

Sequence III Surveillance Panel Meeting

Teams

Thursday February 8, 2024 1:00 – 2:30 EST

Agenda

1.0) Attendance

Completed

2.0) Chairman Comments

The surveillance panel is in need of a secretary.

3.0) Approval of minutes

3.1) Minutes from 9/7/2023 Meeting

Minutes approved, motion Jason second Rich

4.0) IIH Action Items

4.1) Fuel Update – Haltermann


Sorry all A typo on the HF2003 batch number.

Nixon
January 28, 2024

Tank #	HF#	Product	Gallons (temp adj)	Reserve	Gallons (after heel)
62	HF2003	Sequence VI-E w/DCA N-000016 Sales	208,343	56,000	152,343
63	HF0003	EEE Lube Cert N-000017	299,549	56,000	243,549
79	HF0295	SVGM2 N-000010 B/S	183,217	155,000	28,217

Best Regards,
William Hairston

Haltermann Solutions™



Fuel status is OK

4.2) Introduction of Batch Code 6 Pistons – Grundza & Bowden

Hardware update Jason: Approximately 2-months of Batch Code 5 Pistons remaining. About 1.5-year supply of the current batch of rings.

Introduction of the new piston batch Rich: Rich shared the history of the BC5 piston introduction. 4 Labs participated 2x434 & 2x436 plus a run on 438 – tests held in pending status until approved. OHT will distribute the parts to each of the five participating labs this week (SwRI, IAR, Lubrizol, Afton & ExxonMobil). Robert made a motion seconded by Jason to start this process, but the motion was amended and is shown later in these minutes. Pat stated that we need to run these tests quickly to see if there is a bias. Rich clarified that we need to ensure that the results are within a range we can live with. Test number and time will be credited back to the lab reference interval (BC6 piston tests will be run on a referenced stand but will be treated like this test and time did not happen – result will be set aside as pending until we approve the pistons). TMC was given flexibility to adjust calibration intervals (for both time and runs) to allow existing parts to be consumed and an orderly transition to be completed – see motion below. Rich will explore assigning the oil to the BC6 piston run that was run on the previous

reference test on the stand to be used, Rich to decide assignments (likely 2 or 3 runs on each 434 & 436) – Statisticians are to provide guidance to Rich as they see fit. George and Rich discussed some options for running the test early or late in a calibration interval. Rich stated that some calibration intervals were adjusted when BC5 pistons were introduced. There is time to work through the details, and Rich will check with TMC management about precedent and rules. Amol clarified that the new reference would apply immediately after the expiration of the current reference, e.g. there cannot be a time gap if a lab wanted to wait before claiming the BC-6 reference. Extensions can be granted if it looks like the BC6 calibration approval delay might cause a lab issues, talk to Rich before the stand goes out of calibration, no advantage, no penalty (e.g. the next calibration interval will be adjusted accordingly). Todd said that the stats team understands that this data will be a top priority after it is generated.

Motion: Robert Stockwell / Jason Bowden: Allow BC6 piston introduction tests to be charted for calibrations purposes using the Level2 Ei limit. The panel has granted the TMC the latitude to adjust the calibration periods, etc. to facilitate the consumption of BC5 pistons and the orderly shift to BC6 pistons. This test does not count against the current reference test interval. The goal is to have these tests completed by the end of February 2024.

Pass

15 approve

0 oppose

1 waive

see votes on the attendance list

4.3) Update about rebuilding engines – Clark & Murdock

Brief update as meeting time had been consumed. First meeting went well, the next meeting will be soon. There is an extensive list of parts that will be needed to rebuild the engines. Amol asked how long OEM parts would be available – TBD. The engine is no longer being produced by Stellantis. Jason offered to procure larger diameter pistons and larger rings to assist in this effort. IMTS has been working the details.

4.4) Other Topics – Air Cleaner Resonator – OK per an engineer at Stellantis

- Test Method PN – 04861731AB (pg. 6 of method)
- New PN – 04861731AD

Haying had received approval for this change from the Stellantis engineer responsible for the part. There was a motion by Rich second by Adrian to allow the use of the new part number with an information letter to be issues. Motion passed with no negatives.

5.0) Old Business

5.1) TBD

6.0) New Business

6.1) TBD

Amol asked about long-term parts supply, added the discussion to 4.3). We need to understand what is needed for run 2. There are enough BC6 pistons for all remaining new engines. From my December 2023 ASTM update:

Sequence IIIH - hardware

- Enough engines are stored for the life of the category, AER Manufacturing is storing and distributing the engines and as of 20231128 AER had 1765 engines in stock.
 - Consumption of ~32 per month for the last 6-months.
- About a 0.5 year supply of Batch 5 pistons are in stock
 - Batch Code 6 pistons are in stock at the supplier
- About a 1.9 year supply of Batch 8 piston rings remain in stock at the CPD
- Current fuel batch is sufficient - A new batch of fuel will be blended when needed

7.0) Review / Update Scope and Objectives

8.0) Next Meeting TBD

9.0) Meeting Adjourned

Name/Address Phone/Fax/Email Signature: _____

Y = APPROVE

Votes:

Voting Members:

Name/Address	Phone/Fax/Email	Signature	Votes
Jorge Agudelo	jorge.agudelo@bp.com	_____	_____
✓ Adrian Alfonso	adrian.alfonso@intertek.com	<i>Y</i>	_____
✓ Jason Bowden	jhbowden@ohtech.com	<i>Y</i>	_____
Michael Deegan	mdeegan@ford.com	_____	_____
✓ Richard Grundza	reg@astmtmc.org	<i>Y</i>	_____
William Hairston <i>sd</i>	whhairston@jhaltermann.com	<i>Y</i>	_____
✓ Jeff Hsu, PE	j.hsu@shell.com	<i>Y</i>	_____
✓ Teri Kowalski	teri.kowalski@toyota.com	_____	_____
✓ Dan Lanctot	dlanctot@tei-net.com	<i>W</i>	_____
✓ Patrick Lang	plang@swri.org	<i>Y</i>	_____
✓ Dave Passmore	dpassmore@imtsind.com	<i>Y</i>	_____
Michael Raney <i>Tim Aukins</i>	michael.p.raney@gm.com	<i>Y</i>	_____
Andrew Ritchie <i>Paul MAKARUCHA INFINITIUM</i>	andrew.ritchie@infineum.com	<i>Y</i>	_____
✓ Andrew Rohlfig	Andrew.Rohlfig@AftonChemical.com	<i>Y</i>	_____
✓ Amol Sawant	acsawant@valvolineglobal.com	<i>Y</i>	_____
✓ Michael A Scudiero	michael.a.scudiero@exxonmobil.com	<i>Y</i>	_____
✓ Robert Stockwell	robert.stockwell@chevron.com	<i>Y</i>	_____
✓ George Szappanos	george.szappanos@lubrizol.com	<i>Y</i>	_____
✓ Haiying Tang	haiying.tang@stellantis.com	<i>Y</i>	_____

APPROVE

no negative

*15 approve
1 waive*

Martin Robert 23rd Jan

*level 2 Ei
BC-6 hardware introduction
for calibration
TMC LARUDE*

newish resonator

ASTM Sequence III Surveillance Panel (19 Voting members) date:

Name/Address	Phone/Fax/Email	Signature:	
✓ Ricardo Affinito	affinito@chevron.com	N-V Member	Present_____
Laura Birnbaumer	labi@chevron.com	N-V Member	Present_____
Adam Bowden	adbowden@ohotech.com	N-V Member	Present_____
Matt Bowden	mjbowden@ohotech.com	N-V Member	Present_____
Jerome A. Brys	jerome.brys@lubrizol.com	N-V Member	Present_____
Bill Buscher III	william.buscher@intertek.com	N-V Member	Present_____
Bob Campbell	bob.campbell@aftonchemical.com	N-V Member	Present_____
Domingo Carreon	domingo.carreon@intertek.com	N-V Member	Present_____
Jim Carter	jcarter@gageproducts.com	N-V Member	Present_____
Timothy L. Caudill	tlcaudill@ashland.com	N-V Member	Present_____
Martin Chadwick	martin.chadwick@intertek.com	N-V Member	Present_____
Sid Clark	sidney.clark@swri.org	N-V Member	Present_____
✓ Tim Cushing	timothy.cushing@gm.com	N-V Member	Present_____
Phil Davies	daviesjp@bp.com	N-V Member	Present_____
✓ Todd Dvorak	Todd.Dvorak@Infineum.com	N-V Member	Present_____
Joe Franklin	joe.franklin@intertek.com	N-V Member	Present_____
Izabela Gabrel	IGabrel@h-c-s-group.com	N-V Member	Present_____
Travis Kostan	travis.kostan@swri.org	N-V Member	Present_____
Michael Lochte	Michael.lochte@swri.org	N-V Member	Present_____
Ben Maddock	Ben.Maddock@AftonChemical.com	N-V Member	Present_____
Jo Martinez	JoMartinez@chevron.com	N-V Member	Present_____
Sean A. Moyer	sam@astmtmc.org	N-V Member	Present_____
✓ William A. Murdock	william.murdock@swri.org	N-V Member	Present_____
Mark Overaker	mhoveraker@jhaltermann.com	N-V Member	Present_____
Scott Rajala	srajala.1460@idemitsu.com	N-V Member	Present_____
Cliff Salvesen	clifford.r.salvesen@exxonmobil.com	N-V Member	Present_____
Elisa Santos	elisa.santos@infineum.com	N-V Member	Present_____
Hirano Satoshi	satoshi_hirano_aa@mail.toyota.co.jp	N-V Member	Present_____

Name/Address	Phone/Fax/Email	Signature:	
Philip R. Scinto	prs@lubrizol.com	N-V Member	Present _____
Amanda Stone	Amanda.Stone@newmarket.com	N-V Member	Present _____
Chris Taylor	pslservicesinc@gmail.com	N-V Member	Present _____
Jonathan VanScoyoc	VANSCJ@cpchem.com	N-V Member	Present _____
Angela Willis	angela.willis@willisadvancedconsulting.com	N-V Member	Present _____
Dean Wingert	dwingert@ford.com	N-V Member	Present _____
Justin Wolfe	Justin.Wolfe@lubrizol.com	N-V Member	Present _____
Yue Zhang	Yue.Zhang@Lubrizol.com	N-V Member	Present _____

Other Attendees:

- ✓ Beng Cai
- ✓ Ed Hennessey
- ✓ Paul Makarvcha Impin
- ✓ Charles Mathon
- ✓ Wil Mundt
- gton on the phone
- _____
- _____
- _____
- _____
- _____



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Batch 6 Piston Introduction Historic View

How Batch 5 Rings were Introduced

- Blowby and ring gap study was conducted, do we need to repeat.
- Labs A, B, D and G All conducted reference tests on the Batch 5 pistons, 2 on RO 434 and to on RO 436. These tests were held pending until reviewed. Lab B's test may have been donated and lab G conducted a donated test on 438-1. References were held in pending status.
- The references were charted using the level 2 Ei limit for acceptance after review. Labs were to introduce these pistons with a reference after pistons were approved.

How Batch 5 Rings were Introduced

- Labs were allowed to consume the remaining previous batch pistons, however, no subsequent references on previous batch of pistons were to be conducted. All reference tests were to be conducted on Batch 5 pistons.
- Subsequent pages show the original program proposed by the stats group.
- Further discussions??

Proposal for IIIH Piston Batch 5 Ring Gap Study

Date: 10-10-17

Statistics Group

- Doyle Boese, Infineum
- Jo Martinez, Chevron Oronite
- Kevin O'Malley, Lubrizol
- Martin Chadwick, Intertek
- Richard Grundza, TMC
- Lisa Dingwell, Afton
- Todd Dvorak, Afton
- Travis Kostan, SwRI
- Art Andrews, Exxon Mobil

Proposal for IIIH Piston Batch 5 Ring Gap Study

- The IIIH piston & ring batch 4 hardware is performing mild of target.
- The new batch 5 pistons are assumed to have similar (mild of target) performance as compared to the batch 4 piston hardware.
- Piston Study - Task Force requested the statistics group to propose a ring gap test plan to identify the ideal piston ring gaps that will achieve on target performance (for the batch 5 piston/ring hardware).
- Labs A, B, D, and G have offered to donate (1) test each to study the effects of increased ring gaps on IIIH test severity.
- All options will require a statistical analysis of the test data to identify the “ideal” ring gaps that achieve on-target performance for the batch 5 pistons/rings.
 - Follow-on testing will be required to confirm on-target performance

Proposal for IIIH Piston Batch 5 Ring Gap Study

- Prior to full length testing of the new Batch 5 Piston/Ring hardware, it will be advantageous to perform blow-by screening tests to ascertain the severity level of the new piston batch.
- The following slides offers 3 different piston/ring gap test plan options.

Proposal for IIIH Piston Batch 5 Ring Gap Study

- Test Plan Option #1:

- Phase 1 has “*Pending Status*” with possible Calibration for Batch 5 piston/ring candidate testing

Stage Gate	Test #	Oil	Piston Batch	Ring Gap	Lab	Notes
Phase 1	1	436	5	"Test Specified" or SP to Define	A	Test Result is Categorized as "Pending Status"
	2	434	5	"Test Specified" or SP to Define	B	Test Result is Categorized as "Pending Status"
	3	436	5	"Test Specified" or SP to Define	D	Test Result is Categorized as "Pending Status"
	4	434	5	"Test Specified" or SP to Define	G	Test Result is Categorized as "Pending Status"



"Pending Status" - SP to Review (Possible options include: Grant Calibration, Donated Test, etc.)



Stage Gate	Test #	Oil	Piston Batch	Ring Gap	Lab	Notes
Phase 2	5	436	5	SP to Define	A	No Calibration Issued - Research Test Only
	6	434	5	SP to Define	B	No Calibration Issued - Research Test Only
	7	436	5	SP to Define	D	No Calibration Issued - Research Test Only
	8	434	5	SP to Define	G	No Calibration Issued - Research Test Only



Follow on Test Plan:

- 1) With Stats input, gap rings to achieve PVIS & WPD "on Target performance" for reference & candidate Testing.
(Candidate and Reference Tests will have BC5 Pistons & gapped rings)
- 2) Evaluate reference data with new BC5 pistons and gapped rings to confirm "on target performance."

Proposal for IIIH Piston Batch 5 Ring Gap Study

- Test Plan Option #2:

- Phase 2 has “*Pending Status*” with possible Calibration for Batch 5 piston/ring candidate testing

Stage Gate	Test #	Oil	Piston Batch	Ring Gap	Lab	Notes
Phase 1	1	436	5	SP to Define	A	No Calibration Issued - Research Test Only
	2	434	5	SP to Define	B	No Calibration Issued - Research Test Only
	3	436	5	SP to Define	D	No Calibration Issued - Research Test Only
	4	434	5	SP to Define	G	No Calibration Issued - Research Test Only



Stage Gate	Test #	Oil	Piston Batch	Ring Gap	Lab	Notes
Phase 2	5	436	5	"Test Specified" or SP to Define	A	Test Result is Categorized as "Pending Status"
	6	434	5	"Test Specified" or SP to Define	B	Test Result is Categorized as "Pending Status"
	7	436	5	"Test Specified" or SP to Define	D	Test Result is Categorized as "Pending Status"
	8	434	5	"Test Specified" or SP to Define	G	Test Result is Categorized as "Pending Status"



"Pending Status" - SP to Review (Possible options include: Grant Calibration, Donated Test, etc.)

Follow on Test Plan:

- 1) With Stats input, gap rings to achieve PVIS & WPD "on Target performance" for reference & candidate Testing.
(Candidate and Reference Tests will have BC5 Pistons & gapped rings)
- 2) Evaluate reference data with new BC5 pistons and gapped rings to confirm "on target performance."

Proposal for IIIH Piston Batch 5 Ring Gap Study

- Test Plan Option #3:

- No calibration option for follow-on candidate testing with batch 5 piston/rings

Test #	Oil	Piston Batch	Ring Gap	Lab	Notes
1	436	5	SP to Define	A	No Calibration Issued - Research Test Only
2	434	5	SP to Define	B	No Calibration Issued - Research Test Only
3	436	5	SP to Define	D	No Calibration Issued - Research Test Only
4	434	5	SP to Define	G	No Calibration Issued - Research Test Only
5	436	5	"Test Specified" or SP to Define	A	No Calibration Issued - Research Test Only
6	434	5	"Test Specified" or SP to Define	B	No Calibration Issued - Research Test Only
7	436	5	"Test Specified" or SP to Define	D	No Calibration Issued - Research Test Only
8	434	5	"Test Specified" or SP to Define	G	No Calibration Issued - Research Test Only



Follow on Test Plan:

- 1) *With Stats input, gap rings to achieve PVIS & WPD "on Target performance" for reference & candidate Testing.
(Candidate and Reference Tests will have BC5 Pistons & gapped rings)*
- 2) *Evaluate reference data with new BC5 pistons and gapped rings to confirm "on target performance."*

IIIH Severity Task Force Update

Seq. III Surveillance Panel

January 23, 2018

Presented by: Jason H. Bowden

IIH Severity Task Force Members

Jason Bowden - OHT	Jerry Brys – Lubrizol
Matt Bowden - OHT	Ed Altman – Afton
Jeff Betz – FCA	Bob Campbell – Afton
Haiying Tang - FCA	Todd Dvorak – Afton
Addison Scheitzer - Intertek	Rich Grundza – TMC
Pat Lang – Southwest	Robert Stockwell – Chevron Oronite
Ankit Chaudhry – Southwest	Karin Haumann – Chevron Oronite
Amol Savant – Valvoline	Doyle Boese – Infineum
George Szappanos – Lubrizol	Charlie Leverett - Infineum
Sid Clark - Southwest	

BC 5, PHASE 1, REF. OIL TESTING

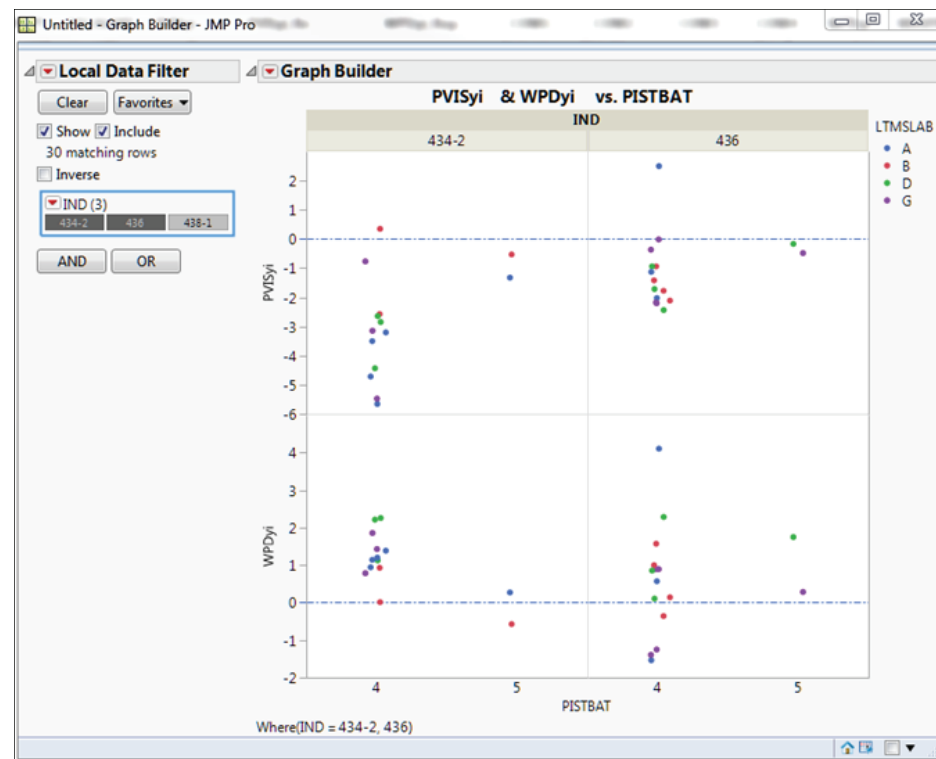
- The phase 1 testing has shown promising results for the BC5 hardware. The initial data shows the PVIS is slightly mild, but closer to target.

Ref. Oil 434-2			
REF OIL	434-2 (BC4 Industy Yi) N=13	434-2 (BC5)	434-2 (BC5)
PVIS	-3.2943425	63.5 (Yi -1.32)	89.3 (Yi -0.528)
WPD	1.2967033	4.35 (Yi 0.27)	3.76 (Yi -0.571)
OC		2.04	1.84
AVE BB		31.1	34.7
TOP GAP AVE		0.025"	0.024"
2ND GAP AVE		0.036"	0.035"
TOP SIDE CLEARANCE		0.0017"	n/a
2ND SIDE CLEARANCE		0.0020"	n/a

Ref. Oil 436			
REF OIL	436 (BC4 Industy Yi) N=14	436 (BC5)	436 (BC5)
PVIS	-1.1937818	16.1 (Yi -1.753)	26.5 (Yi -0.165)
WPD	0.5637755	4.54 (Yi -0.321)	5.12 (Yi 1.75)
OC		1.74	1.54
AVE BB		42.5	37.8
TOP GAP AVE		0.024"	0.025
2ND GAP AVE		0.036"	0.035
TOP SIDE CLEARANCE		0.0015"	0.0015"
2ND SIDE CLEARANCE		0.0020"	0.0020"

Ref. Oil 438-1		
REF OIL	438-1 (BC4 Industy Yi) N=16	438-1 (BC5)
PVIS	-0.6560627	23.7 (Yi -0.847)
WPD	0.2209302	3.69 (Yi 0.070)
OC		
AVE BB		
TOP GAP AVE		0.025"
2ND GAP AVE		0.036"
TOP SIDE CLEARANCE		0.0015"
2ND SIDE CLEARANCE		0.0020"

BC 5, PHASE 1, REF. OIL TESTING



Recommendation to Seq. III Surveillance Panel from IIIH Severity Task Force

- **Motion: Jason Bowden / Robert Stockwell: The IIIH Severity Task Force recommends the BC5 hardware be introduced for calibration testing.**
 - Passed with one waive

Next Steps

- The Task Force discussed possible next steps
 - The industry will generate additional reference oil data in a short timeframe.
 - There are four stands that are ready to begin calibration testing immediately.
 - After review of additional calibration test data, a determination will be made on the following topics:
 - If reference testing continues to show the test close to target and the oils rank in the proper order, there may be no further action required.
 - Possibly discuss resetting LTMS Charts.
 - Determine if a correction factor is appropriate.
 - Modification of ring gaps would be a last resort.

Questions/Discussion

Thank you.



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