



MEMORANDUM: 19-047
DATE: November 26, 2019
TO: Matthew Sangpeal, Chairman, L-42 Surveillance Panel
FROM: Dylan Beck *DJB B. ego*
SUBJECT: L-42 Reference Oil Testing from April 1, 2019 through September 30, 2019

Attached is a summary of reference oil testing activity this period.

DJB/djb/mem19-047.djb.doc

cc: Frank Farber

Jeff Clark

L-42 Surveillance Panel

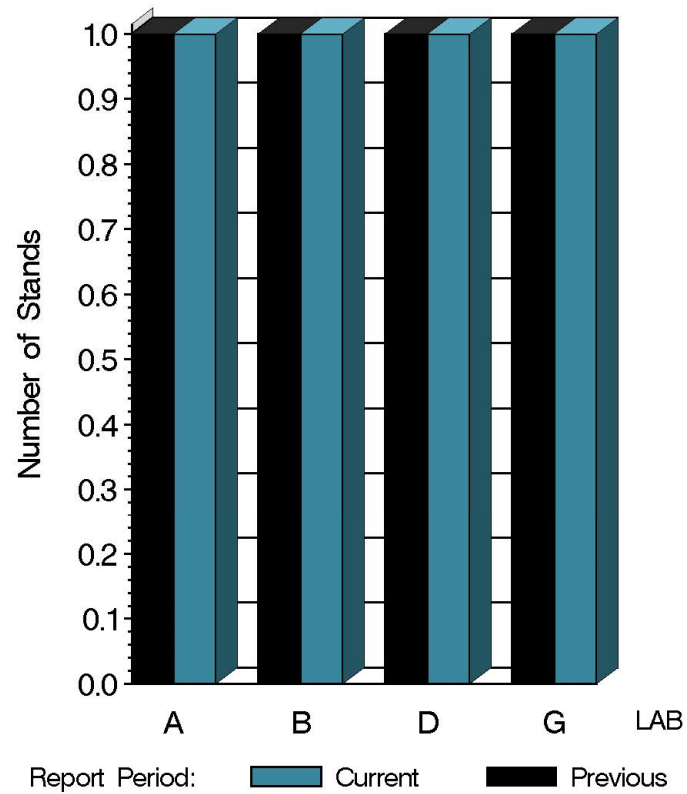
<http://www.astmtmc.cmu.edu/ftp/docs/gear/l42/semiannualreports/l42-10-2019.pdf>

Distribution: email

L-42 (D7452)

	Reporting Data	Calibrated on 9-30-19
Number of Labs	4	4
Number of Stands	4	4

BY-LAB STAND DISTRIBUTION



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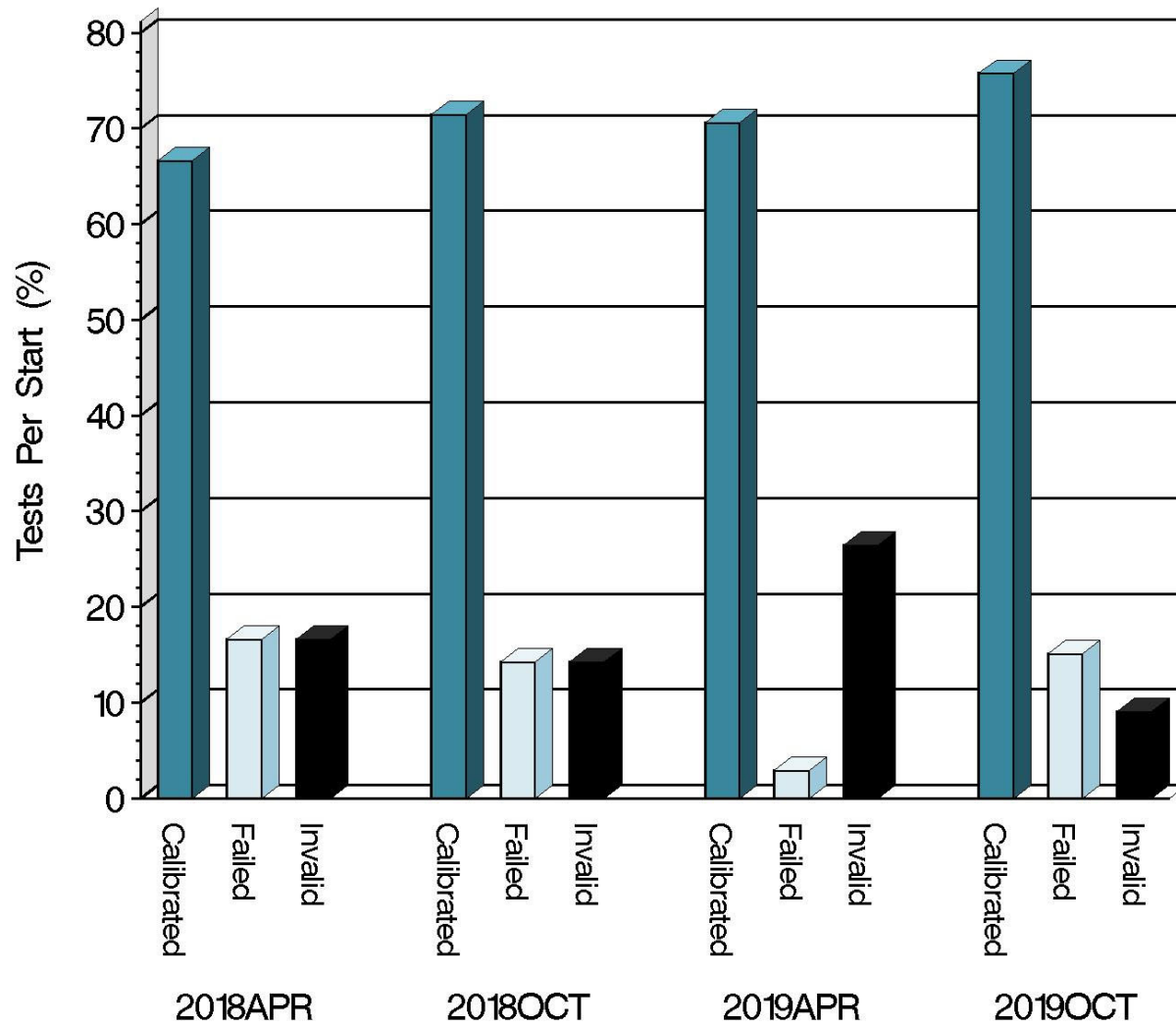
L-42 (D7452)

Test Distribution by Oil and Validity

					Totals	
		113	117	119	Last Period	This Period
Accepted for calibration	AC	0	25	0	24	25
Rejected (Mild)	OC	0	0	0	0	0
Rejected (Severe)	OC	0	5	0	1	5
Rejected (Precision)	OC	0	0	0	0	0
Accepted discrimination	AS	8	0	0	7	8
Unacceptable Information run	MI	0	0	1	0	1
Invalidated discrimination	LS	2	0	0	6	2
Invalidated calibration	LC	0	1	0	9	1
Aborted	XC	0	2	0	0	2
Acceptable information run	NI	0	6	5	1	11
Total		10	39	6	48	55

L-42 (D7452)

CALIBRATION ATTEMPT SUMMARY



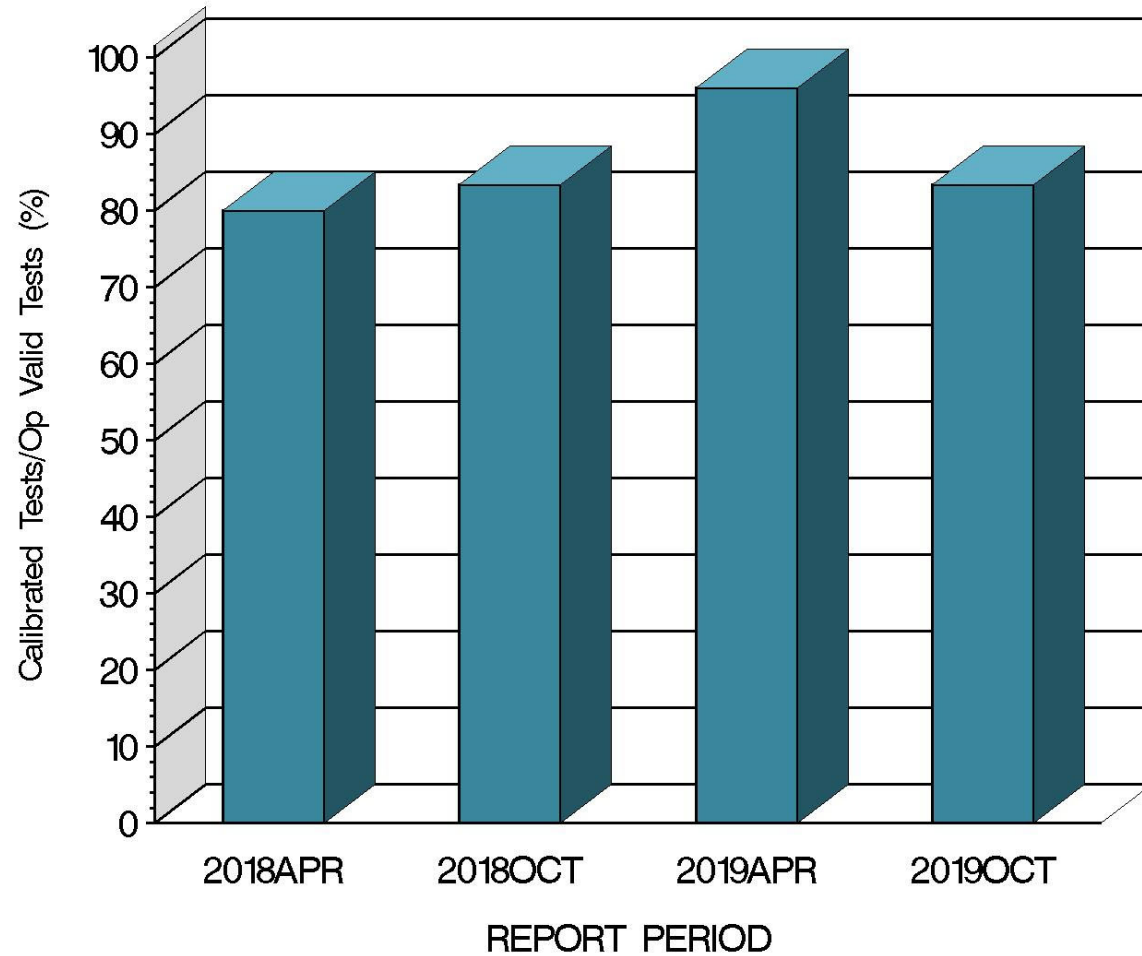
Resolution

Report Period

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OPERATIONALLY VALID TESTS
MEETING ACCEPTANCE CRITERIA



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CAUSES FOR LOST TESTS

		Oil		Validity				Loss Rate		
Lab	Cause	113	117	LS	LC	XC	XI	Lost	Starts	%
B	SS2 Torque not within 10% of other test in reference series	●		●				2	6	33%
	Mechanical failure resulted in missing data		●		●			1	10	10%
A	Emergency shutdown		●			●		1	4	25%
G	Torque meter error		●			●		1	4	25%
Lost		2	3	2	1	2	0			
Starts		10	39	55	55	55	55			
%		20%	26%	3.6%	1.8%	3.6%	0%			

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			Coast Side Pinion Scoring		
Oil	Gear Batch	N	Mean	Std. Dev.	Average Δ/s
117	C1L446/P8AD132	15	37.0	26.63	2.55
117	C1L925/P8AD078X	15	21.8	3.88	-0.22

		Pooled Standard Deviation			
Lab	Coast Side Pinion Scoring Δ/s	df	Coast Side Pinion Scoring	Coast Side Ring Scoring	Shock Series I Coast Side Ring Scoring
A	0.36	2	2.00	2.00	0.00
B	-0.43	8	4.27	2.51	0.00
D	2.82	14	26.63	16.78	15.86
G	-0.18	2	2.65	1.00	0.00

L-42 (D7452)

SUMMARY OF SEVERITY & PRECISION

Severity

Severity exceeded the action limit this period but has since returned within limits.

Precision

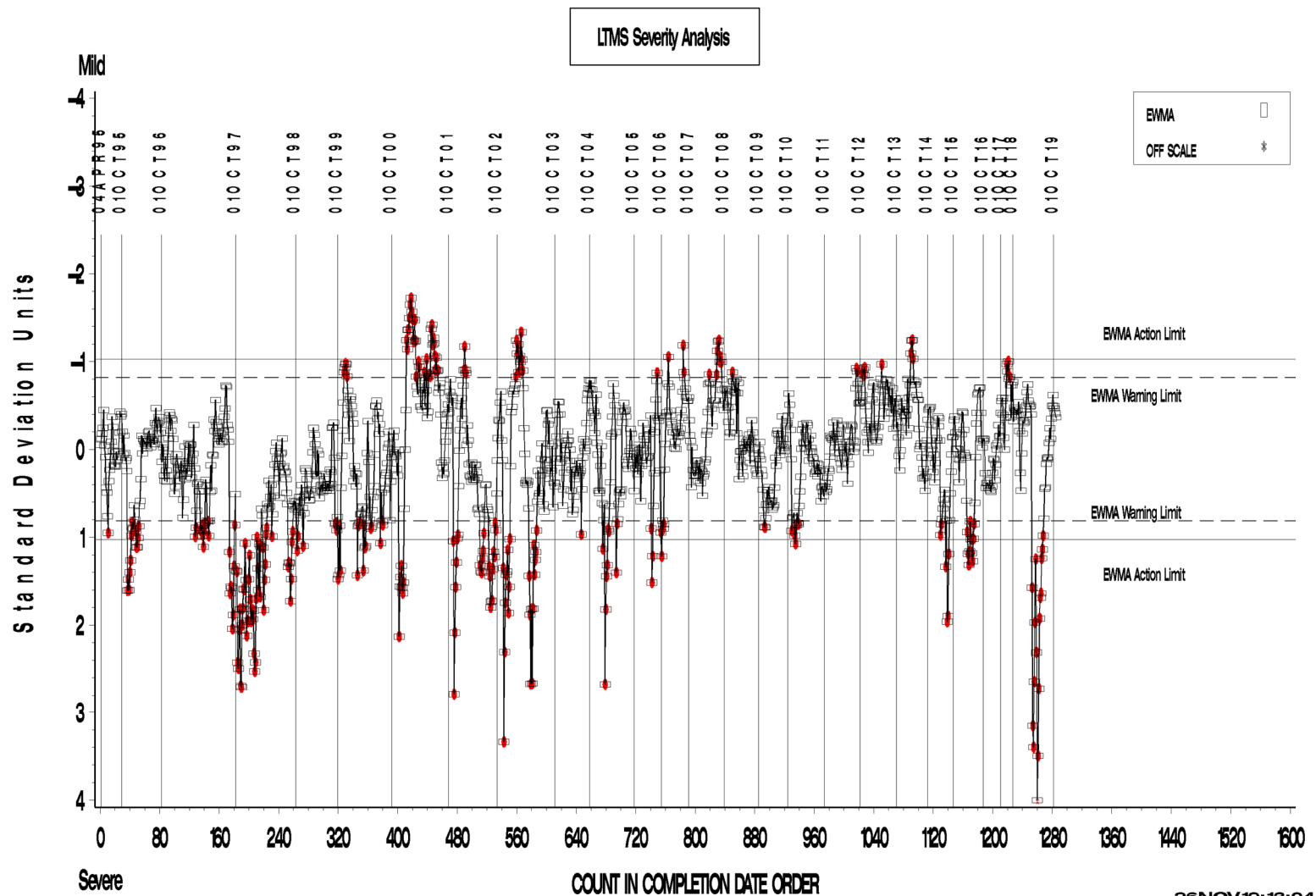
Precision exceeded the action limit this period but has since returned within limits.

Industry control charts follow.

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L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE



Test Monitoring Center

<http://astmtmc.cmu.edu>



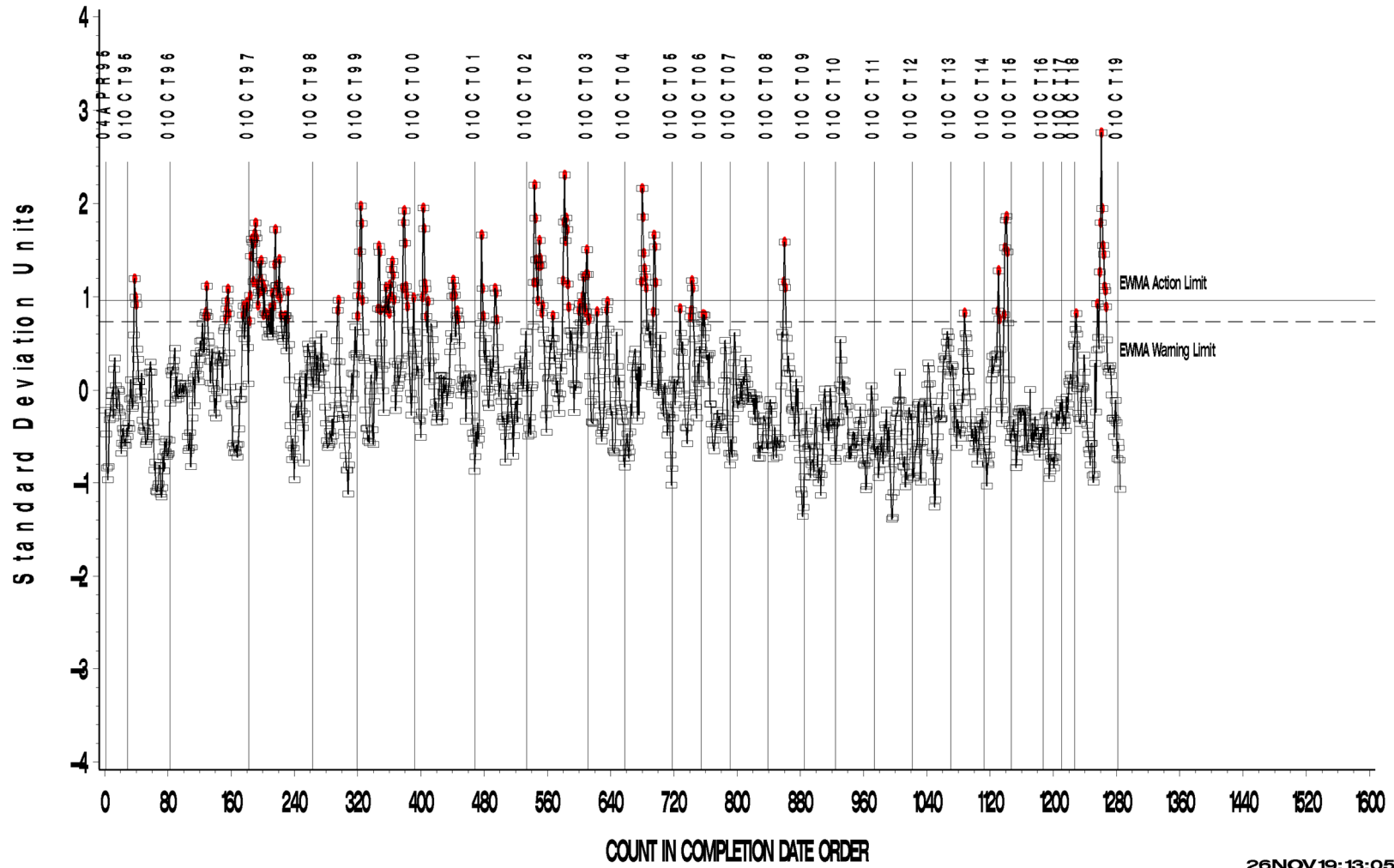
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L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE

LTMS Precision Analysis



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L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE

CUSUM Severity Analysis



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Test Monitoring Center

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TIMELINE ADDITIONS

Effective Date	Information Letter	Event
No information letters issued during this period.		

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LAB VISITS

No L-42 lab visits were conducted during this period.

INFORMATION LETTERS

No information letters issued during this period.

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STATUS OF REFERENCE OIL SUPPLY

Oil	Cans @ Labs	@ TMC	
		Cans	Gallons
113	14	65	32.7
116-1	0	0	0.0
117	32	684	342.0
119	5	108	54.0
Total	51	857	428.7

At surveillance panel direction, the TMC has procured oil 117 as a replacement oil for 116-1. This is a J2360 oil which produces somewhat milder scoring. The oil has been implemented for use as the new “pass” oil with a correction factor +6% for the pinion scoring result and +4% for the ring scoring result.

119 oil is currently being evaluated as a replacement oil to 113 discrimination oil. 119 has not yet been approved by the surveillance panel.