

Sequence VH O&H Meeting
April 29th, 2025 at 3PM EST via MS Teams

Attendees: Dan Engstrom, Tony Catanese, Joe Anthony, Ben Maddock

Overview:

1. Hardware
 2. Operation
 3. Fuel
 4. Other
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Notes:

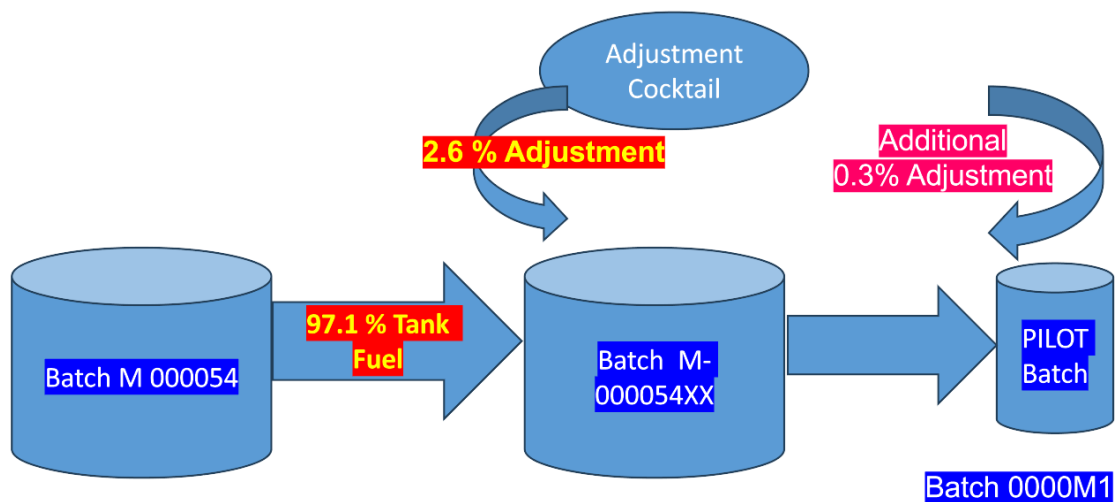
1. Hardware

- a. FCS Order through TEI
 - i. "The Pistons and Rings were ordered on November 1st. The lead time for the rings is 69 days and 127 days for the pistons."
 - ii. Rings expected January 9th, 2025
 1. Arrived early but missing some from one size.
 - iii. Pistons expected March 8th, 2025 **but are late. Dan Lanctot to follow-up**

2. Operation

- Proposal: Request that test labs target Ra between 9 and 12 for the fuel approval matrix
- Blowby Orifice Plate Diameter
 - o 5/16" orifice plate is the correct size
 - o SwRI & Afton utilize very similar 4th order polynomial equations
 - Values differed in the tenths of a L/min

3. Fuel



Precision Matrix without Lab B

A1	A2	G1	G2	D
940	931	940	1011-1	931
931	1011-1	1011-1	931	1011-1
1011-1	931	931	1011-1	931

- M-000054 Fuel Batch Approval
 - M-000054 batch was rejected as too mild
 - [VMinutes20250130ConferenceCall_draft.pdf](#)
 - M-000054-1 pilot batch was rejected as too severe
 - [VMinutes20250409ConferenceCall.pdf](#)
 - M-000054XX fuel is running now at Lab A and G
 - Lab A 931 EOT: 5/5/2025
 - Lab G 1011-1 EOT: 5/3/2025
 - Boths labs reporting 18% fuel dilution
 - Tentative forecast (updated best case):
 - 5/8 - Review M-000054XX data
 - 5/13 – Labs start remaining Row 1
 - 5/27 – Review row 1 data and Release row 2 & 3
 - 6/24 – Completed fuel approval matrix
 - 7/8 – Candidate testing resumes
 - New fuel batch has been delayed 2 months from original forecast
 - [VHOandHMinutes20250225.pdf](#)
- Options:
 - M-000054XX fuel outcomes
 - Meets RO targets
 - Continue down the forecasted path
 - Too mild
 - Tweak batch and add two weeks to forecasted path
 - Too severe
 - Reject the batch, dilute, and try again
 - ICF
 - Can't discriminate
 - Likely to occur on the mild side, likely continue the path and re-evaluate with more data
 - N-000010-19 fuel
 - 30,000 USG of fuel remains (~37 industry tests)
 - Two recent stand calibrations average -1.6 standard deviations severe AES

- Alternate fuel supplier
 - Revisit procedural requirements and consider lowering the barrier of entry?
- Out of Control ([OutofControl.pdf](#))
 - Panels can suspend a test when it's judged to be giving uninterpretable performance
 - Flow plan
 - 1: EWMA plots must exceed action alarms
 - 2a: Consider scope and size of the problem
 - 2b: Analysis
 - Lab & stand charts generated with timescale and start of problem
 - EWMA plots with $\lambda = 0.1$ to detect small shifts
 - 3a: 2/3 majority approval vote by Surveillance Panel
 - 3b: Classification Panel must approval SP decision within two weeks
 - 3c & 3d: Communication outside of the SP's authority
 - 4a: Notice that test is back in control and available

4. Other

- a. Pencool 2000 shortage
 - i. PenRay discontinued their entire PenCool line (2000, 3000, 4000 and the associated filters). They do not offer an alternative.
 - ii. Alternatives
 - 1. Nalcool NalFleet 2000
 - 2. DELO Extended Life coolant
 - 3. Motorcraft, Dexcool, Peak
 - iii. Labs to check inventory and consult internal experts
 - 1. SwRI, IAR and Afton reported at least 6 months inventory available
 - 2. This topic will be shelved until later in the year

Historical Logbook

Date	Topic	Description	Comments
2/12/24	-	O&H formed.	
2/29/24	Hardware	Cam cap anaerobic sealant	IL24-1
3/5/24	Hardware	Cam bearings resolved with King Bearing supply to TEI.	Incl. SwRI bearing analysis
3/12/24	Fuel	N-000010-1+ CofA data integrity review.	Included lab samples to Saybolt
3/26/24	Fuel	Quarterly samples now from test cell	
4/9/24	Hardware	Piston oil hole size differences by piston size not statistically significant to APV	
4/16/24	Operation	Build Workshop conducted	IL24-3 and IL24-4
5/21/24	Fuel	AO content depletion in transit	
5/21/24	Operation	Honing data analysis uninterpretable due to measurement differences	This will be revisited after 2025 fuel approval matrix
6/4/24	Hardware	OHT3G-096-1 brushes explained	IIIG efforts
7/9/24	Operation	OSCR raters group imprecision reviewed	
8/27/24	Hardware	FCS order placed on pistons and rings	
8/27/24	Operation	N-10-1 approval vs PM statistical analysis	
1/7/25	Fuel	RVP adjustments vs fuel dilution	