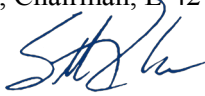




Test Monitoring Center

@ Carnegie Mellon University
6555 Penn Avenue, Pittsburgh, PA 15206, USA

<http://astmtmc.cmu.edu>
412-365-1000

MEMORANDUM: 16-006
DATE: April 26, 2016
TO: Eric Donovan, Chairman, L-42 Surveillance Panel
FROM: Scott Parke 
SUBJECT: L-42 Reference Oil Testing from October 1, 2015 through March 31, 2016

Please find attached a summary of reference oil testing activity this period.

SDP/sdp/mem16-006.sdp.doc

cc: Frank Farber

Jeff Clark

L-42 Surveillance Panel

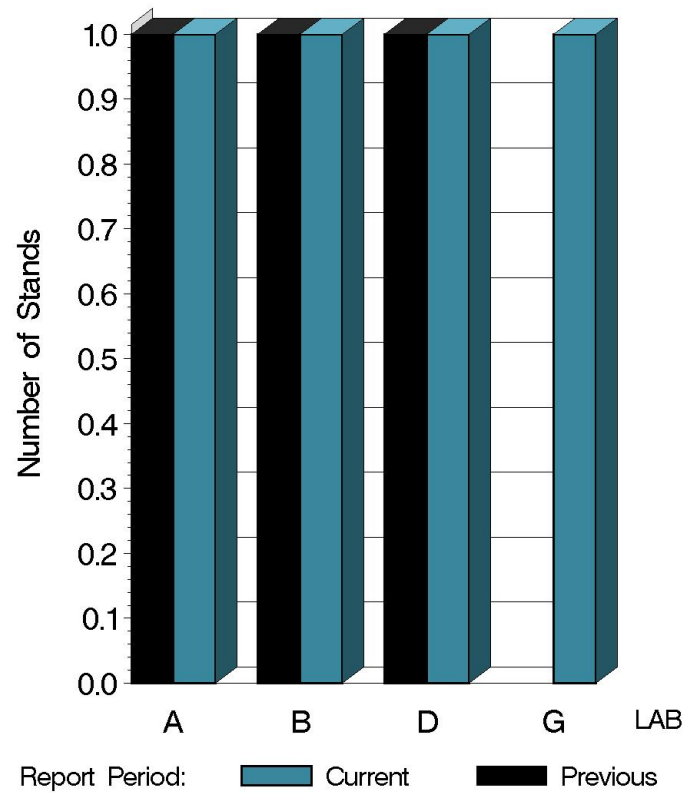
<ftp://ftp.astmtmc.cmu.edu/docs/gear/l42/semiannualreports/l42-04-2016.pdf>

Distribution: email

L-42 (D7452)

	Reporting Data	Calibrated on 3-31-16
Number of Labs	4	3
Number of Stands	4	3

BY-LAB STAND
DISTRIBUTION



12:27:21 26APR2016

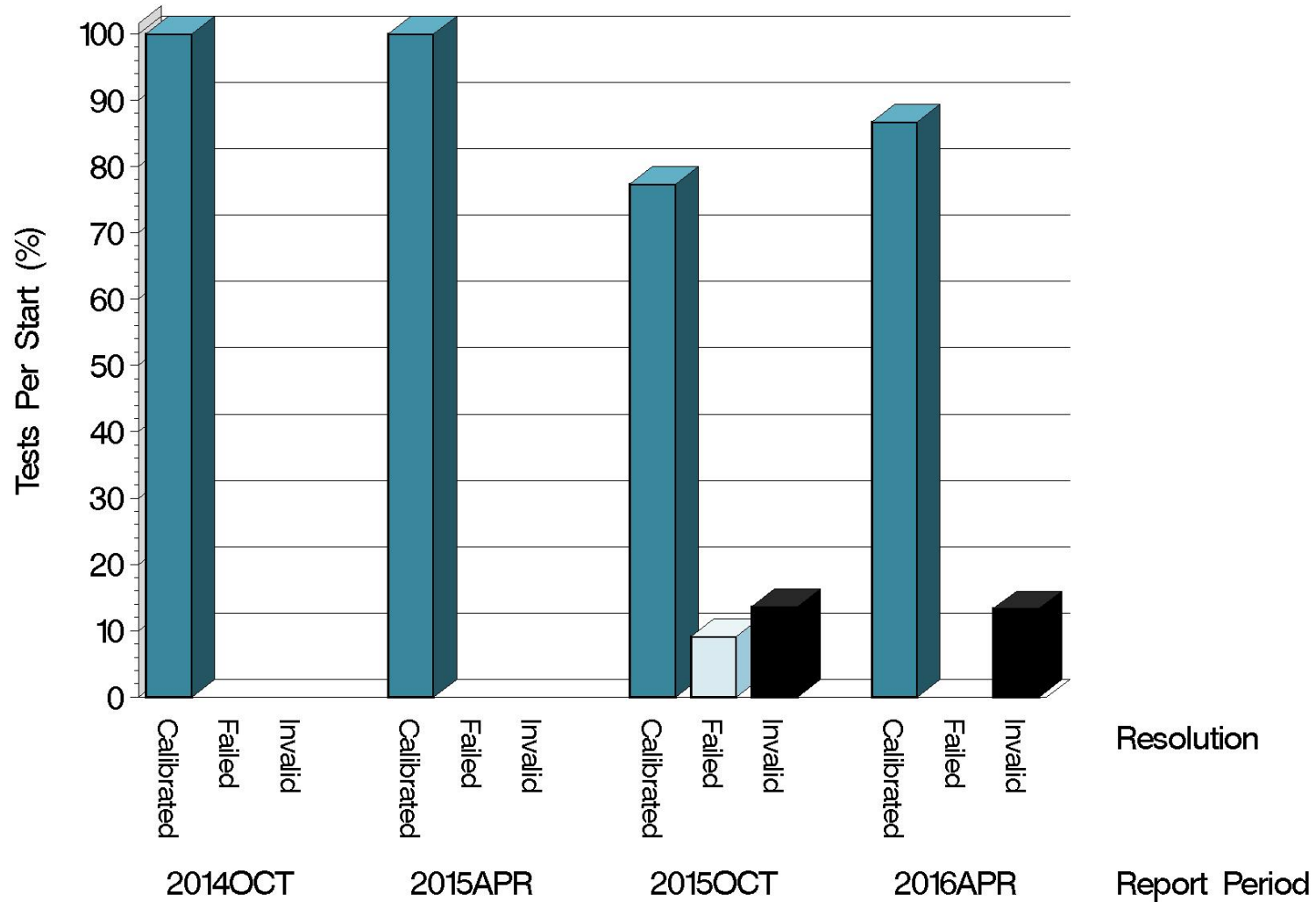
L-42 (D7452)

Test Distribution by Oil and Validity

						Totals	
		112-2	113	116-1	117	Last Period	This Period
Accepted for calibration	AC	0	0	4	9	17	13
Rejected (Mild)	OC	0	0	0	0	0	0
Rejected (Severe)	OC	0	0	0	0	2	0
Rejected (Precision)	OC	0	0	0	0	0	0
Accepted discrimination	AS	0	3	0	0	2	3
Unacceptable discrimination	MS	0	1	0	0	0	1
Invalidated discrimination	LS	0	0	0	0	0	0
Invalidated calibration	LC	0	0	2	0	3	2
Unacceptable calibration	MC	0	0	0	0	0	0
Aborted	XC	0	0	0	0	0	0
Acceptable information run	NI	0	0	0	0	5	0
Unacceptable information run	MI	0	0	0	0	0	0
Total		0	4	6	9	29	19

L-42 (D7452)

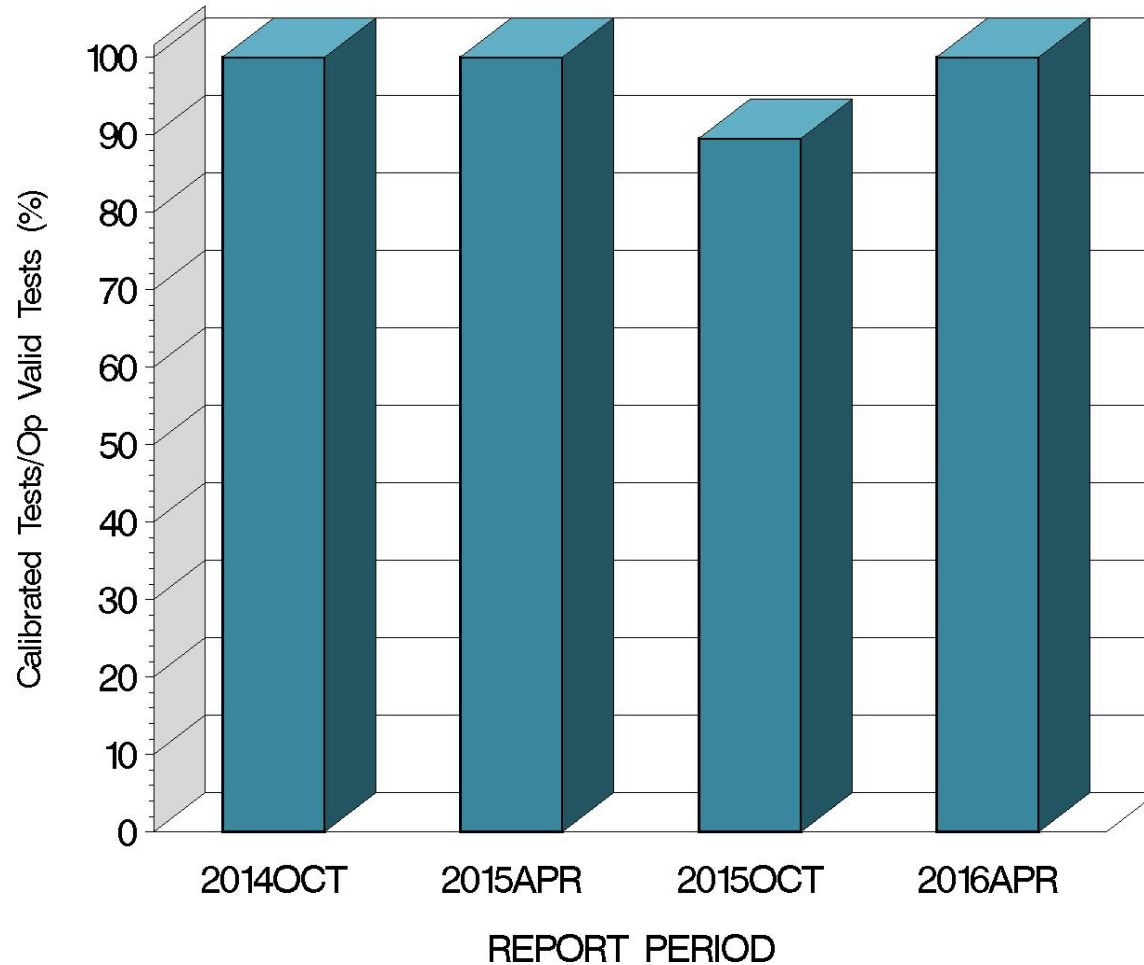
CALIBRATION ATTEMPT SUMMARY



12:27:21 26APR2016

L-42 (D7452)

OPERATIONALLY VALID TESTS
MEETING ACCEPTANCE CRITERIA



12:27:21 26APR2016

L-42 (D7452)

CAUSES FOR LOST TESTS

Lab	Cause	Oil				Validity				Loss Rate		
		112-2	113	116-1	117	MS	LS	LC	MI	Lost	Starts	%
A	Shock series 2 torque too high		●			●				1	5	20%
G	Max shock series 2 wheel speed out of spec			●				●		2	6	33%
	Max shock series 2 wheel speed out of spec			●				●				
Lost		0	1	2	0	1	0	2	0			
Starts		0	4	6	9	19	19	19	19			
%		0%	25%	33%	0%	5%	0%	11%	0%			

L-42 (D7452)

			Coast Side Pinion Scoring		
Oil	Gear Batch	N	Mean	Std. Dev.	Average Δ/s
116-1	C1L925/P8AD078X	4	19.5	2.89	-0.64
117	C1L925/P8AD078X	9	23.2	4.94	0.04

		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	-0.85	1	1.41	1.41	0
B	0.55	5	2.97	2.73	0
D	-0.18	0	0	0	0
G	-0.91	1	3.54	0.71	1.41

L-42 (D7452)

SUMMARY OF SEVERITY & PRECISION

Severity
ECSP severity remained within control chart limits throughout the period.
Precision
Precision also remained within limits throughout the period.

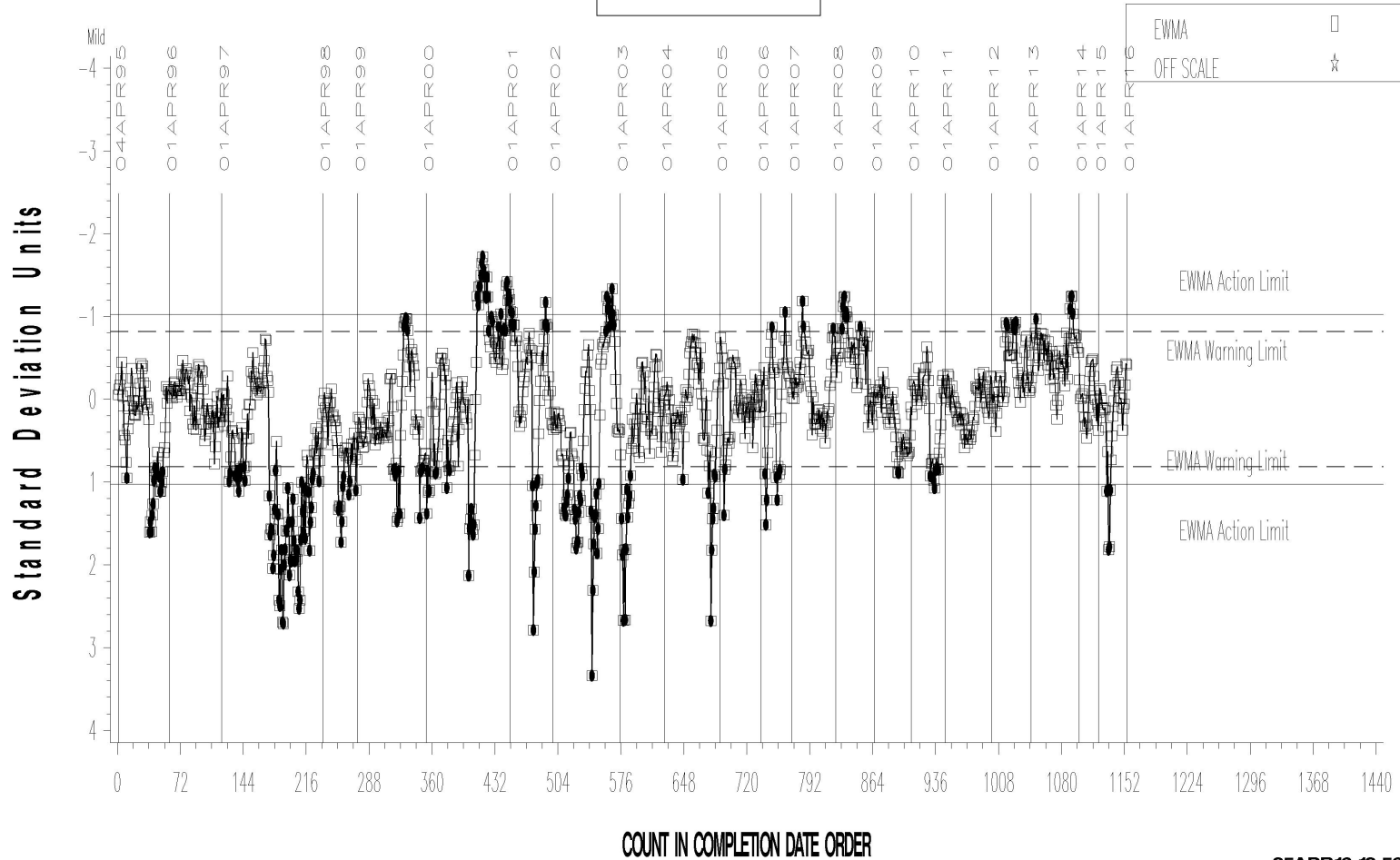
Industry control charts follow.

L-42 (D7452)

L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE

LTMS Severity Analysis



Severe

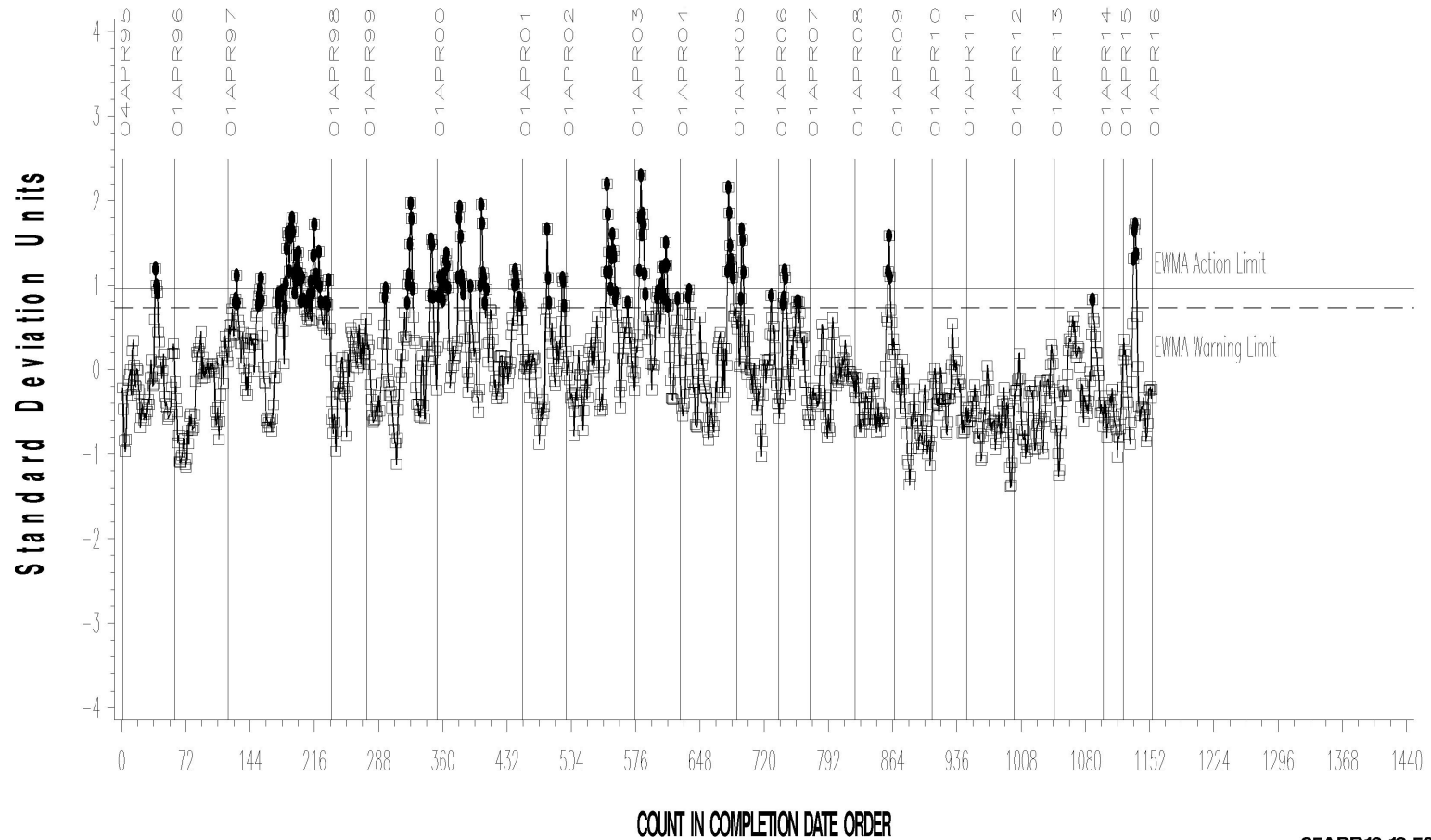
25APR16:12:56

L-42 (D7452)

L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE

LTMS Precision Analysis



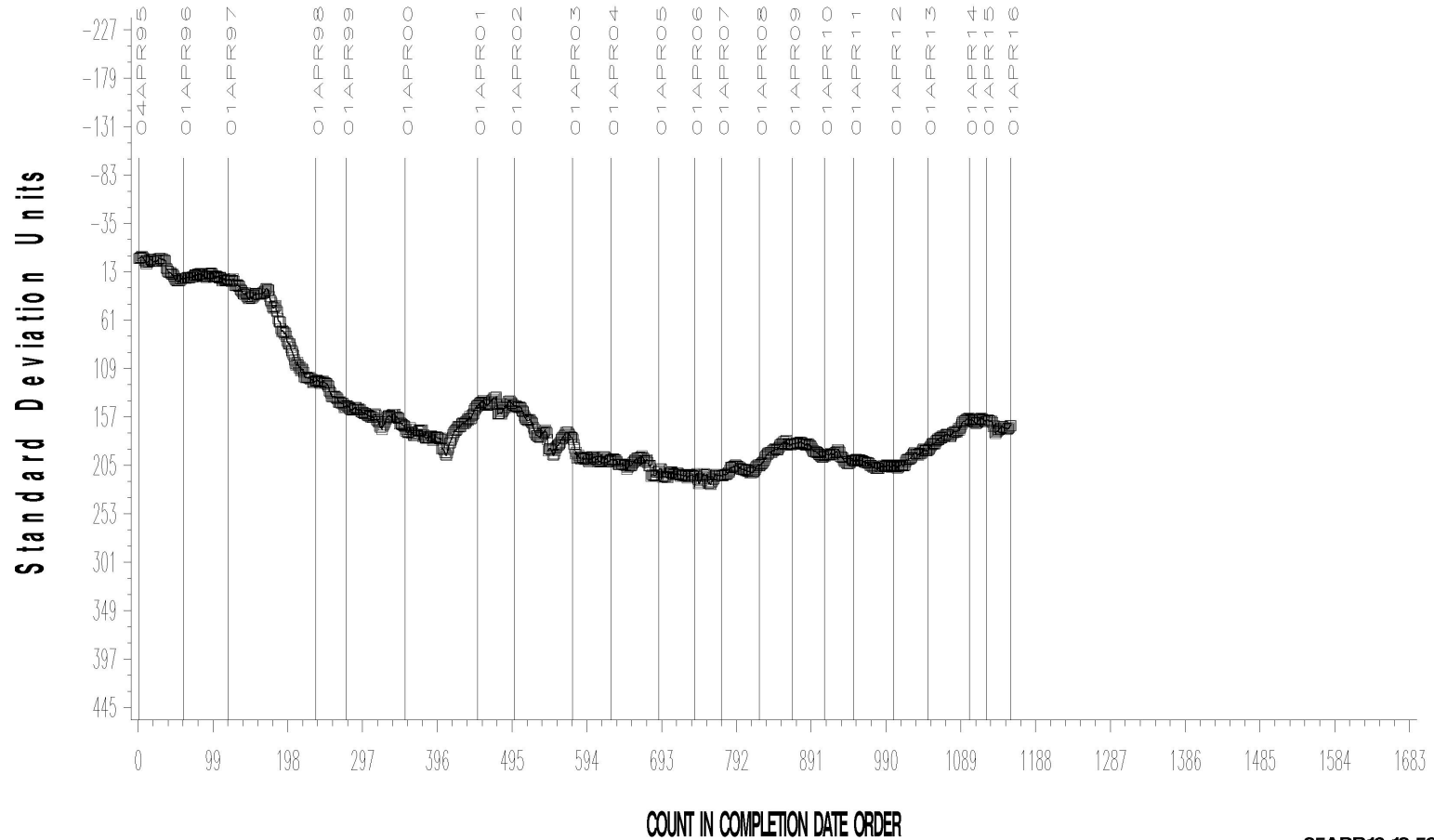
25APR16:12:58

L-42 (D7452)

L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE

CUSUM Severity Analysis



25APR16:12:59

L-42 (D7452)

TIMELINE ADDITIONS

Effective Date	Information Letter	Event
		No industry timeline additions were made this period.

L-42 (D7452)

LAB VISITS

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

INFORMATION LETTERS

No information letters were issued this period.

L-42 (D7452)

STATUS OF REFERENCE OIL SUPPLY

Oil	Cans @ Labs	@ TMC	
		Cans	Gallons
112-2	0	15	7.5
113	10	124	62.0
116-1	2	0	0.0
117	21	900	450.0
Total	33	1039	519.5

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.