Sequence VH Surveillance Panel Call
December 5, 2024, Webex

1.0) Attendance

Afton:	JB. Maddock, A. Stone
Exxon	M. Bushey
Ford:	M. Deegan, R. Zdrodowski
GM	T. Cushing
Haltermann:	W. Hairston, E. Hennessy
IMTS:	S. Clark, D. Passmore
Infineum:	J. Anthony, T. Dvorak, A. Ritchie (Chair)
Intertek:	J. Franklin, A. Lopez
Lubrizol:	T. Catanese, G. Szappanos
OHT:	J. Bowden
Oronite:	R. Affinito, J. Matinez, R. Stockwell
Shell:	J. Hsu
SwRI:	D. Engstrom, T. Kostan, P. Lang
TEI:	D. Lanctot
TMC:	R. Grundza
Toyota:	V. Deshpande

Chair's Comments

- Meeting minutes from 11/20 are posted.
- Chair Ritchie started the meeting and outlined the agenda items:
  1) Review of Meeting Minutes from 11/20/2024
  2) Fuel Supplier Status Report
  3) Old Business
  4) New Business

1.) Review of Meeting Minutes

TMC LTMS Review

- RAC results are skewed due to a 5 std result
  - Explanation of the high values due to unit transformation
- **Report Correction:** Report reads there are 18 tests in the Precision Matrix, but there are 16 tests in the matrix.
- **Report Correction:** "*Adjustments (SAs) vary widely by lab. Strong oils benefit disproportionately from the large SAs*"
  - Comment: This may be misleading.
  - It was agreed to remove this comment from the final report.

2.0) Fuel Supplier Status Report

New Fuel Batch Status:

- 28,000 gallons of fuel remain in a single rail car
    - There will be 22,000 after the latest order ships.
- IAR & SwRI will run new fuel on 940 when received
    - Precision matrix testing could start 12/16 if fuel sample meets specifications.

- Lubrizol received drums of high gravity fuel and is 24 hours into the test.
    - Lubrizol will report the results at ASTM week.

3.0) Old Business

TMC proposes updating the data dictionary modifications earlier than the standard ASTM 1-month waiting period to get updates in sooner due to the severity of the VH tests.

- No objections from the SP members

4.0) New Business

1) Chair Ritchie stated that he had been contacted by the TMC Director Jeff Clark, and asked to read out the following statement to the SP.

"In light of concerns expressed at recent meetings regarding cam usage and per surveillance panel direction, TMC is in the process of expanding the Seq. VH data dictionary to add the total number of runs on the camshafts. A review of the reference test database reveals multiple instances that indicate that the procedurally defined cam life run limit (of 4 tests) was almost exhausted, completely exhausted, or exceeded on reference testing alone. For data integrity and completeness, TMC intends to back populate the database as much as possible and is asking that labs provide the total number of runs on both the left and right camshafts for each record in the reference test database.

As the uploading of over 300 corrections across the industry is an overwhelming task, TMC is willing to provide each lab with a spreadsheet to populate their data, which will then be incorporated into the TMC database. If a lab prefers to upload data rather than transferring via spreadsheet, they may do so."

- TMC is adding CAMSNL & CAMSNR run numbers to the data dictionary.
- This requires labs to document how times each camshaft has been run in candidate and reference tests.
- This became an issue when a review of the calibration oil database showed CAMSNs repeated 3, 4, & 5 times over time frames of many months.
- D8256 Section 7.3 states that the camshafts can only be used 4 times.
- There was concern about the effort required to retroactively add the data.
- It was proposed that only the lab in question be required to submit their data.

2) A negative has been received on Information Letter 24-4: Specifying honing brushes and surface measurement equipment.
    - Specifying the equipment is necessary to ensure engine build uniformity across the labs.
    - A motion will be held at the next SP meeting.

Meeting adjourned at 2:30 PM EST

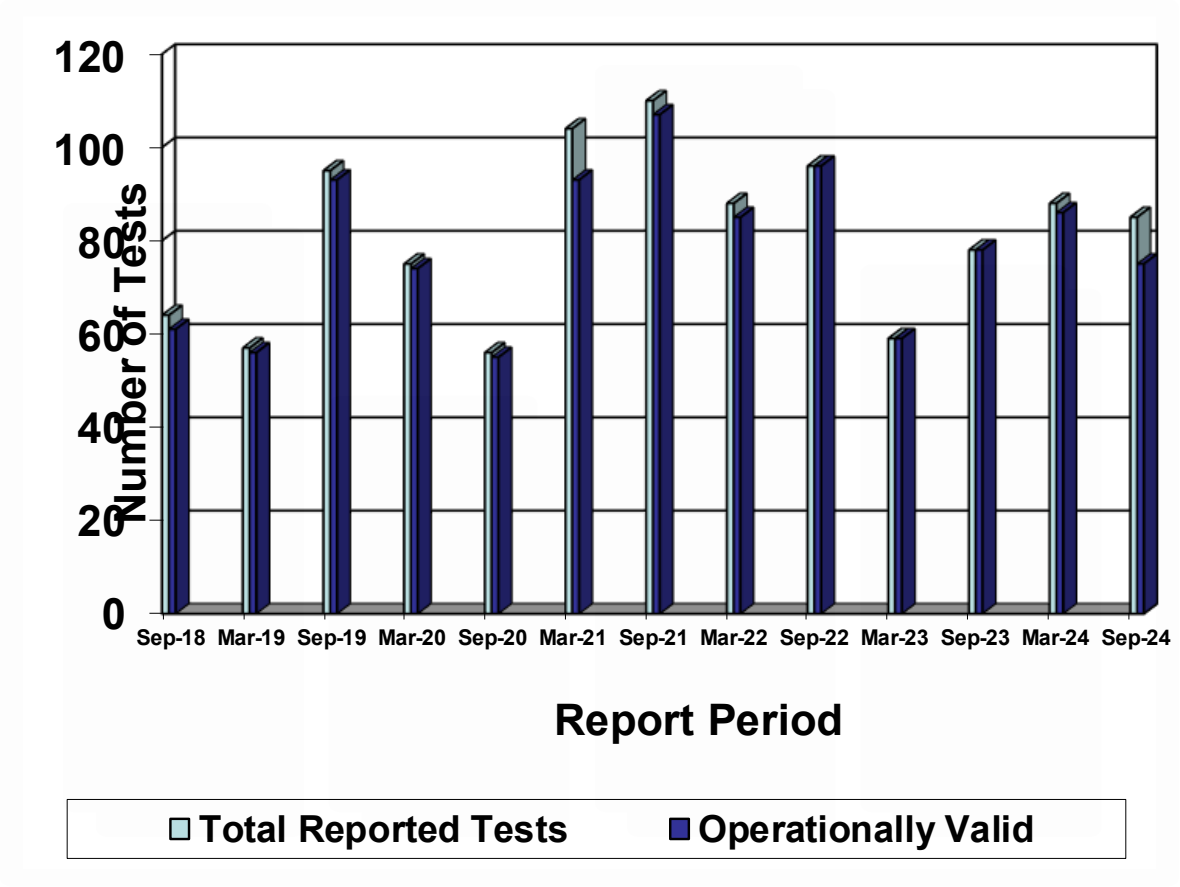
Sequence VH S.P. (ASTM D8256)

December 2024 Semi-annual Report to Subcommittee D02.B

Prepared By: Andrew Ritchie, S.P. Chairman

Sequence VH S.P. Report

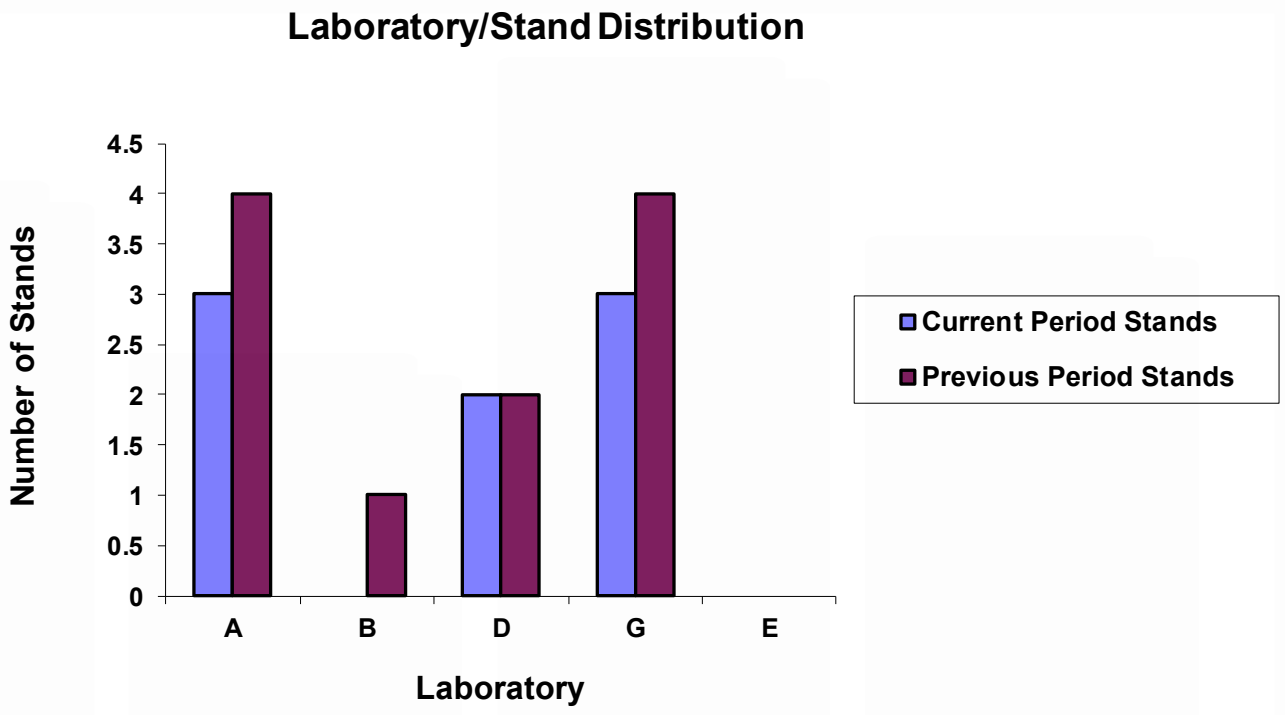
Candidate Test Activity



- VH Candidate registration began May 2017
- 85 VH candidate tests this reporting period
- 10 tests were terminated during this period

Sequence VH S.P. Report
LTMS Laboratory/Stand Distribution

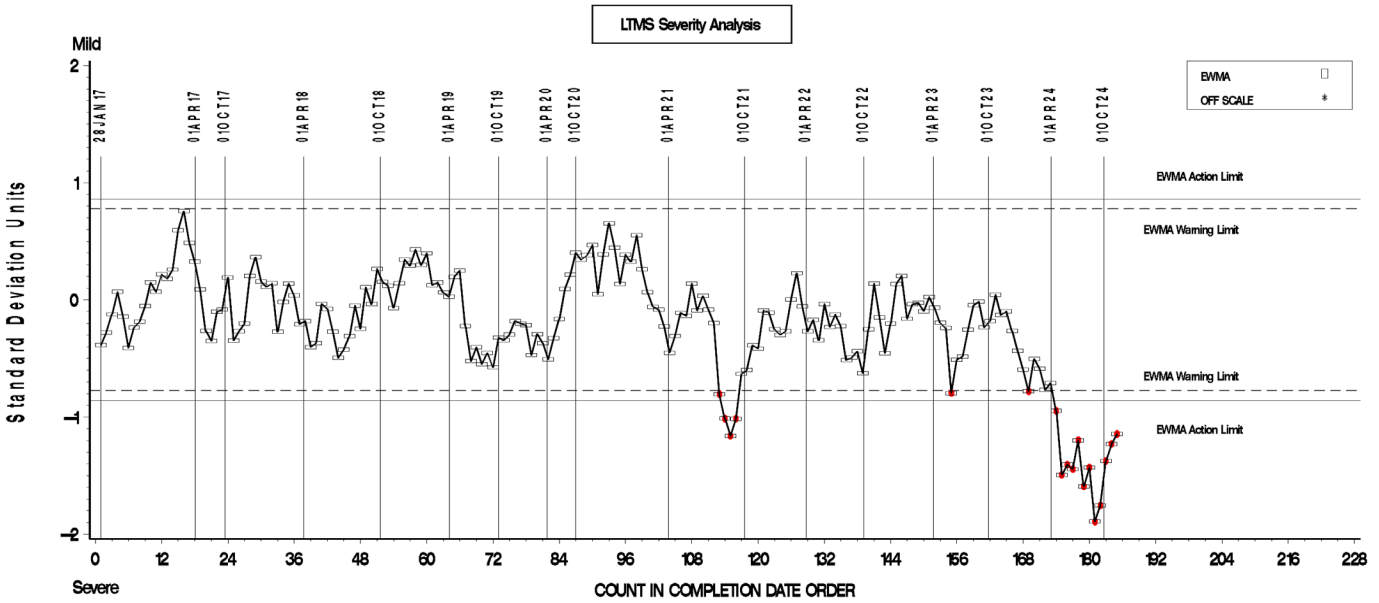
	Reporting Data	Calibrated as of 10/1/24
Number of Laboratories	5	4
Number of Stands	8	8

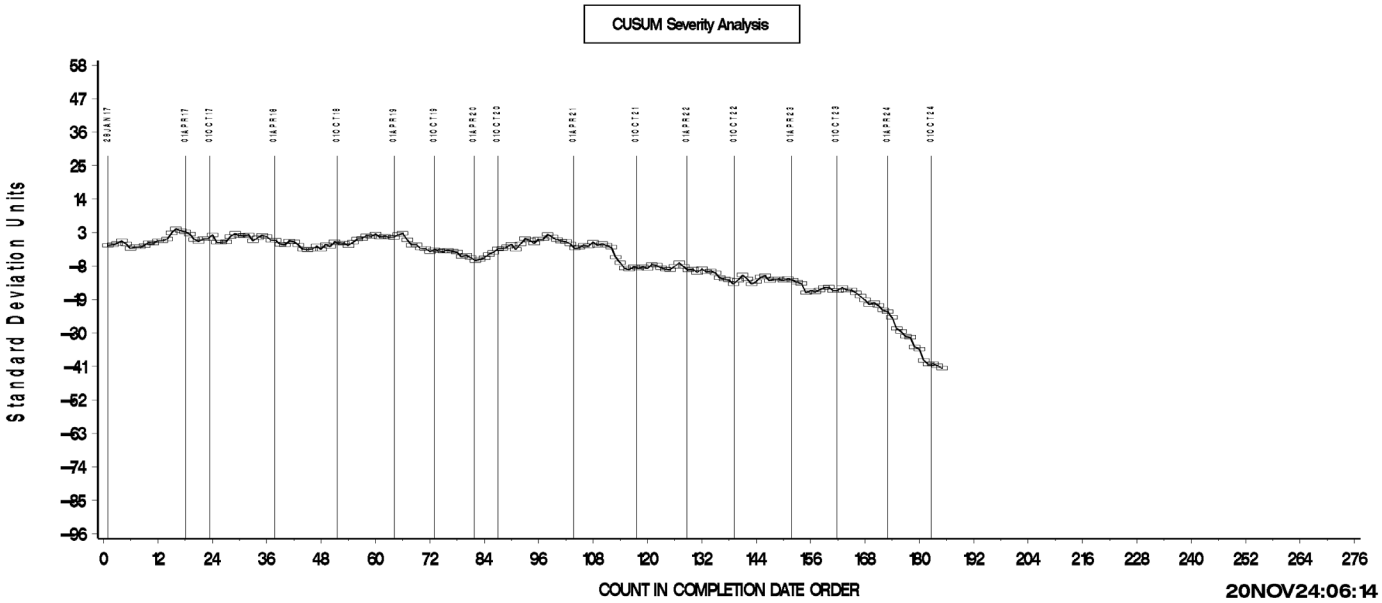


SEQUENCE VH INDUSTRY OPERATIONALLY VALID DATA

A Program of ASTM International

AVERAGE ENGINE SLUDGE





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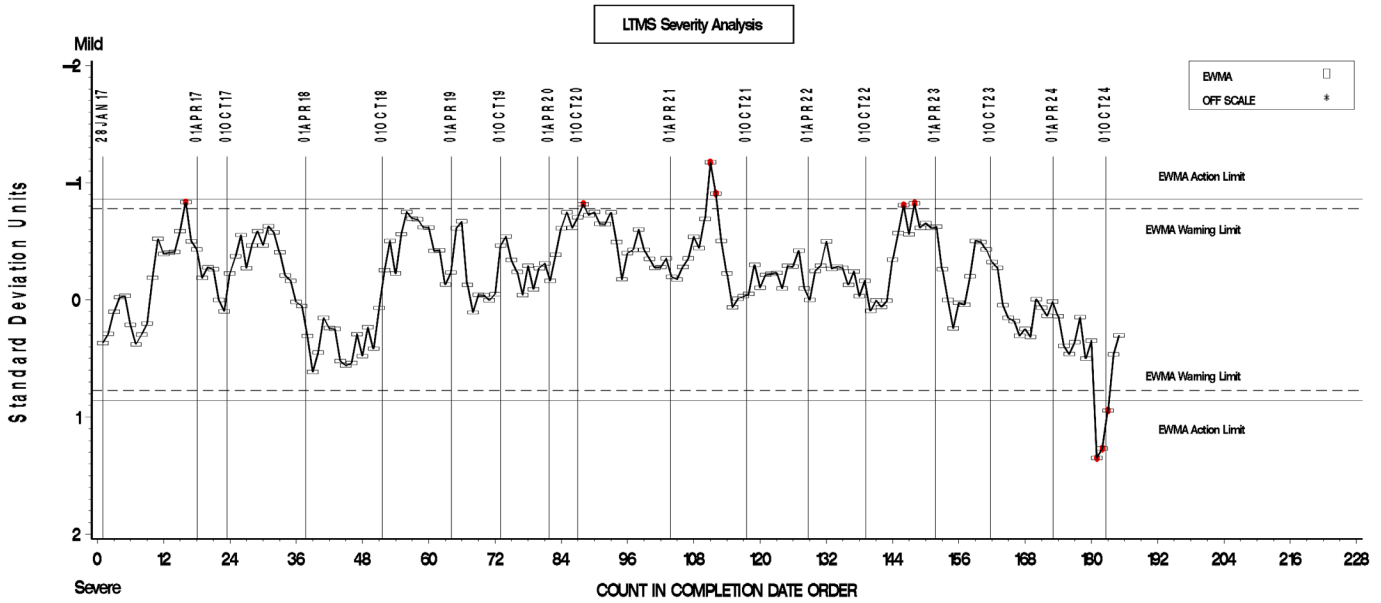
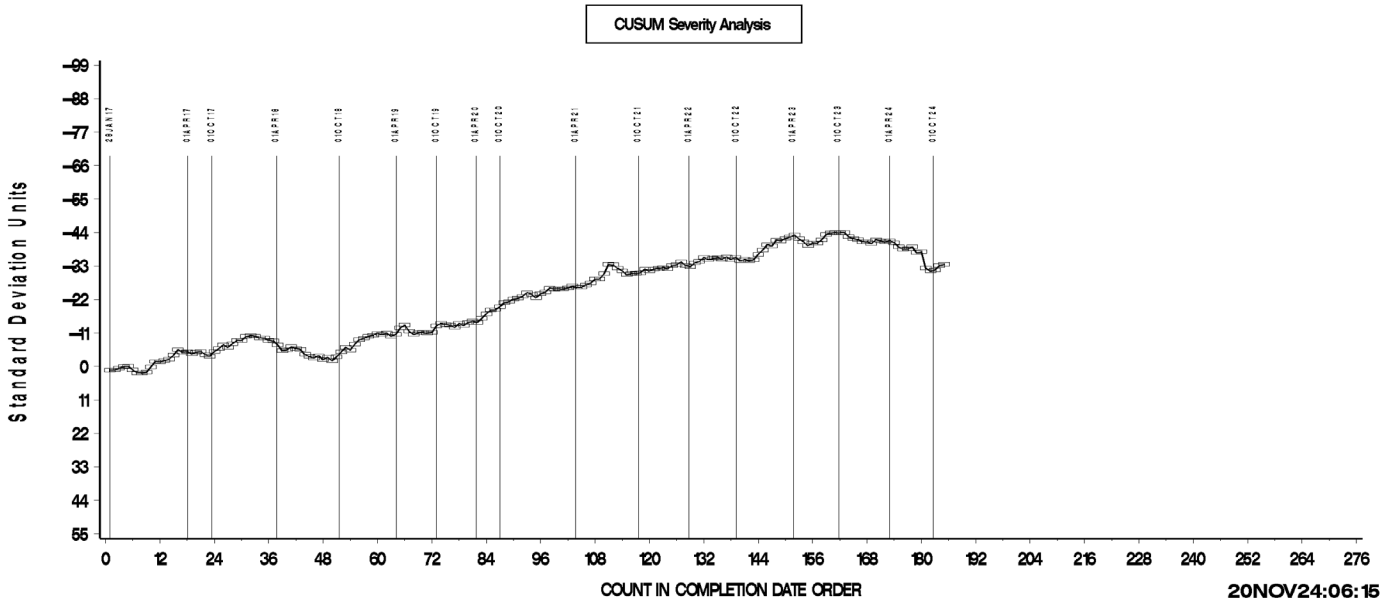
AVERAGE ROCKER COVER SLUDGE





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SEQUENCE VH INDUSTRY OPERATIONALLY VALID DATA

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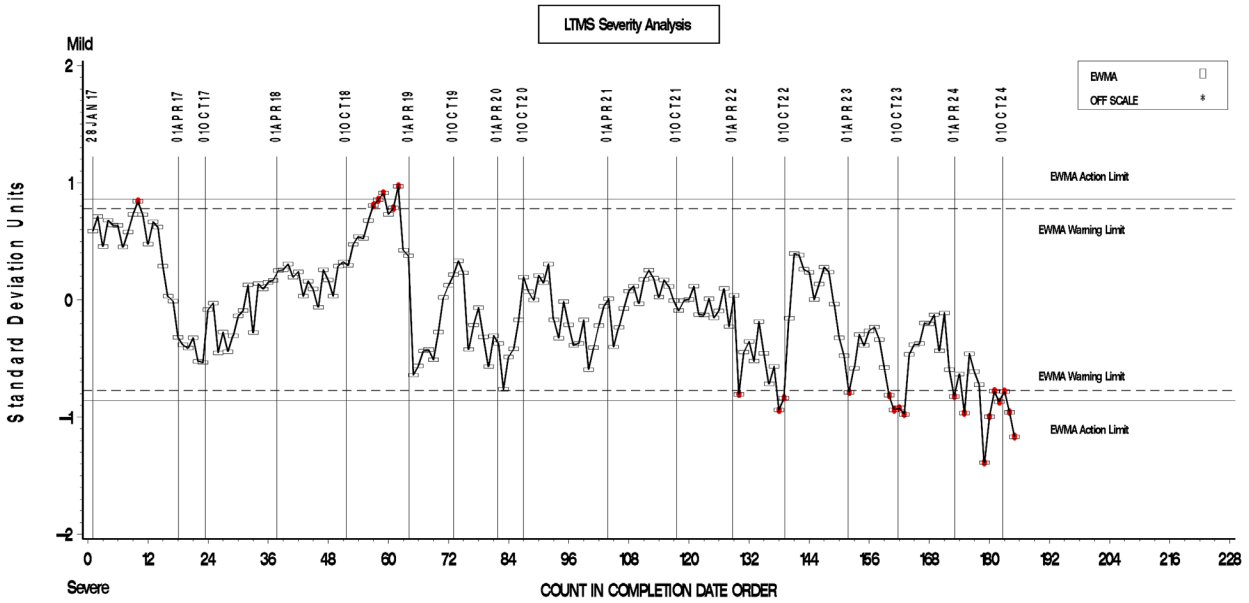
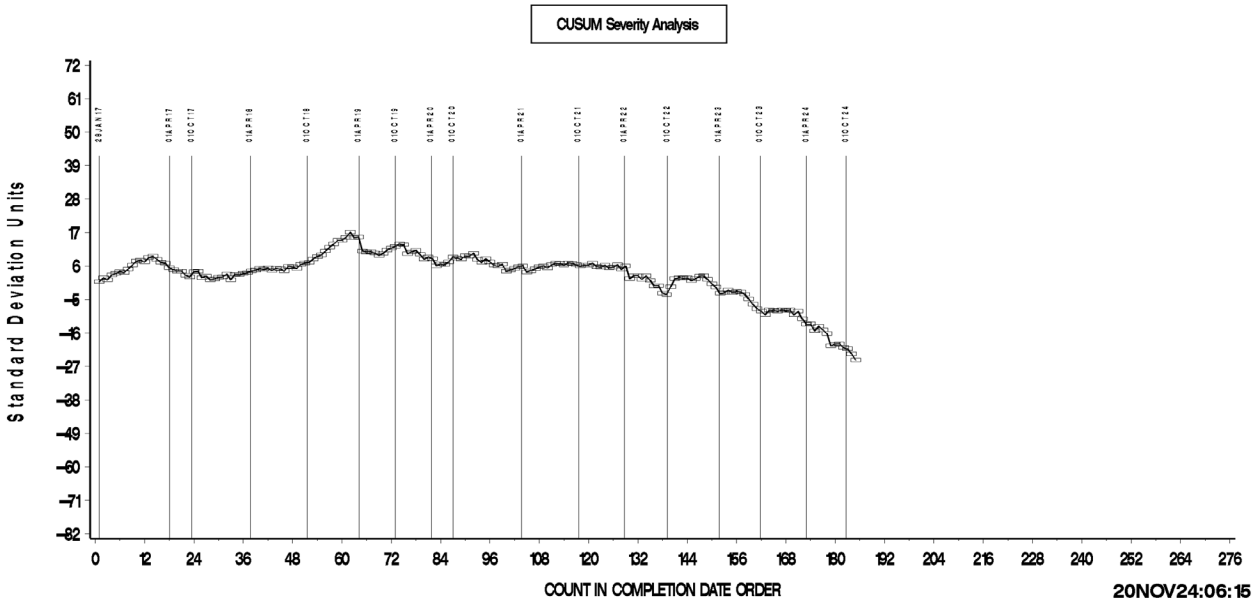
AVG. ENG. VARN. 50% RATING





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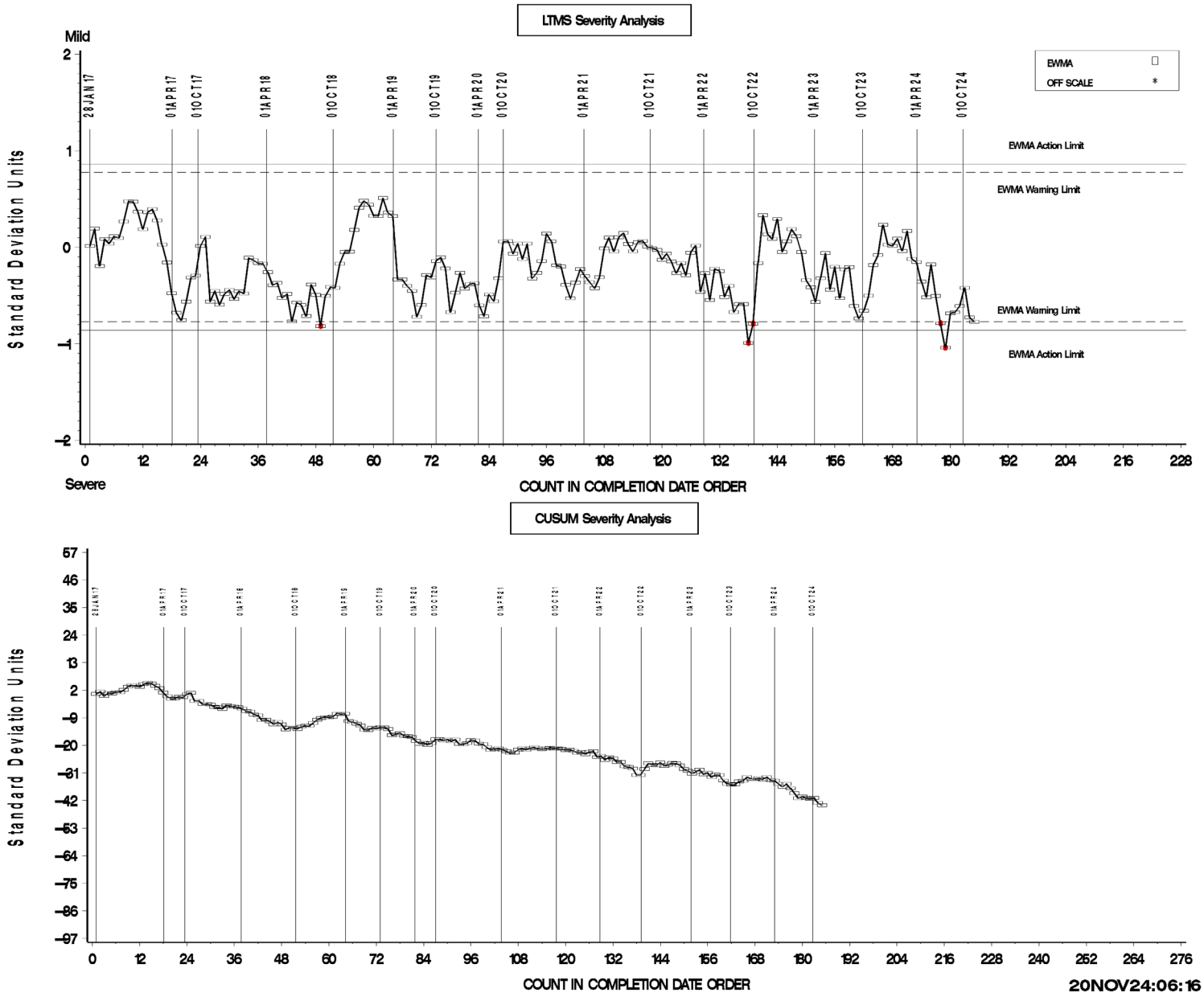
SEQUENCE VH INDUSTRY OPERATIONALLY VALID DATA

AVG PISTON SKIRT 50% RATING



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Sequence VH S.P. Report

Industry Reference Severity Summary

6 month time frame

Variable	Pooled s All Oils	Mean Delta/s	Based on	Delta in Reported Units
RAC	0.4740	1.79	8.0	-5.3*
AES	0.8	-1.93	7.8	-1.5
APV	0.39	-0.80	7.5	-0.31
AEV	0.54	-0.85	8.9	-0.46

- Estimate is heavily biased due to 5s result deemed valid as well as applying such a large difference in transformed units.

Status of VH Reference Oils

- ***1011-1*** *Oil introduced January 2022*
- ***940-1*** *SAE 5W-30 failing reference oil.*
  - *Ready to be introduced but assignment of this oil has been suspended for the foreseeable future*
- ***931*** *SAE 0W-20 borderline reference oil.*

Oil	Tests	Year	Blend Quantity	TMC Inventory	Estimated Life	Oil
931	VH	2020	912	722	>5	931
940-1	VH	2018	485	485	>5	940-1
1011-1	IVB, VH, VF, X	2019	1395	824	4	1011-1

Reference Oil Inventory Estimated Life

Oil	Tests	Year	Blend Quantity	TMC Inventory	Estimated Life	Comment
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940-1	VH	2018	485	485	>5	
1011-1	IVB, VH, VF, X	2019	1395	824	4	

Sequence VH 2H 2024 Activity

- Surveillance Panel held biweekly calls mainly to address the concerns expressed about the severity of the current fuel batch. Minutes posted on the TMC web site
  - O&H panel also meets on a regular basis
- Current batch of fuel was moved into rail cars to reduce the need for constant RVP adjustments.
  - RVP adjustments have still been required
- Panel consensus that the fuel is trending further severe. The Severity Adjustments (SAs) vary widely by lab.
- Motion to approve an Industry Correction Factor for the current fuel is progressing to ASTM ballot.
  - Change in total correction (SA+ICF) is dependent on most recent calibration results and varies lab to lab
- At current VH testing levels the fuel will be exhausted early in 2025
- A new batch of the fuel is ready to run in the approval matrix
  - First 2 tests on 940 will start the week of 12/16
  - 4 labs, 6 stands, 16 tests
  - If fuel is close to target, this fuel could be approved by the middle of February

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

Sequence VH S.P. Scope

The Sequence V Surveillance Panel is responsible for the surveillance and continued improvement of the Sequence VH test documented in ASTM Standard D8256 as updated by the Information Letter System. Data on test precision and laboratory versus field correlation will be solicited and evaluated at least every six months. Improvements in rating technique, test operation, test monitoring and test validation will be accomplished through continual communication with the Test Sponsor, ASTM Test Monitoring Center, ASTM B0.01, Passenger Car Engine Oil Classification Panel, ASTM Light Duty Rating Task Force, ASTM Committee B0.01, ACC Monitoring Agency. Actions to improve the process will be recommended when deemed appropriate based on input from the preceding. Industry transition to new engine hardware batches will be monitored and redistribution of existing hardware facilitated to accomplish uniform industry implementation. Development and correlation of updated test procedures with previous test procedures will be reviewed by the panel. This process will provide the best possible test procedure for evaluating automotive lubricant performance with respect to the lubricant's ability to prevent engine sludge, engine varnish, oil screen plugging, oil ring clogging and ring sticking.