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: 11-015

DATE: May 27, 2011

TO: Gil Reinhard, Chairman, CBT Surveillance Panel

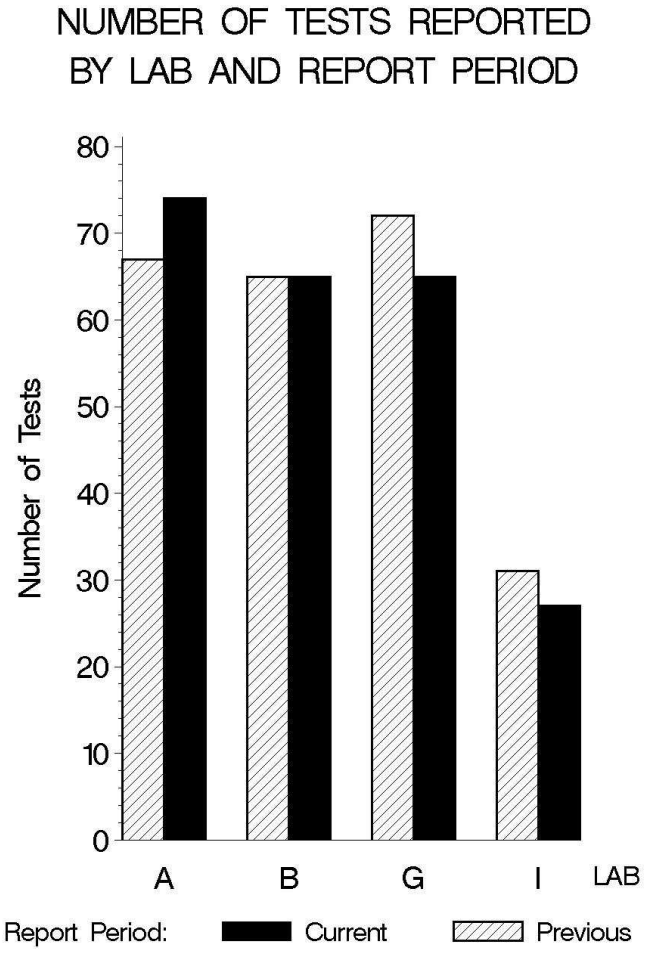
FROM: Michael T. Kasimirsky

SUBJECT: HTCBT Testing from October 1, 2010 through March 31, 2011

A total of 231 HTCBT tests were reported to the Test Monitoring Center during the period from October 1, 2010 through March 31, 2011. Following is a summary of testing activity this period.

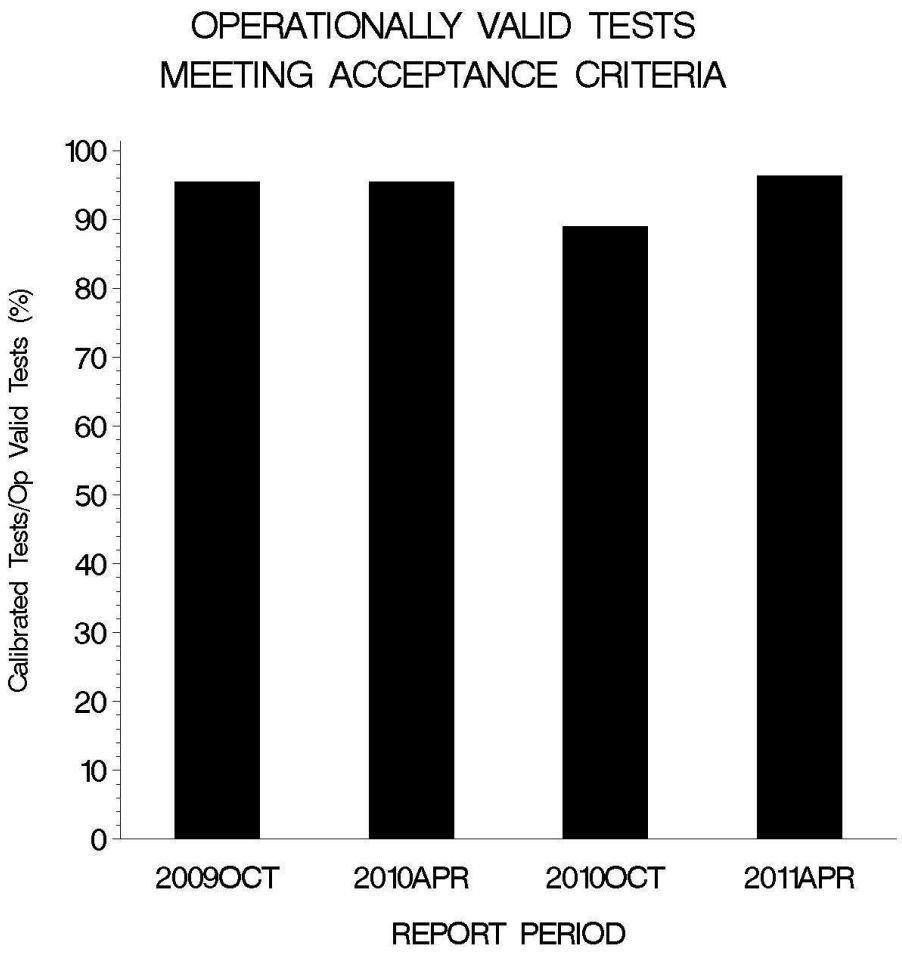
	Reporting Data
Number of Labs	4

Tests reported this period were distributed as shown below:



Test Distribution by Validity

	TMC Validity Codes	No. of Tests
Operationally and Statistically Acceptable	AC	179
Failed Acceptance Criteria	OC	7
Operationally Invalid	LC, RC	3
Aborted	XC	6
Acceptable Donated Tests	NI	25
Unacceptable Donated Tests	MI	11
Total		231



The above chart shows the percentage of accepted operationally valid tests. Seven tests failed to meet the acceptance criteria this period.

The reasons for failed, invalid, or aborted tests are shown in the following tables:

Summary of Reasons for Failed Tests

	No. of Tests
Copper, mild	3
Copper & Lead, mild	1
Copper & Lead, severe	3

Summary of Reasons for Invalid Tests

	No. of Tests
Airflow Problem	3

Summary of Reasons for Aborted Tests

	No. of Tests
Blew Fuse	1
Power Failure	1
Airflow Problem	4

Industry Severity Summary

The following table shows the average Δ/s, by laboratory and for the industry overall, for both copper and lead concentration for this ASTM report period.

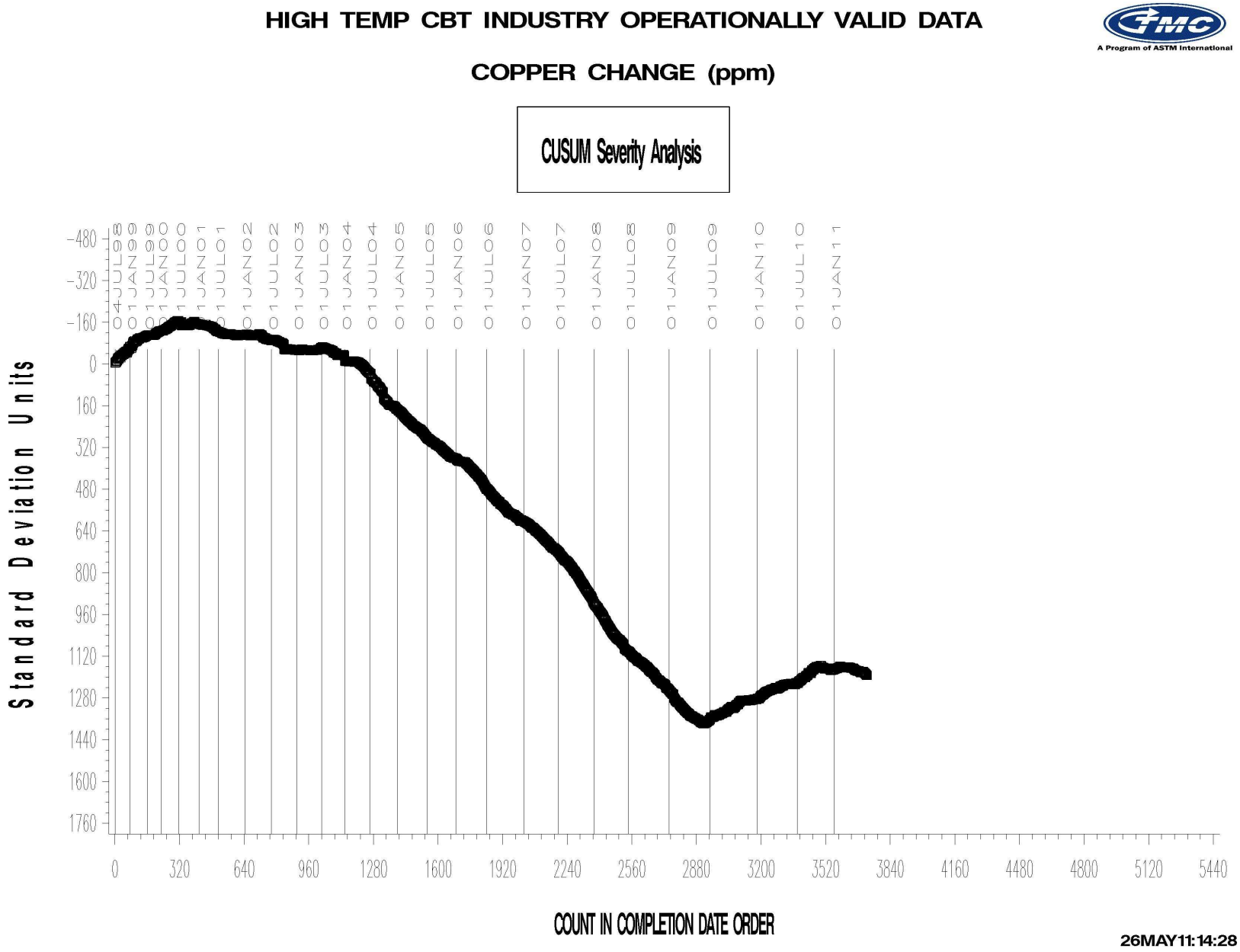
Average Δ/s by Lab

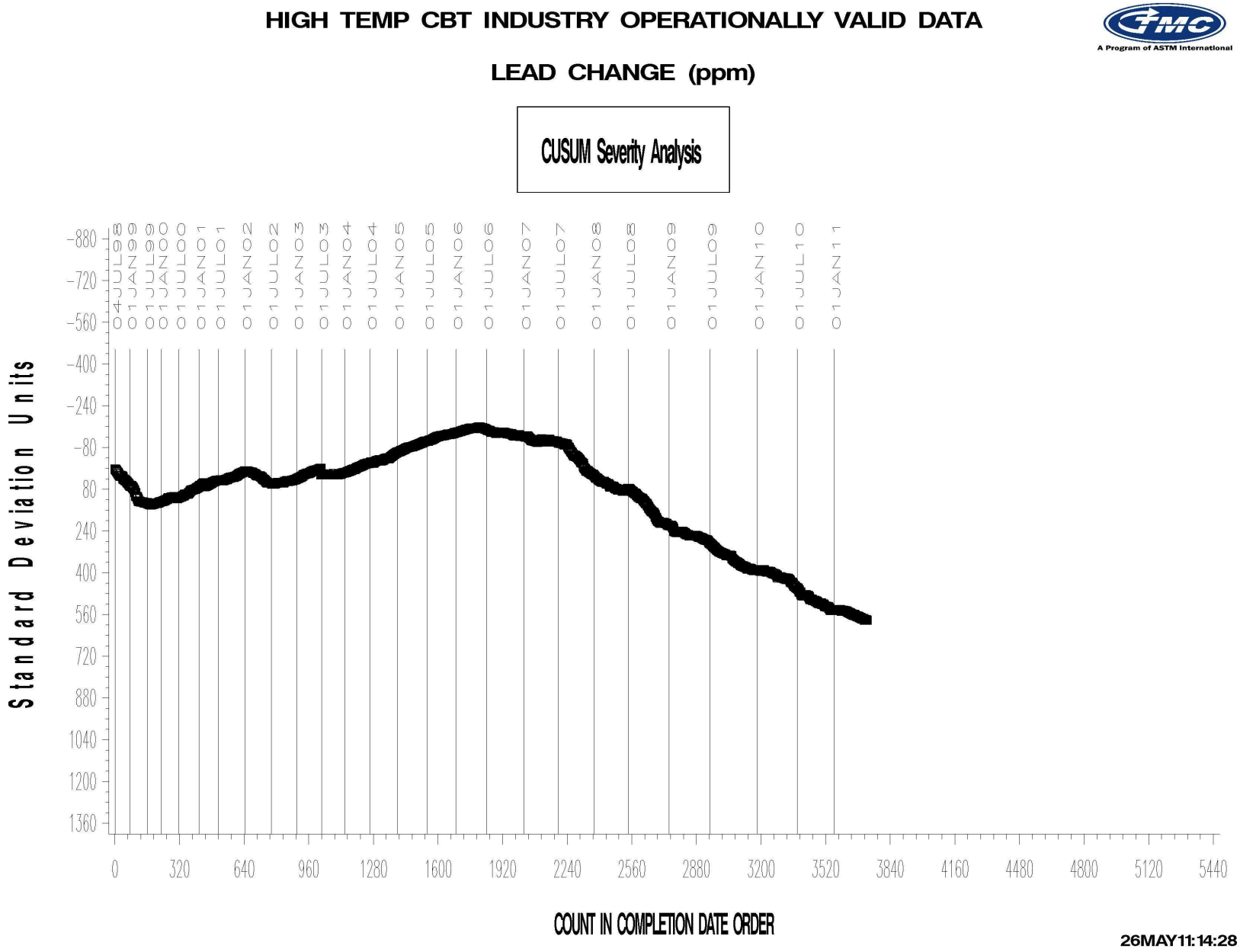
Lab	n	CUC	PBC
A	62	-0.117	0.083
B	53	-0.001	-0.252
G	44	0.441	0.756
I	27	-0.236	1.008
Industry	186	0.031	0.281

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

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

The plots of summation delta/s from target for change in copper and change in lead, respectively, are shown on the following pages. Copper concentration results are continuing the mild trend begun in mid-2009. Lead concentration results are continuing the severe trend begun in 2007.


HIGH TEMP CBT INDUSTRY OPERATIONALLY VALID DATA
A Program of ASTM International
COPPER CHANGE (ppm)
CUSUM Severity Analysis
Standard Deviation Units
-480
-320
-160
0
160
320
480
640
800
960
1120
1280
1440
1600
1760
01JUL98
01JAN99
01JUL99
01JAN00
01JUL00
01JAN01
01JUL01
01JAN02
01JUL02
01JAN03
01JUL03
01JAN04
01JUL04
01JAN05
01JUL05
01JAN06
01JUL06
01JAN07
01JUL07
01JAN08
01JUL08
01JAN09
01JUL09
01JAN10
01JUL10
01JAN11
0
320
640
960
1280
1600
1920
2240
2560
2880
3200
3520
3840
4160
4480
4800
5120
5440
COUNT IN COMPLETION DATE ORDER
26MAY11:14:28


HIGH TEMP CBT INDUSTRY OPERATIONALLY VALID DATA
LEAD CHANGE (ppm)
CUSUM Severity Analysis
A Program of ASTM International
Standard Deviation Units
-880
-720
-560
-400
-240
-80
80
240
400
560
720
880
1040
1200
1360
04JUL98
01JAN99
01JUL99
01JAN00
01JUL00
01JAN01
01JUL01
01JAN02
01JUL02
01JAN03
01JUL03
01JAN04
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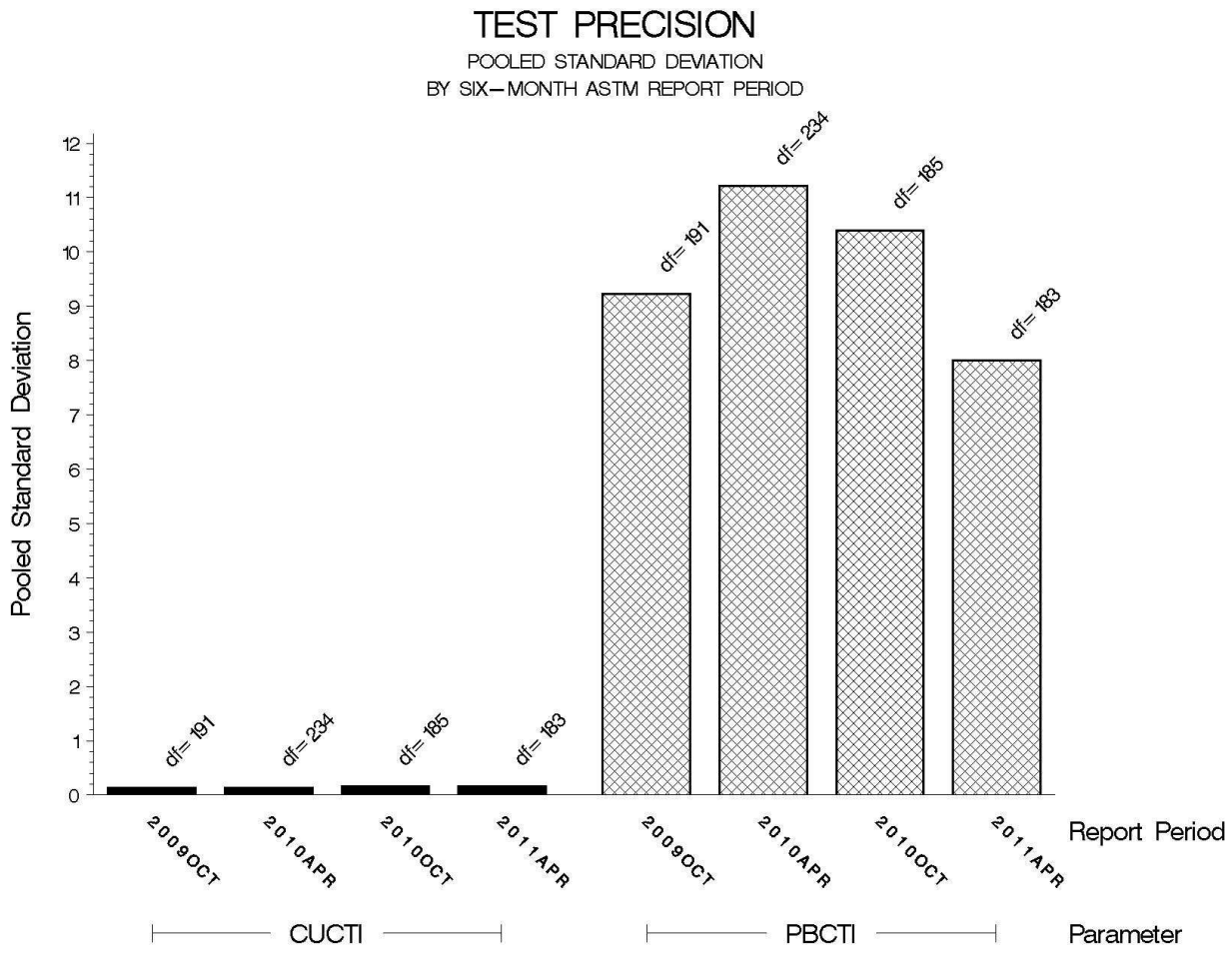
01JAN08
01JUL08
01JAN09
01JUL09
01JAN10
01JUL10
01JAN11
0
320
640
960
1280
1600
1920
2240
2560
2880
3200
3520
3840
4160
4480
4800
5120
5440
COUNT IN COMPLETION DATE ORDER
26MAY11:14:28

POOLED S:

Precision estimates, by report period are depicted below. Precision estimates for both copper and lead are within historical levels.



STATUS OF REFERENCE OIL SUPPLY:
At the end of this report period, the testing oil supply stood as outlined in the following table:

		@ TMC	
Oil	Samples @ Labs	Samples	Gallons
44-1	0	0	0.0
44-2	17	278	8.7
1005-1	0	0	0.0
1005-3	28	899	28.1
Total	45	1177	36.8

NEW TEST COUPONS (BATCH CODE J)
Batch code J test coupons were introduced this period, based upon a donated test matrix of 36 tests. The results of those tests are shown in the following table. Individual test results, shown in red, are outside the acceptable range for that reference oil.

TESTKEY	LAB	BTH	IND	VAL	EOTDATE	TIME	COM1	COM2	CUC	CUCti	CUCyi	PBC	PBCyi	CUCBAND	PBCBAND
76885	A	6	1005-3	MI	20101007	12:48	CUCS		10.0	2.302585093	2.540050686	31.0	1.788732394	4.5 - 9.0	4.4 - 32.2
76881	A	3	1005-3	MI	20101008	13:13	CUCS	PUCS	10.0	2.302585093	2.540050686	34.0	2.211267606	4.5 - 9.0	4.4 - 32.2
76883	A	5	1005-3	MI	20101018	11:04	PCBS	CUCS	10.0	2.302585093	2.540050686	33.0	2.070422535	4.5 - 9.0	4.4 - 32.2
79655	A	3	1005-3	NI	20110203	13:34			6.0	1.791759469	-0.307360818	14.0	-0.605633803	4.5 - 9.0	4.4 - 32.2
79656	A	5	1005-3	NI	20110204	14:38			6.0	1.791759469	-0.307360818	14.0	-0.605633803	4.5 - 9.0	4.4 - 32.2
79658	A	7	1005-3	NI	20110208	13:02			6.0	1.791759469	-0.307360818	13.0	-0.746478873	4.5 - 9.0	4.4 - 32.2
76912	A	6	44-2	MI	20101020	07:01	CUCM	PUCM	59.0	4.077537444	-5.954503752	16.0	-2.513513514	101.1 - 171.6	22.1 - 65.7
76914	A	3	44-2	MI	20101020	13:07	PBCM		114.0	4.736198448	-1.071916617	18.0	-2.333333333	101.1 - 171.6	22.1 - 65.7
79670	A	3	44-2	MI	20110203	13:35	CUCM		89.0	4.48863637	-2.907069164	32.0	-1.072072072	101.1 - 171.6	22.1 - 65.7
79671	A	5	44-2	MI	20110204	14:38	CUCM		78.0	4.356708827	-3.885034643	32.0	-1.072072072	101.1 - 171.6	22.1 - 65.7
79672	A	7	44-2	MI	20110208	13:02	CUCM		91.0	4.510859507	-2.742331308	29.0	-1.342342342	101.1 - 171.6	22.1 - 65.7
76496	B	8	1005-1	NI	20101028	21:45			14.0	2.63905733	0.378459585	63.0	1	10.9 to 16.6	42.7 to 69.6
76518	B	1	1005-3	NI	20101013	13:50			7.0	1.945910149	0.551896037	19.0	0.098591549	4.5 - 9.0	4.4 - 32.2
76520	B	6	1005-3	NI	20101014	15:10			7.0	1.945910149	0.551896037	16.0	-0.323943662	4.5 - 9.0	4.4 - 32.2
79609	B	1	1005-3	NI	20110204	12:05			6.0	1.791759469	-0.307360818	14.0	-0.605633803	4.5 - 9.0	4.4 - 32.2
79611	B	6	1005-3	NI	20110208	15:35			7.0	1.945910149	0.551896037	12.0	-0.887323944	4.5 - 9.0	4.4 - 32.2
79612	B	6	1005-3	NI	20110208	15:35			7.0	1.945910149	0.551896037	12.0	-0.887323944	4.5 - 9.0	4.4 - 32.2
76509	B	2	44-2	NI	20101022	15:45			130.0	4.86753445	-0.098336172	36.0	-0.711711712	101.1 - 171.6	22.1 - 65.7
76511	B	1	44-2	NI	20101025	15:10			120.0	4.787491743	-0.691684635	35.0	-0.801801802	101.1 - 171.6	22.1 - 65.7
76513	B	3	44-2	NI	20101102	15:05			127.0	4.844187086	-0.27140781	35.0	-0.801801802	101.1 - 171.6	22.1 - 65.7
79633	B	1	44-2	NI	20110204	12:05			120.0	4.787491743	-0.691684635	38.0	-0.531531532	101.1 - 171.6	22.1 - 65.7
79635	B	2	44-2	NI	20110211	13:50			124.0	4.820281566	-0.448617008	32.0	-1.072072072	101.1 - 171.6	22.1 - 65.7
79636	B	2	44-2	NI	20110211	13:50			117.0	4.762173935	-0.879362974	35.0	-0.801801802	101.1 - 171.6	22.1 - 65.7
76833	G	2	1005-3	NI	20101005	16:00			8.2	2.104134154	1.433858162	22.9	0.647887324	4.5 - 9.0	4.4 - 32.2
76838	G	2	1005-3	MI	20101014	21:00	CUCS		449.4	6.10791336	23.751468	12.0	-0.887323944	4.5 - 9.0	4.4 - 32.2
76837	G	2	1005-3	NI	20101018	22:00			9.0	2.197224577	1.952756841	23.1	0.676056338	4.5 - 9.0	4.4 - 32.2
76840	G	2	1005-3	MI	20101025	22:00	CUCS	PBCS	20.4	3.015534901	6.514129882	788.9	108.5352113	4.5 - 9.0	4.4 - 32.2
79578	G	2	1005-3	NI	20110131	22:00			7.4	2.00148	0.861649945	19.0	0.098591549	4.5 - 9.0	4.4 - 32.2
79579	G	2	1005-3	NI	20110131	22:00			7.1	1.960094784	0.630963122	21.0	0.38028169	4.5 - 9.0	4.4 - 32.2
79580	G	2	1005-3	NI	20110131	22:00			7.2	1.974081026	0.708924337	17.8	-0.070422535	4.5 - 9.0	4.4 - 32.2
76861	G	2	44-2	NI	20101019	21:00			113.2	4.729156166	-1.124120343	50.6	0.603603604	101.1 - 171.6	22.1 - 65.7
76863	G	2	44-2	NI	20101028	21:00			171.0	5.141663557	1.933755052	46.5	0.234234234	101.1 - 171.6	22.1 - 65.7
79594	G	1	44-2	NI	20110131	21:30			145.7	4.981549713	0.746847392	63.6	1.774774775	101.1 - 171.6	22.1 - 65.7
79595	G	1	44-2	NI	20110131	21:30			131.0	4.875197323	-0.041532074	57.4	1.216216216	101.1 - 171.6	22.1 - 65.7
79596	G	1	44-2	NI	20110131	21:30			138.0	4.927253685	0.34435645	56.7	1.153153153	101.1 - 171.6	22.1 - 65.7

INFORMATION LETTERS:
No information letters were issued this period.

SUMMARY

- J Coupons were introduced into HTCBT testing during this period. Significant differences in laboratory performance were identified during this hardware approval matrix.

- Over the course of this report period, copper severity, as measured by cusum plotting, continued the existing mild trend.

- Over the course of this report period, lead severity, as measured by cusum plotting, continued the existing severe trend.

  Precision as measured by pooled standard deviation is better than last period for lead concentration, while copper concentration is comparable to previous levels.

MTK/mtk/astm0411.doc/mem11-015.mtk.doc
c: F. M. Farber
J. A. Clark
CBT Surveillance Panel
ftp://ftp.astmtmc.cmu.edu/docs/bench/htcbt/semiannualreports/htcbt-04-2011.pdf

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