IS-5128-App.-Vol.2
UC-606

PERFORMANCE TESTING OF MULTI-METAL CONTINUOUS EMISSIONS MONITORS

Appendix Volume 2

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Prepared for:

U. S. Department of Energy Office of Environmental Management
Office of Science and Technology
Characterization, Monitoring and Sensor Technology Crosscutting Program
and
Mixed Waste Focus Area
and
U. S. Environmental Protection Agency National Risk Management Research Laboratory

Date Transmitted: November 17, 1997

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* Operated by Iowa State University for the U. S. Department of Energy under Contract No. W-7405-ENG-82

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ACKNOWLEDGMENTS

This work was jointly sponsored and executed by the U. S. Department of Energy (DOE) and the U. S. Environmental Protection Agency (EPA). The DOE sponsorship was through the Characterization, Monitoring, and Sensor Technology Crosscutting Program (CMST-CP) and the Mixed Waste Focus Area (MWFA), both of the Office of Science and Technology, Office of Environmental Management. The EPA sponsorship involved the National Risk Management Research Laboratory, Air Pollution Prevention and Control Division, Research Triangle Park (RTP), North Carolina, and the National Exposure Research Laboratory, Air Measurements Division, RTP, and Characterization Research Division, Las Vegas, Nevada.

The testing described in this report adds to the information and experience gained during previous DOE/EPA testing of metal and organic compound CEMs conducted in August 1995 at the EPA Incineration Research Facility (IRF) in Jefferson, Arkansas. The success of this testing owes much to many of the same persons who planned and carried out the IRF test program.

Most importantly, all the persons named in this report, and others, from high organizational levels and principal investigators to workers, deserve real praise for the exemplary degree to which each contributed to this multi-organizational and multi-disciplinary team achievement.

CONTENTS

APPENDIX I

DIAL
DAILY LOGBOOK
PAGES
AND
CEM DATA

Remarks: Medium Metals

1. During the one hour EPA sampling, 4 spectral regions were monitored. Each spectral region was monitored for 15 minutes.
2. LIBS data sampling time is 6.7 seconds which corresponds to an average of 66 laser pulses.
3. On site LIBS Calibration for Cr was made on 4/19/96. The data were in good agreement with the calibration data obtained at DIAL. Therefore, the calibration data obtained in the DIAL laboratory were directly applied to the RKIS LIBS data to infer the metal concentrations.
4. Pb, Be, and Cd are roughly corrected for spectral interferences and background by substrating the data obtained without metal injection.
5. Inferred Cd concentrations are not appropriate being much higher than expected due to problems of strong spectral interference from the T line and the Cd stream concentration near the LIBS detection limit.
6. Accurate Pb concentration could not be obtained since the detection limit was near the gas stream Pb concentration.
7. 12:40 - 13:18 : Cleaned window and realigned optics. Nitrogen purge is insufficent due to faulty tank. New one ordered for Tuesday.
8. 13:54 - 14:58 : Detector had condensation problem. Problem solved by increasing detector operating temperature.
9. 18:19 - 18:36 : Signal reduced because the window was getting dirty.
10. Initially, the Y line concentration was ignored since it was not one of the RCRA metals. Since others were reporting the element, the Y line in the same spectral region as Cr was later used to infer Y concentrations.
11. Note because of the long response time between metal injection and a steady state condition, this data is probally not appropriate for direct comparison with EPA method 29.

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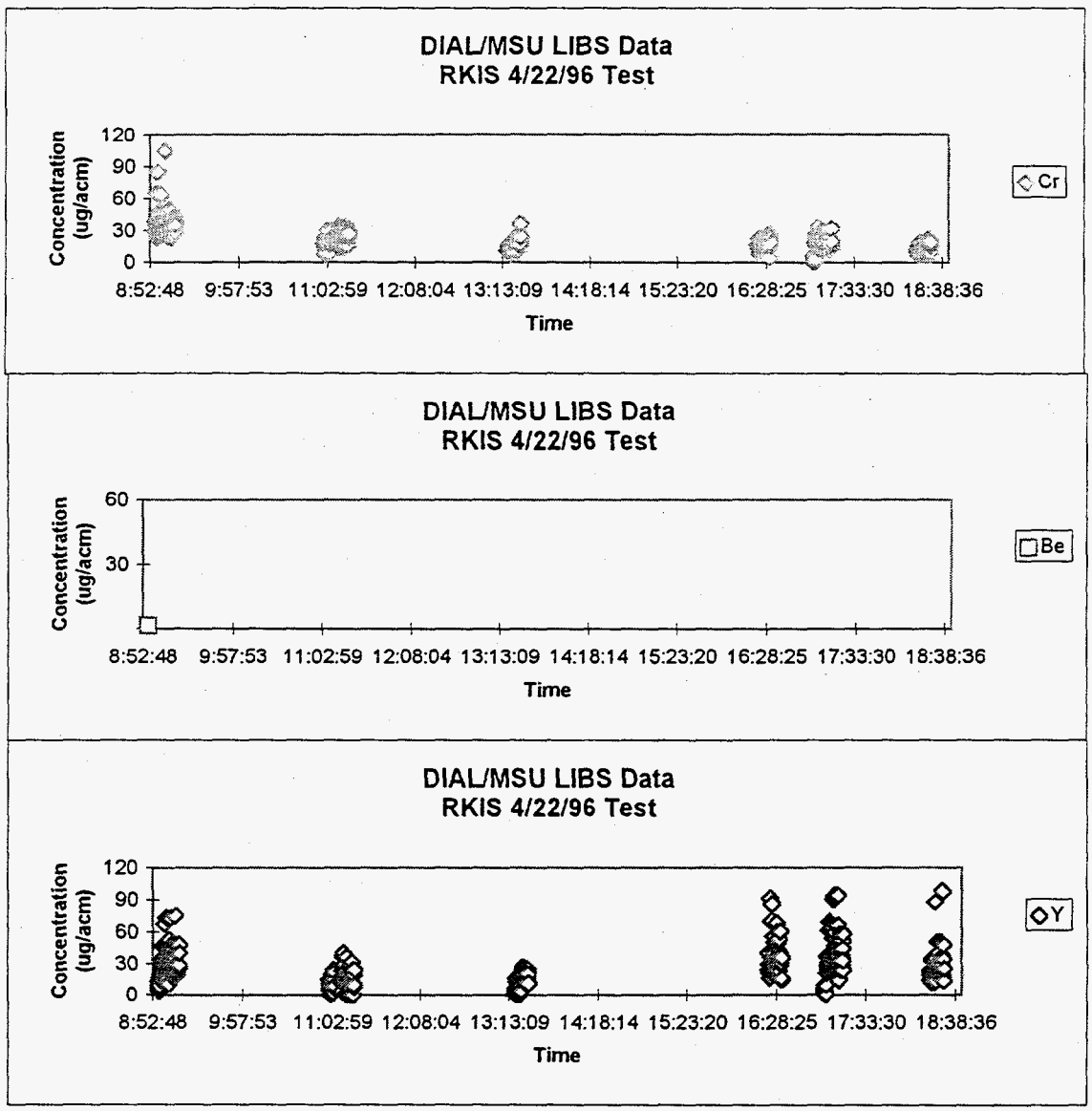
DIAL/MSU LIBS Data
RKIS 4/22/96 Test
Concentration (ug/acm)
120
90
60
30
0
8:52:48 9:57:53 11:02:59 12:08:04 13:13:09 14:18:14 15:23:20 16:28:25 17:33:30 18:38:36
Time
Cr
DIAL/MSU LIBS Data
RKIS 4/22/96 Test
Concentration (ug/acm)
60
30
8:52:48 9:57:53 11:02:59 12:08:04 13:13:09 14:18:14 15:23:20 16:28:25 17:33:30 18:38:36
Time
Be
DIAL/MSU LIBS Data
RKIS 4/22/96 Test
Concentration (ug/acm)
120
90
60
30
0
8:52:48 9:57:53 11:02:59 12:08:04 13:13:09 14:18:14 15:23:20 16:28:25 17:33:30 18:38:36
Time
Y

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
8:56:51	38.1945		12.87149
8:56:59	28.08978		13.17969
8:57:07	29.49653		3.690457
8:57:16	38.15885		7.981434
8:57:24	28.11301		7.067661
8:57:33	64.39312		8.441929
8:57:50	27.26228		15.45546
8:57:59	33.78297		13.9888
8:58:08	22.83325		18.20038
8:58:16	32.98475		18.6948
8:58:25	30.55668		18.98496
8:58:34	34.68813		19.33935
8:58:42	84.9517		33.96909
8:58:51	26.36794		21.55088
8:59:00	37.13689		17.23103
8:59:17	35.1493		24.9418
8:59:25	46.63372		24.50585
8:59:34	34.88387		31.74746
8:59:43	30.92174		19.75582
8:59:51	28.8829		24.45965
9:00:00	35.5239		46.17077
9:00:09	43.43989		24.23446
9:00:17	33.04141		22.72377
9:00:35	36.31608		29.32877
9:00:43	24.93987		19.73561
9:00:52	29.86922		17.5811
9:01:00	33.19131		46.71499
9:01:09	63.24417		67.00781
9:01:18	27.38481		14.43342
9:01:26	34.91378		15.22377
9:02:18	26.90677		24.68629
9:02:27	30.53886		27.961
9:02:36	39.7903		73.66622
9:02:53	34.83994		17.18628
9:03:01	30.89691		24.88189
9:03:10	40.89628		47.418
9:03:19	30.2661		40.23919
9:03:27	35.3635		22.39681
9:03:36	34.895		157.6416
9:03:45	29.08851		16.34902
9:03:53	105.1802		38.8909
9:04:02	33.53886		30.90947
9:04:11	35.62002		28.05267
9:04:28	26.42078		10.07171
9:04:36	28.1859		22.46754
9:04:45	45.00768		21.53139

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
9:04:54	38.31258		43.08011
9:05:02	35.15376		52.09369
9:05:11	24.51116		26.3204
9:05:20	39.47044		29.16926
9:05:28	35.35331		33.81535
9:05:37	38.21328		72.74884
9:05:54	31.53854		38.11716
9:06:03	34.73269		19.36028
9:06:12	39.58756		31.22922
9:06:20	32.03504		47.9615
9:06:29	36.0064		26.37598
9:06:37	32.22377		22.1247
9:06:46	27.97234		38.96886
9:06:55	35.88164		44.65359
9:07:21	49.54651		42.85275
9:07:29	28.64007		37.56067
9:07:47	29.03376		32.63597
9:07:55	36.83167		28.95128
9:08:04	35.40933		20.26684
9:08:12	39.81003		15.96936
9:08:21	34.60061		28.63947
9:08:30	39.67318		17.1769
9:08:38	47.92207		22.75048
9:08:47	22.71263		27.6593
9:08:56	33.24001		35.18673
9:09:13	24.55986		40.52934
9:09:22	31.63561		27.47813
9:09:30	33.4978		24.7729
9:09:39	35.61175		74.72796
9:09:48	30.35172		26.77945
9:09:56	35.47616		27.48824
9:10:05	36.65981		22.4264
9:10:13	35.74415		18.49776
9:10:31	29.80875		19.36533
9:10:39	37.86318		25.88083
9:10:48	35.75306		29.07182
9:10:57	28.82434		23.48814
9:11:05	40.81512		44.78423
9:11:14	30.44751		29.74957
9:11:23	29.98252		24.3088
9:11:31	42.66522		24.78229
9:11:48	39.05192		28.68495
9:11:57	27.46661		47.72909
9:12:06	34.7556		39.72528
9:19:09			
9:19:18			
9:19:35			
9:19:44			
9:19:52			
9:20:01			

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
9:20:10			
9:20:18			
9:20:27			
9:20:36			
9:20:53			
9:21:01			
9:21:10			
9:21:19			
9:21:27			
9:21:36			
9:21:45			
9:22:02			
9:22:11			
9:22:19			
9:22:28			
9:22:36			
9:23:02			
9:23:11			
9:23:20			
9:23:28			
9:23:37			
9:23:46			
9:23:54			
9:24:03			
9:24:20			
9:24:29			
9:24:37			
9:24:46			
9:24:55			
9:25:03			
9:25:12			
9:25:21			
9:25:38			
9:25:47			
9:25:55			
9:26:04			
9:26:12			
9:26:21			
9:26:30			
9:26:38			
9:26:56			
9:27:04			
9:27:13			
9:27:22			
9:27:30			
9:27:39			
9:28:39		9.955132	
9:28:48		11.81806	
9:28:57		9.925403	
9:29:05		12.80855	

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TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
9:29:14		9.137955	
9:29:23		9.432974	
9:29:40		13.72342	
9:29:48		14.5692	
9:29:57		12.65885	
9:30:06		17.83723	
9:30:14		14.35477	
9:30:23		17.54748	
9:30:32		17.56249	
9:30:40		16.4685	
9:30:49		10.38208	
9:30:58		15.05515	
9:31:15		12.43205	
9:31:24		12.8748	
9:31:32		14.63346	
9:31:41		14.82	
9:31:49		17.29387	
9:31:58		1.897528	
9:32:07		0	
9:32:15		0	
9:32:24		0	
9:32:33		0	
9:32:50		0	
9:32:59		0.279638	
9:33:07		0.542196	
9:33:16		0.343843	
9:33:59		0.253262	
9:34:08		0.195518	
9:34:16		0.741884	
9:34:34		0	
9:34:42		0.258007	
9:34:51		0	
9:35:00		0.050481	
9:35:08		0.510799	
9:35:17		0	
9:35:25		0.019003	
9:35:34		0.058083	
9:35:43		0	
9:35:51		0.267217	
9:36:09		0	
9:36:17		0.298992	
9:36:26		0.337888	
9:36:35		0	
9:36:43		0	
9:36:52		0	
9:37:00		0	
9:37:09		0	
9:37:18		0.176066	
9:37:26		0	
9:37:44		0	

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
9:37:52		0	
9:38:01		0	
9:38:10		0.067036	
9:38:18		0	
9:38:27		0	
9:38:36		0	
10:02:12		14.96444	
10:02:30		11.94395	
10:02:38		15.60931	
10:02:47		17.49537	
10:02:56		14.68039	
10:03:04		16.53055	
10:03:13		14.25841	
10:03:22		19.60933	
10:03:30		13.38148	
10:03:48		21.88315	
10:03:56		21.21394	
10:04:05		17.96609	
10:04:13		17.99183	
10:04:22		19.21481	
10:04:31		22.4772	
10:04:39		22.51895	
10:04:48		21.58798	
10:04:57		20.64809	
10:05:14		15.31286	
10:05:23		17.55487	
10:05:31		22.97993	
10:05:40		24.32828	
10:05:48		22.39093	
10:05:57		23.26049	
10:06:06		23.27851	
10:06:14		21.8967	
10:06:23		20.91798	
10:06:32		17.57417	
10:06:49		20.86616	
10:06:58		26.7231	
10:07:24		17.83739	
10:07:32		22.36211	
10:07:41		20.98086	
10:07:49		19.26805	
10:07:58		24.40596	
10:08:07		15.25169	
10:08:15		19.22519	
10:08:24		21.94581	
10:08:33		19.39058	
10:08:50		24.18937	
10:08:59		22.88033	
10:09:07		24.11644	
10:09:16		21.2967	
10:09:24		19.4884	

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
10:09:33		17.76126	
10:09:42		18.2942	
10:09:50		22.2106	
10:10:08		18.95771	c252
10:10:16		20.87211	
10:10:25		23.95504	
10:10:34		19.86947	
10:10:42		33.40129	
10:10:51		21.55339	
10:11:00		22.37691	
10:11:08		23.14455	
10:11:17		24.39017	
10:11:25		23.62137	
10:11:43		22.47603	
10:11:51		18.79051	
10:12:00		19.73577	
10:12:26		23.82573	
10:12:35		17.99506	
10:12:52		22.80779	
10:13:00		27.22207	
10:13:09		21.70467	
10:13:18		22.00531	
10:13:26		25.65111	
10:13:35		35.48202	
10:13:44		27.29257	
10:13:52		18.18533	
10:14:01		26.45202	
10:14:10		19.87044	
10:14:27		23.47679	
10:14:36		20.86402	
10:14:44		13.51337	
10:14:53		19.47073	
10:15:01		19.70324	
10:15:10		19.06188	
10:15:19		23.54531	
10:15:27		20.52537	
10:15:36		20.41076	
10:15:53		17.62338	
10:16:02		26.24999	
10:16:11		26.66736	
10:16:19		24.70671	
10:16:28		20.59439	
10:16:36		20.56725	
10:16:45		21.21194	
10:16:54		24.93846	
10:17:02		30.8284	c294
11:00:58	17.69428	13.73771	
11:01:06	22.12921	13.5396	
11:01:15	21.00193	13.52874	
11:01:24	14.38782	9.797141	

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
11:01:32	15.14891		5.180815
11:01:41	14.02402		0
11:01:49	6.841483		0
11:01:58	11.42002		8.106388
11:02:07	8.167417		8.858136
11:02:24	18.49366		4.034197
11:02:33	18.99029		8.221729
11:02:41	17.17252		11.88005
11:02:50	17.87737		19.92266
11:02:59	18.12628		14.195
11:03:07	9.654904		7.596177
11:03:16	30.2356		7.202663
11:03:24	9.244439		19.43416
11:03:33	10.63739		3.111474
11:03:42	13.83973		12.53953
11:03:59	10.96887		0.393514
11:04:08	17.84027		23.92294
11:04:16	21.79414		20.83589
11:04:25	16.64837		8.559608
11:04:34	20.1451		15.11501
11:04:42	29.32013		21.60663
11:04:51	8.662847		9.247579
11:05:00	20.74464		5.711381
11:05:08	16.41262		7.915059
11:09:45	15.40381		11.19208
11:09:53	17.22876		11.62223
11:10:02	25.65706		16.35797
11:10:11	13.7811		13.05788
11:10:19	19.2416		22.41266
11:10:28	20.48616		2.971709
11:10:36	15.97583		18.4748
11:10:54	20.1439		25.42372
11:11:02	28.32688		15.32941
11:11:11	22.89749		14.4691
11:11:20	21.56916		36.15579
11:11:28	25.08743		14.8097
11:11:37	22.33145		39.4301
11:11:46	18.20526		26.63276
11:11:54	27.55501		17.37975
11:12:03	21.92458		18.39203
11:12:12	33.3087		15.57501
11:12:29	15.79393		28.87443
11:12:37	31.18816		23.01378
11:12:46	23.35821		21.3651
11:12:55	12.91828		13.18408
11:13:03	27.27139		19.19263
11:13:12	18.85148		0
11:13:21	19.68916		23.19561
11:13:29	24.69252		35.95361
11:13:38	17.36997		0

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
11:13:47	17.4693		9.654662
11:14:04	20.4706		12.25728
11:14:12	25.86648		6.042475
11:14:21	19.31938		18.29569
11:14:56	24.16		13.07145
11:15:04	14.4297		7.740013
11:15:13	25.04435		2.181967
11:15:22	18.15739		0
11:15:39	22.76944		12.65622
11:15:48	22.59233		0
11:15:56	26.02803		4.144109
11:16:05	21.1216		7.518831
11:16:13	28.69067		3.443926
11:16:22	14.08625		7.118532
11:16:31	21.27717		19.83039
11:16:39	29.1131		24.70725
11:16:48	20.75661		4.63261
11:16:57	18.98551		9.174304
11:17:14	31.25877		18.78419
11:17:23	20.67882		26.49028
11:17:31	35.27606		4.766947
11:17:40	25.88084		0.175046
11:17:48	17.85583		6.693809
11:17:57	29.79881		31.1256
11:18:06	18.75215		7.197235
11:18:14	16.57298		11.59645
11:18:23	19.01542		0
11:18:40	27.96069		7.569038
11:18:49	27.18284		19.61735
11:18:58	16.08712		18.71498
11:19:06	25.91794		8.324856
11:19:15	23.44438		23.92429
11:19:24	28.49561		6.659885
11:19:32	26.63475		9.145808
11:20:41			
11:20:50			
11:20:59			
11:21:07			
11:21:16			
11:21:24			
11:21:42			
11:21:50			
11:21:59			
11:22:08			
11:22:16			
11:22:25			
11:22:34			
11:22:42			
11:22:51			
11:23:00			

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
11:31:55			
11:32:04			
11:32:12			
11:32:21			
11:32:30			
11:32:38			
11:32:56			
11:33:04			
11:33:13			
11:33:22			
11:33:30			
11:33:39			
11:33:48			
11:33:56			
11:34:05			
11:34:13			
11:34:31			
11:34:39			
11:34:48			
11:34:57			
11:35:05			
11:35:14			
11:35:23			
11:35:31			
11:36:40		1.153464	
11:36:49		1.060257	
11:36:58		1.219251	
11:37:06		1.378545	
11:37:15		0.791568	
11:37:24		0.904452	
11:37:32		1.123381	
11:37:41		1.134179	
11:37:49		1.335692	
11:38:07		1.068709	
11:38:15		0.441087	
11:38:24		1.225322	
11:38:33		0.824643	
11:38:41		0.716061	
11:38:50		1.138348	
11:38:59		0.543409	
11:39:07		1.161351	
11:39:16		0.969432	
11:39:24		0.205387	
11:39:42		0.632453	
11:39:50		0.629323	
11:39:59		0.909623	
11:40:08		0.797708	
11:40:16		1.42499	
11:40:25		0.853372	
11:40:34		1.407314	

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
11:23:08			
11:23:25			
11:23:34			
11:23:43			
11:23:51			
11:24:00			
11:24:09			
11:24:17			
11:24:26			
11:24:35			
11:24:52			
11:25:00			
11:25:09			
11:25:18			
11:25:44			
11:25:52			
11:26:01			
11:26:10			
11:26:18			
11:26:27			
11:26:44			
11:26:53			
11:27:01			
11:27:10			
11:27:19			
11:27:27			
11:27:36			
11:27:45			
11:27:53			
11:28:02			
11:28:11			
11:28:28			
11:28:36			
11:28:45			
11:28:54			
11:29:02			
11:29:11			
11:29:20			
11:29:28			
11:29:37			
11:29:46			
11:30:03			
11:30:12			
11:30:20			
11:30:55			
11:31:03			
11:31:21			
11:31:29			
11:31:38			
11:31:47			

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
11:40:51		1.146269	
11:41:00		0.800965	
11:41:08		0.992729	
11:41:17		1.013732	
11:44:10		0.211602	
11:44:27		0.076021	
11:44:36		0.344289	
11:44:44		0.538866	
11:44:53		0.100309	
11:45:01		2.000211	
11:45:10		1.287863	
11:45:19		0.612211	
11:45:27		0.406196	
11:45:36		0.479495	
11:45:53		0.281949	
11:46:02		0.898467	
11:46:11		0.241985	
11:46:19		0.74088	
11:46:28		0.166956	
11:46:36		0.594022	
11:46:45		0.36927	
11:46:54		0.29589	
11:47:02		0.271018	
11:47:20		0	
11:47:28		0.786368	
11:47:37		0.408116	
11:47:46		0.336823	
11:47:54		0.606879	
11:48:03		1.000795	
11:48:12		0.126138	
11:48:20		0.264019	
11:48:29		0.339337	
11:48:37		0.342859	
11:48:55		0.522988	
12:02:44		0.82786	
12:03:01		10.28997	
12:03:10		7.864895	
12:03:19		8.659738	
12:03:27		17.7692	
12:03:27		11.65652	
12:03:45		22.01974	
12:03:53		14.51198	
12:04:02		14.18319	
12:04:11		20.50209	
12:04:28		15.34136	
12:04:36		26.34798	
12:04:45		25.78934	
12:04:54		21.30984	
12:04:54		21.62402	
12:05:11		18.68975	

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
12:05:20		19.7981	
12:05:28		27.53774	
12:05:37		14.43903	
12:05:46		21.99129	
12:06:03		18.9109	
12:06:12		25.7598	
12:06:20		24.12456	
12:06:20		18.88638	
12:06:37		22.51231	
12:06:46		32.53422	
12:06:55		20.55822	
12:07:03		27.78732	
12:07:21		25.34911	
12:07:29		27.43098	
12:08:12		19.68976	
12:08:30		23.50689	
12:08:38		28.12786	
12:08:47		25.18808	
12:08:56		27.23566	
12:09:04		25.08984	
12:09:13		26.1881	
12:09:22		22.98826	
12:09:30		36.25506	
12:09:39		26.74853	
12:09:56		23.13754	
12:10:05		30.22367	
12:10:13		27.04565	
12:10:22		23.63317	
12:10:31		22.33627	
12:10:39		19.67364	
12:10:48		33.10462	
12:10:57		24.655	
12:11:14		18.65365	
12:11:23		35.54153	
12:11:31		28.06142	
12:11:40		23.90164	
12:11:48		29.83491	
12:11:57		21.00428	
12:12:06		35.64771	
12:12:14		27.86338	
12:12:23		34.76105	
12:12:40		20.09044	
12:12:49		29.68312	
12:12:58		25.11741	
12:13:24		13.93957	
12:13:32		15.0014	
12:13:41		14.32481	
12:13:58		17.89808	
12:14:07		14.65891	
12:14:15		15.23261	

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
12:14:24		13.44679	
12:14:33		13.52284	
12:14:41		11.72957	
12:14:50		15.14163	
12:14:59		10.66913	
12:15:16		17.3192	
12:15:24		11.57325	
12:15:33		11.92193	
12:15:42		18.01538	
12:15:50		13.96692	
12:15:59		16.7965	
12:16:08		18.77983	
12:16:16		13.61095	
12:16:25		15.86957	
12:16:34		19.53569	
12:16:51		20.2164	
12:17:00		21.83498	
12:17:08		14.16283	
12:17:17		15.96195	
12:17:25		14.31255	
12:17:34		17.21223	
12:17:43		16.31849	
12:17:51		14.19556	
12:18:00		12.82746	
13:17:28	9.892753		0.60052
13:17:46	11.4806		0
13:18:03	15.46978		5.113084
13:18:12	15.49588		3.130356
13:18:20	13.54171		0
13:18:29	17.39371		15.44752
13:18:37	14.94304		6.786168
13:18:46	15.80523		5.66741
13:18:55	13.05125		11.47845
13:18:55	12.59581		6.841745
13:19:12	13.46755		4.529164
13:19:21	12.73999		2.599127
13:19:38	12.01688		8.817976
13:19:47	11.77881		0
13:19:55	7.698289		13.04038
13:20:04	12.75876		10.07748
13:20:12	12.36443		19.23325
13:20:21	12.24508		0
13:20:21	10.1967		7.398236
13:20:38	10.36093		10.40878
13:20:47	15.22344		2.039026
13:20:56	9.8657		17.45551
13:21:13	12.36316		5.878891
13:21:22	13.07385		19.06291
13:21:30	11.91344		3.3671
13:21:39	12.81096		6.144506

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
13:21:48	12.99333		0
13:21:56	9.686833		2.057071
13:22:05	12.64164		7.470414
13:22:13	19.68493		2.816382
13:22:48	16.63846		3.126026
13:22:57	16.04807		20.81972
13:23:05	19.24095		19.18272
13:23:14	11.44431		23.86346
13:23:23	19.59773		25.58707
13:23:31	17.11873		23.1323
13:23:40	19.58563		19.04775
13:23:48	19.29919		16.10795
13:24:06	19.09263		13.13277
13:24:14	19.64515		16.55545
13:24:23	14.74222		21.37405
0.5587	18.77596		21.24629
0.5588	18.11555		17.77165
0.5589	20.56781		15.77087
0.559	15.13623		22.65448
0.5591	10.72757		17.39127
0.5592	16.13019		18.43135
0.5593	16.23044		17.84094
0.5595	17.95069		17.16896
0.5596	15.27691		17.10689
0.5597	26.5449		10.25504
0.5598	15.0659		19.68941
0.5599	25.02994		13.66833
0.56	19.2419		25.2998
0.5601	19.27787		21.89301
0.5602	20.57609		19.62301
0.5603	36.16171		14.89752
0.5604	15.7524		23.50113
0.5606	17.06272		19.66271
0.5607	23.69321		10.65707
0.5615		14.14211	
0.5616		17.08136	
0.5617		16.86493	
0.5618		15.23418	
0.5619		20.52755	
0.562		25.71585	
0.5621		20.1452	
0.5622		22.3897	
0.5623		18.38991	
0.5625		21.28094	
0.5626		16.98725	
0.5627		18.29481	
0.5628		23.04772	
0.5629		21.64899	
0.5629		26.79199	
0.5631		21.5194	

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
0.5632		33.13267	
0.5633		20.69453	
0.5635		25.24745	
0.5636		23.4016	
0.5637		21.72509	
0.5638		26.20572	
0.5639		20.80512	
0.5639		18.99979	
0.5641		19.89331	
0.5642		24.78189	
0.5643		20.19211	
0.5645		20.63047	
0.5646		21.54708	
0.5647		21.15246	
0.6752		0.000719	
0.6753		0.569394	
0.6754		0.018447	
0.6756		0.171341	
0.6757		0.418497	
0.6758		0.579244	
0.6758		0.232519	
0.676		0.161361	
0.6761		0.035771	
0.6762		12.75283	
0.6763		16.87458	
0.6765		20.82005	
0.6766		15.72091	
0.6767		14.11878	
0.6768		19.95001	
0.6768		21.82375	
0.677		22.97934	
0.6771		23.95857	
0.6772		15.35077	
0.6773		20.40552	
0.6775		22.25998	
0.6776		27.38639	
0.6777		25.58539	
0.6778		22.1585	
0.6778		18.94942	
0.678		19.22691	
0.6781		18.76212	
0.6782		25.49663	
0.6783		16.13167	
0.6785		15.20294	
0.6787		22.35794	
0.6788		20.74409	
0.6788		20.72554	
0.679		17.76843	
0.6791		16.26076	
0.6792		20.93881	

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
0.6793		19.60754	
0.6795		22.73021	
0.6796		19.18402	
0.6797		22.09497	
0.6798		22.31327	
0.6798		18.83184	
0.68		19.06674	
0.6801		24.2993	
0.6802		20.4617	
0.6803		18.67111	
0.6805		20.25932	
0.6806		23.42471	
0.6807		17.50646	
0.6808		19.97152	
0.6808		23.41621	
0.681		16.40582	
0.6811		19.39438	
0.6812		23.52516	
0.6814		20.10689	
0.6815		24.62836	
0.6816		15.77171	
0.6817		22.73828	
0.6818		22.45398	
0.6819		21.53245	
0.6823	16.08277		23.09765
0.6825	16.24986		29.14833
0.6826	22.21199		39.70435
0.6827	13.94845		21.89661
0.6828	16.21071		23.71983
0.6829	13.66647		21.99189
0.683	14.68811		20.89984
0.6831	13.49333		91.18813
0.6832	16.72885		16.31726
0.6833	8.876839		16.30932
0.6834	14.02929		24.92087
0.6835	10.93254		22.88834
0.6836	12.41663		28.00214
0.6838	18.04171		69.9801
0.6839	14.59772		36.32498
0.684	12.88353		35.88542
0.6841	22.37017		85.72427
0.6842	11.01465		23.351
0.6843	14.3673		18.78647
0.6844	15.18684		585.814
0.6845	14.76577		31.81458
0.6846	14.32751		21.14957
0.6847	9.901028		27.50412
0.6848	10.46468		56.06997
0.685	10.6741		20.95181
0.6851	14.55253		23.28676

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
0.6852	16.70466		39.57804
0.6853	11.33101		50.29285
0.6854	14.70148		21.79051
0.6855	15.23967		27.25149
0.6859	10.77245		28.869
0.686	13.15947		51.46285
0.6861	20.78678		24.90499
0.6862	11.90421		36.14887
0.6864	21.6181		29.88887
0.6865	17.64706		67.54121
0.6866	12.89689		25.66574
0.6867	15.88098		43.10609
0.6868	13.56653		21.01099
0.6869	13.26545		25.22113
0.687	25.37367		50.11674
0.6871	10.78613		25.63904
0.6872	14.5974		19.72478
0.6873	17.67666		59.01194
0.6874	13.89785		42.07828
0.6875	15.59359		52.95116
0.6876	16.52229		22.67253
0.6878	12.36793		39.24674
0.6879	10.59899		38.28822
0.6879	16.4475		31.01052
0.6881	14.9962		29.25804
0.6882	25.15088		59.96541
0.6883	15.1897		32.62009
0.6884	15.57385		33.74895
0.6885	17.34088		30.41072
0.6886	22.13242		37.65738
0.6887	4.781672		14.50054
0.6889	15.09486		15.27501
0.6889	15.68588		35.54979
0.6891	17.6531		35.78364
0.6895			
0.6896			
0.6897			
0.6898			
0.6899			
0.6899			
0.6901			
0.6902			
0.6903			
0.6904			
0.6906			
0.6907			
0.6908			
0.6909			
0.6909			
0.6911			

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
0.6912			
0.6913			
0.6914			
0.6915			
0.6917			
0.6918			
0.6919			
0.6919			
0.6921			
0.6922			
0.6923			
0.6924			
0.6925			
0.6926			
0.6929			
0.6929			
0.6931			
0.6932			
0.6933			
0.6934			
0.6936			
0.6937			
0.6938			
0.6939			
0.694			
0.6941			
0.6942			
0.6943			
0.6944			
0.6945			
0.6946			
0.6948			
0.6949			
0.695			
0.6951			
0.6952			
0.6953			
0.6954			
0.6955			
0.6956			
0.6957			
0.6959			
0.696			
0.6961			
0.7103	4.446853		3.50929
0.7104	0		0.74632
0.7105	0		6.410121
0.7106	0		4.279429
0.7107	2.447488		4.516894
0.7108	0		9.572957

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
0.711	19.1025		5.254552
0.7111	2.890837		0
0.7112	0.839275		3.5295
0.7113	0.190961		2.705228
0.7114	3.4895		0.637331
0.7115	2.37906		0
0.7116	3.060474		9.312395
0.7117	22.35776		20.42202
0.7118	25.08437		26.17171
0.7119	16.04967		36.40221
0.712	18.29028		26.98516
0.7121	20.68398		23.79922
0.7123	13.96819		35.76632
0.7124	23.52135		29.57923
0.7125	18.07895		27.35399
0.7126	19.81129		34.61581
0.7127	14.42745		61.50352
0.7128	20.47551		33.69049
0.7129	32.22505		33.63274
0.713	15.85552		60.8532
0.7131	19.03662		69.20058
0.7131	16.78996		32.94128
0.7134	13.32306		32.35519
0.7135	20.20562		60.43457
0.7137	17.66011		27.14828
0.7138	17.64037		31.39667
0.7139	19.44082		32.14299
0.7141	28.30556		67.45676
0.7141	19.05126		41.43157
0.7143	21.32847		63.80961
0.7144	12.9841		33.30939
0.7145	21.16361		32.19063
0.7146	14.94432		41.78019
0.7147	26.10474		53.65562
0.7148	14.79982		26.6452
0.7149	30.09296		89.96833
0.715	24.23968		30.98814
0.7151	16.6426		26.6719
0.7153	25.99557		93.81325
0.7154	20.91218		36.89879
0.7155	21.32497		94.14599
0.7156	22.1773		56.79752
0.7157	20.94623		58.37605
0.7158	16.21548		44.27754
0.7159	21.24095		20.45811
0.716	16.57513		47.04629
0.7161	20.14356		24.41707
0.7161	12.06653		35.09218
0.7163	15.01625		24.89344
0.7164	14.94559		33.81319

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
0.7166	24.38767		64.9659
0.7167	16.17029		24.05618
0.7168	20.81924		39.16735
0.7169	15.20243		32.88787
0.7171	14.11936		41.38682
0.7173	14.62987		29.42333
0.7174	21.38417		35.10517
0.7175	19.92141		93.93956
0.7176	23.90582		47.65475
0.7177	15.62637		33.28918
0.7178	20.86412		66.15756
0.7179	13.21484		32.8626
0.718	16.99206		143.3049
0.7181	18.75877		13.53408
0.7181	14.62668		33.34403
0.7184	19.44878		40.75959
0.7185	22.66711		43.97512
0.7186	14.92968		31.60238
0.7187	13.36952		57.26163
0.7188	13.23903		23.32068
0.7189	15.15183		23.88584
0.719	18.54235		25.83681
0.7191	14.5067		27.58784
0.7192	13.2715		50.03517
0.7193	23.06463		31.65868
0.7195	11.55794		25.58851
0.7196	15.35202		28.0736
0.7197	12.8326		28.46914
0.7198	13.22185		36.42603
0.7199	31.71932		51.34159
0.72	15.59645		23.35461
0.7201	13.44272		43.36305
0.7202	17.0799		32.5508
0.7203	19.77755		57.39804
0.7209			
0.721			
0.7211			
0.7212			
0.7213			
0.7214			
0.7215			
0.7217			
0.7218			
0.7219			
0.722			
0.7221			
0.7222			
0.7223			
0.7224			
0.7225			

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
0.7226			
0.7227			
0.7228			
0.723			
0.7231			
0.7232			
0.7233			
0.7234			
0.7235			
0.7236			
0.7237			
0.7238			
0.7239			
0.724			
0.7282		26.98632	
0.7284		29.39136	
0.7285		22.52554	
0.7286		19.92197	
0.7287		31.70352	
0.7288		31.67219	
0.7289		30.95862	
0.729		29.17378	
0.7291		22.15493	
0.7292		21.42564	
0.7294		23.93388	
0.7295		21.12761	
0.7296		29.93284	
0.7297		25.44125	
0.7298		24.34106	
0.7299		24.26514	
0.73		25.88385	
0.7301		25.21667	
0.7302		5.368023	
0.7304		24.20597	
0.7305		26.41353	
0.7306		31.47023	
0.7307		28.88849	
0.7308		27.56766	
0.7309		18.25516	
0.731		4.906313	
0.7311		1.398352	
0.7313		20.43395	
0.7314		24.30103	
0.7315		27.66138	
0.7319		25.94433	
0.732		25.32929	
0.7322		27.64335	
0.7323		26.52598	
0.7324		25.11486	
0.7325		25.66179	

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
0.7326		25.33448	
0.7327		25.74574	
0.7328		24.73372	
0.7329		25.35907	
0.7331		17.30247	
0.7332		6.735	
0.7333		11.51269	
0.7334		9.587787	
0.7335		10.63777	
0.7336		10.08006	
0.7337		5.770175	
0.7338		2.950419	
0.7339		0.800118	
0.734		1.635675	
0.7342		0.872559	
0.7343		1.194311	
0.7344		1.021409	
0.7345		0.761082	
0.7346		0.879558	
0.7347		0.657772	
0.7348		0.64271	
0.735		0.869837	
0.7351		0.717156	
0.7352		0.939571	
0.7361		0.536451	
0.7362		0.974972	
0.7364		0.726802	
0.7365		0.808821	
0.7366		0.996232	
0.7367		0.910431	
0.7368		0.721299	
0.7369		0.830395	
0.737		0.818599	
0.7371		0.93003	
0.7372		1.299685	
0.7374		0.731097	
0.7375		0.689339	
0.7376		0.902731	
0.7377		1.152346	
0.7378		1.242702	
0.7379		0.706889	
0.738		1.584255	
0.7381		0.89487	
0.7382		0.593279	
0.7383		0.908315	
0.7385		0.863124	
0.7386		0.590188	
0.7387		0.597006	
0.7388		0.891379	
0.7389		0.990833	

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
0.739		0.996909	
0.7392		0.097592	
0.7393		0.488596	
0.7393		0.99524	
0.7496		0.662926	
0.7497		0.658221	
0.7498		0.608557	
0.75		7.690485	
0.7501		7.983501	
0.7502		3.316409	
0.7503		3.763134	
0.7504		6.174929	
0.7504		3.931537	
0.7506		6.138147	
0.7507		6.667016	
0.7509		5.56838	
0.751		3.588153	
0.7511		3.929231	
0.7512		6.541954	
0.7513		4.378142	
0.7514		8.706538	
0.7514		4.844683	
0.7516		4.912871	
0.7517		6.478692	
0.7519		3.634924	
0.752		5.514417	
0.7521		4.349258	
0.7522		6.789406	
0.7523		6.468124	
0.7524		6.040723	
0.7524		5.098097	
0.7526		6.45553	
0.7528		6.335512	
0.7529		5.083078	
0.7532		5.629033	
0.7533		6.167535	
0.7534		10.08623	
0.7534		8.797058	
0.7537		6.36829	
0.7538		5.947577	
0.7539		6.705661	
0.754		7.221163	
0.7541		3.908537	
0.7542		9.639994	
0.7543		12.05805	
0.7544		4.821898	
0.7544		9.42824	
0.7547		6.185987	
0.7548		8.670508	
0.7549		7.291332	

TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
0.755		6.945048	
0.7551		8.010693	
0.7552		9.312699	
0.7553		7.105731	
0.7554		10.90822	
0.7556		8.189949	
0.7557		8.684281	
0.7558		8.917759	
0.7559		9.649432	
0.756		7.852668	
0.7561		11.26495	
0.7562		6.868376	
0.7563		11.06662	
0.7565		7.736011	
0.7643	11.73999		22.68408
0.7644	9.154369		19.88646
0.7645	9.629226		13.65823
0.7645	11.59931		18.92288
0.7647	15.04775		19.47288
0.7648	6.423622		22.85081
0.7649	13.42458		14.29051
0.765	15.49397		17.33353
0.7652	6.283265		16.44863
0.7653	11.10663		11.32905
0.7654	10.7925		21.22319
0.7655	18.47615		32.03617
0.7655	10.45673		34.8742
0.7657	9.292179		13.52975
0.7658	9.943039		15.60126
0.7659	9.294407		12.89242
0.766	12.48092		11.67983
0.7661	16.07544		25.51561
0.7662	14.81669		15.6092
0.7664	9.664872		23.58558
0.7665	9.988234		30.57312
0.7665	12.62955		18.80163
0.7667	11.61045		30.52765
0.7668	11.60663		16.42697
0.7669	11.17697		14.44352
0.767	14.18302		87.98921
0.7671	14.48537		13.6409
0.7672	12.65501		33.95393
0.7673	12.49174		13.01296
0.7674	8.313503		25.23556
0.7684	11.03279		49.6815
0.7685	14.16551		39.67909
0.7685	13.02293		27.21974
0.7687	13.66615		21.65049
0.7688	13.52038		31.49195
0.7689	15.45196		17.71174

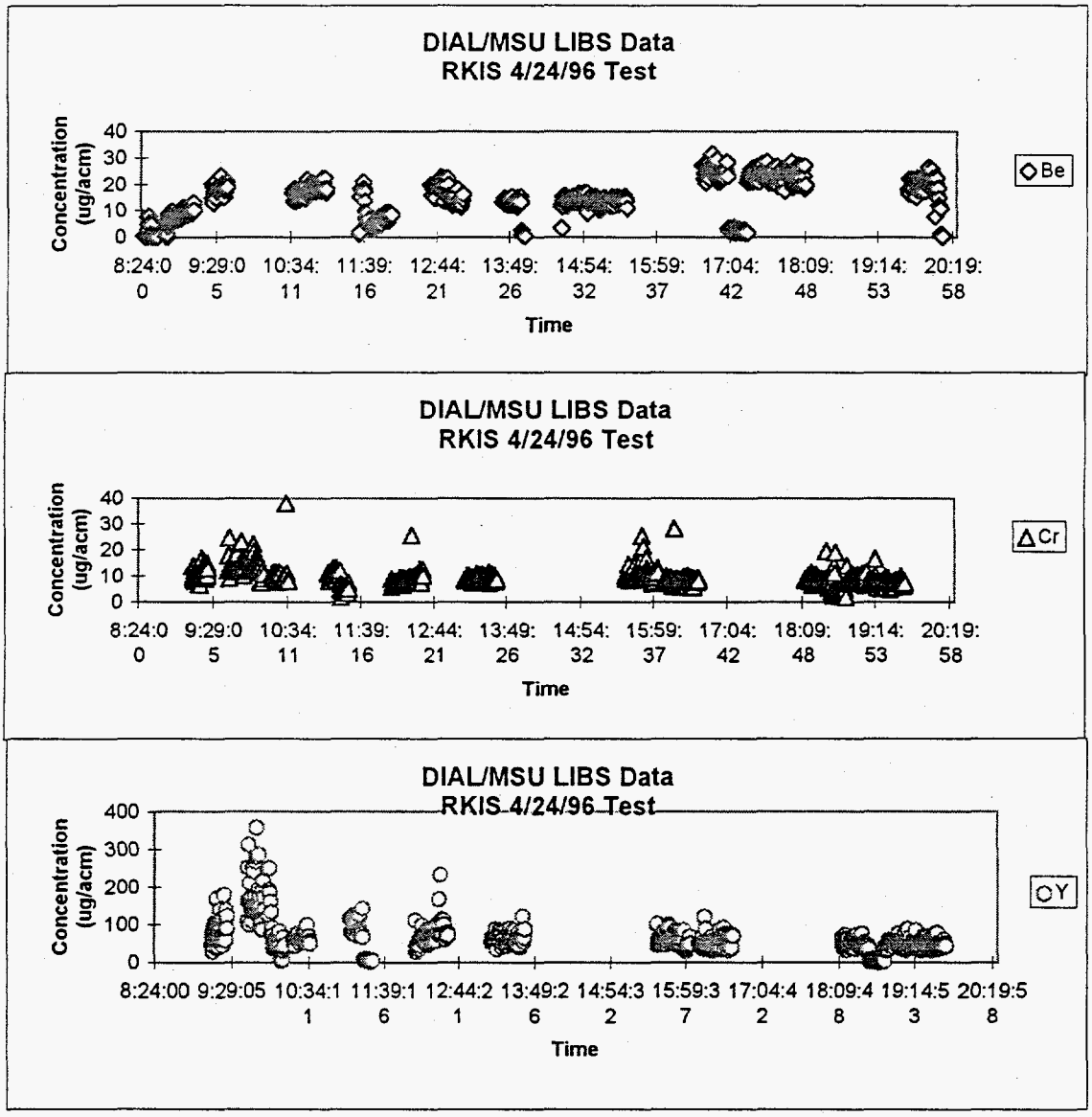
TIME		Concentration (ug/acm)	
4/22/96	Cr	Be	Y
0.769	9.384796		19.67714
0.7691	7.616494		19.02754
0.7693	18.67698		21.43179
0.7694	13.72503		17.00367
0.7695	10.83483		24.87323
0.7696	17.21421		24.70145
0.7697	11.75081		15.35874
0.7698	7.771172		18.21915
0.7699	13.21707		25.97611
0.77	13.2925		21.55233
0.7701	11.95323		49.7147
0.7702	10.64673		31.19313
0.7703	21.05794		18.96547
0.7704	15.12159		28.01514
0.7706	10.57226		36.68226
0.7707	16.45991		98.03854
0.7708	7.318594		16.19672
0.7709	13.20243		23.34522
0.771	13.53852		18.10583
0.7711	9.677285		16.75177
0.7712	15.06749		13.10823
0.7713	17.28741		33.78071
0.7714	16.43095		46.82398
0.7715	19.20148		24.68268
0.7715	19.20148		

DIAL/MSU LIBS RKIS 4/24/96 Data Summary

Time		Concentration (ug/acm)			Remarks		
FROM	To	Be	Cr	Y			
8:55	9:09	9			RM # 1: 8:55 - 9:55 &		
9:11	9:24		11	79	10:21 - 11:21		
9:26	9:39	18					
9:42	9:55		15	178			
10:21	10:35		10	65			
10:37	11:06	18					
11:09	11:20		10	100			
11:41	12:04	6			RM # 2: 11:41 - 12:41 &		
12:06	12:48		9	75	13:00 - 14:01		
13:00	13:08	14					
13:12	13:41		9	64			
13:43	14:00	13					
14:40	15:33	14			RM # 3: 14:40 - 15:40 &		
16:03	16:39		8	54	16:03 - 17:03		
16:41	17:02	25					
17:35	18:10	23			RM # 4: 17:35 - 18:35 &		
18:12	18:35		8	50	19:05 - 20:05		
19:05	19:41		8	49			
19:42	20:04	20					

Remarks : Low Metals

1. Cr, Be, and Y were monitored from two spectral regions during EPA sampling.
2. LIBS data sampling time was 12 seconds which corresponds to an average of 120 laser pulses between 8:27-8:46.
3. LIBS data sampling time was18 seconds between 8:26 - 9:41 which corresponds an average of 180 laser pulses.
4. LIBS Sampling time changed to 26 seconds (equivalent to an average of 260 laser pulses) after 9:59 to achieve better signal-to-noise data.
5. In general, each selected spectral region was monitored for ~ 20 - 60 minute during EPA sampling.
6. 11:29 - 11:34: Checked window.
7. 14:15 - 14:30 : Cleaned window and optics.
8. 16:05 -16:10 : Checked window. Window was clean.
9. See also pertinent remarks on &042296&.


DIAL/MSU LIBS Data
RKIS 4/24/96 Test
Concentration (ug/acm)
40
30
20
10
0
8:24:00
9:29:05
10:34:11
11:39:16
12:44:21
13:49:26
14:54:32
15:59:37
17:04:42
18:09:48
19:14:53
20:19:58
Time
Be
DIAL/MSU LIBS Data
RKIS 4/24/96 Test
Concentration (ug/acm)
40
30
20
10
0
8:24:00
9:29:05
10:34:11
11:39:16
12:44:21
13:49:26
14:54:32
15:59:37
17:04:42
18:09:48
19:14:53
20:19:58
Time
Cr
DIAL/MSU LIBS Data
RKIS 4/24/96 Test
Concentration (ug/acm)
400
300
200
100
0
8:24:00
9:29:05
10:34:11
11:39:16
12:44:21
13:49:26
14:54:32
15:59:37
17:04:42
18:09:48
19:14:53
20:19:58
Time
Y

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
8:26:18	0.41231051		
8:26:36	0.04459166		
8:26:44	0.3868656		
8:27:01	0.11491323		
8:27:19	0.0133325		
8:27:36	0.0141281		
8:27:53	0.06300873		
8:28:11	0.05089233		
8:28:28	0.42623069		
8:28:36	0.39122413		
8:28:54	0.12405114		
8:29:11	0.36608766		
8:29:28	0.18406158		
8:29:46	2.51330702		
8:30:03	4.93332335		
8:30:12	7.3995856		
8:30:29	7.66634349		
8:30:46	4.62937964		
8:31:03	4.68201633		
8:31:21	4.9004384		
8:31:38	4.41364706		
8:31:55	4.47489414		
8:32:12	4.99681311		
8:32:30	4.42239005		
8:32:38	0.92573728		
8:32:56	0.11408015		
8:33:13	0.00322891		
8:33:30	0.22828101		
8:33:48	0.05571281		
8:34:05	0		
8:34:22	0.23094455		
8:34:31	0.13103286		
8:34:48	0.26067015		
8:35:05	0.34012964		
8:35:23	0.29497336		
8:35:40	0.00281884		
8:35:57	0.08217743		
8:36:14	0.44933491		
8:36:23	0.10947084		
8:36:40	0.21622588		
8:36:58	0.44598242		
8:37:15	0.28616695		
8:37:32	0.13841237		
8:37:49	0.15951605		
8:38:07	0.09923465		
8:45:27	0.19556324		
8:45:45	0.31645178		
8:46:02	0.09543823		
8:46:19	0.19786358		
8:46:36	1.0085925		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
8:46:54	6.1082255		
8:47:02	4.01823197		
8:47:20	5.82589281		
8:47:37	5.58747111		
8:47:54	7.6249202		
8:48:12	8.6002065		
8:48:29	5.96608339		
8:48:46	7.34014016		
8:49:03	7.67414963		
8:49:12	6.88973617		
8:49:29	6.51111812		
8:49:47	7.15892122		
8:50:04	7.14063963		
8:50:21	7.45736489		
8:50:38	6.48538206		
8:50:56	6.51210109		
8:51:13	9.5849334		
8:51:22	7.61361167		
8:51:39	5.7425389		
8:51:56	6.16023378		
8:52:13	7.5621511		
8:52:31	6.88259303		
8:52:48	6.38506392		
8:53:05	6.82194265		
8:53:23	7.67947671		
8:53:40	6.91158933		
8:53:48	6.68389098		
8:54:06	7.99571193		
8:54:23	6.18823557		
8:54:40	7.04915672		
8:54:58	8.46229897		
8:55:15	7.1723946		
8:55:32	6.65636482		
8:55:49	6.74007905		
8:56:07	9.2359573		
8:56:15	8.7029345		
8:56:33	8.32230153		
8:56:50	8.50246543		
8:57:07	7.00140031		
8:57:24	8.41743095		
8:57:59	7.5608078		
8:58:16	7.74265227		
8:58:34	6.75736038		
8:58:51	8.8051696		
8:59:08	8.24758395		
8:59:25	8.8564947		
8:59:43	7.75074379		
9:00:00	8.6068307		
9:00:09	7.52191545		
9:00:26	8.56806239		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
9:00:43	9.5880149		
9:01:00	10.9524235		
9:01:18	10.6460699		
9:01:35	9.4768379		
9:01:52	7.91993932		
9:02:01	10.2651977		
9:02:18	8.6281794		
9:02:36	7.99128999		
9:02:53	10.6054855		
9:03:10	8.47653624		
9:03:27	8.29291031		
9:03:45	10.5692826		
9:04:02	9.8716505		
9:04:11	10.814614		
9:04:28	9.8658075		
9:04:45	10.4190058		
9:05:02	8.8449094		
9:05:20	9.7039713		
9:05:37	9.075646		
9:05:54	10.2680803		
9:06:12	9.298369		
9:06:20	9.5851784		
9:06:37	11.5753928		
9:06:55	9.7310996		
9:07:12	9.3903304		
9:07:29	9.743198		
9:07:47	12.4427855		
9:08:04	8.8995928		
9:08:21	11.1305552		
9:08:30	10.697248		
9:08:47	11.1198779		
9:09:04	10.7803627		
9:09:22	10.1127502		
9:09:39	12.9812593		
9:09:56	10.0509785		
9:11:40		13.807779	46.9456
9:11:57		9.5865782	71.11546
9:12:14		10.359335	75.0773
9:12:23		8.6311349	48.45231
9:12:40		9.3281438	29.56299
9:12:58		12.00033	46.40571
9:13:15		10.600583	90.69805
9:13:32		7.7947242	55.89097
9:13:49		10.557935	66.43255
9:14:07		9.4293534	61.12892
9:14:15		11.282952	70.95053
9:14:33		12.407714	53.38459
9:14:50		8.0327893	104.7103
9:15:07		13.807461	85.73148
9:15:24		8.6177676	66.50112

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
9:15:42		10.112677	169.2377
9:15:50		9.8290991	61.74351
9:16:08		12.140368	65.24775
9:16:25		6.7692617	39.99306
9:16:42		10.948769	97.17601
9:17:00		10.420125	54.63904
9:17:17		6.6199936	42.93503
9:17:34		10.116496	71.50738
9:17:43		11.699247	56.77912
9:18:00		8.8784299	54.93569
9:18:17		10.004784	140.1879
9:18:35		9.4990543	100.0224
9:18:52		10.008921	67.90751
9:19:09		16.738081	107.7833
9:19:26		12.40294	58.50273
9:19:35		10.418215	104.4949
9:19:52		11.428082	88.93546
9:20:10		9.6931983	70.6297
9:20:27		11.624772	60.04084
9:20:44		10.904212	49.27514
9:21:01		15.351065	118.2996
9:21:19		11.443996	45.01448
9:21:27		12.070349	60.56232
9:21:45		13.156282	66.43761
9:22:02		11.353926	179.8811
9:22:19		8.914076	66.81474
9:22:36		12.118726	75.11123
9:22:54		9.633682	71.36375
9:23:11		13.848836	96.11825
9:23:28		11.235529	58.41323
9:23:37		12.414398	121.4502
9:23:54		14.66074	140.0504
9:24:12		11.910578	117.6626
9:24:29		10.24635	123.9807
9:24:46		12.728529	90.11124
9:26:12	19.8775531		
9:26:21	14.4043293		
9:26:38	19.1176996		
9:26:56	12.5675338		
9:27:13	15.1022872		
9:27:30	16.435405		
9:27:48	16.5969125		
9:28:05	14.8041923		
9:28:13	17.9789686		
9:28:31	17.3790862		
9:28:48	20.0913687		
9:29:05	17.0835107		
9:29:23	14.596188		
9:29:40	21.26455		
9:29:57	18.8893065		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
9:30:06	19.1536862		
9:30:23	16.8547631		
9:30:40	17.7947863		
9:30:58	17.9616873		
9:31:15	17.4609037		
9:31:32	19.9861271		
9:31:49	17.9118265		
9:32:07	17.6023367		
9:32:15	16.8510128		
9:32:33	16.5120568		
9:32:50	18.348417		
9:33:07	19.1108966		
9:33:24	23.3124572		
9:33:42	18.4100302		
9:33:59	17.2268808		
9:34:16	17.0458493		
9:34:25	20.0609282		
9:34:42	20.0440188		
9:35:00	19.133995		
9:35:17	17.8232666		
9:35:34	18.9042616		
9:35:51	18.8745936		
9:36:09	19.2569677		
9:36:26	19.7800801		
9:36:35	17.7561563		
9:36:52	18.8010406		
9:37:09	14.7256264		
9:37:26	18.759528		
9:37:44	17.4323023		
9:38:01	20.1741375		
9:38:18	18.9692243		
9:38:36	18.8119917		
9:38:44	20.7822094		
9:39:01	18.9825277		
9:39:19	18.7803059		
9:42:03		12.12159	110.1175
9:42:20		17.830486	252.501
9:42:46		24.681755	162.4619
9:43:03		12.748156	313.7569
9:43:29		9.00404	99.86633
9:43:55		14.526006	211.0273
9:44:12		14.736063	158.6564
9:44:38		15.104619	169.3441
9:44:56		13.459381	152.1347
9:45:22		13.676228	140.0437
9:45:48		11.402939	110.2361
9:46:05		15.17973	133.9102
9:46:31		13.690232	253.4345
9:46:57		12.053268	139.8149
9:47:14		17.241476	242.2955

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
9:47:40		12.784014	138.0008
9:47:57		14.775529	138.5455
9:48:23		13.510728	173.0742
9:48:49		13.87504	268.1342
9:49:06		14.419916	142.5215
9:49:32		13.839181	280.5053
9:49:49		15.104194	154.4157
9:50:15		18.618308	359.408
9:50:41		11.648643	158.5744
9:50:59		13.402941	145.0396
9:51:24		12.347561	195.9609
9:51:50		12.571835	287.8325
9:52:08		22.060492	177.9243
9:52:34		14.69872	140.3651
9:53:00		13.816266	105.2542
9:53:17		12.902198	138.0653
9:53:43		23.063888	149.8541
9:54:00		15.646949	191.3891
9:54:26		11.881191	103.2204
9:54:52		12.655221	86.56779
9:55:09		15.932967	217.0707
9:55:35		13.557407	138.2308
9:56:01		14.218558	172.2788
9:56:18		9.9518448	172.6246
9:56:44		13.596024	144.1879
9:59:20		12.601699	247.3786
9:59:54		11.627796	124.6763
10:00:20		16.073854	252.0166
10:00:46		13.57767	193.0149
10:01:21		15.525317	184.5699
10:01:47		16.106317	162.44
10:02:21		17.447343	133.4866
10:02:47		14.658512	77.49815
10:03:13		12.253354	92.1463
10:03:48		18.815263	72.59601
10:04:13		22.103618	54.39905
10:04:48		19.207689	37.36398
10:05:14		13.352654	38.83082
10:05:40		15.599474	49.93304
10:06:14		15.236647	66.04875
10:06:40		15.282955	48.36263
10:07:15		17.411379	62.76862
10:07:41		13.070509	58.7207
10:08:07		14.867774	34.17191
10:08:41		16.366184	54.97016
10:09:07		15.306666	42.97202
10:09:42		14.972643	83.59827
10:10:08		13.832286	26.97505
10:10:34		7.860765	11.63761
10:11:08		8.0926239	5.48877

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
10:11:34		7.2029031	8.762218
10:12:09		11.174104	30.72307
10:12:35		12.666626	67.38422
10:13:00		8.7928155	39.56577
10:13:35		10.436356	44.93508
10:21:04		10.937789	62.65602
10:21:30		9.2197733	52.01285
10:22:05		11.170921	63.97327
10:22:31		10.163918	67.07927
10:22:57		8.7358454	58.90367
10:23:31		11.488076	43.88345
10:23:57		8.9786846	69.3637
10:24:32		7.9228274	75.9198
10:24:58		7.5321523	76.85919
10:25:24		10.737757	57.71815
10:25:58		7.8551953	61.69101
10:26:24		11.566052	52.74708
10:26:59		7.6575503	64.63117
10:27:24		9.3507409	60.95281
10:27:50		9.3501044	68.83608
10:28:25		11.106312	68.69154
10:28:51		8.3582193	69.70546
10:29:17		7.9995302	65.609
10:29:51		8.8494674	75.97032
10:30:17		9.269105	54.93317
10:30:52		8.908188	56.99836
10:31:18		8.1304979	68.27922
10:31:44		8.7204093	81.4304
10:32:18		8.6292253	62.15908
10:32:44		9.3499453	100.1203
10:33:19		37.811939	61.55603
10:33:45		10.822098	64.23871
10:34:11		8.2030632	70.84822
10:34:45		8.3411919	56.44295
10:35:11		7.9301476	51.33311
10:37:12	16.3701691		
10:37:38	17.9608844		
10:38:12	13.2521732		
10:38:38	18.1795969		
10:39:13	17.6054535		
10:39:39	16.4365501		
10:40:05	13.8848116		
10:40:39	14.4576989		
10:41:05	18.017737		
10:41:40	13.5966971		
10:42:06	17.8008499		
10:42:32	15.1934018		
10:43:06	16.514907		
10:43:32	17.2475665		
10:44:07	17.1643654		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
10:44:33	15.9110898		
10:45:07	18.6563229		
10:45:33	17.8379536		
10:45:59	15.6644692		
10:46:34	16.6174051		
10:47:00	18.1257323		
10:47:34	14.4272246		
10:48:00	19.3944926		
10:48:35	16.2645937		
10:49:00	16.8552625		
10:49:26	21.6884828		
10:50:01	17.0139293		
10:50:27	17.9739009		
10:51:01	17.4917585		
10:51:27	16.1013328		
10:52:02	17.0223739		
10:52:28	16.4823052		
10:52:54	18.1210689		
10:53:28	20.7518208		
10:53:54	19.1720428		
10:54:29	18.0426219		
10:54:55	18.4127708		
10:55:29	18.8611447		
10:55:55	17.7775453		
10:56:30	17.186772		
10:56:56	18.0572844		
10:57:22	17.1450273		
10:57:56	17.4140733		
10:58:22	20.0505984		
10:58:57	18.3711602		
10:59:23	17.5293169		
10:59:57	20.5955012		
11:00:23	17.7434547		
11:00:58	18.0321501		
11:01:24	17.2710369		
11:01:49	22.3093565		
11:02:24	18.9229172		
11:02:50	19.4554745		
11:03:24	20.2137072		
11:03:50	20.2678696		
11:04:25	17.5970982		
11:04:51	22.1891518		
11:05:17	18.2227037		
11:05:51	16.7277879		
11:06:17	18.1461535		
11:09:45		11.042659	115.2885
11:10:11		11.342627	118.4889
11:10:36		11.252239	82.2664
11:11:11		7.9228274	78.34299
11:11:37		9.531836	77.45719

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
11:12:12		9.8154136	125.634
11:12:37		11.74842	106.6275
11:13:12		9.879863	127.088
11:13:38		9.2565333	80.64312
11:14:04		9.7248661	86.88723
11:14:38		12.685722	102.0173
11:15:04		10.571143	72.30459
11:15:30		12.269426	126.259
11:16:05		10.995077	106.0523
11:16:31		8.8318035	85.31412
11:17:05		13.06303	128.6174
11:17:31		10.92665	126.3781
11:17:57		10.276108	126.8953
11:18:32		10.129068	72.10935
11:18:58		10.039475	83.46239
11:19:24		10.487598	79.83581
11:19:58		7.7210449	75.80377
11:20:24		12.187631	143.1914
11:20:59		6.7129281	66.38564
11:21:24		4.6850777	7.843394
11:21:50		1.871103	6.707674
11:22:25		5.4387385	6.538236
11:22:51		3.6056686	6.02036
11:23:25		4.8846323	6.181678
11:23:51		3.9562418	12.19717
11:24:26		4.7878785	7.620003
11:24:52		4.0103476	6.065291
11:25:18		3.5119384	6.185828
11:25:52		5.6199926	4.698421
11:26:18		5.7880386	5.950528
11:26:53		3.4344399	6.068539
11:27:19		5.4194832	1.921737
11:27:45		3.2506396	6.589302
11:28:19		7.2337752	8.774669
11:28:45		4.9275986	5.429945
11:35:31	0.92636713		
11:36:06	1.5710498		
11:36:32	14.7668379		
11:36:58	18.123509		
11:37:32	18.8140153		
11:37:58	17.2713842		
11:38:33	17.9571125		
11:38:59	20.7517747		
11:39:24	18.3512103		
11:39:59	17.1308665		
11:40:25	13.39201		
11:41:00	9.1696339		
11:41:25	6.60835618		
11:41:51	8.7768723		
11:42:26	5.38774428		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
11:42:52	4.77404117		
11:43:26	6.347819		
11:43:52	3.72832807		
11:44:18	4.17252001		
11:44:53	4.03969309		
11:45:19	3.84533515		
11:45:53	4.46445904		
11:46:19	4.35990777		
11:46:45	4.82034906		
11:47:20	4.3088695		
11:47:46	3.28490434		
11:48:20	4.3450637		
11:48:46	4.22926299		
11:49:12	4.95020976		
11:49:47	4.70498939		
11:50:12	5.14924907		
11:50:38	4.23569124		
11:51:13	4.74987902		
11:51:39	5.41590751		
11:52:13	5.25810122		
11:52:39	4.68531405		
11:53:14	4.31871365		
11:53:40	6.12893138		
11:54:06	7.31091469		
11:54:40	4.59903716		
11:55:06	6.9699091		
11:55:41	7.60649448		
11:56:07	6.74947064		
11:56:33	5.98500925		
11:57:07	6.8672618		
11:57:33	7.07876702		
11:58:08	7.75978946		
11:58:34	7.08208203		
11:59:00	7.18655548		
11:59:34	9.0714706		
12:00:00	6.64319267		
12:00:35	8.7957175		
12:01:00	5.93492945		
12:01:35	6.67424861		
12:02:01	7.24388075		
12:02:27	7.16070412		
12:03:01	8.9395315		
12:03:27	8.09449652		
12:04:02	8.297142		
12:04:28	8.24529803		
12:06:20		8.9197252	111.0544
12:06:46		5.6139455	27.58712
12:07:21		7.1756116	44.29234
12:07:47		7.1333614	35.29933
12:08:12		7.7405389	40.80939

Time	Concentration (ug/acm)	
4/24/96	Be	Cr	Y
12:08:47		6.4645192	37.42028
12:09:13		6.94423	55.33123
12:09:48		7.3260732	35.75225
12:10:13		7.2015505	53.62639
12:10:39		7.6947082	62.12894
12:11:14		7.044803	46.22743
12:11:40		7.0093956	70.27494
12:12:14		7.4916526	97.69533
12:12:40		7.7211245	57.66294
12:13:06		8.0857811	59.77089
12:13:41		8.3300525	75.84239
12:14:07		9.2911451	58.48504
12:14:41		6.5468713	53.04499
12:15:07		6.4025363	76.7493
12:15:33		8.7651261	74.02278
12:16:08		7.5269804	62.7338
12:16:34		8.4178152	88.2689
12:17:08		6.3392008	47.72692
12:17:34		7.6871493	49.8439
12:18:00		9.2667975	73.26167
12:18:35		7.0338227	86.7593
12:19:00		8.8893306	55.75636
12:19:26		8.1802274	63.60895
12:20:01		7.9595079	83.09085
12:20:27		7.8072958	57.22843
12:20:53		8.4421627	54.6708
12:21:27		8.6782387	83.10096
12:22:02		8.2430855	78.27767
12:22:19		9.6935961	57.09995
12:22:54		8.7208072	94.16223
12:23:28		7.7611468	71.15118
12:23:46		9.4276824	63.05138
12:24:29		25.511959	56.4785
12:24:55		8.0567391	78.57107
12:25:12		7.8036357	78.62954
12:25:55		8.6799096	101.4009
12:26:21		7.8954563	104.8991
12:26:56		9.3603686	168.4553
12:27:22		8.1098104	73.36416
12:27:48		10.288282	233.1884
12:28:22		8.6908899	74.0466
12:28:48		10.277301	114.9495
12:29:23		8.0947722	74.06934
12:29:48		9.4992134	109.2128
12:30:14		10.45776	97.86315
12:30:49		9.9562476	100.5005
12:31:15		9.576871	111.6993
12:31:49		12.610133	99.2237
12:32:15		9.7340959	61.09319
12:32:50		7.4245774	78.03407

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
12:33:16		9.3848753	75.70994
12:33:42		7.2846187	68.57949
12:34:16		11.488155	73.68499
12:34:42		12.415671	79.10916
12:35:17		10.006216	71.91807
12:39:27	19.5826522		
12:40:02	19.4069736		
12:40:28	15.6374792		
12:41:02	18.2066208		
12:41:28	19.8207827		
12:41:54	18.6562004		
12:42:29	19.9089679		
12:42:55	20.5334938		
12:43:29	14.6585248		
12:43:55	18.9341356		
12:44:30	18.5144964		
12:44:56	19.7414631		
12:45:22	21.3181812		
12:45:56	21.7127156		
12:46:22	21.3225209		
12:46:57	19.8734482		
12:47:23	22.495437		
12:47:48	18.6646248		
12:48:23	18.0792031		
12:48:49	22.770197		
12:49:24	18.8828033		
12:49:49	22.3598629		
12:50:15	20.2979432		
12:50:50	13.2095947		
12:51:16	20.9406657		
12:51:50	19.2699554		
12:52:16	19.2353956		
12:52:51	19.8184377		
12:53:17	22.1577046		
12:53:43	21.7473936		
12:54:17	21.8253642		
12:54:43	22.0996039		
12:55:18	19.7391901		
12:55:44	15.5471393		
12:56:10	13.963474		
12:56:44	14.7464995		
12:57:10	13.6511275		
12:57:45	12.0790417		
12:58:11	11.468214		
12:58:36	15.8095271		
12:59:11	13.8181063		
12:59:37	16.159476		
13:00:03	14.0120174		
13:00:37	13.1405631		
13:01:12	13.4794803		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
13:01:29	11.9635927		
13:02:04	13.7986486		
13:02:38	15.5156077		
13:03:04	12.6863901		
13:03:39	18.1649194		
13:04:05	12.2193433		
13:04:31	14.0023621		
13:05:05	12.0114298		
13:05:31	12.3220814		
13:06:06	10.9158257		
13:06:32	12.6604393		
13:07:06	11.9644503		
13:07:32	14.1861091		
13:07:58	13.9176807		
13:08:33	16.0649346		
13:12:17		8.5320737	53.10707
13:12:52		7.9840942	67.3669
13:13:09		8.572653	52.73463
13:13:44		8.9704096	51.56462
13:14:18		9.58809	64.04455
13:14:36		10.283587	51.73821
13:15:19		10.125407	52.4636
13:15:45		8.5906352	88.88133
13:16:02		9.1035256	55.73506
13:16:45		9.7791309	51.66279
13:17:11		7.9147116	34.87059
13:17:46		9.4866418	57.64345
13:18:12		8.9965872	61.2924
13:18:37		9.0811672	77.55697
13:19:12		8.2961569	53.63252
13:19:38		7.2239884	84.76683
13:20:12		8.4084262	80.10125
13:20:38		9.5554674	76.13868
13:21:13		7.8912392	41.63186
13:21:39		8.7651261	62.07481
13:22:05		8.5180699	63.25564
13:22:39		10.896334	63.52559
13:23:05		8.7943273	47.99579
13:23:40		9.1270775	79.1817
13:24:06		8.4839355	56.46514
13:24:32		10.37684	84.23921
13:25:06		8.304034	69.1533
13:25:32		9.6169729	43.72285
13:26:07		9.5515686	54.18504
13:26:33		8.4044479	51.9349
13:26:59		10.705532	80.46971
13:27:33		10.728766	62.77313
13:27:59		9.336021	66.96487
13:28:34		7.8450107	90.35773
13:29:00		9.7694237	64.32135

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
13:29:34		8.6943113	58.34971
13:30:00		8.982106	49.26359
13:30:26		8.7731624	65.10737
13:31:00		9.7330615	84.87473
13:31:26		8.6412399	68.79602
13:32:01		8.2830283	50.78871
13:32:27		8.7417334	84.97722
13:32:53		8.0296862	56.09271
13:33:27		11.473436	48.70602
13:33:53		7.5908729	60.08198
13:34:28		6.9381829	57.2277
13:34:54		8.2503261	76.20183
13:35:28		10.121827	79.13767
13:35:54		10.81072	56.98591
13:36:20		8.3405554	40.9422
13:36:55		7.7117356	40.70329
13:37:21		8.6876276	47.1975
13:37:47		8.6881846	71.83435
13:38:21		7.9788427	61.28122
13:38:56		10.11944	70.43626
13:39:22		8.2231141	122.4343
13:39:48		9.2289235	85.38395
13:40:22		7.5923051	54.75814
13:40:48		8.4159055	65.82265
13:41:23		8.5592857	88.38944
13:43:58	13.1576052		
13:44:33	13.1777807		
13:44:59	12.5423383		
13:45:24	14.5139785		
13:45:59	13.2262462		
13:46:25	12.7118451		
13:47:00	13.1224214		
13:47:25	13.3249515		
13:47:51	12.0821665		
13:48:26	13.2258672		
13:48:52	13.6114035		
13:49:26	11.8112706		
13:49:52	13.9691427		
13:50:18	11.8134182		
13:50:53	12.9830783		
13:51:19	13.9729564		
13:51:53	11.8845008		
13:52:19	15.0590032		
13:52:45	12.1767223		
13:53:20	11.9552273		
13:53:46	12.8281676		
13:54:20	12.9033507		
13:54:46	13.3950555		
13:55:12	11.8041808		
13:55:47	14.4555146		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
13:56:12	12.1098613		
13:56:38	11.0386961		
13:57:13	13.3288676		
13:57:39	14.9115758		
13:58:13	12.1286546		
13:58:39	13.913204		
13:59:14	14.3438375		
13:59:40	15.2184367		
14:00:14	13.2289112		
14:00:40	2.38866963		
14:01:06	0.62315705		
14:01:41	0.68745682		
14:02:07	0.715081		
14:02:41	0.73317666		
14:03:07	0.49981828		
14:03:42	0.20874692		
14:35:40	3.33578119		
14:36:06	12.1122279		
14:36:32	11.0390449		
14:37:06	15.0248311		
14:37:32	13.3528957		
14:38:07	12.5680167		
14:38:33	13.7675955		
14:38:59	15.5338518		
14:39:33	14.172124		
14:39:59	12.5239745		
14:40:34	11.3501937		
14:41:00	13.5582624		
14:41:25	12.7604721		
14:42:00	14.3128191		
14:42:26	12.891212		
14:43:00	12.8556563		
14:43:26	14.219314		
14:44:01	13.1415822		
14:44:27	12.7111764		
14:44:53	13.6285652		
14:45:27	15.1721418		
14:45:53	13.3411533		
14:46:28	13.3893969		
14:46:54	12.7090331		
14:47:20	13.9682232		
14:47:54	13.6445637		
14:48:20	13.842548		
14:48:55	12.7014648		
14:49:21	12.7914992		
14:49:47	15.1967478		
14:50:21	13.5314914		
14:50:47	12.6979999		
14:51:22	14.7207764		
14:51:48	16.3321206		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
14:52:13	13.3426119		
14:52:48	12.5794866		
14:53:14	12.4624204		
14:53:48	15.0336765		
14:54:14	14.7660855		
14:54:49	12.7433479		
14:55:15	14.0647391		
14:55:41	16.7532213		
14:56:15	14.6495512		
14:56:41	12.1485865		
14:57:16	14.5755629		
14:57:42	12.9605261		
14:58:08	8.8398057		
14:58:42	16.5423488		
14:59:08	12.4036049		
14:59:43	14.7170506		
15:00:09	13.7062475		
15:00:35	15.2349181		
15:01:09	14.9092567		
15:01:35	13.6962881		
15:02:01	12.9689275		
15:02:36	12.6526779		
15:03:10	15.0580389		
15:03:27	13.682365		
15:04:11	13.1849296		
15:04:54	13.440255		
15:05:20	12.3031527		
15:05:46	13.7136818		
15:06:20	15.1510842		
15:06:46	13.0215108		
15:07:21	14.3567704		
15:07:47	14.4565567		
15:08:12	13.7066886		
15:08:47	9.9857072		
15:09:13	10.6732977		
15:09:48	13.8933701		
15:10:13	12.2508561		
15:10:39	13.0851505		
15:11:14	11.7189835		
15:11:40	13.61812		
15:12:14	12.427522		
15:12:40	12.0730372		
15:13:06	11.8979943		
15:13:41	13.2612413		
15:14:07	14.8950973		
15:14:41	12.7951428		
15:15:07	12.8202533		
15:15:42	13.344281		
15:16:08	13.7272446		
15:16:34	12.4562127		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
15:17:08	13.1186278		
15:17:34	14.1803251		
15:18:00	11.3393824		
15:18:35	13.6773939		
15:19:00	13.6473455		
15:19:26	14.8804824		
15:20:01	13.7715807		
15:20:36	13.2312346		
15:20:53	14.957692		
15:21:27	11.4462975		
15:22:02	14.4826113		
15:22:19	13.1044857		
15:23:02	14.1223498		
15:23:28	14.0805402		
15:24:03	14.291799		
15:24:29	14.8800629		
15:24:55	14.4179339		
15:25:29	14.8500404		
15:25:55	14.9344566		
15:26:30	12.0677808		
15:26:56	13.0533854		
15:27:22	14.3280955		
15:27:56	14.4700964		
15:28:22	12.9013804		
15:28:57	12.7972082		
15:29:23	14.6721682		
15:29:57	13.5675185		
15:30:23	12.7832116		
15:30:49	13.8465549		
15:31:24	14.6248038		
15:31:49	15.2070965		
15:32:24	12.8821706		
15:32:50	14.4416723		
15:33:24	13.3025233		
15:33:50	10.745653		
15:34:51		10.072734	101.5439
15:35:17		8.8557532	45.88531
15:35:51		11.159622	59.73949
15:36:17		8.8770772	48.98029
15:36:52		10.53486	61.42124
15:37:18		14.316611	56.52
15:37:44		10.659383	53.87901
15:38:18		8.0401095	68.60294
15:38:44		10.645618	56.19556
15:39:19		10.287486	58.45076
15:39:45		10.823292	53.71841
15:40:11		12.023325	64.21813
15:40:45		11.539795	81.64116
15:41:11		10.881853	62.6396
15:41:46		9.0437706	61.23827

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
15:42:12		13.987283	48.1618
15:42:37		9.9316613	57.26993
15:43:12		10.504704	83.21392
15:43:38		9.5033509	55.16594
15:44:04		11.750091	81.19077
15:44:38		8.4198043	73.65179
15:45:13		9.3003749	99.14683
15:45:39		9.4438346	51.98759
15:46:05		12.083955	92.37943
15:46:39		9.9463812	68.37594
15:47:05		10.120872	66.23334
15:47:40		10.259717	55.09304
15:48:06		11.82743	58.89429
15:48:32		10.905405	61.14985
15:49:06		20.386636	59.44501
15:49:32		25.420059	54.49974
15:50:07		17.10958	57.58643
15:50:33		21.254953	85.22227
15:50:59		13.252957	78.97563
15:51:33		10.769822	78.1362
15:51:59		10.868963	46.65256
15:52:34		11.446621	69.28105
15:53:00		16.706015	52.70359
15:53:34		12.960627	67.26007
15:54:00		10.497862	44.66694
15:54:17		10.979323	72.22194
15:55:00		11.66559	53.25539
15:55:26		11.457204	65.43
15:56:01		10.096525	44.58863
15:56:27		10.812152	77.21557
15:57:01		9.9315022	62.90486
15:57:27		9.778017	56.71777
15:57:53		9.8135835	84.62969
15:58:28		7.7213632	35.92872
15:58:54		6.9743065	29.04259
15:59:28		8.6540503	33.70636
15:59:54		7.878588	44.67849
16:00:29		9.8795447	41.54813
16:00:55		11.195746	42.11293
16:01:21		9.1069469	51.30334
16:01:55		9.6359895	48.7634
16:02:21		10.801809	58.7586
16:02:56		12.82401	57.62143
16:03:22		13.071464	69.25687
16:03:48		11.33467	49.28633
16:10:42		8.8445342	51.16494
16:11:17		10.001123	52.09513
16:11:43		8.2331396	46.54447
16:12:09		8.1011376	52.25248
16:12:43		7.5906342	53.12385

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
16:13:09		8.5362112	44.96251
16:13:44		7.9928466	69.06723
16:14:10		7.0870532	36.62109
16:14:36		8.9392192	39.70345
16:15:10		9.4365144	120.3783
16:15:36		7.946618	54.09807
16:16:02		9.1400469	58.68227
16:16:36		6.3047482	88.89324
16:17:02		6.6328039	38.07078
16:17:28		5.924576	54.2989
16:18:03		28.038139	46.4842
16:18:37		8.5632641	42.70839
16:18:55		8.1286678	39.16067
16:19:29		6.6177657	57.93811
16:20:04		7.9100967	46.68341
16:20:21		8.9755019	44.27159
16:21:04		7.5431326	31.02008
16:21:30		6.8298124	67.95208
16:22:05		6.9893447	55.39583
16:22:31		7.0653314	43.05557
16:22:57		8.7048142	35.84897
16:23:31		7.0185458	58.63752
16:23:57		5.5305591	51.00001
16:24:32		5.9344423	40.45861
16:24:58		7.8559909	50.12323
16:25:24		7.0940551	43.56172
16:25:58		7.1799878	36.45616
16:26:24		9.6009799	53.94271
16:26:59		7.0846662	60.38765
16:27:24		7.5159206	37.30173
16:27:50		7.633521	46.05835
16:28:25		7.1383741	85.77876
16:28:51		6.1189587	65.38435
16:29:25		8.7895533	44.76745
16:29:51		7.3723017	35.81035
16:30:26		10.27746	57.88344
16:30:52		8.6381368	67.81981
16:31:18		8.6882642	74.10092
16:31:52		7.4015825	91.64358
16:32:18		7.9278402	36.69525
16:32:53		9.5297672	64.94298
16:33:19		8.0561821	77.19807
16:33:45		6.3590131	60.29545
16:34:19		5.9443882	52.67093
16:34:45		5.3817683	46.11537
16:35:20		9.3251999	33.44869
16:35:46		5.8555912	50.93595
16:36:20		8.637182	76.95032
16:36:46		8.3403167	52.7617
16:37:21		8.280323	39.87848

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
16:37:47		7.5264235	43.72935
16:38:12		9.1708394	58.2261
16:38:47		7.677999	39.33552
16:39:13		9.0600023	74.90263
16:39:48		8.0998645	69.58835
16:41:05	26.9083385		
16:41:40	27.2243791		
16:42:06	26.5131929		
16:42:40	21.7320652		
16:43:06	23.8253622		
16:43:32	25.712533		
16:44:07	21.7274746		
16:44:33	20.308903		
16:45:07	27.7749197		
16:45:33	28.8605758		
16:46:08	27.905981		
16:46:34	26.0276901		
16:47:00	21.8616189		
16:47:34	25.2032788		
16:48:00	24.8471366		
16:48:35	31.4864547		
16:49:00	31.3507249		
16:49:26	26.6079318		
16:50:01	23.8284077		
16:50:27	26.1103277		
16:50:53	23.5336524		
16:51:27	24.1671245		
16:52:02	25.0987679		
16:52:19	23.0105515		
16:52:54	25.092713		
16:53:28	24.7249451		
16:53:46	29.4219176		
16:54:29	23.5091169		
16:54:55	23.6114832		
16:55:12	20.6241033		
16:55:55	22.4104947		
16:56:21	23.6456538		
16:56:56	21.8183868		
16:57:22	22.9239474		
16:57:48	22.5946842		
16:58:22	23.8819568		
16:58:48	25.1971432		
16:59:23	24.0053546		
16:59:48	22.0909214		
17:00:23	23.9632352		
17:00:49	24.7376993		
17:01:15	24.3385685		
17:01:49	25.0885072		
17:02:15	28.4724653		
17:02:50	22.9553421		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
17:03:16	2.97909269		
17:03:50	3.31502054		
17:04:16	1.9884665		
17:04:51	2.43314993		
17:05:17	2.33291971		
17:05:43	3.0443322		
17:06:17	2.07621353		
17:06:43	2.01925435		
17:07:18	2.78075529		
17:07:44	1.59401997		
17:08:10	3.59170185		
17:08:44	3.34003305		
17:09:10	1.320916		
17:09:45	1.951641		
17:11:02	2.65420672		
17:11:37	1.71739189		
17:12:03	1.95301025		
17:12:29	2.83596616		
17:13:03	2.49863735		
17:13:29	2.14371734		
17:14:04	2.08536297		
17:14:30	1.52752076		
17:14:56	2.33404249		
17:15:30	2.24621331		
17:15:56	2.01835786		
17:16:31	2.56379183		
17:16:57	1.86430619		
17:17:31	2.5005615		
17:17:57	1.29213878		
17:18:23	1.76238675		
17:18:58	1.74014299		
17:19:24	1.48588992		
17:19:58	1.62133714		
17:20:24	20.5366229		
17:20:59	21.2436192		
17:21:24	22.9010018		
17:21:50	21.903574		
17:22:25	23.9548799		
17:22:51	20.6616264		
17:23:25	21.8605797		
17:23:51	25.6438906		
17:24:17	22.3965918		
17:24:52	23.7845616		
17:25:18	22.2401764		
17:25:44	26.1284666		
17:26:18	21.2763745		
17:26:53	26.1313968		
17:27:10	26.7021344		
17:27:45	21.913682		
17:28:19	26.0764684		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
17:54:40	26.909813		
17:55:06	25.0984422		
17:55:41	22.371735		
17:56:07	22.2653922		
17:56:33	25.1556767		
17:57:07	21.3488638		
17:57:33	23.0407138		
17:58:08	25.7771657		
17:58:34	28.4070024		
17:59:08	24.2275645		
17:59:34	18.5001611		
18:00:00	19.8214731		
18:00:35	20.1060615		
18:01:00	23.317754		
18:01:35	25.7923355		
18:02:01	24.468556		
18:02:36	20.6162828		
18:03:01	26.0781504		
18:03:27	20.2140762		
18:04:02	19.3741867		
18:04:28	20.0748773		
18:04:54	27.3770745		
18:05:28	21.913264		
18:06:03	23.8113109		
18:06:20	22.14539		
18:07:03	26.4762521		
18:07:29	20.2007902		
18:07:47	25.5042765		
18:08:30	23.3751903		
18:08:56	19.5070597		
18:09:30	22.8699487		
18:09:56	26.7915548		
18:10:31	17.9732206		
18:10:57	19.5441591		
18:12:32		8.6595404	65.15356
18:12:58		8.1963	43.86468
18:13:24		8.8472395	40.01435
18:13:58		9.0448845	46.74476
18:14:24		8.3509787	41.98716
18:14:59		8.9303873	73.78297
18:15:24		9.9619764	52.51972
18:15:50		8.8735763	63.26015
18:16:25		7.9726365	32.43856
18:16:51		8.5738465	45.10001
18:17:25		8.1277926	61.25162
18:17:51		7.6090143	40.93769
18:18:17		11.493884	40.0665
18:18:52		7.8830438	45.13014
18:19:18		6.3934657	46.64335
18:19:52		10.207919	58.92948

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
17:28:36	22.8278855		
17:29:20	25.000273		
17:29:46	24.2311778		
17:30:20	20.5057702		
17:30:46	22.5634654		
17:31:12	23.9313418		
17:31:47	25.8869663		
17:32:12	27.6736762		
17:32:47	24.621655		
17:33:13	24.2161032		
17:33:48	23.4342639		
17:34:13	22.1789668		
17:34:48	23.7880568		
17:35:14	22.5166675		
17:35:40	21.7537757		
17:36:14	21.9487116		
17:36:40	21.561512		
17:37:15	28.5491373		
17:37:41	23.3365747		
17:38:15	23.5966478		
17:38:41	20.0702679		
17:39:07	21.9775767		
17:39:42	21.7290716		
17:40:08	22.7969852		
17:41:51	20.4237683		
17:42:17	25.7196329		
17:42:52	24.9419374		
17:43:09	23.1242638		
17:43:52	23.0994401		
17:44:18	23.1519859		
17:44:36	20.2714894		
17:45:19	26.7093309		
17:45:45	23.8325054		
17:46:19	18.9837802		
17:46:45	21.5284339		
17:47:11	21.6737988		
17:47:46	22.6362444		
17:48:12	22.6903412		
17:48:46	22.9404793		
17:49:12	20.2117788		
17:49:47	22.5501909		
17:50:12	25.6408508		
17:50:38	23.8074381		
17:51:13	17.9345834		
17:51:39	23.0603704		
17:52:13	20.4512988		
17:52:39	17.1150884		
17:53:05	23.0771142		
17:53:40	25.0171465		
17:54:06	24.1462976		

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
18:20:18		7.0415408	39.87559
18:20:44		9.7119762	57.60231
18:21:19		7.9388204	45.56971
18:21:45		7.5323114	52.4064
18:22:19		10.701156	44.5123
18:22:45		8.7971917	48.97759
18:23:11		7.5288105	39.78519
18:23:46		8.3871022	62.72892
18:24:12		9.362676	36.08661
18:24:46		8.9869596	73.9663
18:25:12		7.4586322	62.52412
18:25:38		8.2679901	47.87778
18:26:12		6.8321994	46.54158
18:26:38		9.1192003	63.56547
18:27:13		7.5871333	54.38317
18:27:39		8.4522678	43.38759
18:28:05		7.3425436	39.19134
18:28:39		8.6053551	66.28549
18:29:05		8.6737829	40.99381
18:29:40		7.4381834	76.75652
18:30:06		7.8422258	45.50114
18:30:40		9.0545917	43.35024
18:31:06		19.634249	38.90354
18:31:32		7.7878814	53.73465
18:32:07		8.5865773	49.44187
18:32:33		7.261385	36.81922
18:33:07		5.5401071	47.65998
18:33:33		7.1563563	47.57012
18:34:08		5.7904256	41.51024
18:34:34		5.0165548	46.17799
18:35:00		7.16487	44.61515
18:35:34		6.5424951	35.1151
18:36:00		3.9700865	7.243776
18:36:35		2.6904068	7.746314
18:36:52		3.2947199	1.665325
18:37:26		3.5321485	5.852366
18:38:01		2.2313038	4.571388
18:38:18		14.101064	7.417724
18:39:01		11.196064	9.335852
18:39:27		19.061046	2.836412
18:40:02		3.3940198	5.518362
18:40:28		4.691443	3.215346
18:40:54		4.7212012	6.8966
18:41:28		3.2219954	5.572857
18:42:12		3.9061145	3.428451
18:42:37		3.7594721	4.780704
18:43:12		4.860046	4.19895
18:43:38		2.1219785	6.095425
18:44:04		4.2830245	0.47872
18:44:38		5.0997821	2.479311

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
18:45:13		3.0438444	7.178274
18:45:39		3.0538699	6.010435
18:46:05		4.9184484	5.986797
18:46:39		3.333867	2.573323
18:47:05		5.0537126	6.02848
18:47:40		3.982499	3.661405
18:48:06		3.7722824	3.175828
18:48:40		4.8189098	1.605959
18:49:06		1.9748587	3.15616
18:49:32		14.052926	39.24999
18:50:07		8.5140119	40.51816
18:50:33		7.5283331	31.2967
18:50:59		7.8833621	39.74892
18:51:33		7.0018367	31.05491
18:51:59		7.8275059	43.38614
18:52:34		9.2384716	34.50844
18:53:00		9.0038278	48.44491
18:53:25		8.0596831	59.07041
18:54:00		11.244918	60.40678
18:54:17		9.7464288	60.05744
18:55:00		10.13774	52.21332
18:55:26		9.166145	42.93124
18:56:01		7.8146955	61.54629
18:56:27		9.6239748	48.85164
18:56:53		8.9288755	40.3729
18:57:27		9.2005976	50.47925
18:57:53		7.1387719	59.24508
18:58:28		10.525312	60.66824
18:58:54		8.7435634	60.44612
18:59:20		10.117928	58.40005
18:59:54		8.0356537	44.74363
19:00:20		6.8878964	44.59964
19:00:55		8.9838564	76.48838
19:01:21		9.4171	49.32982
19:01:47		9.7503276	58.22809
19:02:21		10.186515	51.38057
19:02:47		8.8446933	44.29956
19:03:22		10.863791	42.80385
19:03:48		7.4552108	43.90745
19:04:13		10.820984	36.08391
19:04:48		8.7716506	45.64351
19:05:14		8.5973984	36.34772
19:05:48		8.0662871	59.99555
19:06:14		6.355353	51.52655
19:06:49		10.046159	76.66828
19:07:15		11.507968	32.85701
19:07:41		7.1561971	34.83487
19:08:15		6.1858748	38.03578
19:08:41		7.768467	58.92479
19:09:16		8.2780155	88.52657

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
19:09:42		8.876202	58.729
19:10:08		8.2260581	43.65032
19:10:42		7.2812768	45.47227
19:11:08		7.5083617	66.93672
19:12:17		8.0616722	38.09099
19:12:52		8.0663667	49.37817
19:13:09		8.6491967	48.90866
19:13:52		9.4066767	45.15504
19:14:18		9.1287484	59.59893
19:14:36		16.608545	44.5197
19:15:19		10.107425	55.78541
19:15:45		7.4241	85.12483
19:16:02		7.6976522	35.7997
19:16:45		7.5999436	39.35898
19:17:11		5.3246391	51.90133
19:17:46		7.9198039	33.84477
19:18:12		6.8046691	42.95181
19:18:37		7.6741003	45.83731
19:19:12		6.9178137	35.01495
19:19:38		7.6322479	41.88575
19:20:12		4.8020415	31.06195
19:20:38		7.4938009	37.53234
19:21:13		5.3342667	59.83621
19:21:39		6.6325652	65.38399
19:22:05		7.4972223	47.76771
19:22:39		6.0292865	70.50158
19:23:05		6.2659194	36.26164
19:23:31		6.9521072	44.4385
19:24:06		9.6841276	59.25157
19:24:32		5.623971	42.88559
19:25:06		8.0728912	66.9221
19:25:32		7.0089182	54.94959
19:25:58		9.41527	45.75178
19:26:33		8.354957	44.52475
19:26:59		7.4310224	54.30143
19:27:33		8.3199475	49.92997
19:27:59		7.5509302	43.05629
19:28:25		4.5295237	32.49775
19:29:00		5.3522489	63.82873
19:29:25		7.0444848	35.44297
19:30:00		6.9812288	37.90784
19:30:26		5.8241621	39.17583
19:31:00		7.9430375	58.90584
19:31:26		5.6832486	74.1767
19:31:52		7.0302422	35.43665
19:32:27		7.0543511	43.18296
19:32:53		8.3994351	67.95118
19:33:27		6.8399174	37.6794
19:33:53		7.1958216	78.48284
19:34:19		6.7284437	35.78166

Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
19:34:54		7.7900297	46.92052
19:35:20		7.3458854	51.88491
19:35:54		7.0876898	38.50349
19:36:20		7.0835523	37.02637
19:36:46		7.4077887	44.89142
19:37:21		9.1131532	38.67455
19:37:47		9.715318	45.46361
19:38:21		7.3509777	50.82642
19:38:47		8.3603676	46.47121
19:39:13		7.0169545	45.95261
19:39:48		5.8319597	60.37665
19:40:13		8.0814845	50.5157
19:40:48		6.3968075	45.52261
19:41:14		7.2349687	44.30533
19:42:40	17.5162846		
19:43:15	16.2558796		
19:43:41	21.76412		
19:44:07	18.968116		
19:44:41	17.7399286		
19:45:07	18.2100007		
19:45:42	20.2346221		
19:46:08	19.5475303		
19:46:34	18.3430942		
19:47:08	21.5544683		
19:47:34	20.6891828		
19:48:00	20.1445675		
19:48:35	19.8075803		
19:49:00	14.8485141		
19:49:26	17.4505291		
19:50:01	20.4503705		
19:50:36	19.861863		
19:50:53	22.2731493		
19:51:36	21.7782405		
19:52:02	20.2865151		
19:52:19	19.3193477		
19:53:02	17.1208594		
19:53:28	19.668723		
19:54:03	21.3990272		
19:54:29	20.0753846		
19:55:03	20.7492365		
19:55:29	22.1569421		
19:55:55	19.1472767		
19:56:30	17.1945854		
19:56:56	21.7803765		
19:57:30	21.3760801		
19:57:56	20.215728		
19:58:31	19.11225		
19:58:57	20.3346678		
19:59:23	19.9517417		
19:59:57	26.2786311		

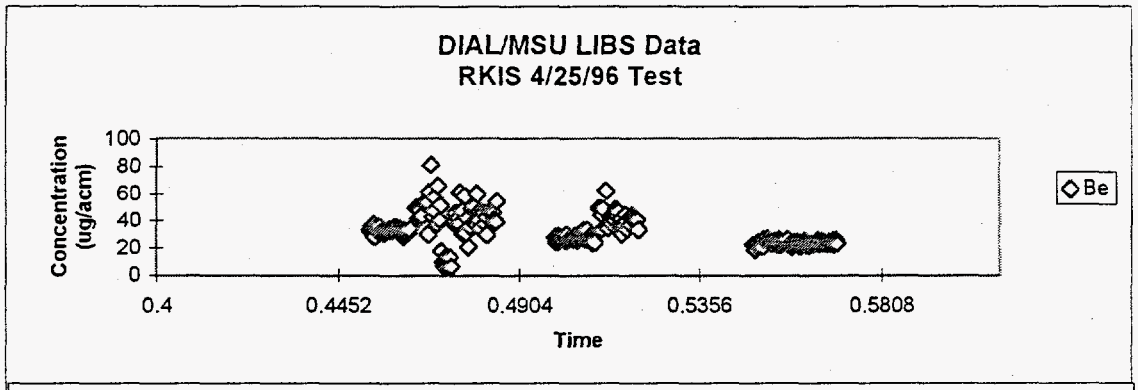
Time	Concentration (ug/acm)		
4/24/96	Be	Cr	Y
20:00:23	21.3339621		
20:00:58	24.3861995		
20:01:24	21.2107112		
20:01:58	19.313372		
20:02:24	20.203631		
20:02:50	25.1054412		
20:03:24	18.5381527		
20:03:50	21.8531959		
20:04:25	19.7584013		
20:04:51	20.2381231		
20:05:25	7.71440545		
20:05:51	22.6869743		
20:06:26	20.2053592		
20:06:52	22.1673542		
20:07:18	15.1252718		
20:07:52	16.0578823		
20:08:18	18.2754751		
20:08:53	14.3135671		
20:09:19	11.6909312		
20:09:45	11.6015642		
20:10:19	10.3521534		
20:10:45	0.87032751		
20:11:11	0.32133062		
20:11:46	0.08150652		

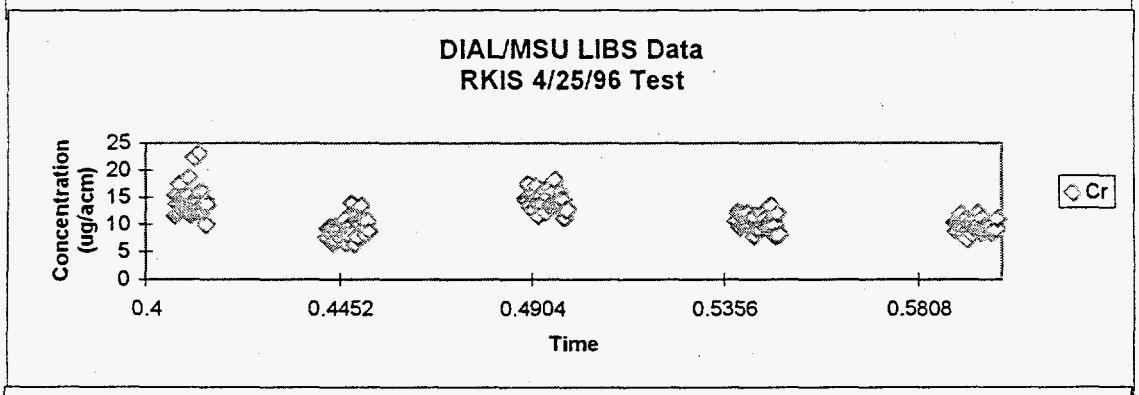
LIBS RKIS 4/25/96 Data Summary

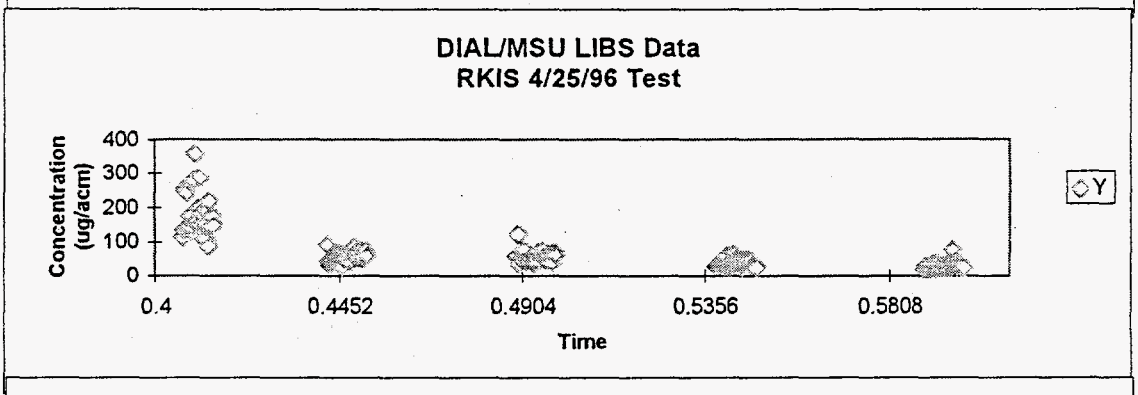
Time		Time Averaged Concentration (ug/acm)				Remarks	
From	To	Be	Cr	Y	Cd		
10:36	10:51		9	57		Rm #1 :	10:35-11:20
10:52	11:06	33					
11:43	11:58		14	55		RM #2 :	11:43-12:43
11:09	11:38	41			27		
11:59	12:13	27					
12:14	12:29	41			27		
12:55	13:09		10	36			
13:11	13:40	23				RM #3 :	13:22-14:22
14:08	14:23		10	28			

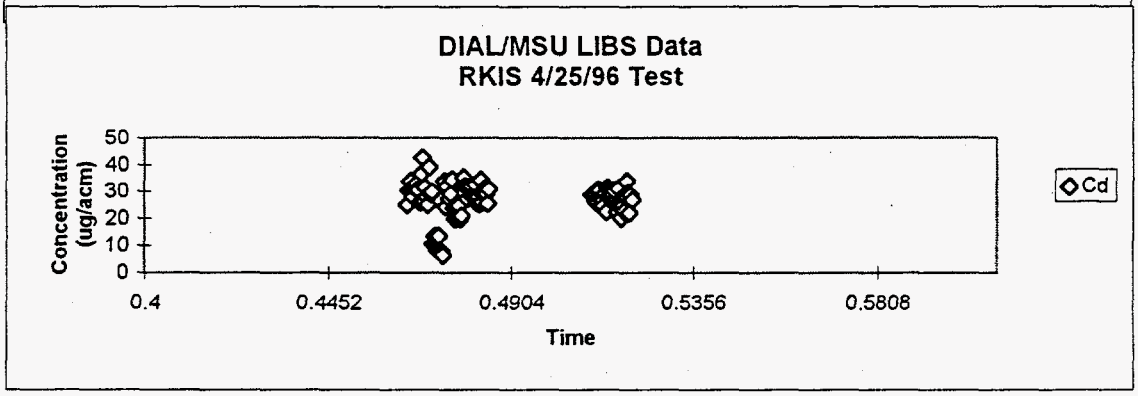
Remarks: Medium Metals

1. Cr, Be, Cd, and Y were monitored from three spectral regions during EPA sampling.
2. The Cd line in the spectral region of 320nm which was monitored on 4/22/96 test has strong spectral interference. To obtain Cd concentrations, the spectral region of 230 nm was selected to be monitored in today's test.
3. LIBS Sampling time was 26 seconds (equivalent to an average of 260 laser pulses).
4. In general, each selected spectral region was monitored for ~15 - 30 minutes during EPA sampling.
5. 11:29 - 11:34: Checked window.
6. 16:05 -16:10 : Checked window. Window was clean.
7. 15:35 - 16:11 : On-site calibration.
8. See also pertinent remarks on &042296&.


DIAL/MSU LIBS Data
RKIS 4/25/96 Test
Concentration (ug/acm)
100
80
60
40
20
0
0.4
0.4452
0.4904
0.5356
0.5808
Time
Be


DIAL/MSU LIBS Data
RKIS 4/25/96 Test
Concentration (ug/acm)
25
20
15
10
5
0
0.4
0.4452
0.4904
0.5356
0.5808
Time
Cr


DIAL/MSU LIBS Data
RKIS 4/25/96 Test
Concentration (ug/acm)
400
300
200
100
0
0.4
0.4452
0.4904
0.5356
0.5808
Time
Y


DIAL/MSU LIBS Data
RKIS 4/25/96 Test
Concentration (ug/acm)
50
40
30
20
10
0
0.4
0.4452
0.4904
0.5356
0.5808
Time
Cd

Time		Concentration (ug/acm)		
4/25/96	Be	Cr	Y	Cd
0.4068		11.40294	110.2361	
0.407		15.17973	133.9102	
0.4073		13.69023	253.4345	
0.4076		12.05327	139.8149	
0.4078		17.24148	242.2955	
0.4081		12.78401	138.0008	
0.4083		14.77553	138.5455	
0.4086		13.51073	173.0742	
0.4089		13.87504	268.1342	
0.4091		14.41992	142.5215	
0.4094		13.83918	280.5053	
0.4096		15.10419	154.4157	
0.4099		18.61831	359.408	
0.4102		11.64864	158.5744	
0.4104		13.40294	145.0396	
0.4107		12.34756	195.9609	
0.411		12.57183	287.8325	
0.4112		22.06049	177.9243	
0.4115		14.69872	140.3651	
0.4118		13.81627	105.2542	
0.412		12.9022	138.0653	
0.4123		23.06389	149.8541	
0.4125		15.64695	191.3891	
0.4128		11.88119	103.2204	
0.4131		12.65522	86.56779	
0.4133		15.93297	217.0707	
0.4136		13.55741	138.2308	
0.4139		14.21856	172.2788	
0.4141		9.951845	172.6246	
0.4144		13.59602	144.1879	
0.4423		7.721841	89.51325	
0.4426		9.400709	44.21078	
0.443		8.300613	33.13832	
0.4433		9.45211	35.35563	
0.4436		6.402457	48.74644	
0.444		7.171394	60.78283	
0.4443		8.525151	67.09082	
0.4447		9.698291	67.10272	
0.445		9.074006	53.47626	
0.4453		7.441127	65.20336	
0.4457		10.34533	57.08371	
0.446		7.087531	26.64845	
0.4464		11.0102	59.62834	
0.4467		6.575436	48.83919	
0.447		8.34342	57.38938	
0.4474		7.808251	52.93528	
0.4477		9.925535	41.3085	
0.448		13.7933	45.16353	
0.4484		8.686195	45.04985	
0.4487		6.447014	86.1613	

Time		Concentration (ug/acm)		
4/25/96	Be	Cr	Y	Cd
0.4491		7.643228	56.01223	
0.4494		10.42522	57.35871	
0.4497		10.08769	72.83293	
0.4501		13.32847	55.03819	
0.4504		10.90198	65.95437	
0.4508		10.62207	71.59869	
0.4511		7.981866	44.21691	
0.4514		9.409143	55.55209	
0.4518		10.59597	73.10071	
0.4521		8.674101	58.80948	
0.4532	32.75957			
0.4535	35.01958			
0.4538	37.2094			
0.4542	27.96515			
0.4545	34.12782			
0.4549	35.22706			
0.4552	31.17011			
0.4555	35.44605			
0.4559	31.27649			
0.4562	31.6685			
0.4565	30.60244			
0.4569	30.88134			
0.4572	31.94605			
0.4576	32.36074			
0.4579	32.49316			
0.4582	33.52605			
0.4586	32.89214			
0.4589	34.38911			
0.4593	34.93299			
0.4596	34.91928			
0.4599	33.74929			
0.4603	34.15608			
0.4606	32.55325			
0.461	33.60722			
0.4613	28.09603			
0.4616	32.28418			
0.462	30.42078			
0.4623	32.22337			
0.4627	30.83137			
0.463	33.77815			
0.4646	49.66341			24.98952
0.465	40.53289			30.3983
0.4653	48.13235			33.6903
0.4656	42.26576			31.07311
0.466	43.30383			27.84065
0.4663	53.26681			31.96338
0.4667	54.08542			32.75579
0.467	51.95006			30.43763
0.4673	54.37863			30.43784
0.4677	29.94148			25.71328

Time		Concentration (ug/acm)		
4/25/96	Be	Cr	Y	Cd
0.468	60.7324			36.54341
0.4683	80.94465			42.46078
0.4687	42.08831			26.1926
0.469	47.20781			31.36662
0.4693	57.1214			27.82357
0.4697	37.55881			24.86606
0.47	65.59892			39.07317
0.4704	40.44216			28.84115
0.4707	51.32745			29.76192
0.471	17.069			10.47339
0.4714	9.316234			13.08588
0.4717	6.255221			9.445839
0.4721	13.19898			8.031186
0.4724	8.871284			13.36359
0.4728	6.602286			7.499686
0.4731	13.19049			7.644505
0.4734	6.180801			6.422586
0.4738	39.11602			33.70719
0.4741	39.28028			24.23836
0.4744	45.34688			31.92771
0.4751	41.72829			27.31034
0.4754	38.19484			29.179
0.4757	60.91789			34.41251
0.4761	47.33988			23.75857
0.4764	30.97686			19.79145
0.4768	58.41692			23.97215
0.4771	30.64745			23.63449
0.4774	41.68136			24.70134
0.4778	20.3736			19.63884
0.4781	35.67085			20.9659
0.4785	48.64635			35.10657
0.4788	50.17965			32.26027
0.4791	50.78551			31.59341
0.4795	37.4835			27.24707
0.4798	59.80988			31.40897
0.4802	40.2408			31.26812
0.4805	47.794			32.11239
0.4808	34.00703			28.17135
0.4812	45.67875			28.3791
0.4815	45.2785			32.5419
0.4818	38.38994			25.66413
0.4822	42.3994			28.20928
0.4825	29.30791			25.15212
0.4829	47.29005			34.27757
0.4832	47.96518			25.84057
0.4835	44.81925			28.8652
0.4839	46.1237			31.19008
0.4842	40.67748			29.20061
0.4846	38.73231			25.42029
0.4849	54.43092			30.67727

Time		Concentration (ug/acm)		
4/25/96	Be	Cr	Y	Cd
0.4888		14.54775	55.84117	
0.4892		14.28311	58.5713	
0.4895		17.34406	122.832	
0.4898		13.4623	36.04204	
0.4902		15.25113	49.8901	
0.4905		12.62557	42.5875	
0.4909		15.72217	61.51615	
0.4912		17.11396	75.80774	
0.4915		13.54871	41.29226	
0.4919		11.4989	43.16167	
0.4922		15.37971	49.24699	
0.4926		13.05571	48.10875	
0.4929		13.45339	44.01698	
0.4932		16.21341	39.70399	
0.4936		12.27086	33.59918	
0.4939		15.00988	40.34096	
0.4942		16.74588	69.46186	
0.4946		13.39228	41.95955	
0.4949		13.46421	67.46506	
0.4953		16.14403	61.24224	
0.4956		18.17459	75.17474	
0.4959		14.28232	53.63757	
0.4963		13.46564	45.5439	
0.4966		13.95068	48.81284	
0.497		15.9031	62.84603	
0.4973		14.4432	55.87256	
0.4976		14.47455	48.21629	
0.498		11.2072	38.3521	
0.4983		12.74969	67.12113	
0.4987		12.65071	59.48904	
0.4995	27.99554			
0.4998	23.97674			
0.5002	25.4225			
0.5004	28.58271			
0.5008	26.78907			
0.5012	27.94893			
0.5014	26.49888			
0.5019	26.12655			
0.5022	24.66703			
0.5024	29.41852			
0.5029	25.9831			
0.5032	26.95702			
0.5034	26.65356			
0.5039	26.17475			
0.5042	28.86835			
0.5046	26.07253			
0.5049	25.30302			
0.5053	26.2478			
0.5056	27.7963			
0.5059	27.44761			

Time		Concentration (ug/acm)		
4/25/96	Be	Cr	Y	Cd
0.5063	32.88258			
0.5066	28.77583			
0.5069	26.19369			
0.5073	33.13183			
0.5076	27.52515			
0.508	28.67411			
0.5083	24.16439			
0.5086	23.23596			
0.509	27.55311			
0.5093	23.77517			
0.5104	48.98358			28.64003
0.5108	44.41296			28.51984
0.5111	33.31134			26.7959
0.5114	48.82268			25.68074
0.5118	35.93567			30.61475
0.5121	61.54922			30.46323
0.5124	34.37466			24.48078
0.5128	34.53311			26.60103
0.5131	42.61238			24.42565
0.5135	37.9128			29.22372
0.5138	42.40096			22.30318
0.5142	39.64344			31.45745
0.5145	47.92272			28.07552
0.5148	42.82647			30.27879
0.5152	46.09353			28.93863
0.5155	37.52305			25.84139
0.5158	40.69134			30.39752
0.5162	29.85566			24.68457
0.5165	36.0968			22.03197
0.5169	44.29742			31.00633
0.5172	39.19893			24.03488
0.5175	33.28363			19.88052
0.5179	42.57997			24.43845
0.5182	37.19767			22.48807
0.5185	43.77202			28.69522
0.5189	43.2227			33.7455
0.5192	39.02484			29.55178
0.5196	41.19685			21.89792
0.5199	40.09152			28.60145
0.5203	32.98886			26.75144
0.5385		10.78932	30.71946	
0.5389		12.14339	34.80672	
0.5392		9.308729	34.37257	
0.5395		11.90413	31.40515	
0.5399		9.956088	33.89331	
0.5402		11.03884	26.42199	
0.5406		11.71063	25.71446	
0.5409		10.27913	27.99493	
0.5412		12.06112	57.6384	
0.5416		9.715636	23.35966	

Time		Concentration (ug/acm)		
4/25/96	Be	Cr	Y	Cd
0.5419		9.973593	33.55948	
0.5423		11.0643	41.71667	
0.5426		7.818674	29.91414	
0.5429		11.495	62.20852	
0.5433		9.000168	45.86293	
0.5436		9.622861	28.51461	
0.5439		9.286848	33.93391	
0.5443		11.92578	45.8835	
0.5446		10.18858	26.98317	
0.545		11.0172	26.41279	
0.5453		9.337055	47.66648	
0.5456		10.03987	32.67855	
0.546		10.35042	46.07315	
0.5463		13.39443	36.17611	
0.5467		10.68238	45.10524	
0.547		10.90358	43.12324	
0.5473		9.78295	27.6741	
0.5477		7.661926	28.26487	
0.548		12.07679	34.25835	
0.5484		8.063741	22.87643	
0.5493	22.05311			
0.5496	18.01874			
0.55	22.87338			
0.5503	20.9665			
0.5507	24.25937			
0.551	24.74438			
0.5514	21.03177			
0.5517	26.0023			
0.552	26.22532			
0.5524	27.07669			
0.5527	25.22823			
0.5531	25.39243			
0.5534	23.21704			
0.5537	22.99571			
0.5541	23.19339			
0.5544	24.57495			
0.5548	23.02286			
0.5551	22.63735			
0.5554	26.26199			
0.5558	22.11807			
0.5561	23.90344			
0.5564	24.35944			
0.5568	23.69616			
0.5571	24.90472			
0.5575	26.31731			
0.5578	22.04802			
0.5582	21.62111			
0.5585	20.67653			
0.5588	22.43221			
0.5592	24.27371			

Time		Concentration (ug/acm)		
4/25/96	Be	Cr	Y	Cd
0.5597	24.20762			
0.5601	23.01528			
0.5604	20.89945			
0.5607	23.98808			
0.5611	22.19898			
0.5614	22.2518			
0.5618	25.44396			
0.5621	22.4097			
0.5625	22.41251			
0.5628	21.38714			
0.5631	22.76853			
0.5635	22.37486			
0.5638	23.11269			
0.5642	23.5076			
0.5645	24.10009			
0.5648	25.72985			
0.5652	23.10186			
0.5655	23.4594			
0.5659	23.32228			
0.5662	24.87401			
0.5665	23.80584			
0.5669	22.66866			
0.5672	23.14644			
0.5676	24.08247			
0.5679	22.68613			
0.5682	23.54407			
0.5686	25.06995			
0.5689	22.51921			
0.5693	25.93187			
0.5696	22.99524			
0.5895		10.55833	18.6865	
0.5898		8.848433	25.82887	
0.5901		9.669965	27.6593	
0.5905		9.557775	21.3634	
0.5908		12.06693	28.19684	
0.5911		9.120076	19.95358	
0.5915		8.230116	23.62058	
0.5919		10.59462	34.88359	
0.5921		7.072492	20.28434	
0.5925		8.926886	27.37943	
0.5929		10.34756	33.70582	
0.5931		9.873179	24.40985	
0.5935		8.152856	24.44756	
0.5939		10.86952	28.59797	
0.5942		8.999372	25.64211	
0.5946		9.783507	20.64703	
0.5949		12.16997	25.58436	
0.5952		9.284382	30.78749	
0.5956		8.528891	23.36146	
0.5959		11.12533	23.03396	

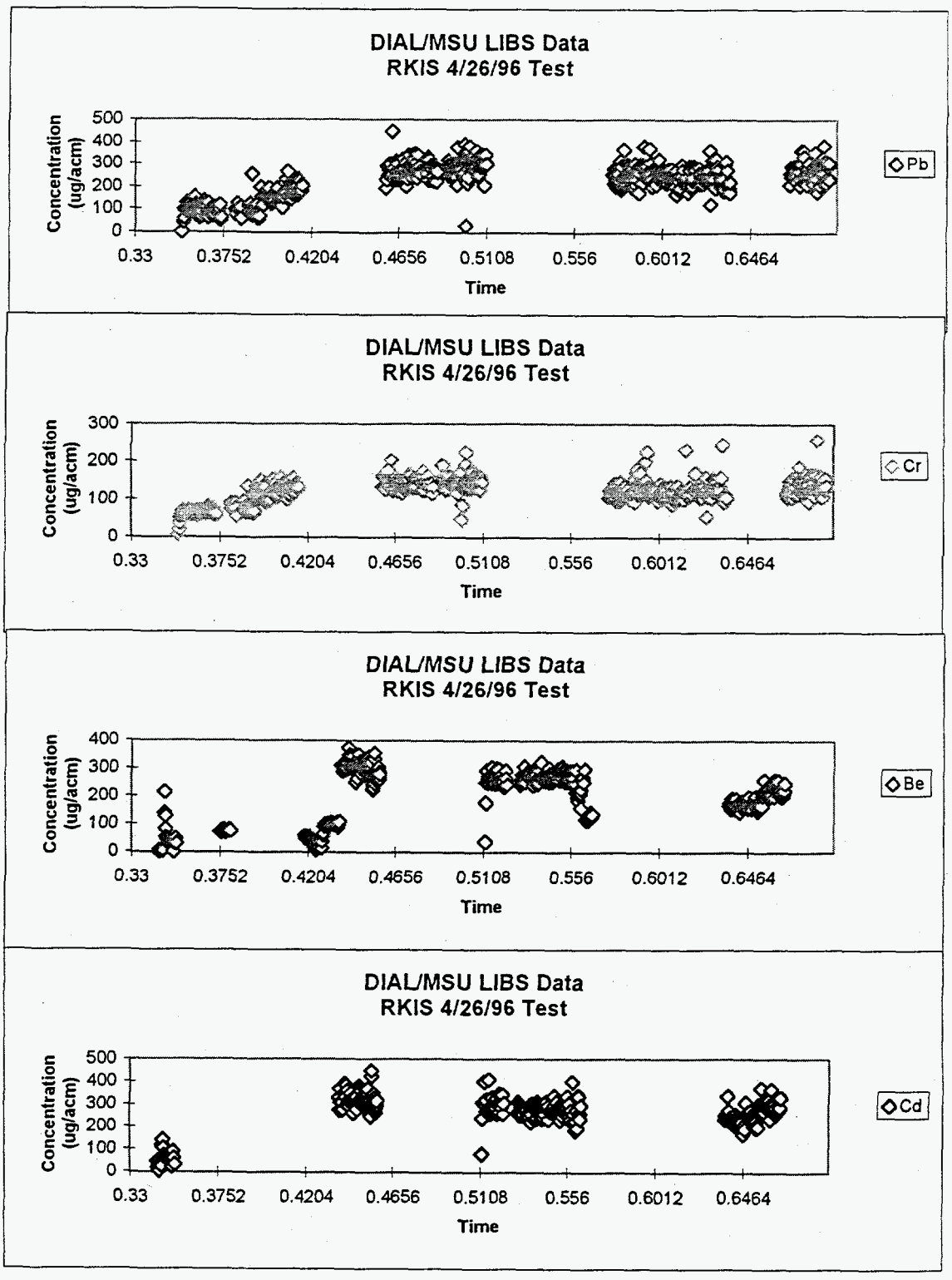
Time		Concentration (ug/acm)		
4/25/96	Be	Cr	Y	Cd
0.5963		8.787485	75.18828	
0.5966		9.596445	35.78798	
0.5969		9.043691	27.25943	
0.5973		8.823767	25.60584	
0.5976		9.45195	32.53672	
0.598		8.469852	38.59552	
0.5983		8.64681	29.88996	
0.5986		8.628032	23.48146	
0.599		9.18906	24.63631	
0.5993		11.07393	24.6567	

DIAL/MSU LIBS RKIS 4/26/96 Data Summary

Time		Concentration (ug/acm)				REMARKS
From	To	Cr	Pb	Cd	Be	
10:30	10:58			316	294	RM #2 : 10:20-10:50
11:08	11:48	143	274			& 11:08 - 11:38
12:02	12:14	151	307			RM#3 : 10:20 -10:50
12:16	12:32			291	255	& 11:08-11:38
12:50	13:20			276	273	
13:49	14:16	123	256			RM #4 : 13:45-14:15
14:31	15:01	116	239			& 14:31 - 15:01
15:30	15:58			270	201	RM # 5: 15:30 - 16:30
16:00	16:28	137	273			

Remarks:

1. Cr, Be, Cd, and Pb were monitored employing three spectral regions during EPA sampling.
2. The initial data starting around 8:30 AM reflected that there was little ash in the gas stream and the metal levels were below specifications. This facility problem was cleared up around 10 AM.
3. Pb concentrations were determined today, since the gas stream concentrations are above our detection limit.
4. LIBS Sampling time was 26 seconds (equivalent to an average of 260 laser pulses) .
5. In general, each selected spectral region was monitored for ~15 - 30 minute during EPA sampling.
6. 12:35 - 12:43: Checked window.
7. 13:40 -13:42 : Checked window.
8. Only Cr and Pb were monitored during RM # 4 due to fire alarm.
9. 17:03 - 18:30 : On-site calibration.
10. See also pertinent remarks on Cd from 4/25/96 data.


DIAL/MSU LIBS Data
RKIS 4/26/96 Test
Concentration (ug/acm)
500
400
300
200
100
0
0.33
0.3752
0.4204
0.4656
0.5108
0.556
0.6012
0.6464
Time
Pb
DIAL/MSU LIBS Data
RKIS 4/26/96 Test
Concentration (ug/acm)
300
200
100
0
0.33
0.3752
0.4204
0.4656
0.5108
0.556
0.6012
0.6464
Time
Cr
DIAL/MSU LIBS Data
RKIS 4/26/96 Test
Concentration (ug/acm)
400
300
200
100
0
0.33
0.3752
0.4204
0.4656
0.5108
0.556
0.6012
0.6464
Time
Be
DIAL/MSU LIBS Data
RKIS 4/26/96 Test
Concentration (ug/acm)
500
400
300
200
100
0
0.33
0.3752
0.4204
0.4656
0.5108
0.556
0.6012
0.6464
Time
Cd

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.344			46.86865	0.547227
0.3443			17.82437	3.09912
0.3447			2.006639	0.970734
0.345			31.91812	1.344161
0.3453			31.54161	2.107574
0.3457			35.33735	1.454299
0.346			25.43984	5.16463
0.3464			117.2097	138.498
0.3467			139.1751	212.9952
0.347			104.3884	125.4989
0.3474			71.29114	79.60927
0.3477			67.00531	49.19357
0.3481			65.50287	41.23282
0.3484			64.51999	28.85189
0.3488			52.77964	34.35815
0.3491			68.01298	29.17848
0.3494			65.58995	24.4142
0.3498			53.02419	27.2288
0.3501			79.83889	28.75263
0.3505			54.68631	22.73285
0.3508			68.28145	24.38422
0.3512			20.06268	0.58603
0.3515			76.01172	30.06535
0.3518			59.01699	37.624
0.3522			88.45445	29.44572
0.3525			60.22029	46.72592
0.3529			32.26059	29.53095
0.354	0.774021	6.824381		
0.3544	42.24124	19.48396		
0.3547	59.90896	36.65299		
0.3551	98.86438	53.00298		
0.3554	92.94298	56.48421		
0.3557	92.47876	54.82731		
0.3561	129.163	67.54699		
0.3564	125.8317	67.75346		
0.3568	99.07215	67.3901		
0.3571	115.1533	64.28147		
0.3574	99.52079	57.28682		
0.3578	104.0561	59.39581		
0.3581	103.4285	64.58471		
0.3585	117.1925	64.22124		
0.3588	105.7337	61.0175		
0.3592	108.1542	67.96385		
0.3595	102.994	70.38218		
0.3598	83.23785	60.68742		
0.3602	154.9081	68.67067		
0.3605	102.2263	60.25804		
0.3609	121.5513	67.43122		
0.3612	70.89634	63.20068		
0.3615	92.19105	62.90999		

Time	Concentration (ug/acm)			
4/26/96	Pb	Cr	Cd	Be
0.3619	84.55836	64.98289		
0.3622	114.9018	59.53237		
0.3626	100.3879	65.2965		
0.3629	63.68358	64.89878		
0.3632	99.88139	64.89503		
0.3636	67.38889	58.35129		
0.3639	86.46111	60.98666		
0.3643	111.8252	66.66855		
0.3646	117.9984	72.25183		
0.365	109.8248	71.62634		
0.3653	136.2279	59.63028		
0.3656	128.2834	63.83955		
0.366	99.60064	61.85621		
0.3663	109.0783	63.75588		
0.3667	82.4843	68.77542		
0.367	63.64153	64.20316		
0.3674	126.4033	68.28016		
0.3677	82.27635	65.10011		
0.368	87.6644	63.38155		
0.3684	93.6721	67.72915		
0.3687	76.32904	71.2815		
0.3691	73.13183	65.31648		
0.3694	108.8924	80.16762		
0.3698	88.83297	75.19397		
0.3701	72.61401	64.81596		
0.3704	107.2105	65.86476		
0.3708	95.66022	68.31842		
0.3711	96.66294	72.86185		
0.3715	102.1206	69.40868		
0.3718	81.88625	74.89212		
0.3721	92.69232	63.80512		
0.3725	104.4584	61.04443		
0.3728	98.94622	65.96191		
0.3732	116.8788	59.4989		
0.3735	51.33855	56.70762		
0.3739	63.96403	61.27181		
0.3755				72.47155
0.3758				69.31324
0.3762				74.29936
0.3765				72.52753
0.3768				74.17665
0.3772				78.46714
0.3775				70.85157
0.3779				69.9689
0.3782				70.7499
0.3785				68.94968
0.3789				72.43617
0.3792				75.59683
0.3796				75.73861
0.3799				78.31369

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.3803				76.18182
0.3806				74.02717
0.3812	95.61919	87.49332		
0.3816	74.83445	74.16754		
0.3819	100.1207	78.69683		
0.3823	108.7868	74.84417		
0.3826	124.5093	80.29946		
0.3829	96.19185	76.92568		
0.3833	107.8662	89.58481		
0.3836	110.7147	74.11009		
0.384	57.90136	53.90528		
0.3878	83.62685	74.94047		
0.3882	111.8234	93.79255		
0.3885	115.2803	76.58031		
0.3888	123.4653	79.16731		
0.3892	75.61324	65.3635		
0.3895	99.68395	80.43824		
0.3899	254.0132	133.744		
0.3902	91.11122	77.62358		
0.3906	76.83087	70.79425		
0.3909	89.39717	76.63637		
0.3912	75.24654	64.62936		
0.3916	98.87937	89.06829		
0.3919	125.1272	80.18589		
0.3923	89.93328	72.33073		
0.3926	69.33884	65.37525		
0.3929	60.59247	62.88233		
0.3933	69.98248	67.46477		
0.3943	200.3718	131.5937		
0.3946	156.0305	115.79		
0.395	159.6358	126.5961		
0.3953	118.9578	122.1038		
0.3957	153.7624	111.6913		
0.396	161.5418	122.786		
0.3963	180.3522	150.6061		
0.3967	164.8051	123.9086		
0.397	151.0518	108.5736		
0.3974	165.0759	134.8387		
0.3977	171.549	124.8155		
0.3981	155.1924	123.2519		
0.3984	194.3115	132.6177		
0.3987	131.0708	91.40357		
0.3991	123.4078	101.1106		
0.3994	133.17	103.1865		
0.3998	130.8187	96.24684		
0.4001	152.7142	114.4986		
0.4004	141.7024	97.49804		
0.4008	138.972	96.87413		
0.4011	166.3584	100.6092		
0.4015	177.5279	114.9334		

Time	Concentration (ug/acm)			
4/26/96	Pb	Cr	Cd	Be
0.4018	163.4466	123.2581		
0.4021	157.5711	124.0747		
0.4025	182.7317	152.0131		
0.4028	194.3276	153.5867		
0.4032	132.3877	117.5229		
0.4035	154.5842	139.423		
0.4039	115.5579	121.1468		
0.4042	126.4304	103.7735		
0.4045	126.0593	104.6716		
0.4049	108.4729	114.2874		
0.4052	171.5383	130.5215		
0.4056	152.0456	125.5134		
0.4059	169.416	128.331		
0.4062	169.4069	124.9977		
0.4066	213.6037	158.2348		
0.4069	167.9169	129.0797		
0.4073	234.6025	134.5133		
0.4076	231.6497	138.1694		
0.4079	264.2677	143.8382		
0.4085	200.2565	136.2916		
0.4088	165.1612	116.1845		
0.4092	212.9927	139.6967		
0.4095	209.4555	127.6748		
0.4099	144.0371	98.27513		
0.4102	177.1404	115.1308		
0.4105	164.9218	111.694		
0.4109	178.3984	124.3431		
0.4112	177.7215	128.2173		
0.4116	205.2521	135.089		
0.4119	163.0629	130.1903		
0.4122	194.8953	123.7481		
0.4126	199.1809	123.6979		
0.4129	160.0893	124.567		
0.4133	232.3631	154.5713		
0.4136	168.3135	116.854		
0.4139	179.3008	134.1963		
0.4143	222.9753	140.7766		
0.4146	190.2224	136.9606		
0.415	182.3738	125.2992		
0.4153	210.8435	127.1559		
0.4157	204.9548	130.4166		
0.419				55.48809
0.4193				48.60947
0.4197				56.09718
0.42				53.37196
0.4203				48.88163
0.4207				50.03238
0.421				47.98345
0.4214				56.28867
0.4217				54.2905

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.422				46.46227
0.4224				41.93799
0.4227				31.50749
0.4231				22.94741
0.4234				18.71694
0.4237				18.48096
0.4241				15.56313
0.4244				6.399627
0.4248				14.93858
0.4251				17.80047
0.4254				14.83645
0.4258				16.26218
0.4261				15.33485
0.4265				16.0285
0.4268				12.70078
0.4271				14.98358
0.4275				14.33939
0.4278				35.70425
0.4282				59.71308
0.4285				67.41287
0.4289				90.41697
0.4292				93.41789
0.4295				97.36581
0.4299				95.83563
0.4302				90.67949
0.4306				100.256
0.4309				98.19788
0.4312				95.94096
0.4316				97.1013
0.4319				96.61755
0.4323				97.85033
0.4326				103.7079
0.4329				98.21894
0.4333				96.78886
0.4336				96.17317
0.434				98.03667
0.4343				98.479
0.4347				100.5111
0.435				100.08
0.4353				104.4713
0.4357				88.9854
0.436				98.60826
0.4364				97.88503
0.4367				106.2706
0.4375			328.2581	309.4109
0.4378			366.7671	312.6596
0.4382			274.1521	310.3333
0.4385			310.9928	289.7951
0.4389			276.5835	297.6161
0.4392			311.8486	313.3859

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.4395			272.4597	293.094
0.4399			277.7487	300.0672
0.4402			351.5012	316.9972
0.4406			389.7358	334.658
0.4409			332.4753	334.2665
0.4412			383.2314	371.8076
0.4416			359.7894	347.5132
0.4419			294.1257	310.8057
0.4423			307.8431	299.787
0.4426			307.5649	317.3135
0.4429			293.168	299.7504
0.4433			324.7713	324.4929
0.4436			347.3933	342.3077
0.444			304.8806	298.6509
0.4443			321.8728	305.7488
0.4446			313.4325	317.1537
0.445			259.3294	248.6282
0.4453			322.9143	325.615
0.4457			296.699	290.3239
0.446			293.0612	261.386
0.4464			329.5941	348.5202
0.4467			286.3547	294.7794
0.447			276.7595	291.831
0.4474			375.7434	323.2
0.4477			314.5375	283.9944
0.4481			381.3342	312.5191
0.4484			372.8096	307.2199
0.4487			360.0634	295.0376
0.4491			319.8176	313.6716
0.4491			301.064	295.2783
0.4494			324.4669	333.8475
0.4494			305.4105	314.2402
0.4498			295.7249	285.6925
0.4498			314.2184	303.5585
0.4501			303.8803	305.478
0.4501			322.9157	324.6135
0.4504			331.8278	318.3417
0.4504			312.236	299.5461
0.4508			323.7776	296.9532
0.4508			344.1393	315.6279
0.4511			348.5275	298.6387
0.4511			327.8736	280.9412
0.4515			362.4061	340.592
0.4515			340.8842	320.3656
0.4518			320.0922	270.8181
0.4518			340.3354	287.9452
0.4522			300.9589	282.7043
0.4522			283.0198	265.8534
0.4525			344.3056	302.1251
0.4525			366.166	321.3074

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.4528			297.0243	256.2526
0.4528			315.9146	272.5499
0.4532			314.6575	280.6801
0.4532			295.8025	263.8611
0.4535			297.9555	251.3719
0.4535			316.9798	267.4219
0.4539			266.8717	236.6536
0.4539			250.8208	222.4202
0.4542			260.8501	242.68
0.4542			245.1364	228.0609
0.4545			421.7964	333.5374
0.4545			448.8801	354.9539
0.4549			307.2487	261.0369
0.4549			288.6712	245.2535
0.4552			303.572	274.029
0.4552			285.1876	257.4337
0.4556			346.7795	277.4588
0.4556			325.7338	260.6201
0.4559			324.7637	280.2699
0.4559			305.0227	263.2335
0.4563			263.0828	250.884
0.4563			280.148	267.1579
0.4566			278.9166	284.2974
0.4566			297.0395	302.7699
0.457			262.2749	260.8635
0.457			279.3551	277.8518
0.4573			285.7319	267.7004
0.4573			304.3713	285.1636
0.4576			296.9444	261.4563
0.4576			316.3482	278.5411
0.4589	194.7822	132.4128		
0.4592	233.4277	130.9609		
0.4595	290.6267	160.6809		
0.4599	253.3826	134.4472		
0.4602	275.3057	157.2097		
0.4606	255.1314	127.0326		
0.4609	299.3622	151.7452		
0.4612	259.5883	138.0218		
0.4616	250.6449	154.0329		
0.4619	277.2503	139.3836		
0.4623	448.0633	176.1617		
0.4626	280.6871	148.3458		
0.4629	233.8476	139.0554		
0.4633	229.9125	132.4404		
0.4636	244.2397	135.7322		
0.464	313.9694	202.2737		
0.4643	269.3983	121.6507		
0.4646	247.6464	148.7096		
0.465	301.3355	129.3077		
0.4653	232.173	140.6615		

Time	Concentration (ug/acm)			
4/26/96	Pb	Cr	Cd	Be
0.4657	263.6576	139.6156		
0.466	260.0577	159.6916		
0.4664	279.2032	122.3113		
0.4667	248.543	131.8387		
0.467	230.0467	148.7803		
0.4674	268.4951	134.9624		
0.4677	320.6492	148.0717		
0.4681	277.3471	144.2685		
0.4684	229.3669	121.3759		
0.4687	302.4207	141.0224		
0.4691	212.7156	141.2348		
0.4694	201.9603	116.8159		
0.4698	233.9883	127.6188		
0.4701	288.0516	141.6366		
0.4705	269.3933	139.1398		
0.4708	339.7795	154.3664		
0.4711	278.1119	143.0919		
0.4715	272.9777	152.0996		
0.4718	276.7934	126.4935		
0.4722	241.5885	126.211		
0.4725	263.9018	152.607		
0.4728	282.6497	131.1197		
0.4732	324.1053	164.8107		
0.4735	283.8191	133.4895		
0.4739	349.8719	165.0637		
0.4742	305.0821	137.2117		
0.4746	280.7087	135.9478		
0.4749	239.0711	128.8942		
0.4752	343.5198	150.6087		
0.4756	290.0495	143.7084		
0.4759	268.5934	144.1462		
0.4763	260.8483	134.3115		
0.4795	267.1389	139.1387		
0.4799	258.5258	125.0394		
0.4802	293.3672	140.8337		
0.4805	334.1964	175.5702		
0.4809	230.6157	123.4701		
0.4812	290.8258	147.1182		
0.4816	318.9636	143.0111		
0.4819	275.9216	146.6111		
0.4823	294.7078	149.4385		
0.4826	294.4315	160.7832		
0.4829	244.2883	139.9379		
0.4833	225.8859	126.1682		
0.4836	295.8272	131.8144		
0.484	227.394	138.0265		
0.4843	276.43	139.6238		
0.4846	263.1327	142.0671		
0.485	223.7132	115.9526		
0.4853	264.6384	133.2415		

Time	Concentration (ug/acm)			
4/26/96	Pb	Cr	Cd	Be
0.4901	287.489	190.4263		
0.4905	279.749	156.1013		
0.4908	319.3303	190.4764		
0.4912	251.7658	147.6168		
0.4915	298.2599	158.4397		
0.4918	262.6341	124.733		
0.4922	265.9649	131.7091		
0.4925	278.6698	152.1191		
0.4929	285.1536	140.2643		
0.4932	294.6917	127.6592		
0.4935	302.0041	153.1416		
0.4939	295.1918	140.9025		
0.4942	263.5246	159.1112		
0.4946	254.8852	147.099		
0.4949	303.9699	135.5352		
0.4953	247.3047	146.8254		
0.4956	209.863	131.2576		
0.4959	378.6069	146.5568		
0.4963	302.0462	133.5157		
0.4966	281.6442	143.3548		
0.497	286.4269	158.1849		
0.4973	272.9835	130.1412		
0.4976	280.4623	140.4716		
0.498	251.1346	117.0406		
0.4983	326.6648	155.225		
0.4987	307.9608	157.8161		
0.499	259.6086	138.3724		
0.4993	313.231	151.804		
0.4997	390.3002	172.795		
0.5	28.10532	46.8738		
0.5004	217.6845	82.46075		
0.5007	279.3644	130.8381		
0.501	242.123	128.7839		
0.5014	308.4212	145.1828		
0.5017	357.0488	146.8076		
0.5021	382.8091	191.4754		
0.5024	321.9389	224.2798		
0.5028	307.3773	151.2995		
0.5031	281.7148	129.0932		
0.5034	314.0154	139.6397		
0.5038	338.0556	146.4559		
0.5041	275.0947	159.5595		
0.5044	275.0578	131.6038		
0.5048	291.096	141.5456		
0.5051	324.8749	174.5835		
0.5054	362.2067	170.3623		
0.5058	308.0252	157.2612		
0.5062	247.6036	144.7852		
0.5065	300.2736	133.9143		
0.5069	255.9862	136.0345		

Time	Concentration (ug/acm)			
4/26/96	Pb	Cr	Cd	Be
0.5072	288.9703	144.6771		
0.5075	336.9692	151.2419		
0.5079	345.5811	159.3673		
0.5082	322.2285	141.7662		
0.5086	289.0075	147.5169		
0.5089	296.864	135.3585		
0.5093	207.1806	125.3424		
0.5096	313.6376	149.4434		
0.5099	343.8745	157.1193		
0.5103	300.5648	146.2409		
0.5117			80.19895	36.51989
0.512			239.4426	176.6623
0.5124			310.506	250.7918
0.5127			400.0345	292.3205
0.513			300.2892	249.3776
0.5134			297.0463	266.8829
0.5137			318.9818	269.6558
0.5141			269.6018	268.0472
0.5144			266.2683	255.4717
0.5148			282.9481	249.3144
0.5151			407.9748	303.1906
0.5154			269.6167	246.3705
0.5158			273.2025	259.5502
0.5161			257.9255	249.6286
0.5165			329.8603	285.116
0.5168			268.2498	289.0156
0.5171			274.9943	245.5879
0.5175			293.8199	298.235
0.5178			298.6568	258.6973
0.5182			290.1183	257.1388
0.5185			270.3359	297.0231
0.5189			285.6389	247.629
0.5192			327.4311	249.1666
0.5195			257.8215	277.2912
0.5199			299.6441	271.8358
0.5202			346.9463	282.4005
0.5206			309.5327	253.2916
0.5209			265.1536	253.529
0.5213			308.4456	233.0455
0.5216			294.2975	239.7513
0.522			285.1533	267.1363
0.5223			340.8448	290.3517
0.5226			256.7644	264.6561
0.523			302.7373	241.8306
0.5301			258.3269	240.864
0.5305			309.8328	256.3706
0.5308			267.1991	247.1507
0.5312			252.8448	275.9775
0.5315			300.5604	308.6187
0.5319			261.9755	260.0593

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.5322			287.2957	274.7138
0.5325			251.8259	250.6188
0.5329			256.2597	275.1931
0.5332			281.6607	287.2351
0.5336			275.0098	279.4165
0.5339			276.8937	275.2643
0.5343			275.4789	280.7326
0.5346			280.6312	287.8526
0.5349			277.9076	267.8434
0.5353			256.0138	263.9718
0.5356			250.9887	259.3681
0.536			246.0144	274.0502
0.5363			295.339	292.918
0.5367			227.4731	239.5193
0.537			221.6814	252.3505
0.5373			257.2275	279.3731
0.5377			300.9624	287.5814
0.538			293.8132	279.8907
0.5384			284.5707	260.6058
0.5387			284.8829	251.6118
0.539			234.4385	243.0567
0.5394			275.9555	248.5787
0.5397			274.9794	294.2431
0.5401			238.906	268.2316
0.5404			311.5847	322.3073
0.5407			300.3248	267.1715
0.5411			289.3627	272.3281
0.5414			272.1387	273.8655
0.5417			295.7983	263.7643
0.5421			255.8593	256.2282
0.5425			244.5708	254.9705
0.5427			236.6119	268.6845
0.5432			256.6598	258.1512
0.5435			241.5788	276.6485
0.5438			293.4236	263.3517
0.5442			255.3341	278.4579
0.5445			299.0751	300.9381
0.5449			309.4527	251.9213
0.5452			310.4686	280.88
0.5456			284.841	276.5832
0.5459			295.4481	274.9147
0.5462			232.9393	266.4943
0.5466			271.9805	252.2749
0.5469			273.3261	265.201
0.5473			272.2372	283.0905
0.5476			265.9797	279.2654
0.548			269.0426	279.6851
0.5483			270.1075	264.4975
0.5486			328.1942	291.1205
0.549			336.2735	295.8849

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.5493			297.6688	291.4319
0.5497			272.3423	266.3935
0.55			272.0693	263.0784
0.5504			309.9018	259.2631
0.551			265.165	290.4196
0.5514			290.6776	267.3482
0.5517			274.5462	305.7987
0.5521			268.0644	280.6778
0.5524			229.7936	286.6799
0.5528			299.4604	296.7265
0.5531			276.8945	295.9867
0.5534			246.9009	251.9321
0.5538			309.0671	285.9247
0.5541			292.2961	281.5455
0.5545			281.9716	264.612
0.5548			261.1828	266.3489
0.5551			258.4162	251.0441
0.5555			285.2535	255.6636
0.5558			334.8407	289.5797
0.5562			267.7773	279.9671
0.5565			255.4939	284.0716
0.5569			304.9034	290.2385
0.5572			249.479	263.381
0.5575			228.8289	250.7175
0.5579			268.5238	290.2246
0.5582			273.9058	266.1494
0.5586			400.0636	296.5455
0.5589			219.2562	212.4166
0.5593			257.303	243.6049
0.5596			222.5344	193.8048
0.5599			216.1974	184.2527
0.5603			183.4433	220.7528
0.5606			225.9168	202.3876
0.561			273.4457	210.0718
0.5613			197.3105	156.1375
0.5616			338.962	224.5101
0.562			333.3122	262.7131
0.5623			260.2277	262.8645
0.5627			257.1898	268.5883
0.5629			235.8235	250.4363
0.5634			295.5147	296.965
0.5639				117.6698
0.5643				114.2405
0.5646				116.272
0.5649				114.5834
0.5653				131.6571
0.5656				128.5328
0.5659				123.8848
0.5663				142.4531
0.5667				125.4331

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.5669				127.2213
0.5673				133.5753
0.576	255.2325	107.5581		
0.5764	253.4249	124.6117		
0.5767	278.0522	115.5409		
0.577	214.4779	114.976		
0.5774	268.4761	117.9612		
0.5777	226.5411	129.4151		
0.578	201.542	108.3328		
0.5784	222.2475	102.169		
0.5787	256.5797	120.0901		
0.579	197.6013	125.7362		
0.5794	228.8523	142.4757		
0.5798	317.1231	137.2256		
0.58	291.5416	121.8077		
0.5804	186.6784	95.68277		
0.5808	239.4977	98.45108		
0.581	192.1868	114.9212		
0.5815	229.1658	114.9131		
0.5818	365.771	146.1926		
0.5821	201.2084	95.51203		
0.5825	303.8051	114.2401		
0.5828	223.8768	119.4919		
0.5832	230.177	103.3231		
0.5835	211.773	111.0993		
0.5838	236.2291	127.705		
0.5842	299.1528	135.8803		
0.5845	273.4797	119.5499		
0.5849	246.9386	117.7545		
0.5852	229.3772	127.3541		
0.5856	200.9319	107.7776		
0.5859	282.411	105.8721		
0.5862	246.2265	109.6561		
0.5866	196.9951	101.3865		
0.5869	246.575	114.9948		
0.5873	303.8179	111.9124		
0.5876	211.2755	115.0273		
0.5879	249.3322	119.8415		
0.5883	232.8261	102.8815		
0.5886	273.6586	121.7674		
0.589	270.661	116.826		
0.5893	176.0569	92.39382		
0.5896	262.3813	155.1354		
0.59	295.1857	171.1643		
0.5903	298.864	138.7992		
0.5907	299.522	179.4178		
0.591	219.5745	112.9782		
0.5914	299.1712	136.9021		
0.5917	278.783	129.889		
0.592	382.4296	170.0524		

Time	Concentration (ug/acm)			
4/26/96	Pb	Cr	Cd	Be
0.5924	262.653	116.4712		
0.5927	240.9589	116.0955		
0.5931	292.28	123.2755		
0.5934	249.0881	132.4126		
0.5937	253.7278	123.5153		
0.5941	265.2417	130.0805		
0.5944	266.5353	128.1556		
0.5948	370.147	199.8851		
0.5951	256.8162	151.136		
0.5955	306.0026	224.8738		
0.5958	233.2944	134.0885		
0.5961	201.3826	107.2508		
0.5974	220.6179	118.5806		
0.5977	286.4325	129.9649		
0.598	211.9635	108.5258		
0.5984	274.8391	129.7772		
0.5987	257.9959	119.929		
0.5991	239.634	112.3		
0.5994	324.5769	123.0297		
0.5997	236.561	104.9352		
0.6001	253.7696	104.0572		
0.6004	247.8132	103.1769		
0.6008	256.6345	115.366		
0.6011	239.3034	97.70826		
0.6014	245.6896	116.5467		
0.6018	273.3296	119.8688		
0.6021	266.5048	143.0651		
0.6025	240.2046	116.9013		
0.6028	221.3357	103.4172		
0.6031	272.4967	121.9958		
0.6035	219.464	122.0242		
0.6038	277.0391	134.3743		
0.6042	261.8127	135.8871		
0.6045	239.6362	117.0529		
0.6048	273.0645	114.6092		
0.6052	226.9689	101.559		
0.6055	278.4834	130.6648		
0.6059	215.9931	96.45868		
0.6062	247.0027	102.804		
0.6065	229.942	115.0709		
0.6069	248.4025	113.8473		
0.6072	239.2552	135.1707		
0.6076	204.4366	113.6793		
0.6079	271.3915	109.3443		
0.6082	167.1353	87.52501		
0.6086	237.4877	122.6713		
0.6089	244.7982	99.22201		
0.6093	228.1344	115.8644		
0.6096	188.1928	104.2837		
0.61	199.4898	104.1863		

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.6103	246.5563	104.5239		
0.6106	242.388	109.4092		
0.611	248.0464	136.1823		
0.6113	295.1127	111.0825		
0.6117	275.2768	115.0307		
0.612	212.7407	107.0218		
0.6123	233.0392	102.4168		
0.6127	236.9068	122.4445		
0.613	227.0485	114.954		
0.6133	214.2935	111.1795		
0.6137	243.5151	113.4772		
0.6141	201.0309	107.4371		
0.6143	178.1274	101.9592		
0.6147	274.6117	114.6444		
0.6151	292.6082	232.0261		
0.6153	218.5777	117.9487		
0.6158	197.8681	107.874		
0.6161	208.5746	106.4332		
0.6165	230.9284	123.958		
0.6168	241.1354	117.4692		
0.6171	294.3016	131.9648		
0.6175	278.8073	115.3791		
0.6195	216.529	130.1304		
0.6198	283.9065	170.0674		
0.6201	260.6941	129.827		
0.6205	226.0534	121.1548		
0.6208	242.5415	117.7976		
0.6212	229.3075	112.0717		
0.6215	215.8035	111.6707		
0.6218	266.6769	106.4909		
0.6222	243.7053	103.6207		
0.6225	237.0727	109.9279		
0.6229	224.6358	113.3228		
0.6232	237.8284	104.545		
0.6235	230.3314	134.7232		
0.6239	280.3073	120.841		
0.6242	265.6718	115.6554		
0.6246	271.5324	113.5562		
0.6249	237.641	114.8606		
0.6253	363.765	157.4829		
0.6256	123.8383	55.13393		
0.6259	225.568	106.6646		
0.6263	239.5819	121.9912		
0.6266	321.0449	120.7449		
0.627	248.7942	117.4694		
0.6273	318.3836	130.6876		
0.6276	237.1239	117.3588		
0.628	196.1955	103.4564		
0.6283	283.4307	133.0507		
0.6287	324.0954	154.875		

Time	Concentration (ug/acm)			
4/26/96	Pb	Cr	Cd	Be
0.629	291.5116	121.0806		
0.6293	266.3996	150.0624		
0.6297	264.6724	135.1796		
0.63	278.0229	124.5139		
0.6304	221.3046	137.3594		
0.6307	238.1817	146.9417		
0.631	201.6263	120.6569		
0.6314	220.8687	118.7754		
0.6317	231.3911	133.3517		
0.6321	234.5216	116.7265		
0.6324	182.3042	136.0705		
0.6328	190.7348	122.7172		
0.6331	297.0579	157.2196		
0.6334	312.9272	245.6294		
0.6338	210.4025	108.0303		
0.6341	272.382	106.8344		
0.6345	214.4668	92.29377		
0.6348	219.3139	106.682		
0.6351	192.1351	112.702		
0.6355	176.6877	103.0531		
0.6358	221.7609	103.8777		
0.6372			233.3913	167.6179
0.6375			248.87	174.4802
0.6379			259.2651	155.3794
0.6382			335.6786	181.6273
0.6385			264.1627	192.2407
0.6389			255.7616	154.6955
0.6392			273.6905	177.1624
0.6395			235.4318	155.6147
0.6399			242.3966	159.207
0.6403			223.4254	172.3149
0.6405			241.006	190.9814
0.6409			235.3005	163.1078
0.6413			211.9101	153.4765
0.6415			233.379	153.4472
0.642			254.4735	158.7481
0.6423			223.3151	143.357
0.6425			258.6444	180.0182
0.643			227.7202	164.5654
0.6433			246.1002	166.8554
0.6437			212.5131	156.4535
0.644			236.1411	182.4195
0.6444			220.183	157.4128
0.6447			223.0206	176.0492
0.645			184.773	171.3672
0.6454			221.4342	171.984
0.6457			181.3761	162.4778
0.6461			178.291	156.1153
0.6464			168.0023	161.5775
0.6468			209.4599	164.7745

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.6471			191.6073	158.9369
0.6474			254.3531	197.6838
0.6478			309.166	165.3126
0.6481			259.1268	160.7823
0.6485			256.7439	154.5458
0.6488			266.7041	173.4795
0.6492			268.7624	183.4186
0.6495			255.1012	177.1991
0.6498			233.2407	174.2672
0.6502			268.2571	168.2349
0.6505			274.4887	200.4434
0.6509			251.5274	164.0305
0.6512			241.5511	160.1066
0.6516			212.9215	146.5738
0.6519			203.8164	159.2404
0.6522			231.7342	170.3999
0.6526			227.3247	160.2368
0.6529			226.2427	181.2922
0.6533			197.3073	159.9586
0.6536			207.049	188.7739
0.654			200.7954	166.4162
0.6543			299.6806	202.1331
0.6546			296.5028	212.7491
0.655			263.2359	212.6408
0.6553			370.3813	257.7613
0.6556			272.5945	222.1321
0.656			260.8186	203.7059
0.6564			297.0582	214.6046
0.6567			299.2671	227.2477
0.657			287.9754	200.9295
0.6574			265.4376	197.8852
0.6579			308.1977	214.3608
0.6582			298.9281	207.6924
0.6585			315.8214	205.2914
0.6589			281.2463	234.6911
0.6592			333.4703	246.5691
0.6596			319.5795	243.0638
0.6599			295.5633	241.1438
0.6603			236.6363	199.0428
0.6606			366.736	258.414
0.6609			278.4482	225.2429
0.6613			303.5092	235.2388
0.6616			277.6505	228.2314
0.662			296.997	226.67
0.6623			302.3987	256.396
0.6626			272.5271	203.3882
0.663			285.9683	217.4371
0.6633			255.166	224.2718
0.6637			262.0761	198.7309
0.664			332.3122	220.3725

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.6643			271.8407	227.3811
0.6647			272.0708	198.9634
0.665			279.831	210.0035
0.6654			288.1549	222.2604
0.6657			330.5838	247.4753
0.6666	212.388	116.6727		
0.6669	260.6371	116.3768		
0.6673	246.7248	105.5847		
0.6676	289.5465	128.1294		
0.668	253.3761	125.5627		
0.6683	277.6851	137.2579		
0.6686	293.2917	151.3383		
0.669	262.4494	141.385		
0.6693	255.3389	120.09		
0.6697	255.5882	107.4251		
0.67	227.8053	155.9296		
0.6703	294.5044	154.3356		
0.6707	293.853	124.4122		
0.671	272.9519	135.9836		
0.6714	269.5236	113.0329		
0.6717	208.5341	114.8811		
0.672	234.3143	115.2874		
0.6724	302.2749	163.5955		
0.6727	363.2483	167.8794		
0.6731	364.1931	187.5154		
0.6734	362.9725	152.2753		
0.6737	336.1081	139.3669		
0.6741	226.5185	122.5191		
0.6744	241.3945	136.2597		
0.6748	284.168	138.5476		
0.6751	212.5281	126.4261		
0.6754	259.9409	135.6025		
0.6758	287.296	152.2515		
0.6761	304.941	137.2488		
0.6765	243.8321	169.0225		
0.6768	246.4315	119.6852		
0.6772	269.7409	138.3435		
0.6775	275.0667	122.6089		
0.6778	230.5675	94.80825		
0.6782	287.8506	125.3259		
0.6785	216.8395	128.8086		
0.6788	256.2376	122.3006		
0.6792	354.8259	164.8445		
0.6795	273.9501	125.4194		
0.6798	290.6129	124.7648		
0.6802	239.0891	132.2604		
0.6806	179.7496	148.229		
0.6808	273.9175	110.1482		
0.6813	296.999	132.4929		
0.6816	298.8255	166.4434		

Time		Concentration (ug/acm)		
4/26/96	Pb	Cr	Cd	Be
0.6819	209.0925	258.4777		
0.6823	288.8824	133.9816		
0.6826	270.4585	126.4787		
0.683	294.9979	124.6009		
0.6833	288.9499	150.2907		
0.6836	262.0306	119.597		
0.684	385.245	161.8153		
0.6843	215.2036	123.4514		
0.6847	318.3106	128.1398		
0.685	218.4444	107.5349		
0.6854	293.9227	150.4864		
0.6857	240.6582	134.4764		
0.686	295.529	127.6988		
0.6864	308.039	156.4286		
0.6867	232.6111	136.6535		
0.6867	232.6111	136.6535		

APPENDIX J

NAVY/TJA
DAILY LOGBOOK
PAGES
AND
CEM DATA

As a reminder, the data submitted for this test by Mike Seltzer, an employee of the Department of Defense, is under no circumstances approved for public release by individuals other than those employed by Federal Agencies such as the EPA and DOE. Written requests for public release clearance should be sent to:

Dr. Michael D. Seltzer
Code 474230D
Naval Air Warfare Center
Weapons Division
China Lake, CA 93555

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US Navy/Thermo Jarrell Ash

Procedure for data analysis:

Sample stream air is introduced from the sampling interface into the inductively coupled plasma at a constant rate to provide approximately 60 seconds of steady-state analyte introduction. During this time, emission measurements are made simultaneously for all metals of interest. Alternate introduction of clean, "reference" air is also carried out to permit frequent blank subtraction. At the end of each 3.5 minute sampling cycle, the raw concentration data for sample air is automatically normalized to dry, standard conditions and corrected to 7% oxygen content. Following this, the reference, or blank air measurement is subtracted to generate a net airborne metal concentration in micrograms per dry standard cubic meter, corrected to 7% oxygen.

After every 12 sampling cycles, approximately 42 minutes, monitoring is paused and the automated process of spectrometer profiling and calibration QC testing is carried out. While introducing an aqueous solution of arsenic, by pneumatic nebulization, the spectrometer ascertains the degree of spectral drift that has occurred since the last profile (42 minutes earlier) and automatically adjusts to zero profile to ensure accuracy and maximum sensitivity.

Following the spectrometer profile, a multielement QC solution is introduced and analyzed. The results are then compared automatically against values located in a limit check table. If the measured values are in agreement (that is within a certain tolerance), the calibration QC test is considered a success. If any one element is out of tolerance, a QC normalization procedure is initiated wherein the slopes of the individual calibration curves are adjusted and the QC solution is re-analyzed. The system then resumes monitoring.

At the end of each day, two additional tests are conducted. First, a zero drift test is carried out to ensure that in the presence of zero metals, zero or near-zero concentration values will be returned by the CEM. Following the zero drift test, the calibration QC test is performed in lieu of a span check.

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4/24/96

concentration measured in:
micrograms per dry standard cubic meter
corrected to 7% oxygen (assuming 16% oxygen in sample)

	antimony	arsenic	beryllium	cadmium	chromium	iron	
08:41	66.1	97.9	39.2	60.3	40.7	3559.0	
08:44	66.2	96.9	41.4	58.8	47.1	4731.6	
08:47	66.4	94.2	48.7	63.7	49.8	2967.0	
08:51	113.9	123.2	73.2	86.3	63.5	3195.8	
08:54	110.5	130.0	80.6	92.2	67.4	2487.2	
08:57	124.6	138.8	86.5	96.0	73.3	3149.6	
09:00	123.1	142.1	96.6	104.4	84.2	2954.9	
09:04							
09:07	95.8	117.6	66.6	80.2	60.8	3292.2	average
09:10							
09:19							
09:22							
09:26							
09:30							
09:34							
09:38							
09:41	158.8	170.7	131.7	125.6	91.6	3121.3	
09:45	163.5	172.2	142.5	133.2	94.3	2204.7	
09:49	166.7	171.9	141.7	132.9	96.7	1859.7	
09:52	169.2	176.1	147.2	134.4	105.1	2830.5	
10:02	167.3	173.8	152.4	136.5	84.8	2264.8	
10:05	133.0	138.8	126.0	105.8	75.7	2029.3	
10:09							
10:13	159.7	167.2	140.2	128.1	91.4	2385.0	average
10:17							
10:21							
10:24							
10:28							
10:32							
10:35	93.1	105.8	66.0	77.1	63.1	1652.5	
10:46	107.1	124.7	79.1	87.6	68.3	2713.1	
10:50	112.3	138.0	90.0	96.6	70.7	1879.2	
10:53	131.5	146.8	102.0	105.8	75.0	2253.4	
10:57	179.5	218.1	137.2	149.7	106.0	1932.8	
11:01	204.6	128.8	84.3	91.8	69.2	2124.6	
11:04							
11:08	138.0	143.7	93.1	101.4	75.4	2092.6	average
11:12							

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11:15							
11:19							
11:30	116.9	145.3	81.7	75.6	41.6	1331.0	
11:34	125.9	162.6	92.7	88.7	41.7	2149.5	
11:37	131.2	151.5	91.3	87.0	43.0	1526.9	
11:57	109.2	130.4	75.8	65.7	35.8	1578.5	
12:01	147.5	152.8	93.1	88.9	45.3	1437.6	
12:05	147.2	162.3	100.4	98.8	55.1	1250.4	
12:08	64.8	99.3	51.5	47.8	31.6	1697.3	
12:12							
12:16	120.4	143.5	83.8	78.9	42.0	1567.3	average
12:19							
12:23							
12:27	96.1	93.5	58.7	58.6	28.3	1872.0	
12:30	91.7	114.5	65.3	66.1	34.6	1267.3	
12:34	90.6	110.2	65.4	66.7	33.1	1831.3	
12:49	95.7	116.3	66.7	68.3	44.4	1330.3	
12:53	73.4	81.0	53.8	50.0	33.9	1248.5	
12:56	96.6	100.3	68.8	70.6	47.7	1118.4	
12:59	98.1	109.4	66.3	68.4	36.3	1923.2	
13:16	90.2	105.9	64.9	66.5	40.2	1096.5	
13:19	83.3	94.6	62.0	64.8	42.2	1365.9	
13:22	86.7	101.5	66.9	69.4	44.2	1296.2	
13:25							
13:29	90.2	102.7	63.9	64.9	38.5	1435.0	average
13:32							
13:35							
13:38							
13:42							
13:45							
13:48							
13:51							
14:00	101.9	107.8	73.0	75.9	45.6	1408.4	
14:03	93.2	118.0	71.5	74.8	49.5	2006.0	
14:07	96.2	126.8	72.5	76.2	52.1	1790.7	
14:10	100.2	107.5	70.5	73.9	49.0	1189.3	
14:13	97.9	113.2	71.1	74.1	41.6	967.4	
14:16							
14:20	97.9	114.6	71.7	75.0	47.5	1472.4	average
14:23							

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14:26							
14:29							
14:33							
14:36							
14:46							
14:49							
14:52							
14:56							
14:59	141.2	162.6	96.9	95.3	51.3	899.9	
15:02	63.7	86.8	45.7	46.6	29.4	1450.4	
15:06	68.1	93.6	52.3	54.2	36.9	1083.6	
15:09	65.6	101.9	55.9	56.5	39.4	1344.9	
15:12	86.8	113.1	66.9	67.3	47.2	480.3	
15:15	94.5	120.4	72.2	71.6	47.9	700.8	
15:19	103.9	111.6	63.5	64.0	40.8	1051.8	
15:22							
15:32	89.1	112.9	64.8	65.1	41.8	1001.7	average
15:35							
15:39							
15:42							
15:45							
15:48	86.7	116.7	67.9	64.4	35.1	1242.5	
15:52	115.5	142.1	85.6	82.7	52.0	957.3	
15:55	126.6	152.3	87.8	83.4	47.9	1324.6	
15:58	151.0	168.3	103.2	99.6	62.0	1690.0	
16:01	126.8	160.1	98.2	93.8	62.2	1463.0	
16:05	129.6	156.4	93.4	87.9	52.7	1542.5	
16:08							
16:19	122.7	149.3	89.4	85.3	52.0	1370.0	average
16:23							
16:27							
16:37							
16:40	89.9	111.1	75.9	63.3	31.2	1530.8	
16:44	152.3	203.1	105.8	112.8	46.3	785.8	
16:47	160.3	213.1	114.4	133.0	65.3	1189.8	
16:51	164.9	220.0	123.8	146.8	67.2	1638.9	
16:55	150.0	208.6	103.4	114.6	59.3	1614.3	
16:58	173.0	219.2	121.2	140.9	66.3	1317.3	
17:02	159.4	216.2	118.9	130.8	66.7	1271.0	
17:06							

17:17	150.0	198.7	109.1	120.3	57.5	1335.4	average
17:21							
17:24							
17:28							
17:31							
17:35	56.4	97.8	26.3	28.7	21.4	1172.0	
17:39	66.3	114.9	33.4	37.2	32.2	1594.9	
17:42	68.5	128.4	41.0	42.7	37.0	2092.2	
17:46	67.6	113.1	36.3	37.9	33.0	1945.3	
17:50	85.8	147.2	60.2	58.8	42.1	1327.0	
17:53	109.8	165.8	73.2	71.7	47.0	1018.5	
17:57	117.6	174.8	80.2	76.5	50.2	1453.7	
18:06	131.8	194.5	90.0	84.7	54.2	2045.5	
average	87.9	142.1	55.1	54.8	39.6	1581.1	average

	lead	mercury	yttrium	
08:41	54.2	6.2	84.3	
08:44	57.1	7.6	86.6	
08:47	68.6	8.5	100.0	
08:51	81.5	8.3	152.8	
08:54	95.8	7.7	167.1	
08:57	96.3	11.9	175.5	
09:00	110.5	14.7	188.9	
09:04				
09:07	80.6	9.3	136.5	average
09:10				
09:19				
09:22				
09:26				
09:30				
09:34				
09:38				
09:41	122.2	24.6	242.0	
09:45	133.8	26.8	251.6	
09:49	135.8	31.2	253.3	
09:52	136.2	34.7	250.5	
10:02	123.1	35.8	261.1	
10:05	93.3	31.4	216.0	

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10:09				
10:13	124.1	30.8	245.7	average
10:17				
10:21				
10:24				
10:28				
10:32				
10:35	87.8	30.9	132.2	
10:46	92.1	36.1	153.3	
10:50	109.4	41.6	174.9	
10:53	113.9	41.2	194.3	
10:57	159.1	20.1	274.6	
11:01	100.8	37.4	163.7	
11:04				
11:08	110.5	34.6	182.2	average
11:12				
11:15				
11:19				
11:30	75.1	16.4	161.7	
11:34	79.2	17.9	191.7	
11:37	86.4	21.4	194.2	
11:57	62.7	21.6	165.0	
12:01	87.3	25.2	204.7	
12:05	100.7	26.1	220.3	
12:08	48.9	19.9	121.1	
12:12				
12:16	77.2	21.2	179.8	average
12:19				
12:23				
12:27	39.1	6.5	122.5	
12:30	63.7	5.5	135.7	
12:34	58.5	5.3	139.0	
12:49	71.5	4.2	136.0	
12:53	51.6	6.0	115.0	
12:56	77.0	8.6	139.2	
12:59	63.6	7.7	138.1	
13:16	70.4	6.1	138.5	
13:19	74.0	8.2	127.1	
13:22	75.9	9.3	141.6	
13:25				
13:29	64.6	6.7	133.3	average
13:32				
13:35				
13:38				
13:42				
13:45				
13:48				

13:51				
14:00	80.7	24.1	169.4	
14:03	87.1	21.3	155.7	
14:07	90.1	18.2	151.6	
14:10	89.3	18.8	154.0	
14:13	86.4	21.4	170.6	
14:16				
14:20	86.7	20.7	160.3	average
14:23				
14:26				
14:29				
14:33				
14:36				
14:46				
14:49				
14:52				
14:56				
14:59	105.5	20.9	182.0	
15:02	46.2	5.4	75.6	
15:06	58.7	4.9	97.6	
15:09	61.6	6.9	104.3	
15:12	77.6	9.1	129.7	
15:15	79.1	10.9	144.5	
15:19	69.9	9.4	117.8	
15:22				
15:32	71.2	9.6	121.7	average
15:35				
15:39				
15:42				
15:45				
15:48	60.5	3.4	143.6	
15:52	87.1	4.5	177.2	
15:55	78.5	7.2	180.0	
15:58	97.4	12.4	222.1	
16:01	101.2	13.7	206.7	
16:05	88.7	14.8	196.4	
16:08				
16:19	85.6	9.3	187.7	average
16:23				
16:27				

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16:37				
16:40	58.1	25.2	145.9	
16:44	80.5	5.3	177.6	
16:47	103.2	5.1	216.4	
16:51	110.0	6.9	247.2	
16:55	94.0	8.6	192.9	
16:58	109.6	11.0	242.9	
17:02	105.3	12.8	230.2	
17:06				
17:17	94.4	10.7	207.6	average
17:21				
17:24				
17:28				
17:31				
17:35	25.8	0.9	50.5	
17:39	39.0	2.0	66.0	
17:42	44.5	3.4	76.2	
17:46	33.5	3.8	71.2	
17:50	58.9	5.6	117.9	
17:53	69.3	7.7	146.0	
17:57	73.6	10.2	160.8	
18:06	77.4	11.9	173.3	
18:10				
18:14	52.8	5.7	107.7	average
18:17				

4/24/96 concentration measured in:
micrograms per dry standard cubic meter
corrected to 7% oxygen (assuming 16% oxygen in sample)

	antimony	arsenic	beryllium	cadmium	chromium	iron	
10:07							
10:11							
10:14							
10:18							
10:22	52.7	35.6	16.7	13.8	16.1	2518.6	
10:25	62.7	26.7	18.6	14.5	11.9	1126.3	
10:29	62.0	23.6	19.6	15.4	15.4	2050.6	
10:33	52.0	11.6	19.0	14.9	15.9	2172.6	
10:36	59.9	14.0	23.1	16.7	13.4	1022.7	
10:46	80.4	53.1	28.2	20.5	20.8	3137.1	
10:49	68.5	33.3	25.4	19.2	17.8	2270.2	
10:53	64.1	44.3	27.5	20.7	22.1	3093.2	
10:57	63.8	38.0	28.1	20.7	17.7	1753.3	
11:01	76.4	85.1	30.3	22.6	23.7	3016.3	
11:05	63.2	47.0	30.8	21.9	16.3	1203.3	
11:09	68.5	39.8	31.3	22.1	19.1	1820.1	
11:12	71.1	66.3	32.5	23.6	22.1	2442.5	
11:16	73.3	54.6	31.3	22.7	19.9	2046.6	
11:19	64.0	66.1	32.6	23.3	19.8	1894.7	
11:22							
11:26	65.5	42.6	26.3	19.5	18.1	2104.5	average
11:35							
11:38							
11:42	34.6	39.3	9.8	8.6	12.0	2009.6	
11:45	26.6	35.7	2.7	2.7	10.2	2290.0	
11:48	20.7	36.3	4.0	4.3	9.2	1717.0	
11:51	19.8	30.7	5.0	5.2	10.9	2252.9	
12:03	39.9	59.2	11.7	9.7	9.6	1669.9	
12:08	41.8	47.6	16.7	13.0	14.1	2172.3	
12:12	43.5	47.7	19.4	14.4	16.9	2524.7	
12:15	52.8	67.4	22.7	16.4	15.9	1947.0	
12:18	57.7	50.2	26.4	18.5	14.6	1275.7	
12:22	56.0	72.1	29.4	21.1	19.8	2356.0	
12:26	66.0	74.2	32.2	22.6	20.7	2339.9	
12:29	44.7	71.8	31.3	20.5	17.4	1214.9	
12:32	65.9	67.1	34.2	22.4	4.3	1194.6	
12:36	64.9	75.8	34.5	23.2	21.7	3430.1	
12:39	61.9	61.7	36.3	23.0	17.9	2002.3	
12:43							
12:53	46.4	55.8	21.1	15.0	14.3	2026.5	average
12:57							
13:00	57.9	61.0	30.4	22.4	19.7	2928.9	
13:03	58.2	72.0	29.7	22.4	25.1	4341.0	
13:07	55.3	71.5	29.8	22.2	23.8	3689.8	
13:10	61.4	60.3	31.2	22.8	22.3	2958.9	
13:13	64.6	61.6	30.1	21.9	18.6	2044.8	

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13:16	64.3	65.5	30.0	21.4	19.1	2267.3	
13:20	56.6	59.8	30.3	21.6	20.2	2213.5	
13:23	59.3	65.4	31.7	22.8	20.3	2372.0	
13:26	54.9	64.3	32.1	23.0	20.6	2406.7	
13:29	62.3	73.0	32.2	23.1	19.3	1976.0	
13:39	65.7	83.2	32.3	22.9	14.9	2530.4	
13:42	56.2	58.2	31.9	23.5	23.5	3565.6	
13:46	55.3	57.2	30.3	21.6	19.1	2262.8	
13:49	55.6	69.2	30.4	22.3	19.1	2085.4	
13:53	61.8	59.9	32.3	23.9	24.3	3359.7	
13:57	64.3	59.3	31.2	22.5	21.5	2517.8	
14:37							
14:41	59.6	65.1	31.0	22.5	20.7	2720.0	average
14:44							
14:47							
14:51							
14:54							
14:57	55.6	45.2	30.6	22.1	19.8	1989.9	
15:00	65.2	95.5	34.2	25.2	30.3	4309.6	
15:04	57.9	70.4	30.2	22.0	22.7	2935.4	
15:07	45.1	36.3	28.2	20.9	19.4	2337.9	
15:10	57.5	76.9	23.4	16.9	11.1	780.2	
15:14	65.1	56.4	29.5	22.3	18.6	2137.6	
15:24	67.3	91.0	32.6	23.4	19.5	2581.4	
15:27	67.8	83.6	33.8	24.4	23.6	3087.2	
15:30	59.0	85.3	32.6	23.2	23.7	3074.3	
15:33	63.0	97.8	32.0	22.7	19.5	1921.6	
15:37	56.7	82.1	28.1	20.8	20.7	2476.9	
15:40	51.6	48.5	28.3	21.2	21.1	2595.7	
15:44							
15:48	59.3	72.4	30.3	22.1	20.8	2519.0	average
15:51							
15:55							
15:59							
16:02							
16:13	59.1	69.5	29.6	22.7	16.1	1837.7	
16:17	64.1	88.0	31.7	23.8	20.7	2420.1	
16:21	57.7	86.5	28.6	21.7	22.7	3017.4	
16:24	48.8	52.5	29.5	22.4	16.5	1178.4	
16:27	51.8	86.3	30.3	22.5	21.4	2322.4	

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16:31	58.7	66.2	29.8	21.8	19.0	1818.1	
16:42	65.4	80.0	29.4	22.0	23.1	2903.2	
16:45	57.9	75.5	29.8	22.4	26.0	3772.6	
16:49	61.9	74.9	28.1	21.3	24.0	3354.6	
16:52	63.2	69.9	29.4	21.6	17.5	1824.4	
16:55	70.6	63.6	30.0	22.4	22.0	2900.8	
17:01	58.3	71.5	29.5	21.6	19.2	2267.4	
17:09							
17:13	59.8	73.7	29.6	22.2	20.7	2468.1	average
17:16							
17:20							
17:23							
17:26							
17:29							
17:33							
17:36	48.5	67.9	28.1	20.3	19.3	2193.9	
17:39	40.3	42.7	26.8	19.3	17.5	1680.7	
17:48	57.2	77.2	26.7	19.5	17.4	1730.6	
17:51	62.0	58.8	27.3	19.8	17.2	1765.8	
18:00	42.8	65.7	23.4	17.6	16.5	2595.0	
18:03	53.5	85.6	26.1	19.6	20.0	2941.5	
18:07	50.4	78.5	26.8	20.6	22.0	3218.9	
18:10	50.5	106.8	26.9	20.0	19.0	2452.9	
18:13	48.1	65.6	24.9	18.3	17.2	1936.9	
18:16	50.3	90.5	25.0	18.8	20.1	2772.9	
18:20	46.4	62.2	24.6	18.6	21.2	3036.5	
18:23	46.3	65.8	25.2	19.1	22.6	3337.8	
18:26	50.3	78.1	25.4	19.1	19.6	2471.4	
18:29	46.1	79.8	24.1	18.0	19.3	2512.9	
18:33	43.3	79.9	23.0	16.9	14.9	1253.8	
18:37							
18:48	49.1	73.7	25.6	19.0	18.9	2393.4	average
18:51							
18:55							
18:58							
19:02							
19:06	48.7	70.6	24.7	17.9	15.9	2334.6	
19:10	49.4	56.1	25.1	17.7	17.4	2539.5	
19:13	40.9	48.6	24.2	17.5	17.1	2301.9	
19:17	45.1	67.7	23.8	17.1	16.3	2159.4	

19:20	48.6	49.6	24.6	18.3	18.6	2685.7	
19:23	51.0	68.9	26.2	19.8	20.3	2962.0	
19:27	48.4	56.2	23.0	16.6	14.6	1647.8	
19:35	44.2	59.9	23.2	16.5	12.1	1913.4	
19:38	44.5	60.7	22.9	17.1	11.7	1015.2	
19:42	41.4	67.3	24.1	18.1	21.7	3617.7	
19:45	54.8	74.7	26.2	19.5	21.5	3539.5	
19:48	47.8	55.6	26.4	19.0	18.2	2365.9	
19:52	48.7	50.1	24.1	16.9	16.8	1827.9	
19:55	49.6	42.0	25.2	18.1	16.7	1868.5	
19:59	48.7	51.5	25.2	18.9	19.2	2516.9	
20:03	38.0	48.3	26.6	18.9	17.0	1780.4	
20:07							
	46.9	58.0	24.7	18.0	17.2	2317.3	average

	lead	mercury	selenium	yttrium
10:22	14.9	2.4	36.5	124.5
10:25	9.6	4.2	29.5	153.3
10:29	11.3	3.5	32.0	149.6
10:33	10.9	3.2	36.8	144.2
10:36	12.3	3.4	33.5	201.5
10:46	15.2	3.7	31.5	217.1
10:49	12.8	3.6	35.9	193.3
10:53	17.2	3.5	30.6	200.1
10:57	16.6	3.3	43.1	223.5
11:01	20.8	4.1	42.9	223.1
11:05	13.4	4.0	39.2	255.7
11:09	14.8	3.7	41.8	246.3
11:12	18.8	3.9	38.0	248.8
11:16	16.7	3.9	44.8	243.9
11:19	19.4	3.7	49.7	260.1
11:22				
11:26	15.0	3.6	37.7	205.7 average
11:35				
11:38				
11:42	6.4	2.8	46.4	77.5
11:45	2.4	3.1	58.5	19.3

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11:48	3.4	3.0	55.5	30.1	
11:51	7.2	2.7	58.4	36.8	
12:03	5.5	3.5	47.5	97.4	
12:08	9.5	2.5	46.5	131.5	
12:12	10.7	3.0	51.3	150.5	
12:15	10.0	3.2	57.0	180.4	
12:18	11.4	3.5	52.1	219.6	
12:22	14.9	3.5	55.2	229.1	
12:26	19.5	3.3	58.4	256.4	
12:29	22.3	2.8	87.9	313.6	
12:32	14.0	3.7	64.2	385.6	
12:36	21.1	2.3	67.2	327.6	
12:39	22.1	2.6	61.6	380.9	
12:43					
12:53	12.0	3.0	57.8	189.1	average
12:57					
13:00	15.8	2.7	67.4	218.4	
13:03	18.5	2.4	71.3	202.8	
13:07	19.3	2.2	66.9	208.8	
13:10	16.8	2.7	68.9	223.0	
13:13	13.8	3.1	66.4	232.3	
13:16	16.5	3.0	65.1	227.8	
13:20	16.7	2.8	75.8	234.4	
13:23	18.8	2.6	70.0	241.2	
13:26	19.4	2.4	76.3	241.2	
13:29	14.9	2.8	69.0	250.6	
13:39	14.1	3.5	61.3	256.0	
13:42	18.8	2.1	50.0	228.6	
13:46	18.3	2.3	56.9	232.9	
13:49	18.0	2.4	73.4	233.2	
13:53	20.6	2.1	72.8	222.9	
13:57	18.9	2.3	59.8	231.4	
14:37					
14:41	17.5	2.6	67.0	230.3	average
14:44					
14:47					
14:51					
14:54					
14:57	20.5	2.3	64.9	258.8	
15:00	20.3	1.5	81.1	263.0	
15:04	20.5	2.1	81.5	241.6	
15:07	20.1	0.6	69.3	232.0	
15:10	11.3	2.3	66.1	243.6	
15:14	19.7	2.1	77.9	249.2	
15:24	17.2	2.1	76.9	279.4	
15:27	20.4	2.1	80.7	275.5	
15:30	20.7	1.6	71.7	268.6	
15:33	18.5	1.9	73.2	278.4	

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15:37	19.5	1.5	87.9	224.2	
15:40	19.0	1.4	86.7	227.0	
15:44					
15:48	19.0	1.8	76.5	253.5	average
15:51					
15:55					
15:59					
16:02					
16:13	16.0	2.7	66.9	254.3	
16:17	18.2	2.2	77.3	258.1	
16:21	17.7	2.0	72.7	232.8	
16:24	16.8	2.0	70.5	259.0	
16:27	17.9	1.8	69.1	245.4	
16:31	16.9	2.5	68.7	252.0	
16:42	17.9	2.3	68.5	239.8	
16:45	22.2	1.2	72.5	234.8	
16:49	21.7	2.5	79.3	228.7	
16:52	13.8	2.1	68.6	260.5	
16:55	21.4	1.7	77.8	250.4	
17:01	18.1	1.4	81.2	257.9	
17:09					
17:13	18.2	2.1	72.7	247.8	average
17:16					
17:20					
17:23					
17:26					
17:29					
17:33					
17:36	17.7	1.9	82.1	253.0	
17:39	18.2	0.8	82.8	256.7	
17:48	17.9	2.1	84.4	254.5	
17:51	15.9	2.3	84.1	257.5	
18:00	15.7	1.7	72.9	216.6	
18:03	13.9	1.6	79.8	227.1	
18:07	17.5	1.7	77.6	222.1	
18:10	13.4	2.4	81.6	235.2	
18:13	17.2	2.0	90.7	232.5	
18:16	14.0	1.9	88.6	220.9	
18:20	19.0	1.9	96.9	214.6	
18:23	17.2	1.7	91.0	212.7	
18:26	16.1	1.9	93.1	225.3	
18:29	18.0	2.0	91.1	218.5	

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18:33	12.7	2.5	97.9	233.5	
18:37					
18:48	16.3	1.9	86.3	232.0	average
18:51					
18:55					
18:58					
19:02					
19:06	14.2	1.6	88.5	230.2	
19:10	16.3	1.1	90.5	230.6	
19:13	18.7	1.7	92.4	228.9	
19:17	15.9	1.5	81.5	223.3	
19:20	13.2	1.6	87.2	220.7	
19:23	15.3	1.5	85.2	220.2	
19:27	12.0	2.0	86.8	230.7	

19:35	11.5	1.9	77.9	228.6	
19:38	12.8	2.2	77.9	241.5	
19:42	16.4	1.8	83.5	204.8	
19:45	15.3	1.5	77.7	216.9	
19:48	12.3	1.7	73.8	233.0	
19:52	15.2	2.4	80.2	230.8	
19:55	14.9	2.1	73.9	233.5	
19:59	17.0	1.7	72.4	223.5	
20:03	14.6	1.8	85.3	245.6	
20:07					
	14.7	1.8	82.2	227.7	average

4/25/96 concentration measured in:
micrograms per dry standard cubic meter
10:22 corrected to 7% oxygen (assuming 16% oxygen in sample)
10:26

	antimony	arsenic	beryllium	cadmium	chromium	iron	
10:30							
10:33							
10:37	178.1	143.4	127.9	100.6	25.2	1641.1	
10:40	177.3	158.3	136.1	115.6	32.1	2545.8	
10:43	179.6	174.1	139.0	113.5	35.2	2878.2	
10:46	175.5	175.8	138.3	112.7	32.0	2444.3	
10:50	193.3	221.1	155.2	127.0	33.2	2410.5	
10:53	189.2	174.7	154.2	125.6	35.8	2673.1	
10:56	190.0	186.1	150.0	119.9	38.8	3287.5	
11:08	176.8	185.1	148.3	116.2	30.4	2203.4	
11:13	170.3	191.5	151.2	114.9	29.2	1908.2	
11:17							
	181.1	178.9	144.5	116.2	32.4	2443.6	average
11:25							
11:29							
11:32							
11:35							
11:39							
11:43							
11:47	164.7	180.1	149.7	115.1	30.3	2216.5	
11:51	164.3	184.7	145.2	112.7	25.1	1524.0	
12:02	160.8	186.9	132.7	102.8	29.7	2469.3	
12:06	147.6	183.2	133.5	105.4	37.8	2943.6	
12:10	160.6	226.9	134.9	105.5	36.8	3318.7	
12:36	193.9	185.7	155.2	129.7	29.7	1743.7	
12:39	190.5	154.0	155.7	131.5	30.6	1594.7	
12:43	194.9	190.9	158.1	132.1	33.5	1937.8	
12:47							
	172.2	186.6	145.6	116.8	31.7	2218.5	average
12:54							
12:58							
13:01							
13:05							
13:09							
13:12							
13:16							

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13:40	200.9	77.4	143.8	111.6	28.9	1648.5	
13:43	204.1	94.5	150.0	118.9	33.6	2060.8	
13:47	206.7	61.6	150.2	116.3	33.8	2008.9	
13:51	199.6	58.9	152.0	115.1	30.3	1587.0	
13:54	210.0	78.7	151.7	119.6	35.2	2224.8	
13:58	210.7	90.5	155.7	122.1	33.3	1853.6	
14:02	199.8	75.4	154.0	124.5	34.1	2093.1	
14:05	209.3	76.2	157.2	123.1	27.0	1218.4	
14:09	166.8	48.1	125.1	92.1	32.3	2454.6	
14:13	199.1	87.9	149.6	118.8	29.9	1718.0	
14:16	192.4	80.7	149.3	112.0	22.6	795.9	
14:19	202.7	90.3	156.5	123.4	32.2	1887.0	
14:29							
	200.2	76.7	149.6	116.4	31.1	1795.9	average
14:36							

	lead	mercury	selenium	yttrium	
10:22	50.7	31.6	89.1	201.9	
10:26	62.4	27.9	102.0	194.3	
10:30	67.0	23.8	106.8	191.6	
10:33	62.5	22.3	108.4	200.1	
10:37	72.9	24.2	130.5	219.4	
10:40	78.5	22.7	120.9	218.4	
10:43	66.0	23.6	111.6	206.1	
10:46	62.5	21.3	126.5	218.0	
10:50	60.8	20.2	113.5	227.9	
10:53					
	64.8	24.2	112.1	208.6	average
11:08					
11:13					
11:17					
11:22					
11:25					
11:29					
11:32	68.9	23.6	129.3	226.3	
11:35	60.9	21.3	131.9	234.5	
11:39	56.2	17.8	124.2	202.5	
11:43	61.2	13.1	131.1	198.5	

11:47	58.0	16.2	134.0	196.8	
11:51	62.7	21.0	80.5	220.8	
12:02	65.6	18.6	93.6	223.6	
12:06	62.1	21.0	86.3	222.5	
12:10					
	61.9	19.1	111.7	215.7	average
12:39					
12:43					
12:47					
12:50					
12:54					
12:58					
13:01					
13:05	55.0	18.3	40.4	219.5	
13:09	61.1	18.3	38.6	220.5	
13:12	61.7	16.5	39.6	220.5	
13:16	56.1	15.3	44.0	230.1	
13:40	62.3	18.3	42.0	221.4	
13:43	61.8	16.5	46.5	231.8	
13:47	66.5	15.9	44.9	227.2	
13:51	55.0	15.3	46.7	246.9	
13:54	46.2	14.1	52.7	195.4	
13:58	55.5	18.4	46.5	232.4	
14:02	46.5	15.8	52.8	255.4	
14:05	59.5	16.4	45.6	238.0	
14:09					
	57.3	16.6	45.4	228.3	average

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4/26/96 concentration measured in micrograms per dry standard corrected to 7% oxygen (assuming 16% oxygen in sample)

	antimony	arsenic	beryllium	cadmium	chromium	iron	
10:16							
10:20							
10:23	973.1	767.7	1060.2	761.4	191.9	2813.7	
10:27	1033.7	813.6	1101.3	824.9	176.2	1804.2	
10:30	1091.1	855.2	1188.4	872.6	200.5	1747.3	
10:34	1104.2	844.5	1201.0	880.9	203.9	2235.5	
10:37	1115.0	860.5	1177.9	875.3	199.3	2615.5	
10:41	993.9	717.2	1113.7	763.5	204.8	3009.8	
10:45	1016.6	772.1	1112.2	785.6	197.6	2582.1	
10:54	695.6	451.3	810.8	508.9	196.1	2455.9	
10:58	971.6	799.4	958.1	758.0	186.7	2577.3	
11:01	982.2	799.1	964.7	771.6	202.5	3778.9	
11:04	1056.4	831.9	1018.8	826.0	203.0	3345.2	
11:07	1030.2	808.3	1033.5	801.8	196.0	2530.0	
11:11	1020.6	791.1	1005.3	786.1	198.2	3053.5	
11:14	1041.4	868.0	1009.2	823.1	204.5	3044.3	
11:17	991.5	839.6	970.1	799.2	196.4	2428.3	
11:20	1024.8	816.8	1015.1	819.9	200.8	2451.4	
11:24	1049.3	854.8	1018.4	842.2	197.4	2379.1	
11:27	1075.8	865.3	1045.7	868.1	211.4	3060.5	
11:30	1040.5	823.4	1031.9	818.5	219.6	3173.0	
11:39							
11:43	1016.2	798.9	1044.0	799.3	199.3	2688.7	average
11:46							
11:49							
11:52							
11:55							
11:59							
12:02							
12:05	940.7	783.6	928.3	728.6	174.6	2186.6	
12:08	950.5	817.8	1059.5	744.3	172.2	2121.5	
12:12	914.5	805.9	1038.0	712.7	172.6	2731.2	
12:15	944.1	824.4	1050.8	732.9	168.9	2679.8	
12:24	938.1	845.3	1065.4	686.8	154.0	2598.2	
12:28	959.1	837.8	1071.2	708.7	162.9	2798.5	
12:31	876.1	780.6	972.6	665.9	147.6	2475.3	

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12:35	896.6	834.1	1033.8	671.0	157.4	2942.2	
12:38	902.6	880.3	1052.1	694.9	147.3	2613.1	
12:42	892.1	798.8	1009.1	660.7	152.2	2679.5	
12:45	940.7	848.8	1061.0	711.4	163.0	2656.6	
12:49	978.1	868.1	1106.6	738.4	164.7	2374.6	
12:53	975.9	863.9	1093.7	734.0	166.2	2637.8	
12:56	990.5	896.1	1085.4	759.8	165.6	2572.1	
13:00	995.0	867.9	1098.6	759.2	164.2	2268.6	
13:03	981.1	877.5	1096.6	766.9	167.0	2426.5	
13:13	979.9	862.6	1069.9	724.3	152.0	2385.2	
13:16	969.3	865.2	1069.0	730.4	162.9	2976.8	
13:19	1025.3	916.2	1106.8	771.2	162.9	2437.9	
	950.0	846.0	1056.2	721.2	162.0	2555.9	average
13:49	1139.9	940.9	1250.7	880.4	187.5	2568.7	
13:52	1211.0	996.0	1259.5	890.2	189.7	3218.7	
13:55	1224.0	1027.4	1284.1	927.7	186.5	2307.9	
13:59	1256.6	939.3	1224.9	873.9	192.1	3117.9	
14:02	1186.9	998.6	1237.9	891.7	182.1	2954.5	
14:05	1200.6	964.2	1252.1	904.9	195.9	3448.2	
14:09	1216.8	916.4	1257.8	898.0	197.1	3512.3	
14:12	1214.3	887.8	1216.9	842.8	186.1	3359.2	
14:16	1160.8	914.1	1222.0	843.8	181.3	2784.2	
14:19	1142.1	885.9	1196.2	844.3	182.0	3282.7	
14:23	1159.5	837.2	1148.1	804.0	183.3	3640.7	
14:33	1081.5	913.9	1187.2	789.9	166.4	2975.9	
14:36	1130.7	884.0	1210.2	804.5	175.0	2369.5	
14:40	1146.3	902.5	1229.1	833.8	186.3	3007.6	
14:44	1166.1	894.9	1221.7	821.7	179.4	2498.7	
14:47	1151.8	929.5	1250.5	829.3	184.3	2198.6	
14:50	1165.2	890.6	1201.5	799.9	176.9	2092.2	
14:54	1117.7	897.2	1182.7	793.2	178.2	3107.8	
14:57	1118.9	879.0	1185.9	783.8	171.1	2824.6	
15:00	1104.9	873.1	1175.0	758.9	165.2	2511.2	
15:03	1103.0	876.2	1190.9	750.7	165.4	2882.4	
15:07							
	1161.8	916.6	1218.3	836.5	181.5	2888.7	average
15:19							
15:23							
15:26							
15:29							
15:33							
15:36	1118.2	921.9	1178.4	773.9	162.2	2191.9	
15:39	1096.6	915.0	1148.2	771.6	153.9	3178.2	
15:42	1092.6	865.4	1126.5	737.5	145.2	2770.7	
15:46	1054.6	842.4	1109.5	710.4	141.1	2683.6	
15:49	1026.8	819.9	1067.0	688.8	135.7	2860.1	

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15:52	991.1	853.7	1095.4	690.5	136.2	3278.1
15:56	1023.2	827.6	1110.1	912.9	174.5	2804.6
16:06	1116.8	795.8	1153.7	820.0	142.3	2679.4
16:10	1040.8	886.9	1173.1	849.4	152.9	3258.4
16:13	1089.0	854.8	1159.2	836.8	150.2	3259.6
16:16	1064.3	773.9	1101.4	779.1	138.7	2897.1
16:19	997.9	805.9	1087.7	782.1	142.0	3246.8
16:23	991.0	797.6	1082.9	774.7	136.7	3059.6
16:26	959.2	758.9	1073.8	750.7	132.4	2414.6
16:29	960.2	735.5	1033.8	734.1	128.7	2824.2
16:33	924.1	751.0	1061.6	725.0	132.3	1965.9
16:36	949.3	390.0	475.0	502.7	86.0	1985.1
16:39						
	1029.2	799.8	1072.8	755.3	140.6	2785.7 average

	lead	mercury	selenium	yttrium
10:16	383.5	73.3	126.9	137.6
10:20	435.1	67.1	113.5	158.4
10:23	480.0	61.6	116.5	170.8
10:27	464.9	67.3	116.0	167.0
10:30	446.0	67.3	131.4	157.5
10:34	399.1	62.0	115.1	146.1
10:37	422.7	65.3	113.5	149.2
10:41	285.8	61.0	85.2	120.5
10:45	382.4	71.2	109.4	131.4
10:54	377.5	66.2	113.5	123.9
10:58	414.3	68.2	116.0	135.0
11:01	404.3	68.8	114.0	145.8
11:04	397.0	67.7	115.0	137.3
11:07	426.6	67.2	123.6	136.8
11:11	438.0	62.7	101.3	142.2
11:14	413.8	67.5	117.8	148.1
11:17	453.3	66.6	116.9	149.4
11:20	449.6	69.9	118.4	146.3
11:24	405.9	69.5	133.2	139.9
11:27				
	414.7	66.9	115.6	144.4 average
11:39				

123

11:43				
11:46				
11:49				
11:52				
11:55				
11:59	383.1	70.7	115.3	135.4
12:02	415.1	74.2	115.4	149.7
12:05	378.8	77.2	119.0	136.9
12:08	386.1	76.2	120.2	137.4
12:12	344.4	77.9	114.6	130.1
12:15	353.8	75.5	117.9	132.0
12:24	356.4	72.9	114.4	128.6
12:28	335.5	74.5	143.1	119.9
12:31	356.2	77.3	121.0	130.6
12:35	338.7	77.4	132.6	130.1
12:38	382.6	73.3	124.7	137.7
12:42	393.0	76.1	128.6	148.0
12:45	374.9	75.1	130.0	139.8
12:49	412.5	72.5	140.9	143.6
12:53	417.4	74.5	120.2	151.2
12:56	422.3	70.3	134.2	150.2
13:00	401.8	75.9	114.5	140.1
13:03	374.4	75.7	117.8	133.5
13:13	455.4	77.0	122.3	151.6
13:16				
	383.3	75.0	123.5	138.2 average
13:43	485.4	83.6	98.7	165.9
13:46	468.3	83.7	97.1	154.9
13:49	552.2	84.1	87.1	174.6
13:52	463.7	82.6	96.8	154.9
13:55	471.9	80.4	96.7	156.2
13:59	481.9	78.4	102.6	158.0
14:02	483.8	78.6	88.0	159.3
14:05	442.1	79.8	91.9	152.5
14:09	458.7	79.3	103.5	163.5
14:12	447.7	81.5	91.2	155.2
14:16	437.4	79.2	93.1	145.6

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14:19	409.1	76.9	85.0	146.6	
14:23	455.1	80.1	86.4	166.1	
14:33	430.1	80.3	90.1	157.0	
14:36	462.7	79.5	89.8	166.8	
14:40	471.1	80.7	88.8	178.3	
14:44	464.2	75.3	93.8	173.6	
14:47	416.4	75.8	100.1	147.2	
14:50	419.4	76.8	80.9	151.9	
14:54	445.2	78.1	93.4	156.1	
14:57	390.8	80.2	89.6	144.8	
15:00					
15:03	455.1	79.8	92.6	158.5	average
15:07					
15:10					
15:19					
15:23					
15:26					
15:29	410.7	78.9	74.7	174.6	
15:33	387.9	73.8	62.5	154.9	
15:36	375.3	73.9	92.8	156.2	
15:39	365.0	72.2	80.0	158.0	
15:42	350.9	67.1	76.3	119.9	
15:46	336.3	70.5	64.2	130.6	
15:49	482.6	90.7	145.1	130.1	
15:52	379.6	74.4	85.0	137.7	
15:56	390.6	76.3	89.4	148.0	
16:06	394.9	75.8	91.3	139.8	
16:10	384.4	71.7	86.9	143.6	
16:13	379.7	72.8	86.2	151.2	
16:16	375.0	70.2	103.7	150.2	
16:19	118.7	70.3	90.4	144.8	
16:23	109.6	66.7	97.1	144.8	
16:26	137.1	68.3	106.0	114.5	
16:29	40.5	47.8	93.0	146.6	
16:33					
16:36	318.8	71.8	89.7	143.9	average

CEM Evaluation of ICP OES by DOE/EPA at Environmental Research Center, RTP, NC

Sunday April 21, 1996

Turned ICP* on and let warm up. Heated transfer line and all related heating circuits turned on by 9:15 am. Pump drawing stack gas turned on ~9:15 am. First profile (scan) of stack gas attempted ~9:30 am. [High voltage adjustment on TJA R_2D_2 set to 3900 v from 3650 v with multiturn pot on back of chassis; plate current increased consequently from 630 to 627 ma reflected, slight increase in rf power to the torch.] System tested as a 'dry run' 10:00 am. System seems to be performing well. When stack gas passes to ICP, a violet glow could be detected by eye both in the 'tail' region (approx 10-15 cm above load coil) and near or between the top of the intermediate tube of the torch and the bottom of the rf coil. No metals detected preliminarily - though → cont on page 2

* Thermo Jarrell Ash ICAP 61E modified for argon/air operation

\# Personnel: Mike Seltzer, PI China Lake Naval Air Warfare
Gerhard Meyer, Thermo Jarrell Ash Corp, Franklin, MA

con't from page 1

the CEM had not been calibrated yet today. Glow in plasma thought to be related to components in stack gas (PICs or products of incomplete combustion). Compared clean reference air (from pump bringing in outside air) to stack gas supposedly free from metals. Baseline shifts and spectral features were detected in the stack gas, which absent in the reference gas. Viewing of peak profiles for all elements necessitated relocating a few background correction points from where they were set in reference air.

By the end of the day (18:00) ICP extinguished for unexpected reasons only once, ran otherwise very steady.

Apr 21, 1996

Apr. 21, 1996

Beginning calibration procedure. Measuring aqueous uptake rate by observing time rate of water removal from pipette. Observed 1.5 ml/min @ speed = 450 on peristaltic pump. Repeat measurement confirm 1.5 ml/min.

Profiled spectrometer. $\Delta\lambda = -.0235$

preliminary QC measured

Method: MAGS Sample Name:
Run Time: 04/21/96 19:25:01
Comment:
Mode: IR Corr. Factor: 1

Elem	Mg2802	Mg2852	Pb2203	As1890
Avge	9.784	1.000	54.56	31.67

Analysis Report Sun 04-21-96 07:30:06 PM

Method: CLNAWS Sample Name: qc Operator:
Run Time: 04/21/96 19:28:38
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	12.41	467.9	249.5	311.5	285.7	442.4

Elem	Hg2536	Pb2203	Se1960	Mn2576	Ni2316	Sb2068
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	3.432	349.8	919.3	288.1	492.1	566.9

Elem	Y3710	Al3082	Fe2966	Mg2802	Mg2852	2203_2
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM			
Avge	396.8	2.304	52.14	9.781	1.000	327.9

Elem	1960_2	1960_1
Units		
Avge	874.0	1010.

APRIL 22, 1996 MONDAY EPA - ENVIRONMENTAL RES. CENTER

- Profiled ICP, ran QC check solution

- Began CEM-ICP testing at 8:34 am.
- First measurement of stack gas @ 8:43. Noted violet (?) emission in plasma; evidently NO_x in stack increased due to HNO_3 in feed solution.
- Aerosol feed into kiln to begin 8:55 am.
- Manual sampling began 9:02 am.
- Nebulizer feed shut off 9:34 a.m.
- Aerosol feed begun 10:10 am (into kiln)
- Reference method resumed on kiln @ 10:11 am. Planned to run reference method till 10:40 am.

- Changed sample loop-temp value in "param.txt" from 335°F to 280°F @ 10:18:43

- Metals feed in kiln shut down for 15-30 minutes @ 10:40 am.
- Metals feed started @ 10:57 in kiln.
- plasma off @ 11:45 AM - argon ~~flow~~ pressure too low did pressure build on dewar - relighting plasma
- Feed to kiln turned off @ 12:40 pm.
- Metals feed to kiln started 1:13 pm; reference method to begin @ 1:16 pm.
  ≡ visits to trailor, missed several notebook recordings.
- Feed to kiln resumed 3:16 pm.
- Reference measurement begun 3:21 pm.

April 22, 1996 MONDAY TEST CONTINUED

- Metals feed resumed 4:15 pm.

Discovered that isokinetic system defaulted to idle flow rate @ 16:19 - went to 4.0 SLM. Went in to parameter file and changed default idle flow rate to 8.5 SLM. Re-started system.

- Metal feed began 6:01 pm
- Reference method began 6:06 pm.
- Metal feed shut down 6:35 pm

Assuming 8% O_2 + 6% H_2O

END. April 22, 1996

MD Selby April 22, 1996
JH Hunger 4/22/96

4pm 23

Replaced torch w new one - adjusted outer and intermediate flows as well as torch position and achieved Mg II / Mg I of ~ 9.5 plus Pb(IR) = ~60 and As ≈ 30 from QC solution and passed on all elements. Re activated As 193 channel and ascertained via 1 scan w stack air that no gross interference exist. although baseline was elevated ~ 5000 relative to ref. air. Eliminated Pb 220.3 + Se 196.0 from QC table. Started monitory sequence @ 1:32 pm -

Water injected into kiln ~ 1:30 - 2:10

Blank nitric acid + water (15%) injected ~ 2:15 - 2:45 pm

Metals + water / acid to begin feed to kiln 2:36 pm

Fly ash introduction 2:55 pm + high metals

medium metals + ash

medium metal + ash off (solution ran out) 3:38

low metals + ash on 3:42 pm

Metals off / ash off 4:02

Assuming 8% O_2 + 6% H_2O

Apr. 24

7:30 Am installed new plasma torch - optimized flow and position. Adjusted auxiliary flow to ~ 2 SLPM argon and intermediate to ~ 0.4 SLPM argon.

Method: MAGS Sample Name:
Run Time: 04/24/95 07:51:33
Comment:
Mode: IR Corr. Factor: 1

Elem	Mg2802	Mg2852	Pb2203	As1890
Avge	7.968	1.000	55.79	23.95

Begin calibration @ 8:20 Am w Mark Mitzel

Start monitoring @ 9:48
Applebarrow planned @ 10 11
Resuming reference method 10:20
Reference method and metal feed shut at 11:
Metal feed began 11:40
Reference method - 11:45 began

Reference method port changed (off 12:42 p) but metal feed left on.

Metals off - M29 end ~ 2pm

Assuming 8% O_2 and 6% water

Metals started again 2:30
Monitoring re-started 2.32
RM started @ 2:40 pm

Switch ports on RM

3:41 Shut down, still feeding metals.

3:54 stopped metals - changed jigs

4:03 Start up reference (run for next ~1 hr then done with 3rd reference method.

6/24/96

April 25, 1996 "Redo" of Monday's test with Continuous metals feed taking 3 Reference Measurements.

9:50 Begin metals feed (+ ash)

Oxygen value of 16% used in calculation to standard conditions

JM
9:52 ~~10:05~~ Afterburner flame out · cut metals feed.
10:05 Complete calibration + check out
10:14 Start monitoring

10:00 restarted metals feed
10:35 Reference method to begin
11:20 Afterburner went off
11:20 Reference method cut short by ~15 min
1:23 Turn metals feed on.
11:44 Reference method begins
12:04 Change sample loop temp value to 300°F in "param. txt" file.

12:15 ICP SYSTEM SHUT DOWN (COMPUTER CRASH-UP)
12:23 SYSTEM BACK ON LINE (12:26 start mon.)

BAROMETRIC PRESS 29.95 MEASURED AT 12:25

12:45 Reference method shut down

.16 "Redo" of Monday's test with Continuous metals feed taking 3 Reference Measurements.

9:50 Begin metals feed (+ ash)

Oxygen value of 16% used in calculation to standard conditions

9:52 10:05 Afterburner flame out · cut metals feed.
10:05 Complete calibration + check out
10:14 Start monitoring

10:00 restarted metals feed
10:35 Reference method to begin
11:20 Afterburner went off
11:20 Reference method cut short by ~15 minutes
11:23 Turn metals feed on.
11:44 Reference method begins
12:04 Change sample loop temperature to 300°F in "param txt" file.

12:15 ICP SYSTEM SHUT DOWN (COMPUTER LOCK-UP)
12:23 SYSTEM BACK ON LINE (12:26 start num.)

BAROMETRIC PRESS 29.85 MEASURED AT 12:25

12:45 Reference method shut down

13:22 profile failure - ICP off
13:24 re-start plasma
RF1 also re-started - last one

2:24 reference method completed

2:30 High level metals introduced

3:22 Plasma stopped.

7:30 System shutdown

April 26, 1996 High Concentration Feed

8:25 Medium metals feed began

8:29 High metals feed began

#1 — 8:40 Reference method began

9:00 Switching argon tanks - shut down noon started monitoring

9:10 Back - on

9:15 Computer Crash - up - stopped execution of secondary program - fixed problem

9:30 Apparent problems with fly ash feed / line plugged; problem corrected. 2nd half of reference method resumed.

9:40 Shut down ICP for torch change and re-cal. Back on @ 9:55

10:00 RM done switching to medium metals

10:11 on line

10:13 Back to high metals

#2 10:22 START Reference method

10:51 Switched ports on reference method

11:01 Resumed reference methods

11:39 Reference method off

#3 12:07 Reference method started

12:31 Switching ports for RM

12:50 resume RM

1:23 RM stopped
cut off monitoring - work on data

1:44 Start monitoring

#4 1:45 RM started
Change Sample loop temp value to 300F in "param.txt"

2:20 Switching ports for RM

~~2:32 RM start~~ 3:00 RM #4 end

#5 3:30 RM #5 start

4:00 adjusted torch position slightly back, adjusted aux argon flow.
turned on A/C - trailer getting too warm.

4:33 RM #5 end.

ZERO DRIFT TEST

Analysis Report Wed 04-24-96 08:13:33 PM page 1

Method: CLNAWS Sample Name: Reference Operator:
Run Time: 04/24/96 20:12:01
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	As1890	As1936	Ba4934	Be3130	Cd2265	Co2286
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	-.3248	4.826	5.108	.0074	.0090	.0983	-.3514
SDev	.0000	.000	.000	.0000	.0000	.0000	.0000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.	1000.	1000.	1000.	1000.	1000.	1000.
Low	-2.000	-5.000	-5.000	-2.000	-2.000	-5.000	-5.000

Elem	Cr2677	Hg2536	Pb2203	Se1960	Mn2576	Ni2316	Sb2068
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	.2143	-.1226	-.1948	2.594	.1131	-.0956	5.184
SDev	.0000	.0000	.0000	.000	.0000	.0000	.000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	LC Pass	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.		1000.	1000.	1000.	1000.	1000.
Low	-2.000		-5.000	-5.000	-5.000	-2.000	-5.000

Elem	Tl1908	Y3710	Al3082	Fe2966	Mg2801	Mg2852	2203_2 (Pb)
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM			
Avge	1.481	-.0079	-.8007	-.9139	.3973	-.0035	.1483
SDev	.000	.0000	.0000	.0000	.0000	.0000	.0000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	1000.						
Low	-2.000						

Elem	2203_1	1960_2 (Se)	1960_1
Units			
Avge	-.8821	.1669	7.457
SDev	.0000	.0000	.000
%RSD	.0000	.0000	.0000
Errors	NOCHECK	NOCHECK	NOCHECK
High			
Low			

QC (SPAN CHECK)

Analysis Report QC Standard Wed 04-24-96 08:18:28 PM page 1

Method: CLNAWS Sample Name: QC Operator:
Run Time: 04/24/96 20:17:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	As1890	As1936	Ba4934	Be3130	Cd2265	Co2286
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	29.83	979.7	958.1	553.6	1019.	1067.	2022.
SDev	.00	.0	.0	.0	.	.	.
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value		1109.	1103.	533.0	1176.	1225.	2325.
Range		20.00	20.00	20.00	20.00	20.00	20.00

Elem	Cr2677	Hg2536	Pb2203	Se1960	Mn2576	Ni2316	Sb2068
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	1576.	18.41	1373.	2566.	1542.	2174.	2061.
SDev	.	.00	.	.	.	.	.
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	1740.				1739.	2423.	2300.
Range	20.00				20.00	20.00	20.00

Elem	Tl1908	Y3710	Al3082	Fe2966	Mg2802	Mg2852	2203_2 (Pb)
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM			
Avge	2574.	1263.	-4.493	-137.7	8.788	1.000	1437.
SDev	.	.	.000	.0	.000	.000	.
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	2574.	1254.					1591.
Range	30.00	20.00					20.00

Elem	2203_1	1960_2 (Se)	1960_1
Units			
Avge	1146.	2824.	2049.
SDev	.	.	.
%RSD	.0000	.0000	.0000
Errors	NOCHECK	QC Pass	NOCHECK
Value		3248.	
Range		20.00	

20:18 04/24/96=> QC Check: passed.

QC (SPAN CHECK)

Analysis Report QC Standard Mon 04-22-96 06:52:55 PM page 1

Method: CLNAWS Sample Name: QC Operator:
Run Time: 04/22/96 18:51:54
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286	Cr2677
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	26.77	1291.	730.5	1076.	1189.	2050.	1587.
SDev	.00	.	.0	.	.	.	.
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value		1225.	708.0	1000.	1134.	1928.	1497.
Range		20.00	20.00	20.00	20.00	20.00	20.00

Elem	Hg2536	Pb2203	Se1960	Mn2576	Ni2316	Sb2068	Tl1908
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	29.49	1620.	3603.	1609.	2304.	2510.	2705.
SDev	.00	.	.	.	.	.	.
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value		1544.	3452.	1516.	2221.	2416.	2749.
Range		20.00	20.00	20.00	20.00	20.00	30.00

Elem	Y3710	Al3082	Fe2965	Mg2802	Mg2852	2203_2 (Pb)	2203_1
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM				
Avge	1439.	5.660	2.054	8.809	1.000	1637.	1585.
SDev	.	.000	.000	.000	.000	.	.
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass
Value	1366.					1543.	1545.
Range	20.00					20.00	20.00

Elem	1960_2 (Se)	1960_1
Units		
Avge	3712.	3385.
SDev	.	.
%RSD	.0000	.0000
Errors	QC Pass	QC Pass
Value	3476.	3402.
Range	20.00	20.00

18:53 04/22/96=> QC Check: passed.
18:57 04/22/96=> Manual Mode entered by m
19:00:25 ZERO DRIFT TEST PASSED

ZERO DRIFT TEST

Analysis Report Mon 04-22-96 07:00:41 PM page 1

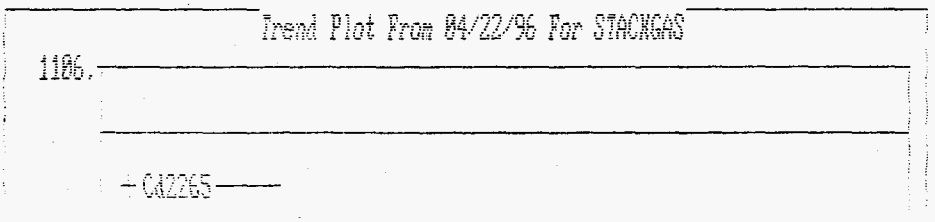
Method: CLNAWS Sample Name: Reference Operator:
Run Time: 04/22/96 18:59:20
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286	Cr2677
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	.2637	4.077	-.0414	-.0287	.2429	.6947	.2579
SDev	.0000	.000	.0000	.0000	.0000	.0000	.0000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.	1000.	1000.	1000.	1000.	1000.	1000.
Low	-2.000	-5.000	-2.000	-2.000	-5.000	-5.000	-2.000

Elem	Hg2536	Pb2203	Se1960	Mn2576	Ni2316	Sb2068	Tl1908
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	-.1564	-.2771	-2.197	-.0096	.6849	.0724	2.768
SDev	.0000	.0000	.000	.0000	.0000	.0000	.000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High		1000.	1000.	1000.	1000.	1000.	1000.
Low		-5.000	-5.000	-5.000	-2.000	-5.000	-2.000

Elem	Y3710	Al3082	Fe2966	Mg2802	Mg2852	2203_2 (Pb)	2203_1 (Pb)
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM				
Avge	.0035	1.312	12.49	-.5150	.0000	-.9413	1.053
SDev	.0000	.000	.00	.0000	.0000	.0000	.000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	1960_2 (Se)	1960_1
Units		
Avge	-6.593	6.607
SDev	.000	.000
%RSD	.0000	.0000
Errors	NOCHECK	NOCHECK
High		
Low		



QC (SPAN CHECK)

Analysis Report QC Standard Thu 04-25-96 03:59:54 PM page 1

Method: CLNAWS Sample Name: QC Operator:
Run Time: 04/25/96 15:58:54
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	As1890	As1936	Ba4934	Be3130	Cd2265	Co2286
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	6.841	365.3	382.6	155.6	397.2	505.7	908.6
SDev	.000	.0	.0	.0	.0	.0	.0
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value		374.0	389.0	159.0	402.0	521.0	934.0
Range		20.00	20.00	20.00	20.00	20.00	20.00

Elem	Cr2677	Hg2536	Pb2203	Se1960	Mn2576	Ni2316	Sb2068
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	685.3	22.60	628.0	916.8	694.3	996.9	814.9
SDev	.0	.00	.0	.0	.0	.0	.0
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	705.0				715.0	1029.	840.0
Range	20.00				20.00	20.00	20.00

Elem	Tl1908	Y3710	Al3082	Fe2966	Mg2802	Mg2852	2203_2 (Pb)
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM			
Avge	901.7	423.5	-2.027	-42.27	9.216	1.000	654.5
SDev	.0	.0	.000	.00	.000	.000	.0
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	936.0	431.0					684.0
Range	30.00	20.00					20.00

Elem	2203_1	1960_2 (Sc)	1960_1
Units			
Avge	574.9	956.9	836.4
SDev	.0	.0	.0
%RSD	.0000	.0000	.0000
Errors	NOCHECK	QC Pass	NOCHECK
Value		992.0	
Range		20.00	

16:00 04/25/96=> QC Check: passed.

ZERO CHECK

Analysis Report Thu 04-25-96 04:28:52 PM page 1

Method: CLNAWS Sample Name: Reference Operator:
Run Time: 04/25/96 16:26:50
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	As1890	As1936	Ba4934	Be3130	Cd2265	Co2286
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	.0000	.1263	2.127	.0247	.0156	-.0254	1.169
SDev	.0000	.0000	.000	.0000	.0000	.0000	.000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.	1000.	1000.	1000.	1000.	1000.	1000.
Low	-2.000	-5.000	-5.000	-2.000	-2.000	-5.000	-5.000

Elem	Cr2677	Hg2536	Pb2203	Se1960	Mn2576	Ni2316	Sb2068
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	.1885	-.5286	.3371	1.746	.0146	.3611	-1.755
SDev	.0000	.0000	.0000	.000	.0000	.0000	.000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	LC Pass	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.		1000.	1000.	1000.	1000.	1000.
Low	-2.000		-5.000	-5.000	-5.000	-2.000	-5.000

Elem	Tl1908	Y3710	Al3082	Fe2966	Mg2802	Mg2852	2203_2(Pb)
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM			
Avge	-.0866	-.0129	1.013	-6.335	-.8743	-.0015	2.460
SDev	.0000	.0000	.000	.000	.0000	.0000	.000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	1000.						
Low	-2.000						

Elem	2203_1	1960_2(Se)	1960_1
Units			
Avge	-3.916	4.811	-4.394
SDev	.000	.000	.000
%RSD	.0000	.0000	.0000
Errors	NOCHECK	NOCHECK	NOCHECK
High			
Low			

16:32 04/25/96=> Stack Monitoring suspended by m: exiting to ThermoSPEC

ZERO DRIFT TEST

Analysis Report Fri 04-26-96 05:06:11 PM page 1

Method: CLNAWS Sample Name: Reference Operator:
Run Time: 04/26/96 17:00:38
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	As1890	As1936	Ba4934	Be3130	Cd2265	Co2286
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	-.0310	-.2447	-.7497	.0039	-.0054	-.0385	.2811
SDev	.0000	.0000	.0000	.0000	.0000	.0000	.0000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.	1000.	1000.	1000.	1000.	1000.	1000.
Low	-2.000	-5.000	-5.000	-2.000	-2.000	-5.000	-5.000

Elem	Cr2677	Hg2536	Pb2203	Se1960	Mn2576	Ni2316	Sb2068
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	-.0321	.2145	.3872	-1.171	-.0567	.2868	-.4613
SDev	.0000	.0000	.0000	.000	.0000	.0000	.0000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	LC Pass	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000.		1000.	1000.	1000.	1000.	1000.
Low	-2.000		-5.000	-5.000	-5.000	-2.000	-5.000

Elem	Tl1908	Y3710	Al3082	Fe2966	Mg2802	Mg2852	2203_2
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM			
Avge	.7482	.0084	-.1345	-1.025	-.1106	.0016	.6815
SDev	.0000	.0000	.0000	.000	.0000	.0000	.0000
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	1000.						
Low	-2.000						

Elem	2203_1	1960_2	1960_1
Units			
Avge	-.2022	-1.531	-.4497
SDev	.0000	.000	.0000
%RSD	.0000	.0000	.0000
Errors	NOCHECK	NOCHECK	NOCHECK
High			
Low			

17:06 04/26/96=> Stack Monitoring suspended by m: exiting to ThermoSPEC

QC (SPAN CHECK)

Analysis Report QC Standard Fri 04-26-96 05:13:03 PM page 1

Method: CLNAWS Sample Name: QC Operator:
Run Time: 04/26/96 17:11:37
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	As1890	As1936	Ba4934	Be3130	Cd2265	Co2286
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	4.485	409.1	431.4	190.0	378.4	512.4	865.4
SDev	.000	.0	.0	.0	.0	.0	.0
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value		408.0	426.0	193.0	379.0	518.0	881.0
Range		20.00	20.00	20.00	20.00	20.00	20.00

Elem	Cr2677	Hg2536	Pb2203	Se1960	Mn2576	Ni2316	Sb2068
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM
Avge	604.2	9.187	459.4	929.6	630.9	975.1	903.3
SDev	.0	.000	.0	.0	.0	.0	.0
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	623.0				649.0	991.0	906.0
Range	20.00				20.00	20.00	20.00

Elem	Tl1908	Y3710	Al3082	Fe2966	Mg2802	Mg2852	2203_2
Units	mcg/DSCM	mcg/DSCM	mcg/DSCM	mcg/DSCM			
Avge	918.7	425.1	-1.030	-5.942	3.778	1.000	595.5
SDev	.0	.0	.000	.000	.000	.000	.0
%RSD	.0000	.0000	.0000	.0000	.0000	.0000	.0000
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	947.0	439.0					593.0
Range	30.00	20.00					20.00

Elem	2203_1	1960_2	1960_1
Units			
Avge	186.7	1103.	582.7
SDev	.0	.	.0
%RSD	.0000	.0000	.0000
Errors	NOCHECK	QC Pass	NOCHECK
Value		1066.	
Range		20.00	

APPENDIX K

SNL
DAILY LOGBOOK
PAGES
AND
CEM DATA

× 4023 pk on wall in lab

4/22/96 powerup 7:05 am

7:31 Run STDSET for wavelength calibration.
crashed at last wavelength, memory problem

crashed again

8:17 RUNA/4 for background scan (stopped intentionally)

≈ 8:28 RUNA/4 flyash on
crashed @ 360

8:46 RunA/4 flyash am
6 Hz, every hit, bin 4

9:00 ~~HITALL/4~~ hit 215/4
9:03 HIT 215/4 start PM 1 9:02

9:05 HIT 230/4
9:06 HIT 230/4

9:08 HIT 265/4
Be @ 530?

9:09 on 9:10 HIT 265/4

9:11 HIT 280/4

9:13 HIT 280/4
9:14 HIT 300/4 Be @ 303
9:15 & 16 HIT 300/4
9:19 HIT 320/4 3708 pk 1107 base Be @ 7 312 same peak & 300 window

9:21 HIT 320/4

9:24 HIT 360/4
9:26 HIT 360/4

9:28 HIT 440/4 pk @ 381 – close to Hg (387)
9:29 HIT 440/4
9:32 HIT 215/4
9:33 turn off metals for RM switching (?)
10:13 start [illegible] am

10:23 HIT 230/4
base 509
pk 681 Cd @ 435

10:26 HIT 230/4

10:28 HIT 265/4 have base image to see Cr @ 604

10:30 HIT 280/4 Cr @ 629-30 -- very slim

10:32 HIT 300/4 Be 903 very strong
3450 pk
774 base

10:35 HIT 320/4

10:39 HIT 265/4

10:40 end RM4 metals ff

10:58 started metals Seed

* 11:06 start RM2 — were ff line, debugging software glitch
11:34 RM2 ff metals ff.
12:04 start metals ff.

Howie turned off, used GPIB transceivers — fixed commun. prob

Ken – Solasky 4 3/4" ht ox: 87

13:16 start RM3, SCAN

13:19 start ~~RUN~~ A/4

215 nm ~~As~~ Cd @ 903?

280 nm

(~~MACCAD not working~~) intensity only

13:27+ start RUNA/4

13:36 start RUNB/4

230 nm Cd

265 nm Sb?! Be marginal

280 nm Be marginal, Y

300 nm -- no Be analysis!

320 nm good Be, Cr problem

13:44 repeat RUNB/4

215 nm ~~As~~ As (prob. bogus)

230 nm Cd, marginal As

13:47 metals off

265 Sb (!?), Be

280 Be, Y

300

320 Be gone

~~13:55~~ repeat RUNB/4 — metals off. (to check & make sure working & as background check)

≈ 14:00 run & install std lamp set. Still flames on 360nm.

14:15 start metals RM3

~~14:16 Start RUNA/4~~

MATLAB bombed

14:20 restart RUNA/4

215 max 520 Y marginal

~~265 max 3600~~

270 max 3600 Be, Cd

265 max 16,215 Sb, Be

280 max 7600 ~~Sb~~ Be, Y

300 max 7000 Y (no Be this)

320 max 3000 Be, Cr error

360 max 2000 —

~~400~~ max 700 —

14:20 start RUNB/4

14:34 " " "

RM3 aborted ≈ 14:~~36~~ 33

14:46 B300/1 as test (Be, Cr analyzed)

14:47 B300/20 as test " " "

14:53 B300/4 as test — OK

15:18 RUNB/4

15:13 RUNB/4 (no metals feed!) (RM not on)

start metals 15:15

15:18 RUNB/4

RM1 starts 15:20

15:25 RUNB/4 Aspen Be fits @ 300, 320

15:31 ~~note~~ RUNB/4

15:35 RUNB/4

15:50 ~~suspend~~ RM1

16:14 resume RM1

16:14 HIT215/4

16:15.6 HIT 230/4

16:17 HIT 265/4 → rename HIT 23x/4

16:20 HIT 265/4

16:21 HIT 280/4

16:23 HIT 300/4

16:25 HIT 320/4

~~select hits~~ pix pk 319 ave 5
base pix 280
threshold ratio 1.2

HIT320/4 16:28

16:31 HIT 320/4 threshold ratio 3

16:38 HIT 320/4 threshold ratio 4

16:45 end RM1

17:05 metals on

17:07 RMS start

HIT215/4 17:09

17:13 HIT230/4

17:14 HIT265/4

17:15 HIT280/4

17:17 HIT300/4

17:19 HIT320/4

17:22 RUNB/4

265 Be,

280 Be, Y

300 Be, Y

320 Y, Be

17:29 RUNB/4

17:34 RUND/4

17:36 ~~metals~~ All.

Metals on at 6:00pm

18:01 B230/20

18:02 B360/20

18:03 RunB/4

18:04 RunB/4

HIT 265/4 pk pix 604

base pix 500

ratio 1.1

av 5

hits 100, shots 193

18:32 HIT 265/4 hits 100, shots 201

18:35 HIT 265/4 hits 100, shots 201

18:37 ~~hits 4, shots 100~~

~~no metals~~ metals off ≈ 18:40 33 end RM 5

Baseline scan:

18:45 RUNB/4 Be still opening

18:56 RUNB/4 for baseline

Tues April 23, 1996

8:46 Run Std 4d for wavelength calibration
(fixed Hg Std360 so wouldn't lock up)

8:52 Run Hg Std360 manually
Run Hg Std440 "

8:56 Run STDSET,
rebuild Hg Std440

9:04 Run STDSET

9:20 RUNA/4 for background scan —
no flyash being fed
Y@300 (bogus?)
Y@280, Pb@280

9:48 repeat RUNA/4 terminated — MATLAB was off

9:50 start RUNB/4
280 nm: marginal Pb fit,
good "Y" fit.
300: good "Y" fit

37.0 laser power (5Hz, every other shot ⇒ 2.5Hz

RUNA/4 w/ flyash Acc Pb, Y@300, Y@280
Hg@440

14:00 RUNA/4 H_2O feed only.
started HNO_3 <3 minutes in

MATLAB bombed

~~14:05~~ restart MATLAB, RUNA/4

14:12 RunA/4 with HNO_3 only

S:N

230 Be 1.3, .34
As .07, .31

245 Sb 5.5, .57
As 1.23, .28

280 Be .5, .45
Y 43, .9

300 Be .1, .486
Y 34.3, .64

320 —

360

440 Hg 4.5, .41

14:19 HNO_3 off

≈ 14:35 metals on (mod, no flyash)

14:36 RUN~~A~~/4
(Mg shows up?!) appears intermittent (rare particles)

14:44 RUNB/4
see iron
Cr in 300 window @ 202?

14:50 B300/4
big Si peak

14:55 B440/4 no Y

14:58 HIT 300/4

14:58 switch to low metal feed, no flyash

14:59 HIT 300/4

~~14:60~~ HIT 300/4

~~15:00~~

15:03 HIT 230/4 see Cd

15:06 HIT 230/4 see Cd

15:08 HIT 230/4 threshold ratio = 1.2
34 Hits/100 shots
435 pk 428 ~~base~~ pix lo

15:10 HIT 440/4

15:12 HIT 440/4

15:13 HIT 320/4

15:17 HIT 320/4

15:19 metals off

15:19 metals on, medium, w/ flyash

15:20 HIT 320/4 good Ba, Mg^2

15:22 HIT 320/4 unknown pk @: 213, 400, 460

15:24 HIT 230/4 Cd @ 435

15:28 HIT 440/4

15:30 ~~HIT 233 HIT 233~~ HIT 230/4

Ok peak: R peak 619

base 515

15:33 HIT 230/4 pk 701

base 488

15:41 low metals w/ flyash

15:42 HIT 230/4

15:43 HIT 230/4

15:46 HIT 230/4 pk 499

base 446

15:48 HIT 320/4

RunB/4 ~~15:53~~ 15:55

April 24, 1996

0730 STDSET for wavelength calibs
0735 Hg STD360
0735 Hg STD440

0827 RUND/4 (320nm for Be, 20 times)
metals on 0830
other peaks showed up before Be, but Be w/in 1 min.

metal off 0834

0835 RUND/4 (metals still off)

0843 RUND/4 (metals still off)

0847 —— metals on

0849 RUND/4
0856 getting better peaks -

0855 start RM1

0857 RUND/4
still big variations
consistently see peak, but doesn't fit every time.

0904 RUND/4
Big variations in Be & other peaks
crashed 0907 (in MATLAB) restart

0908 RUND/4

25 shots take 10 s. 10 s. meas, 10 s. between 25-shot scans.

09 RUN D/4

0939 RUN D/4

correlations are not as good as should be for nice Be peaks.

0949 RUN D/4

0956 RUN D/4

0959 Metals down to switch bottles

1000 Back on

1005 RUN D/4 (had stopped) (RM off 0955 – 1020)

≈ 10:06 Flame out in afterburner

≈ 10:24 Metals off Flame won't relight

≈ 10:11 Run D/4

≈ 10:13 Metals On

≈ 10:14 Change flow from 11.2 to 11.00

10:18 Run D/4

10:20 Resume RM (was off?)

10:27 Run D/4 10:34? Run D/4

10:42 Run D/4

Calcium pks 402, 460 Aeg Howie

MATLAB dies

10:49 ~~RUN D/4~~

Stop → 10:56 RUN D/4

11:04 RUN D/4

11:20 B230/4 for Cd
— small peak (didn't fit)

11:21 metals off RM1
rebuild std lamp + background file
(use early run from yesterday)

11:40 metals on

→ 11:42 start RM2

11:42 RUND/4

4 fit, better Be fit w/ new files.

11:49 RunD/4
locked up

11:57 RUND/4

12:05 RUNH/8D for Cd — no fits, but barely visible

12:09 stopped RUN cuz not enough visible

12:13 HIT215/4

12:14 HIT215/4

12:16 HIT230/20 435 pk, 420 bas pix
1.2 ratio
102 hits, 186 total

HIT230/20 100 hits, 193 tot

12:21 HIT 230/20 17 hit, 102 shots

12:22 HIT 230/20 rating = 0,1 (take all)

12:23 HIT 265/20 take all

12:25 HIT 265/4

12:27 HIT 300/4 look for C4

12:29 HIT 300/4

12:31 HIT 320/4

12:33 HIT 320/4 — every hour, look at 230, 265, 300, 320 single-shot

12:38 RUN3/4

→ 12:41 RM2 off (pause)

12:57 RUN3/4 (80 + A320/4)

→ 1:00 resume RM2

1:13 Run3/4

2:00 Run3/4

→ 14:00 RM2 off

14:21 RUN3/4

metal on → ≈ 14:35 RUN3/4

→ 14:40 RM3 on

14:50 RUN3/4

15:00 RUN3/4

15:23 HIT230/4

15:25 HIT230/4

15:28 HIT230/4
HIT230/4
HIT265/4
HIT265/4
HIT300/4
HIT300/4
HIT320/4
HIT320/4

15:43 RunJ/4

15:46 Part change

15:48 opened system Scr method 60

15:53 closed system Scr " "

15:54 metals feed off briefly
15:55 metals back on

15:57 RunJ4

16:04 Start Method 60

16:14 RUNJ/4

16:33 HIT230/4 50 shots

16:35 HIT230/4 50 shots

16:37 HIT230/4 50 shots

16:37 HIT265/4 50 shots

16:39 " " "

5:45

16:41 HIT 300/4 50 shots
16:42 " "
16:43 " "

16:44 HIT 320/4 50 shots
16:45 " "
= =

16:46 HIT 440/4 " look for Cr
~~16:47 HIT 440/4~~

16:57 RUNJ/4

17:03 metals off, end RM3

17:20 RUNJ/4

17:20 metals on

17:34 RUNJ/4

→ 17:34 RM4 on

stop RUNJ to have fresh start before meeting

17:43 RUNJ

died

17:58 RunJ/4

18:37 metals off, RM4 pause

18:51 RUNL/4 230

19:05 Resume RM4

19:07 RUNJ/4

19:22 B320/4

19:23 RUND/4

19:29 B320/4

— RUNJ/4

20:05 End RM4.

20:05 metals 4

20:07 RUNJ/4

~~DO NOT QUOTE OR CITE~~

~~DO NOT QUOTE OR CITE~~

4/25/96

Build new std lamp set

Yesterday, pointer

RUNM to test

0950 RUN R to test

0952 metals on

lose flame - on & off a few times

1035 start RM

1035 B440/4

1036 B420/4

1038 RUNM

1050 RunC ★★

need to go to Bin 1 on Cd Be @320 ~~for tomorrow~~

1051 RunM

1102 RUNM

make BIN 20 on Cd @230 for today ★★

Bo Lits should be better ★★

1109 RUNM

limited by intermittent particles on Cd

metals off 11:18 (flame off)

11:20 HIT 230/20 w/out metals

every shot

looked at todays 320 Hg Std compared to yesterdays — about 1 pixel shift..

Leave it as is.

11:43 start RM2

11:44 HIT 230/20

11:45 HIT 230/20

11:47 HIT 265/20

11:49 HIT 265/20

11:51 HIT 300/20

11:52 HIT 300/4

11:54 HIT 320/4 — pump turned off to switch metals / 20s

11:56 HIT 320/4

11:57 HIT 420/4

11:59 HIT 420/20

12:01 HIT 420/20

12:04 RUNP 100 shot aves @ 230, 320

conc/
Cd correlations 0.095/0.826

0.045/0.532

0.074/0.706

12:10 RUNQ

12:43 End RM2

13:23 Start RM3

13:52	Hit parade	230/4		
13:55	"	230/4	~~265~~ ~~280~~ ~~295~~	
13:57	"	265/4	~~300~~	~~280~~
13:59	"	265/4	~~320~~	300
14:01	"	280/4		320
	"	280/4		
14:06	"	300/4		
14:08	"	300/4		
14:10	"	320/4		
14:13	"	420/4		
14:15	"	420/4		

End RM3

14:27	B215/20	Medium Seed
14:29	"	"
14:31	"	high Seed
14:32	"	
14:34	B215/20 3.5 delay	
14:35	B230/20	→ see 435 + 497 peaks of Cd through
	~~A230/20~~	
14:37	B265/4	Cr @ 604?
14:38	B280/4	Mg interferes w/ As
		Ru @ 111

[redacted]

14:40	B300/1	B@ 903	
		bin more if kiss off B	
14:41	A320/	bin more if ignore B	/20
14:43	B60/4		
14:44	B360/4	delay 10	
14:46	B440/20	delay 10	
14:47	B440/20	delay 6	
14:48	BI 420/20		
14:50	B215/20	delay 6	(Pb)
14:51	B215/20	3.5	Mutaloff
14:53	B215/20	delay=6	
14:54	B215/20		

4/26/96

Zero scan RUNAA, RUNXX

signal way up on 120 → saturates

0830 std set

0840 Run AA

0846 Start EM1

correlating on Be @ 265, 280

0847 Run AA (crashed previously)

0856 Run AA

0904 RUN XX for Hg, Cr @ 425

BIN 4 on ~~420~~, 360, 440 are low enough so 26 wouldn't saturate — earlier it did.

0904 RUNAA

265 Be

crashed

0913 port chamy

0915 RUNAA 230 Cd, Pb?

265 Be

280 Be Cr

300 Be Cr

320 pon Be Fe

230 Cd, Pb

265 Be

280 Cr, Be

trouble w/ flyash feed

Cd interferes w/ As @ 236

9:36 RUNAA

300 gives excellent Ga, Be fits when works

Bin Be wider @ 320? 290-350
285-355

9:43 RUNAA

9:52 RUNAA

Can get rid of non-Be 320 window
265

10:00 end RM1

10:13 RUNFF

10:20 Start RM2

230 Cd, Pb
280 Ga, Be
300 Ga, Be

10:22 Ref Method On

10:24 RunFF

Bin4 @ 300 not that different in Be than Bin1 — fits accurate?

10:36 RunFF

binning 4 doubles sig relative to 1 (Be @ 300)

10:43 RUNFF

10:50 Swap RM port start

10:54 HIT230/4
10:55 HIT230/4

10:56 HIT280/4
10:57 HIT280/4

10:59 HIT 300/4 9000pk
11:00 HIT 300/4

11:02 HIT 300/1 3000pk
:03 HIT300/1

~11:06 restart RM 2

11:08 RUNFF
11:18 RUN FF
11:34 RUN ff

11:38 end RM 2

11:41 RUN FF

changed binning on As so won't analyze @ 230 — Cd interference.

12:02 Start RM 3

12:02 RUNFF good Cd, Pb, Be, Cr fits

12:08 RUNff
12:14 RUNFF

12:25 HIT230/4
12:26 HIT230/4

12:28 HIT280/4
12:30 HIT280/4
12:31 HIT300/4
~~12:32 "~~ → no shots w/ port open?
change ports

[redacted]

:42 RUNXX for Hg, Cr
(still changing ports)

2:46 RUNXX — end 12:51

12:50 Resume RM3

12:51 RUNff

12:58 RUNff

13:05 RunSf

13:12 Runff

13:21 off RM3

HIT 440
HIT 420

13:33 HIT 230/4

13:36 HIT 280/4

13:38 HIT 300/4

13:42 RUNFF

13:44 Start RM4

13:58 restart RUNFF

14:07 RunSf

14:13 RUNFF

14:36 fire alarm evacuate in rain.
14:51 Restart RUNFF after re-entry
– RUNFF
– RUNFF

15:00

15:14 #1 T230/4
15:15 "

15:17 #1T280/4

#1T300/1

15:00 end RM4

15:30 start RM5

15:33 RUNEE Include 265 for another Be line
valid SA fids @ 230?

15:41 RUNEE

230 –	Cd	116	169	µg/acm rough #'s
	Pb	548	689	
265	Be	88	69	
280	Be	19	17	
	Cr	50	47	
300/1	Be	85	107	
300/4	Cr	62		
~~TSP~~		~~116~~		

15:56 RUNEE
16:04 "
– "
– "

16:30 End RM5, metals station

16:33 RUNEE

```
4-12-96 file
%                360      440                          230 265
%   Column =  195 215 235 260 280 300 320 340 360 380
    lo_pk =  [510 760 215 001 001 001 747 172 350 460;  % Row  1 = Ag = y
              001 880 350 001 500 001 001 001 480 915;  % Row  2 = As *
              848 803 480 618 001 001 001 001 615 478;  % Row  3 = Ba
              001 001 001 660 100 860 300 001 640 500;  % Row  4 = Be
              001 475 290 965 360 001 001 730 400 001;  % Row  5 = Cd *
              001 887 625 467 142 001 001 001 760 327;  % Row  6 = Co
              001 001 001 735 150 875 260 390 440 570;  % Row  7 = Cr *
              665 001 370 346 001 001 001 001 001 205;  % Row  8 = Hg
              001 760 001 346 001 001 001 001 840 120;  % Row  9 = Hv
              001 001 750 455 942 376 001 644 060 315;  % Row 10 = Mn *
              001 001 430 001 001 001 001 001 565 001;  % Row 11 = Ni *
              001 650 125 555 528 001 001 001 240 410;  % Row 12 = Pb *
              001 001 415 516 001 001 001 001 530 365;  % Row 13 = Sb
              760 224 001 001 001 001 001 001 001 001;  % Row 14 = Se *
              001 001 001 988 431 001 001 001 001 848]; % Row 15 = Tl

%                                                 230 265
%   Column =  195 215 235 260 280 300 320 340 360 380
    hi_pk =  [540 790 245 010 010 010 797 222 380 490;  % Row 1 = Ag
              010 920 400 010 527 010 010 010 510 964;  % Row 2 = As *
              898 853 530 668 010 010 010 010 665 528;  % Row 3 = Ba
              010 010 010 710 125 920 340 010 700 560;  % Row 4 = Be
              010 550 340 999 400 010 010 770 470 010;  % Row 5 = Cd *
              010 937 675 517 192 010 010 010 810 377;  % Row 6 = Co
              010 010 010 785 215 975 360 440 590 634;  % Row 7 = Cr *
              685 010 395 396 010 010 010 010 010 235;  % Row 8 = Hg
              010 790 010 396 010 010 010 010 880 207;  % Row 9 = Hv
              010 004 860 505 992 426 010 694 225 365;  % Row 10 = Mn *
              010 010 480 285 010 010 010 010 615 010;  % Row 11 = Ni *
              010 725 175 605 540 010 010 010 310 450;  % Row 12 = Pb *
              010 010 465 556 010 010 010 010 590 405;  % Row 13 = Sb
              810 274 010 010 010 010 010 010 010 010;  % Row 14 = Se *
              010 010 010 1038 481 010 010 010 010 898];    % Row 15 = Tl
```

4-26-96 File

Bin Changes last day

5/28/96 7:10 AM MEMmat1.m Page 1

```
%              360     440                         230 265
%   Column =  195 215 235 260 280 300 320 340 360 380
    lo_pk =  [510 760 215 001 001 001 [illegible] 350 460;  % Row  1 = [illegible]
              001 880 350 001 001 001 001 001 001 001;  % Row  2 = As *
              848 803 480 618 001 001 001 001 615 478;  % Row  3 = Ba
              001 001 001 660 100 [illegible] 300 001 [illegible] 500;  % Row  4 = Be
              001 475 290 965 360 001 001 730 [illegible] 001;  % Row  5 = Cd *
              001 887 625 467 142 001 001 001 760 327;  % Row  6 = Co
              001 001 001 735 [illegible] 260 390 440 [illegible];  % Row  7 = Cr *
              665 001 370 346 001 001 001 001 001 205;  % Row  8 = Hg
              001 760 001 346 001 001 001 001 840 120;  % Row  9 = Hv
              001 001 750 455 942 376 001 644 060 315;  % Row 10 = Mn *
              001 001 430 001 001 001 001 001 565 001;  % Row 11 = Ni *
              001 [illegible] 125 555 [illegible] 001 001 001 [illegible] 001;  % Row 12 = Pb *
              001 001 415 516 001 001 001 001 [illegible] 001;  % Row 13 = Sb
              760 224 001 001 001 001 001 001 001 001;  % Row 14 = Se *
              001 001 001 988 431 001 001 001 001 848];  % Row 15 = Tl

%              360     440                         230 265
%   Column =  195 215 235 260 280 300 320 340 360 380
    hi_pk =  [540 790 245 010 010 010 [illegible] 490;  % Row 1 = Ag
              010 920 400 010 010 010 010 010 010 010;  % Row 2 = As *
              898 853 530 668 010 010 010 010 665 528;  % Row 3 = Ba
              010 010 010 710 125 920 340 010 [illegible] 560;  % Row 4 = Be
              010 550 340 999 400 010 010 770 [illegible] 010;  % Row 5 = Cd *
              010 937 675 517 192 010 010 010 810 377;  % Row 6 = Co
              010 010 010 785 [illegible] 360 440 590 [illegible];  % Row 7 = Cr *
              685 010 395 396 010 010 010 010 010 235;  % Row 8 = Hg
              010 790 010 396 010 010 010 010 880 207;  % Row 9 = Hv
              010 004 860 505 992 426 010 694 225 365;  % Row 10 = Mn *
              010 010 480 285 010 010 010 010 615 010;  % Row 11 = Ni *
              010 [illegible] 175 [illegible] 010 010 010 010 [illegible] 010;  % Row 12 = Pb *
              010 010 465 556 010 010 010 010 [illegible] 010;  % Row 13 = Sb
              810 274 010 010 010 010 010 010 010 010;  % Row 14 = Se *
              010 010 010 1038 481 010 010 010 010 898];  % Row 15 = Tl
```

SNL Guide to Data

• The data folder contains concentration values determined from Monday, Wednesday, Thursday, and Friday RM test periods. The Monday files, in particular, have been cleaned up from what we submitted previously to eliminate extraneous information.

• Some files for Wednesday are missing here (RM1, 2, and 3) -- we submitted these previously, and you will have to refer to that data disk. The hard disk these are contained on was already packed when I discovered they were not on the PowerBook used to compile this summary.

• All measurements are in chronological order. We determined Be and Cd on Monday and Thursday ("medium" runs), Be only on Wednesday ("low"), and Be, Cd, Cr, and Pb on Friday ("high"). We made some slight changes in the wavelength intervals that we fit for Cr and Pb between Thursday and Friday -- we believe we would obtain some Cr and Pb fits at the medium level, as well, if those runs were repeated now. We have not yet calculated average values for the individual RM periods -- we will provide these in the next two weeks.

• Some species concentrations (particularly Cd, Be, and Cr) were sometimes determined from more than one spectral line. In some cases, concentrations determined from multiple lines are in good agreement, but in some cases there are discrepancies. We will be looking at these in the coming weeks. In the meantime, if you want to plot, for example, Be as a function of time, it makes the most sense to sort the Be measurements by wavelength and plot together only measurements made at the same wavelength. Excel lets you do this sorting. (Similarly, only comparable measurements should be used to calculate the average concentration in a particular RM period.) The wavelength is encoded in the column headed "script name." Here, the initial letter is A for a 25-laser-shot average and B for a 100-laser-shot average. The next three digits are the spectrometer wavelength setting in nanometers, and the final number (after the slash) is the number of CCD array rows that were binned together for the measurement.

• We will be analyzing a considerable amount of additional data in the form of sequences of single-laser-shot spectra for 50 to 100 consecutive laser pulses in an 8- to 16-second period. Realistically, we can not expect that this work will be completed and written up in the next two weeks -- we will report it when it is completed. We can provide you with an optical disk containing raw spectra from these measurements (as well as the multiple-shot-averaged measurements) if you would like.

• The concentrations reported here have been corrected only for detector binning. They are **not** intended for publication or public presentation since we anticipate that an additional correction will be necessary once we re-measure the aerosol produced by our calibration nebulizer when we return to Sandia.

- Since we believed at the time that Thursday was an optional test day, we were not attempting to make measurements over the full RM periods, and, in fact, we made no time averaged measurements at all during RM3, working instead to acquire a series of single-laser-shot measurements that we will analyze and report at a later time.

	A	B	C	D	E	F	G	H	I
1	Date	Time	Sequence N	Script Name	Beryllium (Be	Be µg/acm	Cadmium (C	Cd µg/acm	
2	4/22/96	8:30:11	RUNA/4	B215/4	-1		0	0	
3	4/22/96	8:31:00	RUNA/4	B230/4			0	0	
4	4/22/96	8:31:52	RUNA/4	B265/4	0			0	
5	4/22/96	8:32:39	RUNA/4	B280/4	0.7829	9.7856		0	
6	4/22/96	8:33:26	RUNA/4	B300/4	-1			0	
7	4/22/96	8:34:13	RUNA/4	B320/4	0	0		0	
8	4/22/96	8:47:52	RUNA/4	B215/4	-1		0	0	
9	4/22/96	8:48:38	RUNA/4	B230/4			0	0	
10	4/22/96	8:49:26	RUNA/4	B265/4	0			0	
11	4/22/96	13:29:25	RUNA/4	B215/4	-1		0	0	
12	4/22/96	13:30:22	RUNA/4	B230/4			0.1029	128.5625	
13	4/22/96	13:31:10	RUNA/4	B265/4	3.0141	37.6763		0	
14	4/22/96	13:31:57	RUNA/4	B280/4	0.8296	10.37		0	
15	4/22/96	13:32:44	RUNA/4	B300/4	-1			0	
16	4/22/96	13:33:31	RUNA/4	B320/4	2.0519	25.6488		0	
17	4/22/96	13:34:19	RUNA/4	B360/4		0		0	
18	4/22/96	13:35:08	RUNA/4	B440/4		0		0	
19	4/22/96	13:37:22	RUNB/4	B215/4	-1		0	0	
20	4/22/96	13:38:09	RUNB/4	B230/4			0.0791	98.8125	
21	4/22/96	13:38:56	RUNB/4	B265/4	2.7761	34.7013		0	
22	4/22/96	13:39:43	RUNB/4	B280/4	0.7072	8.84		0	
23	4/22/96	13:40:30	RUNB/4	B300/4	-1			0	
24	4/22/96	13:41:17	RUNB/4	B320/4	3.5938	44.9225		0	
25	4/22/96	13:45:39	RUNB/4	B215/4	-1		0.0128	15.9375	
26	4/22/96	13:46:26	RUNB/4	B230/4			0.0561	70.125	
27	4/22/96	13:47:13	RUNB/4	B265/4	3.2241	40.3006		0	
28	4/22/96	13:47:59	RUNB/4	B280/4	0.4378	5.4719		0	
29	4/22/96	13:48:46	RUNB/4	B300/4	-1			0	
30	4/22/96	14:21:41	RUNA/4	B215/4	-1		0.0128	15.9375	
31	4/22/96	14:22:28	RUNA/4	B230/4			0.0825	103.0625	
32	4/22/96	14:23:16	RUNA/4	B265/4	1.9618	24.5225		0	
33	4/22/96	14:24:02	RUNA/4	B280/4	1.2852	16.065		0	
34	4/22/96	14:24:49	RUNA/4	B300/4	-1			0	
35	4/22/96	14:25:36	RUNA/4	B320/4	3.4765	43.4563		0	
36	4/22/96	14:26:24	RUNA/4	B360/4		0		0	
37	4/22/96	14:27:14	RUNA/4	B440/4		0		0	
38	4/22/96	14:29:24	RUNB/4	B215/4	-1		0.0119	14.875	
39	4/22/96	14:30:10	RUNB/4	B230/4			0.0765	95.625	
40	4/22/96	14:30:57	RUNB/4	B265/4	4.2347	52.9338		0	
41	4/22/96	14:31:44	RUNB/4	B280/4	1.1033	13.7913		0	
42	4/22/96	14:32:31	RUNB/4	B300/4	-1			0	
43	4/22/96	14:33:18	RUNB/4	B320/4	1.9797	24.7456		0	
44	4/22/96	14:35:57	RUNB/4	B215/4	-1		0.0145	18.0625	
45	4/22/96	14:36:44	RUNB/4	B230/4			0.0944	117.9375	
46	4/22/96	14:37:31	RUNB/4	B265/4	2.7302	34.1275		0	
47	4/22/96	14:38:18	RUNB/4	B280/4	0.7344	9.18		0	
48	4/22/96	14:39:06	RUNB/4	B300/4	-1			0	
49	4/22/96	14:39:53	RUNB/4	B320/4	2.6333	32.9163		0	

	A	B	C	D	E	F	G	H	I
50	4/21/96	14:42:58	B300/4	B300/4	0			0	0
51	4/22/96	14:47:21	B300/1	B300/1	0.0128	0.1594		0	
52	4/21/96	14:47:59	B300/4	B300/4	-1			0	
53	4/22/96	14:48:46	B300/4	B300/20	0			0	
54	4/22/96	14:56:12	B300/1	B300/1	0			0	
55	4/22/96	15:14:13	RUNB/4	B215/4	-1		0	0	
56	4/22/96	15:15:00	RUNB/4	B230/4			0	0	
57	4/22/96	15:15:47	RUNB/4	B265/4	2.6784	33.4794		0	
58	4/22/96	15:16:33	RUNB/4	B280/4	1.0965	13.7063		0	
59	4/22/96	15:17:20	RUNB/4	B300/4	2.5092	31.365		0	
60	4/22/96	15:18:08	RUNB/4	B320/4	3.0532	38.165		0	
61	4/22/96	15:19:57	RUNB/4	B215/4	-1		0.0136	17	
62	4/22/96	15:20:44	RUNB/4	B230/4			0.0442	55.25	
63	4/22/96	15:21:32	RUNB/4	B265/4	2.4446	30.5575		0	
64	4/22/96	15:22:19	RUNB/4	B280/4	1.7238	21.5475		0	
65	4/22/96	15:23:06	RUNB/4	B300/4	2.879	35.9869		0	
66	4/22/96	15:26:18	RUNB/4	B215/4	-1		0	0	
67	4/22/96	15:27:05	RUNB/4	B230/4			0.0366	45.6875	
68	4/22/96	15:27:52	RUNB/4	B265/4	3.1068	38.8344		0	
69	4/22/96	15:28:39	RUNB/4	B280/4	0.8228	10.285		0	
70	4/22/96	15:29:25	RUNB/4	B300/4	2.1089	26.3606		0	
71	4/22/96	15:30:12	RUNB/4	B320/4	1.5955	19.9431		0	
72	4/22/96	15:32:13	RUNB/4	B215/4	-1		0	0	
73	4/22/96	15:33:00	RUNB/4	B230/4			0.0332	41.4375	
74	4/22/96	15:33:48	RUNB/4	B265/4	1.3005	16.2563		0	
75	4/22/96	15:34:35	RUNB/4	B280/4	0.6588	8.2344		0	
76	4/22/96	15:35:21	RUNB/4	B300/4	2.3392	29.24		0	
77	4/22/96	15:36:08	RUNB/4	B320/4	1.7961	22.4506		0	
78	4/22/96	15:37:52	RUNB/4	B215/4	-1		0.0102	12.75	
79	4/22/96	15:38:38	RUNB/4	B230/4			0.0663	82.875	
80	4/22/96	15:39:27	RUNB/4	B265/4	1.2716	15.895		0	
81	4/22/96	15:40:14	RUNB/4	B280/4	1.1951	14.9388		0	
82	4/22/96	15:41:01	RUNB/4	B300/4	1.6218	20.2725		0	
83	4/22/96	15:41:48	RUNB/4	B320/4	2.5016	31.2694		0	
84	4/22/96	15:49:59	RUNB/4	B215/4	-1		0.017	21.25	
85	4/22/96	15:50:46	RUNB/4	B230/4			0.0349	43.5625	
86	4/22/96	15:51:33	RUNB/4	B265/4	0	0		0	
87	4/22/96	15:52:20	RUNB/4	B280/4	0.2678	3.3469		0	
88	4/22/96	15:53:07	RUNB/4	B300/4	0.0417	0.5206		0	
89	4/22/96	15:53:54	RUNB/4	B320/4	0	0		0	
90	4/22/96	17:24:04	RUNB/4	B215/4	-1		0.0119	14.875	
91	4/22/96	17:24:56	RUNB/4	B230/4			0.034	42.5	
92	4/22/96	17:25:48	RUNB/4	B265/4	4.4217	55.2713		0	
93	4/22/96	17:26:35	RUNB/4	B280/4	1.0863	13.5788		0	
94	4/22/96	17:27:21	RUNB/4	B300/4	2.8688	35.8594		0	
95	4/22/96	17:28:08	RUNB/4	B320/4	2.8994	36.2419		0	
96	4/22/96	17:30:15	RUNB/4	B215/4	-1		0.0213	26.5625	
97	4/22/96	17:31:02	RUNB/4	B230/4			0.0442	55.25	
98	4/22/96	17:31:49	RUNB/4	B265/4	2.6656	33.32		0	

	A	B	C	D	E	F	G	H	I
99	4/22/96	17:32:35	RUNB/4	B280/4	0.9104	11.3794		0	
100	4/22/96	17:33:21	RUNB/4	B300/4	0.9818	12.2719		0	
101	4/22/96	17:34:07	RUNB/4	B320/4	1.8972	23.715		0	
102	4/22/96	17:36:02	RUNB/4	B215/4	-1		0	0	
103	4/22/96	17:36:48	RUNB/4	B230/4			0	0	
104	4/22/96	17:37:35	RUNB/4	B265/4	0			0	
105	4/22/96	17:38:22	RUNB/4	B280/4	0.448	5.5994		0	
106	4/22/96	17:39:08	RUNB/4	B300/4	0	0		0	
107	4/22/96	17:39:55	RUNB/4	B320/4	0	0		0	
108	4/22/96	18:01:57	B230/20	B230/20			0.1046	130.6875	
109	4/22/96	18:03:29	RUNB/4	B360/20		0		0	
110	4/22/96	18:05:00	RUNB/4	B215/4	-1		0	0	
111	4/22/96	18:05:58	RUNB/4	B230/4			0.0264	32.9375	
112	4/22/96	18:06:51	RUNB/4	B265/4	0			0	
113	4/22/96	18:07:38	RUNB/4	B280/4	0.2958	3.6975		0	
114	4/22/96	18:08:27	RUNB/4	B300/4	0.7208	9.01		0	
115	4/22/96	18:09:14	RUNB/4	B320/4	0.9146	11.4325		0	
116	4/22/96	18:11:06	RUNB/4	B215/4	-1		0	0	
117	4/22/96	18:12:01	RUNB/4	B230/4			0	0	
118	4/22/96	18:13:01	RUNB/4	B265/4	0			0	
119	4/22/96	18:13:50	RUNB/4	B280/4	0.3698	4.6219		0	
120	4/22/96	18:14:36	RUNB/4	B300/4	0.5109	6.3856		0	
121	4/22/96	18:15:22	RUNB/4	B320/4	0.9554	11.9425		0	
122	4/22/96	18:17:26	RUNB/4	B215/4	-1		0	0	
123	4/22/96	18:18:12	RUNB/4	B230/4			0.023	28.6875	
124	4/22/96	18:18:59	RUNB/4	B265/4	0			0	
125	4/22/96	18:19:45	RUNB/4	B280/4	0.595	7.4375		0	
126	4/22/96	18:20:31	RUNB/4	B300/4	0	0		0	
127	4/22/96	18:46:07	RUNB/4	B215/4	-1		0	0	
128	4/22/96	18:46:54	RUNB/4	B230/4	0		0	0	
129	4/22/96	18:47:41	RUNB/4	B265/4	0			0	
130	4/22/96	18:48:27	RUNB/4	B280/4	0.5228	6.5344		0	
131	4/22/96	18:49:14	RUNB/4	B300/4	0.8169	10.2106		0	
132	4/22/96	18:50:01	RUNB/4	B320/4	0.9648	12.0594		0	
133	4/22/96	18:52:22	B300/4	B300/4	0.4607	5.7588		0	
134	4/22/96	18:53:52	B300/4	B300/4	0.0434	0.5419		0	
135	4/22/96	18:55:17	B300/4	B300/4	0	0		0	
136	4/22/96	18:57:44	RUNB/4	B215/4	-1		0	0	
137	4/22/96	18:58:30	RUNB/4	B230/4	0		0	0	
138	4/22/96	18:59:17	RUNB/4	B265/4	0			0	
139	4/22/96	19:00:03	RUNB/4	B280/4	0.3893	4.8663		0	
140	4/22/96	19:00:50	RUNB/4	B300/4	0	0		0	
141	4/22/96	19:01:37	RUNB/4	B320/4	0	0		0	
142	Date	Time	Sequence Na	Script Name	Beryllium (Be)(Conc)			0	
143	Date	Time	Sequence Na	Script Name	Beryllium (Be)(Conc)			0	
144	Date	Time	Sequence Na	Script Name	Beryllium (Be)(Conc)			0	
145	Date	Time	Sequence Na	Script Name	Beryllium (Be)(Conc)			#N/A	

	A	B	C	D	E	F	G	H
1	Date	Time	Sequence N	Script Name	Wavelength	Beryllium (Be	Bin corrected Be	Be mg/acm
2	4/24/96	8:00:14	RUND/4	A320/4	320	0.0000	0.0000	0
3	4/24/96	8:00:28	RUND/4	A320/4	320	0.0000	0.0000	0
4	4/24/96	8:00:41	RUND/4	A320/4	320	0.0000	0.0000	0
5	4/24/96	8:00:54	RUND/4	A320/4	320	0.0000	0.0000	0
6	4/24/96	8:01:07	RUND/4	A320/4	320	0.0000	0.0000	0
7	4/24/96	8:01:20	RUND/4	A320/4	320	0.0000	0.0000	0
8	4/24/96	8:01:33	RUND/4	A320/4	320	0.0000	0.0000	0
9	4/24/96	8:01:47	RUND/4	A320/4	320	0.0000	0.0000	0
10	4/24/96	8:02:00	RUND/4	A320/4	320	0.0000	0.0000	0
11	4/24/96	8:02:13	RUND/4	A320/4	320	0.0000	0.0000	0
12	4/24/96	8:02:26	RUND/4	A320/4	320	0.0000	0.0000	0
13	4/24/96	8:02:39	RUND/4	A320/4	320	0.0000	0.0000	0
14	4/24/96	8:02:52	RUND/4	A320/4	320	0.0000	0.0000	0
15	4/24/96	8:03:05	RUND/4	A320/4	320	0.0000	0.0000	0
16	4/24/96	8:03:19	RUND/4	A320/4	320	0.0000	0.0000	0
17	4/24/96	8:03:33	RUND/4	A320/4	320	0.0000	0.0000	0
18	4/24/96	8:03:47	RUND/4	A320/4	320	0.0000	0.0000	0
19	4/24/96	8:04:00	RUND/4	A320/4	320	0.0000	0.0000	0
20	4/24/96	8:04:13	RUND/4	A320/4	320	0.0000	0.0000	0
21	4/24/96	8:04:27	RUND/4	A320/4	320	0.0000	0.0000	0
22	4/24/96	8:28:16	RUND/4	A320/4	320	0.0000	0.0000	0
23	4/24/96	8:28:33	RUND/4	A320/4	320	0.0000	0.0000	0
24	4/24/96	8:28:47	RUND/4	A320/4	320	0.0000	0.0000	0
25	4/24/96	8:29:01	RUND/4	A320/4	320	0.0000	0.0000	0
26	4/24/96	8:29:15	RUND/4	A320/4	320	0.0000	0.0000	0
27	4/24/96	8:29:28	RUND/4	A320/4	320	0.0000	0.0000	0
28	4/24/96	8:29:41	RUND/4	A320/4	320	0.0000	0.0000	0
29	4/24/96	8:29:55	RUND/4	A320/4	320	0.0000	0.0000	0
30	4/24/96	8:30:09	RUND/4	A320/4	320	0.0000	0.0000	0
31	4/24/96	8:30:22	RUND/4	A320/4	320	0.2193	0.0027	2.74125
32	4/24/96	8:30:37	RUND/4	A320/4	320	0.0000	0.0000	0
33	4/24/96	8:30:51	RUND/4	A320/4	320	0.0000	0.0000	0
34	4/24/96	8:31:05	RUND/4	A320/4	320	0.0000	0.0000	0
35	4/24/96	8:31:19	RUND/4	A320/4	320	0.0000	0.0000	0
36	4/24/96	8:31:33	RUND/4	A320/4	320	0.2219	0.0028	2.773125
37	4/24/96	8:31:46	RUND/4	A320/4	320	0.0000	0.0000	0
38	4/24/96	8:32:02	RUND/4	A320/4	320	0.3825	0.0048	4.78125
39	4/24/96	8:32:17	RUND/4	A320/4	320	0.0000	0.0000	0
40	4/24/96	8:32:31	RUND/4	A320/4	320	0.0000	0.0000	0
41	4/24/96	8:32:45	RUND/4	A320/4	320	0.0000	0.0000	0
42	4/24/96	8:35:54	RUND/4	A320/4	320	0.0000	0.0000	0
43	4/24/96	8:36:08	RUND/4	A320/4	320	0.0000	0.0000	0
44	4/24/96	8:36:22	RUND/4	A320/4	320	0.0000	0.0000	0
45	4/24/96	8:36:36	RUND/4	A320/4	320	0.0000	0.0000	0
46	4/24/96	8:36:50	RUND/4	A320/4	320	0.0000	0.0000	0
47	4/24/96	8:37:03	RUND/4	A320/4	320	0.0000	0.0000	0
48	4/24/96	8:37:16	RUND/4	A320/4	320	0.0000	0.0000	0
49	4/24/96	8:37:29	RUND/4	A320/4	320	0.0000	0.0000	0

	A	B	C	D	E	F	G	H
50	4/24/96	8:37:43	RUND/4	A320/4	320	0.0000	0.0000	0
51	4/24/96	8:37:56	RUND/4	A320/4	320	0.0000	0.0000	0
52	4/24/96	8:38:09	RUND/4	A320/4	320	0.0000	0.0000	0
53	4/24/96	8:38:23	RUND/4	A320/4	320	0.0000	0.0000	0
54	4/24/96	8:38:37	RUND/4	A320/4	320	0.0000	0.0000	0
55	4/24/96	8:38:52	RUND/4	A320/4	320	0.0000	0.0000	0
56	4/24/96	8:39:05	RUND/4	A320/4	320	0.0000	0.0000	0
57	4/24/96	8:39:19	RUND/4	A320/4	320	0.0000	0.0000	0
58	4/24/96	8:39:32	RUND/4	A320/4	320	0.0000	0.0000	0
59	4/24/96	8:39:45	RUND/4	A320/4	320	0.0000	0.0000	0
60	4/24/96	8:39:58	RUND/4	A320/4	320	0.0000	0.0000	0
61	4/24/96	8:40:12	RUND/4	A320/4	320	0.0000	0.0000	0
62	4/24/96	8:43:11	RUND/4	A320/4	320	0.0000	0.0000	0
63	4/24/96	8:43:25	RUND/4	A320/4	320	0.0000	0.0000	0
64	4/24/96	8:43:38	RUND/4	A320/4	320	0.0000	0.0000	0
65	4/24/96	8:43:52	RUND/4	A320/4	320	0.0000	0.0000	0
66	4/24/96	8:44:05	RUND/4	A320/4	320	0.0000	0.0000	0
67	4/24/96	8:44:18	RUND/4	A320/4	320	0.0000	0.0000	0
68	4/24/96	8:44:32	RUND/4	A320/4	320	0.0000	0.0000	0
69	4/24/96	8:44:46	RUND/4	A320/4	320	0.0000	0.0000	0
70	4/24/96	8:44:59	RUND/4	A320/4	320	0.0000	0.0000	0
71	4/24/96	8:45:13	RUND/4	A320/4	320	0.0000	0.0000	0
72	4/24/96	8:45:27	RUND/4	A320/4	320	0.0000	0.0000	0
73	4/24/96	8:45:41	RUND/4	A320/4	320	0.0000	0.0000	0
74	4/24/96	8:45:55	RUND/4	A320/4	320	0.0000	0.0000	0
75	4/24/96	8:46:08	RUND/4	A320/4	320	0.0000	0.0000	0
76	4/24/96	8:46:21	RUND/4	A320/4	320	0.0000	0.0000	0
77	4/24/96	8:46:35	RUND/4	A320/4	320	0.2788	0.0035	3.485
78	4/24/96	8:46:49	RUND/4	A320/4	320	0.0000	0.0000	0
79	4/24/96	8:47:02	RUND/4	A320/4	320	0.2134	0.0027	2.666875
80	4/24/96	8:47:16	RUND/4	A320/4	320	0.0000	0.0000	0
81	4/24/96	8:47:30	RUND/4	A320/4	320	0.3621	0.0045	4.52625
82	4/24/96	8:50:19	RUND/4	A320/4	320	0.5432	0.0068	6.789375
83	4/24/96	8:50:33	RUND/4	A320/4	320	0.4191	0.0052	5.238125
84	4/24/96	8:50:46	RUND/4	A320/4	320	0.4633	0.0058	5.790625
85	4/24/96	8:51:00	RUND/4	A320/4	320	0.3383	0.0042	4.22875
86	4/24/96	8:51:14	RUND/4	A320/4	320	0.4837	0.0060	6.045625
87	4/24/96	8:51:28	RUND/4	A320/4	320	0.2890	0.0036	3.6125
88	4/24/96	8:51:41	RUND/4	A320/4	320	0.2899	0.0036	3.623125
89	4/24/96	8:51:55	RUND/4	A320/4	320	0.0000	0.0000	0
90	4/24/96	8:52:09	RUND/4	A320/4	320	0.0000	0.0000	0
91	4/24/96	8:52:22	RUND/4	A320/4	320	0.1896	0.0024	2.369375
92	4/24/96	8:52:35	RUND/4	A320/4	320	0.0000	0.0000	0
93	4/24/96	8:52:49	RUND/4	A320/4	320	0.0000	0.0000	0
94	4/24/96	8:53:02	RUND/4	A320/4	320	0.2567	0.0032	3.20875
95	4/24/96	8:53:17	RUND/4	A320/4	320	0.2219	0.0028	2.773125
96	4/24/96	8:53:31	RUND/4	A320/4	320	0.3791	0.0047	4.73875
97	4/24/96	8:53:44	RUND/4	A320/4	320	0.3485	0.0044	4.35625
98	4/24/96	8:53:57	RUND/4	A320/4	320	0.9724	0.0122	12.155

	A	B	C	D	E	F	G	H
99	4/24/96	8:54:11	RUND/4	A320/4	320	0.5415	0.0068	6.768125
100	4/24/96	8:54:25	RUND/4	A320/4	320	0.5406	0.0068	6.7575
101	4/24/96	8:54:38	RUND/4	A320/4	320	0.6103	0.0076	7.62875
102	4/24/96	8:50:19	RUND/4	A320/4	320	0.5432	0.0068	6.789375
103	4/24/96	8:50:33	RUND/4	A320/4	320	0.4191	0.0052	5.238125
104	4/24/96	8:50:46	RUND/4	A320/4	320	0.4633	0.0058	5.790625
105	4/24/96	8:51:00	RUND/4	A320/4	320	0.3383	0.0042	4.22875
106	4/24/96	8:51:14	RUND/4	A320/4	320	0.4837	0.0060	6.045625
107	4/24/96	8:51:28	RUND/4	A320/4	320	0.2890	0.0036	3.6125
108	4/24/96	8:51:41	RUND/4	A320/4	320	0.2899	0.0036	3.623125
109	4/24/96	8:51:55	RUND/4	A320/4	320	0.0000	0.0000	0
110	4/24/96	8:52:09	RUND/4	A320/4	320	0.0000	0.0000	0
111	4/24/96	8:52:22	RUND/4	A320/4	320	0.1896	0.0024	2.369375
112	4/24/96	8:52:35	RUND/4	A320/4	320	0.0000	0.0000	0
113	4/24/96	8:52:49	RUND/4	A320/4	320	0.0000	0.0000	0
114	4/24/96	8:53:02	RUND/4	A320/4	320	0.2567	0.0032	3.20875
115	4/24/96	8:53:17	RUND/4	A320/4	320	0.2219	0.0028	2.773125
116	4/24/96	8:53:31	RUND/4	A320/4	320	0.3791	0.0047	4.73875
117	4/24/96	8:53:44	RUND/4	A320/4	320	0.3485	0.0044	4.35625
118	4/24/96	8:53:57	RUND/4	A320/4	320	0.9724	0.0122	12.155
119	4/24/96	8:54:11	RUND/4	A320/4	320	0.5415	0.0068	6.768125
120	4/24/96	8:54:25	RUND/4	A320/4	320	0.5406	0.0068	6.7575
121	4/24/96	8:54:38	RUND/4	A320/4	320	0.6103	0.0076	7.62875
122	4/24/96	8:57:45	RUND/4	A320/4	320	0.7106	0.0089	8.8825
123	4/24/96	8:57:58	RUND/4	A320/4	320	0.2448	0.0031	3.06
124	4/24/96	8:58:12	RUND/4	A320/4	320	0.3392	0.0042	4.239375
125	4/24/96	8:58:26	RUND/4	A320/4	320	0.3035	0.0038	3.793125
126	4/24/96	8:58:39	RUND/4	A320/4	320	0.3196	0.0040	3.995
127	4/24/96	8:58:52	RUND/4	A320/4	320	1.3039	0.0163	16.29875
128	4/24/96	8:59:06	RUND/4	A320/4	320	0.0000	0.0000	0
129	4/24/96	8:59:20	RUND/4	A320/4	320	0.0000	0.0000	0
130	4/24/96	8:59:34	RUND/4	A320/4	320	0.8594	0.0107	10.741875
131	4/24/96	8:59:47	RUND/4	A320/4	320	0.3256	0.0041	4.069375
132	4/24/96	9:00:01	RUND/4	A320/4	320	0.7242	0.0091	9.0525
133	4/24/96	9:00:15	RUND/4	A320/4	320	0.4701	0.0059	5.875625
134	4/24/96	9:00:29	RUND/4	A320/4	320	0.5406	0.0068	6.7575
135	4/24/96	9:00:42	RUND/4	A320/4	320	0.7310	0.0091	9.1375
136	4/24/96	9:00:56	RUND/4	A320/4	320	0.4420	0.0055	5.525
137	4/24/96	9:01:09	RUND/4	A320/4	320	0.6622	0.0083	8.276875
138	4/24/96	9:01:22	RUND/4	A320/4	320	0.3179	0.0040	3.97375
139	4/24/96	9:01:36	RUND/4	A320/4	320	0.4114	0.0051	5.1425
140	4/24/96	9:01:50	RUND/4	A320/4	320	0.4310	0.0054	5.386875
141	4/24/96	9:02:03	RUND/4	A320/4	320	0.8424	0.0105	10.529375
142	4/24/96	9:05:05	RUND/4	A320/4	320	0.4301	0.0054	5.37625
143	4/24/96	9:05:18	RUND/4	A320/4	320	0.3188	0.0040	3.984375
144	4/24/96	9:08:53	RUND/4	A320/4	320	0.2448	0.0031	3.06
145	4/24/96	9:09:07	RUND/4	A320/4	320	0.8466	0.0106	10.5825
146	4/24/96	9:09:21	RUND/4	A320/4	320	0.8526	0.0107	10.656875
147	4/24/96	9:09:34	RUND/4	A320/4	320	0.7268	0.0091	9.084375

	A	B	C	D	E	F	G	H
148	4/24/96	9:09:47	RUND/4	A320/4	320	0.2712	0.0034	3.389375
149	4/24/96	9:10:01	RUND/4	A320/4	320	0.8543	0.0107	10.678125
150	4/24/96	9:10:15	RUND/4	A320/4	320	1.8615	0.0233	23.26875
151	4/24/96	9:10:29	RUND/4	A320/4	320	0.7004	0.0088	8.755
152	4/24/96	9:10:43	RUND/4	A320/4	320	1.4646	0.0183	18.306875
153	4/24/96	9:10:57	RUND/4	A320/4	320	0.7166	0.0090	8.956875
154	4/24/96	9:11:11	RUND/4	A320/4	320	1.3056	0.0163	16.32
155	4/24/96	9:11:25	RUND/4	A320/4	320	1.0574	0.0132	13.2175
156	4/24/96	9:11:38	RUND/4	A320/4	320	0.5253	0.0066	6.56625
157	4/24/96	9:11:51	RUND/4	A320/4	320	1.0583	0.0132	13.228125
158	4/24/96	9:12:05	RUND/4	A320/4	320	0.9367	0.0117	11.70875
159	4/24/96	9:12:18	RUND/4	A320/4	320	0.5925	0.0074	7.405625
160	4/24/96	9:12:31	RUND/4	A320/4	320	0.9954	0.0124	12.441875
161	4/24/96	9:12:45	RUND/4	A320/4	320	0.9359	0.0117	11.698125
162	4/24/96	9:12:59	RUND/4	A320/4	320	0.3273	0.0041	4.090625
163	4/24/96	9:13:13	RUND/4	A320/4	320	1.0260	0.0128	12.824375
164	4/24/96	9:17:01	RUND/4	A320/4	320	0.6154	0.0077	7.6925
165	4/24/96	9:17:14	RUND/4	A320/4	320	0.8662	0.0108	10.826875
166	4/24/96	9:17:28	RUND/4	A320/4	320	0.6265	0.0078	7.830625
167	4/24/96	9:17:42	RUND/4	A320/4	320	1.1263	0.0141	14.078125
168	4/24/96	9:17:55	RUND/4	A320/4	320	1.3915	0.0174	17.393125
169	4/24/96	9:18:08	RUND/4	A320/4	320	0.7336	0.0092	9.169375
170	4/24/96	9:18:22	RUND/4	A320/4	320	0.5763	0.0072	7.20375
171	4/24/96	9:18:36	RUND/4	A320/4	320	0.8160	0.0102	10.2
172	4/24/96	9:18:50	RUND/4	A320/4	320	0.8526	0.0107	10.656875
173	4/24/96	9:19:04	RUND/4	A320/4	320	1.6057	0.0201	20.070625
174	4/24/96	9:19:17	RUND/4	A320/4	320	0.5712	0.0071	7.14
175	4/24/96	9:19:31	RUND/4	A320/4	320	1.3898	0.0174	17.371875
176	4/24/96	9:19:45	RUND/4	A320/4	320	0.8432	0.0105	10.54
177	4/24/96	9:19:59	RUND/4	A320/4	320	0.8058	0.0101	10.0725
178	4/24/96	9:20:13	RUND/4	A320/4	320	1.8964	0.0237	23.704375
179	4/24/96	9:20:26	RUND/4	A320/4	320	1.5317	0.0191	19.14625
180	4/24/96	9:20:40	RUND/4	A320/4	320	2.0239	0.0253	25.298125
181	4/24/96	9:20:53	RUND/4	A320/4	320	0.8781	0.0110	10.975625
182	4/24/96	9:21:07	RUND/4	A320/4	320	1.7646	0.0221	22.0575
183	4/24/96	9:21:20	RUND/4	A320/4	320	1.0234	0.0128	12.7925
184	4/24/96	9:24:24	RUND/4	A320/4	320	2.3452	0.0293	29.314375
185	4/24/96	9:24:37	RUND/4	A320/4	320	0.9852	0.0123	12.314375
186	4/24/96	9:24:50	RUND/4	A320/4	320	0.9333	0.0117	11.66625
187	4/24/96	9:25:03	RUND/4	A320/4	320	0.8075	0.0101	10.09375
188	4/24/96	9:25:16	RUND/4	A320/4	320	1.0362	0.0130	12.951875
189	4/24/96	9:25:29	RUND/4	A320/4	320	0.7667	0.0096	9.58375
190	4/24/96	9:25:43	RUND/4	A320/4	320	1.0515	0.0131	13.143125
191	4/24/96	9:25:57	RUND/4	A320/4	320	1.7638	0.0220	22.046875
192	4/24/96	9:26:11	RUND/4	A320/4	320	1.0812	0.0135	13.515
193	4/24/96	9:26:25	RUND/4	A320/4	320	1.6533	0.0207	20.665625
194	4/24/96	9:26:38	RUND/4	A320/4	320	2.8169	0.0352	35.21125
195	4/24/96	9:26:52	RUND/4	A320/4	320	1.4705	0.0184	18.38125
196	4/24/96	9:27:06	RUND/4	A320/4	320	0.7999	0.0100	9.998125

	A	B	C	D	E	F	G	H
197	4/24/96	9:27:20	RUND/4	A320/4	320	1.3847	0.0173	17.308125
198	4/24/96	9:27:34	RUND/4	A320/4	320	1.7332	0.0217	21.664375
199	4/24/96	9:27:47	RUND/4	A320/4	320	1.2563	0.0157	15.70375
200	4/24/96	9:28:01	RUND/4	A320/4	320	1.2070	0.0151	15.0875
201	4/24/96	9:28:15	RUND/4	A320/4	320	1.9916	0.0249	24.894375
202	4/24/96	9:28:28	RUND/4	A320/4	320	0.4165	0.0052	5.20625
203	4/24/96	9:28:42	RUND/4	A320/4	320	1.9389	0.0242	24.235625
204	4/24/96	9:31:53	RUND/4	A320/4	320	1.2776	0.0160	15.969375
205	4/24/96	9:32:07	RUND/4	A320/4	320	0.4361	0.0055	5.450625
206	4/24/96	9:32:20	RUND/4	A320/4	320	1.5453	0.0193	19.31625
207	4/24/96	9:32:33	RUND/4	A320/4	320	1.2444	0.0156	15.555
208	4/24/96	9:32:46	RUND/4	A320/4	320	1.8794	0.0235	23.491875
209	4/24/96	9:33:00	RUND/4	A320/4	320	0.8517	0.0106	10.64625
210	4/24/96	9:33:14	RUND/4	A320/4	320	1.0863	0.0136	13.57875
211	4/24/96	9:33:27	RUND/4	A320/4	320	1.7697	0.0221	22.12125
212	4/24/96	9:33:41	RUND/4	A320/4	320	1.6261	0.0203	20.325625
213	4/24/96	9:33:55	RUND/4	A320/4	320	1.7969	0.0225	22.46125
214	4/24/96	9:34:08	RUND/4	A320/4	320	2.0043	0.0251	25.05375
215	4/24/96	9:34:22	RUND/4	A320/4	320	1.8445	0.0231	23.05625
216	4/24/96	9:34:35	RUND/4	A320/4	320	1.0719	0.0134	13.398125
217	4/24/96	9:34:48	RUND/4	A320/4	320	1.2937	0.0162	16.17125
218	4/24/96	9:35:02	RUND/4	A320/4	320	0.6894	0.0086	8.616875
219	4/24/96	9:35:15	RUND/4	A320/4	320	1.1535	0.0144	14.418125
220	4/24/96	9:35:29	RUND/4	A320/4	320	1.6541	0.0207	20.67625
221	4/24/96	9:35:43	RUND/4	A320/4	320	1.1348	0.0142	14.184375
222	4/24/96	9:35:56	RUND/4	A320/4	320	1.8836	0.0235	23.545
223	4/24/96	9:36:10	RUND/4	A320/4	320	1.4357	0.0179	17.945625
224	4/24/96	9:39:39	RUND/4	A320/4	320	1.0931	0.0137	13.66375
225	4/24/96	9:39:53	RUND/4	A320/4	320	1.1968	0.0150	14.96
226	4/24/96	9:40:06	RUND/4	A320/4	320	0.7795	0.0097	9.743125
227	4/24/96	9:40:20	RUND/4	A320/4	320	1.1866	0.0148	14.8325
228	4/24/96	9:40:33	RUND/4	A320/4	320	2.0358	0.0254	25.446875
229	4/24/96	9:40:46	RUND/4	A320/4	320	1.3524	0.0169	16.904375
230	4/24/96	9:40:59	RUND/4	A320/4	320	1.3192	0.0165	16.49
231	4/24/96	9:41:12	RUND/4	A320/4	320	2.0630	0.0258	25.786875
232	4/24/96	9:41:25	RUND/4	A320/4	320	1.0115	0.0126	12.64375
233	4/24/96	9:41:39	RUND/4	A320/4	320	2.6461	0.0331	33.075625
234	4/24/96	9:41:53	RUND/4	A320/4	320	1.5096	0.0189	18.87
235	4/24/96	9:42:06	RUND/4	A320/4	320	3.2343	0.0404	40.428125
236	4/24/96	9:42:20	RUND/4	A320/4	320	1.1433	0.0143	14.290625
237	4/24/96	9:49:35	RUND/4	A320/4	320	2.3868	0.0298	29.835
238	4/24/96	9:49:49	RUND/4	A320/4	320	1.7697	0.0221	22.12125
239	4/24/96	9:50:02	RUND/4	A320/4	320	1.5453	0.0193	19.31625
240	4/24/96	9:50:16	RUND/4	A320/4	320	1.3515	0.0169	16.89375
241	4/24/96	9:50:29	RUND/4	A320/4	320	2.4251	0.0303	30.313125
242	4/24/96	9:50:43	RUND/4	A320/4	320	1.6856	0.0211	21.069375
243	4/24/96	9:50:57	RUND/4	A320/4	320	0.9121	0.0114	11.400625
244	4/24/96	9:51:11	RUND/4	A320/4	320	1.2291	0.0154	15.36375
245	4/24/96	9:51:25	RUND/4	A320/4	320	2.5857	0.0323	32.32125

	A	B	C	D	E	F	G	H
246	4/24/96	9:51:39	RUND/4	A320/4	320	1.4816	0.0185	18.519375
247	4/24/96	9:51:53	RUND/4	A320/4	320	2.3613	0.0295	29.51625
248	4/24/96	9:52:07	RUND/4	A320/4	320	1.7306	0.0216	21.6325
249	4/24/96	9:52:21	RUND/4	A320/4	320	1.7374	0.0217	21.7175
250	4/24/96	9:52:34	RUND/4	A320/4	320	1.9924	0.0249	24.905
251	4/24/96	9:52:47	RUND/4	A320/4	320	1.1611	0.0145	14.51375
252	4/24/96	9:53:01	RUND/4	A320/4	320	1.7519	0.0219	21.898125
253	4/24/96	9:53:14	RUND/4	A320/4	320	2.1412	0.0268	26.764375
254	4/24/96	9:53:28	RUND/4	A320/4	320	2.4820	0.0310	31.025
255	4/24/96	9:53:42	RUND/4	A320/4	320	2.0069	0.0251	25.085625
256	4/24/96	9:53:55	RUND/4	A320/4	320	1.6031	0.0200	20.03875
257	4/24/96	9:56:48	RUND/4	A320/4	320	2.0018	0.0250	25.021875
258	4/24/96	9:57:01	RUND/4	A320/4	320	1.2504	0.0156	15.629375
259	4/24/96	9:57:15	RUND/4	A320/4	320	0.6766	0.0085	8.4575
260	4/24/96	9:57:28	RUND/4	A320/4	320	1.7034	0.0213	21.2925
261	4/24/96	9:57:41	RUND/4	A320/4	320	1.6558	0.0207	20.6975
262	4/24/96	9:57:54	RUND/4	A320/4	320	1.7782	0.0222	22.2275
263	4/24/96	9:58:07	RUND/4	A320/4	320	1.8964	0.0237	23.704375
264	4/24/96	10:04:56	RUND/4	A320/4	320	0.5313	0.0066	6.640625
265	4/24/96	10:05:10	RUND/4	A320/4	320	0.2474	0.0031	3.091875
266	4/24/96	10:05:24	RUND/4	A320/4	320	0.7829	0.0098	9.785625
267	4/24/96	10:05:38	RUND/4	A320/4	320	0.5721	0.0072	7.150625
268	4/24/96	10:05:51	RUND/4	A320/4	320	0.2627	0.0033	3.283125
269	4/24/96	10:06:04	RUND/4	A320/4	320	0.2907	0.0036	3.63375
270	4/24/96	10:06:17	RUND/4	A320/4	320	0.5517	0.0069	6.895625
271	4/24/96	10:06:31	RUND/4	A320/4	320	0.3060	0.0038	3.825
272	4/24/96	10:06:44	RUND/4	A320/4	320	0.6435	0.0080	8.043125
273	4/24/96	10:06:57	RUND/4	A320/4	320	0.4803	0.0060	6.003125
274	4/24/96	10:07:10	RUND/4	A320/4	320	0.3919	0.0049	4.898125
275	4/24/96	10:07:23	RUND/4	A320/4	320	0.6367	0.0080	7.958125
276	4/24/96	10:07:37	RUND/4	A320/4	320	0.5950	0.0074	7.4375
277	4/24/96	10:07:51	RUND/4	A320/4	320	0.4140	0.0052	5.174375
278	4/24/96	10:08:05	RUND/4	A320/4	320	0.8152	0.0102	10.189375
279	4/24/96	10:08:18	RUND/4	A320/4	320	0.4004	0.0050	5.004375
280	4/24/96	10:08:32	RUND/4	A320/4	320	0.3171	0.0040	3.963125
281	4/24/96	10:08:45	RUND/4	A320/4	320	1.2929	0.0162	16.160625
282	4/24/96	10:08:59	RUND/4	A320/4	320	0.5253	0.0066	6.56625
283	4/24/96	10:09:12	RUND/4	A320/4	320	0.0000	0.0000	0
284	4/24/96	10:12:04	RUND/4	A320/4	320	0.0000	0.0000	0
285	4/24/96	10:12:18	RUND/4	A320/4	320	0.0000	0.0000	0
286	4/24/96	10:12:32	RUND/4	A320/4	320	0.0000	0.0000	0
287	4/24/96	10:12:46	RUND/4	A320/4	320	0.4641	0.0058	5.80125
288	4/24/96	10:12:59	RUND/4	A320/4	320	0.5891	0.0074	7.363125
289	4/24/96	10:13:12	RUND/4	A320/4	320	0.4089	0.0051	5.110625
290	4/24/96	10:13:25	RUND/4	A320/4	320	1.2147	0.0152	15.183125
291	4/24/96	10:13:38	RUND/4	A320/4	320	0.4063	0.0051	5.07875
292	4/24/96	10:13:52	RUND/4	A320/4	320	0.8823	0.0110	11.02875
293	4/24/96	10:14:05	RUND/4	A320/4	320	0.4097	0.0051	5.12125
294	4/24/96	10:14:18	RUND/4	A320/4	320	1.6524	0.0207	20.655

	A	B	C	D	E	F	G	H
295	4/24/96	10:14:32	RUND/4	A320/4	320	0.5092	0.0064	6.364375
296	4/24/96	10:14:46	RUND/4	A320/4	320	0.9036	0.0113	11.294375
297	4/24/96	10:15:00	RUND/4	A320/4	320	0.6350	0.0079	7.936875
298	4/24/96	10:15:14	RUND/4	A320/4	320	0.3757	0.0047	4.69625
299	4/24/96	10:15:28	RUND/4	A320/4	320	0.2321	0.0029	2.900625
300	4/24/96	10:15:41	RUND/4	A320/4	320	0.4939	0.0062	6.173125
301	4/24/96	10:15:55	RUND/4	A320/4	320	0.5381	0.0067	6.725625
302	4/24/96	10:16:08	RUND/4	A320/4	320	0.7548	0.0094	9.435
303	4/24/96	10:16:25	RUND/4	A320/4	320	1.0217	0.0128	12.77125
304	4/24/96	10:19:17	RUND/4	A320/4	320	0.7880	0.0098	9.849375
305	4/24/96	10:19:31	RUND/4	A320/4	320	0.3740	0.0047	4.675
306	4/24/96	10:19:45	RUND/4	A320/4	320	1.0430	0.0130	13.036875
307	4/24/96	10:19:59	RUND/4	A320/4	320	1.0124	0.0127	12.654375
308	4/24/96	10:20:13	RUND/4	A320/4	320	1.6949	0.0212	21.18625
309	4/24/96	10:20:26	RUND/4	A320/4	320	1.6975	0.0212	21.218125
310	4/24/96	10:20:39	RUND/4	A320/4	320	0.6035	0.0075	7.54375
311	4/24/96	10:20:53	RUND/4	A320/4	320	0.4939	0.0062	6.173125
312	4/24/96	10:21:09	RUND/4	A320/4	320	0.6817	0.0085	8.52125
313	4/24/96	10:21:26	RUND/4	A320/4	320	0.7582	0.0095	9.4775
314	4/24/96	10:21:39	RUND/4	A320/4	320	1.0710	0.0134	13.3875
315	4/24/96	10:21:53	RUND/4	A320/4	320	1.5360	0.0192	19.199375
316	4/24/96	10:22:07	RUND/4	A320/4	320	1.8547	0.0232	23.18375
317	4/24/96	10:22:21	RUND/4	A320/4	320	0.5976	0.0075	7.469375
318	4/24/96	10:22:35	RUND/4	A320/4	320	1.0549	0.0132	13.185625
319	4/24/96	10:22:49	RUND/4	A320/4	320	0.6180	0.0077	7.724375
320	4/24/96	10:23:03	RUND/4	A320/4	320	0.5959	0.0074	7.448125
321	4/24/96	10:23:16	RUND/4	A320/4	320	0.5024	0.0063	6.279375
322	4/24/96	10:23:30	RUND/4	A320/4	320	0.8347	0.0104	10.43375
323	4/24/96	10:23:44	RUND/4	A320/4	320	0.6588	0.0082	8.234375
324	4/24/96	10:28:05	RUND/4	A320/4	320	0.8500	0.0106	10.625
325	4/24/96	10:28:19	RUND/4	A320/4	320	0.7718	0.0096	9.6475
326	4/24/96	10:28:32	RUND/4	A320/4	320	0.3953	0.0049	4.940625
327	4/24/96	10:28:45	RUND/4	A320/4	320	0.4089	0.0051	5.110625
328	4/24/96	10:28:59	RUND/4	A320/4	320	0.4038	0.0050	5.046875
329	4/24/96	10:29:13	RUND/4	A320/4	320	0.5075	0.0063	6.343125
330	4/24/96	10:29:26	RUND/4	A320/4	320	0.4633	0.0058	5.790625
331	4/24/96	10:29:40	RUND/4	A320/4	320	0.8628	0.0108	10.784375
332	4/24/96	10:29:53	RUND/4	A320/4	320	0.4284	0.0054	5.355
333	4/24/96	10:30:06	RUND/4	A320/4	320	0.7285	0.0091	9.105625
334	4/24/96	10:30:19	RUND/4	A320/4	320	0.4199	0.0052	5.24875
335	4/24/96	10:30:33	RUND/4	A320/4	320	1.1348	0.0142	14.184375
336	4/24/96	10:30:47	RUND/4	A320/4	320	0.8636	0.0108	10.795
337	4/24/96	10:31:01	RUND/4	A320/4	320	1.1713	0.0146	14.64125
338	4/24/96	10:31:14	RUND/4	A320/4	320	0.6333	0.0079	7.915625
339	4/24/96	10:31:27	RUND/4	A320/4	320	0.9376	0.0117	11.719375
340	4/24/96	10:31:41	RUND/4	A320/4	320	0.5041	0.0063	6.300625
341	4/24/96	10:31:54	RUND/4	A320/4	320	0.8713	0.0109	10.890625
342	4/24/96	10:32:08	RUND/4	A320/4	320	0.4556	0.0057	5.695
343	4/24/96	10:32:22	RUND/4	A320/4	320	0.8458	0.0106	10.571875

	A	B	C	D	E	F	G	H
344	4/24/96	10:36:02	RUND/4	A320/4	320	0.5568	0.0070	6.959375
345	4/24/96	10:36:16	RUND/4	A320/4	320	0.8169	0.0102	10.210625
346	4/24/96	10:36:29	RUND/4	A320/4	320	1.5870	0.0198	19.836875
347	4/24/96	10:36:42	RUND/4	A320/4	320	0.8849	0.0111	11.060625
348	4/24/96	10:36:56	RUND/4	A320/4	320	1.3609	0.0170	17.010625
349	4/24/96	10:37:12	RUND/4	A320/4	320	0.7285	0.0091	9.105625
350	4/24/96	10:37:28	RUND/4	A320/4	320	0.6919	0.0086	8.64875
351	4/24/96	10:37:42	RUND/4	A320/4	320	0.9325	0.0117	11.655625
352	4/24/96	10:37:55	RUND/4	A320/4	320	1.1594	0.0145	14.4925
353	4/24/96	10:38:08	RUND/4	A320/4	320	1.2385	0.0155	15.480625
354	4/24/96	10:38:22	RUND/4	A320/4	320	1.4654	0.0183	18.3175
355	4/24/96	10:38:35	RUND/4	A320/4	320	0.6613	0.0083	8.26625
356	4/24/96	10:38:49	RUND/4	A320/4	320	0.8492	0.0106	10.614375
357	4/24/96	10:39:03	RUND/4	A320/4	320	0.6061	0.0076	7.575625
358	4/24/96	10:39:17	RUND/4	A320/4	320	1.1203	0.0140	14.00375
359	4/24/96	10:39:30	RUND/4	A320/4	320	1.6609	0.0208	20.76125
360	4/24/96	10:39:44	RUND/4	A320/4	320	0.6265	0.0078	7.830625
361	4/24/96	10:39:57	RUND/4	A320/4	320	0.4752	0.0059	5.939375
362	4/24/96	10:40:11	RUND/4	A320/4	320	0.9656	0.0121	12.07
363	4/24/96	10:40:25	RUND/4	A320/4	320	0.3349	0.0042	4.18625
364	4/24/96	10:36:02	RUND/4	A320/4	320	0.5568	0.0070	6.959375
365	4/24/96	10:36:16	RUND/4	A320/4	320	0.8169	0.0102	10.210625
366	4/24/96	10:36:29	RUND/4	A320/4	320	1.5870	0.0198	19.836875
367	4/24/96	10:36:42	RUND/4	A320/4	320	0.8849	0.0111	11.060625
368	4/24/96	10:36:56	RUND/4	A320/4	320	1.3609	0.0170	17.010625
369	4/24/96	10:37:12	RUND/4	A320/4	320	0.7285	0.0091	9.105625
370	4/24/96	10:37:28	RUND/4	A320/4	320	0.6919	0.0086	8.64875
371	4/24/96	10:37:42	RUND/4	A320/4	320	0.9325	0.0117	11.655625
372	4/24/96	10:37:55	RUND/4	A320/4	320	1.1594	0.0145	14.4925
373	4/24/96	10:38:08	RUND/4	A320/4	320	1.2385	0.0155	15.480625
374	4/24/96	10:38:22	RUND/4	A320/4	320	1.4654	0.0183	18.3175
375	4/24/96	10:38:35	RUND/4	A320/4	320	0.6613	0.0083	8.26625
376	4/24/96	10:38:49	RUND/4	A320/4	320	0.8492	0.0106	10.614375
377	4/24/96	10:39:03	RUND/4	A320/4	320	0.6061	0.0076	7.575625
378	4/24/96	10:39:17	RUND/4	A320/4	320	1.1203	0.0140	14.00375
379	4/24/96	10:39:30	RUND/4	A320/4	320	1.6609	0.0208	20.76125
380	4/24/96	10:39:44	RUND/4	A320/4	320	0.6265	0.0078	7.830625
381	4/24/96	10:39:57	RUND/4	A320/4	320	0.4752	0.0059	5.939375
382	4/24/96	10:40:11	RUND/4	A320/4	320	0.9656	0.0121	12.07
383	4/24/96	10:40:25	RUND/4	A320/4	320	0.3349	0.0042	4.18625
384	4/24/96	10:43:21	RUND/4	A320/4	320	0.7642	0.0096	9.551875
385	4/24/96	10:43:35	RUND/4	A320/4	320	1.3745	0.0172	17.180625
386	4/24/96	10:43:48	RUND/4	A320/4	320	0.6613	0.0083	8.26625
387	4/24/96	10:44:01	RUND/4	A320/4	320	1.1645	0.0146	14.55625
388	4/24/96	10:44:15	RUND/4	A320/4	320	0.9843	0.0123	12.30375
389	4/24/96	10:44:29	RUND/4	A320/4	320	1.0651	0.0133	13.313125
390	4/24/96	10:44:45	RUND/4	A320/4	320	0.9121	0.0114	11.400625
391	4/24/96	10:45:02	RUND/4	A320/4	320	1.5598	0.0195	19.496875
392	4/24/96	10:49:16	RUND/4	A320/4	320	0.8381	0.0105	10.47625

	A	B	C	D	E	F	G	H
393	4/24/96	10:49:29	RUND/4	A320/4	320	1.0880	0.0136	13.6
394	4/24/96	10:49:44	RUND/4	A320/4	320	0.6639	0.0083	8.298125
395	4/24/96	10:49:57	RUND/4	A320/4	320	2.0919	0.0261	26.148125
396	4/24/96	10:50:10	RUND/4	A320/4	320	0.8900	0.0111	11.124375
397	4/24/96	10:50:24	RUND/4	A320/4	320	0.6894	0.0086	8.616875
398	4/24/96	10:50:38	RUND/4	A320/4	320	1.1943	0.0149	14.928125
399	4/24/96	10:50:51	RUND/4	A320/4	320	0.6673	0.0083	8.340625
400	4/24/96	10:51:04	RUND/4	A320/4	320	0.4998	0.0062	6.2475
401	4/24/96	10:51:17	RUND/4	A320/4	320	1.1101	0.0139	13.87625
402	4/24/96	10:51:31	RUND/4	A320/4	320	0.6520	0.0081	8.149375
403	4/24/96	10:51:45	RUND/4	A320/4	320	1.1620	0.0145	14.524375
404	4/24/96	10:51:58	RUND/4	A320/4	320	0.9478	0.0118	11.846875
405	4/24/96	10:52:12	RUND/4	A320/4	320	1.4450	0.0181	18.0625
406	4/24/96	10:52:26	RUND/4	A320/4	320	0.9265	0.0116	11.58125
407	4/24/96	10:52:40	RUND/4	A320/4	320	1.0022	0.0125	12.526875
408	4/24/96	10:52:53	RUND/4	A320/4	320	1.4739	0.0184	18.42375
409	4/24/96	10:53:07	RUND/4	A320/4	320	1.4416	0.0180	18.02
410	4/24/96	10:53:21	RUND/4	A320/4	320	1.9890	0.0249	24.8625
411	4/24/96	10:53:34	RUND/4	A320/4	320	0.6180	0.0077	7.724375
412	4/24/96	10:56:40	RUND/4	A320/4	320	1.1968	0.0150	14.96
413	4/24/96	10:56:53	RUND/4	A320/4	320	0.7191	0.0090	8.98875
414	4/24/96	10:57:06	RUND/4	A320/4	320	1.0132	0.0127	12.665
415	4/24/96	10:57:20	RUND/4	A320/4	320	1.2062	0.0151	15.076875
416	4/24/96	10:57:34	RUND/4	A320/4	320	1.0583	0.0132	13.228125
417	4/24/96	10:57:48	RUND/4	A320/4	320	1.3269	0.0166	16.585625
418	4/24/96	10:58:01	RUND/4	A320/4	320	1.5215	0.0190	19.01875
419	4/24/96	10:58:15	RUND/4	A320/4	320	1.7255	0.0216	21.56875
420	4/24/96	10:58:29	RUND/4	A320/4	320	1.5130	0.0189	18.9125
421	4/24/96	10:58:42	RUND/4	A320/4	320	1.6975	0.0212	21.218125
422	4/24/96	10:58:56	RUND/4	A320/4	320	0.7336	0.0092	9.169375
423	4/24/96	10:59:09	RUND/4	A320/4	320	1.4153	0.0177	17.690625
424	4/24/96	10:59:22	RUND/4	A320/4	320	0.7004	0.0088	8.755
425	4/24/96	10:59:36	RUND/4	A320/4	320	0.9002	0.0113	11.251875
426	4/24/96	10:59:50	RUND/4	A320/4	320	0.5857	0.0073	7.320625
427	4/24/96	11:00:04	RUND/4	A320/4	320	1.4858	0.0186	18.5725
428	4/24/96	11:00:17	RUND/4	A320/4	320	0.5993	0.0075	7.490625
429	4/24/96	11:00:31	RUND/4	A320/4	320	1.0336	0.0129	12.92
430	4/24/96	11:00:44	RUND/4	A320/4	320	1.4731	0.0184	18.413125
431	4/24/96	11:00:58	RUND/4	A320/4	320	1.2325	0.0154	15.40625
432	4/24/96	11:04:38	RUND/4	A320/4	320	2.0596	0.0257	25.744375
433	4/24/96	11:04:51	RUND/4	A320/4	320	2.0808	0.0260	26.01
434	4/24/96	11:05:05	RUND/4	A320/4	320	0.8228	0.0103	10.285
435	4/24/96	11:05:19	RUND/4	A320/4	320	1.3532	0.0169	16.915
436	4/24/96	11:05:32	RUND/4	A320/4	320	2.9538	0.0369	36.921875
437	4/24/96	11:05:45	RUND/4	A320/4	320	0.9750	0.0122	12.186875
438	4/24/96	11:05:59	RUND/4	A320/4	320	0.4607	0.0058	5.75875
439	4/24/96	11:06:13	RUND/4	A320/4	320	1.5411	0.0193	19.263125
440	4/24/96	11:06:26	RUND/4	A320/4	320	1.9848	0.0248	24.809375
441	4/24/96	11:06:40	RUND/4	A320/4	320	0.8560	0.0107	10.699375

	A	B	C	D	E	F	G	H
442	4/24/96	11:06:53	RUND/4	A320/4	320	1.2691	0.0159	15.863125
443	4/24/96	11:07:07	RUND/4	A320/4	320	1.5555	0.0194	19.44375
444	4/24/96	11:07:21	RUND/4	A320/4	320	0.5916	0.0074	7.395
445	4/24/96	11:07:34	RUND/4	A320/4	320	1.8828	0.0235	23.534375
446	4/24/96	11:07:48	RUND/4	A320/4	320	1.1764	0.0147	14.705
447	4/24/96	11:08:02	RUND/4	A320/4	320	1.4204	0.0178	17.754375
448	4/24/96	11:08:16	RUND/4	A320/4	320	1.4926	0.0187	18.6575
449	4/24/96	11:08:29	RUND/4	A320/4	320	0.9758	0.0122	12.1975
450	4/24/96	11:08:43	RUND/4	A320/4	320	1.5173	0.0190	18.965625
451	4/24/96	11:08:56	RUND/4	A320/4	320	0.9665	0.0121	12.080625
452	4/24/96	11:11:58	RUND/4	A320/4	320	0.7718	0.0096	9.6475
453	4/24/96	11:12:11	RUND/4	A320/4	320	0.9503	0.0119	11.87875
454	4/24/96	11:12:25	RUND/4	A320/4	320	1.7833	0.0223	22.29125
455	4/24/96	11:12:39	RUND/4	A320/4	320	0.8203	0.0103	10.253125
456	4/24/96	11:12:53	RUND/4	A320/4	320	0.8993	0.0112	11.24125
457	4/24/96	11:13:06	RUND/4	A320/4	320	0.7863	0.0098	9.828125
458	4/24/96	11:13:19	RUND/4	A320/4	320	0.7956	0.0099	9.945
459	4/24/96	11:13:33	RUND/4	A320/4	320	0.5704	0.0071	7.129375
460	4/24/96	11:13:46	RUND/4	A320/4	320	0.7744	0.0097	9.679375
461	4/24/96	11:14:00	RUND/4	A320/4	320	1.8488	0.0231	23.109375
462	4/24/96	11:14:13	RUND/4	A320/4	320	0.8755	0.0109	10.94375
463	4/24/96	11:14:27	RUND/4	A320/4	320	0.7038	0.0088	8.7975
464	4/24/96	11:14:41	RUND/4	A320/4	320	1.3116	0.0164	16.394375
465	4/24/96	11:14:54	RUND/4	A320/4	320	0.7489	0.0094	9.360625
466	4/24/96	11:15:08	RUND/4	A320/4	320	1.4459	0.0181	18.073125
467	4/24/96	11:15:22	RUND/4	A320/4	320	0.5925	0.0074	7.405625
468	4/24/96	11:15:35	RUND/4	A320/4	320	1.0183	0.0127	12.72875
469	4/24/96	11:15:49	RUND/4	A320/4	320	1.0098	0.0126	12.6225
470	4/24/96	11:16:03	RUND/4	A320/4	320	1.4374	0.0180	17.966875
471	4/24/96	11:16:16	RUND/4	A320/4	320	1.2801	0.0160	16.00125

	A	B	C	D	E	F	G	H
1	Date	Time	Sequence N	Script Name	Wavelength	Beryllium (Be	Bin correct	Be mg/acm
2	4/24/96	11:42:05	RUND/4	A320/4	320	0.41055	0.00513	5.1319
3	4/24/96	11:42:19	RUND/4	A320/4	320	0.35955	0.00449	4.4944
4	4/24/96	11:42:32	RUND/4	A320/4	320	0.48535	0.00607	6.0669
5	4/24/96	11:42:46	RUND/4	A320/4	320	0.24650	0.00308	3.0813
6	4/24/96	11:42:59	RUND/4	A320/4	320	0.38080	0.00476	4.7600
7	4/24/96	11:43:12	RUND/4	A320/4	320	0.37910	0.00474	4.7388
8	4/24/96	11:43:26	RUND/4	A320/4	320	0.27965	0.00350	3.4956
9	4/24/96	11:43:40	RUND/4	A320/4	320	0.68680	0.00859	8.5850
10	4/24/96	11:43:53	RUND/4	A320/4	320	0.15215	0.00190	1.9019
11	4/24/96	11:44:08	RUND/4	A320/4	320	0.27540	0.00344	3.4425
12	4/24/96	11:44:26	RUND/4	A320/4	320	0.40545	0.00507	5.0681
13	4/24/96	11:44:39	RUND/4	A320/4	320	0.23290	0.00291	2.9113
14	4/24/96	11:44:52	RUND/4	A320/4	320	0.21080	0.00264	2.6350
15	4/24/96	11:45:06	RUND/4	A320/4	320	0.25415	0.00318	3.1769
16	4/24/96	11:45:20	RUND/4	A320/4	320	0.22270	0.00278	2.7838
17	4/24/96	11:45:33	RUND/4	A320/4	320	0.22355	0.00279	2.7944
18	4/24/96	11:45:47	RUND/4	A320/4	320	0.19975	0.00250	2.4969
19	4/24/96	11:46:00	RUND/4	A320/4	320	0.69615	0.00870	8.7019
20	4/24/96	11:46:13	RUND/4	A320/4	320	0.31110	0.00389	3.8888
21	4/24/96	11:46:26	RUND/4	A320/4	320	0.36890	0.00461	4.6113
22	4/24/96	11:49:53	RUND/4	A320/4	320	0.17680	0.00221	2.2100
23	4/24/96	11:50:07	RUND/4	A320/4	320	0.40885	0.00511	5.1106
24	4/24/96	11:50:20	RUND/4	A320/4	320	0.22950	0.00287	2.8688
25	4/24/96	11:50:34	RUND/4	A320/4	320	0.65365	0.00817	8.1706
26	4/24/96	11:50:47	RUND/4	A320/4	320	0.34850	0.00436	4.3563
27	4/24/96	11:51:00	RUND/4	A320/4	320	0.36550	0.00457	4.5688
28	4/24/96	11:51:13	RUND/4	A320/4	320	1.12880	0.01411	14.1100
29	4/24/96	11:57:12	RUND/4	A320/4	320	0.53210	0.00665	6.6513
30	4/24/96	11:57:25	RUND/4	A320/4	320	0.39780	0.00497	4.9725
31	4/24/96	11:57:39	RUND/4	A320/4	320	0.76160	0.00952	9.5200
32	4/24/96	11:57:53	RUND/4	A320/4	320	0.35870	0.00448	4.4838
33	4/24/96	11:58:07	RUND/4	A320/4	320	0.69445	0.00868	8.6806
34	4/24/96	11:58:20	RUND/4	A320/4	320	0.79050	0.00988	9.8813
35	4/24/96	11:58:33	RUND/4	A320/4	320	0.87805	0.01098	10.9756
36	4/24/96	11:58:47	RUND/4	A320/4	320	0.31705	0.00396	3.9631
37	4/24/96	11:59:01	RUND/4	A320/4	320	0.36040	0.00451	4.5050
38	4/24/96	11:59:14	RUND/4	A320/4	320	0.43180	0.00540	5.3975
39	4/24/96	11:59:28	RUND/4	A320/4	320	0.32810	0.00410	4.1013
40	4/24/96	11:59:41	RUND/4	A320/4	320	0.54570	0.00682	6.8213
41	4/24/96	11:59:55	RUND/4	A320/4	320	0.41565	0.00520	5.1956
42	4/24/96	12:00:08	RUND/4	A320/4	320	0.51935	0.00649	6.4919
43	4/24/96	12:00:21	RUND/4	A320/4	320	1.16450	0.01456	14.5563
44	4/24/96	12:00:35	RUND/4	A320/4	320	0.92735	0.01159	11.5919
45	4/24/96	12:00:50	RUND/4	A320/4	320	0.49895	0.00624	6.2369
46	4/24/96	12:01:03	RUND/4	A320/4	320	0.56185	0.00702	7.0231
47	4/24/96	12:01:17	RUND/4	A320/4	320	0.38760	0.00485	4.8450
48	4/24/96	12:01:31	RUNH/4	A320/4	320	0.66130	0.00827	8.2663
49	4/24/96	12:38:35	RUND/4	A320/4	320	0.99450	0.01243	12.4313

	A	B	C	D	E	F	G	H
50	4/24/96	12:38:49	RUND/4	A320/4	320	0.99110	0.01239	12.3888
51	4/24/96	12:39:05	RUND/4	A320/4	320	2.06295	0.02579	25.7869
52	4/24/96	12:39:18	RUND/4	A320/4	320	1.52915	0.01911	19.1144
53	4/24/96	12:39:31	RUND/4	A320/4	320	1.85810	0.02323	23.2263
54	4/24/96	12:39:45	RUND/4	A320/4	320	1.29965	0.01625	16.2456
55	4/24/96	12:39:59	RUND/4	A320/4	320	2.19385	0.02742	27.4231
56	4/24/96	12:40:13	RUND/4	A320/4	320	1.98220	0.02478	24.7775
57	4/24/96	12:40:27	RUND/4	A320/4	320	2.71065	0.03388	33.8831
58	4/24/96	12:40:41	RUND/4	A320/4	320	1.70850	0.02136	21.3563
59	4/24/96	12:40:54	RUND/4	A320/4	320	2.54320	0.03179	31.7900
60	4/24/96	12:41:07	RUND/4	A320/4	320	2.77440	0.03468	34.6800
61	4/24/96	12:41:21	RUND/4	A320/4	320	1.31240	0.01641	16.4050
62	4/24/96	12:41:35	RUND/4	A320/4	320	0.89080	0.01114	11.1350
63	4/24/96	12:41:48	RUND/4	A320/4	320	2.59675	0.03246	32.4594
64	4/24/96	12:42:02	RUND/4	A320/4	320	1.04380	0.01305	13.0475
65	4/24/96	12:42:16	RUND/4	A320/4	320	0.92140	0.01152	11.5175
66	4/24/96	12:42:30	RUND/4	A320/4	320	1.30050	0.01626	16.2563
67	4/24/96	12:42:43	RUND/4	A320/4	320	1.16705	0.01459	14.5881
68	4/24/96	12:58:29	RUNJ/4	A320/4	320	0.73185	0.00915	9.1481
69	4/24/96	12:58:42	RUNJ/4	A320/4	320	1.19000	0.01488	14.8750
70	4/24/96	12:58:55	RUNJ/4	A320/4	320	1.40250	0.01753	17.5313
71	4/24/96	12:59:09	RUNJ/4	A320/4	320	1.07270	0.01341	13.4088
72	4/24/96	12:59:23	RUNJ/4	A320/4	320	1.46200	0.01828	18.2750
73	4/24/96	12:59:36	RUNJ/4	A320/4	320	1.68980	0.02112	21.1225
74	4/24/96	12:59:50	RUNJ/4	A320/4	320	0.64600	0.00808	8.0750
75	4/24/96	13:00:04	RUNJ/4	A320/4	320	1.33790	0.01672	16.7238
76	4/24/96	13:00:17	RUNJ/4	A320/4	320	0.93840	0.01173	11.7300
77	4/24/96	13:00:30	RUNJ/4	A320/4	320	1.99240	0.02491	24.9050
78	4/24/96	13:00:43	RUNJ/4	A320/4	320	0.77350	0.00967	9.6688
79	4/24/96	13:00:57	RUNJ/4	A320/4	320	0.97665	0.01221	12.2081
80	4/24/96	13:01:11	RUNJ/4	A320/4	320	1.66940	0.02087	20.8675
81	4/24/96	13:01:28	RUNJ/4	A320/4	320	2.03405	0.02543	25.4256
82	4/24/96	13:01:42	RUNJ/4	A320/4	320	1.28180	0.01602	16.0225
83	4/24/96	13:01:56	RUNJ/4	A320/4	320	1.59970	0.02000	19.9963
84	4/24/96	13:02:10	RUNJ/4	A320/4	320	1.28690	0.01609	16.0863
85	4/24/96	13:02:23	RUNJ/4	A320/4	320	0.61370	0.00767	7.6713
86	4/24/96	13:02:36	RUNJ/4	A320/4	320	2.56105	0.03201	32.0131
87	4/24/96	13:02:50	RUNJ/4	A320/4	320	0.73695	0.00921	9.2119
88	4/24/96	13:03:04	RUNJ/4	A320/4	320	1.28435	0.01605	16.0544
89	4/24/96	13:03:17	RUNJ/4	A320/4	320	1.10415	0.01380	13.8019
90	4/24/96	13:03:31	RUNJ/4	A320/4	320	1.51385	0.01892	18.9231
91	4/24/96	13:03:44	RUNJ/4	A320/4	320	0.76670	0.00958	9.5838
92	4/24/96	13:03:57	RUNJ/4	A320/4	320	2.45990	0.03075	30.7488
93	4/24/96	13:04:16	RUNJ/4	A320/4	320	1.00555	0.01257	12.5694
94	4/24/96	13:04:31	RUNJ/4	A320/4	320	2.87810	0.03598	35.9763
95	4/24/96	13:04:44	RUNJ/4	A320/4	320	1.36510	0.01706	17.0638
96	4/24/96	13:04:57	RUNJ/4	A320/4	320	0.91120	0.01139	11.3900
97	4/24/96	13:05:11	RUNJ/4	A320/4	320	0.62135	0.00777	7.7669
98	4/24/96	13:05:24	RUNJ/4	A320/4	320	0.74970	0.00937	9.3713

	A	B	C	D	E	F	G	H
99	4/24/96	13:05:38	RUNJ/4	A320/4	320	0.68680	0.00859	8.5850
100	4/24/96	13:05:52	RUNJ/4	A320/4	320	0.75480	0.00944	9.4350
101	4/24/96	13:06:05	RUNJ/4	A320/4	320	0.54315	0.00679	6.7894
102	4/24/96	13:06:19	RUNJ/4	A320/4	320	1.74845	0.02186	21.8556
103	4/24/96	13:06:33	RUNJ/4	A320/4	320	0.81685	0.01021	10.2106
104	4/24/96	13:06:46	RUNJ/4	A320/4	320	0.42075	0.00526	5.2594
105	4/24/96	13:07:00	RUNJ/4	A320/4	320	0.48450	0.00606	6.0563
106	4/24/96	13:07:14	RUNJ/4	A320/4	320	0.57375	0.00717	7.1719
107	4/24/96	13:07:28	RUNJ/4	A320/4	320	1.68045	0.02101	21.0056
108	4/24/96	13:13:19	RUNJ/4	A320/4	320	2.46925	0.03087	30.8656
109	4/24/96	13:13:33	RUNJ/4	A320/4	320	0.88145	0.01102	11.0181
110	4/24/96	13:13:47	RUNJ/4	A320/4	320	1.00725	0.01259	12.5906
111	4/24/96	13:14:01	RUNJ/4	A320/4	320	0.88570	0.01107	11.0713
112	4/24/96	13:14:14	RUNJ/4	A320/4	320	1.26820	0.01585	15.8525
113	4/24/96	13:14:28	RUNJ/4	A320/4	320	1.68555	0.02107	21.0694
114	4/24/96	13:14:41	RUNJ/4	A320/4	320	1.12200	0.01403	14.0250
115	4/24/96	13:14:55	RUNJ/4	A320/4	320	0.83215	0.01040	10.4019
116	4/24/96	13:15:09	RUNJ/4	A320/4	320	1.59715	0.01996	19.9644
117	4/24/96	13:15:23	RUNJ/4	A320/4	320	2.24230	0.02803	28.0288
118	4/24/96	13:15:37	RUNJ/4	A320/4	320	0.49300	0.00616	6.1625
119	4/24/96	13:15:51	RUNJ/4	A320/4	320	0.96815	0.01210	12.1019
120	4/24/96	13:16:05	RUNJ/4	A320/4	320	1.30730	0.01634	16.3413
121	4/24/96	13:16:18	RUNJ/4	A320/4	320	0.86700	0.01084	10.8375
122	4/24/96	13:16:32	RUNJ/4	A320/4	320	0.60520	0.00757	7.5650
123	4/24/96	13:16:46	RUNJ/4	A320/4	320	1.52235	0.01903	19.0294
124	4/24/96	13:17:00	RUNJ/4	A320/4	320	0.70210	0.00878	8.7763
125	4/24/96	13:17:13	RUNJ/4	A320/4	320	0.56950	0.00712	7.1188
126	4/24/96	13:17:26	RUNJ/4	A320/4	320	0.71230	0.00890	8.9038
127	4/24/96	13:17:40	RUNJ/4	A320/4	320	0.72845	0.00911	9.1056
128	4/24/96	13:17:56	RUNJ/4	A320/4	320	1.17215	0.01465	14.6519
129	4/24/96	13:18:09	RUNJ/4	A320/4	320	1.34810	0.01685	16.8513
130	4/24/96	13:18:22	RUNJ/4	A320/4	320	0.76840	0.00961	9.6050
131	4/24/96	13:18:36	RUNJ/4	A320/4	320	1.57675	0.01971	19.7094
132	4/24/96	13:18:50	RUNJ/4	A320/4	320	0.51595	0.00645	6.4494
133	4/24/96	13:19:04	RUNJ/4	A320/4	320	1.57590	0.01970	19.6988
134	4/24/96	13:19:18	RUNJ/4	A320/4	320	1.05910	0.01324	13.2388
135	4/24/96	13:19:31	RUNJ/4	A320/4	320	1.74335	0.02179	21.7919
136	4/24/96	13:19:44	RUNJ/4	A320/4	320	0.60095	0.00751	7.5119
137	4/24/96	13:19:57	RUNJ/4	A320/4	320	0.95880	0.01199	11.9850
138	4/24/96	13:20:10	RUNJ/4	A320/4	320	1.65495	0.02069	20.6869
139	4/24/96	13:20:23	RUNJ/4	A320/4	320	1.61075	0.02013	20.1344
140	4/24/96	13:20:36	RUNJ/4	A320/4	320	1.30985	0.01637	16.3731
141	4/24/96	13:20:50	RUNJ/4	A320/4	320	1.00470	0.01256	12.5588
142	4/24/96	13:21:04	RUNJ/4	A320/4	320	0.66470	0.00831	8.3088
143	4/24/96	13:21:17	RUNJ/4	A320/4	320	1.02340	0.01279	12.7925
144	4/24/96	13:21:31	RUNJ/4	A320/4	320	1.59205	0.01990	19.9006
145	4/24/96	13:21:45	RUNJ/4	A320/4	320	0.57205	0.00715	7.1506
146	4/24/96	13:21:58	RUNJ/4	A320/4	320	1.06080	0.01326	13.2600
147	4/24/96	13:22:11	RUNJ/4	A320/4	320	1.63965	0.02050	20.4956

	A	B	C	D	E	F	G	H
148	4/24/96	13:27:44	RUNJ/4	A320/4	320	0.94945	0.01187	11.8681
149	4/24/96	13:27:58	RUNJ/4	A320/4	320	1.01150	0.01264	12.6438
150	4/24/96	13:28:12	RUNJ/4	A320/4	320	0.83555	0.01044	10.4444
151	4/24/96	13:28:26	RUNJ/4	A320/4	320	0.95710	0.01196	11.9638
152	4/24/96	13:28:39	RUNJ/4	A320/4	320	0.65195	0.00815	8.1494
153	4/24/96	13:28:52	RUNJ/4	A320/4	320	1.43905	0.01799	17.9881
154	4/24/96	13:29:06	RUNJ/4	A320/4	320	0.82535	0.01032	10.3169
155	4/24/96	13:29:20	RUNJ/4	A320/4	320	1.19935	0.01499	14.9919
156	4/24/96	13:29:33	RUNJ/4	A320/4	320	1.91760	0.02397	23.9700
157	4/24/96	13:29:47	RUNJ/4	A320/4	320	0.60095	0.00751	7.5119
158	4/24/96	13:30:00	RUNJ/4	A320/4	320	0.88400	0.01105	11.0500
159	4/24/96	13:30:13	RUNJ/4	A320/4	320	1.81900	0.02274	22.7375
160	4/24/96	13:30:27	RUNJ/4	A320/4	320	1.00300	0.01254	12.5375
161	4/24/96	13:30:41	RUNJ/4	A320/4	320	0.69020	0.00863	8.6275
162	4/24/96	13:30:54	RUNJ/4	A320/4	320	0.95455	0.01193	11.9319
163	4/24/96	13:31:07	RUNJ/4	A320/4	320	0.74290	0.00929	9.2863
164	4/24/96	13:31:21	RUNJ/4	A320/4	320	1.32685	0.01659	16.5856
165	4/24/96	13:31:35	RUNJ/4	A320/4	320	1.46200	0.01828	18.2750
166	4/24/96	13:31:48	RUNJ/4	A320/4	320	0.68765	0.00860	8.5956
167	4/24/96	13:32:01	RUNJ/4	A320/4	320	1.14240	0.01428	14.2800
168	4/24/96	13:32:14	RUNJ/4	A320/4	320	0.76415	0.00955	9.5519
169	4/24/96	13:32:28	RUNJ/4	A320/4	320	1.48070	0.01851	18.5088
170	4/24/96	13:32:42	RUNJ/4	A320/4	320	0.70635	0.00883	8.8294
171	4/24/96	13:32:56	RUNJ/4	A320/4	320	1.54190	0.01927	19.2738
172	4/24/96	13:33:09	RUNJ/4	A320/4	320	0.78285	0.00979	9.7856
173	4/24/96	13:33:23	RUNJ/4	A320/4	320	1.12285	0.01404	14.0356
174	4/24/96	13:33:36	RUNJ/4	A320/4	320	1.30305	0.01629	16.2881
175	4/24/96	13:33:50	RUNJ/4	A320/4	320	1.22655	0.01533	15.3319
176	4/24/96	13:34:03	RUNJ/4	A320/4	320	0.88230	0.01103	11.0288
177	4/24/96	13:34:17	RUNJ/4	A320/4	320	1.46795	0.01835	18.3494
178	4/24/96	13:34:30	RUNJ/4	A320/4	320	0.83385	0.01042	10.4231
179	4/24/96	13:34:44	RUNJ/4	A320/4	320	0.73440	0.00918	9.1800
180	4/24/96	13:34:58	RUNJ/4	A320/4	320	0.74205	0.00928	9.2756
181	4/24/96	13:35:11	RUNJ/4	A320/4	320	0.92565	0.01157	11.5706
182	4/24/96	13:35:24	RUNJ/4	A320/4	320	1.49430	0.01868	18.6788
183	4/24/96	13:35:37	RUNJ/4	A320/4	320	0.72165	0.00902	9.0206
184	4/24/96	13:35:50	RUNJ/4	A320/4	320	1.71785	0.02147	21.4731
185	4/24/96	13:36:04	RUNJ/4	A320/4	320	1.32430	0.01655	16.5538
186	4/24/96	13:36:18	RUNJ/4	A320/4	320	0.81005	0.01013	10.1256
187	4/24/96	13:36:32	RUNJ/4	A320/4	320	0.63580	0.00795	7.9475
188	4/24/96	13:46:11	RUNJ/4	A320/4	320	0.53805	0.00673	6.7256
189	4/24/96	13:46:24	RUNJ/4	A320/4	320	1.13985	0.01425	14.2481
190	4/24/96	13:46:38	RUNJ/4	A320/4	320	0.82025	0.01025	10.2531
191	4/24/96	13:46:52	RUNJ/4	A320/4	320	1.01065	0.01263	12.6331
192	4/24/96	13:47:06	RUNJ/4	A320/4	320	1.08375	0.01355	13.5469
193	4/24/96	13:47:20	RUNJ/4	A320/4	320	0.50830	0.00635	6.3538
194	4/24/96	13:47:34	RUNJ/4	A320/4	320	1.66685	0.02084	20.8356
195	4/24/96	13:47:48	RUNJ/4	A320/4	320	0.56440	0.00706	7.0550
196	4/24/96	13:48:02	RUNJ/4	A320/4	320	0.64600	0.00808	8.0750

	A	B	C	D	E	F	G	H
197	4/24/96	13:48:16	RUNJ/4	A320/4	320	1.60140	0.02002	20.0175
198	4/24/96	13:48:32	RUNJ/4	A320/4	320	1.36935	0.01712	17.1169
199	4/24/96	13:48:45	RUNJ/4	A320/4	320	0.79645	0.00996	9.9556
200	4/24/96	13:48:59	RUNJ/4	A320/4	320	1.45690	0.01821	18.2113
201	4/24/96	13:49:13	RUNJ/4	A320/4	320	1.12710	0.01409	14.0888
202	4/24/96	13:49:27	RUNJ/4	A320/4	320	0.46835	0.00585	5.8544
203	4/24/96	13:49:41	RUNJ/4	A320/4	320	1.50960	0.01887	18.8700
204	4/24/96	13:49:55	RUNJ/4	A320/4	320	0.85085	0.01064	10.6356
205	4/24/96	13:50:08	RUNJ/4	A320/4	320	1.54530	0.01932	19.3163
206	4/24/96	13:50:21	RUNJ/4	A320/4	320	0.64940	0.00812	8.1175
207	4/24/96	13:50:35	RUNJ/4	A320/4	320	1.84365	0.02305	23.0456
208	4/24/96	13:50:49	RUNJ/4	A320/4	320	1.71615	0.02145	21.4519
209	4/24/96	13:51:02	RUNJ/4	A320/4	320	0.65025	0.00813	8.1281
210	4/24/96	13:51:16	RUNJ/4	A320/4	320	1.98135	0.02477	24.7669
211	4/24/96	13:51:29	RUNJ/4	A320/4	320	1.37530	0.01719	17.1913
212	4/24/96	13:51:42	RUNJ/4	A320/4	320	0.53550	0.00669	6.6938
213	4/24/96	13:51:55	RUNJ/4	A320/4	320	1.65920	0.02074	20.7400
214	4/24/96	13:52:09	RUNJ/4	A320/4	320	0.88230	0.01103	11.0288
215	4/24/96	13:52:22	RUNJ/4	A320/4	320	1.24185	0.01552	15.5231
216	4/24/96	13:52:36	RUNJ/4	A320/4	320	2.38340	0.02979	29.7925
217	4/24/96	13:52:49	RUNJ/4	A320/4	320	0.76160	0.00952	9.5200
218	4/24/96	13:53:02	RUNJ/4	A320/4	320	0.59585	0.00745	7.4481
219	4/24/96	13:53:16	RUNJ/4	A320/4	320	0.63495	0.00794	7.9369
220	4/24/96	13:53:29	RUNJ/4	A320/4	320	0.68000	0.00850	8.5000
221	4/24/96	13:53:43	RUNJ/4	A320/4	320	0.78965	0.00987	9.8706
222	4/24/96	13:53:57	RUNJ/4	A320/4	320	1.16620	0.01458	14.5775
223	4/24/96	13:54:11	RUNJ/4	A320/4	320	1.30050	0.01626	16.2563
224	4/24/96	13:54:25	RUNJ/4	A320/4	320	2.27885	0.02849	28.4856
225	4/24/96	13:54:39	RUNJ/4	A320/4	320	0.79560	0.00995	9.9450
226	4/24/96	13:54:52	RUNJ/4	A320/4	320	0.64090	0.00801	8.0113
227	4/24/96	13:55:05	RUNJ/4	A320/4	320	1.07780	0.01347	13.4725
228	4/24/96	14:00:35	RUNJ/4	A320/4	320	1.11095	0.01389	13.8869
229	4/24/96	14:00:49	RUNJ/4	A320/4	320	1.78670	0.02233	22.3338
230	4/24/96	14:01:02	RUNJ/4	A320/4	320	1.20360	0.01505	15.0450
231	4/24/96	14:01:15	RUNJ/4	A320/4	320	0.00000	0.00000	0.0000
232	4/24/96	14:01:29	RUNJ/4	A320/4	320	0.19635	0.00245	2.4544
233	4/24/96	14:01:43	RUNJ/4	A320/4	320	0.10370	0.00130	1.2963
234	4/24/96	14:01:56	RUNJ/4	A320/4	320	0.08925	0.00112	1.1156
235	4/24/96	14:02:10	RUNJ/4	A320/4	320	0.00000	0.00000	0.0000
236	4/24/96	14:02:23	RUNJ/4	A320/4	320	0.00000	0.00000	0.0000
237	4/24/96	14:02:37	RUNJ/4	A320/4	320	0.00000	0.00000	0.0000
238	4/24/96	14:02:51	RUNJ/4	A320/4	320	0.10625	0.00133	1.3281
239	4/24/96	14:03:05	RUNJ/4	A320/4	320	0.00000	0.00000	0.0000
240	4/24/96	14:03:18	RUNJ/4	A320/4	320	0.00000	0.00000	0.0000
241	4/24/96	14:03:31	RUNJ/4	A320/4	320	0.00000	0.00000	0.0000
242	4/24/96	14:03:45	RUNJ/4	A320/4	320	0.30345	0.00379	3.7931
243	4/24/96	14:03:58	RUNJ/4	A320/4	320	0.00000	0.00000	0.0000

	A	B	C	D	E	F	G	H
1	Date	Time	Sequence N	Script Name	Wavelength	Beryllium (	Bin corr	Be mg/acm
2	4/24/96	14:21:53	RUNJ/4	A320/4	320	0.0850	0.0011	1.0625
3	4/24/96	14:22:07	RUNJ/4	A320/4	320	0.0663	0.0008	0.8288
4	4/24/96	14:22:20	RUNJ/4	A320/4	320	0.0791	0.0010	0.9881
5	4/24/96	14:22:34	RUNJ/4	A320/4	320	0.0000	0.0000	0.0000
6	4/24/96	14:22:47	RUNJ/4	A320/4	320	0.0816	0.0010	1.0200
7	4/24/96	14:23:01	RUNJ/4	A320/4	320	0.0000	0.0000	0.0000
8	4/24/96	14:23:14	RUNJ/4	A320/4	320	0.0655	0.0008	0.8181
9	4/24/96	14:23:27	RUNJ/4	A320/4	320	0.0544	0.0007	0.6800
10	4/24/96	14:23:41	RUNJ/4	A320/4	320	0.0000	0.0000	0.0000
11	4/24/96	14:23:55	RUNJ/4	A320/4	320	0.0731	0.0009	0.9138
12	4/24/96	14:24:08	RUNJ/4	A320/4	320	0.1964	0.0025	2.4544
13	4/24/96	14:24:22	RUNJ/4	A320/4	320	0.3128	0.0039	3.9100
14	4/24/96	14:35:33	RUNJ/4	A320/4	320	0.5449	0.0068	6.8106
15	4/24/96	14:35:46	RUNJ/4	A320/4	320	1.3124	0.0164	16.4050
16	4/24/96	14:35:59	RUNJ/4	A320/4	320	0.8611	0.0108	10.7631
17	4/24/96	14:36:13	RUNJ/4	A320/4	320	1.8403	0.0230	23.0031
18	4/24/96	14:36:27	RUNJ/4	A320/4	320	1.6337	0.0204	20.4213
19	4/24/96	14:36:41	RUNJ/4	A320/4	320	1.3150	0.0164	16.4369
20	4/24/96	14:36:55	RUNJ/4	A320/4	320	1.0583	0.0132	13.2281
21	4/24/96	14:37:09	RUNJ/4	A320/4	320	1.9780	0.0247	24.7244
22	4/24/96	14:37:22	RUNJ/4	A320/4	320	0.6528	0.0082	8.1600
23	4/24/96	14:37:35	RUNJ/4	A320/4	320	0.7140	0.0089	8.9250
24	4/24/96	14:37:49	RUNJ/4	A320/4	320	0.5823	0.0073	7.2781
25	4/24/96	14:38:03	RUNJ/4	A320/4	320	0.9061	0.0113	11.3263
26	4/24/96	14:38:16	RUNJ/4	A320/4	320	1.7357	0.0217	21.6963
27	4/24/96	14:38:29	RUNJ/4	A320/4	320	0.6052	0.0076	7.5650
28	4/24/96	14:38:42	RUNJ/4	A320/4	320	1.1764	0.0147	14.7050
29	4/24/96	14:38:56	RUNJ/4	A320/4	320	0.6783	0.0085	8.4788
30	4/24/96	14:39:09	RUNJ/4	A320/4	320	1.4569	0.0182	18.2113
31	4/24/96	14:39:23	RUNJ/4	A320/4	320	0.5041	0.0063	6.3006
32	4/24/96	14:39:36	RUNJ/4	A320/4	320	0.7353	0.0092	9.1906
33	4/24/96	14:39:50	RUNJ/4	A320/4	320	0.6494	0.0081	8.1175
34	4/24/96	14:40:04	RUNJ/4	A320/4	320	0.6902	0.0086	8.6275
35	4/24/96	14:40:17	RUNJ/4	A320/4	320	0.5032	0.0063	6.2900
36	4/24/96	14:40:31	RUNJ/4	A320/4	320	1.1866	0.0148	14.8325
37	4/24/96	14:40:45	RUNJ/4	A320/4	320	0.3791	0.0047	4.7388
38	4/24/96	14:40:58	RUNJ/4	A320/4	320	0.9699	0.0121	12.1231
39	4/24/96	14:41:12	RUNJ/4	A320/4	320	1.7298	0.0216	21.6219
40	4/24/96	14:41:26	RUNJ/4	A320/4	320	1.5615	0.0195	19.5181
41	4/24/96	14:41:39	RUNJ/4	A320/4	320	0.6486	0.0081	8.1069
42	4/24/96	14:41:53	RUNJ/4	A320/4	320	0.4267	0.0053	5.3338
43	4/24/96	14:42:07	RUNJ/4	A320/4	320	0.4726	0.0059	5.9075
44	4/24/96	14:42:21	RUNJ/4	A320/4	320	0.6265	0.0078	7.8306
45	4/24/96	14:42:35	RUNJ/4	A320/4	320	0.5840	0.0073	7.2994
46	4/24/96	14:42:48	RUNJ/4	A320/4	320	0.9342	0.0117	11.6769
47	4/24/96	14:43:02	RUNJ/4	A320/4	320	0.3953	0.0049	4.9406
48	4/24/96	14:43:16	RUNJ/4	A320/4	320	0.7106	0.0089	8.8825
49	4/24/96	14:43:29	RUNJ/4	A320/4	320	0.6843	0.0086	8.5531

	A	B	C	D	E	F	G	H
50	4/24/96	14:43:42	RUNJ/4	A320/4	320	3.0770	0.0385	38.4625
51	4/24/96	14:43:55	RUNJ/4	A320/4	320	1.4646	0.0183	18.3069
52	4/24/96	14:44:09	RUNJ/4	A320/4	320	1.3005	0.0163	16.2563
53	4/24/96	14:44:23	RUNJ/4	A320/4	320	0.6358	0.0079	7.9475
54	4/24/96	14:50:52	RUNJ/4	A320/4	320	0.9418	0.0118	11.7725
55	4/24/96	14:51:06	RUNJ/4	A320/4	320	0.5653	0.0071	7.0656
56	4/24/96	14:51:19	RUNJ/4	A320/4	320	0.6851	0.0086	8.5638
57	4/24/96	14:51:32	RUNJ/4	A320/4	320	0.6775	0.0085	8.4681
58	4/24/96	14:51:46	RUNJ/4	A320/4	320	0.9214	0.0115	11.5175
59	4/24/96	14:51:59	RUNJ/4	A320/4	320	0.6103	0.0076	7.6288
60	4/24/96	14:52:13	RUNJ/4	A320/4	320	1.4799	0.0185	18.4981
61	4/24/96	14:52:26	RUNJ/4	A320/4	320	0.7013	0.0088	8.7656
62	4/24/96	14:52:40	RUNJ/4	A320/4	320	0.6656	0.0083	8.3194
63	4/24/96	14:52:54	RUNJ/4	A320/4	320	1.2827	0.0160	16.0331
64	4/24/96	14:53:10	RUNJ/4	A320/4	320	1.1773	0.0147	14.7156
65	4/24/96	14:53:24	RUNJ/4	A320/4	320	0.9299	0.0116	11.6238
66	4/24/96	14:53:38	RUNJ/4	A320/4	320	0.7684	0.0096	9.6050
67	4/24/96	14:53:53	RUNJ/4	A320/4	320	1.1475	0.0143	14.3438
68	4/24/96	14:54:07	RUNJ/4	A320/4	320	1.3711	0.0171	17.1381
69	4/24/96	14:54:21	RUNJ/4	A320/4	320	0.7761	0.0097	9.7006
70	4/24/96	14:54:35	RUNJ/4	A320/4	320	1.4340	0.0179	17.9244
71	4/24/96	14:54:49	RUNJ/4	A320/4	320	0.7684	0.0096	9.6050
72	4/24/96	14:55:02	RUNJ/4	A320/4	320	0.5908	0.0074	7.3844
73	4/24/96	14:55:16	RUNJ/4	A320/4	320	0.7225	0.0090	9.0313
74	4/24/96	14:55:32	RUNJ/4	A320/4	320	0.6239	0.0078	7.7988
75	4/24/96	14:55:46	RUNJ/4	A320/4	320	0.5899	0.0074	7.3738
76	4/24/96	15:03:08	RUNJ/4	A320/4	320	0.9554	0.0119	11.9425
77	4/24/96	15:03:21	RUNJ/4	A320/4	320	0.3919	0.0049	4.8981
78	4/24/96	15:03:35	RUNJ/4	A320/4	320	0.9155	0.0114	11.4431
79	4/24/96	15:03:49	RUNJ/4	A320/4	320	0.4752	0.0059	5.9394
80	4/24/96	15:04:02	RUNJ/4	A320/4	320	1.4042	0.0176	17.5525
81	4/24/96	15:04:15	RUNJ/4	A320/4	320	0.5219	0.0065	6.5238
82	4/24/96	15:04:28	RUNJ/4	A320/4	320	0.6180	0.0077	7.7244
83	4/24/96	15:04:42	RUNJ/4	A320/4	320	0.6256	0.0078	7.8200
84	4/24/96	15:04:56	RUNJ/4	A320/4	320	1.1407	0.0143	14.2588
85	4/24/96	15:05:10	RUNJ/4	A320/4	320	0.4837	0.0060	6.0456
86	4/24/96	15:05:24	RUNJ/4	A320/4	320	0.8313	0.0104	10.3913
87	4/24/96	15:05:38	RUNJ/4	A320/4	320	0.4692	0.0059	5.8650
88	4/24/96	15:05:52	RUNJ/4	A320/4	320	0.4684	0.0059	5.8544
89	4/24/96	15:06:06	RUNJ/4	A320/4	320	0.4582	0.0057	5.7269
90	4/24/96	15:06:19	RUNJ/4	A320/4	320	0.4259	0.0053	5.3231
91	4/24/96	15:06:33	RUNJ/4	A320/4	320	1.0991	0.0137	13.7381
92	4/24/96	15:06:46	RUNJ/4	A320/4	320	0.9146	0.0114	11.4325
93	4/24/96	15:07:00	RUNJ/4	A320/4	320	0.7344	0.0092	9.1800
94	4/24/96	15:07:13	RUNJ/4	A320/4	320	0.3043	0.0038	3.8038
95	4/24/96	15:07:26	RUNJ/4	A320/4	320	0.4820	0.0060	6.0244
96	4/24/96	15:07:39	RUNJ/4	A320/4	320	0.6554	0.0082	8.1919
97	4/24/96	15:07:53	RUNJ/4	A320/4	320	0.8823	0.0110	11.0288
98	4/24/96	15:08:06	RUNJ/4	A320/4	320	0.6069	0.0076	7.5863

	A	B	C	D	E	F	G	H
99	4/24/96	15:08:20	RUNJ/4	A320/4	320	1.1858	0.0148	14.8219
100	4/24/96	15:08:34	RUNJ/4	A320/4	320	0.7922	0.0099	9.9025
101	4/24/96	15:08:47	RUNJ/4	A320/4	320	0.5848	0.0073	7.3100
102	4/24/96	15:09:01	RUNJ/4	A320/4	320	1.0923	0.0137	13.6531
103	4/24/96	15:09:15	RUNJ/4	A320/4	320	1.4144	0.0177	17.6800
104	4/24/96	15:09:29	RUNJ/4	A320/4	320	1.9083	0.0239	23.8531
105	4/24/96	15:09:42	RUNJ/4	A320/4	320	1.0778	0.0135	13.4725
106	4/24/96	15:09:56	RUNJ/4	A320/4	320	1.3345	0.0167	16.6813
107	4/24/96	15:10:10	RUNJ/4	A320/4	320	0.6936	0.0087	8.6700
108	4/24/96	15:10:23	RUNJ/4	A320/4	320	0.7489	0.0094	9.3606
109	4/24/96	15:10:37	RUNJ/4	A320/4	320	0.7905	0.0099	9.8813
110	4/24/96	15:10:51	RUNJ/4	A320/4	320	2.1565	0.0270	26.9556
111	4/24/96	15:11:05	RUNJ/4	A320/4	320	0.7701	0.0096	9.6263
112	4/24/96	15:11:19	RUNJ/4	A320/4	320	2.2729	0.0284	28.4113
113	4/24/96	15:11:33	RUNJ/4	A320/4	320	0.5908	0.0074	7.3844
114	4/24/96	15:42:26	RUNJ/4	A320/4	320	0.7778	0.0097	9.7219
115	4/24/96	15:42:43	RUNJ/4	A320/4	320	1.2334	0.0154	15.4169
116	4/24/96	15:42:59	RUNJ/4	A320/4	320	0.8313	0.0104	10.3913
117	4/24/96	15:43:15	RUNJ/4	A320/4	320	1.2155	0.0152	15.1938
118	4/24/96	15:43:31	RUNJ/4	A320/4	320	0.5364	0.0067	6.7044
119	4/24/96	15:43:46	RUNJ/4	A320/4	320	0.8067	0.0101	10.0831
120	4/24/96	15:44:02	RUNJ/4	A320/4	320	0.5780	0.0072	7.2250
121	4/24/96	15:44:18	RUNJ/4	A320/4	320	0.3842	0.0048	4.8025
122	4/24/96	15:44:34	RUNJ/4	A320/4	320	1.1450	0.0143	14.3119
123	4/24/96	15:44:50	RUNJ/4	A320/4	320	0.6035	0.0075	7.5438
124	4/24/96	15:45:06	RUNJ/4	A320/4	320	0.9342	0.0117	11.6769
125	4/24/96	15:45:21	RUNJ/4	A320/4	320	0.5840	0.0073	7.2994
126	4/24/96	15:45:37	RUNJ/4	A320/4	320	0.8747	0.0109	10.9331
127	4/24/96	15:45:53	RUNJ/4	A320/4	320	0.5168	0.0065	6.4600
128	4/24/96	15:46:08	RUNJ/4	A320/4	320	0.8823	0.0110	11.0288
129	4/24/96	15:46:24	RUNJ/4	A320/4	320	0.8424	0.0105	10.5294
130	4/24/96	15:46:40	RUNJ/4	A320/4	320	0.7489	0.0094	9.3606
131	4/24/96	15:46:55	RUNJ/4	A320/4	320	1.4663	0.0183	18.3281
132	4/24/96	15:47:11	RUNJ/4	A320/4	320	0.5058	0.0063	6.3219
133	4/24/96	15:47:27	RUNJ/4	A320/4	320	0.7072	0.0088	8.8400
134	4/24/96	15:47:43	RUNJ/4	A320/4	320	0.6783	0.0085	8.4788
135	4/24/96	15:47:59	RUNJ/4	A320/4	320	0.4463	0.0056	5.5781
136	4/24/96	15:48:15	RUNJ/4	A320/4	320	0.6894	0.0086	8.6169
137	4/24/96	15:48:31	RUNJ/4	A320/4	320	0.2712	0.0034	3.3894
138	4/24/96	15:48:47	RUNJ/4	A320/4	320	0.7574	0.0095	9.4669
139	4/24/96	15:49:03	RUNJ/4	A320/4	320	0.7540	0.0094	9.4244
140	4/24/96	15:49:19	RUNJ/4	A320/4	320	1.0651	0.0133	13.3131
141	4/24/96	15:49:35	RUNJ/4	A320/4	320	0.8254	0.0103	10.3169
142	4/24/96	15:49:50	RUNJ/4	A320/4	320	1.1450	0.0143	14.3119
143	4/24/96	15:50:06	RUNJ/4	A320/4	320	0.9979	0.0125	12.4738
144	4/24/96	15:50:22	RUNJ/4	A320/4	320	0.6341	0.0079	7.9263
145	4/24/96	15:50:38	RUNJ/4	A320/4	320	0.5032	0.0063	6.2900
146	4/24/96	15:50:54	RUNJ/4	A320/4	320	0.8415	0.0105	10.5188
147	4/24/96	15:51:10	RUNJ/4	A320/4	320	0.3341	0.0042	4.1756

	A	B	C	D	E	F	G	H
148	4/24/96	15:51:26	RUNJ/4	A320/4	320	0.6341	0.0079	7.9263
149	4/24/96	15:51:41	RUNJ/4	A320/4	320	0.6749	0.0084	8.4363
150	4/24/96	15:51:57	RUNJ/4	A320/4	320	0.6027	0.0075	7.5331
151	4/24/96	15:52:13	RUNJ/4	A320/4	320	0.6928	0.0087	8.6594
152	4/24/96	15:52:29	RUNJ/4	A320/4	320	1.4663	0.0183	18.3281
153	4/24/96	15:52:45	RUNJ/4	A320/4	320	0.8449	0.0106	10.5613
154	4/24/96	15:58:02	RUNJ/4	A320/4	320	0.6834	0.0085	8.5425
155	4/24/96	15:58:18	RUNJ/4	A320/4	320	0.6197	0.0077	7.7456
156	4/24/96	15:58:34	RUNJ/4	A320/4	320	0.7438	0.0093	9.2969
157	4/24/96	15:58:50	RUNJ/4	A320/4	320	0.4446	0.0056	5.5569
158	4/24/96	15:59:05	RUNJ/4	A320/4	320	0.4497	0.0056	5.6206
159	4/24/96	15:59:19	RUNJ/4	A320/4	320	1.3048	0.0163	16.3094
160	4/24/96	15:59:33	RUNJ/4	A320/4	320	0.6214	0.0078	7.7669
161	4/24/96	15:59:47	RUNJ/4	A320/4	320	0.4947	0.0062	6.1838
162	4/24/96	16:00:00	RUNJ/4	A320/4	320	0.5636	0.0070	7.0444
163	4/24/96	16:00:14	RUNJ/4	A320/4	320	0.4522	0.0057	5.6525
164	4/24/96	16:00:28	RUNJ/4	A320/4	320	0.4403	0.0055	5.5038
165	4/24/96	16:00:41	RUNJ/4	A320/4	320	1.0880	0.0136	13.6000
166	4/24/96	16:00:55	RUNJ/4	A320/4	320	0.7098	0.0089	8.8719
167	4/24/96	16:01:09	RUNJ/4	A320/4	320	1.2096	0.0151	15.1194
168	4/24/96	16:01:23	RUNJ/4	A320/4	320	0.8203	0.0103	10.2531
169	4/24/96	16:01:37	RUNJ/4	A320/4	320	1.2198	0.0152	15.2469
170	4/24/96	16:01:51	RUNJ/4	A320/4	320	0.4633	0.0058	5.7906
171	4/24/96	16:02:04	RUNJ/4	A320/4	320	0.4293	0.0054	5.3656
172	4/24/96	16:02:17	RUNJ/4	A320/4	320	0.7353	0.0092	9.1906
173	4/24/96	16:02:31	RUNJ/4	A320/4	320	0.7905	0.0099	9.8813
174	4/24/96	16:02:45	RUNJ/4	A320/4	320	0.3783	0.0047	4.7281
175	4/24/96	16:02:59	RUNJ/4	A320/4	320	0.4242	0.0053	5.3019
176	4/24/96	16:03:12	RUNJ/4	A320/4	320	1.6635	0.0208	20.7931
177	4/24/96	16:03:26	RUNJ/4	A320/4	320	0.8135	0.0102	10.1681
178	4/24/96	16:03:40	RUNJ/4	A320/4	320	0.6129	0.0077	7.6606
179	4/24/96	16:03:54	RUNJ/4	A320/4	320	0.4845	0.0061	6.0563
180	4/24/96	16:04:07	RUNJ/4	A320/4	320	0.7506	0.0094	9.3819
181	4/24/96	16:04:21	RUNJ/4	A320/4	320	0.5976	0.0075	7.4694
182	4/24/96	16:04:34	RUNJ/4	A320/4	320	1.3456	0.0168	16.8194
183	4/24/96	16:04:47	RUNJ/4	A320/4	320	0.6231	0.0078	7.7881
184	4/24/96	16:05:01	RUNJ/4	A320/4	320	1.5011	0.0188	18.7638
185	4/24/96	16:05:15	RUNJ/4	A320/4	320	0.6605	0.0083	8.2556
186	4/24/96	16:05:29	RUNJ/4	A320/4	320	0.7863	0.0098	9.8281
187	4/24/96	16:05:42	RUNJ/4	A320/4	320	1.2759	0.0159	15.9481
188	4/24/96	16:05:56	RUNJ/4	A320/4	320	1.6133	0.0202	20.1663
189	4/24/96	16:06:09	RUNJ/4	A320/4	320	0.4845	0.0061	6.0563
190	4/24/96	16:06:22	RUNJ/4	A320/4	320	0.5891	0.0074	7.3631
191	4/24/96	16:06:35	RUNJ/4	A320/4	320	0.6962	0.0087	8.7019
192	4/24/96	16:06:48	RUNJ/4	A320/4	320	0.5882	0.0074	7.3525
193	4/24/96	16:07:01	RUNJ/4	A320/4	320	2.4956	0.0312	31.1950
194	4/24/96	16:15:05	RUNJ/4	A320/4	320	0.4871	0.0061	6.0881
195	4/24/96	16:15:19	RUNJ/4	A320/4	320	0.4803	0.0060	6.0031
196	4/24/96	16:15:33	RUNJ/4	A320/4	320	0.7446	0.0093	9.3075

	A	B	C	D	E	F	G	H
197	4/24/96	16:15:46	RUNJ/4	A320/4	320	1.8284	0.0229	22.8544
198	4/24/96	16:16:00	RUNJ/4	A320/4	320	0.8823	0.0110	11.0288
199	4/24/96	16:16:14	RUNJ/4	A320/4	320	1.4450	0.0181	18.0625
200	4/24/96	16:16:27	RUNJ/4	A320/4	320	1.5173	0.0190	18.9656
201	4/24/96	16:16:40	RUNJ/4	A320/4	320	0.4259	0.0053	5.3231
202	4/24/96	16:16:53	RUNJ/4	A320/4	320	1.7553	0.0219	21.9406
203	4/24/96	16:17:07	RUNJ/4	A320/4	320	1.2164	0.0152	15.2044
204	4/24/96	16:17:20	RUNJ/4	A320/4	320	1.0455	0.0131	13.0688
205	4/24/96	16:17:34	RUNJ/4	A320/4	320	0.5619	0.0070	7.0231
206	4/24/96	16:17:48	RUNJ/4	A320/4	320	0.3375	0.0042	4.2181
207	4/24/96	16:18:02	RUNJ/4	A320/4	320	0.5134	0.0064	6.4175
208	4/24/96	16:18:16	RUNJ/4	A320/4	320	0.5899	0.0074	7.3738
209	4/24/96	16:18:30	RUNJ/4	A320/4	320	0.3230	0.0040	4.0375
210	4/24/96	16:18:44	RUNJ/4	A320/4	320	2.0392	0.0255	25.4894
211	4/24/96	16:18:58	RUNJ/4	A320/4	320	0.6197	0.0077	7.7456
212	4/24/96	16:19:12	RUNJ/4	A320/4	320	0.9614	0.0120	12.0169
213	4/24/96	16:19:25	RUNJ/4	A320/4	320	0.7115	0.0089	8.8931
214	4/24/96	16:19:38	RUNJ/4	A320/4	320	0.5185	0.0065	6.4813
215	4/24/96	16:19:51	RUNJ/4	A320/4	320	0.4386	0.0055	5.4825
216	4/24/96	16:20:05	RUNJ/4	A320/4	320	0.8475	0.0106	10.5931
217	4/24/96	16:20:19	RUNJ/4	A320/4	320	0.4412	0.0055	5.5144
218	4/24/96	16:20:32	RUNJ/4	A320/4	320	0.7914	0.0099	9.8919
219	4/24/96	16:20:46	RUNJ/4	A320/4	320	0.5585	0.0070	6.9806
220	4/24/96	16:21:00	RUNJ/4	A320/4	320	0.5797	0.0072	7.2463
221	4/24/96	16:21:14	RUNJ/4	A320/4	320	2.0392	0.0255	25.4894
222	4/24/96	16:21:27	RUNJ/4	A320/4	320	0.9257	0.0116	11.5706
223	4/24/96	16:21:41	RUNJ/4	A320/4	320	0.7327	0.0092	9.1588
224	4/24/96	16:21:54	RUNJ/4	A320/4	320	1.0251	0.0128	12.8138
225	4/24/96	16:22:07	RUNJ/4	A320/4	320	0.7540	0.0094	9.4244
226	4/24/96	16:22:20	RUNJ/4	A320/4	320	0.7701	0.0096	9.6263
227	4/24/96	16:22:34	RUNJ/4	A320/4	320	1.2920	0.0162	16.1500
228	4/24/96	16:22:48	RUNJ/4	A320/4	320	0.7268	0.0091	9.0844
229	4/24/96	16:23:02	RUNJ/4	A320/4	320	0.5015	0.0063	6.2688
230	4/24/96	16:23:15	RUNJ/4	A320/4	320	1.0438	0.0130	13.0475
231	4/24/96	16:23:29	RUNJ/4	A320/4	320	0.9019	0.0113	11.2731
232	4/24/96	16:23:42	RUNJ/4	A320/4	320	0.9367	0.0117	11.7088
233	4/24/96	16:23:56	RUNJ/4	A320/4	320	1.0770	0.0135	13.4619
234	4/24/96	16:58:12	RUNJ/4	A320/4	320	0.6681	0.0084	8.3513
235	4/24/96	16:58:26	RUNJ/4	A320/4	320	1.5640	0.0196	19.5500
236	4/24/96	16:58:39	RUNJ/4	A320/4	320	1.0506	0.0131	13.1325
237	4/24/96	16:58:52	RUNJ/4	A320/4	320	0.7327	0.0092	9.1588
238	4/24/96	16:59:06	RUNJ/4	A320/4	320	1.0149	0.0127	12.6863
239	4/24/96	16:59:19	RUNJ/4	A320/4	320	0.5228	0.0065	6.5344
240	4/24/96	16:59:33	RUNJ/4	A320/4	320	1.1297	0.0141	14.1206
241	4/24/96	16:59:46	RUNJ/4	A320/4	320	0.9920	0.0124	12.3994
242	4/24/96	17:00:00	RUNJ/4	A320/4	320	1.4034	0.0175	17.5419
243	4/24/96	17:00:13	RUNJ/4	A320/4	320	1.4646	0.0183	18.3069
244	4/24/96	17:00:27	RUNJ/4	A320/4	320	1.1620	0.0145	14.5244
245	4/24/96	17:00:40	RUNJ/4	A320/4	320	1.2861	0.0161	16.0756

	A	B	C	D	E	F	G	H
246	4/24/96	17:00:54	RUNJ/4	A320/4	320	0.3995	0.0050	4.9938
247	4/24/96	17:01:08	RUNJ/4	A320/4	320	1.9848	0.0248	24.8094
248	4/24/96	17:01:21	RUNJ/4	A320/4	320	0.8364	0.0105	10.4550
249	4/24/96	17:01:35	RUNJ/4	A320/4	320	0.5194	0.0065	6.4919
250	4/24/96	17:01:49	RUNJ/4	A320/4	320	1.1671	0.0146	14.5881
251	4/24/96	17:02:03	RUNJ/4	A320/4	320	0.0621	0.0008	0.7756
252	4/24/96	17:02:17	RUNJ/4	A320/4	320	0.1165	0.0015	1.4556
253	4/24/96	17:02:31	RUNJ/4	A320/4	320	0.0000	0.0000	0.0000
254	4/24/96	17:02:45	RUNJ/4	A320/4	320	0.1284	0.0016	1.6044
255	4/24/96	17:02:59	RUNJ/4	A320/4	320	0.0000	0.0000	0.0000
256	4/24/96	17:03:12	RUNJ/4	A320/4	320	0.0000	0.0000	0.0000
257	4/24/96	17:03:26	RUNJ/4	A320/4	320	0.0986	0.0012	1.2325
258	4/24/96	17:03:39	RUNJ/4	A320/4	320	0.0952	0.0012	1.1900
259	4/24/96	17:03:53	RUNJ/4	A320/4	320	0.0000	0.0000	0.0000
260	4/24/96	17:04:07	RUNJ/4	A320/4	320	0.0000	0.0000	0.0000
261	4/24/96	17:04:21	RUNJ/4	A320/4	320	0.0578	0.0007	0.7225
262	4/24/96	17:04:35	RUNJ/4	A320/4	320	0.0000	0.0000	0.0000
263	4/24/96	17:04:48	RUNJ/4	A320/4	320	0.0000	0.0000	0.0000

	A	B	C	D	E	F	G
1	Date	Time	Sequence N	Script Name	Wavelength	Beryllium (Be)	Be mg/acm
2	4/24/96	17:20:16	RUNJ/4	A320/4	320	0.00000	0.00000
3	4/24/96	17:20:30	RUNJ/4	A320/4	320	0.06375	0.79688
4	4/24/96	17:20:43	RUNJ/4	A320/4	320	0.00000	0.00000
5	4/24/96	17:20:56	RUNJ/4	A320/4	320	0.47770	5.97125
6	4/24/96	17:21:09	RUNJ/4	A320/4	320	0.92310	11.53875
7	4/24/96	17:21:23	RUNJ/4	A320/4	320	0.58480	7.31000
8	4/24/96	17:21:37	RUNJ/4	A320/4	320	1.78925	22.36563
9	4/24/96	17:21:51	RUNJ/4	A320/4	320	1.67960	20.99500
10	4/24/96	17:22:05	RUNJ/4	A320/4	320	0.83045	10.38063
11	4/24/96	17:22:19	RUNJ/4	A320/4	320	0.71145	8.89313
12	4/24/96	17:22:33	RUNJ/4	A320/4	320	2.37745	29.71813
13	4/24/96	17:22:47	RUNJ/4	A320/4	320	1.40675	17.58438
14	4/24/96	17:23:01	RUNJ/4	A320/4	320	1.26480	15.81000
15	4/24/96	17:23:14	RUNJ/4	A320/4	320	1.25035	15.62938
16	4/24/96	17:23:28	RUNJ/4	A320/4	320	0.82280	10.28500
17	4/24/96	17:23:42	RUNJ/4	A320/4	320	1.04465	13.05813
18	4/24/96	17:23:56	RUNJ/4	A320/4	320	0.89505	11.18813
19	4/24/96	17:24:10	RUNJ/4	A320/4	320	0.49980	6.24750
20	4/24/96	17:24:24	RUNJ/4	A320/4	320	1.13220	14.15250
21	4/24/96	17:24:38	RUNJ/4	A320/4	320	1.67620	20.95250
22	4/24/96	17:24:52	RUNJ/4	A320/4	320	1.45775	18.22188
23	4/24/96	17:25:06	RUNJ/4	A320/4	320	0.46325	5.79063
24	4/24/96	17:25:20	RUNJ/4	A320/4	320	0.73695	9.21188
25	4/24/96	17:25:34	RUNJ/4	A320/4	320	1.67195	20.89938
26	4/24/96	17:25:48	RUNJ/4	A320/4	320	0.74715	9.33938
27	4/24/96	17:26:01	RUNJ/4	A320/4	320	1.11180	13.89750
28	4/24/96	17:26:15	RUNJ/4	A320/4	320	0.65705	8.21313
29	4/24/96	17:26:29	RUNJ/4	A320/4	320	1.49685	18.71063
30	4/24/96	17:26:43	RUNJ/4	A320/4	320	0.58480	7.31000
31	4/24/96	17:26:57	RUNJ/4	A320/4	320	1.02680	12.83500
32	4/24/96	17:27:11	RUNJ/4	A320/4	320	0.98770	12.34625
33	4/24/96	17:27:25	RUNJ/4	A320/4	320	1.50280	18.78500
34	4/24/96	17:27:39	RUNJ/4	A320/4	320	1.48325	18.54063
35	4/24/96	17:27:53	RUNJ/4	A320/4	320	0.94180	11.77250
36	4/24/96	17:28:07	RUNJ/4	A320/4	320	0.52870	6.60875
37	4/24/96	17:28:20	RUNJ/4	A320/4	320	0.55250	6.90625
38	4/24/96	17:28:33	RUNJ/4	A320/4	320	0.94690	11.83625
39	4/24/96	17:28:47	RUNJ/4	A320/4	320	0.69615	8.70188
40	4/24/96	17:29:01	RUNJ/4	A320/4	320	0.66895	8.36188
41	4/24/96	17:29:15	RUNJ/4	A320/4	320	0.89335	11.16688
42	4/24/96	17:35:09	RUNJ/4	A320/4	320	0.49385	6.17313
43	4/24/96	17:35:23	RUNJ/4	A320/4	320	0.87380	10.92250
44	4/24/96	17:35:36	RUNJ/4	A320/4	320	1.13305	14.16313
45	4/24/96	17:35:49	RUNJ/4	A320/4	320	0.80580	10.07250
46	4/24/96	17:36:03	RUNJ/4	A320/4	320	2.07230	25.90375
47	4/24/96	17:36:16	RUNJ/4	A320/4	320	1.09820	13.72750
48	4/24/96	17:36:30	RUNJ/4	A320/4	320	0.33660	4.20750
49	4/24/96	17:36:44	RUNJ/4	A320/4	320	2.28310	28.53875

	A	B	C	D	E	F	G
50	4/24/96	17:36:58	RUNJ/4	A320/4	320	0.65790	8.22375
51	4/24/96	17:37:12	RUNJ/4	A320/4	320	0.56780	7.09750
52	4/24/96	17:37:26	RUNJ/4	A320/4	320	0.57035	7.12938
53	4/24/96	17:37:40	RUNJ/4	A320/4	320	2.29840	28.73000
54	4/24/96	17:37:54	RUNJ/4	A320/4	320	0.70805	8.85063
55	4/24/96	17:38:08	RUNJ/4	A320/4	320	0.61540	7.69250
56	4/24/96	17:38:22	RUNJ/4	A320/4	320	0.69615	8.70188
57	4/24/96	17:38:36	RUNJ/4	A320/4	320	1.20700	15.08750
58	4/24/96	17:38:49	RUNJ/4	A320/4	320	0.68680	8.58500
59	4/24/96	17:39:03	RUNJ/4	A320/4	320	1.21125	15.14063
60	4/24/96	17:39:16	RUNJ/4	A320/4	320	1.54530	19.31625
61	4/24/96	17:39:29	RUNJ/4	A320/4	320	0.90525	11.31563
62	4/24/96	17:43:57	RUNJ/4	A320/4	320	0.51510	6.43875
63	4/24/96	17:44:10	RUNJ/4	A320/4	320	0.55505	6.93813
64	4/24/96	17:44:24	RUNJ/4	A320/4	320	0.66215	8.27688
65	4/24/96	17:44:37	RUNJ/4	A320/4	320	1.33960	16.74500
66	4/24/96	17:44:50	RUNJ/4	A320/4	320	0.51765	6.47063
67	4/24/96	17:45:04	RUNJ/4	A320/4	320	0.64345	8.04313
68	4/24/96	17:45:18	RUNJ/4	A320/4	320	0.85255	10.65688
69	4/24/96	17:45:31	RUNJ/4	A320/4	320	0.60775	7.59688
70	4/24/96	17:45:45	RUNJ/4	A320/4	320	0.39185	4.89813
71	4/24/96	17:45:59	RUNJ/4	A320/4	320	1.00555	12.56938
72	4/24/96	17:46:12	RUNJ/4	A320/4	320	0.81430	10.17875
73	4/24/96	17:46:26	RUNJ/4	A320/4	320	0.64940	8.11750
74	4/24/96	17:46:40	RUNJ/4	A320/4	320	0.92735	11.59188
75	4/24/96	17:46:53	RUNJ/4	A320/4	320	0.74460	9.30750
76	4/24/96	17:47:06	RUNJ/4	A320/4	320	0.56100	7.01250
77	4/24/96	17:47:19	RUNJ/4	A320/4	320	0.54655	6.83188
78	4/24/96	17:47:33	RUNJ/4	A320/4	320	1.03530	12.94125
79	4/24/96	17:59:20	RUNJ/4	A320/4	320	1.50025	18.75313
80	4/24/96	17:59:34	RUNJ/4	A320/4	320	0.99365	12.42063
81	4/24/96	17:59:47	RUNJ/4	A320/4	320	1.71190	21.39875
82	4/24/96	18:00:01	RUNJ/4	A320/4	320	0.98005	12.25063
83	4/24/96	18:00:15	RUNJ/4	A320/4	320	1.20955	15.11938
84	4/24/96	18:00:29	RUNJ/4	A320/4	320	1.43480	17.93500
85	4/24/96	18:00:43	RUNJ/4	A320/4	320	1.32175	16.52188
86	4/24/96	18:00:57	RUNJ/4	A320/4	320	0.92140	11.51750
87	4/24/96	18:01:11	RUNJ/4	A320/4	320	1.00300	12.53750
88	4/24/96	18:01:25	RUNJ/4	A320/4	320	0.37060	4.63250
89	4/24/96	18:01:39	RUNJ/4	A320/4	320	1.30305	16.28813
90	4/24/96	18:01:53	RUNJ/4	A320/4	320	1.11010	13.87625
91	4/24/96	18:02:07	RUNJ/4	A320/4	320	0.47600	5.95000
92	4/24/96	18:02:21	RUNJ/4	A320/4	320	0.78710	9.83875
93	4/24/96	18:02:34	RUNJ/4	A320/4	320	0.75990	9.49875
94	4/24/96	18:02:47	RUNJ/4	A320/4	320	1.13815	14.22688
95	4/24/96	18:03:00	RUNJ/4	A320/4	320	0.77435	9.67938
96	4/24/96	18:03:14	RUNJ/4	A320/4	320	0.83895	10.48688
97	4/24/96	18:03:28	RUNJ/4	A320/4	320	0.57035	7.12938
98	4/24/96	18:03:41	RUNJ/4	A320/4	320	0.98770	12.34625

	A	B	C	D	E	F	G
99	4/24/96	18:03:54	RUNJ/4	A320/4	320	0.56610	7.07625
100	4/24/96	18:04:08	RUNJ/4	A320/4	320	0.43690	5.46125
101	4/24/96	18:04:21	RUNJ/4	A320/4	320	1.70255	21.28188
102	4/24/96	18:04:35	RUNJ/4	A320/4	320	0.63495	7.93688
103	4/24/96	18:04:48	RUNJ/4	A320/4	320	0.61965	7.74563
104	4/24/96	18:05:01	RUNJ/4	A320/4	320	0.56865	7.10813
105	4/24/96	18:05:15	RUNJ/4	A320/4	320	0.63835	7.97938
106	4/24/96	18:05:29	RUNJ/4	A320/4	320	1.26735	15.84188
107	4/24/96	18:05:43	RUNJ/4	A320/4	320	0.84065	10.50813
108	4/24/96	18:05:56	RUNJ/4	A320/4	320	1.45775	18.22188
109	4/24/96	18:06:10	RUNJ/4	A320/4	320	0.48280	6.03500
110	4/24/96	18:06:23	RUNJ/4	A320/4	320	1.80285	22.53563
111	4/24/96	18:06:37	RUNJ/4	A320/4	320	1.31750	16.46875
112	4/24/96	18:06:50	RUNJ/4	A320/4	320	1.26905	15.86313
113	4/24/96	18:07:04	RUNJ/4	A320/4	320	2.24825	28.10313
114	4/24/96	18:07:18	RUNJ/4	A320/4	320	0.33745	4.21813
115	4/24/96	18:07:32	RUNJ/4	A320/4	320	1.71360	21.42000
116	4/24/96	18:07:45	RUNJ/4	A320/4	320	0.53890	6.73625
117	4/24/96	18:07:59	RUNJ/4	A320/4	320	1.17725	14.71563
118	4/24/96	18:08:13	RUNJ/4	A320/4	320	0.51340	6.41750
119	4/24/96	18:14:57	RUNJ/4	A320/4	320	1.31070	16.38375
120	4/24/96	18:15:10	RUNJ/4	A320/4	320	0.61625	7.70313
121	4/24/96	18:27:57	RUNJ/4	A320/4	320	0.71995	8.99938
122	4/24/96	18:28:10	RUNJ/4	A320/4	320	1.43905	17.98813
123	4/24/96	18:28:23	RUNJ/4	A320/4	320	0.36890	4.61125
124	4/24/96	18:28:37	RUNJ/4	A320/4	320	0.57290	7.16125
125	4/24/96	18:28:50	RUNJ/4	A320/4	320	0.52190	6.52375
126	4/24/96	18:29:04	RUNJ/4	A320/4	320	0.42160	5.27000
127	4/24/96	18:29:18	RUNJ/4	A320/4	320	0.48110	6.01375
128	4/24/96	18:29:31	RUNJ/4	A320/4	320	0.63410	7.92625
129	4/24/96	18:29:44	RUNJ/4	A320/4	320	0.99960	12.49500
130	4/24/96	18:29:57	RUNJ/4	A320/4	320	0.53125	6.64063
131	4/24/96	18:30:10	RUNJ/4	A320/4	320	1.44500	18.06250
132	4/24/96	18:30:23	RUNJ/4	A320/4	320	0.42755	5.34438
133	4/24/96	18:30:36	RUNJ/4	A320/4	320	1.28435	16.05438
134	4/24/96	18:30:49	RUNJ/4	A320/4	320	0.76925	9.61563
135	4/24/96	18:31:03	RUNJ/4	A320/4	320	0.63750	7.96875
136	4/24/96	18:31:16	RUNJ/4	A320/4	320	1.31240	16.40500
137	4/24/96	18:31:29	RUNJ/4	A320/4	320	1.20105	15.01313
138	4/24/96	18:31:43	RUNJ/4	A320/4	320	1.03275	12.90938
139	4/24/96	18:31:56	RUNJ/4	A320/4	320	0.68425	8.55313
140	4/24/96	18:32:10	RUNJ/4	A320/4	320	2.11735	26.46688
141	4/24/96	18:32:23	RUNJ/4	A320/4	320	1.41950	17.74375
142	4/24/96	18:32:37	RUNJ/4	A320/4	320	0.67830	8.47875
143	4/24/96	18:32:51	RUNJ/4	A320/4	320	0.70720	8.84000
144	4/24/96	18:33:04	RUNJ/4	A320/4	320	0.74545	9.31813
145	4/24/96	18:33:18	RUNJ/4	A320/4	320	0.13005	1.62563
146	4/24/96	18:33:32	RUNJ/4	A320/4	320	0.07055	0.88188
147	4/24/96	18:33:46	RUNJ/4	A320/4	320	0.00000	0.00000

	A	B	C	D	E	F	G
148	4/24/96	18:33:59	RUNJ/4	A320/4	320	0.04930	0.61625
149	4/24/96	18:34:13	RUNJ/4	A320/4	320	0.00000	0.00000
150	4/24/96	18:34:27	RUNJ/4	A320/4	320	0.00000	0.00000
151	4/24/96	18:34:40	RUNJ/4	A320/4	320	0.06460	0.80750
152	4/24/96	18:34:54	RUNJ/4	A320/4	320	0.00000	0.00000
153	4/24/96	18:35:07	RUNJ/4	A320/4	320	0.00000	0.00000
154	4/24/96	18:35:21	RUNJ/4	A320/4	320	0.00000	0.00000
155	4/24/96	18:35:35	RUNJ/4	A320/4	320	0.00000	0.00000
156	4/24/96	18:35:49	RUNJ/4	A320/4	320	0.24225	3.02813
157	4/24/96	18:36:02	RUNJ/4	A320/4	320	0.07310	0.91375
158	4/24/96	18:36:15	RUNJ/4	A320/4	320	0.06035	0.75438
159	4/24/96	18:36:28	RUNJ/4	A320/4	320	0.00000	0.00000
160	4/24/96	18:36:42	RUNJ/4	A320/4	320	0.08075	1.00938
161	4/24/96	18:57:06	RUNJ/4	A320/4	320	0.70975	8.87188
162	4/24/96	18:57:20	RUNJ/4	A320/4	320	1.14835	14.35438
163	4/24/96	18:57:33	RUNJ/4	A320/4	320	0.32045	4.00563
164	4/24/96	18:57:46	RUNJ/4	A320/4	320	1.10075	13.75938
165	4/24/96	18:58:00	RUNJ/4	A320/4	320	1.10500	13.81250
166	4/24/96	18:58:13	RUNJ/4	A320/4	320	0.66980	8.37250
167	4/24/96	18:58:27	RUNJ/4	A320/4	320	0.45050	5.63125
168	4/24/96	18:58:40	RUNJ/4	A320/4	320	0.44625	5.57813
169	4/24/96	18:58:54	RUNJ/4	A320/4	320	1.61415	20.17688
170	4/24/96	18:59:07	RUNJ/4	A320/4	320	1.45180	18.14750
171	4/24/96	18:59:21	RUNJ/4	A320/4	320	2.65030	33.12875
172	4/24/96	18:59:35	RUNJ/4	A320/4	320	1.92270	24.03375
173	4/24/96	18:59:48	RUNJ/4	A320/4	320	0.48875	6.10938
174	4/24/96	19:00:01	RUNJ/4	A320/4	320	0.64685	8.08563
175	4/24/96	19:00:14	RUNJ/4	A320/4	320	1.47390	18.42375
176	4/24/96	19:00:28	RUNJ/4	A320/4	320	1.19680	14.96000
177	4/24/96	19:00:41	RUNJ/4	A320/4	320	0.79815	9.97688
178	4/24/96	19:00:54	RUNJ/4	A320/4	320	0.59330	7.41625
179	4/24/96	19:07:56	RUNJ/4	A320/4	320	1.02170	12.77125
180	4/24/96	19:08:09	RUNJ/4	A320/4	320	1.36765	17.09563
181	4/24/96	19:08:23	RUNJ/4	A320/4	320	2.26865	28.35813
182	4/24/96	19:08:36	RUNJ/4	A320/4	320	0.50575	6.32188
183	4/24/96	19:08:50	RUNJ/4	A320/4	320	1.54445	19.30563
184	4/24/96	19:09:03	RUNJ/4	A320/4	320	1.68725	21.09063
185	4/24/96	19:09:17	RUNJ/4	A320/4	320	0.47430	5.92875
186	4/24/96	19:09:30	RUNJ/4	A320/4	320	0.77095	9.63688
187	4/24/96	19:09:43	RUNJ/4	A320/4	320	0.48705	6.08813
188	4/24/96	19:09:57	RUNJ/4	A320/4	320	0.64515	8.06438
189	4/24/96	19:10:11	RUNJ/4	A320/4	320	0.63410	7.92625
190	4/24/96	19:10:24	RUNJ/4	A320/4	320	0.48450	6.05625
191	4/24/96	19:10:38	RUNJ/4	A320/4	320	0.45220	5.65250
192	4/24/96	19:10:52	RUNJ/4	A320/4	320	0.61370	7.67125
193	4/24/96	19:11:05	RUNJ/4	A320/4	320	1.60820	20.10250
194	4/24/96	19:11:19	RUNJ/4	A320/4	320	0.34510	4.31375
195	4/24/96	19:11:32	RUNJ/4	A320/4	320	1.09905	13.73813
196	4/24/96	19:11:46	RUNJ/4	A320/4	320	0.85595	10.69938

	A	B	C	D	E	F	G
197	4/24/96	19:11:59	RUNJ/4	A320/4	320	0.62730	7.84125
198	4/24/96	19:12:13	RUNJ/4	A320/4	320	0.99620	12.45250
199	4/24/96	19:12:26	RUNJ/4	A320/4	320	0.91885	11.48563
200	4/24/96	19:12:40	RUNJ/4	A320/4	320	0.95540	11.94250
201	4/24/96	19:12:54	RUNJ/4	A320/4	320	0.85255	10.65688
202	4/24/96	19:13:07	RUNJ/4	A320/4	320	0.59415	7.42688
203	4/24/96	19:13:21	RUNJ/4	A320/4	320	1.06505	13.31313
204	4/24/96	19:13:34	RUNJ/4	A320/4	320	1.23760	15.47000
205	4/24/96	19:13:47	RUNJ/4	A320/4	320	0.76415	9.55188
206	4/24/96	19:14:01	RUNJ/4	A320/4	320	1.08630	13.57875
207	4/24/96	19:14:15	RUNJ/4	A320/4	320	0.50065	6.25813
208	4/24/96	19:14:29	RUNJ/4	A320/4	320	0.73270	9.15875
209	4/24/96	19:14:43	RUNJ/4	A320/4	320	0.64090	8.01125
210	4/24/96	19:14:57	RUNJ/4	A320/4	320	0.51340	6.41750
211	4/24/96	19:15:11	RUNJ/4	A320/4	320	1.72550	21.56875
212	4/24/96	19:15:24	RUNJ/4	A320/4	320	0.65875	8.23438
213	4/24/96	19:15:37	RUNJ/4	A320/4	320	0.37995	4.74938
214	4/24/96	19:15:50	RUNJ/4	A320/4	320	1.50620	18.82750
215	4/24/96	19:16:04	B320/4	A320/4	320	1.33790	16.72375
216	4/24/96	19:16:17	B320/4	A320/4	320	0.77010	9.62625
217	4/24/96	19:16:31	B320/4	A320/4	320	0.85765	10.72063
218	4/24/96	19:16:45	B320/4	A320/4	320	1.37700	17.21250
219	4/24/96	19:31:24	RUNJ/4	A320/4	320	0.46240	5.78000
220	4/24/96	19:31:38	RUNJ/4	A320/4	320	1.51980	18.99750
221	4/24/96	19:31:51	RUNJ/4	A320/4	320	0.53125	6.64063
222	4/24/96	19:32:05	RUNJ/4	A320/4	320	0.50150	6.26875
223	4/24/96	19:32:18	RUNJ/4	A320/4	320	0.74545	9.31813
224	4/24/96	19:32:32	RUNJ/4	A320/4	320	0.43435	5.42938
225	4/24/96	19:32:46	RUNJ/4	A320/4	320	0.87550	10.94375
226	4/24/96	19:33:00	RUNJ/4	A320/4	320	0.86700	10.83750
227	4/24/96	19:33:14	RUNJ/4	A320/4	320	0.88060	11.00750
228	4/24/96	19:33:27	RUNJ/4	A320/4	320	0.55080	6.88500
229	4/24/96	19:33:41	RUNJ/4	A320/4	320	0.72930	9.11625
230	4/24/96	19:33:54	RUNJ/4	A320/4	320	0.44370	5.54625
231	4/24/96	19:34:07	RUNJ/4	A320/4	320	1.35405	16.92563
232	4/24/96	19:34:20	RUNJ/4	A320/4	320	0.48620	6.07750
233	4/24/96	19:34:34	RUNJ/4	A320/4	320	0.54570	6.82125
234	4/24/96	19:34:48	RUNJ/4	A320/4	320	0.61965	7.74563
235	4/24/96	19:35:01	RUNJ/4	A320/4	320	0.91290	11.41125
236	4/24/96	19:35:14	RUNJ/4	A320/4	320	1.13815	14.22688
237	4/24/96	19:35:28	RUNJ/4	A320/4	320	0.81260	10.15750
238	4/24/96	19:35:42	RUNJ/4	A320/4	320	0.52275	6.53438
239	4/24/96	19:35:56	RUNJ/4	A320/4	320	0.46835	5.85438
240	4/24/96	19:36:10	RUNJ/4	A320/4	320	2.69110	33.63875
241	4/24/96	19:36:23	RUNJ/4	A320/4	320	0.78540	9.81750
242	4/24/96	19:57:15	RUNJ/4	A320/4	320	0.81005	10.12563
243	4/24/96	19:57:29	RUNJ/4	A320/4	320	0.37825	4.72813
244	4/24/96	19:57:43	RUNJ/4	A320/4	320	0.67915	8.48938
245	4/24/96	19:57:56	RUNJ/4	A320/4	320	0.34595	4.32438

	A	B	C	D	E	F	G
246	4/24/96	19:58:10	RUNJ/4	A320/4	320	0.62220	7.77750
247	4/24/96	19:58:23	RUNJ/4	A320/4	320	0.58735	7.34188
248	4/24/96	19:58:37	RUNJ/4	A320/4	320	0.46410	5.80125
249	4/24/96	19:58:51	RUNJ/4	A320/4	320	0.49300	6.16250
250	4/24/96	19:59:05	RUNJ/4	A320/4	320	0.53380	6.67250
251	4/24/96	19:59:19	RUNJ/4	A320/4	320	0.72335	9.04188
252	4/24/96	19:59:32	RUNJ/4	A320/4	320	1.70340	21.29250
253	4/24/96	19:59:46	RUNJ/4	A320/4	320	0.60435	7.55438
254	4/24/96	20:00:00	RUNJ/4	A320/4	320	1.56060	19.50750
255	4/24/96	20:00:13	RUNJ/4	A320/4	320	0.48110	6.01375
256	4/24/96	20:00:27	RUNJ/4	A320/4	320	0.62305	7.78813
257	4/24/96	20:00:41	RUNJ/4	A320/4	320	0.73950	9.24375
258	4/24/96	20:00:54	RUNJ/4	A320/4	320	0.63155	7.89438
259	4/24/96	20:01:08	RUNJ/4	A320/4	320	0.73185	9.14813
260	4/24/96	20:01:21	RUNJ/4	A320/4	320	0.64090	8.01125
261	4/24/96	20:01:35	RUNJ/4	A320/4	320	0.70805	8.85063
262	4/24/96	20:01:48	RUNJ/4	A320/4	320	1.32600	16.57500
263	4/24/96	20:02:01	RUNJ/4	A320/4	320	0.44115	5.51438
264	4/24/96	20:02:15	RUNJ/4	A320/4	320	0.77265	9.65813
265	4/24/96	20:02:28	RUNJ/4	A320/4	320	0.40970	5.12125
266	4/24/96	20:02:42	RUNJ/4	A320/4	320	0.98940	12.36750
267	4/24/96	20:08:02	RUNJ/4	A320/4	320	0.42160	5.27000
268	4/24/96	20:08:16	RUNJ/4	A320/4	320	0.70210	8.77625
269	4/24/96	19:22:49	RUND/4	B320/4	320	0.75565	9.44563
270	4/24/96	19:30:31	B320/4	B320/4	320	0.57375	7.17188

Sandia data 960425

- We are reporting time-averaged data for Be and Cd today. Be measurements were made using the Be line at 313.1 nm, and Cd was determined using a line at 226.2 nm. During RM1, each reported value was obtained from a spectrum averaged over 25 laser shots, in a period of about 10 seconds. During RM2, each reported value was obtained from a spectrum averaged over 100 laser shots, in a period of about 50 seconds. Negative concentration values in the table denote points were either no data were obtained or no fit to the spectra could be obtained.

- Since we believed at the time that this was an optional test day, we were not attempting to make measurements over the full RM periods, and, in fact, we made no time averaged measurements at all during RM3, working instead to acquire a series of single-laser-shot measurements that we will analyze and report at a later time.

- The concentrations reported here have been corrected only for detector binning. They are **not** intended for publication or public presentation since we anticipate that an additional correction will be necessary once we re-measure the aerosol produced by our calibration nebulizer when we return to Sandia.

Date	Time	Sequence Na	Script Name	Beryllium (Be	Cadmium (Cd	Be mg/acm	Cd mg/acm
4/25/96	10:39:21	Runm	A230/4		0.0621	0	77.5625
4/25/96	10:39:37	Runm	A230/4		0.1241	0	155.125
4/25/96	10:39:50	Runm	A230/4		0.0782	0	97.75
4/25/96	10:40:04	Runm	A230/4		0.0935	0	116.875
4/25/96	10:40:17	Runm	A230/4		0.0561	0	70.125
4/25/96	10:40:31	Runm	A230/4		0.1972	0	246.5
4/25/96	10:40:47	Runm	A230/4		0.0978	0	122.1875
4/25/96	10:48:18	RUNC/4	A320/4	2.1582	0.0000	26.976875	0
4/25/96	10:48:32	RUNC/4	A320/4	2.2143	0.0000	27.678125	0
4/25/96	10:48:45	RUNC/4	A320/4	2.0137	0.0000	25.170625	0
4/25/96	10:48:58	RUNC/4	A320/4	1.9737	0.0000	24.67125	0
4/25/96	10:49:11	RUNC/4	A320/4	2.9614	0.0000	37.0175	0
4/25/96	10:49:31	RUNC/4	A320/4	3.0328	0.0000	37.91	0
4/25/96	10:49:45	RUNC/4	A320/4	1.7791	0.0000	22.238125	0
4/25/96	10:49:58	RUNC/4	A320/4	3.6236	0.0000	45.294375	0
4/25/96	10:50:12	RUNC/4	A320/4	2.2627	0.0000	28.28375	0
4/25/96	10:50:26	Runm	A320/4	2.3248	0.0000	29.059375	0
4/25/96	10:52:30	Runm	A230/4		0.0952	0	119
4/25/96	10:52:47	Runm	A230/4		0.0978	0	122.1875
4/25/96	10:53:02	Runm	A230/4		0.0621	0	77.5625
4/25/96	10:53:16	Runm	A230/4		0.1088	0	136
4/25/96	10:53:30	Runm	A230/4		0.0884	0	110.5
4/25/96	10:53:44	Runm	A230/4		0.0519	0	64.8125
4/25/96	10:53:57	Runm	A230/4		0.0859	0	107.3125
4/25/96	10:54:10	Runm	A230/4		0.0723	0	90.3125
4/25/96	10:54:23	Runm	A230/4		0.0799	0	99.875
4/25/96	10:54:37	Runm	A230/4		0.1335	0	166.8125
4/25/96	11:01:13	Runm	A230/4		0.1114	0	139.1875
4/25/96	11:01:26	Runm	A230/4		0.1097	0	137.0625
4/25/96	11:01:40	Runm	A230/4		0.0570	0	71.1875
4/25/96	11:01:53	Runm	A230/4		0.0527	0	65.875
4/25/96	11:02:06	Runm	A230/4		0.0731	0	91.375
4/25/96	11:02:20	Runm	A230/4		0.0000	0	0
4/25/96	11:02:34	Runm	A230/4		0.0595	0	74.375
4/25/96	11:02:49	Runm	A230/4		0.0808	0	100.9375
4/25/96	11:03:03	Runm	A230/4		0.0672	0	83.9375
4/25/96	11:03:16	Runm	A230/4		0.0408	0	51
4/25/96	11:09:11	Runm	A230/4		0.1403	0	175.3125
4/25/96	11:09:25	Runm	A230/4		0.0825	0	103.0625
4/25/96	11:09:38	Runm	A230/4		0.0493	0	61.625
4/25/96	11:09:51	Runm	A230/4		0.0000	0	0
4/25/96	11:10:05	Runm	A230/4		0.1037	0	129.625
4/25/96	11:10:19	Runm	A230/4		0.0561	0	70.125
4/25/96	11:10:33	Runm	A230/4		0.0876	0	109.4375
4/25/96	11:10:47	Runm	A230/4		0.0323	0	40.375
4/25/96	11:11:02	Runm	A230/4		0.1513	0	189.125
4/25/96	11:11:16	Runm	A230/4		0.0842	0	105.1875

Date	Time	Sequence Nai	Script Name	Beryllium	Cadmium	Be mg/acm	Cd mg/acm
4/25/96	12:06:13	Runp	B230/4		0.0952	0	119
4/25/96	12:07:03	Runp	B230/4		0.04505	0	56.3125
4/25/96	12:07:47	Runp	B230/4		0.07395	0	92.4375
4/25/96	12:06:13	Runp	B230/4		0.0952	0	119
4/25/96	12:07:03	Runp	B230/4		0.04505	0	56.3125
4/25/96	12:07:47	Runp	B230/4		0.07395	0	92.4375
4/25/96	12:08:38	Runp	B320/4	1.80455	-1	22.556875	-1250
4/25/96	12:09:23	Runp	B320/4	2.3256	-1	29.07	-1250
4/25/96	12:10:07	Runp	B320/4	1.83175	-1	22.896875	-1250
4/25/96	12:12:23	Runq	B230/4		0.1054	0	131.75
4/25/96	12:13:07	Runq	B230/4		0.1275	0	159.375
4/25/96	12:13:55	Runq	B230/4		0.0578	0	72.25
4/25/96	12:14:44	Runq	B320/4	2.771	-1	34.6375	-1250
4/25/96	12:15:29	Runq	B320/4	3.0209	-1	37.76125	-1250
4/25/96	12:16:13	Runq	B320/4	2.3511	-1	29.38875	-1250
4/25/96	12:17:03	Runq	B230/4		0.04845	0	60.5625
4/25/96	12:17:47	Runq	B230/4		0.068	0	85
4/25/96	12:18:30	Runq	B230/4		0.04675	0	58.4375
4/25/96	12:19:19	Runq	B320/4	1.85045	-1	23.130625	-1250
4/25/96	12:20:04	Runq	B320/4	1.2274	-1	15.3425	-1250
4/25/96	12:20:48	Runq	B320/4	1.79945	-1	22.493125	-1250
4/25/96	12:21:38	Runq	B230/4		0.06715	0	83.9375
4/25/96	12:22:23	Runq	B230/4		0.09775	0	122.1875
4/25/96	12:23:06	Runq	B230/4		0.0459	0	57.375
4/25/96	12:23:55	Runq	B320/4	2.805	-1	35.0625	-1250
4/25/96	12:24:39	Runq	B320/4	2.7387	-1	34.23375	-1250
4/25/96	12:25:23	Runq	B320/4	2.76165	-1	34.520625	-1250
4/25/96	12:26:12	Runq	B230/4		0.06885	0	86.0625
4/25/96	12:26:56	Runq	B230/4		0.12155	0	151.9375
4/25/96	12:27:40	Runq	B230/4		0.05695	0	71.1875
4/25/96	12:28:29	Runq	B320/4	3.11865	-1	38.983125	-1250
4/25/96	12:29:13	Runq	B320/4	2.91465	-1	36.433125	-1250
4/25/96	12:29:56	Runq	B320/4	2.0706	-1	25.8825	-1250
4/25/96	12:30:46	Runq	B230/4		0.0425	0	53.125
4/25/96	12:31:30	Runq	B230/4		0.0442	0	55.25
4/25/96	12:32:14	Runq	B230/4		0.09435	0	117.9375
4/25/96	12:33:04	Runq	B320/4	1.8122	-1	22.6525	-1250
4/25/96	12:33:48	Runq	B320/4	1.80115	-1	22.514375	-1250
4/25/96	12:34:32	Runq	B320/4	2.29755	-1	28.719375	-1250
4/25/96	12:35:21	Runq	B230/4		0.0578	0	72.25
4/25/96	12:36:04	Runq	B230/4		0.0646	0	80.75
4/25/96	12:36:48	Runq	B230/4		0.04675	0	58.4375
4/25/96	12:37:38	Runq	B320/4	3.23935	-1	40.491875	-1250
4/25/96	12:38:22	Runq	B320/4	3.82755	-1	47.844375	-1250
4/25/96	12:39:06	Runq	B320/4	3.145	-1	39.3125	-1250
4/25/96	12:39:56	Runq	B230/4		0.1037	0	129.625
4/25/96	12:40:40	Runq	B230/4		0.07055	0	88.1875
4/25/96	12:41:27	Runq	B230/4		0.0765	0	95.625
4/25/96	12:42:17	Runq	B320/4	2.48285	-1	31.035625	-1250

4/25/96	12:43:04	Runq	B320/4	2.1046	-1	26.3075	-1250
4/25/96	12:43:48	Runq	B320/4	2.3834	-1	29.7925	-1250
4/25/96	12:44:37	Runq	B230/4		0.05185	0	64.8125
4/25/96	12:45:21	Runq	B230/4		0.08245	0	103.0625
4/25/96	12:46:05	Runq	B230/4		0.09265	0	115.8125
4/25/96	12:46:55	Runq	B320/4	2.7132	-1	33.915	-1250
4/25/96	12:47:38	Runq	B320/4	2.5602	-1	32.0025	-1250
4/25/96	12:48:22	Runq	B320/4	2.16495	-1	27.061875	-1250
4/25/96	12:49:11	Runq	B230/4		0.0595	0	74.375
4/25/96	12:49:55	Runq	B230/4		0.051	0	63.75
4/25/96	12:50:39	Runq	B230/4		0.09435	0	117.9375
4/25/96	12:51:28	Runq	B320/4	1.55125	-1	19.390625	-1250
4/25/96	12:52:12	Runq	B320/4	2.0094	-1	25.1175	-1250
4/25/96	12:52:56	Runq	B320/4	2.22955	-1	27.869375	-1250

	A	B	C	D	E	F	G	H	I	J	K	L
1	Date	Time	Sequence Na	Script Name	Beryllium (Be	Be µg/acm	Cadmium (Cd	Cd µg/acm	Chromium (C	Cr µg/acm	Lead (Pb)(Cc	Pb µg/acm
2	4/26/96	8:39:58	RUNAA	A230/4	0.0000		0.3196	399.5000	-1.0000		0.2771	1385.5000
3	4/26/96	8:40:11	RUNAA	A230/4	0.0000		0.1794	224.1875	-1.0000		0.3026	1513.0000
4	4/26/96	8:40:27	RUNAA	A230/4	0.0000		0.5627	703.3750	-1.0000		0.2601	1300.5000
5	4/26/96	8:40:44	RUNAA	A265/4	26.9790	337.2375	-1.0000		0.0000		0.0000	
6	4/26/96	8:40:58	RUNAA	A265/4	20.3193	253.9906	-1.0000		0.0000		0.0000	
7	4/26/96	8:41:11	RUNAA	A265/4	24.2174	302.7169	-1.0000		0.0000		0.0000	
8	4/26/96	8:41:27	RUNAA	A280/4	5.1289	64.1113	-1.0000		0.4522	113.0500	0.0000	
9	4/26/96	8:41:41	RUNAA	A280/4	7.0431	88.0388	-1.0000		0.4437	110.9250	0.0000	
10	4/26/96	8:41:54	RUNAA	A280/4	3.3796	42.2450	-1.0000		0.1335	33.3625	0.0000	
11	4/26/96	8:42:10	RUNAA	A300/1	9.4605	473.0250	-1.0000		0.0655	65.4500	-1.0000	
12	4/26/96	8:42:24	RUNAA	A300/1	6.3470	317.3475	-1.0000		0.0000	0.0000	-1.0000	
13	4/26/96	8:42:38	RUNAA	A300/1	6.1379	306.8925	-1.0000		0.1326	132.6000	-1.0000	
14	4/26/96	8:42:52	RUNAA	A300/4			-1.0000		0.7761	194.0125	-1.0000	
15	4/26/96	8:43:05	RUNAA	A300/4			-1.0000		0.1828	45.6875	-1.0000	
16	4/26/96	8:48:30	RUNAA	A230/4	0.0000		0.2941	367.6250	-1.0000		0.3120	1559.7500
17	4/26/96	8:48:44	RUNAA	A230/4	0.0000		0.2729	341.0625	-1.0000		0.3026	1513.0000
18	4/26/96	8:48:58	RUNAA	A230/4	0.0000		0.3290	411.1875	-1.0000		0.2584	1292.0000
19	4/26/96	8:49:15	RUNAA	A265/4	32.1011	401.2638	-1.0000		0.0000		0.0000	
20	4/26/96	8:49:29	RUNAA	A265/4	27.0105	337.6306	-1.0000		0.0000		0.0000	
21	4/26/96	8:49:42	RUNAA	A265/4	20.1450	251.8125	-1.0000		0.0000		0.0000	
22	4/26/96	8:49:59	RUNAA	A280/4	4.6827	58.5331	-1.0000		0.4395	109.8625	0.0000	
23	4/26/96	8:50:13	RUNAA	A280/4	3.6593	45.7406	-1.0000		0.3528	88.1875	0.0000	
24	4/26/96	8:50:27	RUNAA	A280/4	3.0226	37.7825	-1.0000		0.4803	120.0625	0.0000	
25	4/26/96	8:50:43	RUNAA	A300/1	8.0300	401.4975	-1.0000		0.0893	89.2500	-1.0000	
26	4/26/96	8:50:57	RUNAA	A300/1	5.6959	284.7925	-1.0000		0.1615	161.5000	-1.0000	
27	4/26/96	8:51:11	RUNAA	A300/1	6.6793	333.9650	-1.0000		0.2117	211.6500	-1.0000	
28	4/26/96	8:51:24	RUNAA	A300/4			-1.0000		1.4178	354.4500	-1.0000	
29	4/26/96	8:51:38	RUNAA	A300/4			-1.0000		1.6218	405.4500	-1.0000	
30	4/26/96	8:51:51	RUNAA	A300/4			-1.0000		0.4811	120.2750	-1.0000	
31	4/26/96	8:52:08	RUNAA	A320/1	1.7578	87.8900	-1.0000		0.0000		-1.0000	
32	4/26/96	8:52:21	RUNAA	A320/1	2.9104	145.5200	-1.0000		0.0000		-1.0000	
33	4/26/96	8:52:35	RUNAA	A320/1	2.3273	116.3650	-1.0000		0.0000		-1.0000	
34	4/26/96	8:52:49	RUNAA	A320/4			-1.0000		0.0000		-1.0000	
35	4/26/96	8:53:03	RUNAA	A320/4			-1.0000		0.0000		-1.0000	
36	4/26/96	8:53:17	RUNAA	A320/4			-1.0000		0.0000		-1.0000	
37	4/26/96	8:56:56	RUNAA	A230/4	0.0000		0.5049	631.1250	-1.0000		0.1573	786.2500
38	4/26/96	8:57:10	RUNAA	A230/4	0.0000		0.3171	396.3125	-1.0000		0.2754	1377.0000
39	4/26/96	8:57:24	RUNAA	A230/4	0.0000		0.6316	789.4375	-1.0000		0.2533	1266.5000
40	4/26/96	8:57:42	RUNAA	A265/4	17.5500	219.3744	-1.0000		0.0000		0.0000	
41	4/26/96	8:57:56	RUNAA	A265/4	12.0029	150.0356	-1.0000		0.0000		0.0000	
42	4/26/96	8:58:10	RUNAA	A265/4	14.3880	179.8494	-1.0000		0.0000		0.0000	
43	4/26/96	8:58:28	RUNAA	A280/4	2.8611	35.7638	-1.0000		0.3766	94.1375	0.0000	
44	4/26/96	8:58:41	RUNAA	A280/4	3.3983	42.4788	-1.0000		0.4318	107.9500	0.0000	
45	4/26/96	8:58:55	RUNAA	A280/4	2.3001	28.7513	-1.0000		0.4012	100.3000	0.0000	
46	4/26/96	8:59:11	RUNAA	A300/1	4.7804	239.0200	-1.0000		0.1012	101.1500	-1.0000	
47	4/26/96	8:59:25	RUNAA	A300/1	4.5169	225.8450	-1.0000		0.1360	136.0000	-1.0000	
48	4/26/96	8:59:39	RUNAA	A300/1	4.9232	246.1600	-1.0000		0.2771	277.1000	-1.0000	
49	4/26/96	8:59:53	RUNAA	A300/4			-1.0000		0.2142	53.5500	-1.0000	
50	4/26/96	9:00:07	RUNAA	A300/4			-1.0000		0.3358	83.9375	-1.0000	
51	4/26/96	9:00:21	RUNAA	A300/4			-1.0000		1.7451	436.2625	-1.0000	
52	4/26/96	9:00:37	RUNAA	A320/1	3.2946	164.7300	-1.0000		0.0000		-1.0000	
53	4/26/96	9:00:51	RUNAA	A320/1	4.0061	200.3025	-1.0000		0.0000		-1.0000	
54	4/26/96	9:01:04	RUNAA	A320/1	2.8390	141.9500	-1.0000		0.0000		-1.0000	
55	4/26/96	9:01:18	RUNAA	A320/4			-1.0000		0.0000		-1.0000	
56	4/26/96	9:01:32	RUNAA	A320/4			-1.0000		0.0000		-1.0000	
57	4/26/96	9:01:46	RUNAA	A320/4			-1.0000		0.0000		-1.0000	
58	4/26/96	9:09:03	RUNAA	A230/4	0.0000		0.1513	189.1250	-1.0000		0.2754	1377.0000
59	4/26/96	9:09:21	RUNAA	A230/4	0.0000		0.3417	427.1250	-1.0000		0.2397	1198.5000
60	4/26/96	9:09:40	RUNAA	A230/4	0.0000		0.4913	614.1250	-1.0000		0.2159	1079.5000

	A	B	C	D	E	F	G	H	I	J	K	L
61	4/26/96	9:10:01	RUNAA	A265/4	11.7895	147.3688	-1.0000		0.0000		0.0000	
62	4/26/96	9:10:16	RUNAA	A265/4	10.1448	126.8094	-1.0000		0.0000		0.0000	
63	4/26/96	9:10:31	RUNAA	A265/4	14.4866	181.0819	-1.0000		0.0000		0.0000	
64	4/26/96	9:10:48	RUNAA	A280/4	3.5989	44.9863	-1.0000		0.6197	154.9125	0.0000	
65	4/26/96	9:11:06	RUNAA	A280/4	2.9368	36.7094	-1.0000		0.3638	90.9500	0.0000	
66	4/26/96	9:11:20	RUNAA	A280/4	2.8883	36.1038	-1.0000		0.4633	115.8125	0.0000	
67	4/26/96	9:11:37	RUNAA	A300/1	6.0775	303.8750	-1.0000		0.2066	206.5500	-1.0000	
68	4/26/96	9:15:15	RUNAA	A230/4	0.0000		0.2176	272.0000	-1.0000		0.2805	1402.5000
69	4/26/96	9:15:30	RUNAA	A230/4	0.0000		0.1250	156.1875	-1.0000		0.3604	1802.0000
70	4/26/96	9:15:43	RUNAA	A230/4	0.0000		0.6460	807.5000	-1.0000		0.5032	2516.0000
71	4/26/96	9:16:00	RUNAA	A265/4	13.5490	169.3625	-1.0000		0.0000		0.0000	
72	4/26/96	9:16:13	RUNAA	A265/4	11.9009	148.7606	-1.0000		0.0000		0.0000	
73	4/26/96	9:16:27	RUNAA	A265/4	9.9926	124.9075	-1.0000		0.0000		0.0000	
74	4/26/96	9:16:43	RUNAA	A280/4	2.4871	31.0888	-1.0000		0.3179	79.4750	0.0000	
75	4/26/96	9:16:57	RUNAA	A280/4	2.1395	26.7431	-1.0000		0.3120	77.9875	0.0000	
76	4/26/96	9:17:11	RUNAA	A280/4	2.6112	32.6400	-1.0000		0.3528	88.1875	0.0000	
77	4/26/96	9:17:27	RUNAA	A300/1	4.0409	202.0450	-1.0000		0.1173	117.3000	-1.0000	
78	4/26/96	9:17:41	RUNAA	A300/1	6.8544	342.7200	-1.0000		0.1165	116.4500	-1.0000	
79	4/26/96	9:17:55	RUNAA	A300/1	4.4651	223.2525	-1.0000		0.2627	262.6500	-1.0000	
80	4/26/96	9:18:09	RUNAA	A300/4			-1.0000		0.6341	158.5250	-1.0000	
81	4/26/96	9:18:23	RUNAA	A300/4			-1.0000		0.4590	114.7500	-1.0000	
82	4/26/96	9:18:36	RUNAA	A300/4			-1.0000		1.4969	374.2125	-1.0000	
83	4/26/96	9:18:52	RUNAA	A320/1	2.2712	113.5600	-1.0000		0.0000		-1.0000	
84	4/26/96	9:19:05	RUNAA	A320/1	3.5955	179.7750	-1.0000		0.0000		-1.0000	
85	4/26/96	9:19:19	RUNAA	A320/1	2.3035	115.1750	-1.0000		0.0000		-1.0000	
86	4/26/96	9:19:33	RUNAA	A320/4			-1.0000		0.0000		-1.0000	
87	4/26/96	9:19:46	RUNAA	A320/4			-1.0000		0.0000		-1.0000	
88	4/26/96	9:19:59	RUNAA	A320/4			-1.0000		0.0000		-1.0000	
89	4/26/96	9:23:41	RUNAA	A230/4	0.0000		0.1394	174.2500	-1.0000		0.2941	1470.5000
90	4/26/96	9:23:55	RUNAA	A230/4	0.0000		0.1037	129.6250	-1.0000		0.1573	786.2500
91	4/26/96	9:24:09	RUNAA	A230/4	0.0000		0.1326	165.7500	-1.0000		0.1454	726.7500
92	4/26/96	9:24:30	RUNAA	A265/4	12.1397	151.7463	-1.0000		0.0000		0.0000	
93	4/26/96	9:24:43	RUNAA	A265/4	10.4125	130.1563	-1.0000		0.0000		0.0000	
94	4/26/96	9:24:56	RUNAA	A265/4	8.4762	105.9525	-1.0000		0.0000		0.0000	
95	4/26/96	9:25:12	RUNAA	A280/4	2.0817	26.0206	-1.0000		0.1556	38.8875	0.0000	
96	4/26/96	9:25:26	RUNAA	A280/4	1.9856	24.8200	-1.0000		0.3315	82.8750	0.0000	
97	4/26/96	9:25:42	RUNAA	A280/4	2.2780	28.4750	-1.0000		0.3451	86.2750	0.0000	
98	4/26/96	9:25:58	RUNAA	A300/1	4.3801	219.0025	-1.0000		0.1921	192.1000	-1.0000	
99	4/26/96	9:26:12	RUNAA	A300/1	4.9249	246.2450	-1.0000		0.1046	104.5500	-1.0000	
100	4/26/96	9:26:26	RUNAA	A300/1	2.7676	138.3800	-1.0000		0.0850	85.0000	-1.0000	
101	4/26/96	9:26:39	RUNAA	A300/4			-1.0000		1.1764	294.1000	-1.0000	
102	4/26/96	9:26:53	RUNAA	A300/4			-1.0000		0.7123	178.0750	-1.0000	
103	4/26/96	9:27:07	RUNAA	A300/4			-1.0000		0.6384	159.5875	-1.0000	
104	4/26/96	9:32:10	RUNAA	A230/4	0.0000		0.1938	242.2500	-1.0000		0.0000	0.0000
105	4/26/96	9:32:26	RUNAA	A230/4	0.0000		0.7735	966.8750	-1.0000		0.3774	1887.0000
106	4/26/96	9:32:44	RUNAA	A230/4	0.0000		0.2219	277.3125	-1.0000		0.1233	616.2500
107	4/26/96	9:33:01	RUNAA	A265/4	9.0228	112.7844	-1.0000		0.0000		0.0000	
108	4/26/96	9:33:15	RUNAA	A265/4	10.7806	134.7569	-1.0000		0.0000		0.0000	
109	4/26/96	9:33:28	RUNAA	A265/4	13.0866	163.5825	-1.0000		0.0000		0.0000	
110	4/26/96	9:33:45	RUNAA	A280/4	2.5424	31.7794	-1.0000		0.2678	66.9375	0.0000	
111	4/26/96	9:33:59	RUNAA	A280/4	2.1148	26.4350	-1.0000		0.3944	98.6000	0.0000	
112	4/26/96	9:34:13	RUNAA	A280/4	2.1658	27.0725	-1.0000		0.5007	125.1625	0.0000	
113	4/26/96	9:34:29	RUNAA	A300/1	2.6954	134.7675	-1.0000		0.0680	68.0000	-1.0000	
114	4/26/96	9:34:42	RUNAA	A300/1	2.8161	140.8025	-1.0000		0.1071	107.1000	-1.0000	
115	4/26/96	9:34:56	RUNAA	A300/1	3.6559	182.7925	-1.0000		0.2236	223.5500	-1.0000	
116	4/26/96	9:35:10	RUNXX	A300/4			-1.0000		0.6197	154.9125	-1.0000	
117	4/26/96	9:35:23	RUNXX	A300/4			-1.0000		0.4539	113.4750	-1.0000	
118	4/26/96	9:35:37	RUNXX	A300/4			-1.0000		1.5105	377.6125	-1.0000	
119	4/26/96	9:35:54	RUNXX	A320/1	1.4722	73.6100	-1.0000		0.0000		-1.0000	
120	4/26/96	9:36:07	RUNXX	A320/1	0.8449	42.2450	-1.0000		0.0000		-1.0000	

	A	B	C	D	E	F	G	H	I	J	K	L
121	4/26/96	9:36:21	RUNXX	A320/1	1.3031	65.1525	-1.0000		0.0000		-1.0000	
122	4/26/96	9:36:35	RUNXX	A320/4			-1.0000		0.0000		-1.0000	
123	4/26/96	9:36:48	RUNXX	A320/4			-1.0000		0.0000		-1.0000	
124	4/26/96	9:37:02	RUNXX	A320/4			-1.0000		0.0000		-1.0000	
125	4/26/96	9:44:47	RUNAA	A230/4	0.0000		0.3273	409.0625	-1.0000		0.1972	986.0000
126	4/26/96	9:45:02	RUNAA	A230/4	0.0000		0.7965	995.5625	-1.0000		0.4947	2473.5000
127	4/26/96	9:45:15	RUNAA	A230/4	0.0000		0.2083	260.3125	-1.0000		0.1862	930.7500
128	4/26/96	9:45:32	RUNAA	A265/4	11.0466	138.0825	-1.0000		0.0000		0.0000	
129	4/26/96	9:45:45	RUNAA	A265/4	8.1940	102.4250	-1.0000		0.0000		0.0000	
130	4/26/96	9:45:58	RUNAA	A265/4	6.1965	77.4563	-1.0000		0.0000		0.0000	
131	4/26/96	9:46:14	RUNAA	A280/4	1.6618	20.7719	-1.0000		0.4267	106.6750	0.0000	
132	4/26/96	9:46:28	RUNAA	A280/4	2.0732	25.9144	-1.0000		0.4616	115.3875	0.0000	
133	4/26/96	9:46:42	RUNAA	A280/4	1.4204	17.7544	-1.0000		0.4233	105.8250	0.0000	
134	4/26/96	9:46:58	RUNAA	A300/1	2.9334	146.6675	-1.0000		0.1071	107.1000	-1.0000	
135	4/26/96	9:47:11	RUNAA	A300/1	2.4905	124.5250	-1.0000		0.1054	105.4000	-1.0000	
136	4/26/96	9:53:24	RUNAA	A230/4	0.0000		0.3341	417.5625	-1.0000		0.2542	1270.7500
137	4/26/96	9:53:38	RUNAA	A230/4	0.0000		0.2576	321.9375	-1.0000		0.1505	752.2500

	A	B	C	D	E	F	G	H	I	J	K	L
1	Date	Time	Sequence Na	Script Name	Beryllium (Be	Be µg/acm	Cadmium (C	Cd µg/acm	Chromium (C	Cr µg/acm	Lead (Pb)(Cc	Pb µg/acm
2	4/26/96	10:14:11	RUNAA	A230/4	0		0.1003	125.375	-1		0.2057	1028.5
3	4/26/96	10:14:25	RUNAA	A230/4	0		0.0595	74.375	-1		0.1343	671.5
4	4/26/96	10:16:49	RUNFF	B230/4	0		0.0774	96.6875	-1		0.1046	522.75
5	4/26/96	10:17:35	RUNFF	B230/4	0		0.2168	270.9375	-1		0.1522	760.75
6	4/26/96	10:18:23	RUNFF	B280/4	2.9011	36.2631	-1		0.2652	66.3	0	
7	4/26/96	10:19:06	RUNFF	B280/4	3.0243	37.8038	-1		0.5372	134.3	0	
8	4/26/96	10:19:22	RUNFF	A300/1	4.8442	242.2075	-1		0.1403	140.25	-1	
9	4/26/96	10:19:36	RUNFF	A300/1	4.1302	206.5075	-1		0.1454	145.35	-1	
10	4/26/96	10:20:20	RUNFF	B300/4			-1		0.3349		-1	
11	4/26/96	10:21:04	RUNFF	B300/4			-1		0.5814		-1	
12	4/26/96	10:24:16	RUNFF	B230/4	0		0.2984	372.9375	-1		0.1649	824.5
13	4/26/96	10:25:01	RUNFF	B230/4	0		0.221	276.25	-1		0.2134	1066.75
14	4/26/96	10:25:50	RUNFF	B280/4	3.1484	39.355	-1		0.4607	115.175	0	
15	4/26/96	10:26:34	RUNFF	B280/4	4.7303	59.1281	-1		0.833	208.25	0	
16	4/26/96	10:26:50	RUNFF	A300/1	4.2381	211.905	-1		0	0	-1	
17	4/26/96	10:27:04	RUNFF	A300/1	5.8438	292.1875	-1		0.0859	85.85	-1	
18	4/26/96	10:27:48	RUNFF	B300/4			-1		0.6817		-1	
19	4/26/96	10:28:33	RUNFF	B300/4			-1		0.5627		-1	
20	4/26/96	10:30:53	RUNFF	B230/4	0		0.2312	289	-1		0.2168	1083.75
21	4/26/96	10:31:39	RUNFF	B230/4	0		0.2652	331.5	-1		0.1539	769.25
22	4/26/96	10:32:29	RUNFF	B280/4	3.9109	48.8856	-1		0.544	136	0	
23	4/26/96	10:33:12	RUNFF	B280/4	3.8803	48.5031	-1		0.4242	106.0375	0	
24	4/26/96	10:37:43	RUNFF	B230/4	0		0.2907	363.375	-1		0.1913	956.25
25	4/26/96	10:38:27	RUNFF	B230/4	0		0.2695	336.8125	-1		0.1802	901
26	4/26/96	10:39:15	RUNFF	B280/4	3.0107	37.6338	-1		0.3732	93.2875	0	
27	4/26/96	10:39:58	RUNFF	B280/4	3.1824	39.78	-1		0.4301	107.525	0	
28	4/26/96	10:40:14	RUNFF	A300/1	4.8977	244.885	-1		0.2652	265.2	-1	
29	4/26/96	10:40:27	RUNFF	A300/1	6.205	310.25	-1		0.2431	243.1	-1	
30	4/26/96	10:41:11	RUNFF	B300/4			-1		0.4191		-1	
31	4/26/96	10:41:55	RUNFF	B300/4			-1		0.4165		-1	
32	4/26/96	10:44:00	RUNFF	B230/4	0		0.2491	311.3125	-1		0.2185	1092.25
33	4/26/96	10:44:43	RUNFF	B230/4	0		0.2414	301.75	-1		0.1462	731
34	4/26/96	10:45:30	RUNFF	B280/4	3.0252	37.8144	-1		0.4539	113.475	0	
35	4/26/96	10:46:14	RUNFF	B280/4	3.2224	40.2794	-1		0.312	77.9875	0	
36	4/26/96	10:46:31	RUNFF	A300/1	4.8527	242.6325	-1		0.1743	174.25	-1	
37	4/26/96	10:46:45	RUNFF	A300/1	3.9202	196.01	-1		0.1853	185.3	-1	
38	4/26/96	10:47:29	RUNFF	B300/4			-1		0.391		-1	
39	4/26/96	10:48:13	RUNFF	B300/4			-1		0.4718		-1	
40	4/26/96	11:11:22	RUNFF	B230/4	0		0.1998	249.6875	-1		0.1003	501.5
41	4/26/96	11:12:15	RUNFF	B230/4	0		0.238	297.5	-1		0.2023	1011.5
42	4/26/96	11:13:12	RUNFF	B280/4	2.3452	29.3144	-1		0.2924	73.1	0	
43	4/26/96	11:14:05	RUNFF	B280/4	2.4625	30.7806	-1		0.2839	70.975	0	
44	4/26/96	11:14:22	RUNFF	A300/1	3.1467	157.335	-1		0.0918	91.8	-1	
45	4/26/96	11:14:37	RUNFF	A300/1	4.8348	241.74	-1		0.1488	148.75	-1	
46	4/26/96	11:15:31	RUNFF	B300/4			-1		0.4777		-1	
47	4/26/96	11:16:24	RUNFF	B300/4			-1		0.5134		-1	
48	4/26/96	11:19:59	RUNFF	B230/4	0		0.2431	303.875	-1		0.1828	913.75
49	4/26/96	11:19:59	RUNFF	B230/4	0		0.2431	303.875	-1		0.1828	913.75
50	4/26/96	11:20:54	RUNFF	B230/4	0		0.3621	452.625	-1		0.176	879.75
51	4/26/96	11:20:54	RUNFF	B230/4	0		0.3621	452.625	-1		0.176	879.75
52	4/26/96	11:21:44	RUNFF	B280/4	2.1565	26.9556	-1		0.3451	86.275	0	
53	4/26/96	11:21:44	RUNFF	B280/4	2.1565	26.9556	-1		0.3451	86.275	0	
54	4/26/96	11:22:28	RUNFF	B280/4	1.9899	24.8731	-1		0.323	80.75	0	
55	4/26/96	11:22:28	RUNFF	B280/4	1.9899	24.8731	-1		0.323	80.75	0	
56	4/26/96	11:22:44	RUNFF	A300/1	3.1204	156.0175	-1		0.1267	126.65	-1	
57	4/26/96	11:22:44	RUNFF	A300/1	3.1204	156.0175	-1		0.1267	126.65	-1	
58	4/26/96	11:22:58	RUNFF	A300/1	3.859	192.95	-1		0.1046	104.55	-1	
59	4/26/96	11:22:58	RUNFF	A300/1	3.859	192.95	-1		0.1046	104.55	-1	
60	4/26/96	11:23:41	RUNFF	B300/4			-1		0.5874		-1	

	A	B	C	D	E	F	G	H	I	J	K	L
61	4/26/96	11:23:41	RUNFF	B300/4			-1		0.5874		-1	
62	4/26/96	11:24:24	RUNFF	B300/4			-1		0.4395		-1	
63	4/26/96	11:24:24	RUNFF	B300/4			-1		0.4395		-1	
64	4/26/96	11:27:09	RUNFF	B230/4	0		0.1921	240.125	-1		0.1445	722.5
65	4/26/96	11:27:53	RUNFF	B230/4	0		0.2669	333.625	-1		0.1709	854.25
66	4/26/96	11:28:40	RUNFF	B280/4	2.7506	34.3825	-1		0.3723	93.075	0	
67	4/26/96	11:29:24	RUNFF	B280/4	1.9482	24.3525	-1		0.3179	79.475	0	
68	4/26/96	11:29:41	RUNFF	A300/1	3.3898	169.49	-1		0.0842	84.15	-1	
69	4/26/96	11:29:54	RUNFF	A300/1	4.5118	225.59	-1		0.1581	158.1	-1	
70	4/26/96	11:30:38	RUNFF	B300/4			-1		0.3137		-1	
71	4/26/96	11:31:22	RUNFF	B300/4			-1		0.4454		-1	
72	4/26/96	11:35:55	RUNFF	B230/4	0		0.2525	315.5625	-1		0.1649	824.5
73	4/26/96	11:35:55	RUNFF	B230/4	0		0.2525	315.5625	-1		0.1649	824.5
74	4/26/96	11:35:55	RUNFF	B230/4	0		0.2525	315.5625	-1		0.1649	824.5
75	4/26/96	11:36:38	RUNFF	B230/4	0		0.2227	278.375	-1		0.1063	531.25
76	4/26/96	11:36:38	RUNFF	B230/4	0		0.2227	278.375	-1		0.1063	531.25
77	4/26/96	11:36:38	RUNFF	B230/4	0		0.2227	278.375	-1		0.1063	531.25
78	4/26/96	11:37:26	RUNFF	B280/4	2.4225	30.2813	-1		0.3256	81.3875	0	
79	4/26/96	11:37:26	RUNFF	B280/4	2.4225	30.2813	-1		0.3256	81.3875	0	
80	4/26/96	11:37:26	RUNFF	B280/4	2.4225	30.2813	-1		0.3256	81.3875	0	
81	4/26/96	11:38:09	RUNFF	B280/4	2.6274	32.8419	-1		0.4106	102.6375	0	
82	4/26/96	11:38:09	RUNFF	B280/4	2.6274	32.8419	-1		0.4106	102.6375	0	
83	4/26/96	11:38:09	RUNFF	B280/4	2.6274	32.8419	-1		0.4106	102.6375	0	
84	4/26/96	11:38:25	RUNFF	A300/1	4.1948	209.7375	-1		0.0842	84.15	-1	
85	4/26/96	11:38:25	RUNFF	A300/1	4.1948	209.7375	-1		0.0842	84.15	-1	
86	4/26/96	11:38:25	RUNFF	A300/1	4.1948	209.7375	-1		0.0842	84.15	-1	
87	4/26/96	11:38:39	RUNFF	A300/1	3.349	167.45	-1		0.0476	47.6	-1	
88	4/26/96	11:38:39	RUNFF	A300/1	3.349	167.45	-1		0.0476	47.6	-1	
89	4/26/96	11:38:39	RUNFF	A300/1	3.349	167.45	-1		0.0476	47.6	-1	
90	4/26/96	11:39:23	RUNFF	B300/4			-1		0.3171		-1	
91	4/26/96	11:39:23	RUNFF	B300/4			-1		0.3171		-1	
92	4/26/96	11:39:23	RUNFF	B300/4			-1		0.3171		-1	
93	4/26/96	11:40:07	RUNFF	B300/4			-1		0.2686		-1	
94	4/26/96	11:40:07	RUNFF	B300/4			-1		0.2686		-1	
95	4/26/96	11:40:07	RUNFF	B300/4			-1		0.2686		-1	
96	Date	Time	Sequence Na	Script Name	Beryllium (Be)(Conc)		Cadmium (Cd)(Conc)		Chromium (Cr)(Conc)		Lead (Pb)(Conc)	

	A	B	C	D	E	F	G	H	I	J	K	L
1	Date	Time	Sequence Na	Script Name	Beryllium (Be	Be µg/acm	Cadmium (Cd	Cd µg/acm	Chromium (C	Cr µg/acm	Lead (Pb)(Cc	Pb µg/acm
2	4/26/96	12:03:04	RUNFF	B230/4	0.0000		0.2057	257.1250	-1.0000		0.1726	862.7500
3	4/26/96	12:03:48	RUNFF	B230/4	0.0000		0.2321	290.0625	-1.0000		0.1454	726.7500
4	4/26/96	12:04:36	RUNFF	B280/4	1.8165	22.7056	-1.0000		0.3162	79.0500	0.0000	
5	4/26/96	12:05:20	RUNFF	B280/4	1.9763	24.7031	-1.0000		0.3069	76.7125	0.0000	
6	4/26/96	12:05:37	RUNFF	A300/1	2.8781	143.9050	-1.0000		0.0000	0.0000	-1.0000	
7	4/26/96	12:05:51	RUNFF	A300/1	2.7311	136.5525	-1.0000		0.0587	58.6500	-1.0000	
8	4/26/96	12:06:35	RUNFF	B300/4			-1.0000		0.3944	98.6000	-1.0000	
9	4/26/96	12:07:19	RUNFF	B300/4			-1.0000		0.4259	106.4625	-1.0000	
10	4/26/96	12:09:28	RUNFF	B230/4	0.0000		0.1938	242.2500	-1.0000		0.1666	833.0000
11	4/26/96	12:10:12	RUNFF	B230/4	0.0000		0.3290	411.1875	-1.0000		0.1394	697.0000
12	4/26/96	12:10:59	RUNFF	B280/4	1.9270	24.0869	-1.0000		0.2975	74.3750	0.0000	
13	4/26/96	12:11:42	RUNFF	B280/4	2.2100	27.6250	-1.0000		0.2780	69.4875	0.0000	
14	4/26/96	12:11:58	RUNFF	A300/1	3.3380	166.8975	-1.0000		0.1301	130.0500	-1.0000	
15	4/26/96	12:12:12	RUNFF	A300/1	3.4561	172.8050	-1.0000		0.0000	0.0000	-1.0000	
16	4/26/96	12:12:56	RUNFF	B300/4			-1.0000		0.5959	148.9625	-1.0000	
17	4/26/96	12:13:39	RUNFF	B300/4			-1.0000		0.3290	82.2375	-1.0000	
18	4/26/96	12:15:52	RUNFF	B230/4	0.0000		0.2873	359.1250	-1.0000		0.1964	981.7500
19	4/26/96	12:16:37	RUNFF	B230/4	0.0000		0.2482	310.2500	-1.0000		0.1479	739.5000
20	4/26/96	12:17:25	RUNFF	B280/4	2.5942	32.4275	-1.0000		0.3264	81.6000	0.0000.	
21	4/26/96	12:18:09	RUNFF	B280/4	2.3316	29.1444	-1.0000		0.2771	69.2750	0.0000	
22	4/26/96	12:18:26	RUNFF	A300/1	2.3741	118.7025	-1.0000		0.0000	0.0000	-1.0000	
23	4/26/96	12:18:40	RUNFF	A300/1	3.5921	179.6050	-1.0000		0.0655	65.4500	-1.0000	
24	4/26/96	12:19:25	RUNFF	B300/4			-1.0000		0.3808	95.2000	-1.0000	
25	4/26/96	12:20:09	RUNFF	B300/4			-1.0000		0.3494	87.3375	-1.0000	
26	4/26/96	12:51:49	RUNFF	B230/4	0.0000		0.1675	209.3125	-1.0000		0.1539	769.2500
27	4/26/96	12:52:43	RUNFF	B230/4	0.0000		0.1794	224.1875	-1.0000		0.1615	807.5000
28	4/26/96	12:53:42	RUNFF	B280/4	2.6223	32.7781	-1.0000		0.2661	66.5125	0.0000	
29	4/26/96	12:54:36	RUNFF	B280/4	2.0315	25.3938	-1.0000		0.2644	66.0875	0.0000	
30	4/26/96	12:54:54	RUNFF	A300/1	4.6640	233.1975	-1.0000		0.0995	99.4500	-1.0000	
31	4/26/96	12:55:10	RUNFF	A300/1	3.2504	162.5200	-1.0000		0.0595	59.5000	-1.0000	
32	4/26/96	12:56:03	RUNFF	B300/4			-1.0000		0.3579	89.4625	-1.0000	
33	4/26/96	12:56:56	RUNFF	B300/4			-1.0000		0.3638	90.9500	-1.0000	
34	4/26/96	12:59:41	RUNFF	B230/4	0.0000		0.1675	209.3125	-1.0000		0.1369	684.2500
35	4/26/96	13:00:35	RUNFF	B230/4	0.0000		0.2159	269.8750	-1.0000		0.1471	735.2500
36	4/26/96	13:01:32	RUNFF	B280/4	2.1616	27.0194	-1.0000		0.2372	59.2875	0.0000	
37	4/26/96	13:02:25	RUNFF	B280/4	1.6618	20.7719	-1.0000		0.2414	60.3500	0.0000	
38	4/26/96	13:02:44	RUNFF	A300/1	2.3860	119.2975	-1.0000		0.1437	143.6500	-1.0000	
39	4/26/96	13:03:00	RUNFF	A300/1	2.3333	116.6625	-1.0000		0.0000	0.0000	-1.0000	
40	4/26/96	13:03:54	RUNFF	B300/4			-1.0000		0.2474	61.8375	-1.0000	
41	4/26/96	13:04:47	RUNFF	B300/4			-1.0000		0.2916	72.8875	-1.0000	
42	4/26/96	13:06:50	RUNFF	B230/4	0.0000		0.1454	181.6875	-1.0000		0.1267	633.2500
43	4/26/96	13:07:44	RUNFF	B230/4	0.0000		0.1760	219.9375	-1.0000		0.1377	688.5000
44	4/26/96	13:08:42	RUNFF	B280/4	2.1964	27.4550	-1.0000		0.2686	67.1500	0.0000	
45	4/26/96	13:09:36	RUNFF	B280/4	2.6044	32.5550	-1.0000		0.2610	65.2375	0.0000	
46	4/26/96	13:09:55	RUNFF	A300/1	2.9521	147.6025	-1.0000		0.0000	0.0000	-1.0000	
47	4/26/96	13:10:11	RUNFF	A300/1	2.7379	136.8925	-1.0000		0.0000	0.0000	-1.0000	
48	4/26/96	13:11:04	RUNFF	B300/4			-1.0000		0.3205	80.1125	-1.0000	
49	4/26/96	13:11:58	RUNFF	B300/4			-1.0000		0.2814	70.3375	-1.0000	
50	4/26/96	13:14:03	RUNFF	B230/4	0.0000		0.1165	145.5625	-1.0000		0.0935	467.5000
51	4/26/96	13:14:56	RUNFF	B230/4	0.0000		0.2406	300.6875	-1.0000		0.1420	709.7500
52	4/26/96	13:15:53	RUNFF	B280/4	1.9525	24.4056	-1.0000		0.2822	70.5500	0.0000	
53	4/26/96	13:16:46	RUNFF	B280/4	1.8411	23.0138	-1.0000		0.2083	52.0625	0.0000	
54	4/26/96	13:17:04	RUNFF	A300/1	2.6452	132.2600	-1.0000		0.0697	69.7000	-1.0000	
55	4/26/96	13:17:20	RUNFF	A300/1	2.6418	132.0900	-1.0000		0.0459	45.9000	-1.0000	
56	4/26/96	13:18:13	RUNFF	B300/4			-1.0000		0.2763	69.0625	-1.0000	
57	4/26/96	13:19:06	RUNFF	B300/4			-1.0000		0.3800	94.9875	-1.0000	

Date	Time	Sequence Na	Script Name	Beryllium (Be	Be µg/acm	Cadmium (Cd	Cd µg/acm	Chromium (C	Cr µg/acm	Lead (Pb)(Cd	Pb µg/acm
4/26/96	13:43:38	RUNFF	B230/4	0		0.1777	222.0625			0.1539	769.25
4/26/96	13:44:29	RUNFF	B230/4	0		0.1964	245.4375			0.1377	688.5
4/26/96	13:45:25	RUNFF	B280/4	1.7655	22.0681			0.2329	58.225		
4/26/96	13:46:16	RUNFF	B280/4	2.3001	28.7513			0.2967	74.1625		
4/26/96	13:52:51	RUNFF	B230/4	0		0.1811	226.3125			0.1088	544
4/26/96	13:53:42	RUNFF	B230/4	0		0.1207	150.875			0.1088	544
4/26/96	13:54:38	RUNFF	B280/4	2.4735	30.9188			0.2831	70.7625		
4/26/96	13:55:29	RUNFF	B280/4	2.7566	34.4569			0.2618	65.45		
4/26/96	13:55:47	RUNFF	A300/1	3.2768	163.8375			0.193	192.95		
4/26/96	13:56:02	RUNFF	A300/1	2.9648	148.24			0	0		
4/26/96	13:56:53	RUNFF	B300/4	10.1023	126.2781			0.2117	52.9125		
4/26/96	13:57:44	RUNFF	B300/4	10.1652	127.0644			0.2907	72.675		
4/26/96	14:01:58	RUNFF	B230/4	0		0.1811	226.3125			0.1505	752.25
4/26/96	14:02:48	RUNFF	B230/4	0		0.1947	243.3125			0.1233	616.25
4/26/96	14:03:36	RUNFF	B280/4	2.0723	25.9038			0.2533	63.325		
4/26/96	14:04:20	RUNFF	B280/4	2.7761	34.7013			0.2576	64.3875		
4/26/96	14:04:36	RUNFF	A300/1	3.2708	163.54			0.0536	53.55		
4/26/96	14:04:49	RUNFF	A300/1	3.6457	182.2825			0.1658	165.75		
4/26/96	14:05:34	RUNFF	B300/4	10.5672	132.09			0.2304	57.5875		
4/26/96	14:06:18	RUNFF	B300/4	10.5026	131.2825			0.2278	56.95		
4/26/96	14:08:18	RUNFF	B230/4	0		0.1471	183.8125			0.1522	760.75
4/26/96	14:09:02	RUNFF	B230/4	0		0.1318	164.6875			0.1105	552.5
4/26/96	14:09:51	RUNFF	B280/4	2.403	30.0369			0.2873	71.825		
4/26/96	14:10:35	RUNFF	B280/4	2.7158	33.9469			0.3349	83.725		
4/26/96	14:10:51	RUNFF	A300/1	2.4718	123.59			0.0493	49.3		
4/26/96	14:11:05	RUNFF	A300/1	2.9504	147.5175			0.051	51		
4/26/96	14:11:48	RUNFF	B300/4	11.8388	147.985			0.5304	132.6		
4/26/96	14:12:31	RUNFF	B300/4	11.3832	142.29			0.4148	103.7		
4/26/96	14:14:25	RUNFF	B230/4	0		0.1819	227.375			0.1615	807.5
4/26/96	14:15:09	RUNFF	B230/4	0		0.1403	175.3125			0.1437	718.25
4/26/96	14:15:56	RUNFF	B280/4	2.4506	30.6319			0.2754	68.85		
4/26/96	14:16:40	RUNFF	B280/4	1.8114	22.6419			0.2601	65.025		
4/26/96	14:16:57	RUNFF	A300/1	3.3873	169.3625			0.0791	79.05		
4/26/96	14:17:11	RUNFF	A300/1	2.0256	101.2775			0.0434	43.35		
4/26/96	14:17:55	RUNFF	B300/4	5.871	73.3869			0.2567	64.175		
4/26/96	14:18:39	RUNFF	B300/4	6.0444	75.5544			0.261	65.2375		
4/26/96	14:20:37	RUNFF	B230/4	0		0.1114	139.1875			0.0969	484.5
4/26/96	14:21:21	RUNFF	B230/4	0		0.1182	147.6875			0.1216	607.75
4/26/96	14:22:08	RUNFF	B280/4	1.7034	21.2925			0.2032	50.7875		
4/26/96	14:22:51	RUNFF	B280/4	1.5623	19.5288			0.21	52.4875		
4/26/96	14:23:07	RUNFF	A300/1	2.641	132.0475			0	0		
4/26/96	14:23:21	RUNFF	A300/1	3.9466	197.3275			0.108	107.95		
4/26/96	14:24:06	RUNFF	B300/4	9.3874	117.3425			0.3953	98.8125		
4/26/96	14:24:50	RUNFF	B300/4	10.3318	129.1469			0.261	65.2375		
4/26/96	14:26:52	RUNFF	B230/4	0		0.1182	147.6875			0.0978	488.75
4/26/96	14:27:36	RUNFF	B230/4	0		0.1462	182.75			0.1046	522.75
4/26/96	14:28:23	RUNFF	B280/4	2.2738	28.4219			0.2661	66.5125		
4/26/96	14:29:07	RUNFF	B280/4	1.6643	20.8038			0.1794	44.8375		
4/26/96	14:29:24	RUNFF	A300/1	2.5296	126.48			0.0519	51.85		
4/26/96	14:29:37	RUNFF	A300/1	2.2925	114.6225			0.0612	61.2		
4/26/96	14:30:20	RUNFF	B300/4	9.0806	113.5069			0.2848	71.1875		
4/26/96	14:31:03	RUNFF	B300/4	9.6314	120.3919			0.2567	64.175		
4/26/96	14:33:15	RUNFF	B230/4	0		0.1318	164.6875			0.1165	582.25
4/26/96	14:33:59	RUNFF	B230/4	0		0.1828	228.4375			0.1165	582.25
4/26/96	14:34:47	RUNFF	B280/4	1.9202	24.0019			0.2006	50.15		
4/26/96	14:35:31	RUNFF	B280/4	1.802	22.525			0.3069	76.7125		
4/26/96	14:35:48	RUNFF	A300/1	2.2704	113.5175			0	0		
4/26/96	14:36:02	RUNFF	A300/1	2.3494	117.47			0	0		
4/26/96	14:36:46	RUNFF	B300/4	10.5511	131.8881			0.17	42.5		
4/26/96	14:37:29	RUNFF	B300/4	10.9591	136.9881			0.1972	49.3		

	A	B	C	D	E	F	G	H	I	J	K	L
61	4/26/96	16:36:13	RUNEE	B265/4	5.0592	63.24	-1		0		0	
62	4/26/96	16:36:57	RUNEE	B265/4	3.7307	46.6331	-1		0		0	
63	4/26/96	16:37:43	RUNEE	B280/4	0.4956	6.1944	-1		0.0961	123.8875	0	
64	4/26/96	16:38:26	RUNEE	B280/4	0.4327	5.4081	-1		0.1046	108.1625	0	
65	4/26/96	16:38:43	RUNEE	A300/1	0.4123	20.6125	-1		0	0	-1	
66	4/26/96	16:38:57	RUNEE	A300/1	0.3706	18.53	-1		0.0859	85.85	-1	
67	4/26/96	16:39:41	RUNEE	B300/4	1.309	16.3625	-1		0.1012	327.25	-1	
68	4/26/96	16:40:25	RUNEE	B300/4	1.0413	13.0156	-1		0	260.3125	-1	

	A	B	C	D	E	F	G	H	I	J	K	L
1	Date	Time	Sequence Na	Script Name	Beryllium (Be)(Conc)		Cadmium (Cd	Cd µg/acm	Chromium (C	Cr µg/acm	Lead (Pb)(Cd	Pb µg.acm
2	4/26/96	15:33:40	RUNEE	B230/4	0		0.3001	375.0625	-1		0.2117	1058.25
3	4/26/96	15:34:23	RUNEE	B230/4	0		0.1386	173.1875	-1		0.1139	569.5
4	4/26/96	15:35:10	RUNEE	B265/4	10.1074	126.3419	-1		0		0	
5	4/26/96	15:35:53	RUNEE	B265/4	13.7522	171.9019	-1		0		0	
6	4/26/96	15:36:40	RUNEE	B280/4	1.6465	20.5806	-1		0.1887	411.6125	0	
7	4/26/96	15:37:24	RUNEE	B280/4	1.9142	23.9275	-1		0.2414	478.55	0	
8	4/26/96	15:37:40	RUNEE	A300/1	3.774	188.7	-1		0	0	-1	
9	4/26/96	15:37:53	RUNEE	A300/1	2.2177	110.8825	-1		0.1165	116.45	-1	
10	4/26/96	15:38:36	RUNEE	B300/4	8.4235	105.2938	-1		0.2253	2105.875	-1	
11	4/26/96	15:39:19	RUNEE	B300/4	9.0474	113.0925	-1		0.2066	2261.85	-1	
12	4/26/96	15:42:12	RUNEE	B230/4	0		0.0927	115.8125	-1		0.1097	548.25
13	4/26/96	15:42:56	RUNEE	B230/4	0		0.1352	168.9375	-1		0.1377	688.5
14	4/26/96	15:43:43	RUNEE	B265/4	7.0185	87.7306	-1		0		0	
15	4/26/96	15:44:26	RUNEE	B265/4	5.5199	68.9988	-1		0		0	
16	4/26/96	15:45:12	RUNEE	B280/4	1.513	18.9125	-1		0.1989	378.25	0	
17	4/26/96	15:45:56	RUNEE	B280/4	1.3583	16.9788	-1		0.187	339.575	0	
18	4/26/96	15:46:12	RUNEE	A300/1	1.6983	84.915	-1		0	0	-1	
19	4/26/96	15:46:26	RUNEE	A300/1	2.1488	107.44	-1		0	0	-1	
20	4/26/96	15:47:10	RUNEE	B300/4	9.2531	115.6638	-1		0.3256	2313.275	-1	
21	4/26/96	15:47:53	RUNEE	B300/4	7.9671	99.5881	-1		0.3179	1991.7625	-1	
22	4/26/96	15:51:39	RUNEE	B230/4	0		0.1241	155.125	-1		0.0621	310.25
23	4/26/96	15:57:39	RUNEE	B230/4	0		0.1513	189.125	-1		0.1352	675.75
24	4/26/96	15:58:23	RUNEE	B230/4	0		0.1318	164.6875	-1		0.1037	518.5
25	4/26/96	15:59:11	RUNEE	B265/4	6.3674	79.5919	-1		0		0	
26	4/26/96	15:59:55	RUNEE	B265/4	8.8196	110.245	-1		0		0	
27	4/26/96	16:00:42	RUNEE	B280/4	2.3596	29.495	-1		0.2168	589.9	0	
28	4/26/96	16:01:26	RUNEE	B280/4	1.768	22.1	-1		0.1777	442	0	
29	4/26/96	16:01:42	RUNEE	A300/1	2.0664	103.3175	-1		0	0	-1	
30	4/26/96	16:01:56	RUNEE	A300/1	2.4846	124.2275	-1		0.0502	50.15	-1	
31	4/26/96	16:02:40	RUNEE	B300/4	9.5991	119.9881	-1		0.3468	2399.7625	-1	
32	4/26/96	16:03:24	RUNEE	B300/4	8.6139	107.6738	-1		0.2448	2153.475	-1	
33	4/26/96	16:06:13	RUNEE	B230/4	0		0.1862	232.6875	-1		0.1335	667.25
34	4/26/96	16:06:56	RUNEE	B230/4	0		0.1258	157.25	-1		0.0952	476
35	4/26/96	16:07:43	RUNEE	B265/4	5.61	70.125	-1		0		0	
36	4/26/96	16:08:27	RUNEE	B265/4	5.9823	74.7788	-1		0		0	
37	4/26/96	16:09:14	RUNEE	B280/4	1.5683	19.6031	-1		0.2049	392.0625	0	
38	4/26/96	16:09:58	RUNEE	B280/4	1.9712	24.6394	-1		0.2253	492.7875	0	
39	4/26/96	16:10:15	RUNEE	A300/1	3.2853	164.2625	-1		0.1148	114.75	-1	
40	4/26/96	16:10:28	RUNEE	A300/1	1.8785	93.925	-1		0.0383	38.25	-1	
41	4/26/96	16:11:12	RUNEE	B300/4	8.4193	105.2406	-1		0.2652	2104.8125	-1	
42	4/26/96	16:11:56	RUNEE	B300/4	8.251	103.1369	-1		0.2066	2062.7375	-1	
43	4/26/96	16:15:35	RUNEE	B230/4	0		0.1768	221	-1		0.1454	726.75
44	4/26/96	16:16:19	RUNEE	B230/4	0		0.0791	98.8125	-1		0.1224	612
45	4/26/96	16:17:07	RUNEE	B265/4	6.0019	75.0231	-1		0		0	
46	4/26/96	16:17:51	RUNEE	B265/4	5.3023	66.2788	-1		0		0	
47	4/26/96	16:18:37	RUNEE	B280/4	1.5989	19.9856	-1		0.2839	399.7125	0	
48	4/26/96	16:19:20	RUNEE	B280/4	1.5989	19.9856	-1		0.2083	399.7125	0	
49	4/26/96	16:19:37	RUNEE	A300/1	1.8037	90.185	-1		0.0893	89.25	-1	
50	4/26/96	16:19:50	RUNEE	A300/1	1.7536	87.6775	-1		0.1046	104.55	-1	
51	4/26/96	16:20:34	RUNEE	B300/4	7.8217	97.7713	-1		0.2882	1955.425	-1	
52	4/26/96	16:21:18	RUNEE	B300/4	7.673	95.9119	-1		0.2202	1918.2375	-1	
53	4/26/96	16:26:04	RUNEE	B230/4	0		0.1326	165.75	-1		0.1037	518.5
54	4/26/96	16:26:48	RUNEE	B230/4	0		0.1445	180.625	-1		0.1122	561
55	4/26/96	16:27:35	RUNEE	B265/4	6.6538	83.1725	-1		0		0	
56	4/26/96	16:28:19	RUNEE	B265/4	5.6304	70.38	-1		0		0	
57	4/26/96	16:29:05	RUNEE	B280/4	1.6694	20.8675	-1		0.1938	417.35	0	
58	4/26/96	16:29:49	RUNEE	B280/4	1.9338	24.1719	-1		0.2355	483.4375	0	
59	4/26/96	16:34:42	RUNEE	B230/4	0		0.0825	103.0625	-1		0.0901	450.5
60	4/26/96	16:35:26	RUNEE	B230/4	0		0.0952	119	-1		0.0638	318.75

4/26/96	14:52:47	RUNFF	B230/4	0		0.1233	154.0625			0.0893	446.25
4/26/96	14:53:31	RUNFF	B230/4	0		0.1173	146.625			0.1131	565.25
4/26/96	14:54:19	RUNFF	B280/4	1.7383	21.7281			0.255	63.75		
4/26/96	14:55:02	RUNFF	B280/4	2.1726	27.1575			0.2559	63.9625		
4/26/96	14:55:18	RUNFF	A300/1	3.5785	178.925			0	0		
4/26/96	14:55:32	RUNFF	A300/1	1.9593	97.9625			0.0731	73.1		
4/26/96	14:56:16	RUNFF	B300/4	10.9837	137.2963			0.2168	54.1875		
4/26/96	14:57:00	RUNFF	B300/4	10.6582	133.2269			0.2397	59.925		
4/26/96	15:00:16	RUNFF	B230/4	0		0.1122	140.25			0.1437	718.25
4/26/96	15:01:00	RUNFF	B230/4	0		0.1292	161.5			0.0731	365.5
4/26/96	15:01:48	RUNFF	B280/4	1.2019	15.0238			0.1692	42.2875		
4/26/96	15:02:32	RUNFF	B280/4	1.7825	22.2806			0.1496	37.4		
4/26/96	15:06:31	RUNFF	B230/4	0		0.1148	143.4375			0.1224	612
4/26/96	15:07:15	RUNFF	B230/4	0		0.1114	139.1875			0.0876	437.75