Sequence VH Surveillance Panel Meeting

Teams

Monday, June 16, 2025, 10:00 am – 11:00 am EDT

1.0) Attendance

Afton:	B. Campbell, B. Maddock, A. Stone	
Exxon	L. Salvi	
Ford:	M. Deegan, R. Zdrodowski	
GM:	B. Cosgrove	
Haltermann Solutions:	E. Hennessy, I. Mathur	
IMTS:	D. Passmore, S. Clark	
Infineum:	J. Anthony, T. Dvorak	
Intertek:	A. Lopez	
Lubrizol:	T. Catanese, G. Szappanos	
OHT:	J. Bowden	
Shell:	S. Demel, J. Hsu	
SwRI:	T. Kostan, P. Lang, M. Lochte	
TMC:	D. Beck, S. Moyer, W. Venhoff	
TEI:	D. Lanctot	
Toyota:	V. Deshpande	

2.0) Executive Summary

1. The results of the fuel dilution screener tests were presented and discussed.
2. Fuel dilution results for M-000054-2a and M-000054-2b were both about 15%.
3. Motion to use M-000054-2a for next round of evaluation testing passed.
4. Lab D will join Labs A and G in this round of tests on M-000054-2a.
5. N-Batch inventory is estimated to last through August 2025 as test activity has slowed.

3.0) Approval of Minutes

Minutes from May 20th were approved

4.0) M-Batch Fuel Adjustment

4.1) Fuel Dilution Study Results

4.1.1) Fuel M-000054-2a Results

Laboratory:	SR	Test Number:	9- shkn-1
Fuel Batch	M-000054-2a		

Chemical A

ASTM Method	Analysis Description	Units	0	24	48
D445	Kinematic Viscosity @ 100°C	cSt	7.22	4.69	5.11
	Kinematic Viscosity @ 40°C	cSt	37.81	19.68	19.35
D3525-M	Fuel Dilution	wt. %		13.2	14.8

4.1.2) Fuel M-000054-2b Results

Laboratory:	SR	Test Number:	9-SHKN-2
Fuel Batch	M-000054-2b		

Chemical A

ASTM Method	Analysis Description	Units	0	5m	24	48
D445	Kinematic Viscosity @ 100°C	cSt	7.37			
	Kinematic Viscosity @ 40°C	cSt	37.82	32.54	19.02	18.36
D3525-M	Fuel Dilution	wt. %		3.5	13.9	15.0

4.2.3) Fuel Screener Test Results Discussion

- Using fuel dilution as an indication of severity, the previous test results as a function of fuel dilution are as follows,
  - M-000054: Fuel Dilution = 13.4% was too mild
  - M-000054-1: Fuel Dilution = 21% was too severe
  - M-000054-2: Fuel Dilution = 18% was slightly less severe AES

Fuel Adjustment	Fuel Dilution, %	Greatest Difference			
		AES Yi	RAC Yi	AEV Yi	APV Yi
M-000054	13	1.47	5.45	0.79	0.35
M-000054-1	21	-0.95	1.74	0.27	-0.80
M-000054-2	18	-0.70	0.16	-0.26	-1.23
M-000054-2a	14.8	TBD	TBD	TBD	TBD
M-000054-2b	15	TBD	TBD	TBD	TBD

- M. Deegan asked which fuel to proceed should be tested next.
- Haltermann recommends Fuel A going forward

- M. Deegan asked why Haltermann wants to use M-000054-2a.
    - Haltermann answered that by suppressing the front end of the distillation curve, the fuel dilution value is acceptable, but could be too mild.
    - M-000054-2a & M-000054-2b fuel dilution values were very close, however, Haltermann recommended M-000054-2a.
    - Haltermann believes M-000054-2b could be too mild.
    - IAR agrees with the decision to choose M-000054-2a for next round evaluation testing.
- Haltermann asked the SP members if they preferred a pilot batch or treat the entire fuel tank.
    - Haltermann will use the same raw materials for either choice.
    - Haltermann requested using a CofA for assurance to assure the fuel from the pilot batch is the same after the entire tank is treated.
    - The SP members recommended a pilot batch of M-000054-2a.

Motion by I. Mathur to accept Fuel A for precision matrix testing

Motion seconded by B. Maddock

Afton:	B. Maddock	Approve
Exxon	L. Salvi	Approve
Ford:	M. Deegan	Approve
GM:	B. Cosgrove	Approve
Haltermann Solutions:	E. Hennessy	Approve
IMTS:	S. Clark	Waive
Infineum:	J. Anthony	Approve
Intertek:	A. Lopez	Approve
Lubrizol:	T. Catanese	Approve
OHT:	J. Bowden	Waive
Shell:	S. Demel	Waive
SwRI:	P. Lang	Approve
TMC:	D. Beck	Waive
TEI:	D. Lanctot	Waive
Toyota:	V. Deshpande	Approve

4.2.4) Fuel delivery and lab participation

- Labs will be ready within a week
    - IAR ready June 25th
    - Afton can run by the 25th
    - SwRI can start July 7th
    - Haltermann asked the labs to scrap the leftover M-batch fuel at the labs.

5.0) Including the Pilot Fuel Batch Fuel in the Precision Matrix Results Discussion

- Haltermann asked if the pilot batch test results could be included in the precision matrix.
- Infineum believed that the motion that passed in April 2025 to include pilot batch results if the results were within an agreed statistical window still applied.
- SwRI requested another motion because this is a different fuel adjustment, and the outcome of the vote may be different if SP members have changed their minds.
- The SP members, including Haltermann, agreed that a vote was not necessary until the results of fuel adjustment M-000054-2a were reviewed.
- The general consensus is that the pilot results will be accepted if the results meet the discussed requirements and Haltermann uses the same fuel components and dosing of the tank as was used for the pilot batch.

6.0) Old Business

7.0) New Business

8.0) Meeting Adjourned

- Meeting adjourned at 11:00 am EDT