on BL5 vs BL6 and hoping to get funding from ASTM to go ahead and do this. Then the question becomes where do we go from there?

Mike – My thought would be that we would start using it and then severity adjustments would clean up any difference along with anything else going on with the stand and oil. Targets are imperfect since they're set as the target of all of the labs. We rely on SAs to adjust.

Rich – I just wasn't sure what the process was, but I might be getting too far down the road

Andy – The reason doing this is that we think BL6 is different than BL2 or BL5. With sufficient data, we have a case for correction factor since BL6 is different than BL5. Without the data, can't judge that.

Rich – Don't need to discuss this now and go into great detail. To Mike's point, it is different than BL5 and then go from there.

Andrew – If the thought is that we'll just rely on SAs, then there's no reason to run the testing. My understanding is that we may end up having to implement some sort of correction factor. That's what the testing will reveal to us since initial testing shows enough of a change in BL performance that's too much to just roll it in

Andy – I'm just trying to understand the offset

Mike – Yes, that's what I meant

Andy – This is not the first time that this happened; there's an offset and if it's too weird for words in how to actually address it.

Rich – We may be going too far down the road.

Andrew – We have to see the data and see what path we need to take to address it. The best case scenario is that the data shows not much of a change and can roll BL6 in. Maybe it's wishful thinking, but we have to see.

Andy – I'm not convinced it's wishful thinking, but we have no choice. We have to collect data to see the offset and quantify if there's a significant offset. Quantify and move on.

Bob – On call the other day, the action item of the labs was to provide Jeff with their BL comparison test cost. Then Jeff was going to send a note to the board of what we need to request from ASTM. Has that all happened?

Andy – No. Here's the process – Jeff is going to collect data from the labs; that is going to establish the cost of collecting data. Andrew Stevens will write a letter to Andy Ritchie that will describe the problem, need, and funds which we're requesting the board of directors consider. It doesn't have to be the whole amount of money, but the amount of money which is relayed from Andrew Stevens from the info that Jeff and others provided to you. Andy will convene the board of directors to review Andrew's request and see if the board of directors wants to approve that.

Bob – Where are we in the process? Have labs communicated that number to Jeff?

Andy – I'd rather take this offline. In terms of time constraints, we can't do anything until the board of directors makes a decision to make an endorsement of the request and pass on the request to the ASTM board of directors. ASTM BOD will then make a decision on whether they want to endorse that request, transfer money from ASTM to TMC, and enable TMC to fund that work. If I'm being too picky here, I'm sorry but I'm not. I need letter from Andrew Stevens to me, and I'd rather not be looking at traffic on collecting that data. Bob, it's perfectly appropriate to ask labs how they're doing with that, but we need a separation of process.

Bob – I'm simply asking if labs have sent Jeff the information he needs. That's the only question I'm asking here. Afton has provided that info.

Andy – It wasn't clear what was actually being requested; we need to give labs a few days. I will work with Andrew Stevens to make sure that the letter gets to me when business opens in January, and will convene the BOD to have a call no later than the first week in January and take it from there.

Andrew – I will do that as soon as we get that info.

Andy – Please work with Jeff Clark; don't engage me until you have that info

Andrew – Yes, I will do that. Thanks for all commentary and hopefully we'll be able to get this moving early in the new year.

Andy – One item in clean-up, I don't anticipate this process will take a long time. It should be fairly rapid. Don't make an assumption that it will be endorsed; all we can do is follow the process. I'm guessing mid-Jan we will get an answer back.

Rich – We can't turn a supertanker on a dime

Andrew – Any more questions or comments? Other topics that anyone else wishes to bring up today?

William – Got the level of fuel of HF2003. Have 2000 gals of this. I will get all the other information and start working on it this afternoon.

4. Next meeting

Panel will reconvene in January.

5. Meeting adjourned.