PC-11 VGRA Matrix Test Status
November 3, 2015

Five T-13 tests and two COAT tests have been completed. Of the T-13 tests, two tests were incorrectly run on PC11A (10W30) which was intended to be run in the COAT VGRA matrix. T-13 precision matrix oil PC11A should have been assigned to the COAT VGRA matrix and not to the T-13 matrix. TMC reference oil 832 (15W40 and a re-blend of PC11G) which was intended to be run in the T-13 was incorrectly run in a COAT VGRA matrix test at G-1. The reason for the incorrect assignments of PC11A and 832 has been identified to a miscommunication between API and the TMC.

The T-13 test run at Lab A-1 on PC11A failed mild relative to the targets used for the oil as part of the precision matrix and is not useable as a calibration test. The T-13 test run on PC11A run at Lab G-1 passed the T-13 LTMS relative to the targets used for the oil as part of the precision matrix. The COAT test run at Lab G-1 on reference oil 832 failed the LTMS criteria in the severe direction with a Level 3 Prediction Error (Ei) alarm. Note also that T-13 reference oil 823, a re-blend of PC11A has been assigned as Lab A's first COAT run correctly.

Discussions between API, TMC and the statisticians on how to find a way to have the tests rerun have not yielded any immediate solution. The fact that two of the three tests run on reference oils have failed the reference criteria adds to the dilemma. Note that none of the VGRA matrix tests were intended to be run as calibration tests. The tests were only evaluated against LTMS criteria in an attempt to find a way to have the correct oils run. A Mack Surveillance Panel meeting is scheduled for November 11. It is thought that some discussions on reference oil targets may occur at this meeting that might influence the outcome of the PC11A tests run in the T-13 VGRA matrix.

Three tests one from Lab A-1 and two from Lab G (preliminary results) have been reported to the TMC.   All T-13 data will be posted at: ftp://ftp.astmtmc.cmu.edu/refdata/diesel/T13/data/ltms.csv

Two COAT tests from lab G have been reported. The second test run using oil PC11FF has been declared invalid by the lab because of a shift in crankcase pressure and blowby. This test will be rerun by the laboratory. All COAT data will be posted at: ftp://ftp.astmtmc.cmu.edu/refdata/diesel/COAT/data/ltms.csv

The field COM1 will identify the tests as BOI/VGRA matrix tests with a value of "VGRA".
Estimated T-13 Matrix Completion (360 hours/test): Week of November 23, 2015

T-13 VGRA Matrix Test Status

	Lab-Stand	A-1	A-2	D-1	G-1	G-2
Run Order	1	PC11A* 10W30 BS1 Tech1 111339-T13 Reported	PC11Y 10W40 BS1 Tech 1 111446-T13 Completed	PC11LL 15W40 BS2 Tech3 111349-T13 Completed	PC11A 10W30 BS1 Tech1 111337-T13 Preliminary Results Reported	PC11KK 15W40 BS2 Tech2 111439-T13 Preliminary Results Reported
	2	PC11KK 15W40 BS2 Tech2		PC11Y 10W40 BS1 Tech1 111445-T13		PC11LL 15W40 BS2 Tech3 111350-T13

✓ Indicates surveillance panel has reviewed operational data and found the test to be operationally valid.

Test Reported   Invalid   Wrong Oil

* Failed reference criteria

T-13 Reported Results
(Results are not lab severity adjusted)

Oil	TestKey	Lab	Stand	IR Peak Height @ EOT	Viscosity Increase@ 40°C (%)	Comment
PC11A	111339-T13	A	1	91.8	32.4	Failed reference criteria in mild direction
PC11A	111337-T13	G	1	116	61.2	Passed reference criteria – Prelim. Report
PC11KK	111439-T13	G	2	38.0	4.9	Preliminary Report

COAT

Run #	A	G
1	823 10W30 BS1 Tech 1	832* 15W40 BS1 Tech 1 110729-COAT Reported
2	PC11X 10W40 BS2 Tech 2	PC11FF 10W30 BS2 Tech 3 111352-COAT Reported
3	PC11FF 10W30 BS2 Tech 3	PC11EE 10W30 BS2 Tech 2
4	PC11EE 10W30 BS2 Tech 2	PC11X 10W40 BS2 Tech2

✓   Indicates surveillance panel has reviewed operational data and found the test to be operationally valid.

Test Reported   Invalid   Wrong Oil

* Failed reference criteria

COAT Reported Results
(Results are not lab severity adjusted)

Oil	TestKey	Lab	Stand	Average Aeration (40-50) - %	Comment
832	110729-COAT	G	1	10.99	Failed reference prediction error criteria in the severe direction

If there are any questions please let me know.

Best regards,
Frank

Frank Farber
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ftp://ftp.astmtmc.cmu.edu/docs/diesel/PC11matrix/20151103_VGRAMatrixTestStatus.pdf