



Test Monitoring Center

@ Carnegie Mellon University
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<http://astmtmc.cmu.edu>
412-365-1000

MEMORANDUM: 15-045

DATE: November 20, 2015

TO: Mike Birke,
Chairman, Engine Oil Elastomer Compatibility Surveillance Panel

FROM: Michael T. Kasimirsky *Michael T. Kasimirsky*

SUBJECT: EOEC Testing from April 1, 2015 through September 30, 2015

A total of 300 EOEC tests were reported from 5 labs to the Test Monitoring Center during the period from April 1, 2015 through September 30, 2015.

Please find attached a summary of testing activity this period.

MTK/mtk/mem15-045.mtk.doc

cc: Frank Farber

Jeff Clark

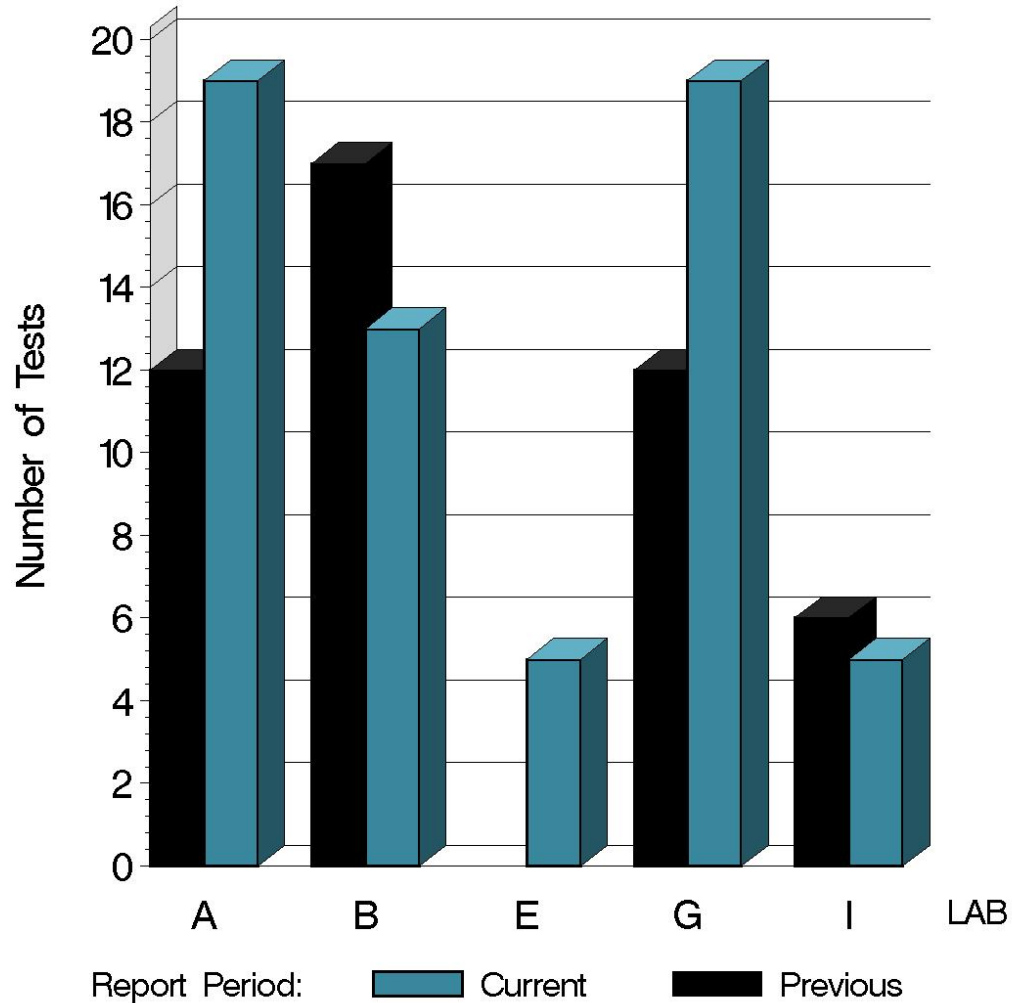
EOEC Surveillance Panel

<ftp://ftp.astmtmc.cmu.edu/docs/bench/eoec/semiannualreports/eoec-10-2015.pdf>

Distribution: email

EOEC (D 7216)

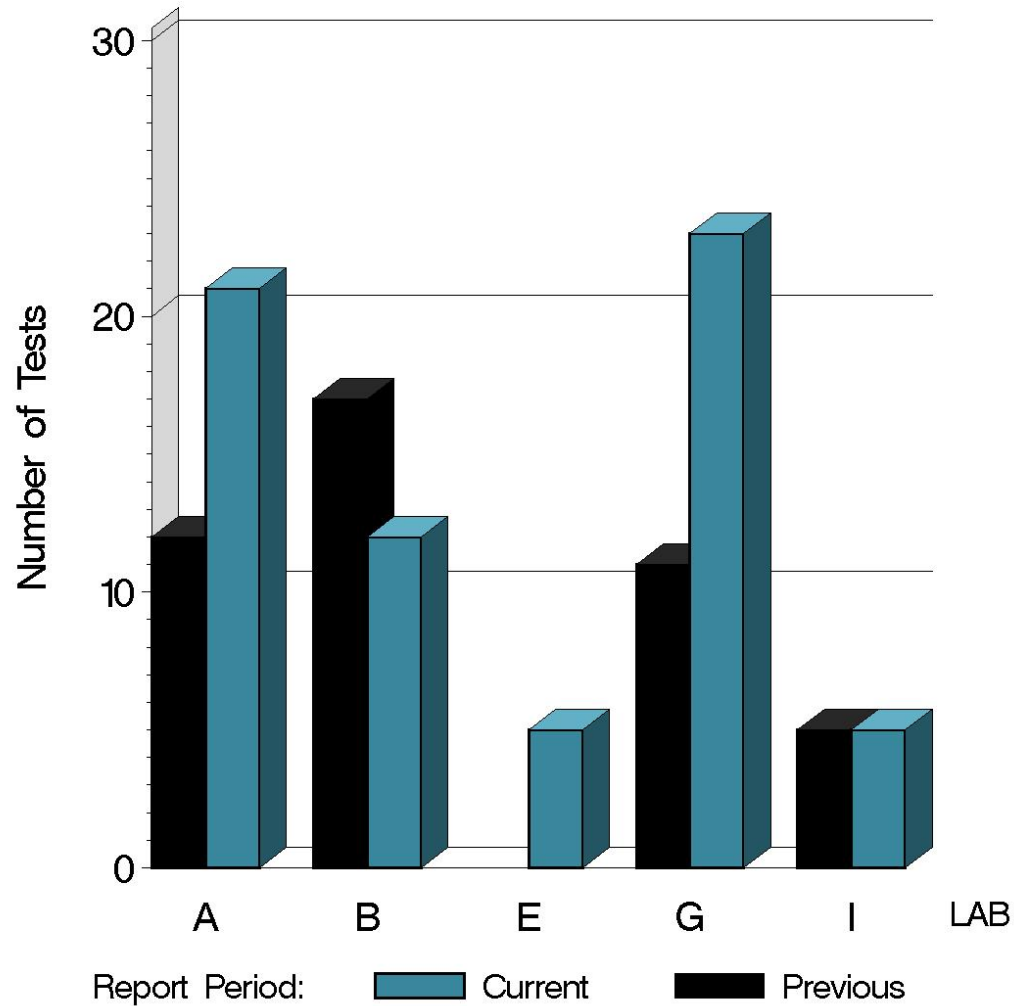
NUMBER OF FLUOROELASTOMER TESTS
REPORTED BY LAB AND REPORT PERIOD



13:05:20 20NOV2015

EOEC (D 7216)

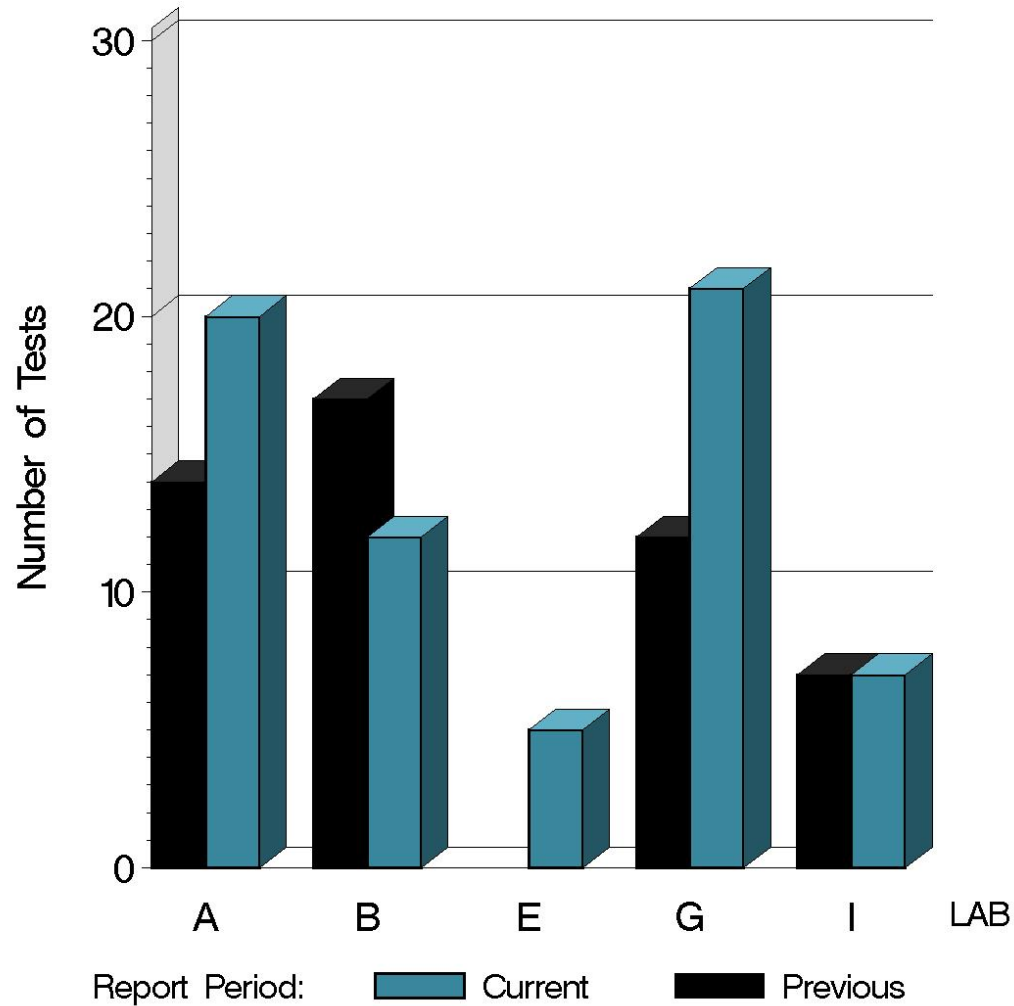
NUMBER OF NITRILE TESTS REPORTED BY LAB AND REPORT PERIOD



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EOEC (D 7216)

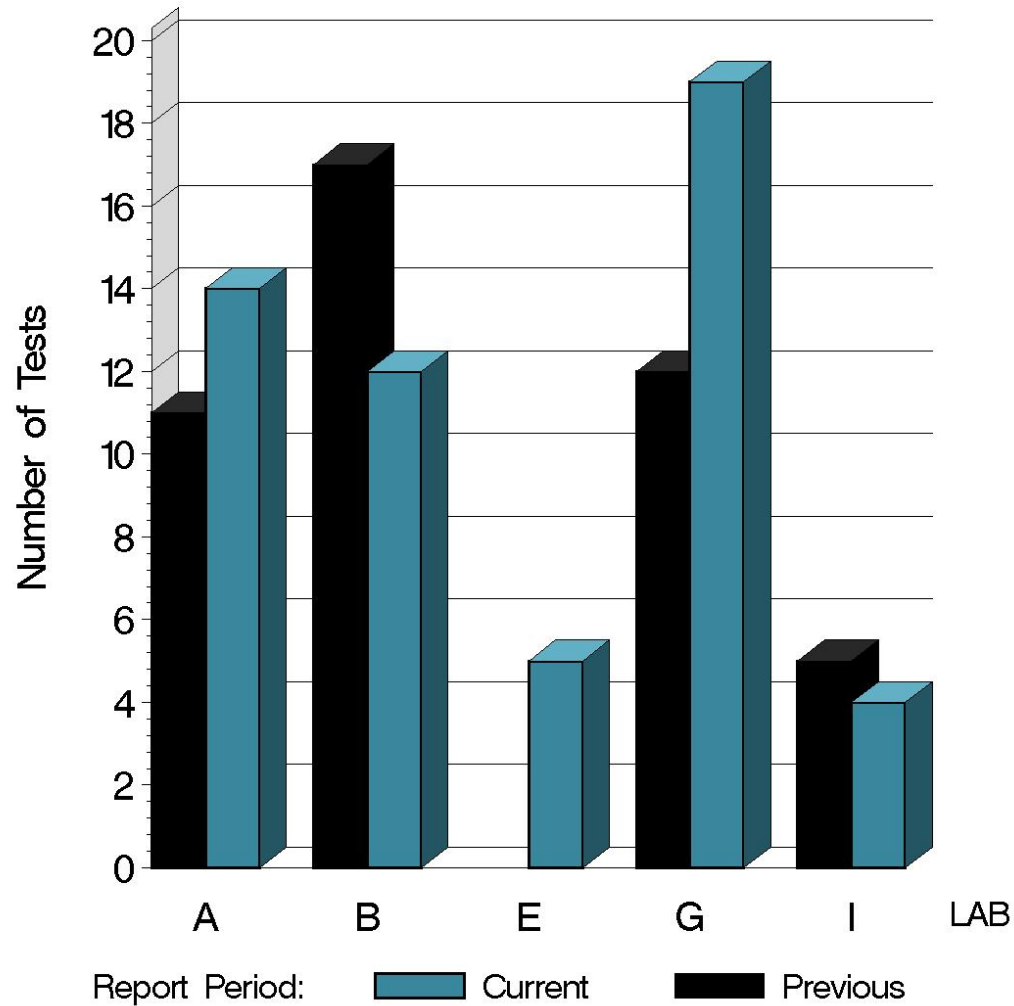
NUMBER OF POLYACRYLATE TESTS REPORTED BY LAB AND REPORT PERIOD



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EOEC (D 7216)

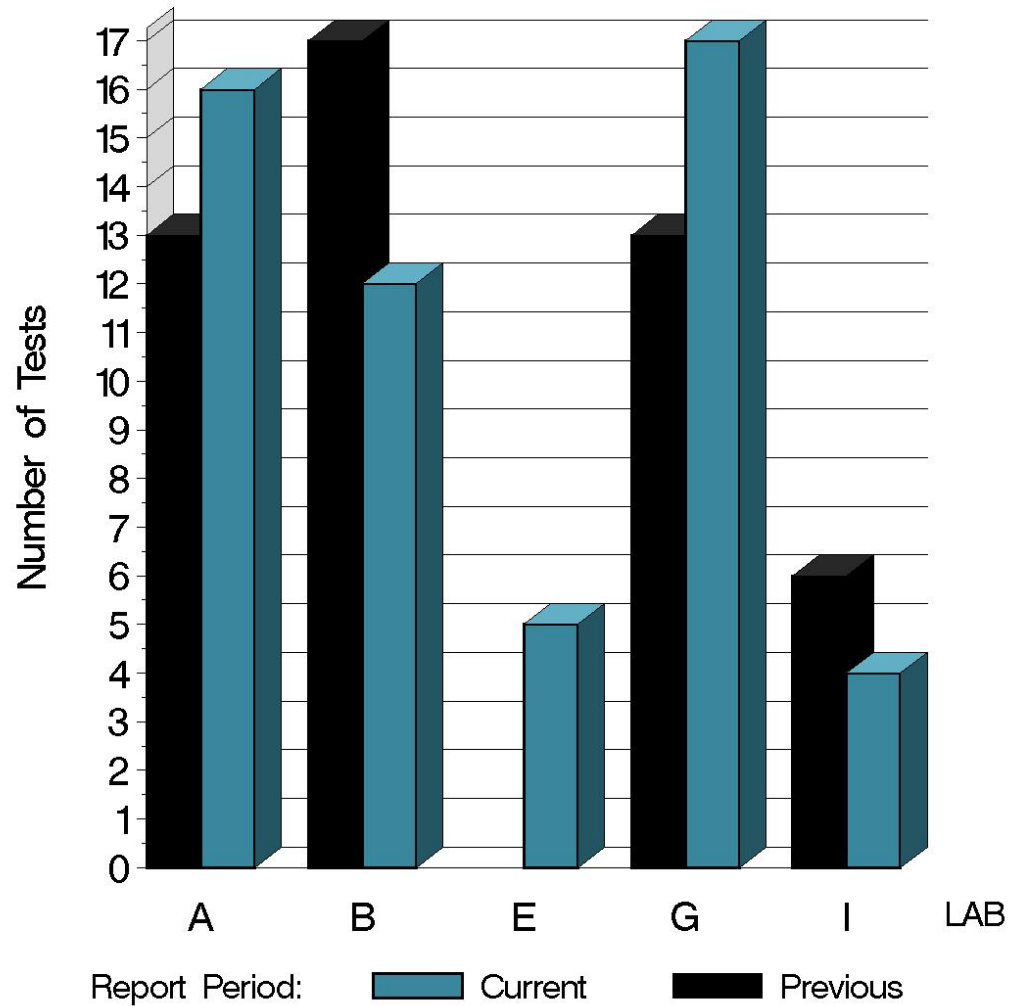
NUMBER OF SILICONE TESTS REPORTED BY LAB AND REPORT PERIOD



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EOEC (D 7216)

NUMBER OF VAMAC TESTS REPORTED BY LAB AND REPORT PERIOD



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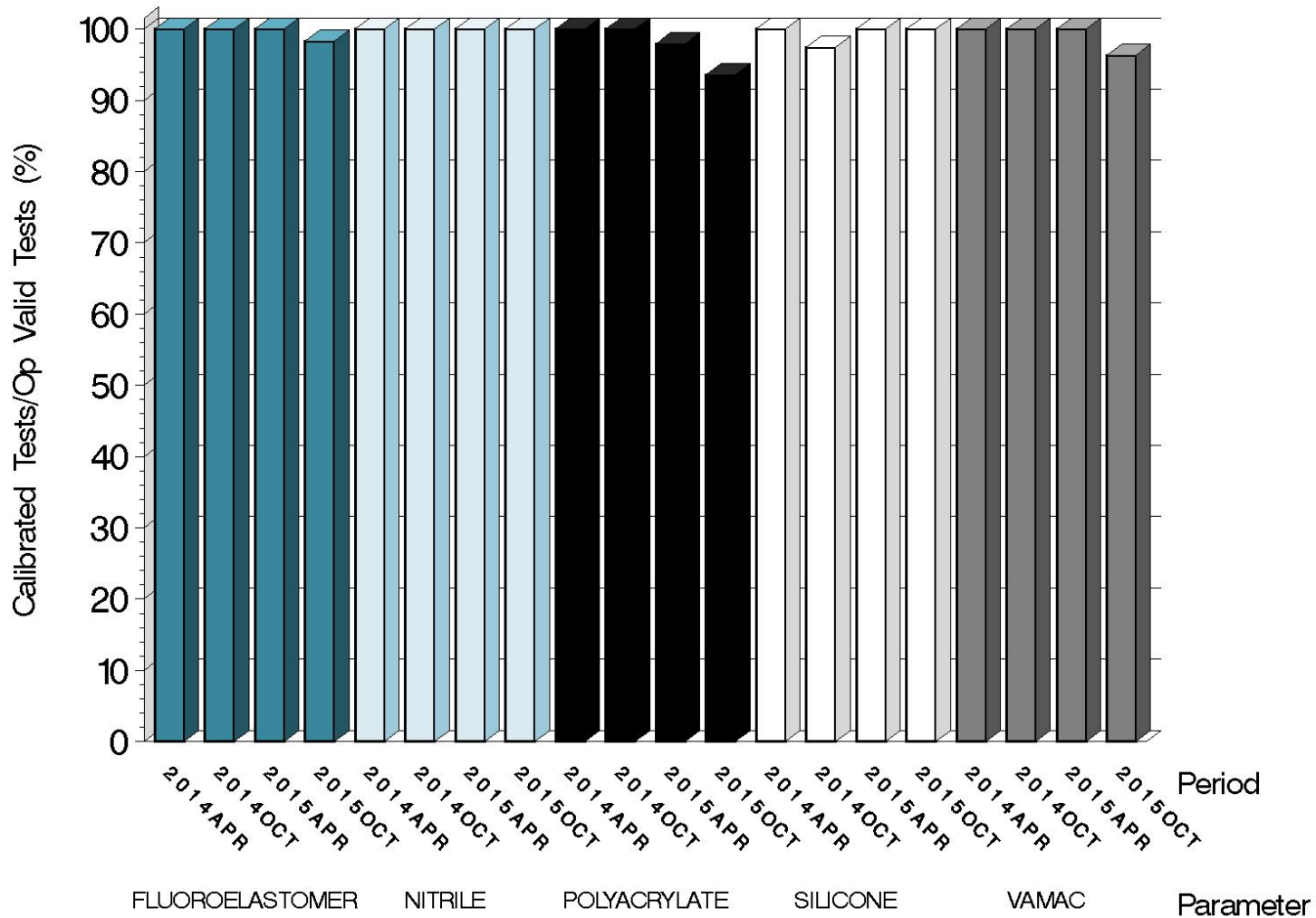
EOEC (D 7216)

Test Distribution by Oil and Validity

		Fluoroelastomer	Nitrile	Polyacrylate	Silicone	Vamac	This Period	Last Period
Accepted for Calibration	AC	59	66	58	54	52	289	232
Rejected	OC	1	0	4	0	2	7	1
Information Run	NI	0	0	0	0	0	0	0
Operationally Invalid (lab)	LC	1	0	2	0	0	3	2
Operationally Invalid (lab/TMC)	RC	0	0	0	0	0	0	0
Aborted Calibration	XC	0	0	1	0	0	1	1
Total		61	66	65	54	54	300	236

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OPERATIONALLY VALID TESTS
MEETING ACCEPTANCE CRITERIA



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LOST TESTS PER START BY LAB AND ELASTOMER TYPE

Lab	Fluoroelastomer			Nitrile			Polyacrylate			Silicone			Vamac			Total		
	Lost	Starts	%	Lost	Starts	%	Lost	Starts	%	Lost	Starts	%	Lost	Starts	%	Lost	Starts	%
A	1	19	5	0	21	0	1	20	5	0	14	0	0	16	0	2	90	2
B	0	13	0	0	12	0	0	12	0	0	12	0	0	12	0	0	61	0
E	0	5	0	0	5	0	0	5	0	0	5	0	0	5	0	0	25	0
G	0	19	0	0	23	0	2	21	10	0	19	0	0	17	0	2	99	2
I	0	5	0	0	5	0	0	7	0	0	4	0	0	4	0	0	25	0
Total	1	61	2%	0	66	0	3	65	5%	0	54	0	0	54	0	4	300	1%

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CAUSES FOR LOST TESTS

Lab	Cause	Elastomer					Validity			Loss Rate		
		Fluoroelastomer	Nitrile	Polyacrylate	Silicone	VAMAC	LC	RC	XC	Lost	Starts	%
A	Wrong Material Used	0	0	1	0	0	0	1	1	90	1%	
G	Bath Failure	1	0	2	0	0	2	0	1	3	99	3%
	Lost	1	0	3	0	0	2	0	2			
	Starts	61	66	65	54	54	300	300	300			
	%	2%	0	5%	0	0	0.7%	0	0.7%			

Lost tests are calibration attempts that were either aborted or operationally invalid

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Average Δ /s by Lab						
Elastomer	Lab	n	VOLCYI	HARDYI	TENSYI	ELONYI
Fluoroelastomer	A	19	0.021	0.653	-0.415	-1.053
	B	13	0.915	0.073	0.183	-0.459
	E	5	-0.757	-0.409	-0.166	-1.718
	G	18	-0.582	0.242	-0.022	-0.694
	I	5	0.297	-0.136	0.273	-0.261
	Industry	60	-0.008	0.250	-0.090	-0.806
Nitrile	A	21	1.571	1.451	-0.164	-0.355
	B	12	2.242	1.034	-0.751	-0.543
	E	5	1.226	0.073	-1.872	-0.801
	G	23	1.027	1.120	-1.012	-0.777
	I	5	1.569	1.542	-1.248	-0.815
	Industry	66	1.477	1.162	-0.778	-0.605
Polyacrylate	A	19	2.071	-0.301	-0.637	0.186
	B	12	2.341	-0.643	-0.465	0.906
	E	5	1.289	0.283	0.878	1.794
	G	19	1.029	0.780	-0.411	0.562
	I	7	2.669	0.045	-1.004	0.462
	Industry	62	1.808	0.050	-0.454	0.601
Silicone	A	14	-0.274	-0.490	0.698	0.289
	B	12	0.269	-0.408	0.557	0.173
	E	5	0.443	0.343	-0.234	0.288
	G	19	1.326	-0.219	0.319	-0.214
	I	4	0.153	-0.123	-0.964	0.111
	Industry	54	0.508	-0.272	0.324	0.073
VAMAC	A	16	0.732	-1.966	0.190	0.446
	B	12	-0.063	-1.856	-0.558	-0.183
	E	5	-0.263	-2.611	0.504	0.797
	G	17	0.749	-1.397	0.060	0.036
	I	4	0.505	-2.558	-0.632	-0.887
	Industry	54	0.452	-1.866	-0.049	0.111

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Individual test results can be viewed at the links shown in the following table:

<i>Links to Individual Test Result Data</i>	
Elastomer Type	Web Link to Data
Fluoroelastomer	ftp://ftp.astmtmc.cmu.edu/refdata/bench/eoecf/data/
Nitrile	ftp://ftp.astmtmc.cmu.edu/refdata/bench/eoecn/data/
Polyacrylate	ftp://ftp.astmtmc.cmu.edu/refdata/bench/eoecp/data/
Silicone	ftp://ftp.astmtmc.cmu.edu/refdata/bench/eoecs/data/
VAMAC	ftp://ftp.astmtmc.cmu.edu/refdata/bench/eoecv/data/

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Severity & Precision Analysis

Due to statistically significant lab differences, a meaningful summary of industry level severity and precision cannot be provided.

A more detailed summary of this situation is available from the following link:

<ftp://ftp.astmtmc.cmu.edu/docs/bench/eoec/memos/EOEC%20Baseline%20Analysis.pdf>

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INFORMATION LETTERS

- No EOEC Information Letters were issued this period.

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STATUS OF REFERENCE OIL SUPPLY

Oil	Samples @ Labs	@ TMC	
		Samples (750 mL)	Gallons
1006-1	226	802	159
Total	226	802	159

The TMC inventory of oil 1006-1 is nearly depleted.

At current usage rates, oil 1006-1 will be depleted in approximately 4 months.

The TMC has 2,000 gallons of Reference Oil 1006-2 available, but it has not been approved for EOEC testing at this time.