



## Test Monitoring Center

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

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

MEMORANDUM: 16-008  
DATE: April 27, 2016  
TO: Gil Reinhard, Chairman, CBT Surveillance Panel  
FROM: Michael T. Kasimirsky *Michael T. Kasimirsky*  
SUBJECT: CBT Testing from October 1, 2015 through March 31, 2016

A total of 19 CBT tests were reported to the Test Monitoring Center during the report period from October 1, 2015 through March 31, 2016.

Please find attached a summary of testing activity this period.

MTK/mtk/astm0416.doc/mem16-008.mtk.doc

cc: F. M. Farber

J. A. Clark

CBT Surveillance Panel

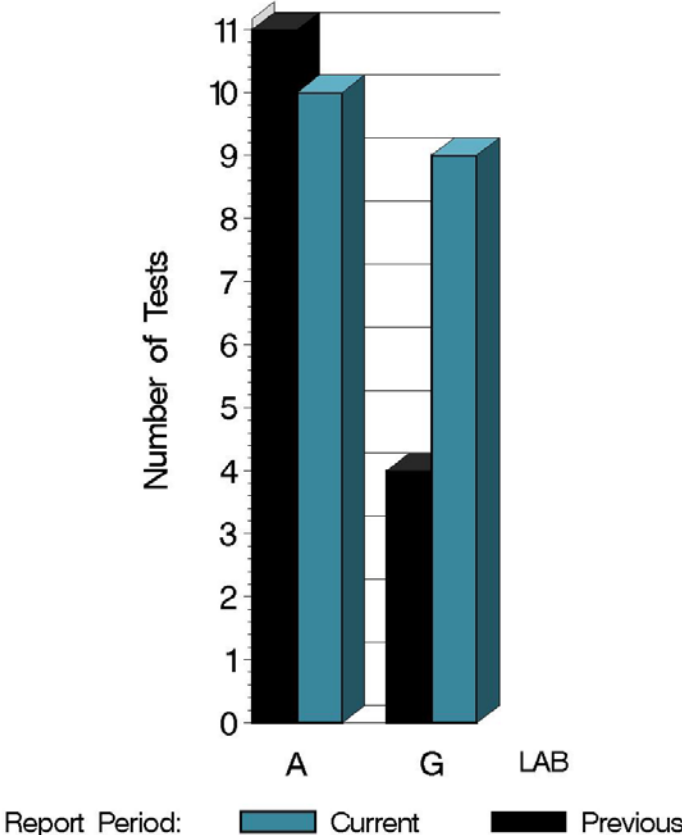
<ftp://ftp.astmtmc.cmu.edu/docs/bench/cbt/semiannualreports/cbt-04-2016.pdf>

Distribution: email

# CBT (D 5968)

Reporting Data	
Number of Labs	2

NUMBER OF TESTS REPORTED  
BY LAB AND REPORT PERIOD



10:09:43 27APR2016

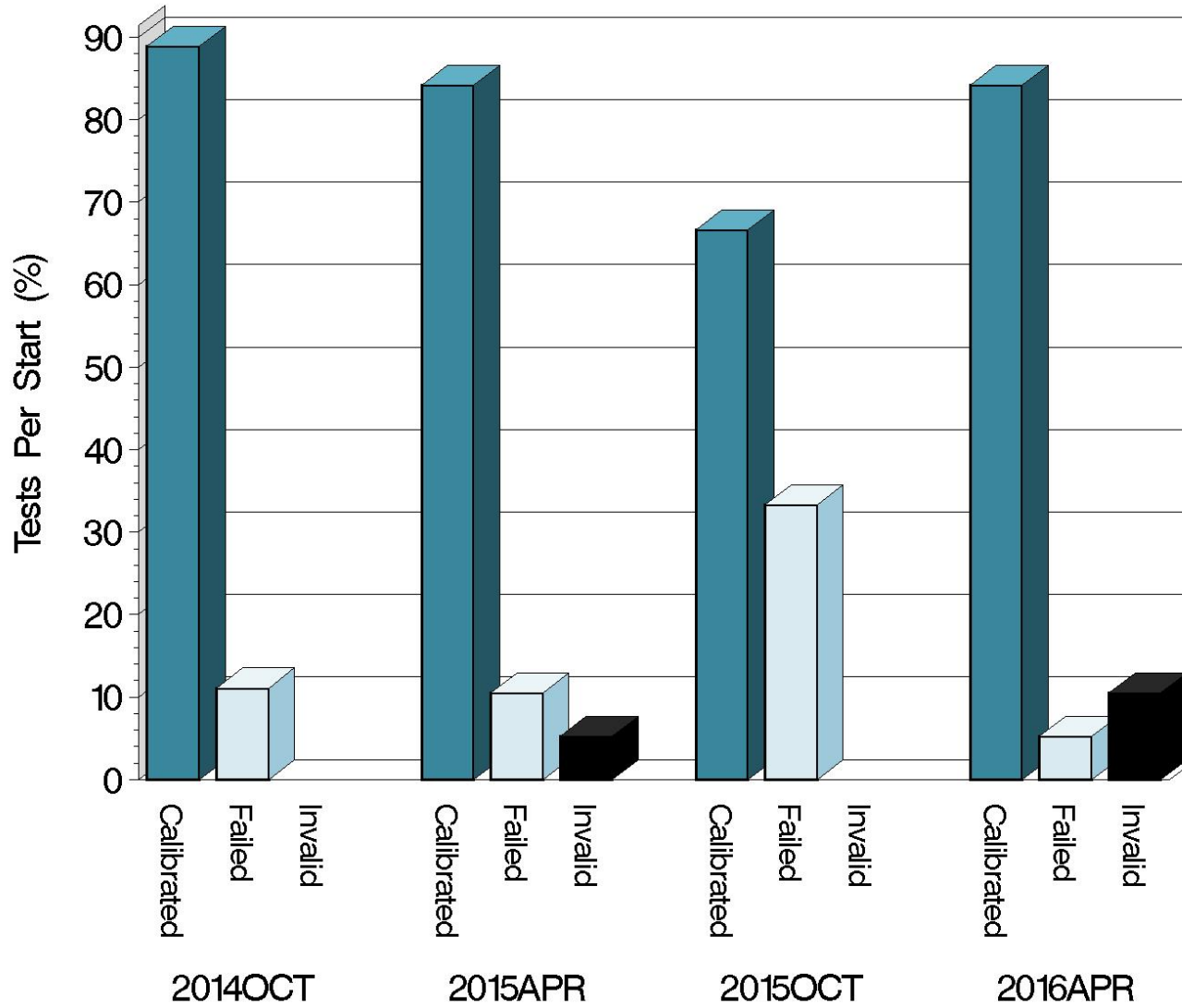
# CBT (D 5968)

## Test Distribution by Validity

		Number of Tests
Accepted for Calibration	AC	16
Rejected	OC	1
Invalidated	LC	2
Aborted	XC	0
Hardware Approval run	NI	0
Unacceptable Approval run	MI	0
Invalid Approval run	LI	0
<hr/>		
Total		19

# CBT (D 5968)

## CALIBRATION ATTEMPT SUMMARY



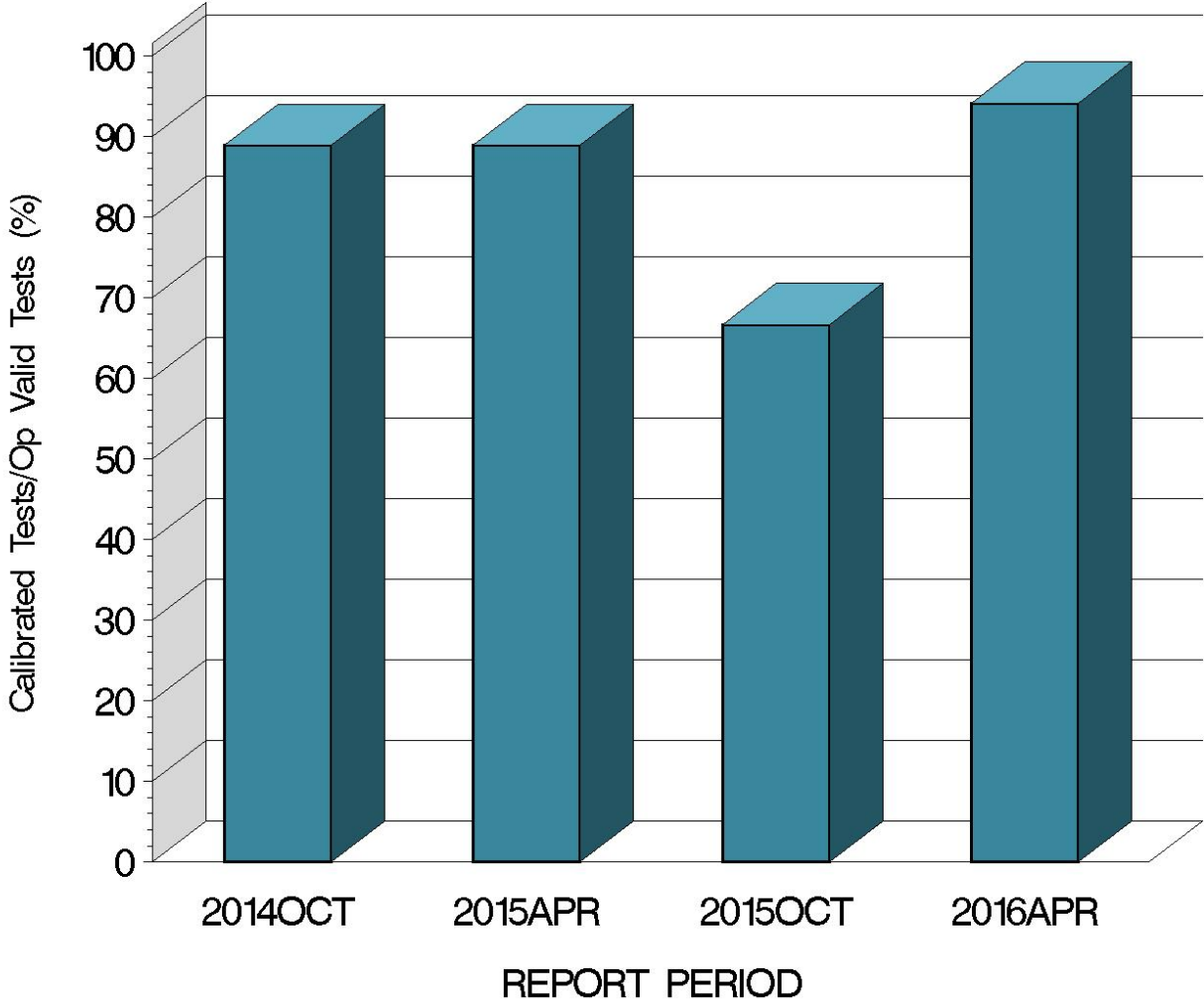
Resolution

Report Period

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# CBT (D 5968)

OPERATIONALLY VALID TESTS  
MEETING ACCEPTANCE CRITERIA



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# CBT (D 5968)

## CAUSES FOR LOST TESTS

Summary of Reasons for Failed Tests	No. of Tests
Mild Copper Concentration	1

Summary of Reasons for Invalid Tests	No. of Tests
Airflow problem	2

Summary of Reasons for Aborted Tests	No. of Tests
No tests were aborted this period	0

# CBT (D 5968)

Average $\Delta$ /s By Laboratory			
Lab	n	CUC	PBC
A	10	-1.589	-1.73333
G	7	-1.760	-0.66571
Industry	17	-1.660	-1.29373

Individual test results can be found on the TMC Web Page at the following link:

<ftp://ftp.astmtmc.cmu.edu/refdata/bench/cbt/data/>

# CBT (D 5968)

CBT INDUSTRY OPERATIONALLY VALID DATA



COPPER CHANGE (ppm)

CUSUM Severity Analysis



27APR16: 10:14





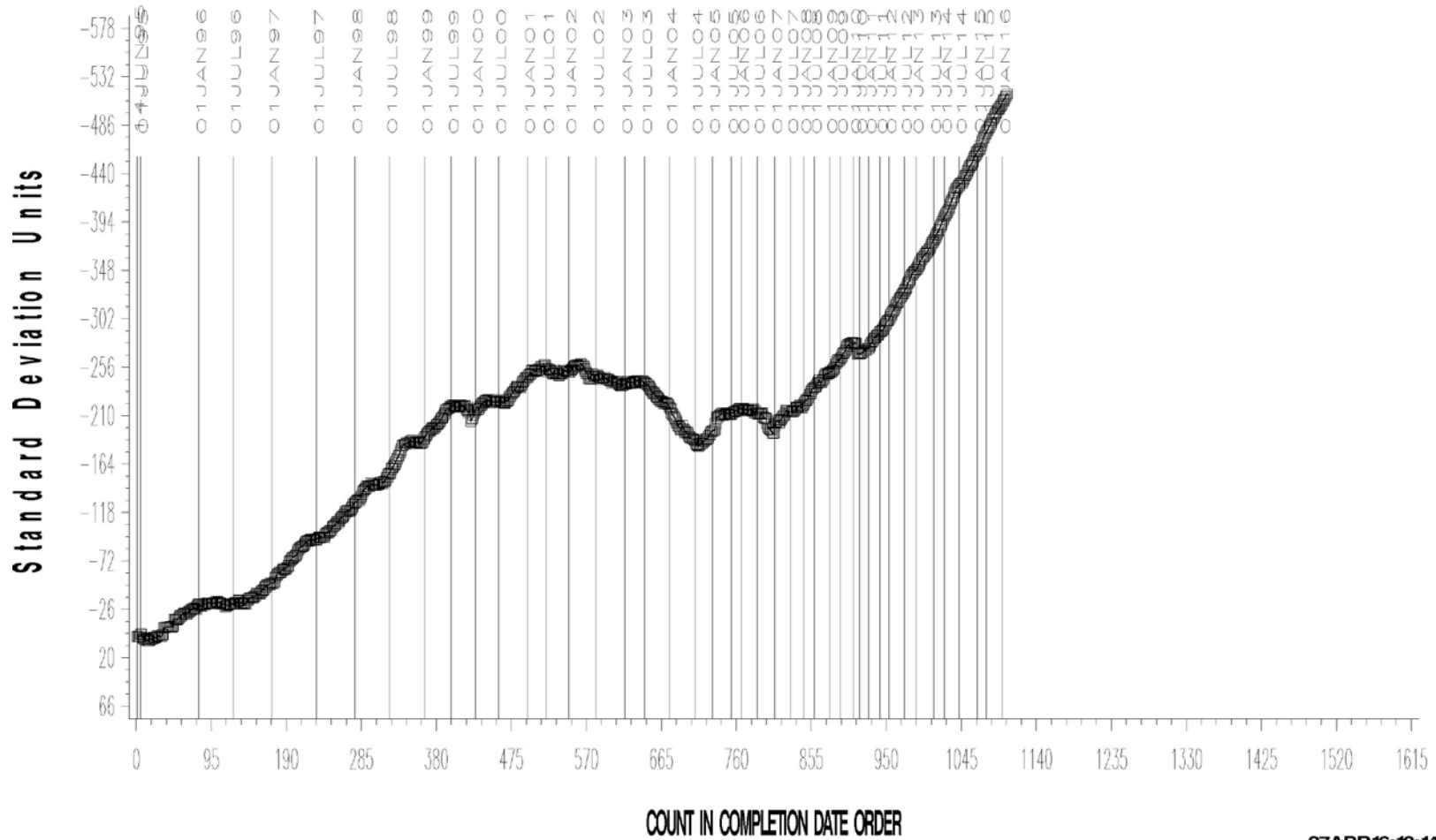
# CBT (D 5968)

CBT INDUSTRY OPERATIONALLY VALID DATA



LEAD CHANGE (ppm)

CUSUM Severity Analysis



27APR16: 10:14

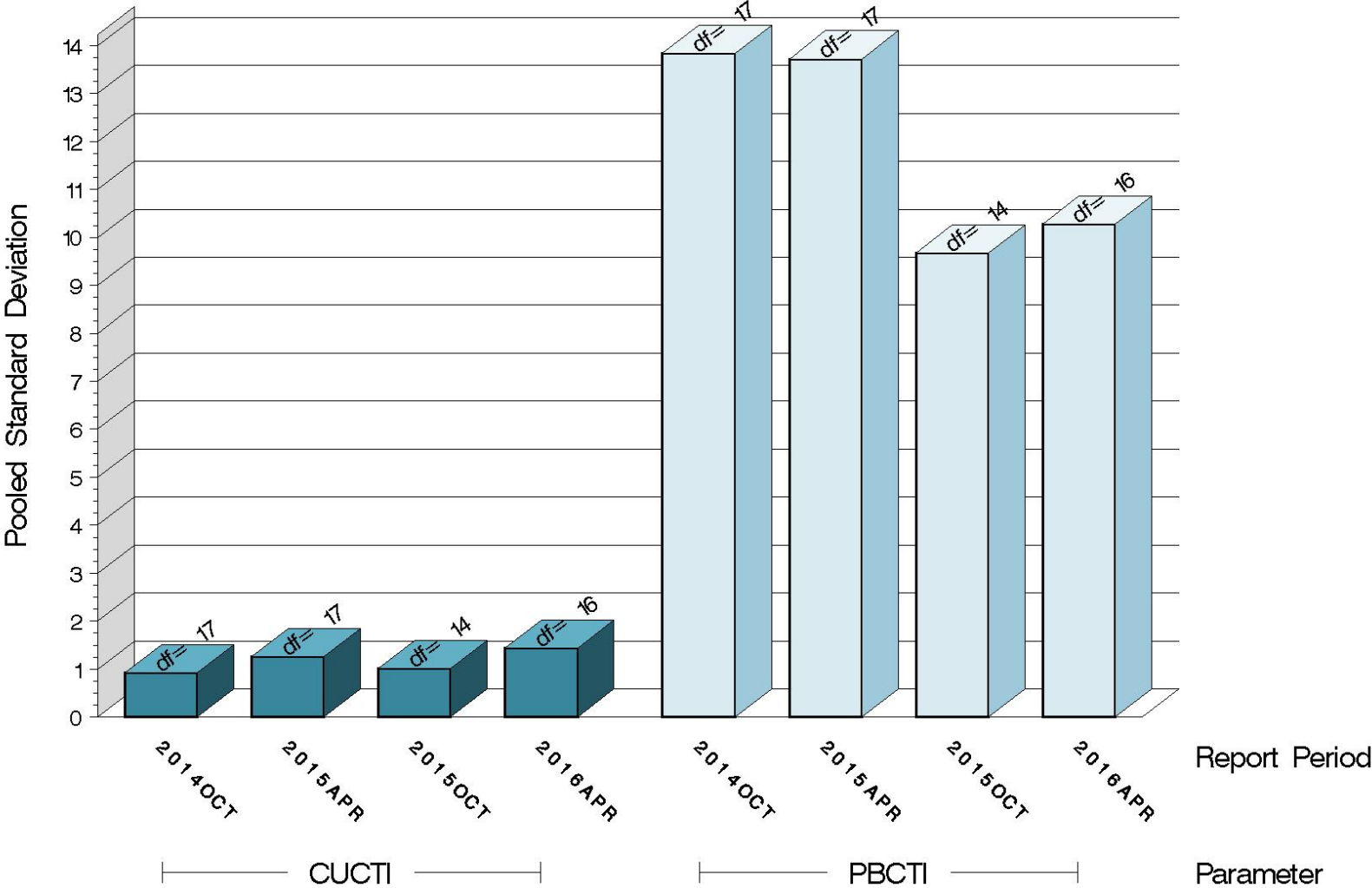
**Test Monitoring Center**  
<http://astmtmc.cmu.edu>



# CBT (D 5968)

## TEST PRECISION

POOLED STANDARD DEVIATION  
BY SIX-MONTH ASTM REPORT PERIOD



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# CBT (D 5968)

## SUMMARY OF SEVERITY & PRECISION

### Severity

Over the course of this report period, both copper and lead severity, as measured by CUSUM plotting, continued the existing mild trend.

### Precision

Pooled  $s$  for this period is 1.44 for copper and 10.28 for lead.

Precision, as measured by pooled standard deviation, is slightly worse than previous periods for copper and lead, but is still within historical levels.

# CBT (D 5968)

## INFORMATION LETTERS

No CBT Information Letters were issued this period.

# CBT (D 5968)

## STATUS OF REFERENCE OIL SUPPLY

Oil	Samples @ Labs	@ TMC	
		Samples (4 oz)	Gallons
43	47	1296	40.5