A Program of ASTM International

**Test Monitoring Center**

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

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

MEMORANDUM: 15-014

DATE: May 6, 2015

TO: Gil Reinhard, Chairman, CBT Surveillance Panel

FROM: Michael T. Kasimirsky

SUBJECT: HTCBT Testing from October 1, 2014 through March 31, 2015

A total of 254 HTCBT tests were reported to the Test Monitoring Center during the report period from October 1, 2014 through March 31, 2015.

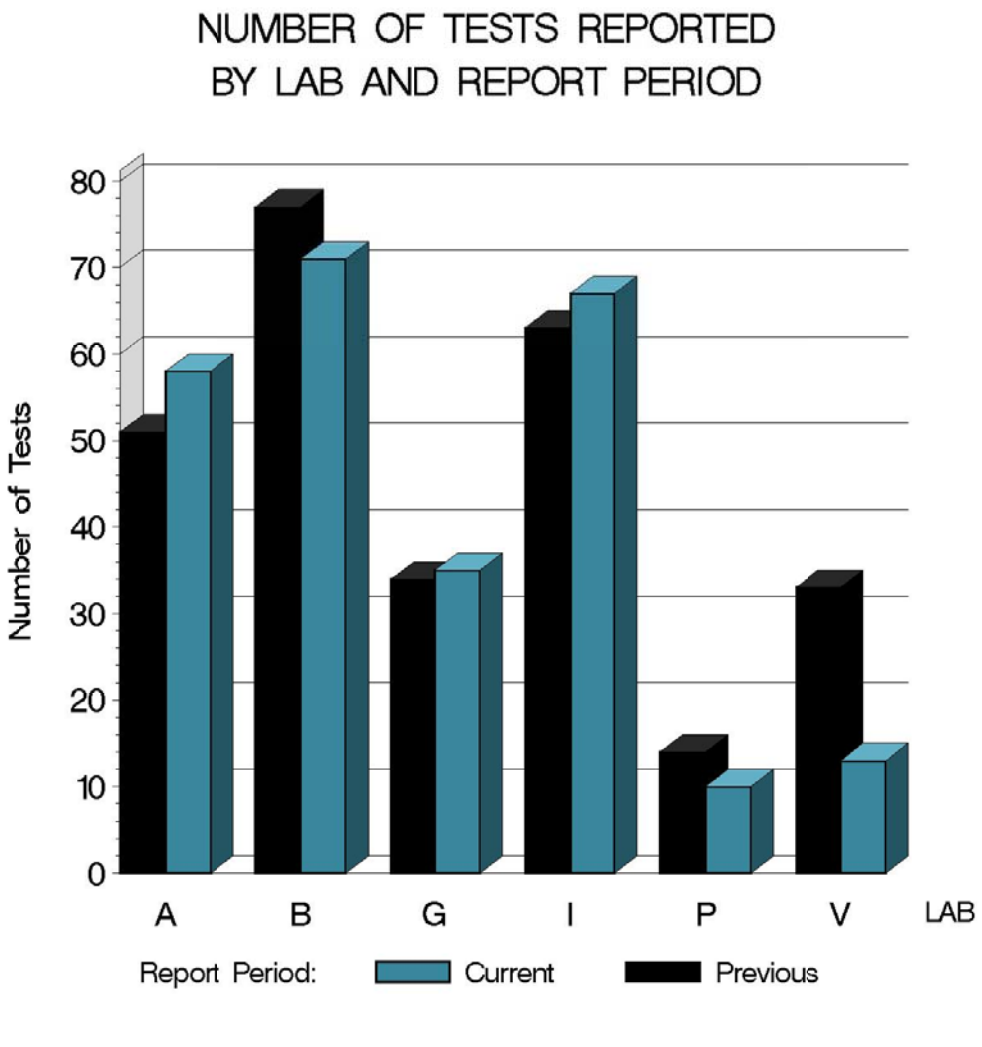
Please find attached a summary of testing activity this period.

MTK/mtk/astm1015.doc/mem15-014.mtk.doc
cc: F. M. Farber
J. A. Clark
CBT Surveillance Panel
ftp://ftp.astmtmc.cmu.edu/docs/bench/htcbt/semiannualreports/htcbt-04-2015.pdf

Distribution: email

# HTCBT (D 6594)

| | Reporting Data |
|---|---|
| Number of Labs | 6 |

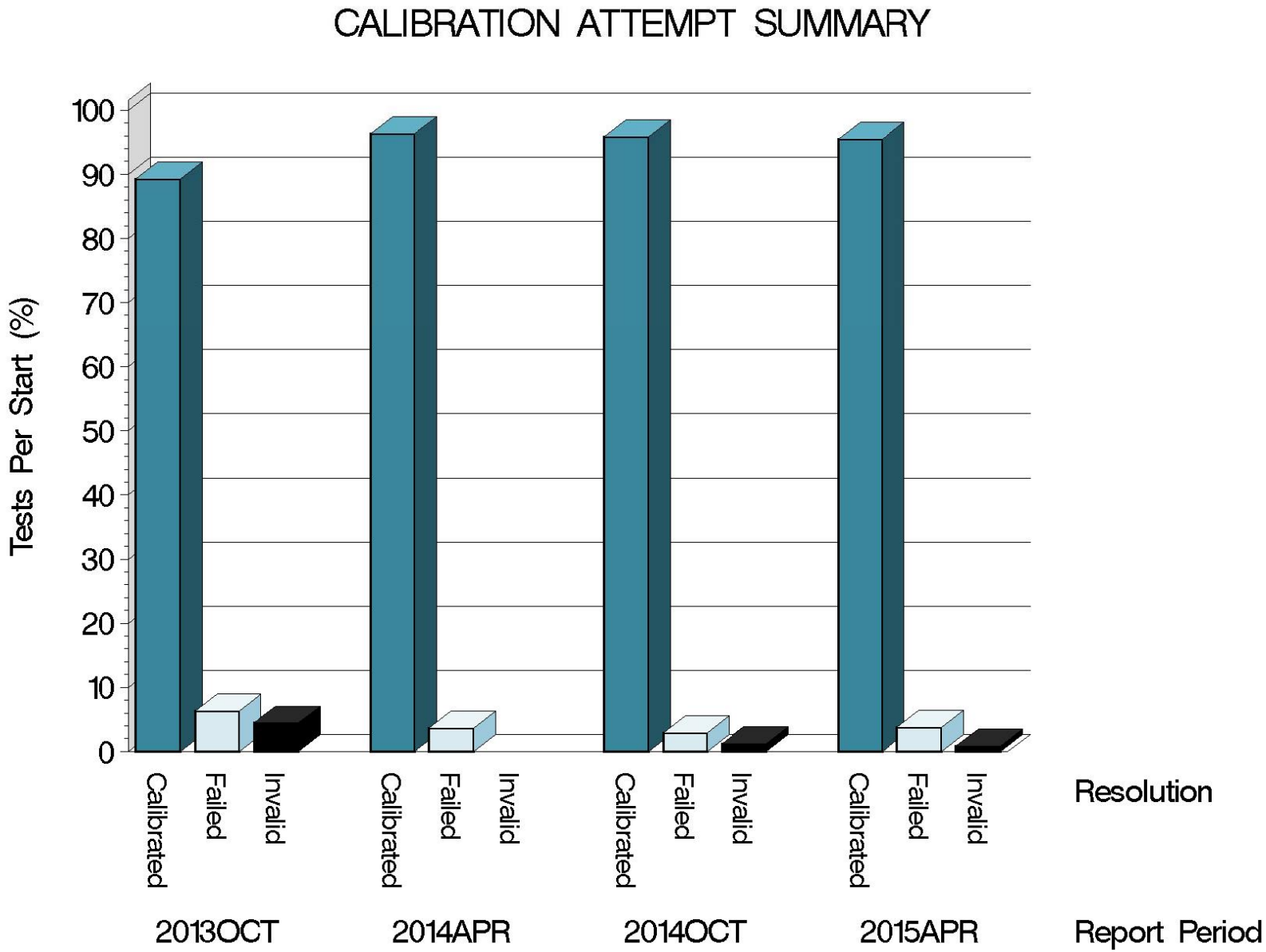


# HTCBT (D 6594)

## Test Distribution by Validity

| | | Number of Tests |
|---|---|---|
| Accepted for calibration | AC | 230 |
| Rejected | OC | 9 |
| Invalidated | LC | 1 |
| Aborted | XC | 1 |
| Acceptable Shakedown Run | AG | 5 |
| Unacceptable Shakedown Run | OG | 6 |
| Invalid Shakedown Run | LG | 2 |
| Aborted Shakedown Run | XG | 0 |
| Total | | 254 |

# HTCBT (D 6594)

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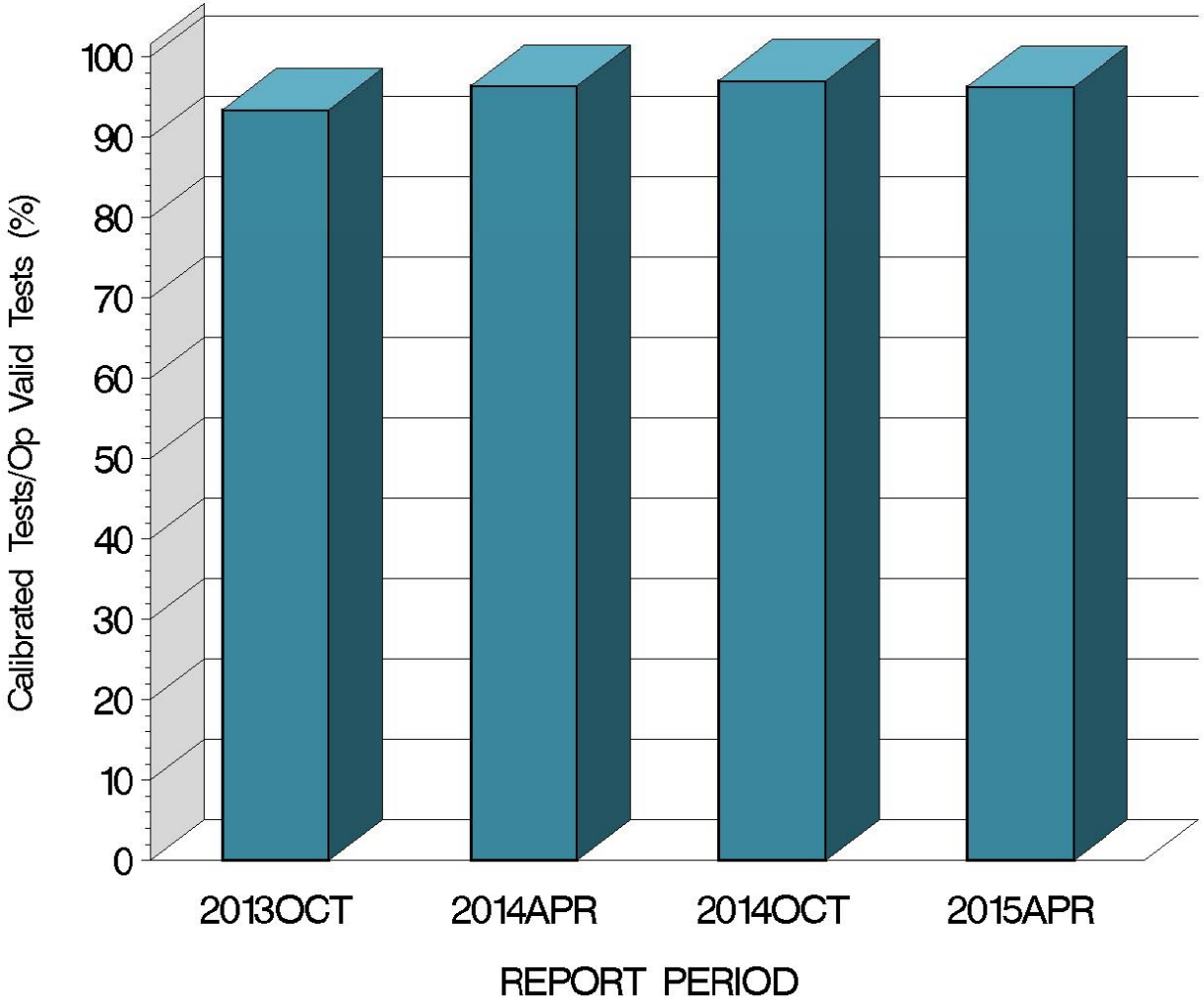
# HTCBT (D 6594)

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# HTCBT (D 6594)

## CAUSES FOR LOST TESTS

| Summary of Reasons for Failed Tests | No. of Tests |
|---|---|
| Copper, severe | 0 |
| Copper, mild | 2 |
| Lead, severe | 3 |
| Lead, mild | 1 |
| Copper & Lead, severe | 3 |

# HTCBT (D 6594)

## CAUSES FOR LOST TESTS (CONTINUED)

| Summary of Reasons for Invalid Tests | No. of Tests |
|---|---|
| Sample Contamination | 1 |

# HTCBT (D 6594)

## CAUSES FOR LOST TESTS (CONTINUED)

| Summary of Reasons for Aborted Tests | No. of Tests |
|---|---|
| Airflow Problem | 1 |

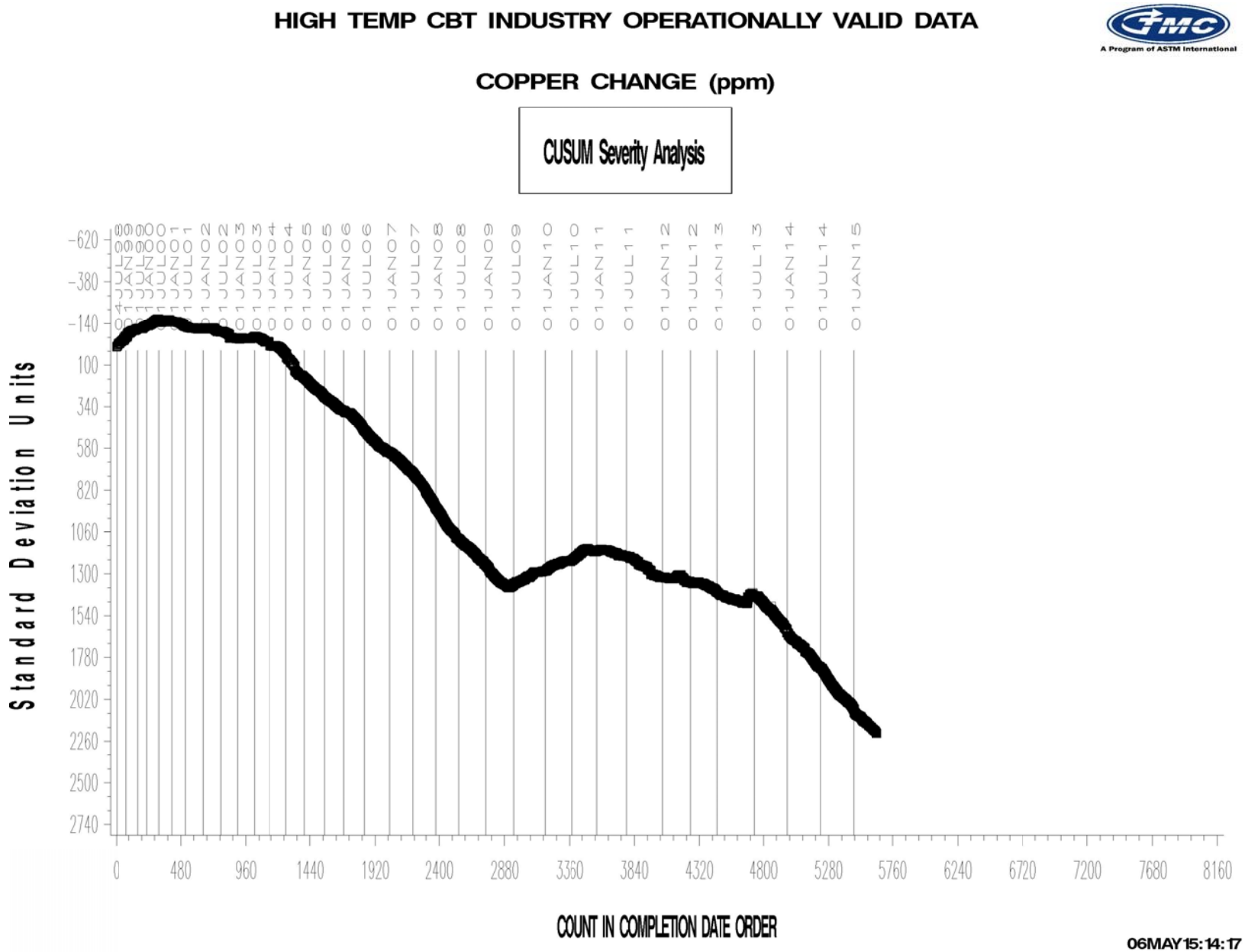
# HTCBT (D 6594)

| Average Δ/s By Laboratory | | | |
|---|---|---|---|
| Lab | n | CUC | PBC |
| A | 58 | 1.274 | 0.757 |
| B | 70 | 0.887 | -0.285 |
| G | 34 | 1.071 | 1.238 |
| I | 67 | 0.193 | 0.198 |
| P | 10 | 0.915 | -0.691 |
| V | 0 | - | - |
| Industry | 239 | 0.814 | 0.303 |

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

ftp://ftp.astmtmc.cmu.edu/refdata/bench/htcbt/data/

# HTCBT (D 6594)


HIGH TEMP CBT INDUSTRY OPERATIONALLY VALID DATA
A Program of ASTM International
COPPER CHANGE (ppm)
CUSUM Severity Analysis
Standard Deviation Units
-620
-380
-140
100
340
580
820
1060
1300
1540
1780
2020
2260
2500
2740
0
480
960
1440
1920
2400
2880
3360
3840
4320
4800
5280
5760
6240
6720
7200
7680
8160
COUNT IN COMPLETION DATE ORDER
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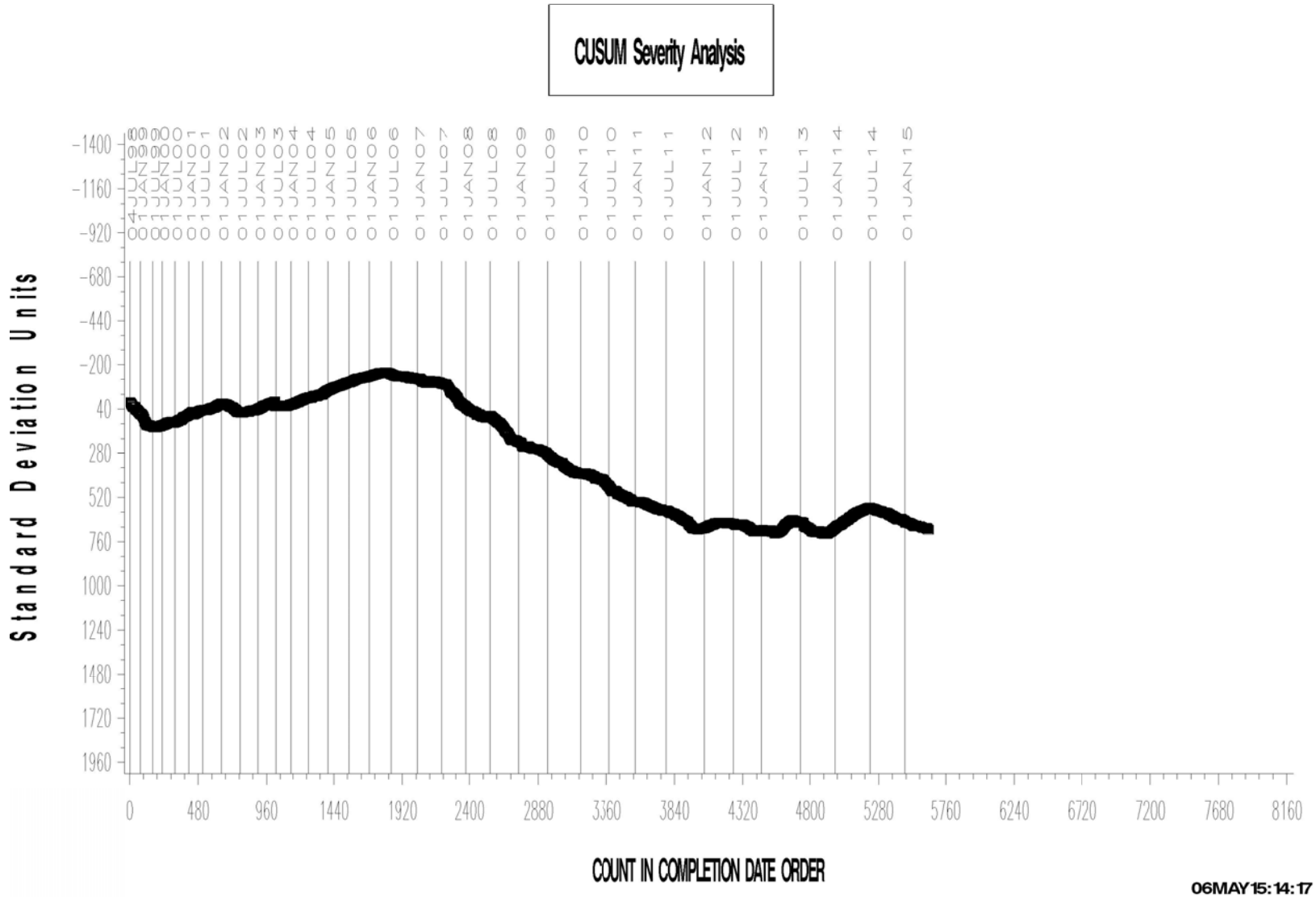
# HTCBT (D 6594)

HIGH TEMP CBT INDUSTRY OPERATIONALLY VALID DATA

LEAD CHANGE (ppm)

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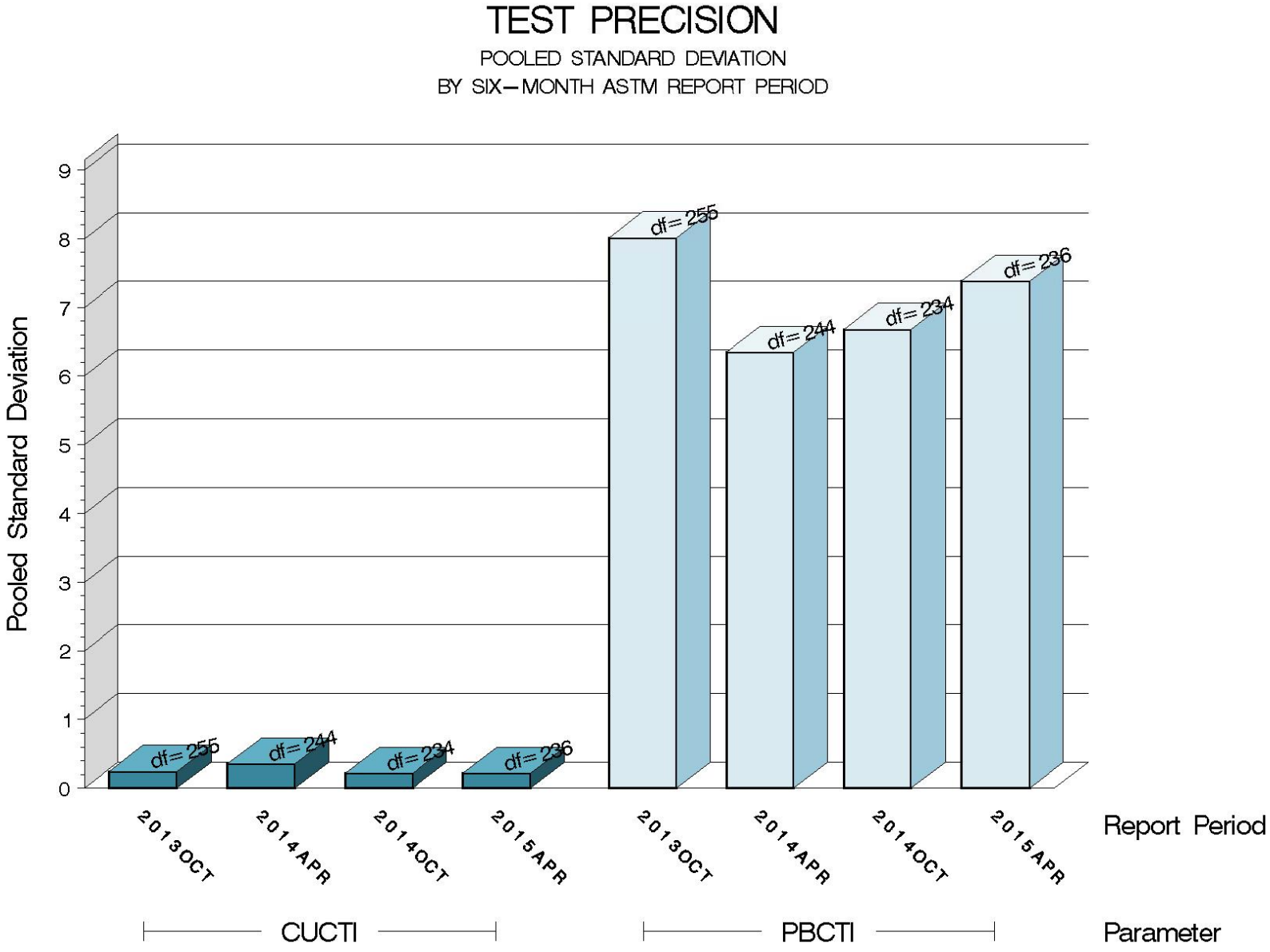
# HTCBT (D 6594)

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# HTCBT (D 6594)

## SUMMARY OF SEVERITY & PRECISION

| Severity |
| --- |
| Over the course of this report period, copper severity, as measured by cusum plotting, was severe.<br><br>Over the course of this report period, lead severity, as measured by cusum plotting, was severe. |

| Precision |
| --- |
| Pooled s for this period is 0.22 for copper and 7.38 for lead.<br><br>Over the course of this report period, Precision, as measured by pooled standard deviation, is unchanged from last period for copper and is slightly worse than the previous period for lead, but is still within historical levels. |

# HTCBT (D 6594)

| INFORMATION LETTERS |
| --- |
| No HTCBT Information Letters were issued this period. |

# HTCBT (D 6594)

## STATUS OF REFERENCE OIL SUPPLY

| | | @ TMC | |
|---|---|---|---|
| Reference Oil | Samples @ Labs | Samples (4 oz) | Gallons |
| 44-1 | 0 | 0 | 0.0 |
| 44-2 | 0 | 0 | 0.0 |
| 44-3 | 71 | 316 | 9.9 |
| 1005-1 | 0 | 0 | 0.0 |
| 1005-3 | 116 | 86 | 2.7 |
| Total | 187 | 402 | 12.6 |

A reblend of 1005-3, reference oil1005-5, is available at the TMC, but has not been introduced into HTCBT testing.

The TMC is working on procuring a reblend of reference oil 44-3; it should be available in July 2015.