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Level IV Data Package

MWH Group 203814

Method: 200.7

Sample No.:

2705080516

2705080517

EPA 200.7/6010B QC Check List

Analyst WSJ Analysis Date 5/17/07 Reviewer/Date M 22 May 07

Instrument PerKin Elmer Optima 4300DV

- All sample analyzed within 6 month holding time
- All sample raw concentration below the high standard or linear
anged samples marked for dilution and rerun

Initial and closing QC

- ICV within +/- 5%
- Linearity check +/- 10%
- ICSAB +/- 20%
- 1 PPM check +/-10%
- MRL +/- 50%

Middle, closing and batch QC

- FilterCheck < 1/2 MRL
- MBLANK < 1/2 MRL
- LCS +/-15%
- MS/MSD +/-30%(200.7) +/- 25% (6010B)
- CCV/MCV/ECV +/- 10%
- ICB/CCB/ECB < 1/2 MRL
- CCB ran after the CCV

General QC

- RPD between MS/MSD is within +/-20%
- RPD between LCS/LCSD is within +/- 20%
- Internal standards +/-20%
- All pH of the samples are < 2

- No more than 20 samples per batch
- MS is run at frequency of 1 every 10 samples and MSD is
run at frequency of 1 every 20 samples

- QIR needed for failed QC
- Special Det Code noted on the cover sheet Fe-low, Fe-D.S
- R value for multi point calibration is > 0.995
- Proper MRL check ran for special low MRL samples Fe-low

Reagent and Standards used for
Optima 4300 DV
Updated 05/17/07

Int: WSJ
Date: 5/17/07

Method 200.7/6010

ICP SUMMARY SHEET

File ID: 070517
 Date Started: 5/17/07
 Analyst ID: WBH

SAMPLE ID

Wash	(12:42)	WASH	(13:00)	NoSample1	(13:14)
NoSample2	(13:18)	NoSample3	(13:22)	NoSample4	(13:26)
NoSample5	(13:30)	NoSample6	(13:33)	NoSample7	(13:44)
2705100326	(13:59)	2705160758	(14:17)	2705090914	(14:21)
2705100330	(14:32)	2705100348	(14:37)	2705150008	(14:41)
2705100322	(14:45)	2705080750	(14:49)	2705090717	(14:54)
2705100626_2	(15:07)	2705110521_2	(15:12)	2705100628_2	(15:16)
2705110523_2	(15:20)	2705090448	(15:25)	2705150070	(15:29)
2705100521	(15:32)	2705080797	(15:36)	2705150408	(15:40)
2705091028	(15:44)	WASH	(15:56)	2705160707	(16:08)
2705160664	(16:18)	2705160710	(16:22)	D705160708	(16:26)
2705160697	(16:46)	2705160695	(16:50)	2705160694	(16:54)
2705160496	(16:58)	2705160825	(17:02)	2705160852	(17:06)
2705160495	(17:11)	2705160637	(17:22)	2705160021	(17:32)
2705160018	(17:37)	2705160019	(17:41)	2705160023	(17:45)
2705160017	(17:50)	2705160022	(17:54)	2705160020	(17:59)
2705160648	(18:03)	2705160629	(18:26)	2705160643	(18:36)
2705160638	(18:40)	2705160193	(18:44)	2705160170	(18:47)
2705160255	(18:51)	2705160666	(18:55)	2705160649	(19:06)
2705160667	(19:09)	2705160648	(19:14)	2705160637	(19:18)
2705160661	(19:28)	2705160665	(19:32)	2705160683	(19:36)
2705160708	(19:41)	2705160477	(19:55)	2705160475	(19:59)
2705160476	(20:04)	2705160478	(20:08)	2705160169	(20:12)
2705160210	(20:26)	2705160854	(20:44)	2705160858	(20:48)
2705160837	(20:52)	2705160676	(20:56)	2705080838_5	(21:00)
N705140396_1	(21:05)	2705100596	(21:09)	2705160831_5	(21:14)
2705160822	(21:18)	2705160857	(21:33)	2705160855_2	(21:37)
2705160834	(21:41)	2705100540	(22:01)	2705100548	(22:19)
2705100544_2	(22:30)	2705100553_2	(22:34)	2705100554_2	(22:39)
2705100558_2	(22:43)	2705100556_2	(22:48)	2705100542_2	(22:52)
2705100381_2	(23:06)	2705080517_2	(23:11)	2705080826_5	(23:15)
2705080223_2	(23:19)	2705080224_2	(23:24)	2705080516_2	(23:28)
2705080217_2	(23:32)	2705100552_2	(23:37)	2705110478_2	(23:41)
2705110468_5	(23:45)	2705110476_2	(23:56)	2705110483	(0:09)
2705110471	(0:21)	2705110473_2	(0:41)	2705110485_2	(0:45)
2705110469_2	(0:49)	2705110470_2	(0:54)	2705110511_2	(0:58)
2705110474_2	(1:02)	2705100538_2	(1:06)	2705100555_2	(1:11)
2705110541_2	(1:14)	2705100551_2	(1:19)	2705100546_2	(1:30)
2705100543_2	(1:34)	2705100550_2	(1:39)	2705100547_2	(1:42)
2705100557_2	(1:47)	2705100539_2	(1:51)	2705150411_2	(1:56)
2705100545_2	(2:00)	Wash	(2:12)		

COMMENT:

Fe-low

Cr 6%

Fe-DIS

BATCH NUMBER for 070517

Analysis
W 3/13/02

Test Parameter:

SCA YR B_ BA BE CA CD CO CR CU FE K MG MN MO NA NI PB V ZN

Batch ID: 2705100326

2705100326	2705160758	2705090914
2705100330	2705100348	2705150008
2705100322	2705080750	2705090717
2705100626_2X	2705110521_2X	2705100628_2X
2705110523_2X	2705090448	2705150070
2705100521	2705080797	2705150408
2705091028		

Batch ID: 2705160707

2705160707	2705160664	2705160710
2705160697	2705160695	2705160694
2705160496	2705160825	2705160852
2705160495	2705160637	2705160021
2705160018	2705160019	2705160023
2705160017	2705160022	2705160020
2705160648		

Batch ID: 2705160629

2705160629	2705160643	2705160638
2705160193	2705160170	2705160255
2705160666	2705160649	2705160667
2705160648	2705160637	2705160661
2705160665	2705160683	2705160708
2705160477	2705160475	2705160476
2705160478	2705160169	

Batch ID: 2705160210

2705160210	2705160854	2705160858
2705160837	2705160676	2705080838_5X
2705100596	2705160831	2705160822
2705160857	2705160855_2X	2705160834

Batch ID: 2705100540

2705100540	2705100548	2705100544_2X
2705100553_2X	2705100554_2X	2705100558_2X
2705100556_2X	2705100542_2X	2705100381_2X
2705080517_2X*	2705080826_5X	2705080223_2X
2705080224_2X	2705080516_2X*	2705080217_2X
2705100552_2X	2705110478_2X	2705110468_5X
2705110476_2X		

Batch ID: 2705110483

2705110483	2705110471	2705110473_2X
2705110485_2X	2705110469_2X	2705110470_2X
2705110511_2X	2705110474_2X	2705100538_2X
2705100555_2X	2705110541_2X	2705100551_2X
2705100546_2X	2705100543_2X	2705100550_2X
2705100547_2X	2705100557_2X	2705100539_2X
2705150411_2X	2705100545_2X	

Sample ID	Date	Time	Dil	Raw	Rept.	Limit	Comment
ICV	5/17/07	12:28	1	9.8375	9.84	95-105	98.3%
Linearity Check	5/17/07	12:31	1	0.0021	.0021		
ICSA	5/17/07	12:35	1	0.0002	0.0001	80-120	
ICSAB	5/17/07	12:39	1	.24567	.246	80-120	98.2%
Wash	5/17/07	12:42	1	0.0002	0.0001		
QC-25 lppm	5/17/07	12:46	1	.99495	.990		
CCV	5/17/07	12:50	1	4.8547	4.85	90-110	97.0%
ICB	- 5/17/07	12:53	1	0.0001	0.0000		
MRL	- 5/17/07	12:56	1	0.0097	.0097	50-150	97.2%
WASH	5/17/07	13:00	1	-0.0001	ND		
MRL/2	5/17/07	13:03	1	0.0049	.0049		
MRL2007	5/17/07	13:07	1	0.0099	.0099		
MRL6010	5/17/07	13:11	1	0.0098	.0098		
NoSample1	5/17/07	13:14	1	0.0009	0.0009		
NoSample2	5/17/07	13:18	1	0.0054	.0054		
NoSample3	5/17/07	13:22	1	0.0045	.0045		
NoSample4	5/17/07	13:26	1	0.0038	.0038		
NoSample5	5/17/07	13:30	1	0.0051	.0051		
NoSample6	5/17/07	13:33	1	0.0021	.0021		
CCV	5/17/07	13:37	1	4.9441	4.94	90-110	98.8%
CCB	- 5/17/07	13:40	1	-0.0001	ND		
NoSample7	5/17/07	13:44	1	0.0024	.0024		
MBLANK2007	- 5/17/07	13:50	1	-0.0001	ND		
LCS	5/17/07	13:54	1	.95395	.954	85-115	95.3%
LCSD	5/17/07	13:56	1	.98842	.988	85-115	98.8%
2705100326	5/17/07	13:59	1	0.0031	.0031		
2705100326MS	5/17/07	14:04	1	.97874	.979	[0.976]	97.5%
2705100326MSD	5/17/07	14:07	1	.99186	.992	[0.989]	98.8%
2705100326T	5/17/07	14:07	1		1.00	70 - 130	
CCV	5/17/07	14:10	1	4.8296	4.83	90-110	96.5%
CCB	- 5/17/07	14:13	1	-0.0001	ND		
2705160758	5/17/07	14:17	1	0.0013	.0013		
2705090914	5/17/07	14:21	1	.01036	.010		
2705090914MS	5/17/07	14:26	1	1.0006	1.00	[0.990]	99.0%
2705090914MSD	5/17/07	14:29	1	1.0232	1.02	[1.013]	101%
2705090914T	5/17/07	14:29	1		1.00	70 - 130	
2705100330	5/17/07	14:32	1	0.0004	0.0004		
2705100348	5/17/07	14:37	1	0.0199	.020		
2705150008	5/17/07	14:41	1	0.0004	0.0003		
2705100322	5/17/07	14:45	1	0.0006	0.0006		
2705080750	5/17/07	14:49	1	0.0003	0.0003		
2705090717	5/17/07	14:54	1	0.0057	.0057		
CCV	5/17/07	14:57	1	5.0050	5.01	90-110	100%
CCB	- 5/17/07	15:01	1	0.0000	0.0000		
MCV	5/17/07	15:04	1	2.4605	2.46	90-110	98.4%
2705100626_2X	5/17/07	15:07	2	0.0019	.0019		

Sample ID	Date	Time	Dil	Raw	Rept.	Limit	Comment
2705110521_2X	5/17/07	15:12	2	0.0010	.001		
2705100628_2X	5/17/07	15:16	2	0.0060	.006		
2705110523_2X	5/17/07	15:20	2	0.0022	.0022		
2705090448	5/17/07	15:25	1	0.0016	.0016		
2705150070	5/17/07	15:29	1	-0.0001	ND		
2705100521	5/17/07	15:32	1	0.0004	0.0003		
2705080797	5/17/07	15:36	1	0.0003	0.0002		
2705150408	5/17/07	15:40	1	0.0158	.016		
2705091028	5/17/07	15:44	1	0.0030	.003		
CCV	5/17/07	15:49	1	5.0215	5.02	90-110	100%
CCB	5/17/07	15:52	1	0.0001	0.0000		
WASH	5/17/07	15:56	1	0.0001	0.0000		
MBLANK	5/17/07	15:59	1	0.0001	0.0000		
LCS	5/17/07	16:03	1	.97076	.971	85-115	97.0%
LCSD	5/17/07	16:05	1	.94887	.949	85-115	94.8%
2705160707	5/17/07	16:08	1	0.0001	0.0000		
2705160707MS	5/17/07	16:12	1	.96458	.965	[0.965]	96.4%
2705160707MSD	5/17/07	16:15	1	.95793	.958	[0.958]	95.7%
2705160707T	5/17/07	16:15	1		1.00	70 - 130	
2705160664	5/17/07	16:18	1	0.0006	0.0006		
2705160710	5/17/07	16:22	1	0.0003	0.0003		
D705160708	5/17/07	16:26	1	0.0000	0		
CCV	5/17/07	16:31	1	5.1015	5.1	90-110	102%
CCB	5/17/07	16:40	1	0.0003	0.0002		
MCV	5/17/07	16:43	1	2.4254	2.43	90-110	97.0%
2705160697	5/17/07	16:46	1	0.0003	0.0003		
2705160695	5/17/07	16:50	1	0.0022	.0022		
2705160694	5/17/07	16:54	1	0.0024	.0024		
2705160496	5/17/07	16:58	1	0.0000	0.0000		
2705160825	5/17/07	17:02	1	-0.0006	ND		
2705160852	5/17/07	17:06	1	0.0057	.0057		
2705160495	5/17/07	17:11	1	-0.0004	ND		
2705160495MS	5/17/07	17:15	1	.97252	.973	[0.973]	97.2%
2705160495MSD	5/17/07	17:18	1	.97211	.972	[0.972]	97.2%
2705160495T	5/17/07	17:18	1		1.00	70 - 130	
2705160637	5/17/07	17:22	1	0.0109	.011		
CCV	5/17/07	17:25	1	4.9329	4.93	90-110	98.6%
CCB	5/17/07	17:29	1	0.0002	0.0002		
2705160021	5/17/07	17:32	1	0.0013	.0013		
2705160018	5/17/07	17:37	1	0.0010	.001		
2705160019	5/17/07	17:41	1	0.0005	0.0005		
2705160023	5/17/07	17:45	1	0.0015	.0015		
2705160017	5/17/07	17:50	1	0.0007	0.0007		
2705160022	5/17/07	17:54	1	0.0013	.0013		
2705160020	5/17/07	17:59	1	0.0004	0.0003		
2705160648	5/17/07	18:03	1	0.0081	.0081		
MBLANK	5/17/07	18:07	1	0.0000	0		
LCS	5/17/07	18:10	1	.96405	.964	85-115	96.4%

Sample ID	Date	Time	Dil	Raw	Rept.	Limit	Comment
CCV	5/17/07	18:13	1	4.8758	4.88	90-110	97.5%
CCB	- 5/17/07	18:16	1	0.0001	0.0000 ✓		
MCV	5/17/07	18:20	1	2.4774	2.48	90-110	99.0%
LCSD	5/17/07	18:23	1	.94040	.94	85-115	94.0%
2705160629	5/17/07	18:26	1	0.0001	0.0000		
2705160629MS	5/17/07	18:30	1	.94517	.945	[0.945]	94.5%
2705160629MSD	5/17/07	18:33	1	.95560	.956	[0.956]	95.5%
2705160629T	5/17/07	18:33	1		1.00	70 - 130	
2705160643	5/17/07	18:36	1	-0.0000	ND		
2705160638	5/17/07	18:40	1	-0.0001	ND		
2705160193	5/17/07	18:44	1	0.0058	.0058		
2705160170	5/17/07	18:47	1	0.0047	.0047		
2705160255	5/17/07	18:51	1	0.0030	.003		
2705160666	5/17/07	18:55	1	-0.0001	ND		
CCV	5/17/07	19:00	1	4.8236	4.82	90-110	96.4%
CCB	- 5/17/07	19:03	1	0.0001	0.0000 ✓		
2705160649	5/17/07	19:06	1	0.0034	.0034		
2705160667	5/17/07	19:09	1	0.0581	.058		
2705160648	5/17/07	19:14	1	0.0082	.0082		
2705160637	5/17/07	19:18	1	0.0103	.010		
2705160637MS	5/17/07	19:21	1	.95912	.959	[0.948]	94.8%
2705160637MSD	5/17/07	19:24	1	.96287	.963	[0.952]	95.1%
2705160637T	5/17/07	19:24	1		1.00	70 - 130	
2705160661	5/17/07	19:28	1	0.0001	0.0001		
2705160665	5/17/07	19:32	1	0.0011	.0011		
2705160683	5/17/07	19:36	1	0.0009	0.0009		
2705160708	5/17/07	19:41	1	-0.0004	ND		
CCV	5/17/07	19:44	1	4.9187	4.92	90-110	98.3%
CCB	- 5/17/07	19:48	1	0.0001	0.0000 ✓		
MCV	5/17/07	19:52	1	2.4742	2.47	90-110	98.9%
2705160477	5/17/07	19:55	1	0.0008	0.0008		
2705160475	5/17/07	19:59	1	0.0013	.0013		
2705160476	5/17/07	20:04	1	-0.0002	ND		
2705160478	5/17/07	20:08	1	-0.0002	ND		
2705160169	5/17/07	20:12	1	-0.0004	ND		
MBLANK	- 5/17/07	20:17	1	-0.0000	ND ✓		
LCS	5/17/07	20:21	1	.97994	.98	85-115	97.9%
LCSD	5/17/07	20:23	1	.96645	.966	85-115	96.6%
2705160210	5/17/07	20:26	1	-0.0001	ND		
2705160210MS	5/17/07	20:30	1	.94117	.941	[0.941]	94.1%
CCV	5/17/07	20:33	1	4.8790	4.88	90-110	97.5%
CCB	5/17/07	20:37	1	0.0002	0.0002 ✓		
2705160210MSD	5/17/07	20:40	1	.96504	.965	[0.965]	96.5%
2705160210T	5/17/07	20:40	1		1.00	70 - 130	
2705160854	5/17/07	20:44	1	-0.0004	ND		
2705160858	5/17/07	20:48	1	-0.0005	ND		
2705160837	5/17/07	20:52	1	0.0001	0.0001		
2705160676	5/17/07	20:56	1	0.0006	0.0006		

Sample ID	Date	Time	Dil	Raw	Rept.	Limit	Comment
2705080838_5X	5/17/07	21:00	5	-0.0019	ND		
N705140396_10X	5/17/07	21:05	10	0.0061	.0061		
2705100596	5/17/07	21:09	1	-0.0004	ND		
2705160831	5/17/07	21:14	1	-0.0003	ND		
2705160822	5/17/07	21:18	1	-0.0004	ND		
CCV	5/17/07	21:23	1	4.8555	4.86	90-110	97.1%
CCB	5/17/07	21:26	1	-0.0000	ND		
MCV	5/17/07	21:29	1	2.4250	2.43	90-110	97.0%
2705160857	5/17/07	21:33	1	0.0053	.0053		
2705160855_2X	5/17/07	21:37	2	0.0000	0		
2705160834	5/17/07	21:41	1	-0.0004	ND		
2705160834MS	5/17/07	21:45	1	.95942	.959	[0.959]	95.9%
2705160834MSD	5/17/07	21:49	1	.96393	.964	[0.964]	96.3%
2705160834T	5/17/07	21:49	1		1.00	70 - 130	
MBLANK6010	5/17/07	21:52	1	-0.0001	ND		
LCS	5/17/07	21:56	1	.99361	.994	85-115	99.3%
LCSD	5/17/07	21:58	1	.99705	.997	85-115	99.7%
2705100540	5/17/07	22:01	2	0.0001	0.0000		
2705100540MS	5/17/07	22:05	2	.98872	.989	[0.989]	49.4 Q 97.2%
CCV	5/17/07	22:09	1	4.8623	4.86	90-110	97.2%
CCB	5/17/07	22:12	1	0.0001	0.0000		
2705100540MSD	5/17/07	22:15	2	.99150	.992	[0.992]	49.5 Q 97.2%
2705100540T	5/17/07	22:15	2		2.00	70 - 130	
2705100548	5/17/07	22:19	2	0.0107	.011		
2705100548MS	5/17/07	22:24	2	1.0219	1.02	[1.011]	50.5 Q 100%
2705100548MSD	5/17/07	22:27	2	1.0149	1.01	[1.004]	50.2 Q 100%
2705100548T	5/17/07	22:27	2		2.00	70 - 130	
2705100544_2X	5/17/07	22:30	2	0.0883	.088		
2705100553_2X	5/17/07	22:34	2	0.0092	.0092		
2705100554_2X	5/17/07	22:39	2	0.0050	.005		
2705100558_2X	5/17/07	22:43	2	0.0051	.0051		
2705100556_2X	5/17/07	22:48	2	0.0013	.0013		
2705100542_2X	5/17/07	22:52	2	.14088	.140		
CCV	5/17/07	22:56	1	4.8635	4.86	90-110	97.2%
CCB	5/17/07	23:00	1	0.0000	0.0000		
MCV	5/17/07	23:03	1	2.4298	2.43	90-110	97.1%
2705100381_2X	5/17/07	23:06	2	.93952	.940		
2705080517_2X	5/17/07	23:11	2	0.0151	.015		
2705080826_5X	5/17/07	23:15	5	0.0149	.015		
2705080223_2X	5/17/07	23:19	2	0.0009	0.0009		
2705080224_2X	5/17/07	23:24	2	0.0118	.012		
2705080516_2X	5/17/07	23:28	2	0.0106	.011		
2705080217_2X	5/17/07	23:32	2	.29924	.3		
2705100552_2X	5/17/07	23:37	2	0.0175	.018		
2705110478_2X	5/17/07	23:41	2	0.0006	0.0005		
2705110468_5X	5/17/07	23:45	5	.99419	.990		
CCV	5/17/07	23:49	1	4.8889	4.89	90-110	97.7%
CCB	5/17/07	23:52	1	0.0005	0.0004		

Sample ID	Date	Time	Dil	Raw	Rept.	Limit	Comment
2705110476_2X	5/17/07	23:56	2	0.0205	.021		
MBLANK6010	5/18/07	0:00	1	-0.0000	ND		
LCS	5/18/07	0:04	1	1.0224	1.02	85-115	102%
LCSD	5/18/07	0:07	1	.98625	.986	85-115	98.6%
2705110483 ✓	5/18/07	0:09	5	1.2629	1.3		
2705110483MS	5/18/07	0:13	5	2.3302	2.33	[1.067]	21.3 Q (1.07)
2705110483MSD	5/18/07	0:17	5	2.2669	2.27	[1.004]	20.0 Q (1.00)
2705110483T	5/18/07	0:17	5		5.00	70 - 130	
2705110471	5/18/07	0:21	2	0.0129	.013		
2705110471MS	5/18/07	0:25	2	.98656	.987	[0.974]	48.6 Q (92.4)
2705110471MSD	5/18/07	0:28	2	1.0000	1.00	[0.987]	49.3 Q (98.7)
2705110471T	5/18/07	0:28	2		2.00	70 - 130	
CCV	5/18/07	0:31	1	4.8872	4.89	90-110	97.7%
CCB	5/18/07	0:35	1	0.0002	0.0002		
MCV	5/18/07	0:38	1	2.4330	2.43	90-110	97.3%
2705110473_2X	5/18/07	0:41	2	0.0255	.025		
2705110485_2X ✓	5/18/07	0:45	2	2.0169	2.0		
2705110469_2X	5/18/07	0:49	2	1.4689	1.5		
2705110470_2X ✓	5/18/07	0:54	2	0.0220	.022		
2705110511_2X	5/18/07	0:58	2	0.0998	.1		
2705110474_2X	5/18/07	1:02	2	0.0004	0.0003		
2705100538_2X	5/18/07	1:06	2	-0.0002	ND		
2705100555_2X	5/18/07	1:11	2	0.0833	.083		
2705110541_2X	5/18/07	1:14	2	.12113	.120		
2705100551_2X	5/18/07	1:19	2	0.0077	.0077		
CCV	5/18/07	1:23	1	4.9197	4.92	90-110	98.3%
CCB	5/18/07	1:26	1	0.0001	0.0001		
2705100546_2X	5/18/07	1:30	2	0.0007	0.0007		
2705100543_2X	5/18/07	1:34	2	0.0002	0.0002		
2705100550_2X	5/18/07	1:39	2	.05970	.060		
2705100547_2X	5/18/07	1:42	2	0.0005	0.0004		
2705100557_2X	5/18/07	1:47	2	0.0212	.021		
2705100539_2X	5/18/07	1:51	2	0.0000	0		
2705150411_2X ✓	5/18/07	1:56	2	0.0107	.011		
2705100545_2X	5/18/07	2:00	2	-0.0003	ND		
ICSA	5/18/07	2:04	1	-0.0006	ND	80-120	
ICSAB	5/18/07	2:08	1	.24281	.243	80-120	97.1%
Wash	5/18/07	2:12	1	-0.0003	ND		
QC-25 1ppm	5/18/07	2:15	1	1.0145	1.0		
ECV	5/18/07	2:18	1	4.9076	4.91	90-110	98.1%
ECB	5/18/07	2:22	1	0.0002	0.0002		
MRL	5/18/07	2:25	1	0.0101	.0101	50-150	101%

Sample_ID	Time	SCA	YR	B	BA	BE	CA	CD	CO	CR	CU	FE
ICV	12:28	N/A	N/A	4.98	9.89/10	3.98/4	98.6/100	5.01/5	9.91	9.84/10	9.89/10	9.85/10
Linearity Check	12:31	N/A	N/A	0.0129	0.0020	-0.0002	286.0	-0.0002	0.0029	0.0021	-0.0108	96.04
ICSA	12:35	N/A	N/A	0.070	0.003	-0.000	248/250	-0.001	0.002	0.000	-0.012	98.3/100
ICSAB	12:39	N/A	N/A	0.068	0.256/.25	0.245/.25	246/250	0.496/.5	0.240/.25	0.246/.25	0.246/.25	97.4/100
Wash	12:42	N/A	N/A	0.0044	0.0003	0.0001	0.0301	0.0004	0.0002	0.0002	0.0003	0.0125
QC-25 ppm	12:46	N/A	N/A	0.9148	1.039	0.9616	1.027	0.9749	1.036	0.9950	0.9694	1.018
CCV	12:50	N/A	N/A	2.40	4.92/5	1.99/2	48.9/50	2.47/2.5	4.94	4.85/5	4.88/5	5.01/5
ICB	12:53	N/A	N/A	0.0124	0.0001	0.0001	0.0025	0.0003	-0.0002	0.0001	-0.0000	0.0028
MRL	12:56	N/A	N/A	0.053	0.020/.02	0.001/.001	0.980/1	0.006/.005	0.050/.05	0.010/.01	0.010/.01	0.023/.02
WASH	13:00	N/A	N/A	0.0065	0.0001	0.0001	0.0011	0.0001	0.0002	-0.0001	0.0000	0.0013
MRL/2	13:03	N/A	N/A	0.028	0.010/.02	0.001/.001	0.499(1)	0.003/.005	0.025(.05)	0.005(-.01)	0.005(-.01)	0.011/.02
MRL2007	13:07	N/A	N/A	0.052	0.021/.02	0.001/.001	1.02/1	0.007/.005	0.053/.05	0.010/.01	0.010/.01	0.023/.02
MRL6010	13:11	N/A	N/A	0.050	0.021/.02	0.001/.001	1.03/1	0.006/.005	0.052/.05	0.010/.01	0.010/.01	0.023/.02
NoSample1	13:14	N/A	N/A	0.0058	-0.0003	0.0003	-0.0084	0.0016	-0.0023	0.0009	0.0004	-0.0051
NoSample2	13:18	N/A	N/A	0.0179	-0.0010	-0.0008	0.0894	0.0045	-0.0071	0.0054	0.0067	-0.0147
NoSample3	13:22	N/A	N/A	0.0153	-0.0011	-0.0007	0.6351	0.0038	-0.0065	0.0045	0.0057	-0.0322
NoSample4	13:26	N/A	N/A	0.0130	-0.0011	-0.0008	-0.0578	0.0044	-0.0053	0.0038	0.0074	0.0046
NoSample5	13:30	N/A	N/A	0.0136	-0.0010	-0.0010	0.2581	0.0043	-0.0071	0.0051	0.0068	-0.0367
NoSample6	13:33	N/A	N/A	0.0065	-0.0005	0.0000	0.1983	0.0022	-0.0037	0.0021	0.0020	-0.0209
CCV	13:37	N/A	N/A	2.41	4.97/5	2.01/2	49.7/50	2.49/2.5	4.98	4.94/5	4.90/5	5.01/5
CCB	13:40	N/A	N/A	0.0070	0.0001	0.0001	0.0004	0.0002	-0.0002	-0.0001	-0.0001	0.0002
NoSample7	13:44	N/A	N/A	0.0103	-0.0007	-0.0001	0.0997	0.0028	-0.0041	0.0024	0.0034	0.0002
MELANK2007	13:50	N/A	N/A	0.0022	0.0001	0.0001	0.0347	0.0001	0.0001	-0.0001	0.0001	0.0031
LCS	13:54	N/A	N/A	0.467	0.967/1	0.050/.05	49.4/50	0.206/.2	0.985/1	0.954/1	0.988/1	4.92/5
LS	13:56	N/A	N/A	0.482	0.992/1	0.051/.05	50.7/50	0.211/.2	1.01/1	0.988/1	1.01/1	5.00/5
2705100326	13:59	N/A	N/A	0.4423	1.2175	-0.0001	51.80	0.0000	0.0082	0.0031	8.135	0.3550
2705100326MS	14:04	N/A	N/A	0.9333	1.218	0.0515	100.8	0.2122	1.011	0.9787	9.185	5.338
2705100326MSD	14:07	N/A	N/A	0.9414	1.231	0.0522	102.4	0.2163	1.024	0.9919	9.295	5.502
CCV	14:10	N/A	N/A	2.38	4.89/5	1.97/2	48.1/50	2.45/2.5	4.90	4.83/5	4.83/5	4.87/5
CCB	14:13	N/A	N/A	0.0085	0.0001	0.0001	0.0021	0.0003	-0.0001	-0.0001	0.0001	-0.0005
2705160758	14:17	N/A	N/A	0.0459	0.0383	-0.0001	91.09	-0.0005	-0.0000	0.0013	0.0026	0.3795
2705090914	14:21	N/A	N/A	0.1276	0.0600	-0.0000	59.45	-0.0006	0.0001	0.0104	0.0002	0.0009
2705090914MS	14:26	N/A	N/A	0.6201	1.060	0.0520	106.6	0.2132	1.005	1.001	1.009	5.038
2705090914MSD	14:29	N/A	N/A	0.6371	1.081	0.0532	108.7	0.2185	1.025	1.023	1.034	5.122
2705100330	14:32	N/A	N/A	0.6642	0.0415	-0.0000	11.69	-0.0001	0.0016	0.0004	1.757	0.0323
2705100348	14:37	N/A	N/A	0.4494	0.4050	-0.0002	52.21	0.0005	0.0027	0.0199	17.91	0.6857
2705150008	14:41	N/A	N/A	0.0318	0.0419	0.0000	12.42	-0.0002	0.0002	0.0004	0.0848	0.1340
2705100322	14:45	N/A	N/A	0.6514	0.0436	-0.0001	10.72	0.0001	0.0028	0.0006	0.6799	0.0622
2705080750	14:49	N/A	N/A	0.2228	0.3882	-0.0001	33.59	-0.0004	-0.0000	0.0003	0.0109	0.0415
2705090717	14:54	N/A	N/A	0.0518	0.0160	0.0000	6.778	0.0002	-0.0000	0.0057	0.0009	0.6465
CCV	14:57	N/A	N/A	2.46	5.06/5	2.04/2	50.2/50	2.53/2.5	5.07	5.01/5	4.96/5	5.15/5
CCB	15:01	N/A	N/A	0.0072	0.0001	0.0001	0.0022	0.0001	-0.0000	0.0000	0.0001	-0.0003
MCV	15:04	N/A	N/A	1.19	2.51/2.5	1.00/1	24.7/25	1.24/1.25	2.51	2.46/2.5	2.43/2.5	2.51/2.5
2705100626_2X	15:07	N/A	N/A	3.812	0.0447	-0.0002	17.00	0.0003	0.0002	0.0019	0.0033	0.6031
2705110521_2X	15:12	N/A	N/A	2.190	0.0248	-0.0001	17.29	-0.0003	0.0002	0.0010	0.0018	0.1955
2705100628_2X	15:16	N/A	N/A	3.307	0.0262	-0.0002	11.45	0.0002	0.0000	0.0060	0.0024	0.5414
2705110523_2X	15:20	N/A	N/A	6.218	0.0391	-0.0002	13.06	0.0001	-0.0002	0.0022	0.0024	0.1480
2705090448	15:25	N/A	N/A	8.610	0.0189	-0.0002	4.389	-0.0001	0.0005	0.0016	0.0022	2.717
2705150070	15:29	N/A	N/A	0.1342	0.0710	0.0000	33.77	-0.0004	0.0002	-0.0001	0.0033	0.3956

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Sample ID	Time	SCA	YR	B	BA	BE	CA	CD	CO	CR	CU	FE
2705100521	15:32	N/A	N/A	0.1536	0.0365	-0.0000	20.00	-0.0002	0.0002	0.0004	0.0026	0.2229
2705080797	15:36	N/A	N/A	0.1572	0.0363	-0.0000	22.21	-0.0001	0.0001	0.0003	0.0025	0.1589
2705150408	15:40	N/A	N/A	0.1445	0.0750	-0.0001	117.8	-0.0006	-0.0003	0.0158	0.0145	0.0110
2705091028	15:44	N/A	N/A	0.2586	0.0491	-0.0001	47.34	-0.0001	0.0005	0.0030	0.0626	0.5811
CCV	15:49	N/A	N/A	2.47	5.08/5	2.05/2	50.5/50	2.55/2.5	5.11	5.02/5	5.00/5	5.14/5
CCB	15:52	N/A	N/A	0.0197	0.0000	0.0000	0.0007	0.0002	-0.0000	0.0001	0.0003	-0.0012
WASH	15:56	N/A	N/A	0.0224	0.0001	0.0000	0.0009	0.0003	-0.0001	0.0001	0.0001	-0.0012
MBLANK	15:59	N/A	N/A	0.0232	0.0000	0.0000	0.0020	0.0002	-0.0001	0.0001	-0.0000	-0.0018
LCS	16:03	N/A	N/A	0.492	0.978/1	0.051/.05	48.7/50	0.207/.2	1.00/1	0.971/1	0.971/1	4.96/5
LCSD	16:05	N/A	N/A	0.484	0.961/1	0.050/.05	46.9/50	0.203/.2	0.983/1	0.949/1	0.948/1	4.81/5
2705160707	16:08	N/A	N/A	0.0553	0.0816	-0.0000	16.90	-0.0002	-0.0001	0.0001	0.0085	0.0014
2705160707MS	16:12	N/A	N/A	0.5187	1.056	0.0491	63.27	0.2111	-0.0001	0.0001	0.0085	0.0014
2705160707MSD	16:15	N/A	N/A	0.5108	1.049	0.0491	63.93	0.2079	0.9980	0.9646	0.9424	4.792
2705160664	16:18	N/A	N/A	0.0700	0.0162	-0.0001	54.60	-0.0004	0.9891	0.9379	0.9376	4.768
2705160710	16:22	N/A	N/A	0.0544	0.0385	-0.0001	36.71	-0.0005	-0.0002	0.0006	0.0006	-0.0007
D705160708	16:26	N/A	N/A	0.0307	0.0635	-0.0002	41.46	-0.0005	-0.0002	0.0003	0.0005	-0.0010
CCV	16:31	N/A	N/A	2.59	5.17/5	2.11/2	51.5/50	2.62/2.5	5.28	5.10/5	5.01/5	5.14/5
CCB	16:40	N/A	N/A	0.0364	0.0001	-0.0000	-0.0002	0.0003	-0.0003	0.0003	0.0003	0.0016
MCV	16:43	N/A	N/A	1.22	2.48/2.5	0.998/1	24.3/25	1.24/1.25	2.50	2.43/2.5	2.39/2.5	2.45/2.5
2705160697	16:46	N/A	N/A	0.0630	0.0002	0.0000	0.0227	0.0001	-0.0000	0.0003	0.0006	-0.0002
2705160695	16:50	N/A	N/A	0.1582	0.0314	-0.0001	47.86	-0.0001	0.0000	0.0022	0.0006	0.0041
2705160694	16:54	N/A	N/A	0.1494	0.0316	-0.0000	49.10	-0.0004	0.0002	0.0024	0.0010	0.0127
2705160496	16:58	N/A	N/A	0.1113	0.0243	-0.0002	71.92	-0.0003	-0.0004	0.0000	0.0323	0.0131
2705160825	17:02	N/A	N/A	0.0841	0.2187	-0.0001	104.2	-0.0005	-0.0002	-0.0006	0.0209	-0.0006
2705160852	17:06	N/A	N/A	0.1352	0.3088	-0.0004	272.1	-0.010	-0.0003	0.0057	0.0007	-0.0046
2705160495	17:11	N/A	N/A	0.4634	0.0422	-0.0001	62.33	-0.0006	-0.0001	-0.0004	0.0168	-0.0030
2705160495MS	17:15	N/A	N/A	0.9353	1.023	0.0507	107.8	0.2154	0.9924	0.9725	0.9838	4.889
2705160495MSD	17:18	N/A	N/A	0.9382	1.027	0.0509	107.3	0.2160	0.9979	0.9721	0.9838	4.879
CCV	17:22	N/A	N/A	0.1894	0.0814	-0.0000	13.53	0.0001	-0.0003	0.0109	0.0021	0.0030
CCB	17:25	N/A	N/A	2.49	5.02/5	2.07/2	49.2/50	2.54/2.5	5.08	4.93/5	5.02/5	4.89/5
2705160021	17:29	N/A	N/A	0.0120	0.0000	0.0000	0.0040	0.0001	0.0000	0.0002	0.0003	0.0004
2705160018	17:32	N/A	N/A	0.0421	0.0556	-0.0000	84.09	-0.0004	0.0000	0.0013	0.0021	0.0004
2705160019	17:37	N/A	N/A	0.0647	0.0549	-0.0002	89.71	-0.0004	-0.0002	0.0010	0.0074	0.0198
2705160023	17:41	N/A	N/A	0.0731	0.0462	-0.0000	65.46	-0.0005	-0.0000	0.0015	0.0030	0.0013
2705160017	17:45	N/A	N/A	0.0415	0.0576	-0.0002	85.44	-0.0003	0.0001	0.0015	0.0031	0.0012
2705160017	17:50	N/A	N/A	0.0625	0.0523	-0.0001	88.80	-0.0005	-0.0001	0.0007	0.0114	0.0075
2705160022	17:54	N/A	N/A	0.0393	0.0462	-0.0001	84.21	-0.0004	-0.0001	0.0013	0.0097	0.0003
2705160020	17:59	N/A	N/A	0.0723	0.0462	-0.0001	66.05	-0.0005	-0.0002	0.0004	0.0007	0.0026
2705160646	18:03	N/A	N/A	0.2130	0.0619	-0.0000	15.47	-0.0001	-0.0001	0.0081	0.0008	0.0025
MBLANK	18:07	N/A	N/A	0.0059	0.0001	0.0000	0.0055	0.0002	-0.0001	0.0000	0.0003	0.0001
LCS	18:10	N/A	N/A	0.475	0.973/1	0.051/.05	48.2/50	0.206/.2	0.995/1	0.964/1	0.973/1	4.79/5
CCV	18:13	N/A	N/A	2.44	4.96/5	2.02/2	49.4/50	2.50/2.5	5.00	4.88/5	4.85/5	4.91/5
CCB	18:16	N/A	N/A	0.0107	0.0001	0.0000	0.0031	0.0002	0.0001	0.0003	0.0003	0.0003
MCV	18:20	N/A	N/A	1.21	2.52/2.5	1.01/1	24.5/25	1.25/1.25	2.54	2.48/2.5	2.45/2.5	2.46/2.5
LCSD	18:23	N/A	N/A	0.470	0.952/1	0.049/.05	46.2/50	0.203/.2	0.972/1	0.940/1	0.951/1	4.63/5
2705160629	18:26	N/A	N/A	0.0323	0.0495	0.0000	11.21	0.0000	0.0000	0.0001	0.0029	0.0873
2705160629MS	18:30	N/A	N/A	0.5048	1.018	0.0497	58.88	0.2084	0.9769	0.9452	0.9622	4.897
2705160629MSD	18:33	N/A	N/A	0.5082	1.025	0.0497	58.63	0.2103	0.9821	0.9556	0.9606	4.862
2705160643	18:36	N/A	N/A	0.0294	0.0476	0.0000	10.85	-0.0003	-0.0001	-0.0000	0.0021	0.0864
2705160638	18:40	N/A	N/A	0.0549	0.1033	-0.0000	17.09	-0.0003	0.0000	-0.0001	0.0005	0.0470

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Sample ID	Time	SCA	YR	B	BA	BE	CA	CD	CO	CR	CU	FE
2705160193	18:44	N/A	N/A	0.0241	0.0145	- .0001	33.22	- .0005	- .0000	0.0058	0.0008	0.0270
2705160170	18:47	N/A	N/A	0.0233	0.0034	- .0000	37.80	- .0005	- .0001	0.0047	0.0011	0.0160
2705160255	18:51	N/A	N/A	0.0257	0.0079	- .0001	34.92	- .0005	- .0000	0.0030	0.0030	0.0062
2705160566	18:55	N/A	N/A	0.5996	0.0620	- .0001	76.77	- .0003	0.0002	- .0001	0.0138	0.1664
CCV	19:00	N/A	N/A	2.43	4.91/5	2.00/2	48.6/50	2.48/2.5	4.96	4.82/5	4.90/5	4.81/5
CCB	19:03	N/A	N/A	0.0107	0.0002	0.0001	0.0025	0.0003	0.0001	0.0001	0.0002	0.0003
2705160649	19:06	N/A	N/A	0.1439	0.0752	- .0000	25.29	- .0002	0.0001	0.0034	0.0004	2.236
2705160667	19:09	N/A	N/A	0.0946	0.0717	- .0002	88.59	- .0006	0.0001	0.0581	0.0206	- .0002
2705160648	19:14	N/A	N/A	0.2135	0.0625	- .0001	15.39	- .0000	- .0000	0.0082	0.0010	0.0036
2705160637	19:18	N/A	N/A	0.1821	0.0785	- .0001	13.37	- .0001	- .0001	0.0103	0.0012	0.0003
2705160637MS	19:21	N/A	N/A	0.6730	1.053	0.0503	60.01	0.2136	0.9882	0.9591	0.9568	4.831
2705160637MSD	19:24	N/A	N/A	0.6649	1.054	0.0499	59.09	0.2127	0.9841	0.9629	0.9896	4.703
2705160661	19:28	N/A	N/A	0.6284	0.0583	- .0001	77.01	- .0005	0.0000	0.0001	0.0094	0.2837
2705160665	19:32	N/A	N/A	0.0857	0.1326	- .0001	90.27	- .0003	- .0001	0.0011	0.0408	0.0021
2705160683	19:36	N/A	N/A	0.2316	0.0577	- .0001	80.30	- .0006	0.0000	0.0009	0.0075	0.0031
2705160708	19:41	N/A	N/A	0.0298	0.0595	- .0001	39.43	- .0005	0.0001	- .0004	0.0015	0.0181
CCV	19:44	N/A	N/A	2.54	5.01/5	2.05/2	48.9/50	2.55/2.5	5.07	4.92/5	5.09/5	4.95/5
CCB	19:48	N/A	N/A	0.0110	0.0001	- .0000	0.0039	0.0005	- .0001	0.0001	0.0006	0.0025
MCV	19:52	N/A	N/A	1.25	2.53/2.5	1.02/1	24.4/25	1.27/1.25	2.56	2.47/2.5	2.52/2.5	2.44/2.5
2705160477	19:55	N/A	N/A	0.0197	0.0292	- .0001	60.66	- .0004	0.0004	0.0008	0.0009	0.0017
2705160475	19:59	N/A	N/A	0.0171	0.0281	- .0001	60.44	- .0006	0.0002	0.0013	0.0005	0.0079
2705160476	20:04	N/A	N/A	0.0194	0.0285	- .0001	60.48	- .0004	0.0001	- .0002	0.0004	0.0025
2705160478	20:08	N/A	N/A	0.0155	0.0298	- .0001	60.60	- .0005	0.0002	- .0002	0.0002	0.0002
2705160169	20:12	N/A	N/A	0.0605	0.1407	- .0001	86.87	- .0007	0.0001	- .0004	0.0099	0.0141
MBLANK	20:17	N/A	N/A	0.0052	0.0001	- .0000	0.0064	0.0001	- .0001	- .0000	0.0004	0.0010
LCS	20:21	N/A	N/A	0.494	0.986/1	0.052/.05	47.9/50	0.212/.2	1.01/1	0.980/1	1.02/1	4.89/5
LCSD	20:23	N/A	N/A	0.486	0.975/1	0.051/.05	47.9/50	0.209/.2	0.997/1	0.966/1	1.00/1	4.76/5
2705160210	20:26	N/A	N/A	0.0270	0.1470	- .0001	50.04	- .0004	- .0001	- .0001	0.0898	0.0390
2705160210MS	20:30	N/A	N/A	0.5052	1.095	0.0499	95.12	0.2110	0.9731	0.9412	1.072	4.794
CCV	20:33	N/A	N/A	2.50	4.97/5	2.03/2	48.5/50	2.53/2.5	5.02	4.88/5	5.17/5	4.98/5
CCB	20:37	N/A	N/A	0.0107	0.0002	- .0000	0.0036	0.0003	0.0000	0.0002	0.0007	0.0024
2705160854	20:40	N/A	N/A	0.5181	1.122	0.0503	95.26	0.2148	0.9895	0.9650	1.072	4.875
2705160858	20:44	N/A	N/A	0.1348	0.0604	- .0001	55.38	- .0005	0.0001	- .0004	0.0008	0.0119
2705160837	20:48	N/A	N/A	0.1222	0.0325	- .0001	51.31	- .0003	0.0000	- .0005	0.0006	0.0015
2705160676	20:52	N/A	N/A	1.063	0.1104	- .0009	665.8	- .0007	- .0002	- .0001	0.0018	1.270
2705160676	20:56	N/A	N/A	0.0569	0.0016	- .0001	5.802	0.0001	0.0002	0.0006	0.0028	0.0035
2705080838 5X	21:00	N/A	N/A	0.8633	0.0190	- .0008	192.3	- .0023	- .0014	- .0019	0.0042	0.5519
N705140396_10X	21:05	N/A	N/A	0.6249	0.2142	- .0015	620.6	- .0062	- .0009	0.0061	0.0058	- .0068
2705100596	21:09	N/A	N/A	0.2160	0.0647	- .0001	102.3	- .0005	0.0012	- .0003	0.0011	0.0129
2705160831	21:14	N/A	N/A	0.4528	0.0645	- .0003	108.9	- .0005	- .0002	- .0003	0.0006	0.0415
2705160822	21:18	N/A	N/A	0.1563	0.0307	- .0001	44.46	- .0004	0.0000	- .0004	0.0006	0.0415
CCV	21:23	N/A	N/A	2.47	4.94/5	2.02/2	48.3/50	2.51/2.5	4.98	4.86/5	5.00/5	4.84/5
CCB	21:26	N/A	N/A	0.0122	0.0001	0.0000	0.0034	0.0001	0.0001	- .0000	0.0003	0.0016
MCV	21:29	N/A	N/A	1.20	2.48/2.5	1.01/1	24.2/25	1.24/1.25	2.49	2.43/2.5	2.49/2.5	2.47/2.5
2705160857	21:33	N/A	N/A	0.1354	0.3050	- .0002	264.1	- .0007	0.0000	0.0053	0.0015	- .0017
2705160834_2X	21:37	N/A	N/A	0.3484	0.0210	- .0001	19.26	0.0014	- .0001	0.0000	0.0014	0.1421
2705160834	21:41	N/A	N/A	0.1747	0.0721	- .0001	40.02	- .0004	0.0001	- .0004	0.0005	0.0857
2705160834MS	21:45	N/A	N/A	0.6556	1.043	0.0494	84.19	0.2129	0.9947	0.9594	0.9703	4.695
2705160834MSD	21:49	N/A	N/A	0.6595	1.051	0.0501	83.78	0.2153	0.9938	0.9639	0.9854	4.828
MBLANK6010	21:52	N/A	N/A	0.0075	0.0002	0.0000	0.0244	0.0000	0.0001	- .0001	0.0003	0.0017

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Sample ID	Time	SCA	YR	B	BA	BE	CA	CD	CO	CR	CU	FE
LCS	21:56	N/A	N/A	0.502	1.01/1	0.053/.05	48.7/50	0.218/.2	1.03/1	0.994/1	1.05/1	4.86/5
LCSD	21:58	N/A	N/A	0.500	1.00/1	0.052/.05	48.1/50	0.215/.2	1.02/1	0.997/1	1.03/1	4.82/5
2705100540	22:01	N/A	N/A	1.159	0.0228	-0.005	183.8	0.0012	0.0099	0.0001	0.0123	0.0325
2705100540MS	22:05	N/A	N/A	1.654	1.035	0.0523	228.0	0.2229	1.043	0.9887	1.086	4.964
CCV	22:09	N/A	N/A	2.47	4.95/5	2.02/2	47.7/50	2.52/2.5	4.98	4.86/5	5.07/5	4.69/5
CCB	22:12	N/A	N/A	0.0123	0.0002	0.0000	0.0035	0.0003	0.0001	0.0001	0.0005	0.0018
2705100540MSD	22:15	N/A	N/A	1.699	1.045	0.0528	235.5	0.2249	1.044	0.9915	1.102	4.942
2705100548	22:19	N/A	N/A	2.025	0.0716	-0.009	520.9	0.0003	0.0106	0.0107	0.0073	1.165
2705100548MS	22:24	N/A	N/A	N/A	1.103	0.0531	591.2	0.2340	1.053	1.022	1.126	6.234
2705100544_2X	22:27	N/A	N/A	N/A	1.099	0.0526	577.4	0.2325	1.043	1.015	1.125	6.034
2705100548MSD	22:30	N/A	N/A	N/A	0.0414	-0.012	541.7	0.0008	0.0045	0.0083	0.0060	0.0578
2705100544_2X	22:34	N/A	N/A	N/A	0.0859	-0.005	189.4	0.0024	0.0092	0.0092	0.0090	1.578
2705100553_2X	22:39	N/A	N/A	N/A	0.0502	-0.004	149.6	0.0019	0.0152	0.0050	0.0045	0.7286
2705100554_2X	22:43	N/A	N/A	N/A	0.0704	-0.009	354.1	0.0024	0.0051	0.0051	0.0066	1.272
2705100558_2X	22:48	N/A	N/A	N/A	0.0447	-0.008	142.8	0.0016	0.0014	0.0013	0.0062	0.5465
2705100556_2X	22:52	N/A	N/A	N/A	0.1049	-0.011	575.8	0.0012	0.0068	0.1409	0.0081	2.564
CCV	22:56	N/A	N/A	N/A	4.96/5	2.01/2	47.5/50	2.52/2.5	4.98	4.86/5	5.02/5	4.75/5
CCB	23:00	N/A	N/A	N/A	0.0002	0.0000	0.0037	0.0003	0.0001	0.0000	0.0005	0.0013
MCV	23:03	N/A	N/A	N/A	2.48/2.5	1.01/1	23.9/25	1.24/1.25	2.49	2.43/2.5	2.52/2.5	2.41/2.5
2705100381_2X	23:06	N/A	N/A	N/A	0.0237	-0.007	129.1	0.0039	0.0038	0.9395	0.0045	0.0221
2705080517_2X	23:11	N/A	N/A	N/A	0.0291	-0.009	439.7	-0.008	0.0189	0.0151	0.0081	2.653
2705080826_5X	23:15	N/A	N/A	N/A	0.0290	-0.014	510.0	-0.009	0.0048	0.0149	0.0128	0.1749
2705080223_2X	23:19	N/A	N/A	N/A	0.0148	-0.006	225.3	0.0012	0.0066	0.0009	0.0124	0.1840
2705080224_2X	23:24	N/A	N/A	N/A	0.0272	-0.009	437.3	-0.010	0.0177	0.0118	0.0064	2.146
2705080516_2X	23:28	N/A	N/A	N/A	0.0279	-0.010	445.0	-0.006	0.0175	0.0106	0.0057	2.050
2705080217_2X	23:32	N/A	N/A	N/A	0.0159	-0.010	642.6	0.0015	0.0014	0.2392	0.0112	0.9359
2705100552_2X	23:37	N/A	N/A	N/A	0.0579	-0.006	201.1	0.0020	0.0118	0.0175	0.0154	1.462
2705110478_2X	23:41	N/A	N/A	N/A	0.0260	-0.009	187.6	0.0017	-0.000	0.0006	0.0045	0.0058
2705110468_5X	23:45	N/A	N/A	N/A	0.0136	-0.002	81.87	-0.004	0.0001	0.9942	0.0014	0.0421
CCB	23:49	N/A	N/A	N/A	4.96/5	2.05/2	47.9/50	2.51/2.5	4.97	4.89/5	5.07/5	4.77/5
CCV	23:52	N/A	N/A	N/A	0.0000	0.0000	0.0029	0.0002	-0.000	0.0005	0.0003	0.0015
2705110476_2X	23:56	N/A	N/A	N/A	0.0260	-0.008	274.9	0.0023	0.0006	0.0205	0.0106	-0.0011
MBLANK6010	0:00	N/A	N/A	N/A	0.0002	0.0000	0.0287	0.0001	0.0001	-0.000	0.0004	0.0003
LCS	0:04	N/A	N/A	N/A	1.03/1	0.053/.05	50.0/50	0.221/.2	1.05/1	1.02/1	1.05/1	4.95/5
LCSD	0:07	N/A	N/A	N/A	0.998/1	0.052/.05	49.4/50	0.214/.2	1.01/1	0.986/1	1.04/1	4.82/5
2705110483	0:09	N/A	N/A	N/A	0.0465	-0.020	758.9	-0.003	0.0069	1.263	0.0133	6.885
2705110483MS	0:13	N/A	N/A	N/A	1.061	0.0506	821.1	0.2246	1.035	2.330	1.114	11.87
2705110483MSD	0:17	N/A	N/A	N/A	1.035	0.0503	811.2	0.2187	1.008	2.267	1.115	12.09
2705110471	0:21	N/A	N/A	N/A	0.0180	-0.009	538.3	-0.003	0.0006	0.0129	0.0064	0.0639
2705110471MS	0:25	N/A	N/A	N/A	1.010	0.0511	577.7	0.2223	0.9956	0.9866	1.091	4.845
2705110471MSD	0:28	N/A	N/A	N/A	1.028	0.0514	582.7	0.2268	1.010	1.000	1.093	4.894
CCV	0:31	N/A	N/A	N/A	4.97/5	2.03/2	47.5/50	2.51/2.5	4.97	4.89/5	5.08/5	4.75/5
CCB	0:35	N/A	N/A	N/A	0.0002	0.0000	0.0059	0.0001	-0.0001	0.0002	0.0003	0.0005
MCV	0:38	N/A	N/A	N/A	2.48/2.5	0.998/1	23.8/25	1.24/1.25	2.48	2.43/2.5	2.48/2.5	2.35/2.5
2705110473_2X	0:41	N/A	N/A	N/A	0.0586	-0.007	274.9	0.0016	0.0011	0.0255	0.0092	0.4727
2705110485_2X	0:45	N/A	N/A	N/A	0.0365	-0.009	355.6	0.0005	-0.005	2.017	0.0041	0.1901
2705110469_2X	0:49	N/A	N/A	N/A	0.0283	-0.005	161.4	0.0004	-0.003	1.469	0.0028	0.0617
2705110470_2X	0:54	N/A	N/A	N/A	0.0412	-0.011	640.4	0.0002	0.0015	0.0220	0.0066	1.174
2705110511_2X	0:58	N/A	N/A	N/A	0.7775	0.0001	692.9	0.0019	0.0336	0.0998	0.0247	18.10
2705110474_2X	1:02	N/A	N/A	N/A	0.0390	-0.007	282.9	0.0017	0.0020	0.0004	0.0063	0.4057

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Sample ID	Time	SCA	YR	B	BA	BE	CA	CD	CO	CR	CU	FE
2705100538_2X	1:06	N/A	N/A	N/A	0.0155	- .0012	505.5	0.0001	0.0043	- .0002	0.0061	0.1938
2705100555_2X	1:11	N/A	N/A	N/A	0.1307	- .0012	897.8	0.0014	0.0033	0.0833	0.0094	3.058
2705110541_2X	1:14	N/A	N/A	N/A	0.0361	- .0013	535.1	0.0009	0.0034	0.1211	0.0058	0.0832
2705100551_2X	1:19	N/A	N/A	N/A	0.0723	- .0008	328.9	0.0013	0.0076	0.0077	0.0100	1.253
CCV	1:23	N/A	N/A	N/A	4.97/5	2.01/2	48.1/50	2.53/2.5	4.99	4.92/5	5.14/5	4.84/5
CCB	1:26	N/A	N/A	N/A	0.0002	- .0000	0.0030	0.0003	0.0000	0.0001	0.0004	0.0021
2705100546_2X	1:30	N/A	N/A	N/A	0.0340	- .0005	166.5	0.0013	0.0108	0.0007	0.0072	0.6424
2705100543_2X	1:34	N/A	N/A	N/A	0.0336	- .0010	241.6	0.0011	0.0008	0.0002	0.0048	0.0011
2705100550_2X	1:39	N/A	N/A	N/A	0.1593	- .0008	560.3	- .0005	0.0056	0.0597	0.0075	2.545
2705100547_2X	1:42	N/A	N/A	N/A	0.0245	- .0009	378.1	0.0006	0.0033	0.0005	0.0071	0.3211
2705100557_2X	1:47	N/A	N/A	N/A	0.0356	- .0010	195.1	0.0018	- .0002	0.0212	0.0051	0.1641
2705100539_2X	1:51	N/A	N/A	N/A	0.0290	- .0007	211.8	0.0005	0.0100	0.0000	0.0109	0.2645
270510411_2X	1:56	N/A	N/A	N/A	0.0262	- .0011	441.4	- .0013	0.0211	0.0107	0.0059	2.068
2705100545_2X	2:00	N/A	N/A	N/A	0.0346	- .0008	177.1	0.0008	0.0008	- .0003	0.0045	0.0285
ICSA	2:04	N/A	N/A	N/A	0.002	- .000	237/250	- .002	0.001	- .001	- .011	94.5/100
ICSAB	2:08	N/A	N/A	N/A	0.254/.25	0.243/.25	235/250	0.492/.5	0.236/.25	0.243/.25	0.247/.25	94.0/100
Wash	2:12	N/A	N/A	N/A	0.0001	0.0001	0.0038	- .0000	- .0001	- .0003	0.0000	0.0035
QC-25 ppm	2:15	N/A	N/A	N/A	1.049	0.9769	1.024	0.9904	1.053	1.015	0.9843	0.9973
ECV	2:18	N/A	N/A	N/A	4.98/5	2.01/2	47.9/50	2.51/2.5	4.99	4.91/5	4.92/5	4.88/5
ECB	2:22	N/A	N/A	N/A	0.0001	0.0000	0.0002	0.0002	- .0003	0.0002	0.0005	- .0007
MRL	2:25	N/A	N/A	N/A	0.021/.02	0.001/.02	0.975/1	0.006/.005	0.051/.05	0.010/.01	0.010/.01	0.020/.02

Sequence No.: 3
 Sample ID: ICV
 Analyst:
 Initial Sample Wt:
 Dilution:

Autosampler Location: 15
 Date Collected: 5/17/2007 12:28:33
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: ICV

Analyte Back Pressure Flow
 All 236.0 kPa 0.65 L/min

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	351214.3	90.6 %	0.01			0.01%
Yr	282782.0	92.8 %	0.33			0.36%
B_f	149696.3	4.98 mg/L	0.020	4.98 mg/L	0.020	0.39%
	QC value within limits for B_ Recovery = 99.69%					
Ba†	638207.1	9.89 mg/L	0.004	9.89 mg/L	0.004	0.04%
	QC value within limits for Ba Recovery = 98.87%					
Be†	10984539.7	3.98 mg/L	0.016	3.98 mg/L	0.016	0.41%
	QC value within limits for Be Recovery = 99.44%					
Ca†	1185347.8	98.6 mg/L	0.22	98.6 mg/L	0.22	0.23%
	QC value within limits for Ca Recovery = 98.56%					
Cd†	117710.6	5.01 mg/L	0.008	5.01 mg/L	0.008	0.17%
	QC value within limits for Cd Recovery = 100.18%					
Co†	230263.9	9.91 mg/L	0.026	9.91 mg/L	0.026	0.27%
	QC value within limits for Co Recovery = 99.07%					
Cr†	706223.1	9.84 mg/L	0.010	9.84 mg/L	0.010	0.10%
	QC value within limits for Cr Recovery = 98.38%					
Cu†	3594755.7	9.89 mg/L	0.034	9.89 mg/L	0.034	0.34%
	QC value within limits for Cu Recovery = 98.95%					
Fe†	23820.8	9.85 mg/L	0.067	9.85 mg/L	0.067	0.68%
	QC value within limits for Fe Recovery = 98.51%					
K†	134215.5	98.7 mg/L	0.31	98.7 mg/L	0.31	0.31%
	QC value within limits for K Recovery = 98.69%					
Mg†	675652.4	97.8 mg/L	0.35	97.8 mg/L	0.35	0.36%
	QC value within limits for Mg Recovery = 97.82%					
Mn†	5201314.0	9.87 mg/L	0.001	9.87 mg/L	0.001	0.01%
	QC value within limits for Mn Recovery = 98.71%					
Mo†	108803.8	9.88 mg/L	0.026	9.88 mg/L	0.026	0.27%
	QC value within limits for Mo Recovery = 98.81%					
Na†	355723.0	99.0 mg/L	0.33	99.0 mg/L	0.33	0.33%
	QC value within limits for Na Recovery = 99.00%					
Ni†	200604.7	9.90 mg/L	0.040	9.90 mg/L	0.040	0.40%
	QC value within limits for Ni Recovery = 99.03%					
Pb†	42150.5	9.89 mg/L	0.008	9.89 mg/L	0.008	0.08%
	QC value within limits for Pb Recovery = 98.92%					
V†	1526491.9	9.94 mg/L	0.010	9.94 mg/L	0.010	0.10%
	QC value within limits for V Recovery = 99.37%					
Zn†	431138.4	9.85 mg/L	0.032	9.85 mg/L	0.032	0.32%
	QC value within limits for Zn Recovery = 98.47%					
All analyte(s) passed QC.						

Sequence No.: 4
 Sample ID: Linearity Check
 Analyst:
 Initial Sample Wt:
 Dilution:

Autosampler Location: 9
 Date Collected: 5/17/2007 12:31:49
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: Linearity Check

Analyte Back Pressure Flow
 All 236.0 kPa 0.65 L/min

Mean Data: Linearity Check

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	338977.2	87.5	%	0.18			0.20%
Yr	275000.0	90.2	%	1.21			1.34%
B _f	386.6	0.0129	mg/L	0.00259	0.0129 mg/L	0.00259	20.04%
	QC value within limits for B _f Recovery = Not calculated						
Ba _f	131.4	0.00203	mg/L	0.000096	0.00203 mg/L	0.000096	4.71%
	QC value within limits for Ba Recovery = Not calculated						
Be _f	-639.3	-0.00023	mg/L	0.000012	-0.00023 mg/L	0.000012	5.10%
	QC value within limits for Be Recovery = Not calculated						
Ca _f	3439586.8	286	mg/L	0.8	286 mg/L	0.8	0.27%
	QC value within limits for Ca Recovery = 95.34%						
Cd _f	-5.5	-0.00022	mg/L	0.000083	-0.00022 mg/L	0.000083	37.52%
	QC value within limits for Cd Recovery = Not calculated						
Co _f	68.0	0.00293	mg/L	0.000201	0.00293 mg/L	0.000201	6.86%
	QC value within limits for Co Recovery = Not calculated						
Cr _f	151.1	0.00210	mg/L	0.000080	0.00210 mg/L	0.000080	3.79%
	QC value within limits for Cr Recovery = Not calculated						
Cu _f	-3925.1	-0.0108	mg/L	0.00011	-0.0108 mg/L	0.00011	0.99%
	QC value within limits for Cu Recovery = Not calculated						
Fe _f	232348.4	96.0	mg/L	0.15	96.0 mg/L	0.15	0.15%
	QC value within limits for Fe Recovery = 96.04%						
K _f	408478.6	300	mg/L	0.4	300 mg/L	0.4	0.15%
	QC value within limits for K Recovery = 100.12%						
Mg _f	1241149.2	180	mg/L	0.1	180 mg/L	0.1	0.04%
	QC value within limits for Mg Recovery = Not calculated						
Mn _f	1745.6	0.00331	mg/L	0.000144	0.00331 mg/L	0.000144	4.36%
	QC value within limits for Mn Recovery = Not calculated						
Mo _f	-3.6	-0.00032	mg/L	0.000217	-0.00032 mg/L	0.000217	66.75%
	QC value within limits for Mo Recovery = Not calculated						
Na _f	1064053.2	296	mg/L	0.2	296 mg/L	0.2	0.08%
	QC value within limits for Na Recovery = 98.71%						
Ni _f	2.4	0.00012	mg/L	0.000104	0.00012 mg/L	0.000104	89.29%
	QC value within limits for Ni Recovery = Not calculated						
Pb _f	-9.5	-0.00224	mg/L	0.002572	-0.00224 mg/L	0.002572	115.05%
	QC value within limits for Pb Recovery = Not calculated						
V _f	-403.0	0.00094	mg/L	0.000068	0.00094 mg/L	0.000068	7.20%
	QC value within limits for V Recovery = Not calculated						
Zn _f	928.9	0.0213	mg/L	0.00018	0.0213 mg/L	0.00018	0.82%
	QC value within limits for Zn Recovery = Not calculated						

All analyte(s) passed QC.

Sequence No.: 5
 Sample ID: ICSA
 Analyst:
 Initial Sample Wt:
 Dilution:

Autosampler Location: 10
 Date Collected: 5/17/2007 12:35:29
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: ICSA

Analyte Back Pressure Flow
 All 236.0 kPa 0.65 L/min

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Sca	344369.3	88.9	%	0.16				0.18%
Yr	276623.3	90.7	%	0.57				0.63%
B_†	2102.1	0.0703	mg/L	0.00086	0.0703	mg/L	0.00086	1.23%
	QC value within limits for B_ Recovery = Not calculated							
Ba†	167.1	0.00258	mg/L	0.000081	0.00258	mg/L	0.000081	3.12%
	QC value within limits for Ba Recovery = Not calculated							
Be†	-772.6	-0.00028	mg/L	0.000020	-0.00028	mg/L	0.000020	7.23%
	QC value within limits for Be Recovery = Not calculated							
Ca†	2978637.5	248	mg/L	1.1	248	mg/L	1.1	0.44%
	QC value within limits for Ca Recovery = 99.07%							
Cd†	-19.1	-0.00080	mg/L	0.000061	-0.00080	mg/L	0.000061	7.62%
	QC value within limits for Cd Recovery = Not calculated							
Co†	45.5	0.00196	mg/L	0.000048	0.00196	mg/L	0.000048	2.43%
	QC value within limits for Co Recovery = Not calculated							
Cr†	13.0	0.00018	mg/L	0.000237	0.00018	mg/L	0.000237	130.97%
	QC value within limits for Cr Recovery = Not calculated							
Cu†	-4206.9	-0.0116	mg/L	0.00004	-0.0116	mg/L	0.00004	0.31%
	QC value within limits for Cu Recovery = Not calculated							
Fe†	237915.5	98.3	mg/L	0.29	98.3	mg/L	0.29	0.29%
	QC value within limits for Fe Recovery = 98.34%							
K†	448.7	0.330	mg/L	0.0379	0.330	mg/L	0.0379	11.47%
	QC value within limits for K Recovery = Not calculated							
Mg†	1586235.1	230	mg/L	0.8	230	mg/L	0.8	0.36%
	QC value within limits for Mg Recovery = 91.90%							
Mn†	1422.0	0.00270	mg/L	0.000034	0.00270	mg/L	0.000034	1.25%
	QC value within limits for Mn Recovery = Not calculated							
Mo†	-18.1	-0.00165	mg/L	0.000554	-0.00165	mg/L	0.000554	33.62%
	QC value within limits for Mo Recovery = Not calculated							
Na†	414.3	0.115	mg/L	0.0104	0.115	mg/L	0.0104	9.06%
	QC value within limits for Na Recovery = Not calculated							
Ni†	-18.3	-0.00090	mg/L	0.000011	-0.00090	mg/L	0.000011	1.26%
	QC value within limits for Ni Recovery = Not calculated							
Pb†	-160.9	-0.0377	mg/L	0.00189	-0.0377	mg/L	0.00189	4.99%
	QC value within limits for Pb Recovery = Not calculated							
V†	-489.0	0.00046	mg/L	0.000123	0.00046	mg/L	0.000123	27.05%
	QC value within limits for V Recovery = Not calculated							
Zn†	751.6	0.0173	mg/L	0.00014	0.0173	mg/L	0.00014	0.81%
	QC value within limits for Zn Recovery = Not calculated							

All analyte(s) passed QC.

Sequence No.: 6
 Sample ID: ICSAB
 Analyst:
 Initial Sample Wt:
 Dilution:

Autosampler Location: 11
 Date Collected: 5/17/2007 12:39:12
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: ICSAB

Analyte Back Pressure Flow
 All 236.0 kPa 0.65 L/min

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	343792.9	88.7 %	0.28			0.32%
Yr	275028.4	90.2 %	0.64			0.71%
B _f	2058.2	0.0683 mg/L	0.00015	0.0683 mg/L	0.00015	0.22%
QC value greater than the upper limit for B _f Recovery = Not calculated						
Ba _f	16552.2	0.256 mg/L	0.0003	0.256 mg/L	0.0003	0.11%
QC value within limits for Ba Recovery = 102.56%						
Be _f	677184.8	0.245 mg/L	0.0005	0.245 mg/L	0.0005	0.22%
QC value within limits for Be Recovery = 98.07%						
Ca _f	2963345.5	246 mg/L	2.8	246 mg/L	2.8	1.12%
QC value within limits for Ca Recovery = 98.56%						
Cd _f	11735.5	0.496 mg/L	0.0009	0.496 mg/L	0.0009	0.19%
QC value within limits for Cd Recovery = 99.29%						
Co _f	5580.1	0.240 mg/L	0.0007	0.240 mg/L	0.0007	0.29%
QC value within limits for Co Recovery = 96.03%						
Cr _f	17636.4	0.246 mg/L	0.0006	0.246 mg/L	0.0006	0.26%
QC value within limits for Cr Recovery = 98.27%						
Cu _f	89225.2	0.246 mg/L	0.0010	0.246 mg/L	0.0010	0.43%
QC value within limits for Cu Recovery = 98.28%						
Fe _f	235525.2	97.4 mg/L	0.03	97.4 mg/L	0.03	0.04%
QC value within limits for Fe Recovery = 97.35%						
K _f	220.6	0.162 mg/L	0.0477	0.162 mg/L	0.0477	29.42%
QC value within limits for K Recovery = Not calculated						
Mg _f	1586017.9	230 mg/L	2.3	230 mg/L	2.3	1.00%
QC value within limits for Mg Recovery = 91.89%						
Mn _f	135598.4	0.257 mg/L	0.0009	0.257 mg/L	0.0009	0.37%
QC value within limits for Mn Recovery = 102.94%						
Mo _f	-22.9	-0.00208 mg/L	0.001026	-0.00208 mg/L	0.001026	49.41%
QC value within limits for Mo Recovery = Not calculated						
Na _f	211.2	0.0588 mg/L	0.00422	0.0588 mg/L	0.00422	7.18%
QC value within limits for Na Recovery = Not calculated						
Ni _f	9490.9	0.469 mg/L	0.0017	0.469 mg/L	0.0017	0.35%
QC value within limits for Ni Recovery = 93.71%						
Pb _f	1939.0	0.455 mg/L	0.0016	0.455 mg/L	0.0016	0.35%
QC value within limits for Pb Recovery = 91.01%						
V _f	37479.5	0.247 mg/L	0.0002	0.247 mg/L	0.0002	0.10%
QC value within limits for V Recovery = 98.99%						
Zn _f	23206.8	0.530 mg/L	0.0010	0.530 mg/L	0.0010	0.20%
QC value within limits for Zn Recovery = 106.09%						
QC Failed. Continue with analysis.						

Sequence No.: 7
 Sample ID: Wash
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 1X

Autosampler Location: 0
 Date Collected: 5/17/2007 12:42:58
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: Wash

Analyte	Back Pressure	Flow
All	236.0 kPa	0.65 L/min

Mean Data: Wash

Analyte	Mean Corrected		Calib		Sample		RSD
	Intensity	Conc.	Units	Std.Dev.	Conc. Units	Std.Dev.	
Sca	389082.2	100	%	0.2			0.18%
Yr	300907.0	98.7	%	0.59			0.59%
B ₊	132.5	0.00443	mg/L	0.000211	0.00443 mg/L	0.000211	4.76%
	QC value within limits for B ₋		Recovery = Not calculated				
Ba ₊	22.3	0.00035	mg/L	0.000069	0.00035 mg/L	0.000069	19.95%
	QC value within limits for Ba		Recovery = Not calculated				
Be ₊	355.6	0.00013	mg/L	0.000012	0.00013 mg/L	0.000012	9.07%
	QC value within limits for Be		Recovery = Not calculated				
Ca ₊	362.2	0.0301	mg/L	0.00182	0.0301 mg/L	0.00182	6.05%
	QC value within limits for Ca		Recovery = Not calculated				
Cd ₊	8.7	0.00037	mg/L	0.000056	0.00037 mg/L	0.000056	15.03%
	QC value within limits for Cd		Recovery = Not calculated				
Co ₊	5.7	0.00024	mg/L	0.000033	0.00024 mg/L	0.000033	13.43%
	QC value within limits for Co		Recovery = Not calculated				
Cr ₊	13.8	0.00019	mg/L	0.000082	0.00019 mg/L	0.000082	42.91%
	QC value within limits for Cr		Recovery = Not calculated				
Cu ₊	106.5	0.00029	mg/L	0.000050	0.00029 mg/L	0.000050	17.04%
	QC value within limits for Cu		Recovery = Not calculated				
Fe ₊	30.2	0.0125	mg/L	0.00118	0.0125 mg/L	0.00118	9.46%
	QC value within limits for Fe		Recovery = Not calculated				
K ₊	109.5	0.0805	mg/L	0.04016	0.0805 mg/L	0.04016	49.90%
	QC value within limits for K		Recovery = Not calculated				
Mg ₊	204.4	0.0296	mg/L	0.00236	0.0296 mg/L	0.00236	7.99%
	QC value within limits for Mg		Recovery = Not calculated				
Mn ₊	37.5	0.00007	mg/L	0.000030	0.00007 mg/L	0.000030	42.75%
	QC value within limits for Mn		Recovery = Not calculated				
Mo ₊	2.3	0.00021	mg/L	0.000178	0.00021 mg/L	0.000178	84.28%
	QC value within limits for Mo		Recovery = Not calculated				
Na ₊	86.3	0.0240	mg/L	0.00126	0.0240 mg/L	0.00126	5.24%
	QC value within limits for Na		Recovery = Not calculated				
Ni ₊	-5.6	-0.00028	mg/L	0.000095	-0.00028 mg/L	0.000095	34.10%
	QC value within limits for Ni		Recovery = Not calculated				
Pb ₊	5.7	0.00135	mg/L	0.001124	0.00135 mg/L	0.001124	83.55%
	QC value within limits for Pb		Recovery = Not calculated				
V ₊	80.3	0.00052	mg/L	0.000057	0.00052 mg/L	0.000057	10.91%
	QC value within limits for V		Recovery = Not calculated				
Zn ₊	23.2	0.00054	mg/L	0.000144	0.00054 mg/L	0.000144	26.99%
	QC value within limits for Zn		Recovery = Not calculated				

All analyte(s) passed QC.

Sequence No.: 8
 Sample ID: QC-25 lppm
 Analyst:
 Initial Sample Wt:
 Dilution:

Autosampler Location: 12
 Date Collected: 5/17/2007 12:46:22
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: QC-25 lppm

Analyte	Back Pressure	Flow
All	236.0 kPa	0.65 L/min

Mean Data: QC-25 lppm

Analyte	Mean Corrected Intensity	Conc. Units	Calib	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	395173.4	102 %		0.1			0.11%
Yr	306167.1	100 %		0.3			0.26%
B_f	27423.1	0.915 mg/L		0.0024	0.915 mg/L	0.0024	0.26%
	QC value within limits for B_ Recovery = 91.48%						
Baf	67051.6	1.04 mg/L		0.003	1.04 mg/L	0.003	0.27%
	QC value within limits for Ba Recovery = 103.87%						
Be†	2656151.7	0.962 mg/L		0.0002	0.962 mg/L	0.0002	0.02%
	QC value within limits for Be Recovery = 96.16%						
Ca†	12347.0	1.03 mg/L		0.003	1.03 mg/L	0.003	0.31%
	QC value within limits for Ca Recovery = 102.67%						
Cd†	22993.9	0.975 mg/L		0.0033	0.975 mg/L	0.0033	0.34%
	QC value within limits for Cd Recovery = 97.49%						
Co†	24082.6	1.04 mg/L		0.004	1.04 mg/L	0.004	0.37%
	QC value within limits for Co Recovery = 103.61%						
Cr†	71426.3	0.995 mg/L		0.0033	0.995 mg/L	0.0033	0.33%
	QC value within limits for Cr Recovery = 99.50%						
Cu†	352160.9	0.969 mg/L		0.0039	0.969 mg/L	0.0039	0.41%
	QC value within limits for Cu Recovery = 96.94%						
Fe†	2462.6	1.02 mg/L		0.004	1.02 mg/L	0.004	0.36%
	QC value within limits for Fe Recovery = 101.83%						
K†	12973.6	9.54 mg/L		0.009	9.54 mg/L	0.009	0.10%
	QC value within limits for K Recovery = 95.40%						
Mg†	7405.3	1.07 mg/L		0.000	1.07 mg/L	0.000	0.04%
	QC value within limits for Mg Recovery = 107.33%						
Mn†	545956.5	1.04 mg/L		0.000	1.04 mg/L	0.000	0.04%
	QC value within limits for Mn Recovery = 103.62%						
Mo†	10577.3	0.961 mg/L		0.0019	0.961 mg/L	0.0019	0.20%
	QC value within limits for Mo Recovery = 96.06%						
Na†	3698.4	1.03 mg/L		0.024	1.03 mg/L	0.024	2.34%
	QC value within limits for Na Recovery = 102.93%						
Ni†	21178.9	1.05 mg/L		0.009	1.05 mg/L	0.009	0.83%
	QC value within limits for Ni Recovery = 104.55%						
Pb†	4504.0	1.06 mg/L		0.011	1.06 mg/L	0.011	1.03%
	QC value within limits for Pb Recovery = 105.70%						
V†	148882.7	0.969 mg/L		0.0002	0.969 mg/L	0.0002	0.02%
	QC value within limits for V Recovery = 96.93%						
Zn†	44010.8	1.00 mg/L		0.005	1.00 mg/L	0.005	0.46%
	QC value within limits for Zn Recovery = 100.50%						

All analyte(s) passed QC.

Sequence No.: 9
 Sample ID: CCV
 Analyst:
 Initial Sample Wt:
 Dilution:

Autosampler Location: 4
 Date Collected: 5/17/2007 12:50:12
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	236.0 kPa	0.65 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	377118.4	97.3 %	0.42			0.43%
Yr	300053.6	98.4 %	0.22			0.23%
B_t	72181.8	2.40 mg/L	0.031	2.40 mg/L	0.031	1.28%
	QC value within limits for B_	Recovery = 96.13%				
Baf	317375.9	4.92 mg/L	0.050	4.92 mg/L	0.050	1.01%
	QC value within limits for Ba	Recovery = 98.33%				
Be†	5496495.5	1.99 mg/L	0.006	1.99 mg/L	0.006	0.31%
	QC value within limits for Be	Recovery = 99.51%				
Ca†	588013.4	48.9 mg/L	0.14	48.9 mg/L	0.14	0.30%
	QC value within limits for Ca	Recovery = 97.79%				
Cd†	58116.0	2.47 mg/L	0.028	2.47 mg/L	0.028	1.12%
	QC value within limits for Cd	Recovery = 98.93%				
Co†	114714.2	4.94 mg/L	0.054	4.94 mg/L	0.054	1.09%
	QC value within limits for Co	Recovery = 98.71%				
Cr†	348512.5	4.85 mg/L	0.054	4.85 mg/L	0.054	1.12%
	QC value within limits for Cr	Recovery = 97.09%				
Cu†	1771077.9	4.88 mg/L	0.010	4.88 mg/L	0.010	0.21%
	QC value within limits for Cu	Recovery = 97.50%				
Fe†	12125.2	5.01 mg/L	0.012	5.01 mg/L	0.012	0.24%
	QC value within limits for Fe	Recovery = 100.28%				
K†	65131.7	47.9 mg/L	0.08	47.9 mg/L	0.08	0.17%
	QC value within limits for K	Recovery = 95.79%				
Mg†	341220.2	49.4 mg/L	0.05	49.4 mg/L	0.05	0.09%
	QC value within limits for Mg	Recovery = 98.81%				
Mn†	2627672.1	4.99 mg/L	0.005	4.99 mg/L	0.005	0.10%
	QC value within limits for Mn	Recovery = 99.74%				
Mo†	53384.3	4.85 mg/L	0.058	4.85 mg/L	0.058	1.20%
	QC value within limits for Mo	Recovery = 96.96%				
Na†	175620.6	48.9 mg/L	0.02	48.9 mg/L	0.02	0.04%
	QC value within limits for Na	Recovery = 97.75%				
Ni†	100947.1	4.98 mg/L	0.058	4.98 mg/L	0.058	1.16%
	QC value within limits for Ni	Recovery = 99.67%				
Pb†	21162.8	4.97 mg/L	0.053	4.97 mg/L	0.053	1.08%
	QC value within limits for Pb	Recovery = 99.33%				
V†	751689.1	4.89 mg/L	0.009	4.89 mg/L	0.009	0.18%
	QC value within limits for V	Recovery = 97.87%				
Zn†	216216.3	4.94 mg/L	0.049	4.94 mg/L	0.049	0.99%
	QC value within limits for Zn	Recovery = 98.77%				

All analyte(s) passed QC.

Sequence No.: 10
 Sample ID: ICB
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 1X

Autosampler Location: 0
 Date Collected: 5/17/2007 12:53:26
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: ICB

Analyte Back Pressure Flow
 All 236.0 kPa 0.65 L/min

Mean Data: ICB

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	387175.0	99.9	%	0.15			0.15%
Yr	301522.6	98.9	%	0.71			0.72%
B _r	370.0	0.0124	mg/L	0.00117	0.0124 mg/L	0.00117	9.44%
	QC value within limits for B _r	Recovery = Not calculated					
Ba _r	7.3	0.00011	mg/L	0.000038	0.00011 mg/L	0.000038	33.37%
	QC value within limits for Ba _r	Recovery = Not calculated					
Be _r	195.9	0.00007	mg/L	0.000006	0.00007 mg/L	0.000006	8.20%
	QC value within limits for Be _r	Recovery = Not calculated					
Ca _r	29.7	0.00247	mg/L	0.000046	0.00247 mg/L	0.000046	1.87%
	QC value within limits for Ca _r	Recovery = Not calculated					
Cd _r	7.4	0.00031	mg/L	0.000173	0.00031 mg/L	0.000173	55.83%
	QC value within limits for Cd _r	Recovery = Not calculated					
Co _r	-4.8	-0.00021	mg/L	0.000092	-0.00021 mg/L	0.000092	44.99%
	QC value within limits for Co _r	Recovery = Not calculated					
Cr _r	6.4	0.00009	mg/L	0.000084	0.00009 mg/L	0.000084	93.42%
	QC value within limits for Cr _r	Recovery = Not calculated					
Cu _r	-8.5	-0.00002	mg/L	0.000124	-0.00002 mg/L	0.000124	521.84%
	QC value within limits for Cu _r	Recovery = Not calculated					
Fe _r	6.8	0.00281	mg/L	0.001208	0.00281 mg/L	0.001208	42.92%
	QC value within limits for Fe _r	Recovery = Not calculated					
K _r	92.5	0.0680	mg/L	0.00880	0.0680 mg/L	0.00880	12.94%
	QC value within limits for K _r	Recovery = Not calculated					
Mg _r	8.9	0.00129	mg/L	0.000087	0.00129 mg/L	0.000087	6.78%
	QC value within limits for Mg _r	Recovery = Not calculated					
Mn _r	-23.8	-0.00005	mg/L	0.000004	-0.00005 mg/L	0.000004	9.48%
	QC value within limits for Mn _r	Recovery = Not calculated					
Mo _r	6.0	0.00054	mg/L	0.000356	0.00054 mg/L	0.000356	65.64%
	QC value within limits for Mo _r	Recovery = Not calculated					
Na _r	57.2	0.0159	mg/L	0.00802	0.0159 mg/L	0.00802	50.37%
	QC value within limits for Na _r	Recovery = Not calculated					
Ni _r	-3.2	-0.00016	mg/L	0.000033	-0.00016 mg/L	0.000033	20.50%
	QC value within limits for Ni _r	Recovery = Not calculated					
Pb _r	0.2	0.00006	mg/L	0.001051	0.00006 mg/L	0.001051	>999.9%
	QC value within limits for Pb _r	Recovery = Not calculated					
V _r	-5.2	-0.00003	mg/L	0.000020	-0.00003 mg/L	0.000020	61.32%
	QC value within limits for V _r	Recovery = Not calculated					
Zn _r	27.6	0.00064	mg/L	0.000075	0.00064 mg/L	0.000075	11.83%
	QC value within limits for Zn _r	Recovery = Not calculated					

All analyte(s) passed QC.

Sequence No.: 11
 Sample ID: MRL
 Analyst:
 Initial Sample Wt:
 Dilution:

Autosampler Location: 20
 Date Collected: 5/17/2007 12:56:50
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: MRL

Analyte	Back Pressure	Flow
All	236.0 kPa	0.65 L/min

Mean Data: MRL

Analyte	Mean Corrected Intensity	Conc. Units	Calib	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	388036.2	100 %		0.7			0.70%
Yr	302603.6	99.3 %		0.22			0.22%
B ₁	1589.1	0.0530 mg/L		0.00101	0.0530 mg/L	0.00101	1.91%
	QC value within limits for B ₁ Recovery = 106.06%						
Ba ₁	1317.2	0.0204 mg/L		0.00007	0.0204 mg/L	0.00007	0.32%
	QC value within limits for Ba Recovery = 101.97%						
Be ₁	2975.0	0.00108 mg/L		0.000012	0.00108 mg/L	0.000012	1.08%
	QC value within limits for Be Recovery = 107.82%						
Ca ₁	11787.0	0.980 mg/L		0.0028	0.980 mg/L	0.0028	0.28%
	QC value within limits for Ca Recovery = 98.01%						
Cd ₁	148.3	0.00646 mg/L		0.000057	0.00646 mg/L	0.000057	0.88%
	QC value within limits for Cd Recovery = 129.17%						
Co ₁	1161.8	0.0500 mg/L		0.00009	0.0500 mg/L	0.00009	0.18%
	QC value within limits for Co Recovery = 99.97%						
Cr ₁	698.0	0.00972 mg/L		0.000023	0.00972 mg/L	0.000023	0.24%
	QC value within limits for Cr Recovery = 97.23%						
Cu ₁	3511.5	0.00969 mg/L		0.000172	0.00969 mg/L	0.000172	1.77%
	QC value within limits for Cu Recovery = 96.95%						
Fe ₁	56.2	0.0233 mg/L		0.00134	0.0233 mg/L	0.00134	5.74%
	QC value within limits for Fe Recovery = 116.26%						
K ₁	1302.9	0.958 mg/L		0.0046	0.958 mg/L	0.0046	0.48%
	QC value within limits for K Recovery = 95.81%						
Mg ₁	714.2	0.103 mg/L		0.0002	0.103 mg/L	0.0002	0.18%
	QC value within limits for Mg Recovery = 103.42%						
Mn ₁	1135.7	0.00216 mg/L		0.000017	0.00216 mg/L	0.000017	0.77%
	QC value within limits for Mn Recovery = 107.78%						
Mo ₁	215.1	0.0195 mg/L		0.00006	0.0195 mg/L	0.00006	0.30%
	QC value within limits for Mo Recovery = 97.67%						
Na ₁	3517.5	0.979 mg/L		0.0036	0.979 mg/L	0.0036	0.37%
	QC value within limits for Na Recovery = 97.90%						
Ni ₁	408.9	0.0202 mg/L		0.00003	0.0202 mg/L	0.00003	0.13%
	QC value within limits for Ni Recovery = 100.93%						
Pb ₁	85.3	0.0200 mg/L		0.00042	0.0200 mg/L	0.00042	2.09%
	QC value within limits for Pb Recovery = 100.05%						
V ₁	309.4	0.00206 mg/L		0.000067	0.00206 mg/L	0.000067	3.27%
	QC value within limits for V Recovery = 102.88%						
Zn ₁	855.2	0.0195 mg/L		0.00025	0.0195 mg/L	0.00025	1.29%
	QC value within limits for Zn Recovery = 97.65%						

All analyte(s) passed QC.

Sequence No.: 145
 Sample ID: MBLANK6010
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 1X

Autosampler Location: 135
 Date Collected: 5/17/2007 21:52:35
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: MBLANK6010

Analyte	Back Pressure	Flow
All	245.0 kPa	0.65 L/min

Mean Data: MBLANK6010

Analyte	Mean Corrected Intensity	Conc. Units	Calib	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	409861.4	106 %		0.4			0.39%
Yr	331208.0	109 %		1.5			1.34%
B _f	223.7	0.00748 mg/L		0.000149	0.00748 mg/L	0.000149	2.00%
B _{at}	13.7	0.00021 mg/L		0.000042	0.00021 mg/L	0.000042	19.99%
B _{et}	56.2	0.00002 mg/L		0.000010	0.00002 mg/L	0.000010	48.47%
Ca _t	293.6	0.0244 mg/L		0.00045	0.0244 mg/L	0.00045	1.85%
Cd _t	1.1	0.00005 mg/L		0.000068	0.00005 mg/L	0.000068	149.31%
Co _t	1.8	0.00008 mg/L		0.000011	0.00008 mg/L	0.000011	13.50%
Cr _t	-10.4	-0.00015 mg/L		0.000085	-0.00015 mg/L	0.000085	58.20%
Cu _t	91.2	0.00025 mg/L		0.000159	0.00025 mg/L	0.000159	63.28%
Fe _t	4.2	0.00172 mg/L		0.000976	0.00172 mg/L	0.000976	56.79%
K _t	43.5	0.0320 mg/L		0.01974	0.0320 mg/L	0.01974	61.68%
Mg _t	6.7	0.00097 mg/L		0.000478	0.00097 mg/L	0.000478	49.28%
Mn _t	-194.7	-0.00037 mg/L		0.000010	-0.00037 mg/L	0.000010	2.62%
Mo _t	8.3	0.00075 mg/L		0.000582	0.00075 mg/L	0.000582	77.56%
Na _t	421.9	0.117 mg/L		0.0141	0.117 mg/L	0.0141	11.97%
Ni _t	1.3	0.00007 mg/L		0.000080	0.00007 mg/L	0.000080	120.07%
V _t	25.7	0.00017 mg/L		0.000300	0.00017 mg/L	0.000300	180.69%
Zn _t	345.9	0.00795 mg/L		0.000107	0.00795 mg/L	0.000107	1.35%

Sequence No.: 146
 Sample ID: LCS
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 1X

Autosampler Location: 136
 Date Collected: 5/17/2007 21:56:25
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: LCS

Analyte	Back Pressure	Flow
All	244.0 kPa	0.65 L/min

Mean Data: LCS

Analyte	Mean Corrected		Calib	Std.Dev.	Sample		RSD
	Intensity	Conc. Units			Conc. Units	Std.Dev.	
Sca	394171.7	102 %	%	0.5			0.48%
Yr	324491.0	106 %	%	1.1			1.02%
B_t	15071.9	0.502 mg/L	mg/L	0.0022	0.502 mg/L	0.0022	0.43%
Bat	65463.2	1.01 mg/L	mg/L	0.003	1.01 mg/L	0.003	0.34%
Bet	145462.7	0.0528 mg/L	mg/L	0.00016	0.0528 mg/L	0.00016	0.30%
Cat	585194.0	48.7 mg/L	mg/L	0.11	48.7 mg/L	0.11	0.22%
Cdt	5061.2	0.218 mg/L	mg/L	0.0005	0.218 mg/L	0.0005	0.22%
Cot	24049.6	1.03 mg/L	mg/L	0.005	1.03 mg/L	0.005	0.50%
Crt	71329.7	0.994 mg/L	mg/L	0.0012	0.994 mg/L	0.0012	0.12%
Cut	382325.7	1.05 mg/L	mg/L	0.004	1.05 mg/L	0.004	0.36%
Fet	11749.5	4.86 mg/L	mg/L	0.058	4.86 mg/L	0.058	1.19%
Kt	26046.9	19.2 mg/L	mg/L	0.30	19.2 mg/L	0.30	1.59%
Mgt	136749.0	19.8 mg/L	mg/L	0.19	19.8 mg/L	0.19	0.97%
Mnt	274813.9	0.522 mg/L	mg/L	0.0019	0.522 mg/L	0.0019	0.36%
Mof	11139.4	1.01 mg/L	mg/L	0.007	1.01 mg/L	0.007	0.65%
Nat	178228.5	49.6 mg/L	mg/L	0.02	49.6 mg/L	0.02	0.04%
Nit	10568.5	0.522 mg/L	mg/L	0.0030	0.522 mg/L	0.0030	0.58%
Vt	154957.7	1.01 mg/L	mg/L	0.002	1.01 mg/L	0.002	0.24%
Znt	46551.8	1.07 mg/L	mg/L	0.003	1.07 mg/L	0.003	0.33%

Sequence No.: 147
 Sample ID: LCSD
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 1X

Autosampler Location: 137
 Date Collected: 5/17/2007 21:58:57
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: LCSD

Analyte Back Pressure Flow
 All 244.0 kPa 0.65 L/min

Mean Data: LCSD

Analyte	Mean Corrected		Calib Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
Sca	391797.0	101	%	1.0				1.02%
Yr	323521.4	106	%	0.9				0.81%
B _t	15023.6	0.500	mg/L	0.0027	0.500	mg/L	0.0027	0.55%
Ba _t	64798.4	1.00	mg/L	0.010	1.00	mg/L	0.010	0.97%
Be _t	144013.2	0.0522	mg/L	0.00013	0.0522	mg/L	0.00013	0.24%
Ca _t	578761.8	48.1	mg/L	0.16	48.1	mg/L	0.16	0.33%
Cd _t	5007.8	0.215	mg/L	0.0013	0.215	mg/L	0.0013	0.63%
Co _t	23749.1	1.02	mg/L	0.013	1.02	mg/L	0.013	1.31%
Cr _t	71576.9	0.997	mg/L	0.0073	0.997	mg/L	0.0073	0.74%
Cu _t	375783.5	1.03	mg/L	0.001	1.03	mg/L	0.001	0.07%
Fe _t	11662.5	4.82	mg/L	0.044	4.82	mg/L	0.044	0.92%
K _t	25773.0	19.0	mg/L	0.21	19.0	mg/L	0.21	1.10%
Mg _t	135052.5	19.6	mg/L	0.21	19.6	mg/L	0.21	1.09%
Mn _t	272169.6	0.517	mg/L	0.0011	0.517	mg/L	0.0011	0.21%
Mo _t	11003.8	0.999	mg/L	0.0078	0.999	mg/L	0.0078	0.78%
Na _t	176446.1	49.1	mg/L	0.39	49.1	mg/L	0.39	0.80%
Ni _t	10422.0	0.515	mg/L	0.0024	0.515	mg/L	0.0024	0.47%
V _t	153589.5	1.000	mg/L	0.0019	1.000	mg/L	0.0019	0.19%
Zn _t	46094.7	1.06	mg/L	0.008	1.06	mg/L	0.008	0.76%

Sequence No.: 148
 Sample ID: 2705100540
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 2X

Autosampler Location: 138
 Date Collected: 5/17/2007 22:01:27
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: 2705100540

Analyte	Back Pressure	Flow
All	245.0 kPa	0.65 L/min

Mean Data: 2705100540

Analyte	Mean Corrected		Calib Conc. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity				Conc. Units			
Sca	366184.7		94.5 %	0.24				0.25%
Yr	310510.8		102 %	1.2				1.22%
B_t	17329.1		0.579 mg/L	0.0024	1.16 mg/L	0.0005		0.42%
Bat	735.9		0.0114 mg/L	0.00012	0.0228 mg/L	0.00025		1.08%
Bet	-688.1		-0.00025 mg/L	0.000015	-0.00050 mg/L	0.000031		6.12%
Cat	1105122.4		91.9 mg/L	0.02	184 mg/L	0.0		0.02%
Cd†	13.4		0.00059 mg/L	0.000305	0.00118 mg/L	0.000610		51.90%
Cot	115.4		0.00496 mg/L	0.000311	0.00993 mg/L	0.000622		6.26%
Crt	3.6		0.00005 mg/L	0.000042	0.00010 mg/L	0.000084		85.31%
Cut	2243.5		0.00617 mg/L	0.000277	0.0123 mg/L	0.00055		4.50%
Fet	39.4		0.0163 mg/L	0.00133	0.0325 mg/L	0.00267		8.20%
K†	11539.4		8.49 mg/L	0.013	17.0 mg/L	0.03		0.15%
Mgt	278754.7		40.4 mg/L	0.15	80.7 mg/L	0.29		0.36%
Mnt	282708.9		0.537 mg/L	0.0002	1.07 mg/L	0.000		0.04%
Mot	157.3		0.0143 mg/L	0.00013	0.0286 mg/L	0.00026		0.91%
Nat	1018452.5		283 mg/L	1.3	567 mg/L	2.6		0.45%
Nit	313.1		0.0155 mg/L	0.00020	0.0309 mg/L	0.00040		1.28%
V†	4576.1		0.0296 mg/L	0.00009	0.0593 mg/L	0.00018		0.30%
Znt	119.0		0.00264 mg/L	0.000021	0.00528 mg/L	0.000041		0.78%

Sequence No.: 149
 Sample ID: 2705100540MS
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 2X

Autosampler Location: 139
 Date Collected: 5/17/2007 22:05:53
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: 2705100540MS

Analyte Back Pressure Flow
 All 247.0 kPa 0.65 L/min

Mean Data: 2705100540MS

Analyte	Mean Corrected		Calib Conc. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity				Conc. Units			
Sca	367337.3	94.8 %		0.81				0.86%
Yr	312135.7	102 %		0.4				0.40%
B_t	24767.6	0.827 mg/L		0.0138	1.65 mg/L	0.028		1.66%
Ba†	33399.6	0.517 mg/L		0.0044	1.03 mg/L	0.009		0.84%
Be†	72074.5	0.0261 mg/L		0.00001	0.0523 mg/L	0.00001		0.03%
Ca†	1371182.6	114 mg/L		0.4	228 mg/L	0.7		0.32%
Cd†	2591.2	0.111 mg/L		0.0002	0.223 mg/L	0.0003		0.15%
Co†	12118.7	0.521 mg/L		0.0051	1.04 mg/L	0.010		0.98%
Cr†	35489.4	0.494 mg/L		0.0043	0.989 mg/L	0.0087		0.88%
Cu†	197227.8	0.543 mg/L		0.0031	1.09 mg/L	0.006		0.57%
Fe†	6004.5	2.48 mg/L		0.028	4.96 mg/L	0.055		1.11%
K†	24766.3	18.2 mg/L		0.34	36.4 mg/L	0.69		1.88%
Mg†	338946.8	49.1 mg/L		0.09	98.1 mg/L	0.18		0.18%
Mn†	413512.7	0.785 mg/L		0.0019	1.57 mg/L	0.004		0.24%
Mo†	5711.2	0.519 mg/L		0.0055	1.04 mg/L	0.011		1.07%
Na†	1102258.9	307 mg/L		3.2	614 mg/L	6.5		1.05%
Ni†	5524.3	0.273 mg/L		0.0051	0.545 mg/L	0.0103		1.89%
V†	81749.5	0.532 mg/L		0.0002	1.06 mg/L	0.000		0.03%
Zn†	23973.7	0.549 mg/L		0.0052	1.10 mg/L	0.010		0.95%

Sequence No.: 150
 Sample ID: CCV
 Analyst:
 Initial Sample Wt:
 Dilution:

Autosampler Location: 4
 Date Collected: 5/17/2007 22:09:07
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	247.0 kPa	0.65 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	381096.6	98.3 %	0.46			0.47%
Yr	316604.4	104 %	2.1			2.07%
B _f	74072.0	2.47 mg/L	0.007	2.47 mg/L	0.007	0.28%
	QC value within limits for B _f	Recovery = 98.65%				
Ba _f	319617.7	4.95 mg/L	0.015	4.95 mg/L	0.015	0.31%
	QC value within limits for Ba	Recovery = 99.03%				
Be _f	5579711.8	2.02 mg/L	0.008	2.02 mg/L	0.008	0.38%
	QC value within limits for Be	Recovery = 101.02%				
Ca _f	573271.0	47.7 mg/L	0.14	47.7 mg/L	0.14	0.29%
	QC value within limits for Ca	Recovery = 95.34%				
Cd _f	59148.1	2.52 mg/L	0.008	2.52 mg/L	0.008	0.31%
	QC value within limits for Cd	Recovery = 100.68%				
Co _f	115679.7	4.98 mg/L	0.020	4.98 mg/L	0.020	0.41%
	QC value within limits for Co	Recovery = 99.54%				
Cr _f	349059.8	4.86 mg/L	0.001	4.86 mg/L	0.001	0.03%
	QC value within limits for Cr	Recovery = 97.25%				
Cu _f	1842358.1	5.07 mg/L	0.049	5.07 mg/L	0.049	0.96%
	QC value within limits for Cu	Recovery = 101.42%				
Fe _f	11335.4	4.69 mg/L	0.093	4.69 mg/L	0.093	1.98%
	QC value within limits for Fe	Recovery = 93.75%				
K _f	63066.4	46.4 mg/L	1.04	46.4 mg/L	1.04	2.25%
	QC value within limits for K	Recovery = 92.75%				
Mg _f	330675.2	47.9 mg/L	0.21	47.9 mg/L	0.21	0.43%
	QC value within limits for Mg	Recovery = 95.75%				
Mn _f	2653652.4	5.04 mg/L	0.019	5.04 mg/L	0.019	0.38%
	QC value within limits for Mn	Recovery = 100.73%				
Mo _f	54121.7	4.92 mg/L	0.005	4.92 mg/L	0.005	0.10%
	QC value within limits for Mo	Recovery = 98.30%				
Na _f	173858.9	48.4 mg/L	0.20	48.4 mg/L	0.20	0.41%
	QC value within limits for Na	Recovery = 96.77%				
Ni _f	102262.1	5.05 mg/L	0.003	5.05 mg/L	0.003	0.07%
	QC value within limits for Ni	Recovery = 100.97%				
V _f	757818.1	4.93 mg/L	0.011	4.93 mg/L	0.011	0.22%
	QC value within limits for V	Recovery = 98.66%				
Zn _f	220948.3	5.05 mg/L	0.005	5.05 mg/L	0.005	0.10%
	QC value within limits for Zn	Recovery = 100.93%				

All analyte(s) passed QC.

Sequence No.: 151
 Sample ID: CCB
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 1X

Autosampler Location: 0
 Date Collected: 5/17/2007 22:12:22
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	246.0 kPa	0.65 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	404001.1	104 %	%	0.0			0.03%
Yr	331103.4	109 %	%	0.6			0.57%
B _f	366.6	0.0123 mg/L	mg/L	0.00066	0.0123 mg/L	0.00066	5.39%
	QC value within limits for B _f	Recovery = Not calculated					
Ba _f	10.3	0.00016 mg/L	mg/L	0.000002	0.00016 mg/L	0.000002	1.05%
	QC value within limits for Ba _f	Recovery = Not calculated					
Be _f	50.5	0.00002 mg/L	mg/L	0.000007	0.00002 mg/L	0.000007	37.49%
	QC value within limits for Be _f	Recovery = Not calculated					
Ca _f	42.5	0.00354 mg/L	mg/L	0.000844	0.00354 mg/L	0.000844	23.87%
	QC value within limits for Ca _f	Recovery = Not calculated					
Cd _f	8.2	0.00035 mg/L	mg/L	0.000158	0.00035 mg/L	0.000158	45.55%
	QC value within limits for Cd _f	Recovery = Not calculated					
Co _f	1.5	0.00006 mg/L	mg/L	0.000053	0.00006 mg/L	0.000053	84.29%
	QC value within limits for Co _f	Recovery = Not calculated					
Cr _f	6.4	0.00009 mg/L	mg/L	0.000128	0.00009 mg/L	0.000128	143.16%
	QC value within limits for Cr _f	Recovery = Not calculated					
Cu _f	185.5	0.00051 mg/L	mg/L	0.000196	0.00051 mg/L	0.000196	38.35%
	QC value within limits for Cu _f	Recovery = Not calculated					
Fe _f	4.3	0.00176 mg/L	mg/L	0.000150	0.00176 mg/L	0.000150	8.52%
	QC value within limits for Fe _f	Recovery = Not calculated					
K _f	72.2	0.0531 mg/L	mg/L	0.00945	0.0531 mg/L	0.00945	17.81%
	QC value within limits for K _f	Recovery = Not calculated					
Mg _f	-2.4	-0.00035 mg/L	mg/L	0.000446	-0.00035 mg/L	0.000446	127.56%
	QC value within limits for Mg _f	Recovery = Not calculated					
Mn _f	-177.0	-0.00034 mg/L	mg/L	0.000011	-0.00034 mg/L	0.000011	3.15%
	QC value within limits for Mn _f	Recovery = Not calculated					
Mo _f	6.1	0.00055 mg/L	mg/L	0.000148	0.00055 mg/L	0.000148	26.91%
	QC value within limits for Mo _f	Recovery = Not calculated					
Na _f	403.1	0.112 mg/L	mg/L	0.0128	0.112 mg/L	0.0128	11.45%
	QC value within limits for Na _f	Recovery = Not calculated					
Ni _f	-0.4	-0.00002 mg/L	mg/L	0.000207	-0.00002 mg/L	0.000207	>999.9%
	QC value within limits for Ni _f	Recovery = Not calculated					
V _f	22.1	0.00014 mg/L	mg/L	0.000076	0.00014 mg/L	0.000076	53.14%
	QC value within limits for V _f	Recovery = Not calculated					
Zn _f	3.9	0.00009 mg/L	mg/L	0.000054	0.00009 mg/L	0.000054	60.72%
	QC value within limits for Zn _f	Recovery = Not calculated					

All analyte(s) passed QC.

Sequence No.: 152
 Sample ID: 2705100540MSD
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 2X

Autosampler Location: 140
 Date Collected: 5/17/2007 22:15:46
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: 2705100540MSD

Analyte Back Pressure Flow
 All 247.0 kPa 0.65 L/min

Mean Data: 2705100540MSD

Analyte	Mean Corrected		Calib Conc. Units	Std.Dev.	Sample		RSD
	Intensity				Conc. Units	Std.Dev.	
Sca	368182.5		95.0 %	0.51			0.53%
Yr	317914.2		104 %	0.5			0.44%
B_t	25437.8		0.849 mg/L	0.0014	1.70 mg/L	0.003	0.17%
Bat	33732.1		0.523 mg/L	0.0020	1.05 mg/L	0.004	0.39%
Bet	72729.6		0.0264 mg/L	0.00005	0.0528 mg/L	0.00010	0.19%
Cat	1416304.9		118 mg/L	0.4	236 mg/L	0.9	0.38%
Cdt	2613.8		0.112 mg/L	0.0007	0.225 mg/L	0.0014	0.62%
Cof	12129.5		0.522 mg/L	0.0027	1.04 mg/L	0.005	0.51%
Crt	35589.1		0.496 mg/L	0.0027	0.992 mg/L	0.0055	0.55%
Cut	200146.7		0.551 mg/L	0.0006	1.10 mg/L	0.001	0.11%
Fet	5978.1		2.47 mg/L	0.027	4.94 mg/L	0.054	1.10%
Kt	24884.5		18.3 mg/L	0.05	36.6 mg/L	0.09	0.26%
Mgt	348876.4		50.5 mg/L	0.14	101 mg/L	0.3	0.27%
Mnt	423152.4		0.803 mg/L	0.0036	1.61 mg/L	0.007	0.44%
Mot	5776.4		0.525 mg/L	0.0040	1.05 mg/L	0.008	0.76%
Nat	1127218.1		314 mg/L	0.9	627 mg/L	1.9	0.30%
Nit	5547.9		0.274 mg/L	0.0008	0.548 mg/L	0.0017	0.31%
Vt	82521.6		0.537 mg/L	0.0011	1.07 mg/L	0.002	0.20%
Znt	24056.3		0.551 mg/L	0.0033	1.10 mg/L	0.007	0.59%

Sequence No.: 153
 Sample ID: 2705100548
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 2X

Autosampler Location: 141
 Date Collected: 5/17/2007 22:19:31
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: 2705100548

Analyte Back Pressure Flow
 All 248.0 kPa 0.65 L/min

Mean Data: 2705100548

Analyte	Mean Corrected		Calib Conc. Units	Std.Dev.	Sample		RSD
	Intensity				Conc. Units	Std.Dev.	
Sca	364826.0		94.1 %	0.23			0.25%
Yr	316870.2		104 %	1.4			1.32%
B_t	30279.8		1.01 mg/L	0.002	2.03 mg/L	0.004	0.21%
Ba†	2310.0		0.0358 mg/L	0.00010	0.0716 mg/L	0.00020	0.28%
Be†	-1240.5		-0.00045 mg/L	0.000007	-0.00090 mg/L	0.000015	1.64%
Ca†	3132190.4		260 mg/L	4.4	521 mg/L	8.8	1.69%
Cd†	3.5		0.00017 mg/L	0.000054	0.00034 mg/L	0.000108	32.16%
Co†	123.5		0.00531 mg/L	0.000148	0.0106 mg/L	0.00030	2.78%
Cr†	385.6		0.00537 mg/L	0.000214	0.0107 mg/L	0.00043	3.99%
Cu†	1328.4		0.00365 mg/L	0.000347	0.00729 mg/L	0.000693	9.51%
Fe†	1408.9		0.582 mg/L	0.0005	1.16 mg/L	0.001	0.09%
K†	17928.2		13.2 mg/L	0.01	26.4 mg/L	0.01	0.04%
Mg†	736069.6		107 mg/L	0.1	213 mg/L	0.2	0.11%
Mn†	477795.2		0.907 mg/L	0.0036	1.81 mg/L	0.007	0.39%
Mo†	326.3		0.0296 mg/L	0.00024	0.0593 mg/L	0.00049	0.82%
Na†	1360811.0		379 mg/L	1.5	757 mg/L	3.0	0.40%
Ni†	206.6		0.0102 mg/L	0.00014	0.0204 mg/L	0.00028	1.37%
V†	3276.7		0.0213 mg/L	0.00004	0.0426 mg/L	0.00007	0.17%
Zn†	192.2		0.00436 mg/L	0.000079	0.00871 mg/L	0.000157	1.80%

Sequence No.: 154
 Sample ID: 2705100548MS
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 2X

Autosampler Location: 142
 Date Collected: 5/17/2007 22:24:00
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: 2705100548MS

Analyte	Back Pressure	Flow
All	254.0 kPa	0.65 L/min

Mean Data: 2705100548MS

Analyte	Mean Corrected		Calib	Std.Dev.	Sample		RSD
	Intensity	Conc. Units			Conc. Units	Std.Dev.	
Sca	360339.0	93.0 %		0.36			0.39%
Yr	304083.1	99.7 %		0.96			0.96%
Ba†	35602.5	0.552 mg/L		0.0025	1.10 mg/L	0.005	0.46%
Be†	73151.1	0.0265 mg/L		0.00008	0.0531 mg/L	0.00016	0.31%
Ca†	3555059.5	296 mg/L		1.3	591 mg/L	2.5	0.42%
Cd†	2722.1	0.117 mg/L		0.0006	0.234 mg/L	0.0013	0.55%
Co†	12240.1	0.527 mg/L		0.0018	1.05 mg/L	0.004	0.35%
Cr†	36682.7	0.511 mg/L		0.0038	1.02 mg/L	0.008	0.74%
Cu†	204542.4	0.563 mg/L		0.0004	1.13 mg/L	0.001	0.07%
Fer	7539.8	3.12 mg/L		0.033	6.23 mg/L	0.067	1.07%
K†	32688.3	24.0 mg/L		0.26	48.1 mg/L	0.53	1.10%
Mg†	805422.2	117 mg/L		0.2	233 mg/L	0.4	0.19%
Mn†	623129.2	1.18 mg/L		0.000	2.37 mg/L	0.001	0.03%
Mo†	6053.2	0.550 mg/L		0.0038	1.10 mg/L	0.008	0.69%
Ni†	5442.1	0.269 mg/L		0.0037	0.537 mg/L	0.0074	1.39%
V†	83313.2	0.542 mg/L		0.0009	1.08 mg/L	0.002	0.17%
Zn†	25036.8	0.574 mg/L		0.0053	1.15 mg/L	0.011	0.93%

Sequence No.: 155
 Sample ID: 2705100548MSD
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 2X

Autosampler Location: 143
 Date Collected: 5/17/2007 22:27:11
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: 2705100548MSD

Analyte Back Pressure Flow
 All 251.0 kPa 0.65 L/min

Mean Data: 2705100548MSD

Analyte	Mean Corrected Intensity	Conc. Units	Calib	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	353659.7	91.2 %		0.27			0.30%
Yr	309804.5	102 %		0.4			0.36%
Baf	35463.0	0.549 mg/L		0.0015	1.10 mg/L	0.003	0.27%
Bei	72553.8	0.0263 mg/L		0.00005	0.0526 mg/L	0.00009	0.17%
Ca†	3471870.9	289 mg/L		0.5	577 mg/L	1.1	0.18%
Cd†	2704.7	0.116 mg/L		0.0004	0.233 mg/L	0.0008	0.35%
Co†	12120.4	0.521 mg/L		0.0023	1.04 mg/L	0.005	0.43%
Cr†	36430.3	0.507 mg/L		0.0041	1.01 mg/L	0.008	0.82%
Cu†	204288.4	0.562 mg/L		0.0020	1.12 mg/L	0.004	0.35%
Fe†	7298.4	3.02 mg/L		0.061	6.03 mg/L	0.121	2.01%
K†	31399.1	23.1 mg/L		0.48	46.2 mg/L	0.96	2.08%
Mg†	794616.1	115 mg/L		0.0	230 mg/L	0.0	0.01%
Mn†	615149.4	1.17 mg/L		0.002	2.33 mg/L	0.005	0.20%
Mo†	5972.5	0.542 mg/L		0.0010	1.08 mg/L	0.002	0.18%
Ni†	5423.0	0.268 mg/L		0.0019	0.535 mg/L	0.0039	0.72%
V†	83214.9	0.542 mg/L		0.0056	1.08 mg/L	0.011	1.03%
Zn†	24657.9	0.565 mg/L		0.0037	1.13 mg/L	0.007	0.66%

Sequence No.: 162
 Sample ID: CCV
 Analyst:
 Initial Sample Wt:
 Dilution:

Autosampler Location: 4
 Date Collected: 5/17/2007 22:56:49
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte Back Pressure Flow
 All 250.0 kPa 0.65 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Conc. Units	Calib Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	381283.6	98.4	%	0.66			0.67%
Yr	314533.7	103	%	0.0			0.01%
Ba†	319909.6	4.96	mg/L	0.023	4.96 mg/L	0.023	0.46%
	QC value within limits for Ba Recovery = 99.12%						
Be†	5560846.7	2.01	mg/L	0.023	2.01 mg/L	0.023	1.13%
	QC value within limits for Be Recovery = 100.68%						
Ca†	571270.1	47.5	mg/L	0.15	47.5 mg/L	0.15	0.31%
	QC value within limits for Ca Recovery = 95.00%						
Cd†	59247.4	2.52	mg/L	0.006	2.52 mg/L	0.006	0.22%
	QC value within limits for Cd Recovery = 100.85%						
Co†	115729.7	4.98	mg/L	0.011	4.98 mg/L	0.011	0.22%
	QC value within limits for Co Recovery = 99.58%						
Cr†	349150.1	4.86	mg/L	0.008	4.86 mg/L	0.008	0.16%
	QC value within limits for Cr Recovery = 97.27%						
Cu†	1823503.3	5.02	mg/L	0.023	5.02 mg/L	0.023	0.46%
	QC value within limits for Cu Recovery = 100.39%						
Fe†	11478.1	4.75	mg/L	0.054	4.75 mg/L	0.054	1.14%
	QC value within limits for Fe Recovery = 94.93%						
K†	64098.2	47.1	mg/L	0.35	47.1 mg/L	0.35	0.75%
	QC value within limits for K Recovery = 94.27%						
Mg†	330445.1	47.8	mg/L	0.11	47.8 mg/L	0.11	0.23%
	QC value within limits for Mg Recovery = 95.69%						
Mn†	2629381.1	4.99	mg/L	0.046	4.99 mg/L	0.046	0.91%
	QC value within limits for Mn Recovery = 99.81%						
Mo†	54175.8	4.92	mg/L	0.014	4.92 mg/L	0.014	0.29%
	QC value within limits for Mo Recovery = 98.40%						
Ni†	102240.3	5.05	mg/L	0.002	5.05 mg/L	0.002	0.04%
	QC value within limits for Ni Recovery = 100.95%						
V†	760171.9	4.95	mg/L	0.000	4.95 mg/L	0.000	0.00%
	QC value within limits for V Recovery = 98.97%						
Zn†	220728.5	5.04	mg/L	0.004	5.04 mg/L	0.004	0.07%
	QC value within limits for Zn Recovery = 100.83%						

All analyte(s) passed QC.

Sequence No.: 163
 Sample ID: CCB
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 1X

Autosampler Location: 0
 Date Collected: 5/17/2007 23:00:08
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	249.0 kPa	0.65 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	395175.3	102 %		0.2			0.24%
Yr	316343.8	104 %		1.0			0.97%
Ba†	12.3	0.00019 mg/L		0.000022	0.00019 mg/L	0.000022	11.62%
	QC value within limits for Ba	Recovery = Not calculated					
Be†	64.9	0.00002 mg/L		0.000007	0.00002 mg/L	0.000007	28.77%
	QC value within limits for Be	Recovery = Not calculated					
Ca†	45.1	0.00375 mg/L		0.000267	0.00375 mg/L	0.000267	7.11%
	QC value within limits for Ca	Recovery = Not calculated					
Cd†	7.3	0.00031 mg/L		0.000072	0.00031 mg/L	0.000072	23.28%
	QC value within limits for Cd	Recovery = Not calculated					
Co†	2.2	0.00010 mg/L		0.000066	0.00010 mg/L	0.000066	69.47%
	QC value within limits for Co	Recovery = Not calculated					
Cr†	1.8	0.00003 mg/L		0.000047	0.00003 mg/L	0.000047	182.01%
	QC value within limits for Cr	Recovery = Not calculated					
Cu†	199.6	0.00055 mg/L		0.000044	0.00055 mg/L	0.000044	7.97%
	QC value within limits for Cu	Recovery = Not calculated					
Fe†	3.0	0.00126 mg/L		0.000070	0.00126 mg/L	0.000070	5.57%
	QC value within limits for Fe	Recovery = Not calculated					
K†	132.0	0.0971 mg/L		0.00462	0.0971 mg/L	0.00462	4.76%
	QC value within limits for K	Recovery = Not calculated					
Mg†	-2.5	-0.00037 mg/L		0.000628	-0.00037 mg/L	0.000628	171.32%
	QC value within limits for Mg	Recovery = Not calculated					
Mn†	-179.9	-0.00034 mg/L		0.000001	-0.00034 mg/L	0.000001	0.41%
	QC value within limits for Mn	Recovery = Not calculated					
Mo†	8.4	0.00076 mg/L		0.000037	0.00076 mg/L	0.000037	4.84%
	QC value within limits for Mo	Recovery = Not calculated					
Ni†	-0.1	0.00000 mg/L		0.000320	0.00000 mg/L	0.000320	>999.9%
	QC value within limits for Ni	Recovery = Not calculated					
V†	1.9	0.00001 mg/L		0.000102	0.00001 mg/L	0.000102	798.70%
	QC value within limits for V	Recovery = Not calculated					
Zn†	1.0	0.00002 mg/L		0.000106	0.00002 mg/L	0.000106	452.42%
	QC value within limits for Zn	Recovery = Not calculated					

All analyte(s) passed QC.

Sequence No.: 164
 Sample ID: MCV
 Analyst:
 Initial Sample Wt:
 Dilution:

Autosampler Location: 5
 Date Collected: 5/17/2007 23:03:34
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: MCV

Analyte Back Pressure Flow
 All 249.0 kPa 0.65 L/min

Mean Data: MCV

Analyte	Mean Corrected		Calib Conc. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity				Conc. Units			
Sca	389965.7		101 %	0.4				0.37%
Yr	318416.4		104 %	0.2				0.24%
Ba†	160350.4		2.48 mg/L	0.009	2.48 mg/L	0.009		0.36%
	QC value within limits for Ba Recovery = 99.36%							
Be†	2787599.4		1.01 mg/L	0.003	1.01 mg/L	0.003		0.33%
	QC value within limits for Be Recovery = 100.94%							
Ca†	287197.4		23.9 mg/L	0.00	23.9 mg/L	0.00		0.01%
	QC value within limits for Ca Recovery = 95.52%							
Cd†	29195.7		1.24 mg/L	0.004	1.24 mg/L	0.004		0.33%
	QC value within limits for Cd Recovery = 99.41%							
Co†	57883.2		2.49 mg/L	0.006	2.49 mg/L	0.006		0.24%
	QC value within limits for Co Recovery = 99.62%							
Cr†	174434.1		2.43 mg/L	0.008	2.43 mg/L	0.008		0.33%
	QC value within limits for Cr Recovery = 97.19%							
Cu†	915673.8		2.52 mg/L	0.008	2.52 mg/L	0.008		0.31%
	QC value within limits for Cu Recovery = 100.82%							
Fe†	5820.0		2.41 mg/L	0.013	2.41 mg/L	0.013		0.56%
	QC value within limits for Fe Recovery = 96.27%							
K†	32206.2		23.7 mg/L	0.08	23.7 mg/L	0.08		0.32%
	QC value within limits for K Recovery = 94.73%							
Mg†	167248.1		24.2 mg/L	0.00	24.2 mg/L	0.00		0.02%
	QC value within limits for Mg Recovery = 96.86%							
Mn†	1340263.7		2.54 mg/L	0.009	2.54 mg/L	0.009		0.35%
	QC value within limits for Mn Recovery = 101.75%							
Mo†	26897.4		2.44 mg/L	0.004	2.44 mg/L	0.004		0.16%
	QC value within limits for Mo Recovery = 97.71%							
Ni†	51218.1		2.53 mg/L	0.005	2.53 mg/L	0.005		0.21%
	QC value within limits for Ni Recovery = 101.14%							
V†	376139.8		2.45 mg/L	0.002	2.45 mg/L	0.002		0.10%
	QC value within limits for V Recovery = 97.94%							
Zn†	109881.0		2.51 mg/L	0.001	2.51 mg/L	0.001		0.04%
	QC value within limits for Zn Recovery = 100.39%							

All analyte(s) passed QC.

Sequence No.: 166
 Sample ID: 2705080517_2X
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 2X

Autosampler Location: 151
 Date Collected: 5/17/2007 23:11:15
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: 2705080517_2X

Analyte Back Pressure Flow
 All 249.0 kPa 0.65 L/min

Mean Data: 2705080517_2X

Analyte	Mean Corrected		Calib Conc. Units	Std.Dev.	Sample		RSD
	Intensity				Conc.	Units	
Sca	358380.1	92.5 %		0.66			0.71%
Yr	313643.0	103 %		1.4			1.32%
Ba†	940.3	0.0146 mg/L		0.00034	0.0291 mg/L	0.00069	2.36%
Be†	-1284.8	-0.00046 mg/L		0.000009	-0.00093 mg/L	0.000019	2.03%
Ca†	2644091.8	220 mg/L		0.2	440 mg/L	0.3	0.07%
Cd†	-10.7	-0.00041 mg/L		0.000036	-0.00082 mg/L	0.000072	8.72%
Co†	219.7	0.00945 mg/L		0.000181	0.0189 mg/L	0.00036	1.91%
Cr†	542.5	0.00756 mg/L		0.000024	0.0151 mg/L	0.00005	0.32%
Cu†	1483.3	0.00403 mg/L		0.000085	0.00806 mg/L	0.000171	2.12%
Fe†	3208.6	1.33 mg/L		0.026	2.65 mg/L	0.052	1.96%
K†	20314.0	14.9 mg/L		0.21	29.9 mg/L	0.42	1.41%
Mg†	705890.8	102 mg/L		0.2	204 mg/L	0.4	0.20%
Mn†	286991.0	0.545 mg/L		0.0006	1.09 mg/L	0.001	0.11%
Mo†	1588.6	0.144 mg/L		0.0033	0.289 mg/L	0.0066	2.29%
Ni†	588.7	0.0291 mg/L		0.00044	0.0581 mg/L	0.00088	1.51%
V†	2138.9	0.0140 mg/L		0.00032	0.0280 mg/L	0.00065	2.32%
Zn†	698.4	0.0159 mg/L		0.00027	0.0317 mg/L	0.00054	1.71%

Sequence No.: 170
 Sample ID: 2705080516_2X
 Analyt: Walter Hsieh
 Initial Sample Wt:
 Dilution: 2X

Autosampler Location: 155
 Date Collected: 5/17/2007 23:28:23
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: 2705080516_2X

Analyte Back Pressure Flow
 All 250.0 kPa 0.65 L/min

Mean Data: 2705080516_2X

Analyte	Mean Corrected		Calib Conc. Units	Std.Dev.	Sample		RSD
	Intensity				Conc. Units	Std.Dev.	
Sca	346482.4	89.4 %		0.48			0.53%
Yr	294072.1	96.5 %		2.64			2.74%
Ba	901.2	0.0140 mg/L		0.00002	0.0279 mg/L	0.00003	0.12%
Be	-1448.4	-0.00052 mg/L		0.000006	-0.00105 mg/L	0.000012	1.12%
Ca	2675890.3	223 mg/L		1.0	445 mg/L	2.0	0.44%
Cd	-8.5	-0.00032 mg/L		0.000017	-0.00065 mg/L	0.000034	5.26%
Co	203.9	0.00877 mg/L		0.000119	0.0175 mg/L	0.00024	1.36%
Cr	380.3	0.00530 mg/L		0.000025	0.0106 mg/L	0.00005	0.47%
Cu	1053.5	0.00285 mg/L		0.000002	0.00571 mg/L	0.000003	0.06%
Fe	2479.4	1.02 mg/L		0.021	2.05 mg/L	0.043	2.08%
K	21045.0	15.5 mg/L		0.10	31.0 mg/L	0.19	0.62%
Mg	718914.8	104 mg/L		0.5	208 mg/L	1.0	0.48%
Mn	291081.7	0.552 mg/L		0.0041	1.10 mg/L	0.008	0.74%
Mo	1424.7	0.129 mg/L		0.0004	0.259 mg/L	0.0009	0.34%
Ni	597.3	0.0295 mg/L		0.00004	0.0590 mg/L	0.00008	0.14%
V	2417.3	0.0158 mg/L		0.00001	0.0315 mg/L	0.00002	0.07%
Zn	475.4	0.0107 mg/L		0.00018	0.0215 mg/L	0.00035	1.63%

Sequence No.: 175
 Sample ID: CCV
 Analyst:
 Initial Sample Wt:
 Dilution:

Autosampler Location: 4
 Date Collected: 5/17/2007 23:49:33
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	249.0 kPa	0.65 L/min

Mean Data: CCV

Analyte	Mean Corrected		Calib Conc. Units	Std.Dev.	Sample		RSD
	Intensity				Conc. Units	Std.Dev.	
Sca	371695.0		95.9 %	0.25			0.26%
Yr	305019.5		100 %	0.8			0.77%
Ba†	320379.9		4.96 mg/L	0.010	4.96 mg/L	0.010	0.21%
	QC value within limits for Ba Recovery = 99.26%						
Be†	5662476.6		2.05 mg/L	0.013	2.05 mg/L	0.013	0.64%
	QC value within limits for Be Recovery = 102.52%						
Ca†	575631.0		47.9 mg/L	0.07	47.9 mg/L	0.07	0.16%
	QC value within limits for Ca Recovery = 95.73%						
Cd†	58940.0		2.51 mg/L	0.001	2.51 mg/L	0.001	0.05%
	QC value within limits for Cd Recovery = 100.33%						
Co†	115602.7		4.97 mg/L	0.007	4.97 mg/L	0.007	0.14%
	QC value within limits for Co Recovery = 99.48%						
Cr†	350969.0		4.89 mg/L	0.004	4.89 mg/L	0.004	0.08%
	QC value within limits for Cr Recovery = 97.78%						
Cu†	1841998.7		5.07 mg/L	0.034	5.07 mg/L	0.034	0.67%
	QC value within limits for Cu Recovery = 101.40%						
Fe†	11545.1		4.77 mg/L	0.049	4.77 mg/L	0.049	1.02%
	QC value within limits for Fe Recovery = 95.49%						
K†	65162.2		47.9 mg/L	0.11	47.9 mg/L	0.11	0.24%
	QC value within limits for K Recovery = 95.83%						
Mg†	333003.3		48.2 mg/L	0.13	48.2 mg/L	0.13	0.26%
	QC value within limits for Mg Recovery = 96.43%						
Mn†	2671210.2		5.07 mg/L	0.028	5.07 mg/L	0.028	0.55%
	QC value within limits for Mn Recovery = 101.39%						
Mo†	54301.6		4.93 mg/L	0.010	4.93 mg/L	0.010	0.21%
	QC value within limits for Mo Recovery = 98.63%						
Ni†	102354.9		5.05 mg/L	0.003	5.05 mg/L	0.003	0.06%
	QC value within limits for Ni Recovery = 101.06%						
V†	762908.1		4.97 mg/L	0.006	4.97 mg/L	0.006	0.12%
	QC value within limits for V Recovery = 99.32%						
Zn†	220490.7		5.04 mg/L	0.000	5.04 mg/L	0.000	0.00%
	QC value within limits for Zn Recovery = 100.72%						

All analyte(s) passed QC.

Sequence No.: 176
 Sample ID: CCB
 Analyst: Walter Hsieh
 Initial Sample Wt:
 Dilution: 1X

Autosampler Location: 0
 Date Collected: 5/17/2007 23:52:50
 Data Type: Original
 Initial Sample Vol:
 Sample Prep Vol:

Nebulizer Parameters: CCB

Analyte Back Pressure Flow
 All 249.0 kPa 0.65 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sca	390236.6	101 %		0.2			0.23%
Yr	308718.3	101 %		0.5			0.53%
Ba†	2.4	0.00004 mg/L		0.000053	0.00004 mg/L	0.000053	139.52%
	QC value within limits for Ba	Recovery = Not calculated					
Be†	13.1	0.00000 mg/L		0.000022	0.00000 mg/L	0.000022	452.01%
	QC value within limits for Be	Recovery = Not calculated					
Ca†	34.7	0.00289 mg/L		0.000612	0.00289 mg/L	0.000612	21.19%
	QC value within limits for Ca	Recovery = Not calculated					
Cd†	5.1	0.00021 mg/L		0.000035	0.00021 mg/L	0.000035	16.22%
	QC value within limits for Cd	Recovery = Not calculated					
Co†	-0.7	-0.00003 mg/L		0.000054	-0.00003 mg/L	0.000054	175.56%
	QC value within limits for Co	Recovery = Not calculated					
Cr†	32.5	0.00045 mg/L		0.000047	0.00045 mg/L	0.000047	10.39%
	QC value within limits for Cr	Recovery = Not calculated					
Cu†	101.9	0.00028 mg/L		0.000124	0.00028 mg/L	0.000124	44.12%
	QC value within limits for Cu	Recovery = Not calculated					
Fe†	3.7	0.00153 mg/L		0.000636	0.00153 mg/L	0.000636	41.57%
	QC value within limits for Fe	Recovery = Not calculated					
K†	95.2	0.0700 mg/L		0.02880	0.0700 mg/L	0.02880	41.13%
	QC value within limits for K	Recovery = Not calculated					
Mg†	-2.4	-0.00034 mg/L		0.001459	-0.00034 mg/L	0.001459	422.95%
	QC value within limits for Mg	Recovery = Not calculated					
Mn†	-171.8	-0.00033 mg/L		0.000000	-0.00033 mg/L	0.000000	0.09%
	QC value within limits for Mn	Recovery = Not calculated					
Mo†	5.9	0.00054 mg/L		0.000136	0.00054 mg/L	0.000136	25.20%
	QC value within limits for Mo	Recovery = Not calculated					
Ni†	-0.1	0.00000 mg/L		0.000352	0.00000 mg/L	0.000352	>999.9%
	QC value within limits for Ni	Recovery = Not calculated					
V†	-12.5	-0.00008 mg/L		0.000082	-0.00008 mg/L	0.000082	104.52%
	QC value within limits for V	Recovery = Not calculated					
Zn†	3.4	0.00008 mg/L		0.000019	0.00008 mg/L	0.000019	24.77%
	QC value within limits for Zn	Recovery = Not calculated					

All analyte(s) passed QC.

**Standard
Preparation
Worksheet
&
Certificate of
Analysis**

Reagent Lot #
 HNO3 R# 100411 HCL R# 100412
 IS = Yttrium(ME0702007)0.75mL + Scandium ME0606006)0.5mL to 1000mL w/ 2% HNO3

Standards	Lot #	Exp. Date	Dilution
Calibration	ME0704023	(05/01/08)	1:10 ME0704027
(Prepare daily)	ME0704024	(05/01/08)	1:10
CCV/MCV/ECV	ME0610005	(04/10/08)	CCV/ECV 1:20 ME0610006 MCV 1:40 ME0610007
(Prepare daily)			
Spike/LCS	ME0606004	(12/13/07)	1:100 ME0601006
(Prepare daily)	ME0705006	(10/01/07)	1:100
	ME0704005	(10/04/08)	1:200
MRL	ME0703010	(09/16/07)	1:100 ME0603015
(Prepare daily)			
ICSA	ME0705012	(08/23/07)	
ICSAB	ME0705013	(08/23/07)	
QC-25 1PPM	ME0705005	(11/09/07)	
Linearity	ME0705004	(11/09/07)	
Method Sr/Ti/Sn/SiO2			
Calibration	ME0705008	(08/01/07)	
CCV/ECV	ME0703007	(09/16/07)	
Spike/LCS	ME0703006	(09/16/07)	1:100
(Prepare daily)			
MRL	ME0705007	(11/09/07)	1:100
(Prepare daily)			
Method Li			
Std/ICV/MRL	ME0703008	(09/16/07)	1:1000, 200, 40, 10
(Prepare daily)			
LCS/Spike	ME0701003	(07/04/07)	1:50
(Prepare daily)			
ccv	ME0701003	(07/04/07)	1:40
(Prepare daily)			

From May 2005: the calibration std for ICP should be ME0505010,011 not ME0408010
 dilution should be 1:20 and 1:40 not 1:200 and 1:400. 1/10/2006.
 From 10/4/06: the QC-25 1ppm solution ref # should be ME0610001 not ME0610002.

ME0704023

Initial:
Date:

WB
4/23/07

METALS STANDARD DOCUMENTATION

Standard: ICPCalibration Stock Std #1 **ME #:** 0704023
Date Received/Prepped: 4/23/2007 **By:** wbh
Date Expired: 5/1/2008 **Lot #:** A2-MEB235010
Manufacturer: Inorganic Ventures **Certificate:** Y
Matrix: 5% Nitric Acid **NIST SRM:** Varies
Amount: 500 mL **Storage:** Room Temp

Component	Comment	Conc.	Unit:
Ca	(P/N MWH-ICAP-CAL-1)	1000	ug/ml
K		1000	ug/ml
Mg		1000	ug/ml
Na		1000	ug/ml
Al		1000	ug/ml
As		100	ug/ml
Ba		100	ug/ml
Co		100	ug/ml
Cr		100	ug/ml
Cu		100	ug/ml
Fe		100	ug/ml
Mn		100	ug/ml
Ni		100	ug/ml
Pb		100	ug/ml
Se		100	ug/ml
Tl		100	ug/ml
V		100	ug/ml
Zn		100	ug/ml
Cd		50	ug/ml
Be		40	ug/ml
SR		30	ug/ml
Ag		20	ug/ml

1.0 INORGANIC VENTURES is an ISO Guide 34:2000 registered Certified Reference Material (CRM) Manufacturer (Certificate #883-02). The certificate is designed and the data is determined in accordance with ISO Guide 31:2000 (Reference Materials-Contents of Certificates and Labels), ISO Guide 34:2000 "Quality System Guidelines for the Production of Reference Materials," and ISO Guide 35-1989 "Certification of Reference Materials - General and Statistical Principles."

2.0 DESCRIPTION OF CRM Custom Solution
 Catalog No.: MWH-ICAP-CAL-1
 Lot Number: **A2-MEB235010**
 Matrix: 5% HNO₃(abs)

M80704023

1,000.00 µg/mL each:
 Ca, K, Mg, Na,
 100.00 µg/mL each:
 Al, As, Ba, Co, Cr₃, Cu, Fe, Mn, Ni, Pb, Se, Ti, V, Zn,
 50.00 µg/mL each: ,
 Cd,
 40.00 µg/mL each:
 Be,
 30.00 µg/mL each:
 Sr,
 20.00 µg/mL each:
 Ag

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ELEMENT	CERTIFIED VALUE	ELEMENT	CERTIFIED VALUE	ELEMENT	CERTIFIED VALUE
Aluminum, Al	100.1 ± 0.5 µg/mL	Arsenic, As	100.2 ± 0.3 µg/mL	Barium, Ba	99.9 ± 0.2 µg/mL
Beryllium, Be	39.98 ± 0.08 µg/mL	Cadmium, Cd	50.05 ± 0.12 µg/mL	Calcium, Ca	997 ± 3 µg/mL
Chromium+3, Cr ₃	100.1 ± 0.4 µg/mL	Cobalt, Co	100.1 ± 0.2 µg/mL	Copper, Cu	100.1 ± 0.2 µg/mL
Iron, Fe	100.0 ± 0.2 µg/mL	Lead, Pb	100.1 ± 0.3 µg/mL	Magnesium, Mg	996 ± 3 µg/mL
Manganese, Mn	100.1 ± 0.3 µg/mL	Nickel, Ni	100.1 ± 0.2 µg/mL	Potassium, K	1,003 ± 2 µg/mL
Selenium, Se	100.1 ± 0.2 µg/mL	Silver, Ag	20.03 ± 0.06 µg/mL	Sodium, Na	997 ± 5 µg/mL
Strontium, Sr	29.92 ± 0.18 µg/mL	Thallium, Tl	100.0 ± 0.1 µg/mL	Vanadium, V	100.1 ± 0.3 µg/mL
Zinc, Zn	100.1 ± 0.4 µg/mL				

Certified Density: 1.056 g/mL (measured at 22° C)

The Certified Value is based upon the most precise method used to analyze this CRM. The following equations are used in the calculation of the certified value and the uncertainty:

$$\text{Certified Value } (\bar{x}) = \frac{\sum x_i}{n}$$

(\bar{x}) = mean
 x_i = individual results
 n = number of measurements

$$\text{Uncertainty } (\pm) = \frac{2[(\sum s_i)^2]^{1/2}}{(n)^{1/2}}$$

$\sum s_i$ = The summation of all significant estimated errors (Most common are the errors from instrumental measurement, weighing, dilution to volume, and the fixed error reported on the NIST SRM certificate of analysis.)

4.0 TRACEABILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS

"Property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties." (ISO VIM, 2nd ed., 1993, definition 6.10)

This product is Traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRMs are available, the term 'in-house std.' is specified.

4.1 ASSAY INFORMATION

ELEMENT	METHOD	NIST SRM#	SRM LOT#	ELEMENT	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212	Ag	Volhard	999a	999a
Al	ICP Assay	3101a	010808	Al	EDTA	928	928
As	ICP Assay	3103a	010713	As	Gravimetric		See Sec. 4.2
Ba	Gravimetric		See Sec. 4.2	Ba	ICP Assay	3104a	992907
Be	Gravimetric		See Sec. 4.2	Be	ICP Assay	3105a	892707
Ca	EDTA	928	928	Ca	ICP Assay	3109a	000622
Cd	EDTA	928	928	Cd	ICP Assay	3108	890312
Co	ICP Assay	3113	00630	Co	EDTA	928	928
Cr3	ICP Assay	3112a	990607	Cr3	Gravimetric		See Sec. 4.2
Cu	EDTA	928	928	Cu	ICP Assay	3114	891811
Fe	ICP Assay	3126a	000606	Fe	EDTA	928	928
K	ICP Assay	3141a	891312	K	Gravimetric		See Sec. 4.2
Mg	EDTA	928	928	Mg	ICP Assay	3131a	991107
Mn	EDTA	928	928	Mn	ICP Assay	3132	890903
Na	ICP Assay	3152a	990907	Na	Gravimetric		See Sec. 4.2
Ni	EDTA	928	928	Ni	ICP Assay	3136	000612
Pb	ICP Assay	3128	030721	Pb	EDTA	928	928
Se	ICP Assay	3149	992106	Se	Gravimetric		See Sec. 4.2
Sr	ICP Assay	3153a	990906	Sr	EDTA	928	928
Tl	Gravimetric		See Sec. 4.2	Tl	ICP Assay	3158	993012
V	ICP Assay	3165	992706	V	EDTA	928	928
Zn	EDTA	928	928	Zn	ICP Assay	3168a	001402

- 4.2 **BALANCE CALIBRATION** - All balances are checked daily using an in-house procedure. The weights used for testing are annually compared to master weights and are traceable to the National Institute of Standards and Technology (NIST). The NIST Traceability numbers are 692476 - Class 1 and 692476A - Class 2. The NIST test number is 822/260017-98. All analytical balances are calibrated every 4 months. The balances are calibrated with a class 1 and/or class 2 analytical weight set. These weights are tested annually by a NIST / NVLAP accredited calibration lab. The NIST test number is
- 4.3 **THERMOMETER CALIBRATION** - The thermometers used in the determination of the final densities are calibrated vs standard thermometer No. 903-2680 which was certified in accordance with the procedures outlined by ASTM E77-87 and NIST Monograph 150 using NIST Test Nos. and Std Nos.: 769543, 217368/769543, 217368/P14452, 176240/P14452, 176240. Thermometers which are not calibrated vs standard thermometer No. 903-2680 are traceable to NIST Identification
- 4.4 **GLASSWARE CALIBRATION** - An in-house procedure is used to calibrate all Class A Glassware used in the manufacturing and quality control of CRM's.

5.0 **TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES IN µg/mL - N/A**

6.0 **INTENDED USE**

- For the calibration of analytical instruments including but not limited to the following:
ICP-MS, ICP-OES, FAAS, GFAA, XRF, and DCP
- For the validation of analytical methods
- For the preparation of "working reference samples"
- For interference studies and the determination of correction coefficients
- For detection limit and linearity studies
- For additional intended uses, contact Technical Staff

7.0 **INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL**

Storage & Handling - Keep **Tightly** sealed when not in use. Store and use at 20 ± 4°C. **Do Not** pipette from the container. **Do Not** return portions removed from pipetting to container.

Element Specific Information - For specific information regarding any element: Contact technical staff.

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 **HAZARDOUS INFORMATION** - Please refer to the enclosed Material Safety Data sheet for information regarding this CRM.

9.0 **HOMOGENEITY** - This solution was mixed according to in-house procedure IV-MPM-004 and is guaranteed to be homogeneous.

10.0 **QUALITY STANDARD DOCUMENTATION**



10.1 **ISO 9001:2000 Quality Management System Registration - QMI Certificate Number 010105**

Recognized by:

- Registrar Accreditation Board (ANSI-RAB)
- Standards Council of Canada (SCC)
- Dutch Council for Accreditation (RVA)
- Entidad Mexicana de Acreditacion, a.c.(EMA)

Members of IQ Net International Certification Network:

Argentina (IRAM), Australia (QAS), Austria (ÖQS), Belgium (Avinter), Brazil (FCAV), Canada (QMI), Hong Kong (HKQAA), Columbia (ICONTEC), Czech Republic (CQS), Denmark (DS), Finland (SFS), France (AFAQ), Germany (DQS), Greece (ELOT), Hungary (MSZT), Ireland (NSAI), Israel (SII), Italy (CISQ), Japan (JQA), Korea (KSA-QA), Netherlands (KEMA), Norway (NCS), Poland (PCBC), Portugal (APCER), Singapore (PSB), Slovenia (SIQ), Spain (AENOR), Switzerland (SQS)

10.2 **ISO/IEC 17025 - 1999 "General Requirements for the Competence of Testing and Calibration"**

- Chemical Testing - Accredited A2LA Certificate Number 883.01

10.3 **ISO/IEC Guide 34 - 2000 "General Requirements for the Competence of Reference Material Producers"**

- Reference Materials Production - Accredited A2LA Certificate Number 883.02

A2LA Mutual Recognition Agreement Partners:

Australia (NATA), Austria (BmWA), Belgium (BELTEST) (BKO-OBE), Canada (SCC), Chinese Taipei (CNLA), Czech Republic (NAO), Denmark (DANAK), Finland (FINAS), France (COFRAC), Germany (DAR), Hong Kong (HKAS), Ireland (NAB), Italy (SIT) (SINAL), Japan (JAB) (JNLA), Republic of Korea (KOLAS), The Netherlands (RvA), New Zealand (IANZ), Norway (NA), Portugal (IPQ), Singapore (SAC-SINGLAS), Spain (ENAC), Sweden (SWEDAC), Switzerland (SAS), United Kingdom (UKAS) and United States (NVLAP) (ICBO ES)

10.4 **10CFR50 Appendix B - Nuclear Regulatory Commission - Domestic Licensing of Production and Utilization Facilities**

10.5 **10CFR21 - Nuclear Regulatory Commission - Reporting Defects and Non-Compliance**

10.6 **MIL-STD-45662A (Obsolete/Observed)**

11.0 DATE OF CERTIFICATION AND PERIOD OF VALIDITY

- 11.1 Shelf Life** - The period of time during which the concentration of the analyte(s) in a properly packaged, unopened, and unused standard stored under environmentally controlled and monitored conditions will remain within the specified uncertainty range. Shelf life is limited primarily by transpiration (loss of water from the solution) and infrequently, by chemical instability. Transpiration studies of chemically-stable solutions performed at the manufacturer's facility show a CRM shelf-life of twenty one months for solutions packaged in 125-mL low density polyethylene bottles. When stored under special environmental controls that minimize transpiration and instability, the shelf life can be extended past this limit.
- 11.2 Expiration Date** - The date after which a CRM should not be used. Routine laboratory use of a CRM increases transpiration losses and the chance of contamination which affect the integrity of the CRM and limit its useful life. Manufacturer concurs with state and federal regulatory agencies' recommendations that solution standards be assigned a one-year expiration date.

Certification Date: April 16, 2007
Expiration Date:

EXPIRES
12 2008

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By: Nick Maida, Product
Documentation Administrator

Nicholas Maida

Certificate Approved By: Katalin Le, QC Manager

Katalin Le

Certifying Officer: Paul Gaines, PhD., Senior Technical Director

Paul R. Gaines

ME0704024

Initial:

Date:

wbh
4/23/07

METALS STANDARD DOCUMENTATION

Standard: ICPCalibration Stock Std #2
Date Received/Prepped: 4/23/2007
Date Expired: 5/1/2008
Manufacturer: Inorganic Ventures
Matrix: 5% Nitric Acid + Trace HF
Amount: 500 mL

ME #: 0704024
By: wbh
Lot #: A2-MEB235011
Certificate: Y
NIST SRM: Varies
Storage: Room Temp

Component	Comment	Conc. Unit:
Mo	(P/N MWH-ICAP-CAL-2)	100 ug/ml

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2.0 DESCRIPTION OF CRM Custom Solution
 Catalog No.: MWH-ICAP-CAL-2
 Lot Number: **A2-MEB235011**
 Matrix: tr. HF, 5% HNO₃(abs)

M70704024

100.00 µg/mL each:
 Mo, Sb, Sn, Ti,
 50.00 µg/mL each:
 B

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ELEMENT	CERTIFIED VALUE	ELEMENT	CERTIFIED VALUE	ELEMENT	CERTIFIED VALUE
Antimony, Sb	100.4 ± 0.3 µg/mL	Boron, B	50.07 ± 0.28 µg/mL	Molybdenum, Mo	100.3 ± 0.3 µg/mL
Tin, Sn	100.3 ± 0.3 µg/mL	Titanium, Ti	100.5 ± 0.2 µg/mL		

Certified Density: 1.037 g/mL (measured at 22° C)

The Certified Value is based upon the most precise method used to analyze this CRM. The following equations are used in the calculation of the certified value and the uncertainty:

$$\text{Certified Value } (\bar{x}) = \frac{\sum x_i}{n}$$

(\bar{x}) = mean

x_i = individual results

n = number of measurements

$\sum s_i$ = The summation of all significant estimated errors

(Most common are the errors from instrumental measurement, weighing, dilution to volume, and the fixed error reported on the NIST SRM certificate of analysis.)

$$\text{Uncertainty } (\pm) = \frac{2[(\sum s_i)^2]^{1/2}}{(n)^{1/2}}$$

4.0 TRACEABILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS

- "Property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties." (ISO VIM, 2nd ed., 1993, definition 6.10)

- This product is Traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRMs are available, the term 'in-house std.' is specified.

10.0 QUALITY STANDARD DOCUMENTATION



10.1 ISO 9001:2000 Quality Management System Registration - QMI Certificate Number 010105

Recognized by:

Registrar Accreditation Board (ANSI-RAB)
Standards Council of Canada (SCC)
Dutch Council for Accreditation (RVA)
Entidad Mexicana de Acreditacion, a.c.(EMA)

Members of IQ Net International Certification Network:

Argentina (IRAM), Australia (QAS), Austria (ÖQS), Belgium (Avinter), Brazil (FCAV), Canada (QMI), Hong Kong (HKQAA), Columbia (ICONTEC), Czech Republic (CQS), Denmark (DS), Finland (SFS), France (AFAQ), Germany (DQS), Greece (ELOT), Hungary (MSZT), Ireland (NSAI), Israel (SII), Italy (CISQ), Japan (JQA), Korea (KSA-QA), Netherlands (KEMA), Norway (NCS), Poland(PCBC), Portugal (APCER), Singapore (PSB), Slovenia (SIQ), Spain (AENOR), Switzerland (SQS)

10.2 ISO/IEC 17025 - 1999 "General Requirements for the Competence of Testing and Calibration"

- Chemical Testing - Accredited A2LA Certificate Number 883.01

10.3 ISO/IEC Guide 34 - 2000 "General Requirements for the Competence of Reference Material Producers"

- Reference Materials Production - Accredited A2LA Certificate Number 883.02

A2LA Mutual Recognition Agreement Partners:

Australia (NATA), Austria (BmWA), Belgium (BELTEST) (BKO-OBE), Canada (SCC), Chinese Taipei (CNLA), Czech Republic (NAO), Denmark (DANAK), Finland (FINAS), France (COFRAC), Germany (DAR), Hong Kong (HKAS, Ireland (NAB), Italy (SIT) (SINAL), Japan (JAB) (JNLA), Republic of Korea (KOLAS), The Netherlands (RvA), New Zealand (IANZ), Norway (NA), Portugal (IPQ), Singapore (SAC-SINGLAS), Spain (ENAC), Sweden (SWEDAC), Switzerland (SAS), United Kingdom (UKAS) and United States (NVLAP) (ICBO ES)

10.4 10CFR50 Appendix B - Nuclear Regulatory Commission - Domestic Licensing of Production and Utilization Facilities

10.5 10CFR21 - Nuclear Regulatory Commission - Reporting Defects and Non-Compliance

10.6 MIL-STD-45662A (Obsolete/Observed)

11.0 DATE OF CERTIFICATION AND PERIOD OF VALIDITY

11.1 **Shelf Life** - The period of time during which the concentration of the analyte(s) in a properly packaged, unopened, and unused standard stored under environmentally controlled and monitored conditions will remain within the specified uncertainty range. Shelf life is limited primarily by transpiration (loss of water from the solution) and infrequently, by chemical instability. Transpiration studies of chemically-stable solutions performed at the manufacturer's facility show a CRM shelf-life of twenty one months for solutions packaged in 125-mL low density polyethylene bottles. When stored under special environmental controls that minimize transpiration and instability, the shelf life can be extended past this limit.

11.2 **Expiration Date** - The date after which a CRM should not be used. Routine laboratory use of a CRM increases transpiration losses and the chance of contamination which affect the integrity of the CRM and limit its useful life. Manufacturer concurs with state and federal regulatory agencies' recommendations that solution standards be assigned a one-year expiration date.

Certification Date: April 16, 2007

Expiration Date:

EXPIRES
12/2008

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By: Nick Maida, Product
Documentation Administrator

Certificate Approved By: Katalin Le, QC Manager

Certifying Officer: Paul Gaines, PhD., Senior Technical Director

4.1 ASSAY INFORMATION

ELEMENT	METHOD	NIST SRM#	SRM LOT#	ELEMENT	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	991907	B	Gravimetric		See Sec. 4.2
Mo	Gravimetric		See Sec. 4.2	Mo	ICP Assay	3134	891307
Sb	ICP Assay	3102a	990707	Sb	Gravimetric		See Sec. 4.2
Sn	ICP Assay	3161a	993107	Sn	Gravimetric		See Sec. 4.2
Ti	Gravimetric		See Sec. 4.2	Ti	ICP Assay	3162a	992801

4.2 BALANCE CALIBRATION - All balances are checked daily using an in-house procedure. The weights used for testing are annually compared to master weights and are traceable to the National Institute of Standards and Technology (NIST). The NIST Traceability numbers are 692476 - Class 1 and 692476A - Class 2. The NIST test number is 822/260017-98. All analytical balances are calibrated every 4 months. The balances are calibrated with a class 1 and/or class 2 analytical weight set. These weights are tested annually by a NIST / NVLAP accredited calibration lab. The NIST test number is

4.3 THERMOMETER CALIBRATION - The thermometers used in the determination of the final densities are calibrated vs standard thermometer No. 903-2680 which was certified in accordance with the procedures outlined by ASTM E77-87 and NIST Monograph 190 using NIST Test Nos. and Std Nos.: 769543, 217368/769543, 217368/P14452, 176240/P14452, 176240. Thermometers which are not calibrated vs standard thermometer No. 903-2680 are traceable to NIST Identification

4.4 GLASSWARE CALIBRATION - An in-house procedure is used to calibrate all Class A Glassware used in the manufacturing and quality control of CRM's.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES IN µg/mL - N/A

6.0 INTENDED USE

For the calibration of analytical instruments including but not limited to the following:
ICP-MS, ICP-OES, FAAS, GFAA, XRF, and DCP

For the validation of analytical methods

For the preparation of "working reference samples"

For interference studies and the determination of correction coefficients

For detection limit and linearity studies

For additional intended uses, contact Technical Staff

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

Storage & Handling - Keep Tightly sealed when not in use. Store and use at 20 ± 4°C. Do Not pipette from the container. Do Not return portions removed from pipetting to container.

Element Specific Information - For specific information regarding any element. Contact technical staff.

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION - Please refer to the enclosed Material Safety Data sheet for information regarding this CRM.

9.0 HOMOGENEITY - This solution was mixed according to in-house procedure IV-MPM-004 and is guaranteed to be homogeneous.

Initial:
Date:

WBH
10/17/06

METALS STANDARD DOCUMENTATION

Standard: ICP CCV/MCV Stock Standard
Date Received/Prepped: 10/17/2006
Date Expired: 4/10/2008
Manufacturer: CPI
Matrix: 5% HNO₃ = tr HF
Amount: 100 mL x 10

ME #: 0610005
By: WBH
Lot #: 06j053
Certificate: Y
NIST SRM: Varius
Storage: Room Temp

Component	Comment	Conc. Unit:
Ag		20 ppm
Al		100 ppm
As		100 ppm
B		100 ppm
Ba		50 ppm
bE		100 ppm
Ca		40 ppm
Cd		1000 ppm
Co		50 ppm
Cr		100 ppm
Cu		100 ppm
Fe		100 ppm
K		100 ppm
Mg		1000 ppm
Mn		1000 ppm
Mo		100 ppm
Na		100 ppm
Ni		1000 ppm
Pb		100 ppm
Sb		100 ppm
Se		100 ppm
Tl		100 ppm
V		100 ppm
Zn		100 ppm
Sr		100 ppm
Sn		20 ppm
Ti		20 ppm



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*Innovative Solutions
 in Analytical Science and
 Technology*

Expiry: 4/10/2008

Certificate of Analysis

Part Number: 4400-061003RH01
Lot Number: 06J053
Shelf Life: 18 months

M70610005

MWH
 Custom Multi
 5% HNO₃ + tr HF

Concentrations in ug/mL ± 0.5%

Ag	20	K	1000	Sr	20
Al	100	Mg	1000	Sn	20
As	100	Mn	100	Ti	20
B	50	Mo	100		
Ba	100	Na	1000		
Be	40	Ni	100		
Ca	1000	Pb	100		
Cd	50	Sb	100		
Co	100	Se	100		
Cr	100	TL	100		
Cu	100	V	100		
Fe	100	Zn	100		

This standard solution was prepared using high-purity starting materials, high-purity acid (if required) and 18-megaohm de-ionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed at 1000µg/mL by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against the National Institute of Standards and Technology's SRM 3100 series, NIST approved second source and/or gravimetrically.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for the stated shelf life from the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA, +31 20 638 05 97 in Europe or visit our web-site at www.cpiinternational.com.

METALS STANDARD DOCUMENTATION

0253
6/19/06

Standard: ICP/ICPMS LCS/SPIKE Solution
Date Received/Prepped: 6/19/2006
Date Expired: 12/13/2006
Manufacturer: CPI
Matrix: 5% HNO₃ + 0.1% HF
Amount: 10 x 100 mL

ME #: 0606004
By: wbh
Lot #: 06F103
Certificate: Y
NIST SRM: 3100 Series
Storage: Room Temp

Component	Comment	Conc. Unit:
Iron	CPI P/N: 4400-050314RH01	500 mg/L
Aluminum		200 mg/L
Barium		100 mg/L
Cobalt		100 mg/L
Chromium		100 mg/L
Copper		100 mg/L
Molybdenum		100 mg/L
Strontium		100 mg/L
Titanium		100 mg/L
Vanadium		100 mg/L
Zinc		100 mg/L
Tin		100 mg/L
Silver		100 mg/L
Boron		50 mg/L
Manganese		50 mg/L
Nickel		50 mg/L
Antimony		50 mg/L
Arsenic		20 mg/L
Cadmium		20 mg/L
Lead		20 mg/L
Selenium		20 mg/L
Thallium		20 mg/L
Uraium		20 mg/L
Beryllium		5 mg/L
Tin		100 mg/L



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1000 CS Amsterdam Fax +31 20 420 28 36
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*Innovative Solutions
in Analytical Science and
Technology*

Expiry: 12/13/2007

Certificate of Analysis

Part Number: 4400-050314RH01
Lot Number: 06F103
Shelf Life: 18 months

M7060604

MWH Labs
5% HNO3 + 0.1% HF
#REF!

Concentrations in ug/mL ± 0.5%

Fe	500	B	50
Al	200	Mn	50
Ba	100	Ni	50
Co	100	Sb	50
Cr	100	As	20
Cu	100	Cd	20
Mo	100	Pb	20
Sr	100	Se	20
Ti	100	TL	20
V	100	Sn	100
Zn	100	Be	5
Ag	50	U	20

This standard solution was prepared using high-purity starting materials, high-purity acid (if required) and 18-megaohm de-ionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed at 1000µg/mL by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against the National Institute of Standards and Technology's SRM 3100 series, NIST approved second source and/or gravimetrically.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for the stated shelf life from the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA, +31 20 638 05 97 in Europe or visit our web-site at www.cpiinternational.com.

Initial: WBY
Date: 5/9/07

METALS STANDARD DOCUMENTATION

Standard: ICP Spike solution
Date Received/Prepped: 5/9/2007
Date Expired: 10/1/2007
Manufacturer: MWH-WBH
Matrix: 2% HNO3
Amount: 100mL x 2

ME #: 0705006
By: WBH
Lot #:
Certificate: Y
NIST SRM: 3100 SERIES
Storage: Room Temp

Component	Comment	Conc. Unit:
AS	8.0mL ME0611005/100mL	80 ppm
PB	8.0mL ME0704013/100mL	80 ppm
SE	8.0mL ME0703001/100mL	80 ppm
TL	8.0mL ME0702006/100mL	80 ppm

Initial:

Date:

Wes
11/1/06

METALS STANDARD DOCUMENTATION

Standard: Arsenic Stock Std
Date Received/Prepped: 11/1/2006
Date Expired: 10/1/2007
Manufacturer: IV
Matrix: 1.4% HNO3
Amount: 100mL

ME #: 0611005
By: WBH
Lot #: Y-AS02029
Certificate: Y
NIST SRM:
Storage: Room Temp

Component	Comment	Conc. Unit:
AS	Cat # CGAS1-1	1004 ppm

1.0 INORGANIC VENTURES is an ISO Guide 34:2000 registered Certified Reference Material (CRM) Manufacturer (Certificate #883-02). The certificate is designed and the data is determined in accordance with ISO Guide 31:2000 (Reference Materials-Contents of Certificates and Labels), ISO Guide 34:2000 "Quality System Guidelines for the Production of Reference Materials," and ISO Guide 35-1989 "Certification of Reference Materials - General and Statistical Principles."

2.0 DESCRIPTION OF CRM **1000 µg/mL Arsenic in 1.4% (abs) HNO₃**

Catalog Number: CGAS1-1, CGAS1-2, and CGAS1-5
 Lot Number: **Y -AS02029**
 Starting Material: As Polycrystalline lump
 Starting Material Purity (%): 99.999055
 Starting Material Lot No: 23115
 Matrix: 1.4% (abs) HNO₃

170611005

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Concentration: 1004 ± 2 µg/mL 995 ± 2 µg/g

Certified Density: 1.009 g/mL (measured at 22° C)

The Certified Value is the instrument analysis value. The following equations are used in the calculation of the certified value and the uncertainty:

$$\text{Certified Value } (\bar{x}) = \frac{\sum x_1}{n}$$

(\bar{x}) = mean
 x₁ = individual results
 n = number of measurements

$$\text{Uncertainty } (\pm) = \frac{2\sqrt{(\sum s_1^2)}}{(n)^{1/2}}$$

∑s₁ = The summation of all significant estimated errors
 (Most common are the errors from instrumental measurement weighting, dilution to volume, and the fixed error reported on the NIST SRM certificate of analysis.)

4.0 TRACEABILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS

"Property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties." (ISO VIM, 2nd ed., 1993, definition 6.10)

This IV product is Traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRMs are available, the term 'in-house std.' is specified.

4.1 Assay Method #1 **1004 ± 2 µg/mL 995 ± 2 µg/g (Avg 2 runs)**
 ICP Assay NIST SRM 3103a Lot Number: 010713

Assay Method #2 **1003 ± 5 µg/mL 994 ± 5 µg/g**
 Gravimetric NIST SRM Lot Number: See Sec. 4.2

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

Storage & Handling - Keep tightly sealed when not in use. Store and use at $20 \pm 4^\circ\text{C}$. Do not pipet from container. Do not return portions removed for pipetting to container.

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.9216; mix of +3 and +5; 6; H_3AsO_4 and HAsO_2

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl , HNO_3 , H_3PO_4 , H_2SO_4 and HF aqueous matrices water and NH_4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

As Containing Samples (Preparation and Solution) - As_2O_3 (soluble in 1:1 H_2O / HNO_3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphous form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (One gram of powdered sample is fused in a NiO crucible with 10 grams of a 1:1 mix of K_2CO_3 and KNO_3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of the sample are fused with 15 grams of a 1:1 Na_2CO_3 / Na_2O_2 mix in a NiO crucible. The fuseate is extracted with water and acidified with HNO_3)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Type	Interferences (underlined indicates severe)
ICP-OES 189.042 nm	0.05 / 0.005 $\mu\text{g}/\text{mL}$	1	atom	Cr
ICP-OES 193.696 nm	0.1 / 0.01 $\mu\text{g}/\text{mL}$	1	atom	V, Ge
ICP-OES 228.812 nm	0.1 / 0.01 $\mu\text{g}/\text{mL}$	1	atom	<u>Cd</u> , <u>Pt</u> , Ir, Co
ICP-MS 75 amu	20 ppt	n/a	M+	40Ar35Cl, 59Co16O, 36Ar38Ar1H, 38Ar37Cl, 6Ar39K, 150Nd2+, 150Sm2+

- 8.0 **HAZARDOUS INFORMATION** - Please refer to the enclosed Material Safety Data sheet for information regarding this CRM.
- 9.0 **HOMOGENEITY** - This solution was mixed according to procedure IV-MPM-004 and is guaranteed to be homogeneous.

10.0 QUALITY STANDARD DOCUMENTATION



10.1 ISO 9001:2000 Quality Management System Registration - QMI Certificate Number 010105

Recognized by:

Registrar Accreditation Board (ANSI-RAB)

Standards Council of Canada (SCC)

Dutch Council for Accreditation (RVA)

Entidad Mexicana de Acreditacion, a.c.(EMA)

Members of IQ Net International Certification Network:

Argentina (IRAM), Australia (QAS), Austria (ÖQS), Belgium (Avinter), Brazil (FCAV), Canada (QMI), Hong Kong (HKQAA), Columbia (ICONTEC), Czech Republic (CQS), Denmark (DS), Finland (SFS), France (AFAQ), Germany (DQS), Greece (ELOT), Hungary (MSZT), Ireland (NSAI), Israel (SII), Italy (CISQ), Japan (JQA), Korea (KSA-QA), Netherlands (KEMA), Norway (NCS), Poland (PCBC), Portugal (APCER), Singapore (PSB), Slovenia (SIQ), Spain (AENOR), Switzerland (SQS)

10.2 ISO/IEC 17025 - 1999 "General Requirements for the Competence of Testing and Calibration"

- Chemical Testing - Accredited A2LA Certificate Number 883.01

10.3 ISO/IEC Guide 34 - 2000 "General Requirements for the Competence of Reference Material Producers"

- Reference Materials Production - Accredited A2LA Certificate Number 883.02

A2LA Mutual Recognition Agreement Partners:

Australia (NATA), Austria (BmWA), Belgium (BELTEST) (BKO-OBE), Canada (SCC), Chinese Taipei (CNLA), Czech Republic (NAO), Denmark (DANAK), Finland (FINAS), France (COFRAC), Germany (DAR), Hong Kong (HKAS), Ireland (NAB), Italy (SIT) (SINAL), Japan (JAB) (JNLA), Republic of Korea (KOLAS), The Netherlands (RVA), New Zealand (IANZ), Norway (NA), Portugal (IPQ), Singapore (SAC-SINGLAS), Spain (ENAC), Sweden (SWEDAC), Switzerland (SAS), United Kingdom (UKAS) and United States (NVLAP) (ICBO ES)

10.4 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.5 10CFR21 - Nuclear Regulatory Commission - Reporting Defects and Non-Compliance

10.6 MIL-STD-45662A (Obsolete/Observed)

- 4.2 BALANCE CALIBRATION** - All balances are checked daily using in-house procedure number 6-IMM001. The weights used for testing are annually compared to Gerhart Scale Corporation's master weights and are traceable to the National Institute of Standards and Technology (NIST). The NIST Traceability numbers are 692476 - Class 1 and 692476A - Class 2. The NIST test number is 822/260017-98. All analytical balances are calibrated every 4 months by Gerhart Scale Corp. of South Amboy. The balances are calibrated with a class 1 and/or class 2 analytical weight set. These weights are tested annually by a NIST / NVLAP accredited calibration lab. The NIST test number is 822/260017-98.
- 4.3 THERMOMETER CALIBRATION** - The thermometers used in the determination of the final densities are calibrated vs standard thermometer No. 903-2680 which was certified in accordance with the procedures outlined by ASTM E77-87 and NIST Monograph 150 using NIST Test Nos. and Std Nos.: 769543, 217368/769543, 217368/P14452, 176240/P14452, 176240. The in-house procedure No. is 2-QC-001. Thermometers which are not calibrated vs standard thermometer No. 903-2680 are traceable to NIST Identification Nos. 92564, 119016, 471047 and NIST test report Nos. 811/258522, 811/2557078, and 236090.
- 4.4 GLASSWARE CALIBRATION** - In-house procedure 3-QC-002 is used to calibrate all Class A glassware used in the manufacture and quality control of CRM's.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP/MS AND ICP-OES IN µg/mL

CRM's solutions are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

<u>Q</u> Al 0.00038	<u>M</u> Dy < 0.01884	<u>Q</u> Li < 0.00002	<u>M</u> Pr < 0.00094	<u>M</u> Te < 0.09418
<u>Q</u> Sb < 0.01000	<u>M</u> Er < 0.01570	<u>M</u> Lu < 0.00126	<u>Q</u> Re < 0.01000	<u>M</u> Tb < 0.00094
<u>s</u> As	<u>M</u> Eu < 0.00942	<u>Q</u> Mg 0.00017	<u>M</u> Rh < 0.00314	<u>M</u> Tl < 0.00314
<u>M</u> Ba < 0.03139	<u>M</u> Gd < 0.00314	<u>Q</u> Mn 0.00005	<u>M</u> Rb < 0.00314	<u>M</u> Th < 0.00314
<u>M</u> Be < 0.00157	<u>M</u> Ga < 0.00314	<u>Q</u> Hg < 0.01200	<u>M</u> Ru < 0.00628	<u>M</u> Tm < 0.00126
<u>M</u> Bi < 0.00126	<u>M</u> Ge < 0.01884	<u>M</u> Mo < 0.00628	<u>M</u> Sm < 0.00314	<u>Q</u> Sn 0.00073
<u>Q</u> B < 0.01200	<u>M</u> Au < 0.00942	<u>M</u> Nd < 0.00628	<u>M</u> Sc < 0.03139	<u>M</u> Ti < 0.15697
<u>M</u> Cd < 0.00942	<u>M</u> Hf < 0.00628	<u>Q</u> Ni < 0.00200	<u>M</u> Se < 0.02511	<u>M</u> W < 0.03139
<u>Q</u> Ca 0.00206	<u>M</u> Ho < 0.00157	<u>Q</u> Nb < 0.00200	<u>Q</u> Si 0.00476	<u>M</u> U < 0.00628
<u>M</u> Ce < 0.01570	<u>M</u> In < 0.03139	<u>n</u> Os	<u>M</u> Ag < 0.00628	<u>M</u> V < 0.00628
<u>M</u> Cs < 0.00094	<u>M</u> Ir < 0.01570	<u>M</u> Pd < 0.01570	<u>Q</u> Na 0.00159	<u>M</u> Yb < 0.00314
<u>M</u> Cr < 0.01570	<u>Q</u> Fe < 0.00110	<u>Q</u> P < 0.00260	<u>M</u> Sr < 0.00157	<u>M</u> Y < 0.12558
<u>M</u> Co < 0.00942	<u>M</u> La < 0.00157	<u>M</u> Pt < 0.00628	<u>Q</u> S < 0.02500	<u>Q</u> Zn 0.00044
<u>M</u> Cu < 0.01884	<u>M</u> Pb < 0.00942	<u>Q</u> K 0.00048	<u>M</u> Ta < 0.02198	<u>M</u> Zr < 0.01570

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments including but not limited to the following: ICP-MS, ICP-OES, FAAS, GFAA, XRF, and DCP
- For the validation of analytical methods
- For the preparation of "working reference samples"
- For interference studies and the determination of correction coefficients
- For detection limit and linearity studies
- For additional intended uses, contact IV Technical Staff

11.0 DATE OF CERTIFICATION AND PERIOD OF VALIDITY

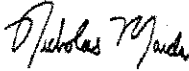
11.1 IV Shelf Life - The period of time during which the concentration of the analyte(s) in a properly packaged, unopened, and unused standard stored under environmentally controlled and monitored conditions will remain within the specified uncertainty range. Shelf life is limited primarily by transpiration (loss of water from the solution) and infrequently, by chemical instability. Transpiration studies (P-SP01020) of chemically-stable solutions performed at Inorganic Ventures Labs indicate a CRM shelf-life of four years for solutions packaged in 500-mL low density polyethylene bottles. When stored under special conditions that minimize transpiration and instability, the shelf life can be extended past this limit.

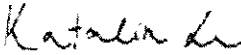
11.2 Expiration Date - The date after which a CRM should not be used. Routine laboratory use of a CRM increases transpiration losses and the chance of contamination which affect the integrity of the CRM and limit its useful life. Inorganic Ventures Labs concurs with state and federal regulatory agencies' recommendations that solution standards be assigned a one-year expiration date.

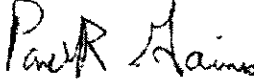
Certification Date: September 15, 2005

Expiration Date: **EXPIRES**
1st 2007

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By: Nick Maida, QA Administrator 

Certificate Approved By: Katalin Le, QC Manager 

Certifying Officer: Paul Gaines, PhD., Technical Director 

Initial:

WBH

Date:

4/16/07

METALS STANDARD DOCUMENTATION

Standard:	Lead Stock Standard	ME #: 0704013
Date Received/Prepped:	4/16/2007	By: WBH
Date Expired:	10/11/2008	Lot #: 07A097
Manufacturer:	CPI	Certificate: Y
Matrix:	2% HNO ₃	NIST SRM: 3128
Amount:	100 mL	Room temp. storage

Component	Comment	Conc. Unit:
Pb	P/N S4400-1000281	1000 ppm



Initial:
Date:

w/34
3/5/07

METALS STANDARD DOCUMENTATION

Standard: Selenium Stock Standard
Date Received/Prepped: 3/5/2007
Date Expired: 8/22/2008
Manufacturer: CPI
Matrix: 2% HNO₃
Amount: 100 mL

ME #: 0703001
By: wbh
Lot #: 6.00E+228
Certificate: Y
NIST SRM: 3148
Storage: Room Temp

Component	Comment	Conc. Unit:
Se	P/N # S4400-1000491	1000 ppm



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CERTIFICATE OF ANALYSIS

P/N 4400-1000491
P/N S4400-1000491
 Single-Element Selenium Standard
 Se in 2% HNO₃
 1000 ± 3 µg/mL

M70703001

Lot # 06E228

Material Source: Selenium Metal
 Source Purity: 99.99%
 Specific Gravity: 1.011 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3148. Trace impurities of the 1000 µg/mL standard were analyzed by ICP-MS.

ppb	DL	ppb	DL	ppb	DL	ppb	DL	ppb	DL
Al 1.8	0.1	Cu 0.4	0.1	Pb 0.3	0.1	K ND	70	Tl 3.6	0.1
Sb ND	0.1	Dy ND	0.1	Li ND	0.4	Pr ND	0.1	Th ND	0.1
As ND	6	Er ND	0.1	Lu ND	1	Re ND	0.1	Tm ND	0.1
Ba ND	0.1	Eu ND	0.1	Mg 1.1	0.2	Rh ND	0.1	Sn ND	0.1
Be ND	0.1	Gd ND	0.1	Mn ND	1	Rb ND	0.1	Ti ND	0.1
Bi ND	0.1	Ga ND	0.1	Hg ND	0.2	Ru ND	0.1	W ND	0.1
B ND	4	Ge ND	0.1	Mo 0.6	0.1	Sm ND	0.1	U ND	0.1
Br INT	10	Au ND	0.1	Nd ND	0.1	Se X	6	V ND	1
Cd 0.4	0.1	Hf ND	0.1	Ni 0.6	0.1	Si 40	8	Yb ND	0.1
Ca 5	7	Ho ND	0.1	Nb INT	0.1	Ag 0.8	0.1	Y ND	0.1
Ce ND	0.1	I 0.5	0.2	Os ND	0.1	Na 3.8	1	Zn ND	2
Cs ND	0.1	Ir ND	0.1	Pd ND	0.1	Sr ND	0.1	Zr INT	0.1
Cr ND	1	Fe ND	30	P ND	10	Ta ND	0.1		
Co ND	0.1	La ND	0.1	Pt ND	0.1	Te ND	0.1		

X=Major Element INT=Interference from Major Element DL=Detection Limit ND=None Detected

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA or +31 20 638 05 97 in Europe.



Initial:

Date:

WBY
2/20/07

METALS STANDARD DOCUMENTATION

Standard: Thallium 1000ppm Stock Std
Date Received/Prepped: 2/20/2007
Date Expired: 8/16/2008
Manufacturer: CPI
Matrix: 2% HNO3
Amount: 100 mL

ME #: 0702006
By: WBH
Lot #: 06H213
Certificate: Y
NIST SRM: 3158
 Room temp. storage

Component	Comment	Conc. Unit:
TI	P/N S4400-1000581	1000 ppm

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MF0702006

CERTIFICATE OF ANALYSIS

P/N 4400-1000581
P/N S4400-1000581

Single Element Thallium Standard
Tl in 2% HNO₃
1000 ± 3 µg/mL

Lot # 06H213

Material Source: Thallium metal
Source Purity: 99.999%
Specific Gravity: 1.015 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3158. Trace impurities of the 1000 µg/mL standard were analyzed by ICP-MS.

ppb	DL	ppb	DL	Ppb	DL	ppb	DL	ppb	DL
Al 13.3	0.1	Cu 9.3	0.1	Pb 41	0.1	K ND	70	Tl X	0.1
Sb ND	0.1	Dy ND	0.1	Li ND	0.4	Pr ND	0.1	Th ND	0.1
As ND	6	Er ND	0.1	Lu ND	1	Re ND	0.1	Tm ND	0.1
Ba 0.37	0.1	Eu ND	0.1	Mg 1.7	0.2	Rh ND	0.1	Sn ND	0.1
Be 0.67	0.1	Gd ND	0.1	Mn ND	1	Rb ND	0.1	Ti 0.45	0.1
Bi 0.12	0.1	Ga ND	0.1	Hg 0.16	0.2	Ru ND	0.1	W ND	0.1
B ND	4	Ge ND	0.1	Mo 0.21	0.1	Sm ND	0.1	U ND	0.1
Br ND	10	Au ND	0.1	Nd ND	0.1	Se ND	6	V ND	1
Cd 1.6	0.1	Hf ND	0.1	Ni 1.1	0.1	Si 46	8	Yb ND	0.1
Ca 51	7	Ho ND	0.1	Nb ND	0.1	Ag 0.3	0.1	Y ND	0.1
Ce ND	0.1	I 0.4	0.2	Os ND	0.1	Na 3.3	1	Zn 14.7	2
Cs 0.24	0.1	Ir ND	0.1	Pd ND	0.1	Sr ND	0.1	Zr ND	0.1
Cr ND	1	Fe ND	30	P 20	10	Ta ND	0.1		
Co ND	0.1	La ND	0.1	Pt ND	0.1	Te ND	0.1		

X=Major Element INT=Interference from Major Element DL=Detection Limit ND=None Detected

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654.

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Initial:

WB

Date:

4/11/07

METALS STANDARD DOCUMENTATION

Standard: ICP LCS/SPIKE STOCK STD
Date Received/Prepped: 4/10/2007
Date Expired: 10/4/2008
Manufacturer: CPI
Matrix: 5% HNO3
Amount: 100mL

ME #: 0704005
By: wbh
Lot #: 07D019
Certificate: Y
NIST SRM: 3100 series
Storage: Room Temp

Component	Comment	Conc. Unit:
Ca	P/N # 4400-130309	10000 ppm
K	per 500mL DI	4000 ppm
Mg		4000 ppm
Na		10000 ppm



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CERTIFICATE OF ANALYSIS

P/N: 4400-130309
Lot Number: 07D019
Shelf Life: 18 months
Expiration Date: 10/04/2008

MZ 0704005

MWH
Dat MW Standard
 $\mu\text{g/mL} \pm 0.5\%$ in 5% HNO_3

Na 10,000 Ca 10,000 Mg 4,000 K 4,000

This standard solution was prepared using high-purity starting materials, high-purity acid (if required) and 18-megaohm de-ionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed at 1000 $\mu\text{g/mL}$ by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against the National Institute of Standards and Technology's SRM 3100 series, NIST approved second source and/or gravimetrically.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for the stated shelf life from the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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Initial: W.B.
Date: 3/16/07

METALS STANDARD DOCUMENTATION

Standard: ICP MRL Working stock Solution **ME #:** 0703010
Date Received/Prepped: 3/16/2007 **By:** WBH
Date Expired: 9/16/2007 **Lot #:**
Manufacturer: MWH-WBH **Certificate:**
Matrix: 5% HNO3 **NIST SRM:**
Amount: 2X100 mL **Storage:** Room Temp

Component	Comment	Conc. Unit:
Al	10mL ME0609001	5 ppm
Sb		5 ppm
As		10 ppm
Ba		2 ppm
Be		0.1 ppm
B		5 ppm
Cd		0.5 ppm
Ca		100 ppm
Cr		1 ppm
Co		5 ppm
Cu		1 ppm
Fe		2 ppm
Pb		2 ppm
Mg		10 ppm
Mn		0.2 ppm
Mo		2 ppm
Ni		2 ppm
K		100 ppm
Se		10 ppm
Ag		1 ppm
Na		100 ppm
Zn		2 ppm
V		0.2 ppm
Tl		10 ppm
Li		0.1 ppm
Ti		2 ppm
Sr		1 ppm
Sn		20 ppm

Initial:

Date:

WBN
9/25/06

METALS STANDARD DOCUMENTATION

Standard: ICP MRL Stock Solution
 Date Received/Prepped: 9/25/2006
 Date Expired: 9/20/2007
 Manufacturer: CPI
 Matrix: 2% HNO3 + tr HF
 Amount: 100 mL

ME #: 0609001
 By: WBH
 Lot #: 061162
 Certificate: Yes
 NIST SRM: 3100 series
 Storage: Room Temp

Component	Comment	Conc. Unit:
Al	Part # 4400-060915RH01	50 ppm
Sb		50 ppm
As		100 ppm
Ba		20 ppm
Be		1 ppm
B		50 ppm
Cd		5 ppm
Ca		1000 ppm
Cr		10 ppm
Co		50 ppm
Cu		10 ppm
Fe		20 ppm
Pb		20 ppm
Mg		100 ppm
Mn		2 ppm
Mo		20 ppm
Ni		20 ppm
K		1000 ppm
Se		100 ppm
Ag		10 ppm
Na		1000 ppm
Zn		20 ppm
V		2 ppm
Tl		10 ppm
Li		1 ppm
Ti		20 ppm
Sr		10 ppm
Sn		200 ppm



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1470609001

Expiry: 9/20/2007

Certificate of Analysis

Part Number: 4400-060915RH01
Lot Number: 061162
Shelf Life: 12 months

MWH
 Custom Standard
 2% HNO3 + tr HF

Concentrations in ug/mL ± 0.5%

Al	50	Pb	20	Zn	20
Sb	50	Li	1	Ti	20
As	100	Mg	100	Sr	10
Ba	20	Mn	2	Sn	200
Be	1	Mo	20		
B	50	Ni	20		
Cd	5	K	1000		
Ca	1000	Se	100		
Cr	10	Ag	10		
Co	50	Na	1000		
Cu	10	TL	100		
Fe	20	V	2		

This standard solution was prepared using high-purity starting materials, high-purity acid (if required) and 18-megaohm de-ionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed at 1000µg/mL by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against the National Institute of Standards and Technology's SRM 3100 series, NIST approved second source and/or gravimetrically.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for the stated shelf life from the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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Initial:

Date:


5/16/07

METALS STANDARD DOCUMENTATION

Standard: Interference Check Std A (ICSA)
Date Received/Prepped: 5/16/2007
Date Expired: 8/23/2007
Manufacturer: MWH-WBH
Matrix: 5% HNO₃
Amount: 500 mL

ME #: 0705012**By:** WBH**Lot #:** VARIOUS**Certificate:****NIST SRM:****Storage:** Room Temp.

Component	Comment	Conc. Unit:
Al	25mL ME0603001/500mL	250 ppm
Ca		250 ppm
Fe		100 ppm
Mg		250 ppm

Initial:

Date:

WBH

3/2/06

METALS STANDARD DOCUMENTATION

Standard: ICP ICSA Stock solution
Date Received/Prepped: 3/2/2006
Date Expired: 8/23/2007
Manufacturer: CPI
Matrix: 5% HNO3
Amount: 500mL

ME #: 0603001
By: WBH
Lot #: 06A078
Certificate: Y
NIST SRM: varius
Storage: Room Temp

Component	Comment	Conc. Unit:
AL	P/N 4400-INTA1-500	5000 mg/L
CA		5000 mg/L
FE		2000 mg/L
MG		2000 mg/L

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CERTIFICATE OF ANALYSIS

P/N 4400-INTA1-500
CLP Interferents A Solution
in 5% HNO₃

Lot # 06A078

M80603001

Material Source: Metals and Salts
Source Purity: 99.99+%

Elements and Concentrations: µg/mL

Al 5000 Ca 5000 Fe 2000 Mg 5000

This standard solution was prepared using high-purity reference materials, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against an independent source traceable to the National Institute of Standards and Technology's SRM 3100 series.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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Extraction Manifold

MOD
BLOCK

Nu•Phase™
ORGANICS

Initial:

WBH

Date:

5/16/07

METALS STANDARD DOCUMENTATION

Standard: Interference Check Std AB (ICSAB)
Date Received/Prepped: 5/16/2007
Date Expired: 8/23/2007
Manufacturer: MWH-WBH
Matrix: 5% HNO3
Amount: 500 mL

ME #: 0705013
By: WBH
Lot #: VARIOUS
Certificate:
NIST SRM:
Storage: Room Temp.

Component	Comment	Conc. Unit:
Al	25mL ME0603001/500mL	250 ppm
Ca		250 ppm
Fe		100 ppm
Mg		250 ppm
Ag	25mL ME0603002/500mL	0.5 ppm
Ba	2.5mL	0.25 ppm
Be	5/16/07	0.25 ppm
Cd		0.5 ppm
Co		0.25 ppm
Cr		0.25 ppm
Cu		0.25 ppm
Mn		0.25 ppm
Ni		0.5 ppm
Pb		0.5 ppm
V		0.25 ppm
Zn		0.5 ppm

Initial: WBY
Date: 3/2/06

METALS STANDARD DOCUMENTATION

Standard: ICP ICESA Stock solution
Date Received/Prepped: 3/2/2006
Date Expired: 8/23/2007
Manufacturer: CPI
Matrix: 5% HNO3
Amount: 500mL

ME #: 0603001
By: WBH
Lot #: 06A078
Certificate: Y
NIST SRM: varius
Storage: Room Temp

Component	Comment	Conc. Unit:
AL	P/N 4400-INTA1-500	5000 mg/L
CA		5000 mg/L
FE		2000 mg/L
MG		2000 mg/L



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CERTIFICATE OF ANALYSIS

P/N 4400-INTA1-500
 CLP Interferents A Solution
 in 5% HNO₃

M80603001

Lot # 06A078

Material Source: Metals and Salts
 Source Purity: 99.99+%

Elements and Concentrations: µg/mL

Al 5000 Ca 5000 Fe 2000 Mg 5000

This standard solution was prepared using high-purity reference materials, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against an independent source traceable to the National Institute of Standards and Technology's SRM 3100 series.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA or +31 20 638 05 97 in Europe.

Initial:

Date:

WBH
3/2/06

METALS STANDARD DOCUMENTATION

Standard: ICSB Stock Solution
Date Received/Prepped: 3/2/2006
Date Expired: 8/23/2007
Manufacturer: CPI
Matrix: 5% HNO₃
Amount: 100 mL

ME #: 0603002
By: WBH
Lot #: 04L149
Certificate: Y
NIST SRM: 3100 series
Storage: Room Temp

Component	Comment	Conc.	Unit:
Ag	P/N 4400-INTB1-100	100	ppm
Ba		50	ppm
Be		50	ppm
Cd		100	ppm
Co		50	ppm
Cr		50	ppm
Mn		50	ppm
Ni		100	ppm
Pb		100	ppm
V		50	ppm
Zn		100	ppm
Sb		50	ppm



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M70603002

CERTIFICATE OF ANALYSIS

P/N 4400-INTB1-100
 CLP Analytes B Solution
 in 5% HNO₃

Lot # 04L149

Material Source: Metals and Salts
 Source Purity: 99.99+%

Elements and Concentrations: µg/mL

Ag	100	Ba	50	Be	50	Cd	100
Co	50	Cr	50	Cu	50	Mn	50
Ni	100	Pb	100	V	50	Zn	100

This standard solution was prepared using high-purity reference materials, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against an independent source traceable to the National Institute of Standards and Technology's SRM 3100 series.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA or +31 20 638 05 97 in Europe.

Initial:

Date:

W37
5/9/07

METALS STANDARD DOCUMENTATION

Standard: ICP QC-25 1PPM
Date Received/Prepped: 5/9/2007
Date Expired: 11/9/2007
Manufacturer: MWH-DYH
Matrix: 5% HNO3
Amount: 500 mL

ME #: 0705005
By: DYH
Lot #: VARIOUS
Certificate:
NIST SRM:
Storage: Room Temp

Component	Comment	Conc. Unit:
Ag	5mL ME0608006+ 5mL ME0608007	1 ppm
Al	per 500mL DI	1
B		1
Ba		1
Be		1
Ca		1
Cd		1
Co		1
Cr		1
Cu		1
Fe		1
K		10
Li		1
Mg		1
Mn		1
Mo		1
Na		1
Ni		1
Pb		1
Sb		1
Se		1
Si		0.5
Sr		1
Ti		1
Tl		1
V		1
Zn		1

Initial:

Date:

WBH
8/31/06

METALS STANDARD DOCUMENTATION

Standard: QC Check Std 21
Date Received/Prepped: 8/31/2006
Date Expired: 8/31/2007
Manufacturer: Crescent Chemical
Matrix: 5% HNO₃ + tr. Tartaric Acid
Amount: 100 mL

ME #: 0608006
By: WBH
Lot #: 062504J
Certificate: Y
NIST SRM: Various
Room temp. storage

Component	Comment	Conc. Unit:
AS	QC-021.1	100 ppm
Be		100 ppm
Ca		100 ppm
Cd		100 ppm
Co		100 ppm
Cr		100 ppm
Cu		100 ppm
Fe		100 ppm
Li		100 ppm
Mg		100 ppm
Mn		100 ppm
Mo		100 ppm
Ni		100 ppm
Pb		100 ppm
Sb		100 ppm
Se		100 ppm
Sr		100 ppm
Ti		100 ppm
Tl		100 ppm
V		100 ppm
Zn		100 ppm

M70608006

Laboratory Report - Certificate of Analysis

Environmental Multielement Standard

QC Check Standard 21

CATALOG NO: QC-021.1

CONTENTS: See Below

MATRIX: 5% HNO₃/tr. F/tr. Tartaric Acid

LOT NO.: 062504J

This solution is intended for use as a calibration standard for plasma emission spectroscopy (ICP or DCP). It is a multielement solution, that was prepared gravimetrically to contain the elements/concentrations shown below.

In order to verify the concentration, the final solution was checked against NIST SRMS: 3102a, 3103a, 3105a, 3108, 3109a, 3112a, 3113, 3114, 3126a, 3128, 3129a, 3131a, 3132, 3134, 3136, 3149, 3153a, 3158, 3162a, 3165, and 3168a.

Concentrations are given in µg/mL unless noted otherwise.

As 100	Be 100	Ca 100	Cd 100	Co 100
Cr 100	Cu 100	Fe 100	Li 100	Mg 100
Mn 100	Mo 100	Ni 100	Pb 100	Sb 100
Se 100	Sr 100	Ti 100	Tl 100	V 100
Zn 100				

Crescent Chemical Co. Inc.

Julie M. MacIntosh
QA Manager

EXPIRES: August 2007

CRESCENT CHEMICAL CO, INC., waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Crescent Chemical Co, Inc., 2 Oval Drive, Islandia, NY 11749
(516) 348-0333 - Fax (516) 348-0913

Initial:

Date:

WBH
8/31/06

METALS STANDARD DOCUMENTATION

Standard:	QC Check Std 7	ME #: 0608007
Date Received/Prepped:	8/31/2006	By: WBH
Date Expired:	8/31/2007	Lot #: 062504K
Manufacturer:	Crescent Chemical	Certificate: Y
Matrix:	5% HNO ₃ + tr. HF	NIST SRM: Various
Amount:	100 mL	Room temp. storage

Component	Comment	Conc.	Unit:
Ag	QC-007.1	100	ppm
Al		100	ppm
B		100	ppm
Ba		100	ppm
K		1000	ppm
Na		100	ppm
Si		50	ppm

ME0608007

Laboratory Report - Certificate of Analysis

Environmental Multielement Standard

QC Check Standard 7

CATALOG NO: QC-007.1

CONTENTS: See Below

MATRIX: 5% HNO₃/tr. F⁻

LOT NO.: 062504K

This solution is intended for use as a calibration standard for plasma emission spectroscopy (ICP or DCP). It is a multielement solution, that was prepared gravimetrically to contain the elements/concentrations shown below.

In order to verify the concentration, the final solution was checked against NIST SRMS: 3101a, 3104a, 3107, 3141a, 3150, 3151, and 3152a.

Concentrations are given in µg/mL unless noted otherwise.

Ag 100	Al 100	B 100	Ba 100	K 1,000±5
Na 100	Si 50.0			

Crescent Chemical Co. Inc.

Julie M. MacIntosh
QA Manager

EXPIRES: August 2007

CRESCENT CHEMICAL CO, INC., waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

*Crescent Chemical Co, Inc., 2 Oval Drive, Islandia, NY 11749
(516) 348-0333 - Fax (516) 348-0913*

01008
~~01003~~

Initial: WBH
Date: 5/9/07

METALS STANDARD DOCUMENTATION

Standard: ICP LINEARITY CHECK
Date Received/Prepped: 5/9/2007
Date Expired: 11/9/2007
Manufacturer: MWH-WBH
Matrix: 5% HNO3
Amount: 500mL

ME #: 0705004
By: WBH
Lot #:
Certificate: Y
NIST SRM: 3100 SERIES
Storage: Room Temp

Component	Comment	Conc. Unit:
CA	15.0mL ME0702002/500mL	300 ppm
K	15.0mL ME0702005/500mL	300 ppm
MG	10.0mL ME0702004/500mL	200 ppm
NA	15.0mL ME0702003/500mL	300 ppm
FE	5.0mL ME0701008/500mL	100 ppm

Initial: W37
Date: 2/20/07

METALS STANDARD DOCUMENTATION

Standard: Calcium 10000ppm Stock Std **ME #:** 0702002
Date Received/Prepped: 2/20/2007 **By:** WBH
Date Expired: 8/16/2008 **Lot #:** 07B065
Manufacturer: CPI **Certificate:** Y
Matrix: 4% HNO3 **NIST SRM:** 3109a
Amount: 250 mL Room temp. storage

Component	Comment	Conc. Unit:
Ca	P/N 4400-10M91	10000 ppm



Innovative Solutions
in Analytical Science and
Technology

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CERTIFICATE OF ANALYSIS

P/N 4400-10M91
P/N S4400-10M91

1780702602

Single-Element Calcium Standard
Ca in 4% HNO₃
10,000 ± 30 µg/mL

Lot # 07B065

Material Source: Calcium Carbonate (CaCO₃)
Source Purity: 99.997%
Specific Gravity: 1.035 @ 21 °C

This standard solution was prepared using high-purity salt, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3109a. Trace impurities of the standard solution at 1000 µg/mL were analyzed by ICP-MS.

ppb	DL	ppb	DL	ppb	DL	ppb	DL	ppb	DL
Al 7	0.1	Cu 1.7	0.1	Pb 0.23	0.1	K ND	70	Tl 0.27	0.1
Sb ND	0.1	Dy ND	0.1	Li ND	0.4	Pr ND	0.1	Th ND	0.1
As ND	6	Er ND	0.1	Lu ND	1	Re ND	0.1	Tm ND	0.1
Ba 1.5	0.1	Eu ND	0.1	Mg 38	0.2	Rh ND	0.1	Sn ND	0.1
Be ND	0.1	Gd ND	0.1	Mn ND	1	Rb ND	0.1	Ti ND	0.1
Bi ND	0.1	Ga ND	0.1	Hg ND	0.2	Ru ND	0.1	W ND	0.1
B 1.5	4	Ge ND	0.1	Mo ND	0.1	Sm ND	0.1	U ND	0.1
Br ND	10	Au ND	0.1	Nd ND	0.1	Se ND	6	V ND	1
Cd ND	0.1	Hf ND	0.1	Ni 3	0.1	Si 47	8	Yb ND	0.1
Ca X	7	Ho ND	0.1	Nb ND	0.1	Ag ND	0.1	Y ND	0.1
Ce ND	0.1	I 0.27	0.2	Os ND	0.1	Na 11.6	1	Zn 3.5	2
Cs ND	0.1	Ir ND	0.1	Pd ND	0.1	Sr 55	0.1	Zr ND	0.1
Cr ND	1	Fe INT	30	P ND	10	Ta ND	0.1		
Co INT	0.1	La 0.41	0.1	Pt ND	0.1	Te ND	0.1		

INT=Interference from Major Element ND=None Detected X=Major Element DL=Detection Limit

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA or +31 20 638 05 97 in Europe.

Initial:

UBJ

Date:

2/20/07

METALS STANDARD DOCUMENTATION

Standard: Sodium 10000ppm Stock Std **ME #:** 0702003
Date Received/Prepped: 2/20/2007 **By:** WBH
Date Expired: 8/16/2008 **Lot #:** 07B057
Manufacturer: CPI **Certificate:** Y
Matrix: 1% HNO3 **NIST SRM:** 3152a
Amount: 250 mL Room temp. storage

Component	Comment	Conc. Unit:
Na	P/N 4400-10M521	10000 ppm

Initial:

Date:

WBH
2/14/07

METALS STANDARD DOCUMENTATION

Standard: Magnesium 10000ppm Stock Std **ME #:** 0702004
Date Received/Prepped: 2/20/2007 **By:** WBH
Date Expired: 8/16/2008 **Lot #:** 07B058
Manufacturer: CPI **Certificate:** Y
Matrix: 4% HNO3 **NIST SRM:** 3131
Amount: 250 mL Room temp. storage

Component	Comment	Conc. Unit:
Mg	P/N 4400-10M311	10000 ppm



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CERTIFICATE OF ANALYSIS

P/N 4400-10M311

P/N S4400-10M311

Single-Element Magnesium Standard

Mg in 4% HNO₃
 10,000 ± 30 µg/mL

Lot # 07B058

470702004

Material Source: Magnesium Metal
 Source Purity: 99.99%
 Specific Gravity: 1.056 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3131. Trace impurities of the standard solution at 1000 µg/mL were analyzed by ICP-MS.

ppb	DL	ppb	DL	ppb	DL	ppb	DL	ppb	DL
Al 28	0.1	Cu 1.6	0.1	Pb 7.7	0.7	K ND	70	Tl 0.91	0.1
Sb ND	0.1	Dy ND	0.1	Li ND	0.4	Pr 0.28	0.1	Th ND	0.1
As ND	6	Er ND	0.1	Lu ND	1	Re ND	0.1	Tm ND	0.1
Ba 0.28	0.1	Eu ND	0.1	Mg X	0.2	Rh ND	0.1	Sn 0.14	0.1
Be ND	0.1	Gd 0.23	0.1	Mn 19.8	1	Rb ND	0.1	Ti ND	0.1
Bi ND	0.1	Ga 0.18	0.1	Hg ND	0.2	Ru ND	0.1	W ND	0.1
B ND	4	Ge ND	0.1	Mo ND	0.1	Sm ND	0.1	U ND	0.1
Br ND	10	Au ND	0.1	Nd 1.1	0.1	Se ND	6	V ND	1
Cd ND	0.1	Hf ND	0.1	Ni 1	0.1	Si 64	20	Yb ND	0.1
Ca ND	7	Ho ND	0.1	Nb ND	0.1	Ag 0.19	0.1	Y 0.2	0.1
Ce 2.1	0.1	I 1	0.2	Os ND	0.1	Na 7.2	1	Zn ND	1
Cs ND	0.1	Ir ND	0.1	Pd ND	0.1	Sr 0.19	0.1	Zr 0.29	0.1
Cr ND	1	Fe 80	30	P ND	10	Ta ND	0.1		
Co ND	0.1	La 0.76	0.1	Pt ND	0.1	Te ND	0.1		

X=Major Element INT=Interference from Major Element ND=Not Detected DL=Detection Limit

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Initial:

Date:

WBH
2/20/07

METALS STANDARD DOCUMENTATION

Standard: Potassium 10000ppm Stock Std **ME #:** 0702005
Date Received/Prepped: 2/20/2007 **By:** WBH
Date Expired: 8/16/2008 **Lot #:** 07B056
Manufacturer: CPI **Certificate:** Y
Matrix: 1% HNO3 **NIST SRM:** 3141
Amount: 250 mL Room temp. storage

Component	Comment	Conc. Unit:
K	P/N 4400-10M411	10000 ppm

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CERTIFICATE OF ANALYSIS

MEO702005

P/N 4400-10M411
P/N S4400-10M411
 Single-Element Potassium Standard
 K in 1% HNO₃
 10,000 ± 30 µg/mL

Lot # 07B056

Material Source: Potassium Nitrate (KNO₃)
 Source Purity: 99.999%
 Specific Gravity: 1.019 @ 21 °C

This standard solution was prepared using high-purity salt, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3141. Trace impurities of the standard solution at 1000µg/mL were analyzed by ICP-MS.

ppb	DL	ppb	DL	ppb	DL	ppb	DL	ppb	DL
Al 0.39	0.1	Cu 0.16	0.1	Pb ND	0.1	K X	70	Tl ND	0.1
Sb 0.34	0.1	Dy ND	0.1	Li ND	0.4	Pr ND	0.1	Th ND	0.1
As ND	6	Er ND	0.1	Lu ND	1	Re ND	0.1	Tm ND	0.1
Ba 0.14	0.1	Eu ND	0.1	Mg 2.6	0.2	Rh ND	0.1	Sn 0.17	0.1
Be ND	0.1	Gd ND	0.1	Mn 0.93	1	Rb 9.5	0.1	Ti ND	0.1
Bi ND	0.1	Ga ND	0.1	Hg ND	0.2	Ru ND	0.1	W ND	0.1
B ND	4	Ge ND	0.1	Mo ND	0.1	Sm ND	0.1	U ND	0.1
Br ND	10	Au ND	0.1	Nd ND	0.1	Se ND	6	V ND	1
C ² ND	0.1	Hf ND	0.1	Ni 0.4	0.1	Si 50	20	Yb ND	0.1
Ca 82	7	Ho ND	0.1	Nb ND	0.1	Ag ND	0.1	Y ND	0.1
Ce ND	0.1	I ND	0.2	Os ND	0.1	Na 19	1	Zn 2.9	1
Cs ND	0.1	Ir ND	0.1	Pd ND	0.1	Sr 1	0.1	Zr ND	0.1
Cr ND	1	Fe ND	30	P 18	10	Ta ND	0.1		
Co ND	0.1	La ND	0.1	Pt ND	0.1	Te ND	0.1		

X=Major Element INT=Interference from Major Element ND=Not Detected DL=Detection Limit

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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Bx 100

PRW SW160

From Page No. _____

Client	Spec	Mix	Is part	Conc at		
1059	6010	5/16/07	W317			
BIK LL LCLD				MW05 R100410 - 1ml MCI R100402 - 2.5ml		
2705100540	Kerr McGee	PC-97	AG	50 ml → 50 ml		
2705100540M	↓	↓	↓	↓		
2705100540MS		PC-56				M 0606004 - 500ul
2705100548		↓				M 0705206 - 500ul
2705100548MS		PC-101R				M 0704005 - 250ul
2405100548MS		PC-62				MRC
2705100544		PC-68				M 20703010 → 500ul
2705100553		ARP-3				
2705100554		ARP-1				
2705100558		PC-18				
2705100556		CLD-1R				
2705100542		In P.				
2705100381		- NA C104				
2705080517		SEEP				
2705080826		SF 1"				
2705080223		EFF				
2705080224	ART-6					
2705080516	PC-60					
2705080217						
2705100552						
MRL	NWM					
		5/16/07				
2705110468	Kerr McGee	M-57	AG	50 → 250 ml		
2705110476	↓	PC-58R	↓	↓		
2705110478		L-637				
		5/16/07				
				Add'l to the Batch 5/16/07		

To Page No. _____

Witnessed & Understood by me, _____

Date _____

Invented by _____

Date _____