



## Test Monitoring Center

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412-365-1000

MEMORANDUM: 09-052  
DATE: October 28, 2009  
TO: HTCBT Surveillance Panel  
FROM: Michael T. Kasimirsky  
SUBJECT: Reference Oil 44-1 Final Test Targets

On May 5, 2009, the HTCBT Surveillance Panel approved a motion to introduce Reference Oil 44-1 into the calibration system and update and finalize the targets at a later date. The final targets are shown in Table 1, below:

Table 1: Reference Oil 44-1 Initial Test Targets (N=168)			
Parameter	Mean	Standard Deviation	Acceptance Range
Copper Concentration	4.8349*	0.1351*	96.6 to 164.0 ppm
Lead Concentration	46.3	11.2	24.3 to 68.3 ppm

\*Transformed units (*natural log*)

The individual test results used in generation of these test targets are shown in Table 2. The individual test results, initial test target acceptance range, and the test target acceptance range for Reference Oil 44 for *Copper Concentration* and *Lead Concentration* are plotted in Figures 1 and 2, respectively.

These targets are effective on November 9, 2009.

c: <ftp://ftp.astmtmc.cmu.edu/docs/bench/htcbt/memos/mem09-052.pdf>

Distribution: electronic mail

Table 2: Individual Test Results							
TESTKEY	LAB	BATH	COUPON BATCH	LTMSDATE	LTMSTIME	CUC	PBC
70297	B	1	G	20090409	14:15	123.0	39.0
70282	G	2	G	20090409	21:20	150.3	53.6
70283	G	2	G	20090409	21:20	152.0	39.4
70284	G	2	G	20090409	21:20	150.8	58.9
70298	B	2	G	20090413	11:10	117.0	41.0
70299	B	6	G	20090414	11:05	121.0	34.0
70277	A	3	G	20090421	15:16	131.0	26.0
70312	I	1	G	20090422	12:00	126	47
70278	A	7	G	20090422	15:18	122.0	34.0
70313	I	1	G	20090512	12:00	147	50
70285	G	2	G	20090514	17:15	150.3	50.2
70300	B	2	G	20090518	11:10	138.0	41.0
70279	A	3	G	20090519	15:18	118.0	35.0
70280	A	7	G	20090522	12:30	128.0	36.0
70286	G	2	G	20090522	17:30	160.6	55.8
70301	B	3	G	20090527	10:05	130.0	41.0
70840	G	2	G	20090527	15:00	135.2	52.4
70841	G	1	G	20090528	15:00	141.4	56.3
70846	G	2	G	20090602	15:00	140.5	47.8
70848	G	2	G	20090603	14:30	150.4	50.1
70281	A	6	G	20090603	16:37	109.0	36.0
70847	G	1	G	20090603	8:00	150.8	55.7
70866	B	2	G	20090605	11:50	118.0	44.0
70849	G	1	G	20090608	14:45	142.4	57.4
70867	B	3	G	20090608	15:05	115.0	39.0
70868	B	1	G	20090608	15:15	113.0	39.0
71307	A	7	G	20090609	15:16	112.0	49.0
70850	G	2	G	20090610	15:30	150.8	52.9
70869	B	6	G	20090611	09:40	128.0	45.0
71308	A	5	G	20090611	16:32	112.0	29.0
71309	A	3	G	20090612	12:41	118.0	33.0
70854	G	2	G	20090612	14:30	141.2	58.9
70853	G	1	G	20090612	9:00	145.6	51.1
70870	B	2	G	20090615	15:00	126.0	49.0
70315	I	1	G	20090616	09:00	127	39
70871	B	1	G	20090617	11:00	114.0	42.0
71310	A	7	G	20090617	12:40	108.0	30.0
70982	G	1	G	20090617	15:15	140.8	54.1
70872	B	3	G	20090618	13:25	111.0	40.0
70873	B	6	G	20090619	09:30	127.0	45.0
71311	A	6	G	20090619	12:02	111.0	34.0
70983	G	2	G	20090619	13:15	146.9	65.1
70984	G	2	G	20090622	14:30	138.1	60.0
70316	I	1	G	20090623	10:30	116	56
70874	B	2	G	20090623	10:30	133.0	44.0
70985	G	2	G	20090623	15:00	141.7	62.3

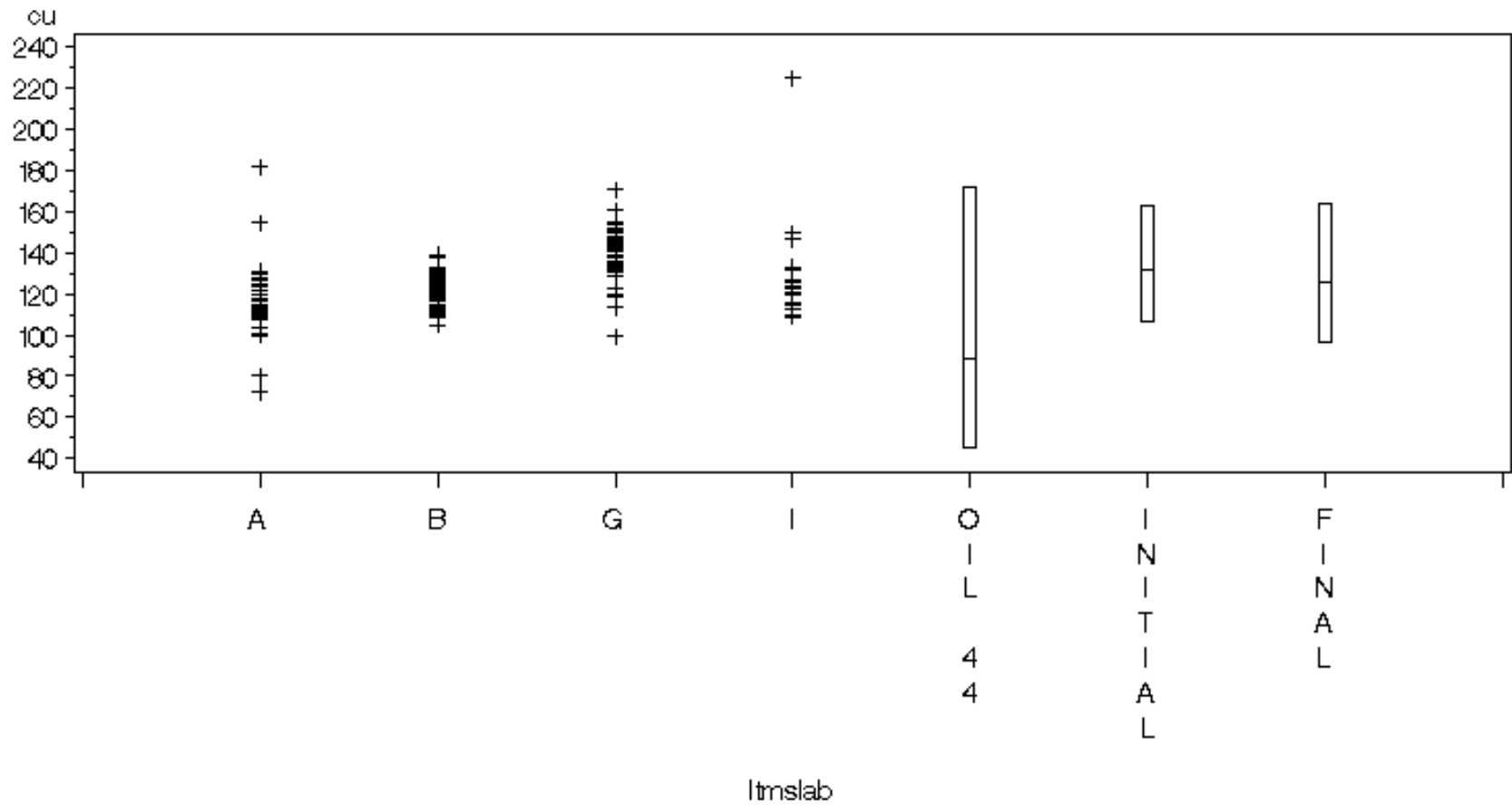
TESTKEY	LAB	BATH	COUPON BATCH	LTMSDATE	LTMSTIME	CUC	PBC
71313	A	5	G	20090624	15:18	110.0	52.0
70986	G	1	G	20090624	8:30	119.2	58.1
71312	A	3	G	20090625	13:11	108.0	42.0
71314	A	7	G	20090630	12:50	113.0	46.0
71391	G	1	0	20090630	13:00	149.8	51.9
70875	B	3	G	20090701	09:20	128.0	51.0
71315	A	6	G	20090701	13:19	72.0	42.0
71392	G	2	G	20090701	14:15	133.4	53.3
71393	G	1	G	20090701	15:00	99.6	57.4
71316	A	5	G	20090702	12:39	111.0	34.0
70876	B	1	G	20090702	15:15	114.0	39.0
70877	B	2	G	20090706	11:45	139.0	43.0
71395	G	1	G	20090706	13:45	154.6	57.0
71394	G	2	G	20090706	15:15	153.8	58.0
71317	A	3	G	20090707	15:51	108.0	42.0
71513	B	3	G	20090708	14:55	131.0	42.0
71396	G	2	G	20090709	09:45	144.4	59.2
71514	B	1	G	20090713	11:50	128.0	50.0
71397	G	1	G	20090714	13:15	118.6	49.6
71398	G	2	G	20090714	13:30	122.2	54.4
71515	B	6	G	20090715	11:10	129.0	40.0
71318	A	6	G	20090715	12:26	80.0	36.0
71516	B	3	G	20090716	11:25	126.0	34.0
71399	G	2	G	20090717	15:15	113.3	55.7
71517	B	1	G	20090721	14:35	119.0	42.0
71400	G	2	G	20090722	14:30	128.6	56.6
71401	G	1	G	20090723	09:45	147.4	59.4
71518	B	6	G	20090723	11:55	128.0	46.0
71402	G	1	G	20090724	14:15	153.8	50.8
71403	G	2	G	20090728	16:00	150.0	57.8
71519	B	1	G	20090729	15:50	127.0	44.0
71520	B	2	G	20090729	16:05	120.0	47.0
71521	B	6	G	20090731	10:25	132.0	41.0
71404	G	2	G	20090803	13:05	136.0	54.5
71925	A	6	G	20090804	12:57	109.0	42.0
71405	G	2	G	20090805	16:30	130.7	55.1
71522	B	1	G	20090806	11:30	123.0	37.0
71523	B	2	G	20090806	12:00	123.0	43.0
71566	G	2	G	20090807	15:30	144.3	57.8
71927	A	7	H	20090807	16:50	115.0	42.0
71524	B	3	G	20090811	16:05	118.0	48.0
71929	A	5	H	20090813	13:24	109.0	34.0
71567	G	2	G	20090813	18:00	139.2	54.9
71525	B	1	G	20090814	10:15	114.0	45.0
71930	A	3	H	20090814	12:41	110.0	39.0
71568	G	2	G	20090814	18:30	142.8	59.0
71928	A	6	H	20090818	12:04	125.0	30.0

Table 2: Individual Test Results							
TESTKEY	LAB	BATH	COUPON BATCH	LTMSDATE	LTMSTIME	CUC	PBC
71569	G	2	G	20090820	18:30	146.7	52.1
71931	A	7	H	20090821	12:14	118.0	36.0
71933	A	5	H	20090825	13:32	112.0	45.0
71570	G	2	G	20090825	18:00	132.3	45.3
71526	B	6	G	20090826	09:42	118.0	47.0
71571	G	2	G	20090826	16:00	133.0	60.0
71926	A	3	H	20090827	12:11	120.0	38.0
71527	B	3	G	20090828	09:13	122.0	37.0
71936	A	2	H	20090828	16:02	130.0	46.0
71937	A	2	H	20090828	16:02	127.0	46.0
71932	A	6	H	20090901	12:14	110.0	32.0
71573	G	1	G	20090901	14:30	136.2	57.4
71572	G	2	G	20090901	17:30	134.5	47.0
72179	B	6	G	20090902	14:15	122.0	38.0
71934	A	5	H	20090903	15:14	100.0	37.0
72180	B	3	G	20090904	13:50	129.0	44.0
72181	B	1	H	20090908	14:05	117.0	41.0
71935	A	7	H	20090908	16:06	118.0	32.0
71574	G	1	H	20090909	15:00	143.2	58.1
72182	B	6	H	20090910	09:30	126.0	36.0
72284	I	2	G	20090910	10:00	150	49
71938	A	3	H	20090910	12:54	101.0	38.0
71575	G	2	H	20090910	16:30	134.4	57.4
72324	G	1	H	20090910	18:00	144.0	58.0
72325	G	1	H	20090911	16:00	146.0	58.2
72285	I	1	H	20090915	10:00	110	48
72183	B	3	H	20090915	14:45	114.0	38.0
71939	A	6	H	20090915	15:45	115.0	28.0
71941	A	5	H	20090916	12:54	104.0	44.0
72184	B	2	H	20090917	11:10	132.0	37.0
72286	I	2	H	20090917	11:40	113	59
72185	B	1	H	20090917	12:00	112.0	38.0
71942	A	7	H	20090918	08:24	155.0	50.0
71946	A	3	H	20090922	12:23	108.0	33.0
72186	B	3	H	20090923	10:30	124.0	38.0
71940	A	6	H	20090923	12:28	112.0	31.0
72187	B	2	H	20090924	11:50	118.0	37.0
72287	I	2	H	20090924	13:00	133	41
72188	B	4	H	20090929	13:50	125.0	40.0
72326	G	1	H	20090929	16:00	145.7	52.0
71943	A	5	H	20090929	16:13	114.0	35.0
72288	I	1	H	20090930	10:00	132	56
72189	B	3	H	20090930	14:50	110.0	41.0
71944	A	7	H	20090930	15:38	124.0	31.0
72289	I	2	H	20091001	11:40	124	59
72327	G	1	H	20091001	15:00	138.2	59.0
71947	A	3	H	20091001	16:19	120.0	35.0

Table 2: Individual Test Results							
TESTKEY	LAB	BATH	COUPON BATCH	LTMSDATE	LTMSTIME	CUC	PBC
71945	A	6	H	20091002	14:01	118.0	28.0
72190	B	2	H	20091005	10:45	119.0	38.0
72191	B	6	H	20091006	12:00	120.0	49.0
71948	A	5	H	20091006	16:04	118.0	52.0
72290	I	1	H	20091007	10:00	121	57
72291	I	2	H	20091008	11:20	225	129
71949	A	7	H	20091008	16:23	182.0	43.0
72192	B	1	H	20091009	11:15	120.0	39.0
72471	A	3	H	20091009	12:24	130.0	28.0
72328	G	2	H	20091009	17:00	143.4	59.8
72193	B	3	H	20091012	11:30	109.0	49.0
72329	G	2	H	20091012	14:00	131.7	59.2
72331	G	1	H	20091012	16:30	170.9	59.4
72474	A	6	H	20091013	14:13	114.0	38.0
72194	B	2	H	20091013	15:30	122.0	43.0
72472	A	5	H	20091014	06:43	114.0	41.0
72292	I	1	H	20091014	14:00	120	59
72293	I	2	H	20091015	12:00	115	52
72330	G	2	H	20091015	16:00	138.1	54.1
72195	B	6	H	20091016	11:50	112.0	39.0
72332	G	2	H	20091016	17:30	154.0	55.8
72196	B	3	H	20091019	12:10	110.0	44.0
72197	B	1	H	20091020	14:00	105.0	49.0
72473	A	3	H	20091021	11:47	118.0	35.0
72294	I	1	H	20091021	12:00	123	49
72295	I	2	H	20091022	10:00	109	59
72479	A	6	H	20091022	12:13	117.0	32.0
72198	B	2	H	20091023	13:30	121.0	41.0

### Figure 1: Change in Copper Concentration Test Target Data Set and Acceptance Bands

HTCBT Reference Oil 44-1



### Figure 2: Change in Lead Concentration Test Target Data Set and Acceptance Bands

HTCBT Reference Oil 44-1

