APPENDIX

Appendix A: Process Operating Data
Appendix B: Calculations
Appendix C: Raw Field Data and Calibration Data Sheets
Appendix D: Reduced Field Data Sheets
Appendix E: Sampling Log and Chain of Custody Records
Appendix F: Analytical Data Sheets
Appendix G: List of Participants

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Unit #1

Mostardi Platt Mercury Test

Date	Time	Feeder	reading		LBS of Coal for the Test	
02/08/2000	10:00	A	6222422	A	102884	
		B	98789695	B	111330	
		C	36083687	C	103310	
02/08/2000	12:50	A	6325306		317524	Total
		B	98901025			
		C	36186997			

					LBS of Coal for the Test	
02/08/2000	14:00	A	6369584	A	77636	
		B	98948976	B	83972	
		C	36231488	C	78135	
02/08/2000	16:15	A	6447220		239743	Total
		B	99032948			
		C	36309623			

					LBS of Coal for the Test	
02/09/2000	9:00	A	6987682	A	82494	
		B	99575917	B	78794	
		C	36853324	C	82746	
02/09/2000	11:14	A	7070176		244034	Total
		B	99654711			
		C	36936070			

Mastardi Platt

Unit #1

Start of test Feeder reading (10 AM)

Test #1

1A- 06222422
1B- 98789695
1C- 36083687

end of test reading (12:50)

1A- 06325306
1B- 98901025
1C- 36186997

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start of test #2 feeder readings (2pm)

Test #2

1A- 06369584
1B- 98948976
1C- 3623 1488

end of test reading (4:15)

1A- 06447220
1B- 99032948
1C- 3630[illegible]

2-9-2000

Start of Test 9AM Feeder Readings

1A 06987682
1B 99575917
1C 36853324

End of Test (11:14 AM)

1A 07070176
1B 99654711
1C 36936070

Start Time	Unit #1 Gross Load (MW)	Unit #1 Station Use(MW)	Unit #1 Net Load (MW)	Throttle Steam Temp.(F)	Throttle Steam Press.(PSIG)
2/8/00 10:00	115.51	6.91	108.60	983.70	1448.61
2/8/00 11:00	115.44	7.18	108.26	981.88	1449.88
2/8/00 12:00	116.12	6.75	109.37	983.06	1449.88
2/8/00 13:00	115.85	6.84	109.02	983.90	1449.86
2/8/00 14:00	116.38	6.87	109.51	984.03	1451.73
2/8/00 15:00	116.11	6.79	109.32	982.00	1450.14
2/8/00 16:00	116.48	6.81	109.67	984.18	1449.88
2/8/00 16:30	116.17	6.88	109.29	983.90	1449.64
2/9/00 8:00	98.09	6.15	91.94	981.56	1449.31
2/9/00 9:00	111.48	6.67	104.82	985.42	1447.66
2/9/00 10:00	116.90	6.88	110.02	984.45	1451.23
2/9/00 11:00	116.27	6.83	109.44	981.89	1448.22
2/9/00 11:30	115.42	6.80	108.62	984.70	1450.41

Cold R.H. Temp.(F)	Cold R.H. Press.(PSIG)	Main Steam Flow (KPPH)	Feedwater to Econ. Temp.(F)	Main Steam Attemp. Flow (KPPH)	R.H. Attemp. Flow (KPPH)
737.03	477.08	817.51	467.47	43.27	10.45
735.44	476.71	817.88	467.00	42.58	10.47
737.39	477.36	818.23	467.58	44.21	10.49
737.44	476.56	818.26	467.73	47.27	10.49
738.78	477.89	819.95	468.03	48.69	10.52
734.90	478.55	819.02	467.65	41.45	10.55
736.94	477.89	818.95	467.85	44.02	10.58
738.01	477.00	818.44	467.75	46.12	10.56
713.00	394.16	679.22	451.86	15.10	8.26
736.75	456.52	791.58	463.52	39.18	8.27
741.38	477.89	828.23	468.38	49.01	8.25
737.21	476.78	826.08	467.53	45.64	8.24
738.48	471.72	819.93	467.41	46.48	8.25

Circulating Water in Temp.(F)	Circulating Water Out Temp.(F)	Condenser Press.("Hga)	Barometric Press.(PSIA)	A.H. Gas In temp.(F)	A.H. Gas Out Temp.(F)
34.95	61.72	0.82	14.61	656.94	311.67
35.06	61.98	0.82	14.60	647.64	313.92
35.00	61.72	0.82	14.58	656.13	314.85
35.12	61.79	0.82	14.56	653.50	315.63
34.98	61.85	0.81	14.53	654.04	315.36
35.05	61.95	0.82	14.51	643.72	314.85
34.58	60.13	0.82	14.50	654.95	313.19
35.03	60.20	0.81	14.50	657.42	313.55
34.92	58.38	0.69	14.42	610.00	311.47
34.45	60.29	0.78	14.43	638.28	309.33
34.49	61.81	0.83	14.44	666.66	317.28
34.94	61.79	0.83	14.44	648.59	325.21
34.55	61.76	0.82	14.44	660.06	326.74

A.H. Air In Temp.(F)	A.H. Air Out Temp.(F)	Ambient Temp.(F)
119.91	587.38	21.44
120.34	583.81	22.34
120.97	589.26	23.36
121.80	585.25	25.54
122.18	584.68	26.20
121.45	579.77	27.03
120.84	584.13	26.80
121.20	588.59	25.76
134.96	567.34	29.31
134.95	565.34	34.16
139.12	594.31	38.92
142.67	584.70	41.89
144.21	591.66	41.64

Data Dump Report

Report Date: 02/09/2000

Reporting Period: 02/08/2000 to 02/08/2000

Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MIS	OCC	EXC	INV	SUN	MST	SUT	SHT	Limit	RAW	MDO	ACP	CKC	CAL	DL Flags
S1	S1OPC	PERCENT	02/08/00	10:00	19.7835	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	10:06	17.6544	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	10:12	15.6422	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	10:18	20.7521	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	10:24	18.3714	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	10:30	18.2144	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	10:36	16.8243	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	10:42	18.6757	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	10:48	16.6745	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	10:54	14.9161	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	11:00	16.5704	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	11:06	19.9877	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	11:12	15.9792	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	11:18	19.0555	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	11:24	17.6135	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	11:30	18.2924	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	11:36	15.8030	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	11:42	17.6258	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	11:48	17.1687	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	11:54	20.3189	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	12:00	18.4300	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	12:06	19.7925	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	12:12	17.8756	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	12:18	17.2394	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	12:24	19.1193	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	12:30	18.3416	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	12:36	17.3503	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	12:42	19.4631	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	12:48	19.7363	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	

Data Dump Report

Report Date: 02/09/2000
Reporting Period: 02/08/2000 to 02/08/2000
Rolling Average Interval (Hours): 1

Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MISS	OCC	EXC	INVS	SUNT	MUNT	SSTU	SHUT	SINV	Limit	RAW	MDO	ACP	LCK	CAL	MDC	CID	MID	FID	DL	Flags
S1	S1PFLOW	SCFM	02/08/00	10:00	764255.6875	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006				
S1	S1PFLOW	SCFM	02/08/00	11:00	770334.1250	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006				
S1	S1PFLOW	SCFM	02/08/00	12:00	776539.5625	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006				
S1	S1CPFLOW	SCFH	02/08/00	10:00	45855340.000	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006	102			
S1	S1CPFLOW	SCFH	02/08/00	11:00	46220048.000	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006	102			
S1	S1CPFLOW	SCFH	02/08/00	12:00	46592372.000	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006	102			

Data Dump Report

Report Date: 02/09/2000
Reporting Period: 02/08/2000 to 02/08/2000
Rolling Average Interval (Hours): 1

Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MIS	OCS	EXC	INV	SUN	MUT	SNT	STU	SHT	SIN V	Limit	RAW	MOD	ALC	CAL	CMD	CID	MID	FID	DL	Flags
S1	S1PCO2	PERCENT	02/08/00	10:00	14.4196	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N					
S1	S1PCO2	PERCENT	02/08/00	11:00	14.3761	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N					
S1	S1PCO2	PERCENT	02/08/00	12:00	14.3158	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N					
S1	S1CPCO2	PERCENT	02/08/00	10:00	14.4196	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	008	104		
S1	S1CPCO2	PERCENT	02/08/00	11:00	14.3761	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	008	104		
S1	S1CPCO2	PERCENT	02/08/00	12:00	14.3158	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	008	104		

Data Dump Report

Report Date: 02/09/2000
Reporting Period: 02/08/2000 to 02/08/2000
Rolling Average Interval (Hours): 1

Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MISS	OCC	EXC	INVS	SUNT	MSUT	SSUT	SHUT	SINV	Limit	RAW	MOD	ACP	LCK	CAL	MDC	CID	MID	FID	DL	Flags
S1	U1MEG	MEGAWATT	02/08/00	10:00	115.6556	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	U1MEG	MEGAWATT	02/08/00	11:00	115.7241	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	U1MEG	MEGAWATT	02/08/00	12:00	115.8558	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					

Data Dump Report

Report Date: 02/09/2000

Reporting Period: 02/08/2000 to 02/08/2000

Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MISC	OCC	EXC	INV	SUS	MAN	SCT	STU	Limit	RAW	MDO	ACP	LCK	CAL	DL Flags
S1	U1MEG	MEGAWATT	02/08/00	10:00	115.5644	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:01	115.6499	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:02	115.7234	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:03	115.7732	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:04	116.0065	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:05	115.9872	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:06	115.7783	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:07	115.8777	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:08	115.8674	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:09	115.8133	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:10	115.7463	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:11	115.7637	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:12	115.7401	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:13	115.7173	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:14	115.7908	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:15	115.6929	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:16	115.6162	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:17	115.5118	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:18	115.4457	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:19	115.4251	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:20	115.4815	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:21	115.5703	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:22	115.7113	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:23	115.8053	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:24	115.8189	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:25	115.9166	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:26	116.0486	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:27	115.9604	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:28	115.6860	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:29	115.7390	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:30	115.7366	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:31	115.7584	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:32	115.7559	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:33	115.6683	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:34	115.5461	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:35	115.5747	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:36	115.4259	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:37	115.5171	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:38	115.2723	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:39	115.2339	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:40	115.4124	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:41	115.4574	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:42	115.4901	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:43	115.4644	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:44	115.4467	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:45	115.4954	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:46	115.5199	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MIS	OCS	EXC	INV	SUS	MNT	SUT	SHT	Limit	RAW	MOD	ACP	LCK	CAL	DL Flags
S1	U1MEG	MEGAWATT	02/08/00	10:47	115.4980	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:48	115.5685	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:49	115.6662	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:50	115.5972	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:51	115.5083	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:52	115.4921	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:53	115.6476	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:54	115.8409	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:55	115.8490	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:56	115.5772	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:57	115.6115	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:58	115.8198	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	10:59	115.6549	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:00	115.6245	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:01	115.5959	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:02	115.7477	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:03	115.7601	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:04	115.8265	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:05	115.9532	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:06	116.0045	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:07	115.8447	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:08	115.7973	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:09	115.7567	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:10	115.6941	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:11	115.6905	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:12	115.5491	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:13	115.5516	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:14	115.4301	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:15	115.4926	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:16	115.5692	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:17	115.5418	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:18	115.5529	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:19	115.5129	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:20	115.5206	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:21	115.5073	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:22	115.5714	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:23	115.6792	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:24	115.8673	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:25	116.0473	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:26	115.9912	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:27	115.5514	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:28	115.4405	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:29	115.4424	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:30	115.5039	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:31	115.5206	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:32	115.8927	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:33	115.8240	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:34	115.8257	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MISC	OCC	EXC	INVS	SUS	MTU	SST	Limit	RAW	MOD	ACP	LCK	CAL	DL Flags
S1	U1MEG	MEGAWATT	02/08/00	11:35	115.7895	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:36	115.9034	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:37	115.9351	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:38	115.9114	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:39	115.9844	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:40	116.0388	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:41	116.0700	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:42	116.0177	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:43	116.0685	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:44	116.1013	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:45	115.8812	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:46	115.8002	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:47	115.7710	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:48	115.6848	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:49	115.6180	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:50	115.5752	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:51	115.5661	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:52	115.4914	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:53	115.4395	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:54	115.4812	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:55	115.7148	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:56	115.7535	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:57	115.7464	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:58	115.7238	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	11:59	115.7000	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:00	115.8285	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:01	115.8902	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:02	115.8860	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:03	116.0339	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:04	115.8688	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:05	115.7937	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:06	115.8332	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:07	115.7966	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:08	115.8258	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:09	116.0714	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:10	116.1133	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:11	116.1694	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:12	116.0579	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:13	115.9425	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:14	115.9375	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:15	115.9364	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:16	115.9370	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:17	115.9946	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:18	116.0149	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:19	115.6527	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:20	115.6241	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:21	115.6707	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:22	115.8061	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MISS	OCC	EXC	INVS	MUST	MSNT	SUT	SHT	Limit	RAW	MOD	ACP	LCK	CAL	DL Flags
S1	U1MEG	MEGAWATT	02/08/00	12:23	115.8352	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:24	115.8266	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:25	115.6345	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:26	115.6162	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:27	115.6464	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:28	115.7288	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:29	115.7575	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:30	115.7582	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:31	115.8399	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:32	115.9542	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:33	115.8629	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:34	115.8491	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:35	115.9592	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:36	116.0304	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:37	116.0372	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:38	116.0361	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:39	115.8852	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:40	115.9491	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:41	116.0450	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:42	116.0524	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:43	116.0568	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:44	116.0402	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:45	116.0121	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:46	116.0305	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:47	116.0153	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:48	116.0241	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:49	116.0052	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	12:50	116.0692	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MIS	OCC	OXC	EVN	ISU	SST	MUN	SNT	SUT	HT	Limit	RW	MD	AO	PC	KC	LA	DL Flags
S1	S1OPC	PERCENT	02/08/00	14:00	20.3877	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	14:06	17.5730	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	14:12	18.5820	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	14:18	20.6771	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	14:24	18.5538	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	14:30	18.2689	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	14:36	18.4196	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	14:42	18.5586	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	14:48	15.8277	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	14:54	18.2539	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	15:00	16.8453	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	15:06	19.5393	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	15:12	16.8068	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	15:18	19.3608	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	15:24	16.8240	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	15:30	16.7890	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	15:36	16.6131	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	15:42	17.9208	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	15:48	15.9954	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	15:54	18.0031	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	16:00	18.1325	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	16:06	20.1160	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	
S1	S1OPC	PERCENT	02/08/00	16:12	17.2696	00	00	01	N	N	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	N	

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Site	Parameter	Units	Date	HH	MM	Value	RC	AC	MC	MIS	OCC	EXC	INV	SUS	MNT	SUT	SHT	SIN	Limit	RAW	MDP	ACK	LCA	MDC	CID	MID	FID	DL	Flags
S1	S1PFLOW	SCFM	02/08/00	14	00	770021.5000	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	006				
S1	S1PFLOW	SCFM	02/08/00	15	00	770908.5000	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	006				
S1	S1PFLOW	SCFM	02/08/00	16	00	772074.5625	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	006				
S1	S1CPFLOW	SCFH	02/08/00	14	00	46201288.000	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	006	102			
S1	S1CPFLOW	SCFH	02/08/00	15	00	46254512.000	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	006	102			
S1	S1CPFLOW	SCFH	02/08/00	16	00	46324472.000	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	006	102			

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MIS	OCS	EXC	INC	SVS	MUT	SNT	STU	SHT	SIN	Limit	RAW	MOD	ACP	LCK	CAL	MCC	CID	MID	FID	DL	Flags
S1	S1PCO2	PERCENT	02/08/00	14:00	14.2637	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	S1PCO2	PERCENT	02/08/00	15:00	14.2808	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	S1PCO2	PERCENT	02/08/00	16:00	14.2425	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	S1CPCO2	PERCENT	02/08/00	14:00	14.2637	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	008	104			
S1	S1CPCO2	PERCENT	02/08/00	15:00	14.2808	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	008	104			
S1	S1CPCO2	PERCENT	02/08/00	16:00	14.2425	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	008	104			

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MISS	OCC	EXCV	INUS	SMUT	SSTU	SHT	SINV	Limit	RAW	MOD	ACP	LCK	CAL	MDC	CID	MID	FID	DL	Flags
S1	U1MEG	MEGAWATT	02/08/00	14:00	115.8087	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	U1MEG	MEGAWATT	02/08/00	15:00	116.0939	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	U1MEG	MEGAWATT	02/08/00	16:00	115.7351	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MIS	OCC	EXC	INV	SUS	MNT	SUT	Limit	RAW	MDO	ALP	CKC	CAL	DL Flags
S1	U1MEG	MEGAWATT	02/08/00	14:00	115.8219	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:01	115.7974	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:02	115.7645	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:03	115.6965	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:04	115.6553	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:05	115.7445	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:06	115.8753	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:07	115.8985	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:08	115.8448	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:09	115.7284	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:10	115.7599	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:11	116.0536	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:12	116.0685	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:13	116.1564	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:14	116.1587	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:15	116.0963	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:16	115.7386	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:17	115.7249	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:18	115.7468	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:19	115.6898	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:20	115.5619	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:21	115.5157	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:22	115.4522	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:23	115.3999	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:24	115.3611	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:25	115.5499	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:26	115.5910	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:27	115.5978	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:28	115.4815	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:29	115.4304	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:30	115.4753	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:31	115.4766	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:32	115.5176	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:33	115.6235	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:34	115.7654	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:35	115.7933	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:36	115.7840	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:37	115.9386	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:38	115.9708	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:39	115.9721	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:40	115.9389	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:41	115.9351	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:42	115.7936	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:43	115.8380	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:44	115.8656	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:45	115.7677	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:46	115.6659	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MIS	OCS	EXC	INV	SUN	MNT	SUT	SHT	Limit	RAW	MOD	ACP	LCK	CAL	DL Flags
:1	U1MEG	MEGAWATT	02/08/00	14:47	115.7886	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
J1	U1MEG	MEGAWATT	02/08/00	14:48	115.8553	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:49	115.8749	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	14:50	115.8601	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	14:51	115.9532	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:52	115.9494	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
1	U1MEG	MEGAWATT	02/08/00	14:53	115.9457	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
1	U1MEG	MEGAWATT	02/08/00	14:54	116.0322	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:55	116.0913	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:56	116.1500	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
1	U1MEG	MEGAWATT	02/08/00	14:57	116.1506	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
1	U1MEG	MEGAWATT	02/08/00	14:58	116.4262	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	14:59	116.3587	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:00	116.2384	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:01	116.3048	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:02	116.3301	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:03	116.2064	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:04	116.1688	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:05	116.1906	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:06	116.1243	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:07	116.0116	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:08	115.9749	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:09	115.9780	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:10	116.0760	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:11	116.1153	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:12	116.0678	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:13	116.1025	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
1	U1MEG	MEGAWATT	02/08/00	15:14	116.1557	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:15	116.1217	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:16	116.0579	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
1	U1MEG	MEGAWATT	02/08/00	15:17	115.8940	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
1	U1MEG	MEGAWATT	02/08/00	15:18	115.8929	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:19	115.8437	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
1	U1MEG	MEGAWATT	02/08/00	15:20	115.9373	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
1	U1MEG	MEGAWATT	02/08/00	15:21	115.9855	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:22	115.8895	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:23	115.8880	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:24	115.9403	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
J1	U1MEG	MEGAWATT	02/08/00	15:25	115.8888	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:26	115.8961	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:27	116.0286	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:28	116.0814	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:29	116.1090	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
1	U1MEG	MEGAWATT	02/08/00	15:30	116.0668	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:31	116.1366	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:32	116.1995	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:33	116.2059	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
:1	U1MEG	MEGAWATT	02/08/00	15:34	116.2919	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MISS	OCC	EXC	INVS	MNUS	SNTS	SHUT	Limit	RAW	MOD	ACP	LCK	CAL	DL Flags
S1	U1MEG	MEGAWATT	02/08/00	15:35	116.2721	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:36	116.2888	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:37	116.2154	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:38	116.1965	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:39	116.1558	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:40	116.1917	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:41	116.1823	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:42	116.0739	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:43	116.0146	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:44	116.0838	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:45	116.0090	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:46	116.0213	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:47	115.9885	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:48	116.0132	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:49	116.0497	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:50	115.9822	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:51	115.9935	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:52	116.0493	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:53	116.1431	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:54	116.1469	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:55	116.1594	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:56	116.2168	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:57	116.3223	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:58	116.2298	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	15:59	116.2358	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:00	116.1463	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:01	116.1004	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:02	116.0900	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:03	115.9439	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:04	115.7794	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:05	115.7523	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:06	115.7349	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:07	115.5969	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:08	115.6066	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:09	115.7123	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:10	115.7052	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:11	115.6399	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:12	115.7389	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:13	115.7207	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/08/00	16:14	115.6637	00	00	01	N	N	N	N	N	N	N		Y	N	N	N	N	

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MISC	OCC	EXC	INVS	SUNT	MUNT	SNTU	SHT	Limit	RAW	MOD	ACP	LCK	CAL	DL Flags
S1	S1OPC	PERCENT	02/09/00	09:00	11.6808	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	09:06	9.3421	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	09:12	9.8656	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	09:18	8.5386	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	09:24	8.5772	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	09:30	8.9002	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	09:36	8.8401	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	09:42	9.1701	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	09:48	8.5952	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	09:54	7.2308	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	10:00	8.0650	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	10:06	6.9588	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	10:12	7.0130	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	10:18	8.0149	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	10:24	7.3100	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	10:30	6.7901	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	10:36	6.9366	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	10:42	6.5620	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	10:48	7.3654	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	10:54	6.4585	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	11:00	7.2601	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	11:06	6.8086	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	
S1	S1OPC	PERCENT	02/09/00	11:12	6.6983	00	00	01	N	N	N	N	N	N	N	N	40.5000	Y	N	N	N	N	

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MISC	OCC	EXC	INV	SUN	MNT	SUT	SHT	SINV	Limit	RAW	MOD	ACP	LCK	CAL	MCD	CID	MID	FID	DL	Flags
S1	S1PFLOW	SCFM	02/09/00	09:00	670917.5625	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006				
S1	S1PFLOW	SCFM	02/09/00	10:00	627018.8125	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006				
S1	S1PFLOW	SCFM	02/09/00	11:00	605805.4375	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006				
S1	S1CPFLOW	SCFH	02/09/00	09:00	40255052.000	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006	102			
S1	S1CPFLOW	SCFH	02/09/00	10:00	37621128.000	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006	102			
S1	S1CPFLOW	SCFH	02/09/00	11:00	36348328.000	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	006	102			

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MIS	OCC	EXC	INV	SUS	MNT	SUT	SHT	SINV	Limit	RAW	MOD	ACP	CKL	ALC	CAD	CID	MID	FID	DL	Flags
S1	S1PCO2	PERCENT	02/09/00	09:00	14.0690	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	S1PCO2	PERCENT	02/09/00	10:00	14.1734	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	S1PCO2	PERCENT	02/09/00	11:00	14.2326	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	S1CPCO2	PERCENT	02/09/00	09:00	14.0690	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	008	104			
S1	S1CPCO2	PERCENT	02/09/00	10:00	14.1734	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	008	104			
S1	S1CPCO2	PERCENT	02/09/00	11:00	14.2326	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	008	104			

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MIS	OCS	EXC	INV	SUN	MUS	SNT	SHU	SIT	SVN	Limit	RAW	MOD	ACP	CKL	LAC	CAD	CID	MID	FID	DL	Flags
S1	U1MEG	MEGAWATT	02/09/00	09:00	115.7913	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	U1MEG	MEGAWATT	02/09/00	10:00	115.8850	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					
S1	U1MEG	MEGAWATT	02/09/00	11:00	112.5268	00	00	01	N	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N					

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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MIS	OCC	EXC	INV	SUS	MAN	SNT	STU	SHT	Limit	RAW	MDO	ACP	LCK	CAL	DL Flags
S1	U1MEG	MEGAWATT	02/09/00	09:00	112.6395	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:01	113.4911	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:02	114.2330	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:03	114.6011	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:04	114.7786	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:05	115.1128	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:06	115.5331	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:07	115.6787	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:08	115.8119	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:09	116.1617	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:10	116.2400	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:11	116.0238	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:12	115.8096	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:13	115.7226	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:14	115.6661	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:15	115.4018	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:16	115.5046	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:17	115.6095	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:18	115.7444	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:19	115.7846	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:20	115.8496	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:21	115.7284	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:22	115.6036	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:23	115.4835	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:24	115.4269	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:25	115.3467	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:26	115.1728	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:27	115.3642	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:28	115.6418	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:29	115.9316	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:30	116.0765	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:31	116.0438	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:32	116.4567	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:33	116.5208	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:34	116.6452	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:35	116.6465	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:36	116.4831	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:37	116.1561	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:38	115.8924	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:39	115.7469	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:40	115.7455	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:41	115.7079	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:42	115.5309	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:43	115.5323	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:44	115.9299	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:45	115.7684	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:46	115.7015	00	00	01	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	

Report Date: 02/09/2000
Reporting Period: 02/09/2000 to 02/09/2000

Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MISC	OCC	EXC	INV	SUN	MST	SUT	SHT	Limit	RAW	MDO	ACP	LCK	CAL	DL Flags
S1	U1MEG	MEGAWATT	02/09/00	09:47	115.7784	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:48	116.0645	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:49	116.5399	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:50	116.7934	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:51	116.7518	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:52	116.8434	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:53	116.8099	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:54	116.6601	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:55	116.3110	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:56	116.2788	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:57	116.3696	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:58	116.2791	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	09:59	116.3188	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:00	116.4166	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:01	116.3883	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:02	116.4791	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:03	116.5592	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:04	116.8848	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:05	116.9905	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:06	116.7302	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:07	116.5221	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:08	116.3492	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:09	116.0564	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:10	115.9312	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:11	115.7928	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:12	115.6440	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:13	115.5538	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:14	115.4499	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:15	115.5575	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:16	115.6737	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:17	115.3484	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:18	115.3312	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:19	115.3607	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:20	115.3936	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:21	115.3903	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:22	115.3669	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:23	115.3831	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:24	115.4058	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:25	115.4763	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:26	115.4458	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:27	115.4143	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:28	115.4696	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:29	115.5249	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:30	115.4105	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:31	115.4289	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:32	115.4603	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:33	115.4612	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:34	115.4239	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	

Report Date: 02/09/2000
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Site	Parameter	Units	Date	HH MM	Value	RC	AC	MC	MISS	OCC	EXC	INVS	MUST	SMT	SUT	SHT	Limit	RAW	MOD	ACP	LCK	CAL	DL Flags
S1	U1MEG	MEGAWATT	02/09/00	10:35	115.2800	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:36	115.2506	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:37	115.2813	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:38	115.4239	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:39	115.3942	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:40	115.2389	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:41	115.5925	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:42	115.5490	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:43	115.5440	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:44	115.6740	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:45	115.7071	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:46	115.9522	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:47	116.5239	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:48	116.6927	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:49	116.9264	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:50	116.7560	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:51	116.4582	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:52	116.4002	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:53	116.2741	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:54	116.6441	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:55	116.5965	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:56	116.5792	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:57	116.5354	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:58	116.2850	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	10:59	116.0685	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:00	116.4530	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:01	116.8083	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:02	116.7769	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:03	116.9925	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:04	117.0919	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:05	116.8081	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:06	116.4611	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:07	116.1460	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:08	116.0194	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:09	115.8145	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:10	115.6765	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:11	115.7346	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:12	115.6498	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:13	115.5403	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	
S1	U1MEG	MEGAWATT	02/09/00	11:14	115.3114	00	00	01	N	N	N	N	N	N	N	N		Y	N	N	N	N	

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Tuesday, February 08, 2000 11:14

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	167	28	2.5	37.5	80	32
1B	155	20	2.0	35.5	70	28
1C	174	32	4.5	38.0	120	26
1D	268	238	53.0	38.5	1270	3

Total Precipitator Power 65.0 KW
Duct Opacity 10.8 %
Generator Load 114.4 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 107.1 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Tuesday, February 08, 2000 11:19

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	120	14	1.5	31.0	60	31
1B	160	20	1.5	37.0	50	27
1C	139	20	2.5	33.0	80	27
1D	268	238	53.0	38.5	1270	3

Total Precipitator Power 58.5 KW
Duct Opacity 10.7 %
Generator Load 114.6 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 107.0 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Tuesday, February 08, 2000 11:55

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	155	20	2.5	35.5	70	31
1B	155	18	1.5	36.5	50	27
1C	181	36	4.5	39.0	110	27
1D	266	238	52.5	38.0	1270	0

Total Precipitator Power 61.0 KW
Duct Opacity 10.5 %
Generator Load 114.7 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 106.7 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Tuesday, February 08, 2000 11:44

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	157	24	3.0	36.0	90	31
1B	153	18	1.5	35.0	50	27
1C	176	36	4.5	37.5	120	27
1D	268	238	53.0	38.5	1270	0

Total Precipitator Power 61.0 KW
Duct Opacity 10.3 %
Generator Load 114.7 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 107.1 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Tuesday, February 08, 2000 12:13

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	141	18	2.0	33.0	70	30
1B	179	28	2.5	39.0	80	28
1C	176	34	4.5	37.5	130	27
1D	263	234	51.5	38.0	1250	2

Total Precipitator Power 60.5 KW
Duct Opacity 10.5 %
Generator Load 114.4 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 107.1 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Tuesday, February 08, 2000 14:15

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	160	24	2.0	36.5	70	32
1B	174	28	2.5	37.0	90	27
1C	181	34	4.0	38.5	100	27
1D	268	238	53.0	38.5	1280	0

Total Precipitator Power 62.5 KW
Duct Opacity 9.6 %
Generator Load 114.6 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 107.4 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Tuesday, February 08, 2000 16:33

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	155	22	3.0	35.5	90	31
1B	162	22	2.0	36.5	60	28
1C	174	34	5.0	37.5	130	26
1D	268	234	52.0	38.5	1260	4

Total Precipitator Power 62.0 KW
Duct Opacity 9.8 %
Generator Load 115.0 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 107.9 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Tuesday, February 08, 2000 15:05

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	141	22	3.0	32.0	110	30
1B	183	34	4.5	38.5	130	26
1C	167	28	4.0	37.0	100	27
1D	266	238	52.5	38.0	1270	5

Total Precipitator Power 63.5 KW
Duct Opacity 9.8 %
Generator Load 115.0 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 107.3 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Tuesday, February 08, 2000 15:27

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	129	14	2.0	32.0	70	32
1B	204	42	4.5	40.5	130	27
1C	169	32	4.5	36.5	120	27
1D	263	236	52.5	38.0	1270	3

Total Precipitator Power 63.5 KW
Duct Opacity 9.2 %
Generator Load 115.2 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 107.6 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Tuesday, February 08, 2000 15:57

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	155	22	2.5	35.5	90	31
1B	136	16	2.0	32.5	60	27
1C	165	28	3.0	37.0	80	25
1D	270	238	53.5	39.0	1280	0

Total Precipitator Power 61.5 KW
Duct Opacity 9.8 %
Generator Load 115.2 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 107.4 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Wednesday, February 09, 2000 09:11

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	136	14	2.0	33.0	60	32
1B	179	26	3.0	38.0	100	25
1C	193	38	4.5	40.5	120	28
1D	284	238	54.5	40.0	1280	0

Total Precipitator Power 64.0 KW
Duct Opacity 9.0 %
Generator Load 114.4 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 80.6 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Wednesday, February 09, 2000 09:24

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	162	24	2.5	37.0	80	32
1B	190	36	4.5	38.0	140	27
1C	174	32	4.5	37.5	110	28
1D	263	238	52.0	37.5	1270	0

Total Precipitator Power 65.0 KW
Duct Opacity 8.7 %
Generator Load 114.0 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 79.3 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Wednesday, February 09, 2000 10:00

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	165	24	2.5	36.0	80	30
1B	148	18	2.5	34.0	60	27
1C	157	28	4.0	35.0	110	28
1D	268	238	53.0	38.5	1280	0

Total Precipitator Power 61.5 KW
Duct Opacity 8.6 %
Generator Load 115.2 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 69.4 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Wednesday, February 09, 2000 10:28

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	127	12	1.0	32.0	30	32
1B	155	20	1.5	35.0	50	28
1C	174	36	4.0	37.0	120	28
1D	263	238	52.0	37.5	1270	0

Total Precipitator Power 60.5 KW
Duct Opacity 8.7 %
Generator Load 114.2 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 66.2 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Wednesday, February 09, 2000 11:01

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	157	22	2.0	36.5	70	31
1B	193	40	5.0	38.0	150	27
1C	183	40	5.5	38.0	160	27
1D	266	238	52.5	38.0	1280	1

Total Precipitator Power 65.5 KW
Duct Opacity 8.5 %
Generator Load 115.5 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 60.7 MW

A.V.C. SPECIALISTS, INC. PRECIPITATOR SUPERVISORY SYSTEM
Alliant Energy -- WP&L
Nelson Dewey Generating Station
Wednesday, February 09, 2000 11:29

Unit 1, Precipitator No. 1 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
1A	129	14	2.0	31.5	80	31
1B	160	22	1.5	35.5	60	29
1C	148	22	3.0	34.5	80	28
1D	270	238	53.0	38.5	1280	0

Total Precipitator Power 62.5 KW
Duct Opacity 9.2 %
Generator Load 115.4 MW

Unit 2, Precipitator No. 2 Readings: Instantaneous

POWERCON	Pri V	Pri A	Pri KW	Sec KV	Sec mA	Spk/Min
2A	-	-	-	-	-	-
2B	-	-	-	-	-	-
2C	-	-	-	-	-	-
2D	-	-	-	-	-	-

Total Precipitator Power 0.0 KW
Duct Opacity -0.2 %
Generator Load 64.5 MW

SUMMARY OF RESULTS CALCULATIONS

$$Vm\ (std) = 17.647 \times Vm \times \left[\frac{P_{bar} + \frac{DH}{13.6}}{(460 + Tm)} \right] \times Y$$

$$Vw\ (std) = 0.0471 \times Vlc$$

Vlc = water + silica net

$$Bws = \left[\frac{Vw\ (std)}{Vw\ (std) + Vm\ (std)} \right]$$

$$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + [0.28 \times (100 - \%CO_2 - \%O_2)]$$

$$MS = Md \times (1 - Bws) + (18 \times Bws)$$

$$Vs = \sqrt{\frac{(Ts + 460)}{Ms \times Ps}} \times \sqrt{DP} \times Cp \times 85.49$$

Cp = pitot tube correction factor
Ps = absolute flue gas pressure
Ms = molecular weight of gas (lb/lb mole)
Md = dry molecular weight of gas (lb/lb mole)
Bws = water vapor in gas stream proportion by volume

$$Acfm = Vs \times Area\ (of\ stack\ or\ duct) \times 60$$

$$Dscfm = Acfm \times 17.647 \times \left[\frac{Ps}{(460 + Ts)} \right] \times (1 - Bws)$$

$$Scfm = Acfm \times 17.647 \times \left[\frac{Ps}{(460 + Ts)} \right]$$

$$Scfh = Scfm \times 60 \frac{min}{hr}$$

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NOMENCLATURE

A = Cross-sectional area of stack or duct, ft^2
A_n = Cross-sectional area of nozzle, ft^2
B_{ws} = Water vapor in gas stream, proportion by volume
C_a = Acetone blank residue concentration, g/g
C_{acf} = Concentration of particulate matter in gas stream at actual conditions, gr/acf
C_p = Pitot tube coefficient, dimensionless
C_s = Concentration of particulate matter in gas stream, dry basis, corrected to standard conditions, gr/dscf
IKV = Isokinetic sampling variance, must be $.90 \leq IKV \leq 1.10$
M_d = Dry molecular weight of gas, lb/lb-mole
m_n = Total amount of particulate matter collected, grams
M_s = Molecular weight of gas, wet basis, lb/lb-mole
M_w = Molecular weight of water, 18.0 lb/lb-mole
m_a = Mass of residue of acetone after evaporation, grams
P_{bar} = Barometric pressure at testing site, in. Hg
P_g = Static pressure of gas, in. Hg (in. H_2O/13.6)
P_s = Absolute pressure of gas, in. Hg = $P_{bar} + P_g$
P_{std} = Standard absolute pressure, 29.92 in. Hg
Q_{acfm} = Actual volumetric gas flow rate, acfm
Q_{sd} = Dry volumetric gas flow rate corrected to standard conditions, dscf/hr
R = Ideal gas constant, 21.85 in. Hg-ft^3/°R-lb-mole
T_m = Absolute dry gas meter temperature, °R
T_s = Absolute gas temperature, °R
T_{std} = Standard absolute temperature, 528°R
V_a = Volume of acetone blank, ml
V_{aw} = Volume of acetone used in wash, ml
V_{1c} = Total volume of liquid collected in impingers and silica gel, ml
V_m = Volume of gas sample as measured by dry gas meter, dcf
$V_{m(std)}$ = Volume of gas sample measured by dry gas meter, corrected to standard conditions, dscf
v_s = Gas velocity, ft/sec
$V_{w(std)}$ = Volume of water vapor in gas sample, corrected to standard conditions, scf
W_a = Weight of residue in acetone wash, grams
Y = Dry gas meter calibration factor
ΔH = Average pressure differential across the orifice meter, in. H_2O
Δp = Velocity head of gas, in. H_2O
ρ_a = Density of acetone, 0.7855 g/ml (average)
ρ_w = Density of water, 0.002201 lb/ml
θ = Total sampling time, minutes
K_1 = 17.64 °R/in. Hg
K_2 = 0.04707 ft^3/ml
K_4 = 0.09450/100 = 0.000945
K_p = Pitot tube constant, $85.49 \frac{ft}{sec}\left[\frac{(lb/lb-mole)(in.Hg)}{(°R)(in.H_2O)}\right]^{1/2}$
%EA = Percent excess air
$\%CO_2$ = Percent carbon dioxide by volume, dry basis
$\%O_2$ = Percent oxygen by volume, dry basis
%CO = Percent carbon monoxide by volume, dry basis
$\%N_2$ = Percent nitrogen by volume, dry basis
0.264 = Ratio of O_2 to N_2 in air, v/v
0.28 = Molecular weight of N_2 or CO, divided by 100
0.32 = Molecular weight of O_2 divided by 100
0.44 = Molecular weight of CO_2 divided by 100
13.6 = Specific gravity of mercury (Hg)

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CALCULATION FORMULAS

1. $$V_{m(std)} = V_m Y \left(\frac{T_{std}}{T_m}\right)\left(\frac{P_{bar} + \frac{\Delta H}{13.6}}{P_{std}}\right) = K_1 V_m Y \frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}$$

2. $$V_{w(std)} = V_{lc}\left(\frac{\rho_w}{M_w}\right)\left(\frac{RT_{std}}{P_{std}}\right) = K_2 V_{lc}$$

3. $$B_{ws} = \frac{V_{w(std)}}{V_{m(std)} + V_{w(std)}}$$

4a. $$C_a = \frac{m_a}{V_a \rho_a}$$

4b. $$W_a = C_a V_{aw} \rho_a$$

5. $$C_S = (15.43 \text{ grains/gram})\,(m_n / V_{m(std)})$$

6. $$C_{acf} = 15.43 K_i \left(\frac{m_n P_s}{V_{w(std)} + V_{m(std)}\ T_s}\right)$$

7. $$\%EA = \left(\frac{\%O_2 - (0.5\ \%CO}{0.264\ \%N_2 - (\%O_2 - 0.5\ \%CO)}\right) \times 100$$

8. $$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$

9. $$M_s = M_d(1 - B_{ws}) + 18.0 B_{ws}$$

10. $$v_s = K_p C_p \sqrt{\frac{\Delta P\ T_s}{P_s M_s}}$$

11. $$Q_{acfm} = v_s A(60_{sec/min})$$

12. $$Q_{sd} = (3600_{sec/hr})(1 - B_{ws})\ v_s \left(\frac{T_{std} P_s}{T_s P_{std}}\right) A$$

13. $$E \text{ (emission rate, lbs/hr)} = Q_{std}(C_s / 7000 \text{ grains/lb})$$

14. $$IKV = \frac{T_s V_{m(std)} P_{std}}{T_{std} v_s \theta A_n P_s 60(1 - B_{ws})} = K_4 \frac{T_s V_{m(std)}}{P_s v_s A_n \theta (1 - B_{ws})}$$

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MERCURY CALCULATIONS

Determination of Speciated Mercury

Concentration

$$\frac{\text{ug of Mercury detected} \times \frac{10^{-6}\,\text{g}}{\text{ug}}}{453.6\,\text{g/lb}} = \text{lbs Mercury/sample}$$

$$\frac{\text{lbs Mercury/sample}}{\text{Vm(std)}} = \text{lbs Mercury/dscf}$$

Emission Rates

$$\text{lbs Mercury/hr} = \text{lbs/dscf} \times \text{dscf/min} \times 60\,\text{min/hr}$$

$$\text{lbs Mercury}/10^{12}\,\text{Btu} = \text{lbs/dscf} \times F_d\,\text{Factor}\left(\text{dscf}/10^{6}\,\text{Btu}\right) \times \frac{20.9\%}{20.9\% - O_2\%} \times 10^{6}$$

Mercury Fractions

Elemental Mercury Catch – mercury collected in the acidified hydrogen peroxide (HNO_3-H_2O_2) and potassium permanganate (H_2SO_4-$KMnO_4$) impinger solutions.

Oxidized Mercury Catch – mercury collected in the aqueous potassium chloride (KCl) impinger solution.

Particle-bound Mercury Catch – mercury associated with the particulate matter collected in the front half of the sampling train.

Determination of Mercury Available from Coal

$$\text{lbs Mercury/hr} = \frac{\text{ug Mercury}}{\text{g Coal}}(\text{dry}) \times \frac{10^{-6}\,\text{g}}{\text{ug}} \times \frac{\text{lbs Coal (wet)}}{\text{hr}} \times (1 - B_{ws})\,\text{moisture corr.}$$

$$\text{lbs Mercury}/10^{12}\,\text{Btu} = \frac{\text{lbs Mercury}}{\text{hr}} \div \frac{10^{12}\,\text{Btu}}{\text{hr}}$$

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EMISSION RATE CALCULATIONS

A pollutant emission rate (E), expressed as pounds of pollutant per million Btu heat input from the fuel combusted can be calculated by several methods as follows:

1. $C = C_s/7000$ where, C = pollutant concentration, lb/dscf
   c_s = pollutant concentration, grains/dscf

2. If fuel flow is monitored and the fuel combusted during the test is sampled and analyzed for gross calorific value, then:

$$E = \frac{Q_{sd}C}{\text{fuel flow rate (lb / hr) GCV}} \times 10^6$$

where, E = lbs per million Btu
GCV = gross calorific value, Btu / lb
Q_{sd} = dry volumetric gas flow at standard conditions, dscf / hr

3. If an integrated gas sample is taken during the test and analyzed for $\%CO_2$ or $\%O_2$, dry basis by volume, with an Orsat gas analyzer, then

$$E = C\,F_c \frac{100}{(\%CO_2)} \text{ or, } E = C\,F \frac{20.9}{(20.9 - \%O_2)} \quad \text{where,}$$

$\%CO_2$ and $\%O_2$ are expressed as percent; and, for example, for subbituminous and bituminous coals:

F_c = a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted, 1800 scf CO_2/million Btu.

F = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted, 9780 dscf/million Btu.

4. If fuel sample increments are taken and composited during the test and an ultimate analysis is performed and the GCV is determined, then

$$F_c = \frac{321 \times 10^3 (\%C)}{GCV} \quad \text{where, } \%C = \text{carbon content by weight expressed as percent}$$

$$F = \frac{[3.64\,(\%H) + 1.53\,(\%C) + 0.57\,(\%S) + 0.14\,(\%N) - 0.46\,(\%O_2)]}{GVC} \times 10^6$$

where, H, C, S, N, and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent) respectively.

5. If fuels other than subbituminous and bituminous coals are fired, other F-factors than those above will apply; and, if combinations of different fuels are fired, the F-factors must be prorated according to the fraction of the total heat input derived from each type of fuel.

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STP 1-PL 1 A: SIA , IN

TEST SUPPORT DATA

TEST RUN NO. 1

COMPANY: ALLIANS ENERGY
PLANT: NELSON DEWEY
TEST LOCATION: UNIT 1 INLET
CLIENT: ALLIANT
OPERATOR: DH
DATE: 2/8/00
CONTROL BOX: E54 POT. NO.: E54.
METER NO.: E54
METER CALIBRATION FACTOR: 1.004
PITOT ID NO.: 391 A
PITOT TUBE COEFFICIENT: 0.836
PORT LENGTH: 22 in.
PORT SIZE: 4 in.
PORT TYPE: FLANGE

IMPINGER H_2O
FINAL: 4704.3 ml/gm
INITIAL: 4554.9 ml/gm
GAIN: 149.4 ml/gm

SILICA GEL:
FINAL WT: 729.1 gm
INITIAL WT: 713.1 gm
WT. GAIN: 16.0 gm

TOTAL H_2O COLLECTED: 165.4
DESCRIPTION OF IMPINGER H_2O:
SILICA GEL EXHAUSTED?:
IMPINGERS RECOVERED BY:
SILICA GEL WEIGHED BY:

COMMENTS & NOTES

THIMBLE NO: 132 TARE WT: 3.2905
FILTER NO: – TARE WT: –
BAROMETRIC PRESSURE in. Hg: 29.75
FLUE PRESSURE in. H_2O: +10.5
FLUE PRESSURE in. Hg ABS: 30.52
PROBE LENGTH: 5 ft.
PROBE LINER MATERIAL: GLASS
NOZZLE IDENTIFICATION NO: #2 SET 3
CALIBRATED NOZZLE DIAMETER: 0.236
LEAK CHECK: PRE: 0.00 POST: 0.010 @ 19/11 in. Hg
DUCT SHAPE: RECT. DIAMETER:
DUCT AREA: 96.00 sq. ft. L 2.6667' W 18' x 2
DISTURBANCE UPSTREAM: DOWNSTREAM:
TEST LENGTH: 90 min
MINUTES PER POINT: 5
TOTAL NUMBER OF TRAVERSE POINTS: 18
GAS ANALYSIS (ORSAT/FYRITE):
CO_2: 14.4 14.4 14.4
O_2: 4.4 4.4 4.4

PITOT LEAK CHECK: PRE POST
ΔH@
SAMPLES REMOVED FROM SITE BY:

For computer data entry: Supervisor, please complete.
Do you want to enter a fuel analysis? Y ☐ N ☐
What value do you want to use? F = 9,780 F_c = 1,800 Other =
Circle to indicate "Yes" or add other value if not given.

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FIELD TEST DATA SHEET FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, IN

PROJECT Alliant Energy - Nelson Dewey

TEST RUN NO. 1

TEST LOCATION Unit 1 Inlet

DATE 2/8/00 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	1.598 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.702 Meter Rate cfm	Pump Vacuum in. Hg	×5 Notes	Probe Temp. °F	Filter Holder Temp. °F	Imping Outle Temp.
1-1	1.10	1.05	1000	31.753	1.67	466	48	45	0.74	5		367	222	64
2	1.00	1.00	1005	35.3	1.588	467	48	48	0.702	5	35.43	334	223	48
3	1.05	1.03	1010	38.1	1.63	465	47	49	0.723	5	38.94	287	222	48
			1015	41.626							42.56			
2-1	1.10	1.05	1018	41.63	1.67	498	42	47	0.74	4		355	223	48
2	0.98	0.99	1023	44.98	1.57	496	51	47	0.69	4	46.25	378	224	48
3	1.20	1.10	1028	48.40	1.74	492	51	46	0.77	4	49.72	297	222	49
			1033	51.575							53.58			
3-1	1.20	1.10	10:34	51.575	1.74	507	53	47	0.77	4		312	222	49
2	1.10	1.05	10:39	54.99	1.67	507	55	49	0.74	5	57.44	372	221	49
3	0.97	0.98	10:44	58.36	1.56	504	53	47	0.69	5	61.12	300	219	49
			10:49	61.765				(leak	check)		64.56			
4-1	1.20	1.10	11:27	62.709	1.74	519	54	47	0.77	8		220	225	45
2	1.30	1.14	11:32	66.19	1.81	497	47	48	0.80	10	69.35	353	223	47
3	1.40	1.18	11:37	69.71	1.87	519	51	45	0.83	12	73.35	294	221	48
			11:42	73.355							77.50			
1-1	1.20	1.10	11:44	75.55	1.74	461	50	46	0.77	13		298	217	50
2	1.10	1.05	11:49	76.28	1.67	462	51	46	0.74	15	81.35	325	212	50
3	1.10	1.05	11:54	80.63	1.67	467	50	46	0.74	16	85.03	284	212	51
			11:59	84.291							88.71			
2-1	1.10	1.05	12:00	84.291	1.67	497	48	46	0.74	18		283	209	52
2	1.00	1.00	12:05	88.0	1.59	496	48	45	0.70	19	92.39	354	209	54
3	1.20	1.10	12:10	91.48	1.74	494	48	45	0.77	19	95.90	290	208	56
			12:15	94.813							99.75			
		19.12				490								
		1.062		63.663	1.686		49.7	46.6						

Form 1026 [Rev. 5/27]

950 48.2

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MOSTARDI-PLATT ASSOCIATES, INC.
TEST SUPPORT DATA

TEST RUN NO. 2

COMPANY: ALLIANT ENERGY
PLANT: NELSON DEWEY
TEST LOCATION: UNIT 1 INLET
CLIENT: ALLIANT
OPERATOR: DH
DATE: 2/8/00
CONTROL BOX: E54 POT. NO.: E54
METER NO.: E54
METER CALIBRATION FACTOR: 1.004
PITOT ID NO.: 391A
PITOT TUBE COEFFICIENT: 0.836
PORT LENGTH: 22 in.
PORT SIZE: 4 in.
PORT TYPE: FLANGE

IMPINGER H_2O
FINAL: 4673.7 ml/gm
INITIAL: 4544.0 ml/gm
GAIN: 129.7 ml/gm

SILICA GEL:
FINAL WT: 798.9 gm
INITIAL WT: 783.5 gm
WT. GAIN: 15.4 gm

TOTAL H_2O COLLECTED: 145.1
DESCRIPTION OF IMPINGER H_2O:
SILICA GEL EXHAUSTED?:
IMPINGERS RECOVERED BY:
SILICA GEL WEIGHED BY:

COMMENTS & NOTES

THIMBLE NO: 131 TARE WT: 3.1131
FILTER NO: — TARE WT: —
BAROMETRIC PRESSURE in. Hg: 29.75
FLUE PRESSURE in. H_2O: +10.5
FLUE PRESSURE in. Hg ABS: 30.52
PROBE LENGTH: 5 ft.
PROBE LINER MATERIAL: GLASS
NOZZLE IDENTIFICATION NO: #1 SET 3
CALIBRATED NOZZLE DIAMETER: 0.196
LEAK CHECK: PRE: 0.00 POST: 0.00 @ 19/20 in. Hg
DUCT SHAPE: RECT. DIAMETER: —
DUCT AREA: 96.00 sq. ft. L 2.6667' W 18' x 2 (36)
DISTURBANCE UPSTREAM: DOWNSTREAM:
TEST LENGTH: 120 min
MINUTES PER POINT: 5
TOTAL NUMBER OF TRAVERSE POINTS: 24
GAS ANALYSIS (ORSAT/FYRITE):
CO_2: 14.5 14.5 14.5
O_2: 4.3 4.3 4.3

PITOT LEAK CHECK: PRE POST
ΔH@
SAMPLES REMOVED FROM SITE BY:

For computer data entry: Supervisor, please complete.
Do you want to enter a fuel analysis? Y ☐ N ☐
What value do you want to use? F = 9,780 F_c = 1,800 Other = _____
Circle to indicate "Yes" or add other value if not given.

Form 1053 [Rev. 6/97]

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FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT ALLIANT-Nelson Dewey
TEST RUN NO. 2
TEST LOCATION UNIT 1 Inlet

DATE 2/8/00 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	0.702 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.463 Meter Rate cfm	Pump Vacuum in. Hg	Notes	Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
1-1	1.10	1.05	1400	95.22	0.74	465	48	45	0.49	5		271	219	47
2	0.93	0.96	1405	97.55	0.68	466	47	46	0.45	5	97.65	301	218	47
3	0.98	0.99	1410	99.82	0.69	464	47	45	0.46	5	99.88	255	217	47
			1415	102.07							102.17			
2-1	1.10	1.05	14:19	102.07	0.74	490	48	46	0.49	5		242	217	47
2	0.90	0.95	14:24	104.42	0.67	494	49	46	0.44	5	104.60	323	218	48
3	1.10	1.05	14:29	106.70	0.74	491	50	46	0.49	5	106.80	276	219	48
			14:34	109.03							109.22			
3-1	1.20	1.10	14:35	109.03	0.77	497	50	48	0.51	6		253	221	49
2	1.00	1.0	14:40	111.47	0.70	502	51	47	0.46	7	111.76	379	221	49
3	0.87	0.93	14:45	113.83	0.65	500	52	47	0.43	7	114.07	292	219	46
			14:50	116.12							116.23			
4-1	1.30	1.14	14:52	116.12	0.80	517	51	48	0.53	8		300	222	50
2	1.30	1.14	14:57	118.56	0.80	517	53	48	0.53	9	118.87	397	230	50
3	1.30	1.14	15:02	121.03	0.80	516	53	48	0.53	9	121.51	325	221	50
			15:07	123.53							124.15			
1-1	1.10	1.05	15:10	123.53	0.74	461	52	49	0.49	10		267	220	50
2	0.96	0.98	15:15	126.30	0.69	463	52	49	0.45	10	126.58	351	220	50
3	0.94	0.97	15:20	128.46	0.68	464	53	49	0.45	10	128.85	275	221	50
			15:25	130.84							131.09			
2-1	0.95	0.97	15:26	130.84	0.68	492	52	49	0.45	10		282	221	52
2	0.94	0.97	15:31	133.23	0.68	493	52	49	0.45	11	133.35	360	221	50
3	1.10	1.05	15:36	135.59	0.74	491	53	49	0.49	12	135.58	278	219	50
			15:41	137.87							138.01			

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FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT ALLIANT - NELSON DENNEY
TEST RUN NO. 2
TEST LOCATION UNIT 1 INLET

DATE 2/8/00 PAGE 2 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	0.702 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.463 Meter Rate cfm	Pump Vacuum in. Hg	Notes	Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
3-1	1.20	1.10	15:43	137.87	0.77	502	53	50	0.51	13	138.01	293	220	51
2	0.98	0.99	15:48	140.38	0.70	504	53	49	0.49	14	140.54	391	221	51
3	0.95	0.97	15:53	142.68	0.68	503	54	50	0.45	14	142.83	297	222	51
			15:58	144.92							145.09			
4-1	1.30	1.14	15:59	144.92	0.80	519	53	50	0.53	15		321	218	52
2	1.20	1.10	16:04	147.50	0.77	519	53	50	0.51	16	147.73	592	220	52
3	1.10	1.05	16:09	149.97	0.74	518	53	50	0.49	17	150.26	320	221	53
			16:14	152.41							152.69			

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MOSTARDI-PLATT ASSOCIATES, INC.
TEST SUPPORT DATA

TEST RUN NO. 3

COMPANY: ALLIANT ENERGY
PLANT: NELSON DEWEY
TEST LOCATION: UNIT 1 INLET
CLIENT: ALLIANT
OPERATOR: D.H.
DATE: 2/9/00
CONTROL BOX: E-54 POT. NO.: E-54
METER NO.: E-54
METER CALIBRATION FACTOR: 1.004
PITOT ID NO.: 391A
PITOT TUBE COEFFICIENT: 0.836
PORT LENGTH: 22 in.
PORT SIZE: 4 in.
PORT TYPE: FLANGE

IMPINGER H_2O
FINAL: 4735.1 ml/gm
INITIAL: 4598.3 ml/gm
GAIN: 136.8 ml/gm

SILICA GEL:
FINAL WT: 736.2 gm
INITIAL WT: 719.9 gm
WT. GAIN: 16.3 gm

TOTAL H_2O COLLECTED: 153.1
DESCRIPTION OF IMPINGER H_2O:
SILICA GEL EXHAUSTED?:
IMPINGERS RECOVERED BY:
SILICA GEL WEIGHED BY:

COMMENTS & NOTES

THIMBLE NO: 109 TARE WT: 3.4836
FILTER NO: – TARE WT: –
BAROMETRIC PRESSURE in. Hg: 29.87
FLUE PRESSURE in. H_2O: + 10.5
FLUE PRESSURE in. Hg ABS: 30.64
PROBE LENGTH: 5 ft.
PROBE LINER MATERIAL: GLASS
NOZZLE IDENTIFICATION NO: #1 Set 3
CALIBRATED NOZZLE DIAMETER: 0.196
LEAK CHECK: PRE: 0.00 POST: 0.00 @ 19/20 in. Hg
DUCT SHAPE: Rect. DIAMETER: –
DUCT AREA: 96.00 sq. ft. L 2.6667' W 18' x 2
DISTURBANCE UPSTREAM: DOWNSTREAM:
TEST LENGTH: 120 min
MINUTES PER POINT: 5
TOTAL NUMBER OF TRAVERSE POINTS: 24
GAS ANALYSIS (ORSAT/FYRITE):
CO_2: 15.0 15.0 15.0
O_2: 3.8 3.8 3.8

PITOT LEAK CHECK: PRE POST
ΔH@
SAMPLES REMOVED FROM SITE BY:

For computer data entry: Supervisor, please complete.
Do you want to enter a fuel analysis? Y ☐ N ☐
What value do you want to use? F = 9,780 F_c = 1,800 Other =
Circle to indicate "Yes" or add other value if not given.

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FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT Alliant Energy - Nelson Dewey
TEST RUN NO. 3
TEST LOCATION Unit 1 Inlet

DATE 2/9/00 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	0.754 Orifice (H) in. H_2O	Stack Temp (t) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.498 Meter Rate cfm	Pump Vacuum in. Hg	Notes	Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
1-1	1.00	1.00	09:00	57.89	0.754	449	72	75	0.498	3		280	222	52
2	1.10	1.05	09:05	55.51	0.79	460	69	74	0.522	3	55.38	365	224	53
3	1.10	1.05	09:10	58.05	0.79	465	71	74	0.522	3	57.99	261	223	52
			09:15	60.60							60.60			
2-1	1.10	1.05	09:17	60.60	0.79	488	73	74	0.522	3		236	223	55
2	0.96	0.98	09:22	63.13	0.74	494	75	75	0.488	3	63.21	372	224	55
3	1.10	1.05	09:27	65.62	0.79	495	76	76	0.522	3	65.65	300	224	55
			09:32	68.22							68.27			
3-1	1.30	1.14	09:34	68.22	0.86	509	77	76	0.568	5		247	224	56
2	1.20	1.10	09:39	70.91	0.83	511	74	75	0.546	5	71.10	384	222	55
3	0.96	0.98	09:44	73.51	0.74	510	74	76	0.488	5	73.83	313	226	56
			09:49	76.03							76.27			
4-1	1.30	1.14	09:50	76.03	0.86	523	72	73	0.568	5		353	223	56
2	1.30	1.14	09:55	78.75	0.86	525	74	73	0.568	6	79.11	396	224	55
3	1.40	1.18	10:00	81.42	0.89	527	76	74	0.589	7	81.95	315	225	56
			10:05	84.13							84.90			
4-1	1.40	1.18	10:07	84.13	0.89	528	75	75	0.589	8		266	226	57
2	1.30	1.14	10:12	86.87	0.86	530	75	74	0.568	8	87.84	402	224	56
3	1.30	1.14	10:17	89.60	0.86	530	76	75	0.568	10	90.68	354	226	57
			10:22	92.42							93.52			
3-1	1.30	1.14	10:24	92.42	0.86	515	75	75	0.568	10		272	225	58
2	1.10	1.05	10:29	95.24	0.79	515	77	74	0.522	10	96.36	389	225	59
3	0.85	0.92	10:34	97.90	0.70	512	78	74	0.459	11	98.97	317	225	60
			10:39	100.45							101.27			

Form 1026 [Rev. 5/27]

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FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT Alliant Energy - Nelson Dewey
TEST RUN NO. 3
TEST LOCATION Unit 1 Inlet

DATE 2/9/00 PAGE 2 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft³	0.794 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.498 Meter Rate cfm	Pump Vacuum in. Hg	Notes	Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
2-1	1.10	1.05	10:40	100.45	0.79	504	77	76	0.522	11		260	225	60
2	0.94	0.97	10:45	103.16	0.73	504	75	76	0.482	11	103.88	377	209	60
3	1.10	1.05	10:50	105.75	0.77	499	74	75	0.522	12	106.29	303	210	60
			10:55	108.26							108.90			
1-1	1.20	1.10	10:56	108.26	0.83	471	73	75	0.546	13		295	215	59
2	1.00	1.00	11:01	111.00	0.79	472	73	74	0.498	14	111.63	359	221	59
3	1.10	1.05	11:06	113.60	0.79	473	72	74	0.522	14	114.12	286	221	60
			11:11	116.26							116.73			

Form 1026 [Rev. 5/27]

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MO RD: ..ATT ..SOC..ES, ..C.

TEST SUPPORT DATA

TEST RUN NO. 1

COMPANY: Alliant Energy

PLANT: Nelson Dewey

TEST LOCATION: Unit 1 Outlet

CLIENT: Alliant Energy

OPERATOR: D. Helm

DATE: 2-8-00

CONTROL BOX: E31 POT. NO.: E31

METER NO.: E31

METER CALIBRATION FACTOR: 1.002

PITOT ID NO.: 258A

PITOT TUBE COEFFICIENT: 0.833

PORT LENGTH: 20 in.

PORT SIZE: 4 in.

PORT TYPE: Flange

IMPINGER H_2O

FINAL: 4767.7 ml/gm

INITIAL: 4636.8 ml/gm

GAIN: 130.9 ml/gm

SILICA GEL:

FINAL WT: 719.6 gm

INITIAL WT: 708.9 gm

WT. GAIN: 10.7 gm

TOTAL H_2O COLLECTED: 141.6

DESCRIPTION OF IMPINGER H_2O:

SILICA GEL EXHAUSTED?:

IMPINGERS RECOVERED BY:

SILICA GEL WEIGHED BY:

COMMENTS & NOTES

THIMBLE NO: ① 129 ② 130 TARE WT: ① 7.3835 ② 3.2499

FILTER NO: TARE WT:

BAROMETRIC PRESSURE in. Hg: 29.75

FLUE PRESSURE in. H_2O: +7.0

FLUE PRESSURE in. Hg ABS: 30.265

PROBE LENGTH: 6 ft.

PROBE LINER MATERIAL: Glass

NOZZLE IDENTIFICATION NO: N/A

CALIBRATED NOZZLE DIAMETER: 0.237 / 0.197

LEAK CHECK: PRE: 0.008 POST: 0.006 @ 13 in. Hg

DUCT SHAPE: Rectangular DIAMETER:

DUCT AREA: 48.00 sq. ft. L 18' W 2'8"

DISTURBANCE UPSTREAM: DOWNSTREAM:

TEST LENGTH: 100 min

MINUTES PER POINT: 5

TOTAL NUMBER OF TRAVERSE POINTS: 20

GAS ANALYSIS (ORSAT/FYRITE):

CO_2: 14.3 14.3 14.3

O_2: 4.2 4.2 4.2

PITOT LEAK CHECK: PRE 3.50" H_2O POST 3.50" H_2O

$\Delta H@$ 1.847

SAMPLES REMOVED FROM SITE BY:

For computer data entry: Supervisor, please complete.

Do you want to enter a fuel analysis? Y ☐ N ☐

What value do you want to use? F = 9,780 F_c = 1,800 Other = _____

Circle to indicate "Yes" or add other value if not given.

Form 1053 [Rev. 6/97]

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FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT Alliant Energy - Nelson Dewey Plant
TEST RUN NO. 1
TEST LOCATION Unit 1 outlet

DATE 2-8-00 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	0.7418 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.4708 Meter Rate cfm	Pump Vacuum in. Hg	x 5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
1-1	0.69	0.8307	1018	1.270	1.13	482	47	42	0.577	4	2.885		246	240	65 °F
-2	0.80	0.8944	1023	4.180	1.23	485	53	43	0.601	4	3.004	4.155	247	239	
-3	1.30	1.1402	1028	7.180	2.00	488	54	43	0.766	6	3.830	7.159	249	242	
-4	1.45	1.2042	1033	10.930	2.23	488	55	44	0.809	8	4.045	10.989	246	243	
		1.0174	1038	15.010	1.648	485.8	52.25	43.0				15.034			
2-1	0.75	0.8660	1113	15.185	0.55	492	51	43	0.402	3	2.010		248	251	
-2	1.10	1.0488	1118	17.210	0.81	494	52	43	0.487	4	2.434	17.195	247	249	
-3	1.42	1.1916	1123	19.640	1.04	495	54	44	0.553	5	2.766	19.629	246	247	
-4	1.59	1.2247	1128	22.380	1.10	494	54	44	0.569	5	2.843	22.395	251	247	
		1.0828	1133	25.250	0.875	493.75	52.75	43.5				25.238			
3-1	0.77	0.8775	1136	25.250	0.57	496	56	45	0.413	3	2.066		247	241	
-2	0.84	0.9165	1141	27.330	0.62	502	56	45	0.432	3	2.158	27.316	246	243	
-3	1.31	1.1446	1146	29.460	0.97	504	57	46	0.539	5	2.694	29.474	251	241	
-4	1.35	1.1619	1151	32.190	1.00	503	58	46	0.547	5	2.735	32.168	249	240	
		1.0251	1156	34.910	0.790	501.25	56.75	45.5				34.903			

Form 1026 [Rev. 5/27]

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FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT Alliant Energy - Nelson Dewey Plant
TEST RUN NO. 1
TEST LOCATION Unit 1 Outlet

DATE 2-8-00 PAGE 2 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	0.7418 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.4708 Meter Rate cfm	Pump Vacuum in. Hg	× 5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
4-1	0.61	0.7810	1207	34.910	0.45	502	58	50	0.368	3	1.839	34.903	249	237	≤68°F
-2	0.71	0.8426	1212	36.760	0.53	506	58	50	0.397	3	1.984	36.742	255	239	
-3	0.87	0.9327	1217	38.710	0.65	505	59	50	0.439	3	2.196	38.726	246	239	
-4	1.45	1.204	1222	40.920	1.08	503	60	51	0.567	5	2.835	40.923	246	240	
		0.9401	1227	43.760	0.678	504.0	58.75	50.25				43.758			
5-1	0.76	0.8718	1229	43.760	0.56	496	60	51	0.410	3	2.052		251	241	
-2	0.87	0.9327	1234	45.800	0.66	497	60	51	0.439	3	2.196	45.812	248	242	
-3	1.05	1.0247	1239	48.020	0.78	500	61	52	0.482	4	2.412	48.008	249	241	
-4	1.42	1.1916	1244	50.440	1.05	499	60	52	0.561	5	2.805	50.420	248	240	
		1.0052	1249	53.230	0.763	498.0	60.75	51.5				53.225			
6-1															
-2															
-3															
-4															
		1.0141		51.785	0.951	496.6	56.2	46.75				51.804			

Form 1026 [Rev. 5/27]

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MOSTARDI-PLATT ASSOCIATES, INC.
TEST SUPPORT DATA

TEST RUN NO. 2

COMPANY: Alliant Energy
PLANT: Nelson Dewey
TEST LOCATION: Unit 1 outlet
CLIENT: Alliant Energy
OPERATOR: D. Helm
DATE: 2-8-00
CONTROL BOX: E31 POT. NO.: E31
METER NO.: E31
METER CALIBRATION FACTOR: 1.002
PITOT ID NO.: 258A
PITOT TUBE COEFFICIENT: 0.833
PORT LENGTH: 20 in.
PORT SIZE: 4 in.
PORT TYPE: Flange

IMPINGER H_2O
FINAL: 4953.8 ml/gm
INITIAL: 4817.1 ml/gm
GAIN: 136.7 ml/gm

SILICA GEL:
FINAL WT: 712.2 gm
INITIAL WT: 699.4 gm
WT. GAIN: 12.8 gm

TOTAL H_2O COLLECTED: 149.5
DESCRIPTION OF IMPINGER H_2O:
SILICA GEL EXHAUSTED?:
IMPINGERS RECOVERED BY:
SILICA GEL WEIGHED BY:

COMMENTS & NOTES

THIMBLE NO: 087 TARE WT: 3.2832
FILTER NO: TARE WT:
BAROMETRIC PRESSURE in. Hg: 29.75
FLUE PRESSURE in. H_2O: +7.0
FLUE PRESSURE in. Hg ABS: 30.265
PROBE LENGTH: 6 ft.
PROBE LINER MATERIAL: Glass
NOZZLE IDENTIFICATION NO: N/A
CALIBRATED NOZZLE DIAMETER: 0.197
LEAK CHECK: PRE: 0.015 POST: 0.007 @ 10 in. Hg
DUCT SHAPE: Rectangular DIAMETER:
DUCT AREA: 48.00 sq. ft. L 18' W 2'8"
DISTURBANCE UPSTREAM: DOWNSTREAM:
TEST LENGTH: 120 min
MINUTES PER POINT: 5
TOTAL NUMBER OF TRAVERSE POINTS: 24
GAS ANALYSIS (ORSAT/FYRITE):
CO_2: 14.5 14.5 14.5
O_2: 4.2 4.2 4.2

PITOT LEAK CHECK: PRE 3.60" H_2O POST 4.50" H_2O
ΔH@ 1.847
SAMPLES REMOVED FROM SITE BY:

For computer data entry: Supervisor, please complete.
Do you want to enter a fuel analysis? Y ☐ N ☐
What value do you want to use? F = 9,780 F_c = 1,800 Other = _____
Circle to indicate "Yes" or add other value if not given.

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FIELD TEST DATA SHEET FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT Alliant Energy - Nelson Dewey Plant
TEST RUN NO. 2
TEST LOCATION Unit 1 Outlet

DATE 2-8-00 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	0.7418 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.4708 Meter Rate cfm	Pump Vacuum in. Hg	X5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
1-1	0.74	0.8602	1400	53.580	0.55	484	52	43	0.405	3	2.025		247	240	≤68°F
-2	0.76	0.8718	1405	55.610	0.56	484	54	43	0.410	3	2.052	55.605	251	241	
-3	1.10	1.049	1410	57.670	0.82	486	55	44	0.494	4	2.469	57.657	248	241	
-4	1.50	1.225	1415	60.140	1.11	487	56	44	0.577	4	2.883	60.126	247	240	
		1.0015	1420	63.010	0.760	485.25	54.25	43.50				63.009			
2-1	0.99	0.9950	1422	63.010	0.73	489	57	43	0.468	3	2.342		246	243	
-2	1.30	1.1402	1427	65.360	0.96	494	58	44	0.537	3	2.684	65.352	247	244	
-3	1.35	1.1619	1432	68.010	1.00	494	58	44	0.547	3	2.735	68.036	247	242	
-4	1.40	1.1832	1437	70.750	1.04	496	59	45	0.557	3	2.785	70.771	247	241	
		1.1201	1442	73.560	0.933	493.25	58.0	44.0				73.556			
3-1	0.69	0.8307	1444	73.560	0.51	499	61	46	0.391	2	1.955		251	242	
-2	0.81	0.9000	1449	75.530	0.60	503	62	46	0.424	3	2.119	75.515	249	243	
-3	1.25	1.1180	1454	77.640	0.93	504	63	47	0.526	3	2.632	77.634	249	242	
-4	1.30	1.1402	1459	80.260	0.96	505	64	47	0.537	3	2.684	80.266	250	242	
		0.9972	1504	82.950	0.750	502.75	62.5	47.5				82.950			

Form 1026 [Rev. 5/27]

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FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT Alliant Energy - Nelson Dewey Plant
TEST RUN NO. 2
TEST LOCATION Unit 1 Outlet

DATE 2-8-00 PAGE 2 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	0.7418 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.4708 Meter Rate cfm	Pump Vacuum in. Hg	x 5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
4-1	0.56	0.7483	1510	82.950	0.42	501	64	48	0.352	2	1.762	82.950	252	241	≤68°F
-2	0.69	0.8307	1515	84.720	0.51	505	64	49	0.391	2	1.955	84.712	253	242	
-3	0.82	0.9055	1520	86.680	0.61	505	65	49	0.426	3	2.132	86.667	252	242	
-4	1.40	1.1832	1525	88.810	1.04	505	65	50	0.557	3	2.785	88.799	254	242	
		0.9169	1530	91.550	0.645	504.0	64.5	49.0				91.584			
5-1	0.72	0.8485	1532	91.550	0.53	497	62	51	0.400	3	1.997		248	238	
-2	0.85	0.9220	1537	93.570	0.63	500	64	51	0.434	3	2.170	93.581	249	241	
-3	1.00	1.0000	1542	95.750	0.74	501	65	51	0.471	3	2.354	95.751	247	240	
-4	1.35	1.1619	1547	98.120	1.00	503	66	52	0.547	4	2.735	98.105	249	240	
		0.9831	1552	100.850	0.725	500.25	64.25	51.25				100.840			
6-1	0.85	0.9220	1557	100.850	0.63	486	64	52	0.434	3	2.170		247	242	
-2	0.86	0.9274	1559	103.020	0.64	492	64	53	0.437	3	2.183	103.010	249	246	
-3	1.05	1.0247	1604	105.210	0.78	494	64	52	0.482	3	2.412	105.193	250	243	
-4	1.50	1.2247	1609	107.610	1.11	494	63	52	0.577	4	2.883	107.605	249	243	
		1.0247	1614	110.470	0.79	491.5	63.75	52.25				110.488			
		1.0073		56.890	0.767	496.2	61.2	47.9							

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MOSTARDI-PLATT ASSOCIATES, INC.
TEST SUPPORT DATA

TEST RUN NO. 3

COMPANY: Alliant Energy
PLANT: Nelson Dewey
TEST LOCATION: Unit 1 Outlet
CLIENT: Alliant Energy
OPERATOR: D. Helm
DATE: 2-9-00
CONTROL BOX: E31 POT. NO.: E31
METER NO.: E31
METER CALIBRATION FACTOR: 1.002
PITOT ID NO.: 258A
PITOT TUBE COEFFICIENT: 0.833
PORT LENGTH: 20 in.
PORT SIZE: 4 in.
PORT TYPE: Flange

IMPINGER H_2O
FINAL: 4802.8 ml/gm
INITIAL: 4659.8 ml/gm
GAIN: 143.0 ml/gm

SILICA GEL:
FINAL WT: 729.4 gm
INITIAL WT: 718.4 gm
WT. GAIN: 11.0 gm

TOTAL H_2O COLLECTED: 154.0
DESCRIPTION OF IMPINGER H_2O:
SILICA GEL EXHAUSTED?:
IMPINGERS RECOVERED BY:
SILICA GEL WEIGHED BY:

COMMENTS & NOTES

THIMBLE NO: 126 TARE WT: 3.3922
FILTER NO: TARE WT:
BAROMETRIC PRESSURE in. Hg: 29.87
FLUE PRESSURE in. H_2O: +7.0
FLUE PRESSURE in. Hg ABS: 30.385
PROBE LENGTH: 6 ft.
PROBE LINER MATERIAL: Glass
NOZZLE IDENTIFICATION NO: N/A
CALIBRATED NOZZLE DIAMETER: 0.197
LEAK CHECK: PRE: 0.006 POST: 0.005 @ 10 in. Hg
DUCT SHAPE: Rectangular DIAMETER:
DUCT AREA: 48.00 sq. ft. L 18' W 2'8"
DISTURBANCE UPSTREAM: DOWNSTREAM:
TEST LENGTH: 120 min
MINUTES PER POINT: 5
TOTAL NUMBER OF TRAVERSE POINTS: 24
GAS ANALYSIS (ORSAT/FYRITE):
CO_2: 14.8 14.8
O_2: 3.8 3.8

PITOT LEAK CHECK: PRE 4.00" H_2O POST 3.50" H_2O
ΔH@ 1.847
SAMPLES REMOVED FROM SITE BY:

For computer data entry: Supervisor, please complete.
Do you want to enter a fuel analysis? Y ☐ N ☐
What value do you want to use? F = 9,780 F_c = 1,800 Other = _____
Circle to indicate "Yes" or add other value if not given.

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FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT Alliant Energy - Nelson Dewey Plant
TEST RUN NO. 3
TEST LOCATION Unit 1 Outlet

DATE 2-9-00 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	0.7379 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.4686 Meter Rate cfm	Pump Vacuum in. H_g	x 5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
1-1	0.77	0.8775	900	10.950	0.57	491	55	51	0.411	3	2.056		255	243	≤ 68°F
-2	0.76	0.8718	905	13.010	0.56	496	57	50	0.409	3	2.043	13.006	256	243	
-3	1.20	1.0954	910	15.060	0.89	498	58	51	0.513	4	2.567	15.049	255	241	
-4	1.55	1.2450	915	17.630	1.14	501	59	51	0.583	5	2.917	17.616	255	241	
		1.0224	920	20.520	0.790	496.5	57.25	50.75				20.533			
2-1	0.96	0.9798	922	20.520	0.71	510	59	51	0.459	3	2.296	20.533	257	244	
-2	1.35	1.1619	927	22.810	1.00	515	61	52	0.545	5	2.722	22.829	260	242	
-3	1.45	1.2042	932	25.520	1.07	518	61	52	0.564	5	2.821	25.551	256	242	
-4	1.50	1.2247	937	28.380	1.11	519	62	52	0.574	5	2.870	28.372	259	243	
		1.1427	942	31.250	0.973	515.5	60.75	51.75				31.242			
3-1	0.78	0.8832	944	31.250	0.58	511	63	53	0.414	3	2.069		258	241	
-2	0.83	0.9110	949	33.300	0.61	514	63	53	0.427	3	2.135	33.311	257	241	
-3	1.35	1.1619	954	35.460	1.00	515	64	53	0.545	4	2.722	35.446	256	243	
-4	1.35	1.1619	959	38.170	1.00	515	64	53	0.545	4	2.722	38.168	257	244	
		1.0295	1004	40.870	0.798	513.75	63.5	53.0				40.890			

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FIELD TEST DATA SHEET FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT Alliant Energy - Nelson Dewey Plant
TEST RUN NO. 3
TEST LOCATION Unit 1 Outlet

DATE 2-9-00 PAGE 2 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	0.7379 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.4686 Meter Rate cfm	Pump Vacuum in. Hg	×5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
4-1	0.65	0.8062	1009	40.870	0.48	505	64	53	0.378	3	1.889	40.890	248	243	≤ 68 °F
-2	0.71	0.8426	1014	42.790	0.52	509	64	54	0.395	3	1.974	42.779	247	241	
-3	0.86	0.9274	1019	44.760	0.63	510	65	54	0.435	3	2.173	44.753	247	243	
-4	1.45	1.2042	1024	46.910	1.07	511	65	55	0.564	4	2.821	46.926	248	243	
		0.9451	1029	49.750	0.675	508.75	64.5	54.0				49.747			
5-1	0.78	0.8832	1031	49.750	0.58	507	65	55	0.414	3	2.069		249	242	
-2	0.88	0.9381	1036	51.820	0.65	512	67	56	0.440	3	2.198	51.816	247	243	
-3	1.05	1.0247	1041	54.020	0.78	512	67	56	0.480	3	2.401	54.014	247	241	
-4	1.40	1.1832	1046	56.430	1.03	511	68	57	0.555	4	2.772	56.415	246	242	
		1.0073	1051	59.170	0.76	510.5	66.75	56.0				59.187			
6-1	0.90	0.9487	1055	59.170	0.66	494	68	57	0.445	3	2.223		248	241	
-2	0.91	0.9539	1100	61.420	0.67	496	69	57	0.447	3	2.235	61.410	246	239	
-3	1.05	1.0247	1105	63.660	0.78	499	69	58	0.480	4	2.401	63.645	246	240	
-4	1.60	1.2649	1110	66.050	1.18	498	69	58	0.593	4	2.964	66.046	247	240	
		1.0481	1115	69.010	0.823	496.75	68.75	57.5				69.010			
		1.0325		58.060	0.803	507.0	63.6	53.8							

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CALIBRATION PROCEDURES

PITOT TUBES

The pitot tubes used during this test program are fabricated according to the specification described and illustrated in the *Code of Federal Regulations*, Title 40, Part 60, Appendix A, Methods 1 through 5 as published in the *Federal Register*, Volume 42, No. 160; hereafter referred to by the appropriate method number. The pitot tubes comply with the alignment specifications in Method 2, Section 4; and the pitot tube assemblies are in compliance with specifications in the same section.

Pitot tube assemblies are calibrated in accordance with Method 2, Section 4, against a standard hemispherical pitot utilizing a wind tunnel meeting the specification in Method 2, Section 4.1.2.

TEMPERATURE SENSING DEVICES

The potentiometer and thermocouples are calibrated against a mercury thermometer in a calibration well. Alternatively, readings are checked utilizing a NBS traceable millivolt source.

DRY GAS METERS

The test meters are calibrated according to Method 5, Section 5.3 and "Procedures for Calibrating and Using Dry Gas Volume Meters as Calibration Standards" by P.R. Westlin and R.T. Shigehara, March 10, 1978.

ANALYTICAL BALANCE

The accuracy of the analytical balance is checked with Class S, Stainless Steel Type 303 weights manufactured by F. Hopken and Son, Jersey City, New Jersey.

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Pitot Tube Calibration Data

Calibration Pitot Tube: Type: Standard Size (OD): 0.25 Pitot ID #: 160-18

Type "S" Pitot Tube ID Numbe 391 Cp(std) = 0.99

Calibration Date: 4/4/96 Performed By: JAB

P_{std}, (in.) H_2O		A-Side Calibration		
Set Value	Read Value	P_s, (in.) H_2O	$C_{p(S)}$ [a]	DEV. [b]
0.25	0.26	0.36	0.841	0.005
0.55	0.57	0.80	0.838	0.002
0.85	0.86	1.21	0.835	0.002
1.00	0.99	1.40	0.833	0.004
2.00	2.05	2.90	0.832	0.004
3.00	2.98	4.15	0.839	0.003
		Average	0.836	0.003

P_{std}, (in.) H_2O		B-Side Calibration		
Set Value	Read Value	P_s, (in.) H_2O	$C_{p(S)}$ [a]	DEV. [b]
0.25	0.26	0.36	0.839	0.000
0.55	0.57	0.81	0.833	0.006
0.85	0.86	1.20	0.838	0.001
1.00	0.99	1.39	0.835	0.004
2.00	2.05	2.80	0.847	0.008
3.00	3.00	4.15	0.842	0.003
		Average	0.839	0.004

$\overline{C_p}(A) - \overline{C_p}(B) =$ 0.003 (must be ≤ 0.01)

[a] $C_{p(S)} = C_{p(std)}\sqrt{\frac{\Delta P_{std}}{\Delta P_s}}$

[b] $DEV = C_{p(S)} - \overline{C_p}$, (must be ≤ 0.01)

TYPE S PITOT TUBE INSPECTION DATA FORM

Pitot tube assembly level? X yes ____ no

Pitot tube openings damaged? ____ yes (explain below) X no

α_1 = 0.5 ° (<10°), α_2 = 2 ° (<10°) z = A sin γ = 0.013 (in.); (<0.125 in.)

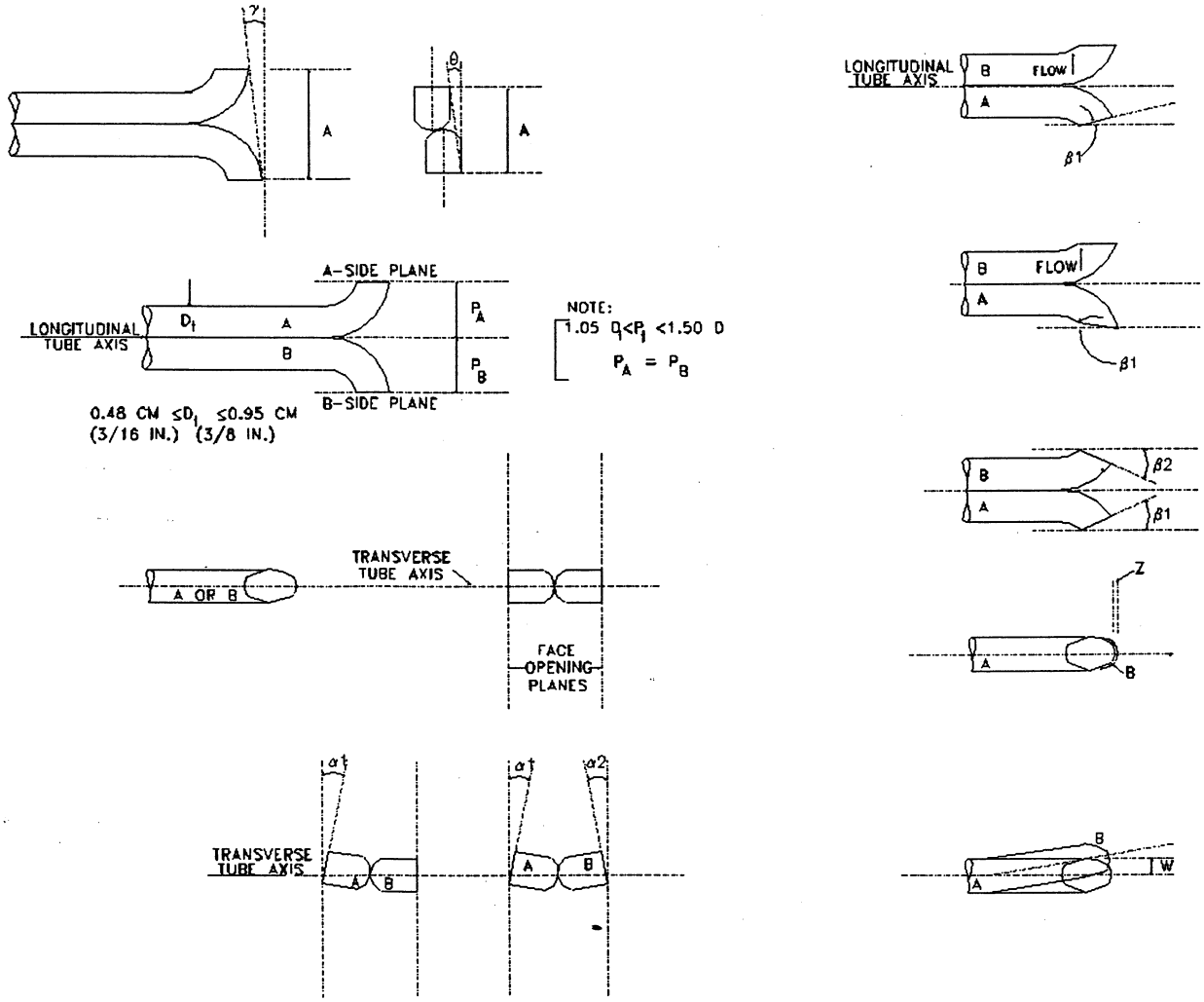
β_1 = 1 ° (<5°), β_2 = 0.5 ° (<5°) w = A sin θ = 0.007 (in.); (<0.03125 in.)

γ = 1 °, θ = 0.5 °, A = 0.768 (in.) P_A = 0.38 (in.), P_B = 0.39 (in.), D_t = 0.251 (in.)

Comments: _____

Calibration required? ____ yes X no

Pitot Tube No.: 391 Date: 01/18/2000 Name: Rich Russ



Pitot Tube Calibration Data

Calibration Pitot Tube: Type: Std. Hemi Size (OD): 0.25 Pitot ID #: N/A

Type "S" Pitot Tube ID Numbe 258 A & B Cp(std) = 0.99

Calibration Date: 1/9/95 Performed By: T. Krull

P_{std}, (in.) H_2O		A-Side Calibration		
Set Value	**Read Value**	**P_s, (in.) H_2O**	**$C_{p(S)}$ [a]**	**DEV.[b]**
0.25	0.25	0.36	0.825	0.008
0.55	0.56	0.80	0.828	0.005
0.85	0.82	1.15	0.836	0.003
1.00	1.10	1.55	0.834	0.001
2.00	2.40	3.35	0.838	0.005
3.00	3.35	4.70	0.836	0.003
		Average	0.833	0.004

P_{std}, (in.) H_2O		B-Side Calibration		
Set Value	**Read Value**	**P_s, (in.) H_2O**	**$C_{p(S)}$ [a]**	**DEV.[b]**
0.25	0.25	0.36	0.831	0.001
0.55	0.56	0.81	0.823	0.008
0.85	0.83	1.20	0.823	0.008
1.00	1.10	1.55	0.834	0.002
2.00	2.40	3.35	0.838	0.006
3.00	3.35	4.65	0.840	0.009
		Average	0.832	0.006

$\overline{C_p}(A) - \overline{C_p}(B) =$ 0.001 (must be $\leq$ 0.01)

[a] $C_{p(S)} = C_{p(std)}\sqrt{\frac{\Delta P_{std}}{\Delta P_s}}$

[b] $DEV = C_{p(S)} - \overline{C_p}$, (must be ≤ 0.01)

TYPE S PITOT TUBE INSPECTION DATA FORM

Pitot tube assembly level? X yes ____ no

Pitot tube openings damaged? ____ yes (explain below) X no

α_1 = 1.5 ° (<10°), α_2 = 2 ° (<10°) z = A sin γ = 0.006 (in.); (<0.125 in.)

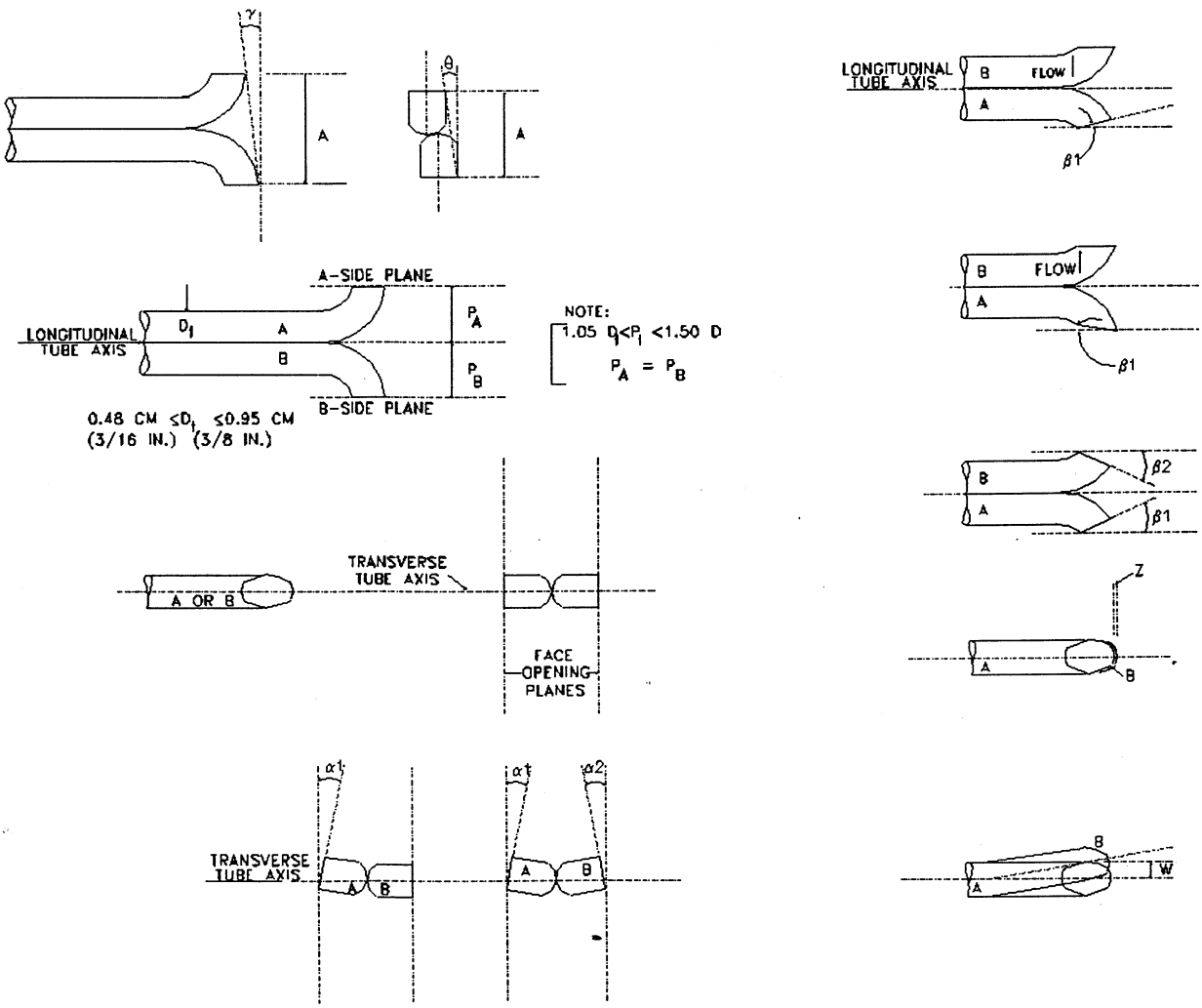
β_1 = 3 ° (<5°), β_2 = 1 ° (<5°) w = A sin θ = 0.006 (in.); (<0.03125 in.)

γ = 0.5 °, θ = 0.5 °, A = 0.699 (in.) P_A = 0.35 (in.), P_B = 0.35 (in.), D_t = 0.250 (in.)

Comments: _____

Calibration required? ____ yes X no

Pitot Tube No.: 258 Date: 02/02/2000 Name: Rich Russ

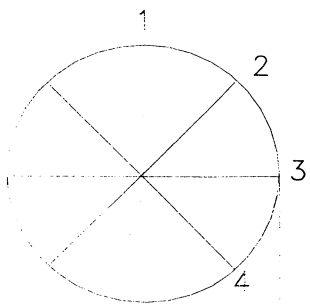


Nozzle Calibration

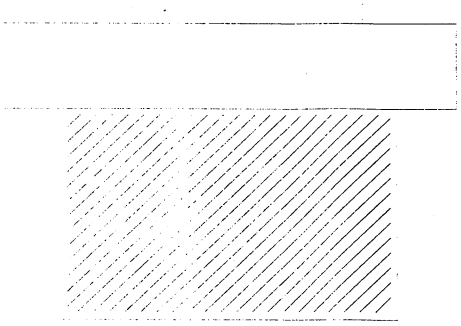
Date: 2/8/00

Nozzle ID No.: #2 Set 3

Analyst: DH



Pre Test		Post Test
0.235	1	√
0.236	2	√
0.236	3	√
0.236	4	√



Average
_____

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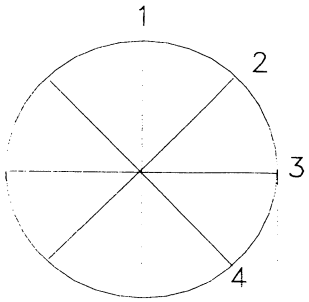
Nozzle Calibration

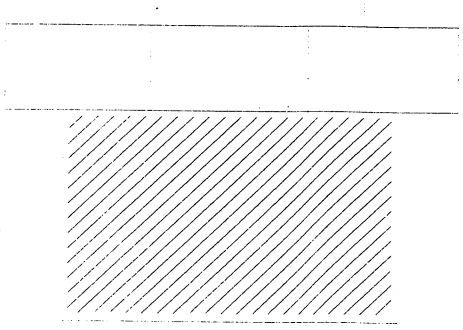
Date: 2/8/00

Nozzle ID No.: #1 Set 3

Analyst: DH



Pre Test		Post Test
0.196	1	√
0.195	2	√
0.196	3	√
0.197	4	√



Average
_____

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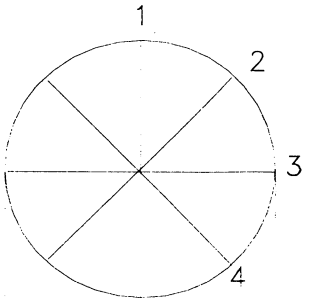
Nozzle Calibration

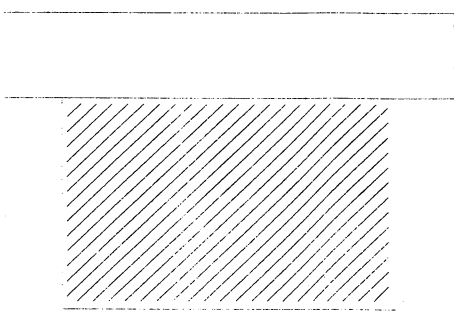
Date: 2/8/00

Nozzle ID No.: N/A

Analyst: DH



Pre Test		Post Test
0.237	1	√
0.237	2	√
0.237	3	√
0.237	4	√



Average
_____

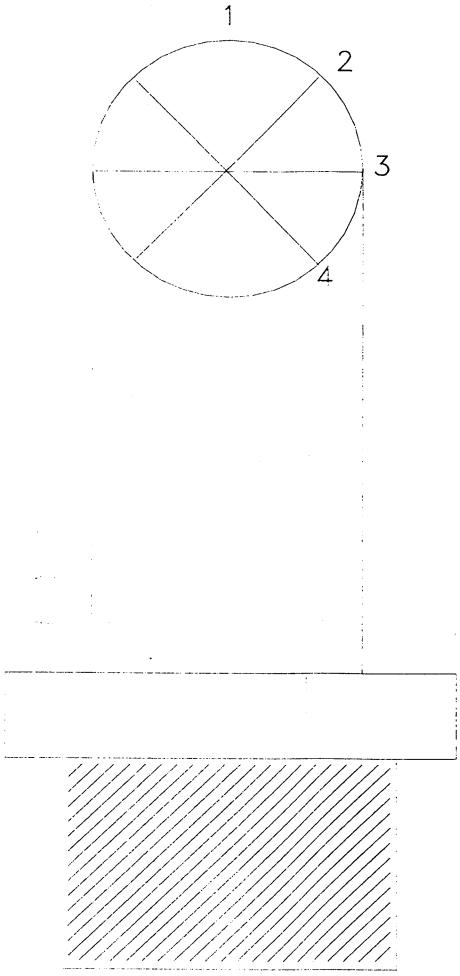
© Mostardi-Platt Associates, Inc.

Nozzle Calibration

Date: 2/8/00

Nozzle ID No.: N/A

Analyst: DH



Pre Test		Post Test
0.197	1	√
0.197	2	√
0.197	3	√
0.196	4	√

Average
_____

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STACK TEMPERATURE SENSOR CALIBRATION DATA FORM
(FOR K-TYPE THERMOCOUPLES)

EPA Control Module Number: E31 Name: C.Hill

Ambient Temperature: 67 °F Date: 2/2/00

Model 1061; S/N: A20821 Reference Source (T/C Calibrator): Transmation, Inc.

Date of Calibration Verification: 10/18/94

Primary Standards Directly Traceable to
National Institute of Standards and Technology (NIST)

Reference[a] Source Temperature, (°F)	Test Thermometer Temperature, (°F)	Temperature Difference,[b] %
50	50	0.000
100	100	0.000
150	150	0.000
200	200	0.000
250	250	0.000
300	300	0.000
350	350	0.000
400	400	0.000
450	450	0.000
500	500	0.000
550	550	0.000
600	600	0.000
650	650	0.000
700	700	0.000
800	800	0.000
900	900	0.000
1000	1000	0.000
1100	1100	0.000
1200	1200	0.000

[a]Every (50°F) for each reference point.

$$\frac{(\text{Ref. Temp., °F} + 460) - (\text{Test Therm. Temp., °F} + 460)}{\text{Ref. Temp., °F} + 460} * 100 <= 1.5\ \%$$

STACK TEMPERATURE SENSOR CALIBRATION DATA FORM
(FOR K-TYPE THERMOCOUPLES)

EPA Control Module Number: E54 Name: Dan Tuider

Ambient Temperatu 67 °F Date: 02-01-00

Model 1061; S/N: A20821 Reference Source (T/C Calibrator): Transmation, Inc.

Date of Calibration Verification: 10/18/94

Primary Standards Directly Traceable to
National Institute of Standards and Technology (NIST)

Reference[a] Source Temperature, (°F)	Test Thermometer Temperature, (°F)	Temperature Difference,[b] %
50	50	0.000
100	100	0.000
150	150	0.000
200	200	0.000
250	250	0.000
300	300	0.000
350	350	0.000
400	400	0.000
450	450	0.000
500	500	0.000
550	550	0.000
600	600	0.000
650	650	0.000
700	700	0.000
800	800	0.000
900	900	0.000
1000	1000	0.000
1100	1100	0.000
1200	1200	0.000

[a]Every (50°F) for each reference point.

$$\frac{(\text{Ref. Temp., °F} + 460) - (\text{Test Therm. Temp., °F} + 460)}{\text{Ref. Temp., °F} + 460} * 100 <= 1.5\ \%$$

METER BOX CALIBRATION

Dry Gas Meter No.	E54	Date:	02-01-00
Standard Meter No.	3623851	Calibrated By:	Dan Tuider
Standard Meter (Yr)	1.0063	Barometric Pressure :	29.40

Formula Protection Password: MPA

Run Number		Orifice Setting in H20 Chg (H)	Standard Meter Gas Volume Vr	Dry Meter Gas Volume Vd	Standard Meter Temp. F tr	Dry Gas Meter Inlet Temp. F tdi	Dry Gas Meter Outlet Temp. F tdo	Dry Gas Meter Avg. Temp. F td	Time Min.	Time Sec.	Y	Chg (H@)
Final			94.269	886.366	64	74	72					
Inital			89.267	881.279	64	73	71					
Difference	1	0.20	5.002	5.087	64	73.5	71.5	72.5	18	56	0.999	1.592
Final			604.276	897.274	64	78	73					
Inital			599.272	892.206	64	76	73					
Difference	2	0.50	5.004	5.068	64	77	73	75	12	37	1.007	1.758
Final			89.267	880.943	64	74	70					
Inital			84.267	875.881	64	71	69					
Difference	3	0.70	5.000	5.062	64	72.5	69.5	71	10	36	0.999	1.753
Final			14.287	908.443	64	80	74					
Inital			9.284	903.365	64	77	74					
Difference	4	0.90	5.003	5.078	64	78.5	74	76.25	9	38	1.006	1.841
Final			9.284	902.888	64	80	74					
Inital			4.276	897.821	64	77	73					
Difference	5	1.20	5.008	5.067	64	78.5	73.5	76	8	14	1.008	1.790
Final			99.272	891.937	64	79	73					
Inital			94.269	886.878	64	75	72					
Difference	6	2.00	5.003	5.059	64	77	72.5	74.75	6	31	1.004	1.877
									Average		1.004	1.769

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VOLUME METERING SYSTEM FIELD AUDIT

Date: 02-01-00 Name: Dan Tuider

EPA Control Module No.: E54 Ambient Temperature: 67 °F

Calibration (Y): 1.004 Barometric Pressure: 29.4 "Hg

Delta H: 1.769

un N 32	Time (Minutes)	Gas Meter Reading/Gas Meter Temperature (Cubic Feet)	Inlet (°F)	Outlet (°F)	Yc (Calculated)
1	0	909.219	74	74	1.028
	10	916.630	77	73	
	Vm=	7.411	Avg.= 74.50	534.50	
2	0	916.630	76	73	1.029
	10	924.036	80	74	
	Vm=	7.406	Avg.= 75.75	535.75	
3	0	924.036	79	74	1.033
	10	931.425	82	74	
	Vm=	7.389	Avg.= 77.25	537.25	

$$Yc = \frac{10}{Vm}\sqrt{\frac{Pbar}{0.0319Tm}}$$

Limit: 0.97Y <Yc< 1.03Y

Limit: 0.974 <Yc< 1.034

$$\text{Calc. Delta H @} = \frac{0.0319\ (\text{Delta H})(Tm)(100)}{Pbar(Y^2)(Vm^2)}$$ (From Calibration Data) = 1.945

METER BOX CALIBRATION

Dry Gas Meter No.	E31	Date:	Feb. 01, 2000
Standard Meter No.	3623851	Calibrated By:	C. Hill
Standard Meter (Yr)	1.0063	Barometric Pressure :	29.40

Formula Protection Password: MPA

Run Number		Orifice Setting in H20 Chg (H)	Standard Meter Gas Volume Vr	Dry Meter Gas Volume Vd	Standard Meter Temp. F tr	Dry Gas Meter Inlet Temp. F tdi	Dry Gas Meter Outlet Temp. F tdo	Dry Gas Meter Avg. Temp. F td	Time Min.	Time Sec.	Y	Chg (H@)
Final			83.957	659.674	62	69	65					
Inital			78.957	654.643	62	66	63					
Difference	1	0.20	5.000	5.031	62	67.5	64	65.75	20	19	1.000	1.844
Final			67.089	633.474	64	76	72					
Inital			62.086	628.400	64	75	72					
Difference	2	0.50	5.003	5.074	64	75.5	72	73.75	12	51	1.003	1.828
Final			49.354	614.818	64	71	67					
Inital			44.352	609.795	64	69	67					
Difference	3	0.70	5.002	5.023	64	70	67	68.5	10	44	1.003	1.804
Final			78.957	644.788	64	77	73					
Inital			73.953	639.693	64	76	73					
Difference	4	0.90	5.004	5.095	64	76.5	73	74.75	9	40	1.000	1.858
Final			73.416	639.151	64	78	73					
Inital			68.413	634.068	64	76	73					
Difference	5	1.20	5.003	5.083	64	77	73	75	8	17	1.002	1.819
Final			62.418	627.992	64	75	72					
Inital			57.412	622.950	64	74	71					
Difference	6	2.00	5.006	5.042	64	74.5	71.5	73	6	36	1.005	1.930
									Average		1.002	1.847

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VOLUME METERING SYSTEM FIELD AUDIT

Date: 2/01/2000 Name: C. Hill

EPA Control Module No.: E31 Ambient Temperature: 67 °F

Calibration (Y): 1.002 Barometric Pressure: 29.4 "Hg

Delta H: 1.848

#VALUE!

Run No.	Time (Minutes)	Gas Meter Reading/Gas Meter Temperature (Cubic Feet)	Inlet (°F)	Outlet (°F)	Yc (Calculated)
1	0	678.002	74	72	1.022
	10	685.452	77	73	
	Vm=	7.450	Avg.= 74.00	534.00	
2	0	685.452	75	73	1.021
	10	692.911	78	73	
	Vm=	7.459	Avg.= 74.75	534.75	
3	0	692.911	77	73	1.027
	10	700.334	80	74	
	Vm=	7.423	Avg.= 76.00	536.00	

$$Yc = \frac{10}{Vm}\sqrt{\frac{Pbar}{0.0319\ Tm}}$$

Limit: 0.97Y <Yc< 1.03Y

Limit: 0.972 <Yc< 1.032

Calc. Delta H @ = $\frac{0.0319\ (\text{Delta H})(Tm)(100)}{Pbar(Y^2)(Vm^2)}$ (From Calibration Data) = #VALUE!

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.:	000604	**TEST RUN NO.:**	1	**TEST DATE:**	2/8/2000

CUSTOMER:	Alliant Energy	**BAROMETRIC PRESSURE (Pb)**	29.75 **in. Hg.**
PLANT:	Nelson Dewey Plant	**STATIC PRESSURE**	10.5 **in. H2O**
TEST LOC.:	Unit No. 1 Precipitator Inlet	**FLUE PRESSURE (Ps)**	30.52 **in. Hg. abs.**
CLIENT:	Alliant Energy	**PROBE LENGTH:**	5 **ft.**
OPERATOR:	D. Hillesheim	**PROBE LINER MATERIAL:**	Glass
CONTROL BOX:	E-54	**NOZZLE IDENTIFICATION NO.:**	#2 Set 3
METER NO.:	E-54	**CALIBRATED NOZZLE DIAMETER:**	0.236 **in. (average)**
METER CALIBRATION FACTOR:	1.004	**LEAK CHECK PRE:**	0.000 **POST:** 0.010 @ 11 in. Hg.
PITOT ID NO.:	391A	**DUCT SHAPE:**	Circular DIA. Feet Rectangular 2.6667 Feet 36 Feet
PITOT TUBE COEFFICIENT:	0.836	**DUCT AREA:**	96.0012 **sq. ft.**
PORT LENGTH:	22 in.	**TEST LENGTH:**	90 **min.**
PORT SIZE:	4 in.	**MINUTES PER POINT:**	5
PORT TYPE:	Flange	**TOTAL NUMBER OF TRAVERSE POINTS:**	18

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ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Alliant Energy **Date:** 2/8/2000 **Test Ru** 1

Location: Unit No. 1 Precipitator Inlet

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
1-1	1.10	1.049	10:00	31.75	1.67	466	48	45	5	3.547
1-2	1.00	1.000	10:05	35.30	1.59	467	48	48	5	2.800
1-3	1.03	1.015	10:10	38.10	1.63	465	47	49	5	3.526
			10:15	41.63						0.000
2-1	1.10	1.049	10:18	41.63	1.67	498	42	47	4	3.350
2-2	0.98	0.990	10:23	44.98	1.57	496	51	47	4	3.420
2-3	1.20	1.095	10:28	48.40	1.74	492	51	46	4	3.175
			10:33	51.58						0.000
3-1	1.20	1.095	10:34	51.58	1.74	507	53	47	4	3.415
3-2	1.10	1.049	10:39	54.99	1.67	507	55	49	5	3.370
3-3	0.97	0.985	10:44	58.36	1.56	504	53	47	5	3.405
			10:49	61.77						0.000
4-1	1.20	1.095	11:27	62.71	1.74	519	54	47	8	3.481
4-2	1.30	1.140	11:32	66.19	1.81	497	47	48	10	3.520
4-3	1.40	1.183	11:37	69.71	1.87	519	51	45	12	3.645
			11:42	73.36						0.000
1-1	1.20	1.095	11:44	73.36	1.74	461	50	46	13	2.925
1-2	1.10	1.049	11:49	76.28	1.67	469	51	46	15	4.350
1-3	1.10	1.049	11:54	80.63	1.67	467	50	46	16	3.661
			11:59	84.29						0.000
2-1	1.10	1.049	12:00	84.29	1.67	497	48	46	18	3.709
2-2	1.00	1.000	12:05	88.00	1.59	496	48	45	19	3.480
2-3	1.20	1.095	12:10	91.48	1.74	494	48	45	19	3.333
			12:15	94.81						0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
		1.060		62.112	1.69	490	50	47		#####
							48.17			

MOISTURE, DILUENT AND MERCURY DATA

Company Alliant Energy **Date:** 2/8/2000 **Test Run:** 1

Location: Unit No. 1 Precipitator Inlet

SILICA GEL FINAL WT.:	729.10	**grams**
SILICA GEL INITIAL WT.:	713.10	**grams**
DIFFERENCE:	16.00	
FINAL IMPINGER WATER:	4704.30	**mls.**
INITIAL IMPINGER WATER:	4554.90	**mls.**
DIFFERENCE:	149.40	
TOTAL WATER GAIN:	165.40	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:			0.000000000
PROBE WASH:	0.000		0.000000000
		Particle-bound Total:	0.000000000
KCl:	0.830		0.000000830
		Oxidized Total:	0.000000830
HNO_3/H_2O_2:	0.000		0.000000000
$KMNO_4$:	5.400		0.000005400
		Elemental Total:	0.000005400

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	14.40	14.40	14.40	14.40
Oxygen:	4.40	4.40	4.40	4.40

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	Alliant Energy
Date:	2/8/2000
Test Run:	1
Stack or Duct No.:	Unit No. 1 Precipitator Inlet
Start Time:	10:00
Stop Time:	12:15

Pb:	29.75	Inches Hg
Static	10.50	Inches H2O
Ps:	30.52	Inches Hg Abs.
Vlc:	165	ml + grams
Mn:	0.0000	gm
Test Time:	90	minutes
% O2:	4.40	%
% CO2:	14.40	%
% N2:	81.20	%
Delta H:	1.69	Inches H20
Cp:	0.836	Dimensionless - pitot
Tm:	48.17	°F
Sqrt P:	1.060	Inches H20
Ts:	490.06	°F
Vm:	62.112	Cubic Feet
Dn:	0.236	Inches - nozzle
As:	96.00	Sq. Feet
Yd:	1.004	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	64.694	cubic feet (dry)
Vwstd:	7.790	cubic feet (wet)
Bwo:	0.107	
Md:	30.480	lb/lb-mole (dry)
Ms:	29.139	lb/lb-mole (wet)
Excess Air (%)	25.826	
Vs:	78.313	fps
ACFM:	451087.	
DSCFM:	228253.	
WSCFM:	255739	
%I:	99.6	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.:	000604	**TEST RUN NO.:**	2	**TEST DATE:**	2/8/2000

CUSTOMER:	Alliant Energy	**BAROMETRIC PRESSURE (Pb)**	29.75 **in. Hg.**
PLANT:	Nelson Dewey Plant	**STATIC PRESSURE**	10.5 **in. H2O**
TEST LOC.:	Unit No. 1 Precipitator Inlet	**FLUE PRESSURE (Ps)**	30.52 **in. Hg. abs.**
CLIENT:	Alliant Energy	**PROBE LENGTH:**	5 **ft.**
OPERATOR:	D. Hillesheim	**PROBE LINER MATERIAL:**	Glass
CONTROL BOX:	E-54	**NOZZLE IDENTIFICATION NO.:**	#1 Set 3
METER NO.:	E-54	**CALIBRATED NOZZLE DIAMETER:**	0.196 **in.**
METER CALIBRATION FACTOR:	1.004	**LEAK CHECK PRE:**	0.000 **POST:** 0.000 @ 20 in. Hg.
PITOT ID NO.:	391A	**DUCT SHAPE:**	Circular DIA. Feet Rectangular 2.6667 Feet 36 Feet
PITOT TUBE COEFFICIENT:	0.836	**DUCT AREA:**	96.0012 **sq. ft.**
PORT LENGTH:	22 in.	**TEST LENGTH:**	120 **min.**
PORT SIZE:	4 in.	**MINUTES PER POINT:**	5
PORT TYPE:	Flange	**TOTAL NUMBER OF TRAVERSE POINTS:**	24

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ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Alliant Energy **Date:** 2/8/2000 **Test Ru** 2

Location: Unit No. 1 Precipitator Inlet

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
1-1	1.10	1.049	14:00	95.22	0.74	465	48	45	5	2.330
1-2	0.93	0.964	14:05	97.55	0.68	466	47	46	5	2.270
1-3	0.98	0.990	14:10	99.82	0.69	464	47	45	5	2.250
			14:15	102.07						0.000
2-1	1.10	1.049	14:19	102.07	0.74	490	48	46	5	2.350
2-2	0.90	0.949	14:24	104.42	0.67	494	49	46	5	2.280
2-3	1.10	1.049	14:29	106.70	0.74	491	50	46	5	2.330
			14:34	109.03						0.000
3-1	1.20	1.095	14:35	109.03	0.77	497	50	48	6	2.440
3-2	1.00	1.000	14:40	111.47	0.70	502	51	47	7	2.360
3-3	0.87	0.933	14:45	113.83	0.65	500	52	47	7	2.290
			14:50	116.12						0.000
4-1	1.30	1.140	14:52	116.12	0.80	517	51	48	8	2.440
4-2	1.30	1.140	14:57	118.56	0.80	517	53	48	9	2.470
4-3	1.30	1.140	15:02	121.03	0.80	516	53	48	9	2.500
			15:07	123.53						0.000
1-1	1.10	1.049	15:10	123.53	0.74	461	52	49	10	2.770
1-2	0.96	0.980	15:15	126.30	0.69	463	52	49	10	2.160
1-3	0.94	0.970	15:20	128.46	0.68	464	53	49	10	2.380
			15:25	130.84						0.000
2-1	0.95	0.975	15:26	130.84	0.68	492	52	49	10	2.390
2-2	0.94	0.970	15:31	133.23	0.68	493	52	49	11	2.360
2-3	1.10	1.049	15:36	135.59	0.74	491	53	49	12	2.280
			15:41	137.87						0.000
3-1	1.20	1.095	15:43	137.87	0.77	502	53	50	13	2.510
3-2	0.98	0.990	15:48	140.38	0.70	504	53	49	14	2.300
3-3	0.95	0.975	15:53	142.68	0.68	503	54	50	14	2.240
			15:58	144.92						0.000
4-1	1.30	1.140	15:59	144.92	0.80	519	53	50	15	2.580
4-2	1.20	1.095	16:04	147.50	0.77	519	53	50	16	2.470
4-3	1.10	1.049	16:09	149.97	0.74	518	53	50	17	2.440
			16:14	152.41						0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
		1.035		57.190	0.73	494	51	48		#####
							49.69			

MOISTURE, DILUENT AND MERCURY DATA

Company Alliant Energy **Date:** 2/8/2000 **Test Run:** 2

Location: Unit No. 1 Precipitator Inlet

SILICA GEL FINAL WT.:	798.90	**grams**
SILICA GEL INITIAL WT.:	783.50	**grams**
DIFFERENCE:	15.40	
FINAL IMPINGER WATER:	4673.70	**mls.**
INITIAL IMPINGER WATER:	4544.00	**mls.**
DIFFERENCE:	129.70	
TOTAL WATER GAIN:	145.10	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:			0.000000000
PROBE WASH:	0.000		0.000000000
		Particle-bound Total:	0.000000000
KCl:	0.370		0.000000370
		Oxidized Total:	0.000000370
HNO_3/H_2O_2:	0.000		0.000000000
$KMNO_4$:	3.400		0.000003400
		Elemental Total:	0.000003400

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	14.50	14.50	14.50	14.50
Oxygen:	4.30	4.30	4.30	4.30

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	Alliant Energy
Date:	2/8/2000
Test Run:	2
Stack or Duct No.:	Unit No. 1 Precipitator Inlet
Start Time:	14:00
Stop Time:	16:14

Pb:	29.75	Inches Hg
Static	10.50	Inches H2O
Ps:	30.52	Inches Hg Abs.
Vlc:	145	ml + grams
Mn:	0.0000	gm
Test Time:	120	minutes
% O2:	4.30	%
% CO2:	14.50	%
% N2:	81.20	%
Delta H:	0.73	Inches H20
Cp:	0.836	Dimensionless - pitot
Tm:	49.69	°F
Sqrt P:	1.035	Inches H20
Ts:	493.67	°F
Vm:	57.190	Cubic Feet
Dn:	0.196	Inches - nozzle
As:	96.00	Sq. Feet
Yd:	1.004	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	59.250	cubic feet (dry)
Vwstd:	6.834	cubic feet (wet)
Bwo:	0.103	
Md:	30.492	lb/lb-mole (dry)
Ms:	29.200	lb/lb-mole (wet)
Excess Air (%)	25.092	
Vs:	76.498	fps
ACFM:	440637.	
DSCFM:	223131.	
WSCFM:	248868	
%I:	101.4	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.:	000604	**TEST RUN NO.:**	3	**TEST DATE:**	2/9/00

CUSTOMER:	Alliant Energy	**BAROMETRIC PRESSURE (Pb)**	29.87 **in. Hg.**
PLANT:	Nelson Dewey Plant	**STATIC PRESSURE**	10.5 **in. H2O**
TEST LOC.:	Unit No. 1 Precipitator Inlet	**FLUE PRESSURE (Ps)**	30.64 **in. Hg. abs.**
CLIENT:	Alliant Energy	**PROBE LENGTH:**	5 **ft.**
OPERATOR:	D. Hillesheim	**PROBE LINER MATERIAL:**	Glass
CONTROL BOX:	E-54	**NOZZLE IDENTIFICATION NO.:**	#1 Set 3
METER NO.:	E-54	**CALIBRATED NOZZLE DIAMETER:**	0.196 **in.**
METER CALIBRATION FACTOR:	1.004	**LEAK CHECK PRE:**	0.000 **POST:** 0.000 @ 20 in. Hg.
PITOT ID NO.:	391A	**DUCT SHAPE:**	Circular DIA. Feet Rectangular 2.6667 Feet 36 Feet
PITOT TUBE COEFFICIENT:	0.836	**DUCT AREA:**	96.0012 **sq. ft.**
PORT LENGTH:	22 in.	**TEST LENGTH:**	120 **min.**
PORT SIZE:	4 in.	**MINUTES PER POINT:**	5
PORT TYPE:	Flange	**TOTAL NUMBER OF TRAVERSE POINTS:**	24

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ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Alliant Energy **Date:** 2/9/00 **Test Ru** 3

Location: Unit No. 1 Precipitator Inlet

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
1-1	1.00	1.000	9:00	52.89	0.75	449	72	75	3	2.620
1-2	1.10	1.049	9:05	55.51	0.79	460	69	74	3	2.540
1-3	1.10	1.049	9:10	58.05	0.79	465	71	74	3	2.550
			9:15	60.60						0.000
2-1	1.10	1.049	9:17	60.60	0.79	488	73	74	3	2.530
2-2	0.96	0.980	9:22	63.13	0.74	494	75	75	3	2.490
2-3	1.10	1.049	9:27	65.62	0.79	495	76	76	3	2.600
			9:32	68.22						0.000
3-1	1.30	1.140	9:34	68.22	0.86	509	77	76	5	2.690
3-2	1.20	1.095	9:39	70.91	0.83	511	74	75	5	2.600
3-3	0.96	0.980	9:44	73.51	0.74	510	74	76	5	2.520
			9:49	76.03						0.000
4-1	1.30	1.140	9:50	76.03	0.86	523	72	73	5	2.720
4-2	1.30	1.140	9:55	78.75	0.86	525	74	73	6	2.670
4-3	1.40	1.183	10:00	81.42	0.89	527	76	74	7	2.710
			10:05	84.13						0.000
4-1	1.40	1.183	10:07	84.13	0.89	528	75	75	8	2.740
4-2	1.30	1.140	10:12	86.87	0.86	530	75	74	8	2.730
4-3	1.30	1.140	10:17	89.60	0.86	530	76	75	10	2.820
			10:22	92.42						0.000
3-1	1.30	1.140	10:24	92.42	0.86	515	75	75	10	2.820
3-2	1.10	1.049	10:29	95.24	0.79	515	77	74	10	2.660
3-3	0.85	0.922	10:34	97.90	0.70	512	78	74	11	2.550
			10:39	100.45						0.000
2-1	1.10	1.049	10:42	100.45	0.79	504	77	76	11	2.710
2-2	0.94	0.970	10:45	103.16	0.73	504	75	76	11	2.590
2-3	1.10	1.049	10:50	105.75	0.77	499	74	75	12	2.510
			10:55	108.26						0.000
1-1	1.20	1.095	10:56	108.26	0.83	471	73	75	13	2.740
1-2	1.00	1.000	11:01	111.00	0.79	472	73	74	14	2.600
1-3	1.10	1.049	11:06	113.60	0.79	473	72	74	14	2.660
			11:11	116.26						0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
		1.068		63.370	0.81	500	74	75		#####
							74.48			

MOISTURE, DILUENT AND MERCURY DATA

Company Alliant Energy **Date:** 2/9/00 **Test Run:** 3

Location: Unit No. 1 Precipitator Inlet

SILICA GEL FINAL WT.:	736.20	**grams**
SILICA GEL INITIAL WT.:	719.90	**grams**
DIFFERENCE:	16.30	
FINAL IMPINGER WATER:	4735.10	**mls.**
INITIAL IMPINGER WATER:	4598.30	**mls.**
DIFFERENCE:	136.80	
TOTAL WATER GAIN:	153.10	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:			0.000000000
PROBE WASH:	0.000		0.000000000
		Particle-bound Total:	0.000000000
KCl:	0.190		0.000000190
		Oxidized Total:	0.000000190
HNO_3/H_2O_2:	0.000		0.000000000
$KMNO_4$:	3.500		0.000003500
		Elemental Total:	0.000003500

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	15.00	15.00	15.00	15.00
Oxygen:	3.80	3.80	3.80	3.80

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	Alliant Energy
Date:	2/9/00
Test Run:	3
Stack or Duct No.:	Unit No. 1 Precipitator Inlet
Start Time:	9:00
Stop Time:	11:11

Pb:	29.87	Inches Hg
Static	10.50	Inches H2O
Ps:	30.64	Inches Hg Abs.
Vlc:	153	ml + grams
Mn:	0.0000	gm
Test Time:	120	minutes
% O2:	3.80	%
% CO2:	15.00	%
% N2:	81.20	%
Delta H:	0.81	Inches H20
Cp:	0.836	Dimensionless - pitot
Tm:	74.48	°F
Sqrt P:	1.068	Inches H20
Ts:	500.38	°F
Vm:	63.370	Cubic Feet
Dn:	0.196	Inches - nozzle
As:	96.00	Sq. Feet
Yd:	1.004	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	62.872	cubic feet (dry)
Vwstd:	7.211	cubic feet (wet)
Bwo:	0.103	
Md:	30.552	lb/lb-mole (dry)
Ms:	29.260	lb/lb-mole (wet)
Excess Air (%)	21.546	
Vs:	79.022	fps
ACFM:	455172.	
DSCFM:	229915.	
WSCFM:	256285	
%I:	104.5	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.: 000604 **TEST RUN NO.:** 1 **TEST DATE:** 2/8/2000

CUSTOMER: Alliant Energy

PLANT: Nelson Dewey Plant

TEST LOC.: Unit No. 1 Precipitator Outlet

CLIENT: Alliant Energy

OPERATOR: D. Helm

CONTROL BOX: E-31

METER NO.: E-31

BAROMETRIC PRESSURE (Pb) 29.75 **in. Hg.**

STATIC PRESSURE 7 **in. H2O**

FLUE PRESSURE (Ps) 30.26 **in. Hg. abs.**

PROBE LENGTH: 6 **ft.**

PROBE LINER MATERIAL: Glass

NOZZLE IDENTIFICATION NO.: N/A

CALIBRATED NOZZLE DIAMETER: 0.205 **in. (average)**
- Nozzle with 0.237 in. diameter was used for 20 minutes of testing
- Nozzle with 0.197 in. diameter was used for 80 minutes of testing

METER CALIBRATION FACTOR: 1.002

PITOT ID NO.: 258A

PITOT TUBE COEFFICIENT: 0.833

PORT LENGTH: 20 in.

PORT SIZE: 4 in.

PORT TYPE: Flange

LEAK CHECK **PRE:** 0.008 **POST:** 0.006 @ 13 in. Hg.

DUCT SHAPE: Circular DIA. Feet
Rectangular 2.6667 Feet 36 Feet

DUCT AREA: 96.0012 **sq. ft.**

TEST LENGTH: 100 **min.**

MINUTES PER POINT: 5

TOTAL NUMBER OF TRAVERSE POINTS: 20

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ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Alliant Energy **Date:** 2/8/2000 **Test Ru** 1

Location: Unit No. 1 Precipitator Outlet

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
1-1	0.69	0.831	10:18	1.27	1.13	482	47	42	4	2.910
1-2	0.80	0.894	10:23	4.18	1.23	485	53	43	4	3.000
1-3	1.30	1.140	10:28	7.18	2.00	488	54	43	6	3.750
1-4	1.45	1.204	10:33	10.93	2.23	488	55	44	8	4.080
			10:38	15.01						0.000
2-1	0.75	0.866	11:13	15.19	0.55	492	51	43	3	2.025
2-2	1.10	1.049	11:18	17.21	0.81	494	52	43	4	2.430
2-3	1.42	1.192	11:23	19.64	1.04	495	54	44	5	2.740
2-4	1.50	1.225	11:28	22.38	1.10	494	54	44	5	2.870
			11:33	25.25						0.000
3-1	0.77	0.877	11:36	25.25	0.57	496	56	45	3	2.080
3-2	0.84	0.917	11:41	27.33	0.62	502	56	45	3	2.130
3-3	1.31	1.145	11:46	29.46	0.97	504	57	46	5	2.730
3-4	1.35	1.162	11:51	32.19	1.00	503	58	46	5	2.720
			11:56	34.91						0.000
4-1	0.61	0.781	12:07	34.91	0.45	502	58	50	3	1.850
4-2	0.71	0.843	12:12	36.76	0.53	506	58	50	3	1.950
4-3	0.87	0.933	12:17	38.71	0.65	505	59	50	3	2.210
4-4	1.45	1.204	12:22	40.92	1.08	503	60	51	5	2.840
			12:27	43.76						0.000
5-1	0.76	0.872	12:29	43.76	0.56	496	60	51	3	2.040
5-2	0.87	0.933	12:34	45.80	0.66	497	60	51	3	2.220
5-3	1.05	1.025	12:39	48.02	0.78	500	61	52	4	2.420
5-4	1.42	1.192	12:44	50.44	1.05	499	60	52	5	2.790
			12:49	53.23						0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
		1.014		51.785	0.95	497	56	47		#####
							51.45			

MOISTURE, DILUENT AND MERCURY DATA

Company Alliant Energy **Date:** 2/8/2000 **Test Run:** 1

Location: Unit No. 1 Precipitator Outlet

SILICA GEL FINAL WT.:	719.60	**grams**
SILICA GEL INITIAL WT.:	708.90	**grams**
DIFFERENCE:	10.70	
FINAL IMPINGER WATER:	4767.70	**mls.**
INITIAL IMPINGER WATER:	4636.80	**mls.**
DIFFERENCE:	130.90	
TOTAL WATER GAIN:	141.60	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:	0.000		0.000000000
PROBE WASH:			0.000000000
		Particle-bound Total:	0.000000000
KCl:	0.360		0.000000360
		Oxidized Total:	0.000000360
HNO_3/H_2O_2:	0.000		0.000000000
$KMNO_4$:	4.700		0.000004700
		Elemental Total:	0.000004700

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	14.30	14.30	14.30	14.30
Oxygen:	4.20	4.20	4.20	4.20

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	Alliant Energy
Date:	2/8/2000
Test Run:	1
Stack or Duct No.:	Unit No. 1 Precipitator Outlet
Start Time:	10:18
Stop Time:	12:49

Pb:	29.75	Inches Hg
Static	7.00	Inches H2O
Ps:	30.26	Inches Hg Abs.
Vlc:	142	ml + grams
Mn:	0.0000	gm
Test Time:	100	minutes
% O2:	4.20	%
% CO2:	14.30	%
% N2:	81.50	%
Delta H:	0.95	Inches H20
Cp:	0.833	Dimensionless - pitot
Tm:	51.45	°F
Sqrt P:	1.014	Inches H20
Ts:	496.55	°F
Vm:	51.785	Cubic Feet
Dn:	0.205	Inches - nozzle
As:	96.00	Sq. Feet
Yd:	1.002	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	53.388	cubic feet (dry)
Vwstd:	6.669	cubic feet (wet)
Bwo:	0.111	
Md:	30.456	lb/lb-mole (dry)
Ms:	29.073	lb/lb-mole (wet)
Excess Air (%)	24.255	
Vs:	75.300	fps
ACFM:	433732.	
DSCFM:	215278.	
WSCFM:	242171	
%I:	103.9	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.:	000604	**TEST RUN NO.:**	2	**TEST DATE:**	2/8/2000

CUSTOMER:	Alliant Energy	**BAROMETRIC PRESSURE (Pb)**	29.75 **in. Hg.**
PLANT:	Nelson Dewey Plant	**STATIC PRESSURE**	7 **in. H2O**
TEST LOC.:	Unit No. 1 Precipitator Outlet	**FLUE PRESSURE (Ps)**	30.26 **in. Hg. abs.**
CLIENT:	Alliant Energy	**PROBE LENGTH:**	6 **ft.**
OPERATOR:	D. Helm	**PROBE LINER MATERIAL:**	Glass
CONTROL BOX:	E-31	**NOZZLE IDENTIFICATION NO.:**	N/A
METER NO.:	E-31	**CALIBRATED NOZZLE DIAMETER:**	0.197 **in.**
METER CALIBRATION FACTOR:	1.002	**LEAK CHECK PRE:**	0.015 **POST:** 0.007 @ 10 in. Hg.
PITOT ID NO.:	258A	**DUCT SHAPE:**	Circular DIA. Feet Rectangular 2.6667 Feet 36 Feet
PITOT TUBE COEFFICIENT:	0.833	**DUCT AREA:**	96.0012 **sq. ft.**
PORT LENGTH:	20 in.	**TEST LENGTH:**	120 **min.**
PORT SIZE:	4 in.	**MINUTES PER POINT:**	5
PORT TYPE:	Flange	**TOTAL NUMBER OF TRAVERSE POINTS:**	24

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ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Alliant Energy **Date:** 2/8/2000 **Test Ru** 2

Location: Unit No. 1 Precipitator Outlet

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
1-1	0.74	0.860	14:00	53.58	0.55	484	52	43	3	2.030
1-2	0.76	0.872	14:05	55.61	0.56	484	54	43	3	2.060
1-3	1.10	1.049	14:10	57.67	0.82	486	55	44	4	2.470
1-4	1.50	1.225	14:15	60.14	1.11	487	56	44	4	2.870
			14:20	63.01						0.000
2-1	0.99	0.995	14:22	63.01	0.73	489	57	43	3	2.350
2-2	1.30	1.140	14:27	65.36	0.96	494	58	44	3	2.650
2-3	1.35	1.162	14:32	68.01	1.00	494	58	44	3	2.740
2-4	1.40	1.183	14:37	70.75	1.04	496	59	45	3	2.810
			14:42	73.56						0.000
3-1	0.69	0.831	14:44	73.56	0.51	499	61	46	2	1.970
3-2	0.81	0.900	14:49	75.53	0.60	503	62	46	3	2.110
3-3	1.25	1.118	14:54	77.64	0.93	504	63	47	3	2.620
3-4	1.30	1.140	14:59	80.26	0.96	505	64	47	3	2.690
			15:04	82.95						0.000
4-1	0.56	0.748	15:10	82.95	0.42	501	64	48	2	1.770
4-2	0.69	0.831	15:15	84.72	0.51	505	64	49	2	1.960
4-3	0.82	0.906	15:20	86.68	0.61	505	65	49	3	2.130
4-4	1.40	1.183	15:25	88.81	1.04	505	65	50	3	2.740
			15:30	91.55						0.000
5-1	0.72	0.849	15:32	91.55	0.53	497	62	51	3	2.020
5-2	0.85	0.922	15:37	93.57	0.63	500	64	51	3	2.180
5-3	1.00	1.000	15:42	95.75	0.74	501	65	51	3	2.370
5-4	1.35	1.162	15:47	98.12	1.00	503	66	52	4	2.730
			15:52	100.85						0.000
6-1	0.85	0.922	15:54	100.85	0.63	486	64	52	3	2.170
6-2	0.86	0.927	15:59	103.02	0.64	492	64	53	3	2.190
6-3	1.05	1.025	16:04	105.21	0.78	494	64	52	3	2.400
6-4	1.50	1.225	16:09	107.61	1.11	494	63	52	4	2.860
			16:14	110.47						0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
		1.007		56.890	0.77	496	61	48		#####
							54.48			

MOISTURE, DILUENT AND MERCURY DATA

Company Alliant Energy **Date:** 2/8/2000 **Test Run:** 2

Location: Unit No. 1 Precipitator Outlet

SILICA GEL FINAL WT.:	712.20	**grams**
SILICA GEL INITIAL WT.:	699.40	**grams**
DIFFERENCE:	12.80	
FINAL IMPINGER WATER:	4953.80	**mls.**
INITIAL IMPINGER WATER:	4817.10	**mls.**
DIFFERENCE:	136.70	
TOTAL WATER GAIN:	149.50	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:	0.000		0.000000000
PROBE WASH:			0.000000000
		Particle-bound Total:	0.000000000
KCl:	0.240		0.000000240
		Oxidized Total:	0.000000240
HNO_3/H_2O_2:	0.000		0.000000000
$KMNO_4$:	3.700		0.000003700
		Elemental Total:	0.000003700

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	14.50	14.50	14.50	14.50
Oxygen:	4.20	4.20	4.20	4.20

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	Alliant Energy
Date:	2/8/2000
Test Run:	2
Stack or Duct No.:	Unit No. 1 Precipitator Outlet
Start Time:	14:00
Stop Time:	16:14

Pb:	29.75	Inches Hg
Static	7.00	Inches H2O
Ps:	30.26	Inches Hg Abs.
Vlc:	150	ml + grams
Mn:	0.0000	gm
Test Time:	120	minutes
% O2:	4.20	%
% CO2:	14.50	%
% N2:	81.30	%
Delta H:	0.77	Inches H20
Cp:	0.833	Dimensionless - pitot
Tm:	54.48	°F
Sqrt P:	1.007	Inches H20
Ts:	496.17	°F
Vm:	56.890	Cubic Feet
Dn:	0.197	Inches - nozzle
As:	96.00	Sq. Feet
Yd:	1.002	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	58.280	cubic feet (dry)
Vwstd:	7.041	cubic feet (wet)
Bwo:	0.108	
Md:	30.488	lb/lb-mole (dry)
Ms:	29.142	lb/lb-mole (wet)
Excess Air (%)	24.329	
Vs:	74.685	fps
ACFM:	430188.	
DSCFM:	214386.	
WSCFM:	240288	
%I:	102.8	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.:	000604	**TEST RUN NO.:**	3	**TEST DATE:**	2/9/2000

CUSTOMER:	Alliant Energy	**BAROMETRIC PRESSURE (Pb)**	29.87 **in. Hg.**
PLANT:	Nelson Dewey Plant	**STATIC PRESSURE**	7 **in. H2O**
TEST LOC.:	Unit No. 1 Precipitator Outlet	**FLUE PRESSURE (Ps)**	30.38 **in. Hg. abs.**
CLIENT:	Alliant Energy	**PROBE LENGTH:**	6 **ft.**
OPERATOR:	D. Helm	**PROBE LINER MATERIAL:**	Glass
CONTROL BOX:	E-31	**NOZZLE IDENTIFICATION NO.:**	N/A
METER NO.:	E-31	**CALIBRATED NOZZLE DIAMETER:**	0.197 **in.**
METER CALIBRATION FACTOR:	1.002	**LEAK CHECK PRE:**	0.006 **POST:** 0.005 @ 10 in. Hg.
PITOT ID NO.:	258A	**DUCT SHAPE:**	Circular DIA. Feet Rectangular 2.6667 Feet 36 Feet
PITOT TUBE COEFFICIENT:	0.833	**DUCT AREA:**	96.0012 **sq. ft.**
PORT LENGTH:	20 in.	**TEST LENGTH:**	120 **min.**
PORT SIZE:	4 in.	**MINUTES PER POINT:**	5
PORT TYPE:	Flange	**TOTAL NUMBER OF TRAVERSE POINTS:**	24

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ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Alliant Energy **Date:** 2/9/2000 **Test Ru** 3

Location: Unit No. 1 Precipitator Outlet

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
1-1	0.77	0.877	9:00	10.95	0.57	491	55	51	3	2.060
1-2	0.76	0.872	9:05	13.01	0.56	496	57	50	3	2.050
1-3	1.20	1.095	9:10	15.06	0.89	498	58	51	4	2.570
1-4	1.55	1.245	9:15	17.63	1.14	501	59	51	5	2.890
			9:20	20.52						0.000
2-1	0.96	0.980	9:22	20.52	0.71	510	59	51	3	2.290
2-2	1.35	1.162	9:27	22.81	1.00	515	61	52	5	2.710
2-3	1.45	1.204	9:32	25.52	1.07	518	61	52	5	2.860
2-4	1.50	1.225	9:37	28.38	1.11	519	62	52	5	2.870
			9:42	31.25						0.000
3-1	0.78	0.883	9:44	31.25	0.58	511	63	53	3	2.050
3-2	0.83	0.911	9:49	33.30	0.61	514	63	53	3	2.160
3-3	1.35	1.162	9:54	35.46	1.00	515	64	53	4	2.710
3-4	1.35	1.162	9:59	38.17	1.00	515	64	53	4	2.700
			10:04	40.87						0.000
4-1	0.65	0.806	10:09	40.87	0.48	505	64	53	3	1.920
4-2	0.71	0.843	10:14	42.79	0.52	509	64	54	3	1.970
4-3	0.86	0.927	10:19	44.76	0.63	510	65	54	3	2.150
4-4	1.45	1.204	10:24	46.91	1.07	511	65	55	4	2.840
			10:29	49.75						0.000
5-1	0.78	0.883	10:31	49.75	0.58	507	65	55	3	2.070
5-2	0.88	0.938	10:36	51.82	0.65	512	67	56	3	2.200
5-3	1.05	1.025	10:41	54.02	0.78	512	67	56	3	2.410
5-4	1.40	1.183	10:46	56.43	1.03	511	68	57	4	2.740
			10:51	59.17						0.000
6-1	0.90	0.949	10:55	59.17	0.66	494	68	57	3	2.250
6-2	0.91	0.954	11:00	61.42	0.67	496	69	57	3	2.240
6-3	1.05	1.025	11:05	63.66	0.78	499	69	58	4	2.390
6-4	1.60	1.265	11:10	66.05	1.18	498	69	58	4	2.960
			11:15	69.01						0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
		1.033		58.060	0.80	507	64	54		#####
							58.71			

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MOISTURE, DILUENT AND MERCURY DATA

Company Alliant Energy **Date:** 2/9/2000 **Test Run:** 3

Location: Unit No. 1 Precipitator Outlet

SILICA GEL FINAL WT.:	729.40	**grams**
SILICA GEL INITIAL WT.:	718.40	**grams**
DIFFERENCE:	11.00	
FINAL IMPINGER WATER:	4802.80	**mls.**
INITIAL IMPINGER WATER:	4659.80	**mls.**
DIFFERENCE:	143.00	
TOTAL WATER GAIN:	154.00	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:	0.000		0.000000000
PROBE WASH:			0.000000000
		Particle-bound Total:	0.000000000
KCl:	0.410		0.000000410
		Oxidized Total:	0.000000410
HNO_3/H_2O_2:	0.000		0.000000000
$KMNO_4$:	3.900		0.000003900
		Elemental Total:	0.000003900

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	14.80	14.80		14.80
Oxygen:	3.80	3.80		3.80

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	Alliant Energy
Date:	2/9/2000
Test Run:	3
Stack or Duct No.:	Unit No. 1 Precipitator Outlet
Start Time:	9:00
Stop Time:	11:15

Pb:	29.87	Inches Hg
Static	7.00	Inches H2O
Ps:	30.38	Inches Hg Abs.
Vlc:	154	ml + grams
Mn:	0.0000	gm
Test Time:	120	minutes
% O2:	3.80	%
% CO2:	14.80	%
% N2:	81.40	%
Delta H:	0.80	Inches H20
Cp:	0.833	Dimensionless - pitot
Tm:	58.71	°F
Sqrt P:	1.033	Inches H20
Ts:	506.96	°F
Vm:	58.060	Cubic Feet
Dn:	0.197	Inches - nozzle
As:	96.00	Sq. Feet
Yd:	1.002	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	59.236	cubic feet (dry)
Vwstd:	7.253	cubic feet (wet)
Bwo:	0.109	
Md:	30.520	lb/lb-mole (dry)
Ms:	29.154	lb/lb-mole (wet)
Excess Air (%)	21.482	
Vs:	76.821	fps
ACFM:	442492.	
DSCFM:	218603.	
WSCFM:	245371	
%I:	102.5	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

Project Summary-Samples Received Report

Project	*Client*	*Unit*
000604	ALLIANT	NELSON DEWEY/CASVILLE WI

Project	*Sample*	*Sample Point*	*Date Received*	*Analyte Detail*
000604	001	UN1 INL FLTR T1	2/9/2000	Mercury
000604	002	UN1 INL FLTR T2	2/9/2000	Mercury
000604	003	UN1 INL FLTR T3	2/9/2000	Mercury
000604	004	UN1 INL HNO3 T1	2/9/2000	Mercury
000604	005	UN1 INL HNO3 T2	2/9/2000	Mercury
000604	006	UN1 INL HNO3 T3	2/9/2000	Mercury
000604	007	UN1 INL KCL T1	2/9/2000	Mercury
000604	008	UN1 INL KCL T2	2/9/2000	Mercury
000604	009	UN1 INL KCL T3	2/9/2000	Mercury
000604	010	UN1 INL IMP4 T1	2/9/2000	Mercury
000604	011	UN1 INL IMP4 T2	2/9/2000	Mercury
000604	012	UN1 INL IMP4 T3	2/9/2000	Mercury
000604	013	UN1 IN IMP5-7T1	2/9/2000	Mercury
000604	014	UN1 IN IMP5-7T2	2/9/2000	Mercury
000604	015	UN1 IN IMP5-7T3	2/9/2000	Mercury
000604	016	UN1 OUT FLTR T1	2/9/2000	Mercury
000604	017	UN1 OUT FLTR T2	2/9/2000	Mercury
000604	018	UN1 OUT FLTR T3	2/9/2000	Mercury
000604	019	UN1 OUT HNO3 T1	2/9/2000	Mercury
000604	020	UN1 OUT HNO3 T2	2/9/2000	Mercury
000604	021	UN1 OUT HNO3 T3	2/9/2000	Mercury
000604	022	UN1 OUTL KCL T1	2/9/2000	Mercury
000604	023	UN1 OUTL KCL T2	2/9/2000	Mercury
000604	024	UN1 OUTL KCL T3	2/9/2000	Mercury
000604	025	UN1 OUT IMP4 T1	2/9/2000	Mercury
000604	026	UN1 OUT IMP4 T2	2/9/2000	Mercury

Project	Sample	Sample Point	Date Received	Analyte Detail
000604	027	UN1 OUT IMP4 T3	2/9/2000	Mercury
000604	028	UN1 OUT IM5-7T1	2/9/2000	Mercury
000604	029	UN1 OUT IM5-7T2	2/9/2000	Mercury
000604	030	UN1 OUT IM5-7T3	2/9/2000	Mercury
000604	031	UN1 IN F/BL KCL	2/9/2000	Mercury
000604	032	UN1 IN F/BL IM4	2/9/2000	Mercury
000604	033	UN1 IN F/BL 5-7	2/9/2000	Mercury
000604	034	UN1 OUT F/B KCL	2/9/2000	Mercury
000604	035	UN1 OUT F/B IM4	2/9/2000	Mercury
000604	036	UN1 OUT F/B 5-7	2/9/2000	Mercury
000604	037	BLANK-HNO3	2/9/2000	Mercury
000604	038	BLANK-KCL	2/9/2000	Mercury
000604	039	BLANK HNO3/H2O2	2/9/2000	Mercury
000604	040	BL-KMNO4/H2SO4	2/9/2000	Mercury
000604	041	BL-KMNO4/H2SO4	2/9/2000	Mercury
000604	042	BLNK-HYDROXYLAM	2/9/2000	Mercury
000604	043	BLANK FLTR #36	2/9/2000	Mercury
000604	044	BLANK FLTR #137	2/9/2000	Mercury
000604	045	BLANK FLTR #138	2/9/2000	Mercury
000604	046	COAL SAMPLE T1	2/9/2000	Ultimate/Proximate on Coal
000604	046	COAL SAMPLE T1	2/9/2000	Chlorine
000604	046	COAL SAMPLE T1	2/9/2000	Mercury
000604	047	COAL SAMPLE T2	2/9/2000	Chlorine
000604	047	COAL SAMPLE T2	2/9/2000	Mercury
000604	047	COAL SAMPLE T2	2/9/2000	Ultimate/Proximate on Coal
000604	048	COAL SAMPLE T3	2/9/2000	Ultimate/Proximate on Coal
000604	048	COAL SAMPLE T3	2/9/2000	Chlorine
000604	048	COAL SAMPLE T3	2/9/2000	Mercury
000604	049	ASH SAMPLE T1	2/9/2000	Hold
000604	050	ASH SAMPLE T2	2/9/2000	Hold

Project	*Sample*	*Sample Point*	*Date Received*	*Analyte Detail*
000604	051	ASH SAMPLE T3	2/9/2000	Hold

PHILIP SERVICES

INORGANIC DATA PACKAGE
FOR
MOSTARDI-PLATT ASSOCIATES INC.
Project #000604

Philip Analytical Services Corporation
5555 North Service Road
Burlington, ON L7L 5H7

Submission #0C0414

Prepared by: Shari Typer – CSR Initial : _____
Approved by : Dr. Ron McLeod - Principal Scientist Initial : _____

PHILIP ANALYTICAL SERVICES
5555 North Service Road, Burlington, Ontario, Canada L7L 5H7 Tel: (905) 332-8788 Fax: (905) 332-9169

1. CASE NARRATIVE

PROJECT NARRATIVE

PHILIP Analytical Services (Burlington ON)
Philip Project: AN000250
Philip Submission #:0C0414

Client: MOSTARDI-PLATT ASSOCIATES INC.
Client Project: 000604

I. SAMPLE RECEIPT/ANALYSIS

a) Sample Listing

Philip ID	Client Sample ID	Date Sampled	Date Received	Date Prepped	Run Date
Draft ASTM Mercury Speciation Method (October 27, 1999 Revision)- Front Half Outlet					
010630 00	Method Blank	00/02/08	00/03/10	00/03/29	00/03/29
010631 00	Blank Filter 043	00/02/08	00/03/10	00/03/29	00/03/29
010632 00	Blank Filter 044	00/02/08	00/03/10	00/03/29	00/03/29
010633 00	Blank Filter 045	00/02/08	00/03/10	00/03/29	00/03/29
010638 00	Unit 1 Outlet-R1	00/02/08	00/03/10	00/03/29	00/03/29
010639 00	Unit 1 Outlet-R2	00/02/08	00/03/10	00/03/29	00/03/29
010640 00	Unit 1 Outlet-R3	00/02/09	00/03/10	00/03/29	00/03/29
Draft ASTM Mercury Speciation Method (October 27, 1999 Revision)- Front Half Inlet					
010641 00	Unit 1 Inlet-R1	00/02/08	00/03/10	00/03/29	00/03/29
010642 00	Unit 1 Inlet-R2	00/02/08	00/03/10	00/03/29	00/03/29
010643 00	Unit 1 Inlet-R3	00/02/09	00/03/10	00/03/29	00/03/29
Draft ASTM Mercury Speciation Method (October 27, 1999 Revision)- HNO3 Rinse					
010634 00	Reagent Blank 02/08	00/02/08	00/03/10	00/03/30	00/03/30
Draft ASTM Mercury Speciation Method (October 27, 1999 Revision)- Hydroxylamine					
010630 00	Method Blank	00/02/08	00/03/10	00/03/30	00/03/30
010634 00	Reagent Blank 02/08	00/02/08	00/03/10	00/03/30	00/03/30
Draft ASTM Mercury Speciation Method (October 27, 1999 Revision)- KCl Impingers/Rinses					
010630 00	Method Blank	00/02/08	00/03/10	00/03/24	00/03/24
010634 00	Reagent Blank 02/08	00/02/08	00/03/10	00/03/24	00/03/24
010636 00	Unit 1 Outlet-FB	00/02/08	00/03/10	00/03/24	00/03/24
010637 00	Unit 1 Inlet-FB	00/02/08	00/03/10	00/03/24	00/03/24
010638 00	Unit 1 Outlet-R1	00/02/08	00/03/10	00/03/24	00/03/24
010639 00	Unit 1 Outlet-R2	00/02/08	00/03/10	00/03/24	00/03/24
010640 00	Unit 1 Outlet-R3	00/02/09	00/03/10	00/03/24	00/03/24
010641 00	Unit 1 Inlet-R1	00/02/08	00/03/10	00/03/24	00/03/24
010642 00	Unit 1 Inlet-R2	00/02/08	00/03/10	00/03/24	00/03/24
010643 00	Unit 1 Inlet-R3	00/02/09	00/03/10	00/03/24	00/03/24

Draft ASTM Mercury Speciation Method (October 27, 1999 Revision)- KMNO4 Impingers/Rinses

010630	00	Method Blank	00/02/08	00/03/10	00/03/30	00/03/30
010634	00	Reagent Blank 02/08	00/02/08	00/03/10	00/03/30	00/03/30
010635	00	Reagent Blank 02/09	00/02/09	00/03/10	00/03/30	00/03/30
010636	00	Unit 1 Outlet-FB	00/02/08	00/03/10	00/03/30	00/03/30
010637	00	Unit 1 Inlet-FB	00/02/08	00/03/10	00/03/30	00/03/30
010638	00	Unit 1 Outlet-R1	00/02/08	00/03/10	00/03/30	00/03/30
010639	00	Unit 1 Outlet-R2	00/02/08	00/03/10	00/03/30	00/03/30
010640	00	Unit 1 Outlet-R3	00/02/09	00/03/10	00/03/30	00/03/30
010641	00	Unit 1 Inlet-R1	00/02/08	00/03/10	00/03/30	00/03/30
010642	00	Unit 1 Inlet-R2	00/02/08	00/03/10	00/03/30	00/03/30
010643	00	Unit 1 Inlet-R3	00/02/09	00/03/10	00/03/30	00/03/30

Draft ASTM Mercury Speciation Method (October 27, 1999 Revision)- HNO3/H202 Impingers/Rinses

010630	00	Method Blank	00/02/08	00/03/10	00/03/21	00/03/21
010634	00	Reagent Blank 02/08	00/02/08	00/03/10	00/03/21	00/03/21
010636	00	Unit 1 Outlet-FB	00/02/08	00/03/10	00/03/21	00/03/21
010637	00	Unit 1 Inlet-FB	00/02/08	00/03/10	00/03/21	00/03/21
010638	00	Unit 1 Outlet-R1	00/02/08	00/03/10	00/03/21	00/03/21
010639	00	Unit 1 Outlet-R2	00/02/08	00/03/10	00/03/21	00/03/21
010640	00	Unit 1 Outlet-R3	00/02/09	00/03/10	00/03/21	00/03/21
010641	00	Unit 1 Inlet-R1	00/02/08	00/03/10	00/03/21	00/03/21
010642	00	Unit 1 Inlet-R2	00/02/08	00/03/10	00/03/21	00/03/21
010643	00	Unit 1 Inlet-R3	00/02/09	00/03/10	00/03/21	00/03/21

Draft ASTM Mercury Speciation Method (October 27, 1999 Revision)- Probe Rinse

010641	00	Unit 1 Inlet-R1	00/02/08	00/03/10	00/03/29	00/03/29
010642	00	Unit 1 Inlet-R2	00/02/08	00/03/10	00/03/29	00/03/29
010643	00	Unit 1 Inlet-R3	00/02/09	00/03/10	00/03/29	00/03/29

Mercury via SW846 Method 7471

010515	00	NIST 1633b reference	00/03/14	00/03/14	00/03/27	00/03/27

Run Date is defined as the date of injection of the last calibration standard (12 hour or less) prior to the samples analyzed within that run sequence. Therefore the time of calibration injection that defines the run date is always within 12 hours of the time of sample injection.

b) Shipping Problems: none encountered

c) Documentation Problems: none encountered

II. SAMPLE PREP:

No problems encountered

III. SAMPLE ANALYSIS:

See also comments within the appropriate Certificate of Analysis.

a) Hold Times: all within recommended hold times

b) Instrument Calibration: all within control limits

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above.
In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate.
Release of the data contained in this data package has been authorized by the cognizant laboratory official or his/her designee, as verified by this signature.

R A McLeod

Ronald A. McLeod, Principal Sci., Ph.D.,C.Chem.

April 12th 2000

Date

2. ANALYTICAL DATA REPORT

PHILIP SERVICES

Certificate of Analysis

CLIENT INFORMATION		LABORATORY INFORMATION	
Attention:	Jim Platt	**Contact:**	Ron McLeod
Client Name:	MOSTARDI-PLATT ASSOCIATES INC.	**Project:**	AN000250
Project:	604	**Date Received:**	00/03/10
Project Desc:	Alliant-Cassville, WI	**Date Reported:**	00/03/31
Address:	1301 Corporate Center Drive Suite 177 Eagan, Minnesota 55121	**Submission No.:**	0C0414
		Sample No.:	010630-010643
Fax Number:	630-993-9017		
Phone Number:	651-686-0700		

NOTES: ***"-" = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available***
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)

Methods used by PASC are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Nineteenth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PASC for a period of three weeks from receipt of data or as per contract.

COMMENTS:

cc Fax: 651-686-4434

Certified by: _____

PHILIP ANALYTICAL SERVICES
5555 North Service Road, Burlington, Ontario, Canada L7L 5H7 Tel: (905) 332-8788 Fax: (905) 332-9169

PASC - Certificate of Analysis

	Client ID:		Method Blank	Blank Spike #1	Blank Spike #1	Blank Spike #2	Blank Spike #2	Blank Filter 043	Blank Filter 044	Blank Filter 045
	Lab No.:		010630 00	010630 00	010630 00	010630 00	010630 00	010631 00	010632 00	010633 00
	Date Sampled:		-	-	-	-	-	00/02/08	00/02/08	00/02/08
Component	**MDL**	**Units**			% Recoveries		% Recoveries			
Mercury - filter (FH Outlet)	0.010	ug	<	0.10	100	0.10	100	<0.060	<0.060	<0.060
Mercury - filter - (FH Inlet)	0.010	"	-	-	-	-	-	-	-	-
Mercury - hydroxylamine	0.010	"	<	0.098	98	0.097	97	-	-	-
Mercury - KCl	0.030	"	<	0.33	110	0.32	110	-	-	-
Mercury - KMnO4	0.030	"	<	0.31	100	0.31	100	-	-	-
Mercury - H202	0.010	"	<	0.11	110	0.11	110	-	-	-
Mercury - probe rinse	0.010	"	-	-	-	-	-	-	-	-

135

00007

PASC - Certificate of Analysis

	Client ID:		Reagent Blank 02/08	Reagent Blank 02/09	Unit 1 Outlet-FB	Unit 1 Inlet-FB	Unit 1 Outlet-R1	Unit 1 Outlet-R1	Unit 1 Outlet-R1	Unit 1 Outlet-R1
	Lab No.:		010634 00	010635 00	010636 00	010637 00	010638 00	010638 00	010638 00	010638 00
	Date Sampled:		00/02/08	00/02/09	00/02/08	00/02/08	00/02/08	00/02/08	00/02/08	00/02/08
Component	**MDL**	**Units**						Duplicate	M. Spike	MS % Rec.
Mercury - filter (FH Outlet)	0.010	ug	-	-	-	-	<0.14	-	-	-
Mercury - filter - (FH Inlet)	0.010	"	-	-	-	-	-	-	-	-
Mercury - hydroxylamine	0.010	"	<	-	-	-	-	-	-	-
Mercury - KCl	0.030	"	<	-	0.063	0.30	0.36	-	-	-
Mercury - KMnO4	0.030	"	<	<	<0.10	<0.10	4.7	-	-	-
Mercury - H202	0.010	"	<0.25	-	<0.25	<0.25	<0.25	<0.25	2.8	110
Mercury - probe rinse	0.010	"	-	-	-	-	-	-	-	-

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00008

PASC - Certificate of Analysis

			Unit 1	Unit 1	Unit 1	Unit 1	Unit 1	Unit 1	Unit 1	Unit 1
	Client ID:		Outlet-R1	Outlet-R1	Outlet-R2	Outlet-R3	Inlet-R1	Inlet-R1	Inlet-R1	Inlet-R1
	Lab No.:		010638 00	010638 00	010639 00	010640 00	010641 00	010641 00	010641 00	010641 00
	Date Sampled:		00/02/08	00/02/08	00/02/08	00/02/09	00/02/08	00/02/08	00/02/08	00/02/08
Component	**MDL**	**Units**	MS Dup	MSD % Rec.				Duplicate	M. Spike	MS % Rec.
Mercury - filter (FH Outlet)	0.010	ug	-	-	<0.060	<0.060	-	-	-	-
Mercury - filter - (FH Inlet)	0.010	"	-	-	-	-	0.041	0.041	0.14	97
Mercury - hydroxylamine	0.010	"	-	-	-	-	-	-	-	-
Mercury - KCl	0.030	"	-	-	0.24	0.41	0.83	-	-	-
Mercury - KMnO4	0.030	"	-	-	3.7	3.9	5.4	5.4	10	95
Mercury - H202	0.010	"	2.8	110	<0.25	<0.25	<0.25	-	-	-
Mercury - probe rinse	0.010	"	-	-	-	-	<	-	-	-

137

00009

PASC - Certificate of Analysis

	Client ID:		Unit 1 Inlet-R1	Unit 1 Inlet-R1	Unit 1 Inlet-R2	Unit 1 Inlet-R2	Unit 1 Inlet-R2	Unit 1 Inlet-R2	Unit 1 Inlet-R2	Unit 1 Inlet-R2	Unit 1 Inlet-R3
	Lab No.:		010641 00	010641 00	010642 00	010642 00	010642 00	010642 00	010642 00	010642 00	010643 00
	Date Sampled:		00/02/08	00/02/08	00/02/08	00/02/08	00/02/08	00/02/08	00/02/08	00/02/08	00/02/09
Component	**MDL**	**Units**	MS Dup	MSD % Rec.		Duplicate	M. Spike	MS % Rec.	MS Dup	MSD % Rec.	
Mercury - filter (FH Outlet)	0.010	ug	-	-	-	-	-	-	-	-	-
Mercury - filter - (FH Inlet)	0.010	"	0.14	98	0.028	-	-	-	-	-	0.034
Mercury - hydroxylamine	0.010	"	-	-	-	-	-	-	-	-	-
Mercury - KCl	0.030	"	-	-	0.37	0.38	1.4	100	1.4	110	0.19
Mercury - KMnO4	0.030	"	10	93	3.4	-	-	-	-	-	3.5
Mercury - H202	0.010	"	-	-	<0.25	-	-	-	-	-	<0.25
Mercury - probe rinse	0.010	"	-	-	<	-	-	-	-	-	<

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00010

Batch Code:	**0329MNF2**	**0329MNF1**
Mercury - filter (FH Outlet)	010630 00	010631 00
	010639 00	010632 00
	010640 00	010633 00
		010638 00
Run Date:	00/03/29	00/03/29
Date of Sample Prep:	00/03/29	00/03/29

Batch Code:	**0329MNB1**
Mercury - filter -(FH Inlet)	010641 00
	010642 00
	010643 00
Run Date:	00/03/29
Date of Sample Prep:	00/03/29

Batch Code:	**03306BHY**
Mercury - hydroxylamine	010630 00
	010634 00
Run Date:	00/03/30
Date of Sample Prep:	00/03/30

Batch Code:	**03242BKC**	**03243BKC**
Mercury - KCl	010630 00	010641 00
	010634 00	010642 00
	010636 00	010643 00
	010637 00	
	010638 00	
	010639 00	
	010640 00	
Run Date:	00/03/24	00/03/24
Date of Sample Prep:	00/03/24	00/03/24

Batch Code:	**03304BMN**	**03305BMN**
Mercury - KMnO4	010630 00	010640 00
	010634 00	010641 00
	010635 00	010642 00
	010636 00	010643 00
	010637 00	
	010638 00	
	010639 00	
Run Date:	00/03/30	00/03/30
Date of Sample Prep:	00/03/30	00/03/30

Batch Code:	**03212BPO**
Mercury - H202	010630 00
	010634 00
	010636 00
	010637 00
	010638 00
	010639 00
	010640 00
	010641 00
	010642 00
	010643 00
Run Date:	00/03/21
Date of Sample Prep:	00/03/21

Batch Code:	**0329MNP1**
Mercury - probe rinse	010641 00
	010642 00
	010643 00
Run Date:	00/03/29
Date of Sample Prep:	00/03/29

PHILIP SERVICES

Certificate of Analysis

CLIENT INFORMATION		LABORATORY INFORMATION	
Attention:	Jim Platt	**Contact:**	Ron McLeod
Client Name:	MOSTARDI-PLATT ASSOCIATES INC.	**Project:**	AN000243
		Date Received:	00/03/14
		Date Reported:	00/03/31
Address:	1301 Corporate Center Drive Suite 177 Eagan, Minnesota 55121	**Submission No.:**	0C0413
		Sample No.:	010515
Fax Number:	651-686-4434		
Phone Number:	651-686-0700		

NOTES: ***'-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available***
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)

Methods used by PASC are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Nineteenth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PASC for a period of three weeks from receipt of data or as per contract.

COMMENTS:

Certified by: _____

PHILIP ANALYTICAL SERVICES
3555 North Service Road, Burlington, Ontario, Canada L7L 5H7 Tel: (905) 332-8788 Fax: (905) 332-9169

			NIST 1633b	
		Client ID:	reference	
		Lab No.:	010515 00	
		Date Sampled:	00/03/14	
Component	**MDL**	**Units**	Observed	Theoretical
Mercury	0.04	mg/kg	0.14	0.141

142

00014

Client:MOSTARDI-PLATT ASSOCIATES INC.

Batch Code:	**0327MNF1**
Mercury	010515 00
Run Date:	00/03/27
Date of Sample Prep:	00/03/27

3. RAW DATA

enon umber	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
10409	MOSTARDI	Unit 3 Inlet-R1	Mercury -	PV	-0.010	-0.010	0.106	101.	0.106	101.	00/03/29	MNP1	00/03/29	MG02	64.	20.	
10410	MOSTARDI	Unit 3 Inlet-R2	Mercury -	PV	-0.010						00/03/29	MNP1	00/03/29	MG02	64.	20.	
10411	MOSTARDI	Unit 3 Inlet-R3	Mercury -	PV	-0.010						00/03/29	MNP1	00/03/29	MG02	63.	20.	
10627	MOSTARDI	Unit 1 Inlet-R1	Mercury -	PV	0.020						00/03/29	MNP1	00/03/29	MG02	36.	19.	
10628	MOSTARDI	Unit 1 Inlet-R2	Mercury -	PV	0.017						00/03/29	MNP1	00/03/29	MG02	36.	19.	
10629	MOSTARDI	Unit 1 Inlet-R3	Mercury -	PV	-0.010						00/03/29	MNP1	00/03/29	MG02	35.	19.	
10641	MOSTARDI	Unit 1 Inlet-R1	Mercury -	PV	-0.010						00/03/29	MNP1	00/03/29	MG02	50.	19.	
10642	MOSTARDI	Unit 1 Inlet-R2	Mercury -	PV	-0.010						00/03/29	MNP1	00/03/29	MG02	50.	19.	
10643	MOSTARDI	Unit 1 Inlet-R3	Mercury -	PV	-0.010						00/03/29	MNP1	00/03/29	MG02	49.	19.	
L0329	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.101	101.	0.099	99.	00/03/29	MNP1	00/03/29	MG02	$$$	$$$	

10 Tests for OHPROBE with an MDL of 0.010 ug Validated By cmb Control Chart Updated N/A IO Requirements met N/A

145

00017

Lenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
)10627	MOSTARDI	Unit 1 Inlet-R1	Mercury -	PV	0.395						00/03/29	MNB1	00/03/29	MG02	36.	19.	
)10628	MOSTARDI	Unit 1 Inlet-R2	Mercury -	PV	0.221						00/03/29	MNB1	00/03/29	MG02	36.	19.	
)10629	MOSTARDI	Unit 1 Inlet-R3	Mercury -	PV	0.145						00/03/29	MNB1	00/03/29	MG02	35.	19.	
)10641	MOSTARDI	Unit 1 Inlet-R1	Mercury -	PV	0.041	0.041	0.139	97.	0.139	98.	00/03/29	MNB1	00/03/29	MG02	50.	19.	
)10642	MOSTARDI	Unit 1 Inlet-R2	Mercury -	PV	0.028						00/03/29	MNB1	00/03/29	MG02	50.	19.	
)10643	MOSTARDI	Unit 1 Inlet-R3	Mercury -	PV	0.034						00/03/29	MNB1	00/03/29	MG02	49.	19.	
3L0329	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.101	101.	0.101	101.	00/03/29	MNB1	00/03/29	MG02	$$$	$$$	

7 Tests for OHFLTB with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

146

00018

enon umber	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
10617	MOSTARDI	MB R456	Mercury -	PV	-0.010	-99999.0	0.101	101.	0.101	101.	00/03/29	MNF1	00/03/29	MG02	36.	19.	
10618	MOSTARDI	Blank Filter 062	Mercury -	PV	-0.060						00/03/29	MNF1	00/03/29	MG02	36.	19.	
10619	MOSTARDI	Blank Filter 063	Mercury -	PV	-0.060						00/03/29	MNF1	00/03/29	MG02	36.	19.	
10624	MOSTARDI	Unit 1 Outlet-R1	Mercury -	PV	0.844	0.841	1.481	91.	1.485	91.	00/03/29	MNF1	00/03/29	MG02	36.	19.	
10625	MOSTARDI	Unit 1 Outlet-R2	Mercury -	PV	-0.070						00/03/29	MNF1	00/03/29	MG02	36.	19.	
10626	MOSTARDI	Unit 1 Outlet-R3	Mercury -	PV	-0.070						00/03/29	MNF1	00/03/29	MG02	35.	19.	
10631	MOSTARDI	Blank Filter 043	Mercury -	PV	-0.060						00/03/29	MNF1	00/03/29	MG02	50.	19.	
10632	MOSTARDI	Blank Filter 044	Mercury -	PV	-0.060						00/03/29	MNF1	00/03/29	MG02	50.	19.	
10633	MOSTARDI	Blank Filter 045	Mercury -	PV	-0.060						00/03/29	MNF1	00/03/29	MG02	50.	19.	
10638	MOSTARDI	Unit 1 Outlet-R1	Mercury -	PV	-0.140						00/03/29	MNF1	00/03/29	MG02	50.	19.	
3L0329	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.101	101.	0.101	101.	00/03/29	MNF1	00/03/29	MG02	$$$	$$$	
10630	MOSTARDI	MB R456	Mercury -	PV	-0.010	-99999.0	0.101	101.	0.101	101.	00/03/29	MNF2	00/03/29	MG02	50.	19.	
10639	MOSTARDI	Unit 1 Outlet-R2	Mercury -	PV	-0.060						00/03/29	MNF2	00/03/29	MG02	50.	19.	
10640	MOSTARDI	Unit 1 Outlet-R3	Mercury -	PV	-0.060						00/03/29	MNF2	00/03/29	MG02	49.	19.	

14 Tests for OHFLT with an MDL of 0.010 ug Validated By [illegible] Control Chart Updated N/A IO Requirements met N/A

147

00019

00020 1/2

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.03.29 NA Run Code: MG03 Matrix: IMP

Analyst: MG Units: µg (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			BL0329	MNF1		
13			"			
14			BL0329 S			
15			"			
16			BL0329 S			
17			"			
18			10624			
19			"			
20			10624 D			
21			"			
22			10624 S			
23			"			
24			10624 DS			
25			"			
26			10617			
27			"			
28			10618			
29			"			
30			10619			
31			"			
32			CCV			
33			B			
34			D4			
35			10625			
36			"			
37			10626			
38			"			
39			10631			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			10632			
42			"			
43			10633			
44			"			
45			10638			
46			"			
47			10630			
48			"			
49			10639			
50			"			
51			10640			
52			"			
53			BL0329	MNB1		
54			"			
55			CCV.			
56			B			
57			D4			
58			BL0329 S			
59			"			
60			BL0329 DS			
61			"			
62			10641			
63			"			
64			10641 D			
65			"			
66			10641 S			
67			"			
68			10641 DS			
69			"			
70			10642			
71			"			
72			10643			
73			"			
74		1/4	10627			
75		↓	"			
76			10628			
77			"			
78			CCV			
79			B			
80			D4			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

00021

2/2

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00-03-29 (WA) Run Code: MG02 Matrix: IMP.

Analyst: MG Units: µg (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
81 21			10629			
22			"			
23			BL0329	MNPI		
24			"			
25			BL0329 S			
26			"			
27			BL0329 DS			
28			"			
29			10409			
30			"			
31			10409 D			
32			"			
33			10409 S			
34			"			
35			10409 DS			
36			"			
37			10416			
38			"			
39			10411			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			CCV			
42			B			
43			D4			
44			10627			
45			"			
46			10628			
47			"			
48			10629			
49			"			
50			10641			
51			"			
52			10642			
53			"			
54			10643			
55			"			
56			NIST 1633b			
57			"			
58			CCV			
59			B			
60			D4			
61						
62						
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80						

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG, DGHGLEACH, DG29*

Calibration Solutions:

#	I.D.	**Conc.	Spike	***Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
8	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

SIX ATTACHED WITH + AQUA REGIA

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- Reagents added
- Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- Hydroxylamine HCl added
- ✓ Samples shaken and bulked
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	MNP1	20 ml	30 ml	1 X	1.5 ppb = 600 ul of MES-ZENO 30/QCA (Ref Std)
	10	BL 03 29	"	"	"	"	(Processed Blank)
	11	BL 03 29 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	12	BL 03 29 DS					(Duplicate Blank Spike)
1	13	10627	"	"	"	"	FINAL VOL 100 ml
1	14	000329 MN D	"	"	"	"	(Duplicate sample)
1	15	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	16	DS	"	"	"	"	(Duplicate Spiked sample)
2	17	10628	"	"	"	"	100
3	18	29	"	"	"	"	↓
4	19	41	"	"	"	"	
5	20	42	"	"	"	"	
6	21	43	"	"	"	"	
7	22	10409	"	"	"	"	100
8	23	10	"	"	"	"	100
9	23	11	"	"	"	"	100
10	24		"	"	"	"	↓ FRONT 1/2 RINSE
	25	CCV (Cont. Calib. Verif.)	-	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)
	26	BL		20 ml	30 ml	"	(Processed Blank)
	27	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	28	BL DS					(Duplicate Blank Spike)
1	29		"	"	"	"	
1	30	D	"	"	"	"	(Duplicate sample)
1	31	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	32	DS	"	"	"	"	(Duplicate Spiked sample)
2	33		"	"	"	"	
3	34		"	"	"	"	
4	35		"	"	"	"	
5	36		"	"	"	"	
6	37		"	"	"	"	
7	38		"	"	"	"	
8	39		"	"	"	"	
9	40		"	"	"	"	
10	41		"	"	"	"	
	42	CCV (Cont. Calib. Verif.)	-	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Comments ONTARIO HYDRO HF + AQUA REGIA DIGEST 8 HRS @ 85°C

** concentration based on 30 ml final volume, *** concentration based on 20 ml final volume

Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C

DG29HGI, DG29HGF, DG101AA1, DG101AA2

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG, DGHGLEACH, DG29*

Calibration Solutions:

#	I.D.	**Conc.	Spike	***Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
8	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

ATRIX MATCHED WITH HF + AQUA REGIA

Check List

- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- Reagents added
- Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- Hydroxylamine HCl added
- ✓ Samples shaken and bulked
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	MNF1	20 ml	30 ml	1 X	1.5 ppb = 600 ul of MES-ZENO 30/QCA (Ref Std)
	10	BL 0329	"	"	"	"	(Processed Blank)
	11	BL 0329 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	12	BL 0329 DS					(Duplicate Blank Spike)
1	13	10624	"	"	"	"	FINALVOL 700
1	14	10624 D	"	"	"	"	(Duplicate sample)
1	15	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	16	DS	"	"	"	"	(Duplicate Spiked sample)
2	17	10617 MB	"	"	"	"	100
3	18	18	"	"	"	"	600
4	19	19	"	"	"	"	600
5	20	25	"	"	"	"	700
6	21	26	"	"	"	"	700
7	22	31	"	"	"	"	600
8	23	32	"	"	"	"	600
9	23	33	"	"	"	"	600
10	24	38	"	"	"	"	1400
	25	CCV (Cont. Calib. Verif.)	-	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)
	26	BL 0329	MNF2	20 ml	30 ml	"	(Processed Blank)
	27	BL 0329 000329MNS	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	28	BL 0329 DS					(Duplicate Blank Spike)
1	29	10630 MB	"	"	"	"	100
1	30	D	"	"	"	"	(Duplicate sample)
1	31	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	32	DS	"	"	"	"	(Duplicate Spiked sample)
2	33	10639	"	"	"	"	600
3	34	40	"	"	"	"	600
4	35		"	"	"	"	
5	36		"	"	"	"	
6	37		"	"	"	"	
7	38		"	"	"	"	
8	39		"	"	"	"	
9	40		"	"	"	"	
10	41		"	"	"	"	
	42	CCV (Cont. Calib. Verif.)	-	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Comments ONTARIO HYDRO HF + AQUA REGIA DIGEST 8 HRS @ 85°C

** concentration based on 30 ml final volume, *** concentration based on 20 ml final volume

Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C

DG29HGI, DG29HGF, DG101AA1, DG101AA2

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	43	BL		"	"	"	(Processed Blank)
	44	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	45	BL DS					(Duplicate Blank Spike)
1	46		"	"	"	"	
1	47	D	"	"	"	"	(Duplicate sample)
1	48	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	49	DS	"	"	"	"	(Duplicate Spiked sample)
2	50		"	"	"	"	
3	51		"	"	"	"	
4	52		"	"	"	"	
5	53		"	"	"	"	
6	54		"	"	"	"	
7	55		"	"	"	"	
8	56		"	"	"	"	
9	57		"	"	"	"	
10	58		"	"	"	"	
	57	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Procedure/Methodology:

1 Prepare 25 ppm Intermediate Calibration Standard (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO_3
2 Prepare 0.05 ppm Working standard daily by pipetting 200 ul., of 25 ppm Intermediate to 100 ml final volume of 2% HNO_3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Include one External Reference Material sample per run
7 Incude one Organic Mercury Control Standard per run
8 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
9 Spike the tubes as indicated in the comment sector of the digestion sheet
10 Add 0.5 ml. of conc. Nitric Acid (HNO_3), and 1 ml. of conc. Sulphuric acid, (H_2SO_4), to each tube
11 Add 3 ml. Of 6% $KMnO_4$, purple colour must remain for at least 15 minutes
12 Add 1.5 ml. of 5% potassium persulphate, ($K_2S_2O_8$), to each tube
13 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
14 Remove tubes and allow to cool to room temperature
15 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
16 Recap tubes and shake until $KMnO_4$ is destroyed and sample becomes colourless
17 Dilute the sample to a final volume of 30 ml.

Supplier/Lot Information	Supplier	Lot	Expiry Date
Stock Calibration Standard	Inorganic Ventures	N HG020019	
Intermediate Cal Standard	Internal		
Stock Reference Standard	High Purity	836309	00FEB
External Reference Material	SPEX		
Organic Mercury Control Standard	Aldrich		
6% potassium permanganate	Internal		
5% potassium persulphate	Internal		
20% hydroxylamine hydrochloride	Internal		
HNO_3	Anachemia		
~~H_2SO_4~~ HF	Anachemia	MN ~~50~~ 519070	00 05 29
Bath Temps: 1 185°C	Time ON:	Time OFF:	

Prepared By: M Mipiros Date: 00 03 21 Checked by: M Mipiros

00025

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	43	BL 0329	MNB1	"	"	"	(Processed Blank)
	44	BL 0329 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	45	BL 0329 DS					(Duplicate Blank Spike)
1	46	10627	"	"	"	"	100
1	47	D	"	"	"	"	(Duplicate sample)
1	48	000329 MN S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	49	DS	"	"	"	"	(Duplicate Spiked sample)
2	50	10628	"	"	"	"	100
3	51	29	"	"	"	"	
4	52	41	"	"	"	"	DUP + POST SPIKE
5	53	42	"	"	"	"	
6	54	43	"	"	"	"	
7	55		"	"	"	"	
8	56		"	"	"	"	
9	57		"	"	"	"	
10	58		"	"	"	"	* .500g SUB SAMPLE *
	57	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Procedure/Methodology:

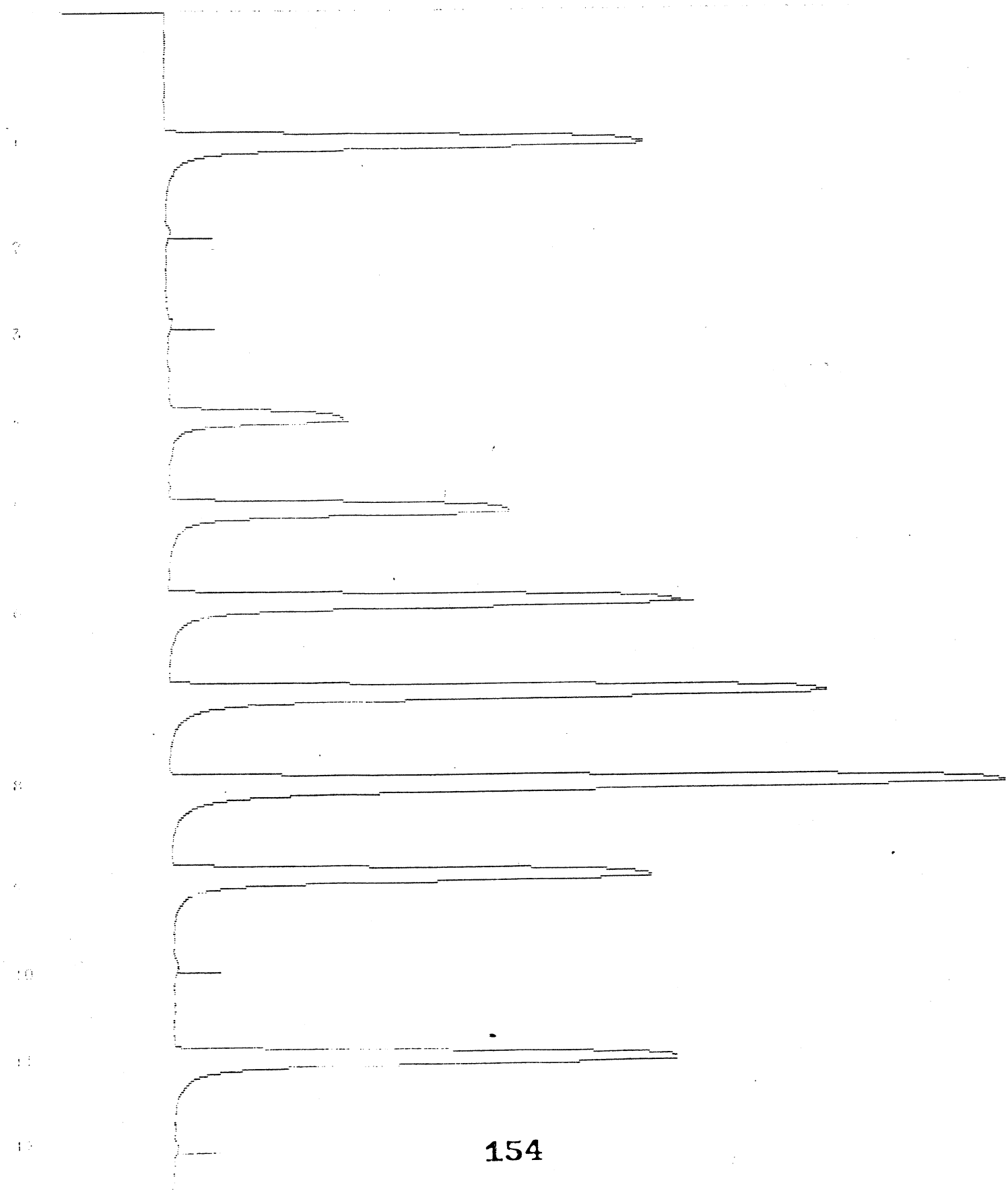
1 Prepare 25 ppm Intermediate Calibration Standard (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO_3
2 Prepare 0.05 ppm Working standard daily by pipetting 200 ul., of 25 ppm Intermediate to 100 ml final volume of 2% HNO_3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Include one External Reference Material sample per run
7 Incude one Organic Mercury Control Standard per run
8 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
9 Spike the tubes as indicated in the comment sector of the digestion sheet
10 Add 0.5 ml. of conc. Nitric Acid (HNO_3), and 1 ml. of conc. Sulphuric acid, (H_2SO_4), to each tube
11 Add 3 ml. Of 6% $KMnO_4$, purple **colour must remain for at least 15 minutes**
12 Add 1.5 ml. of 5% potassium persulphate, ($K_2S_2O_8$), to each tube
13 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
14 Remove tubes and allow to cool to room temperature
15 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
16 Recap tubes and shake until $KMnO_4$ is destroyed and sample becomes colourless
17 Dilute the sample to a final volume of 30 ml.

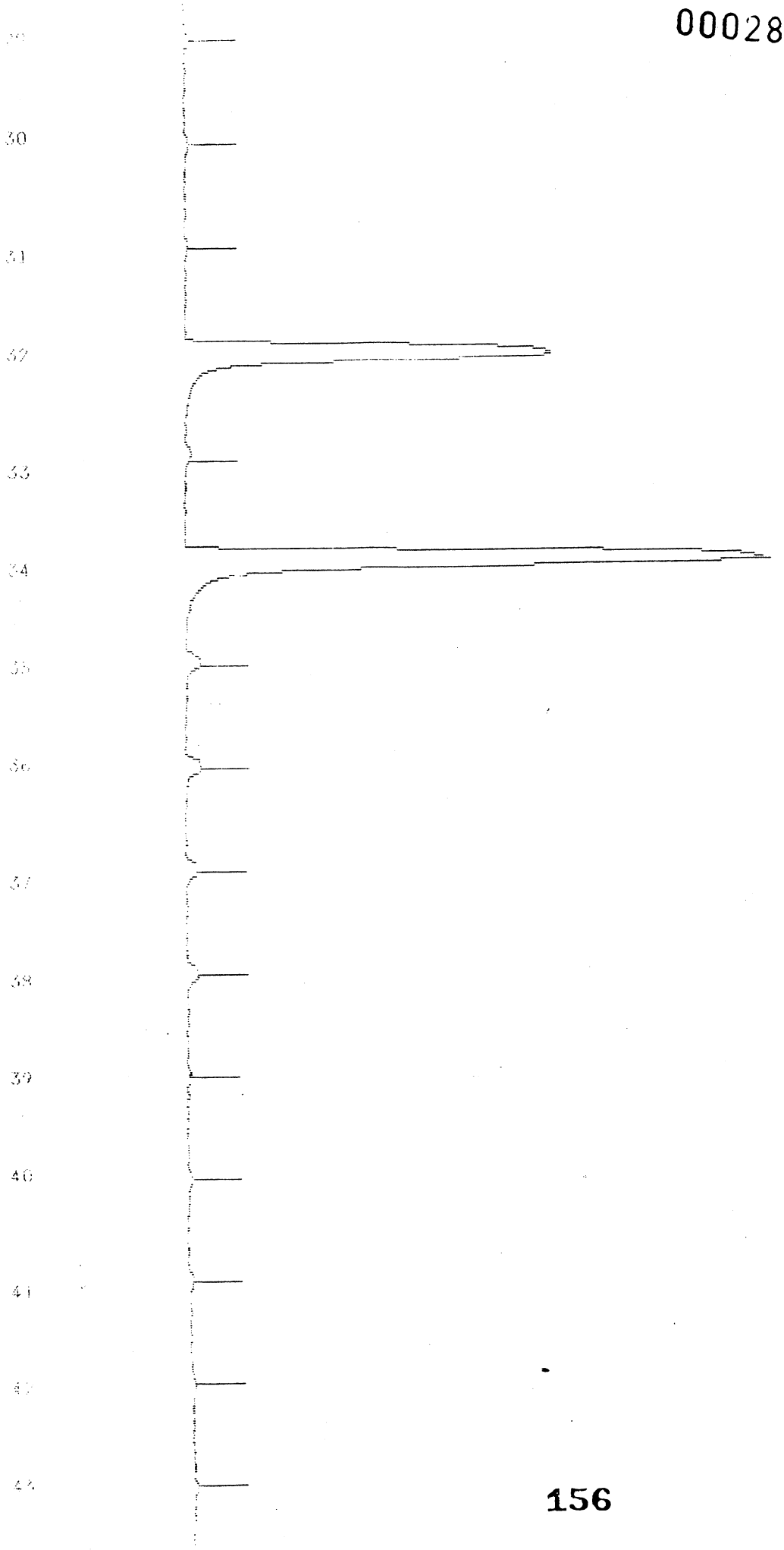
Supplier/Lot Information	Supplier	Lot	Expiry Date
Stock Calibration Standard	Inorganic Ventures	N HG02019	00 04 01
Intermediate Cal Standard	Internal	00 03 09 A	00 04 09
Stock Reference Standard	High Purity	836309	00 FEB
External Reference Material	SPEX		
Organic Mercury Control Standard	Aldrich		
6% potassium permanganate	Internal		
5% potassium persulphate	Internal		
20% hydroxylamine hydrochloride	Internal		
HNO_3	Anachemia		
~~H_2SO_4~~ HF	Anachemia	519070	00 05 29
Bath Temps: 1 185°C	Time ON:	Time OFF:	

Prepared By: M Thoppuraja Date: 00 03 29 Checked by: M Thoppuraja

Philip Analytical Services-Burlington

RUN DATE: 03-29-2000 CHART DATE: 03-30-2000
CHART SPEED: 30
DATA FILE NAME: C:\DP4\DATA\000329WA.DAT

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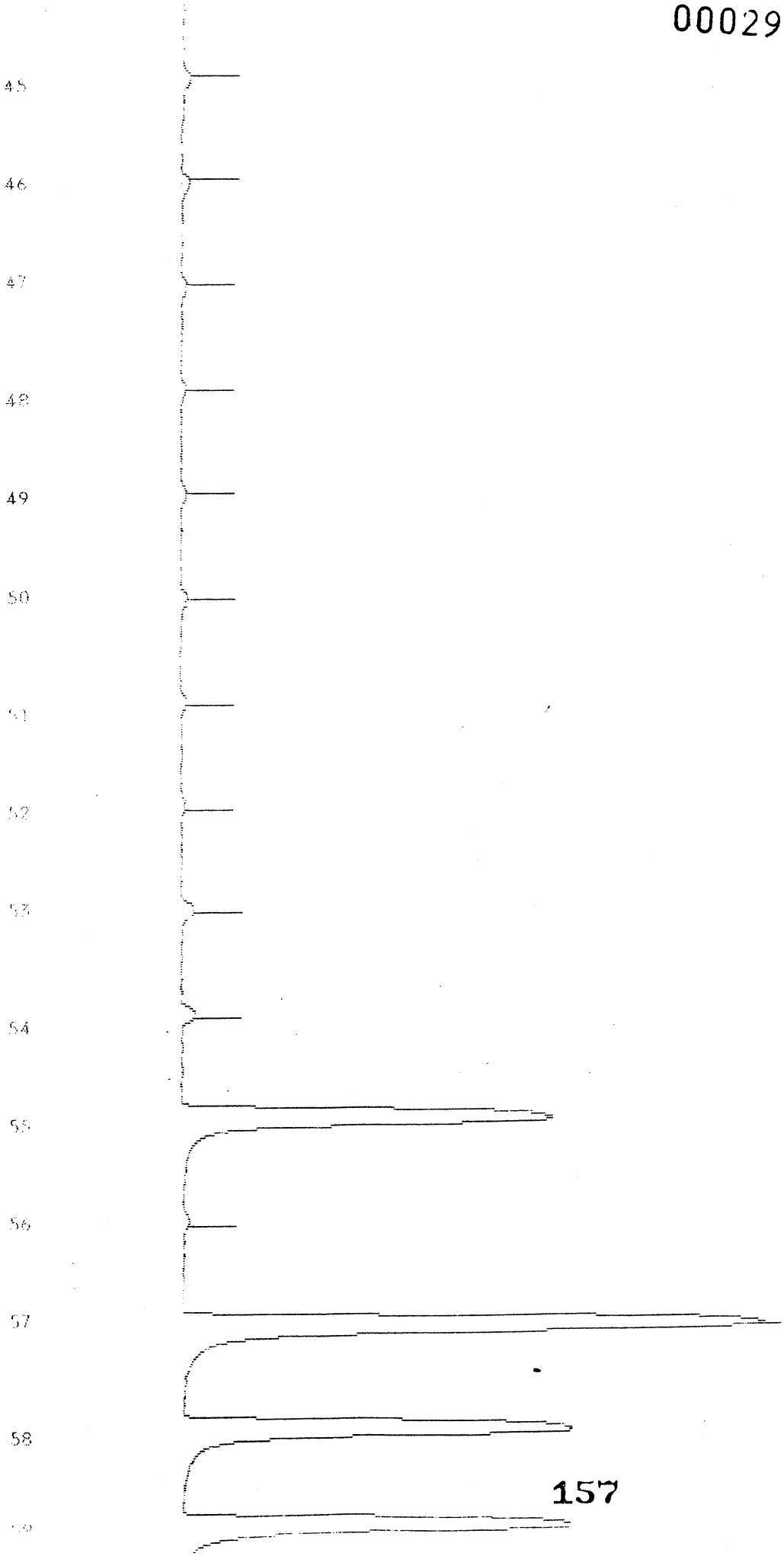
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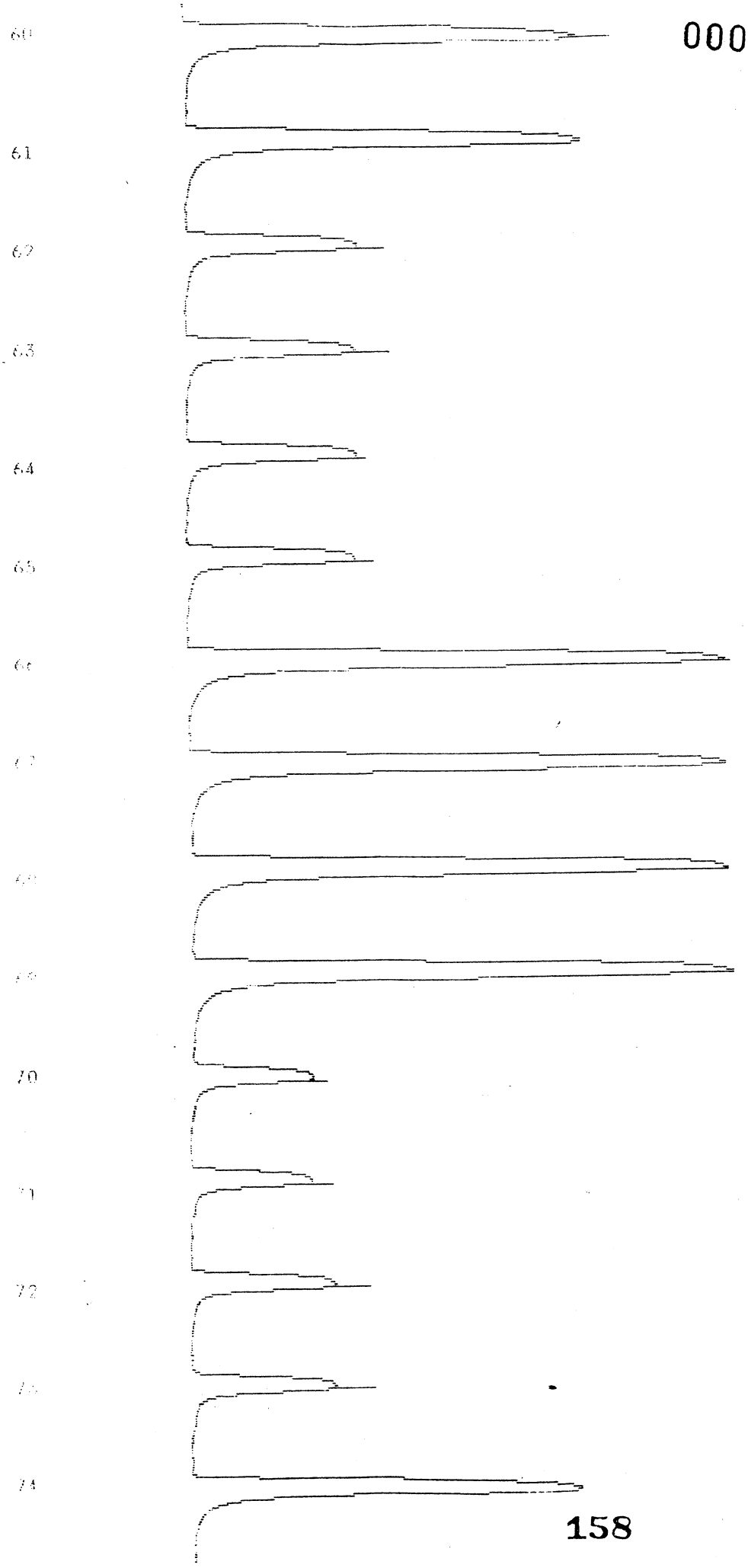
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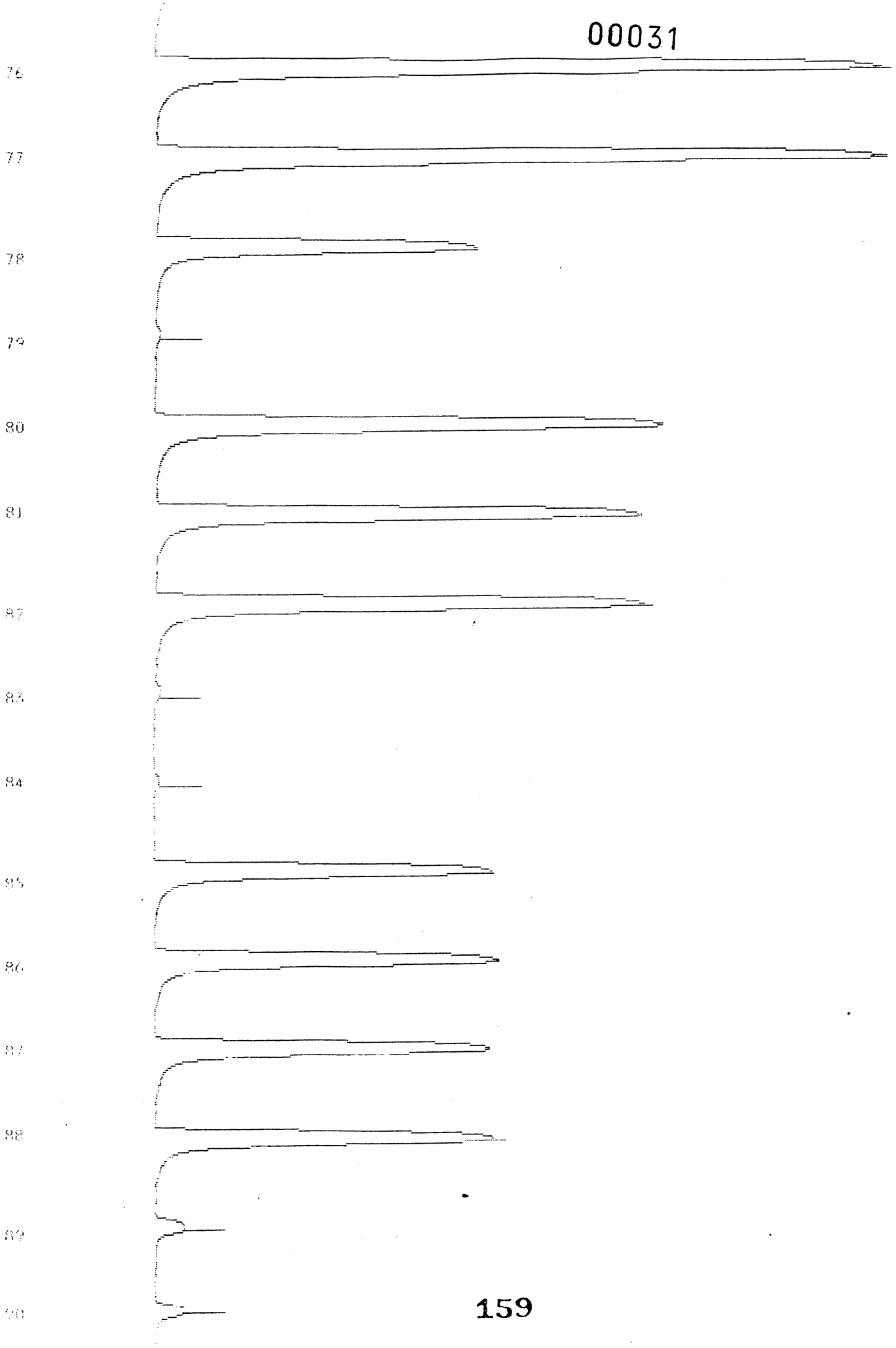
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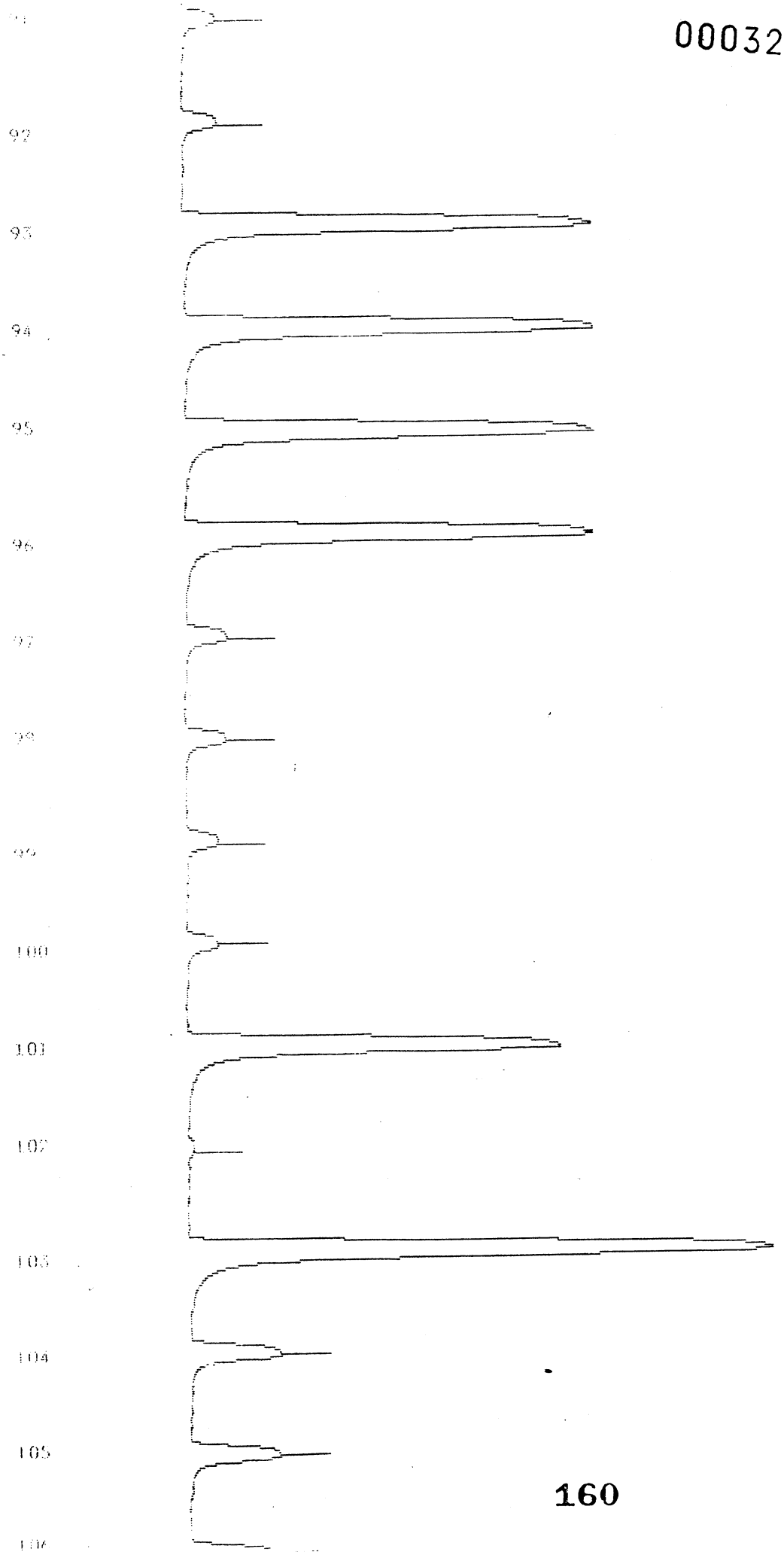
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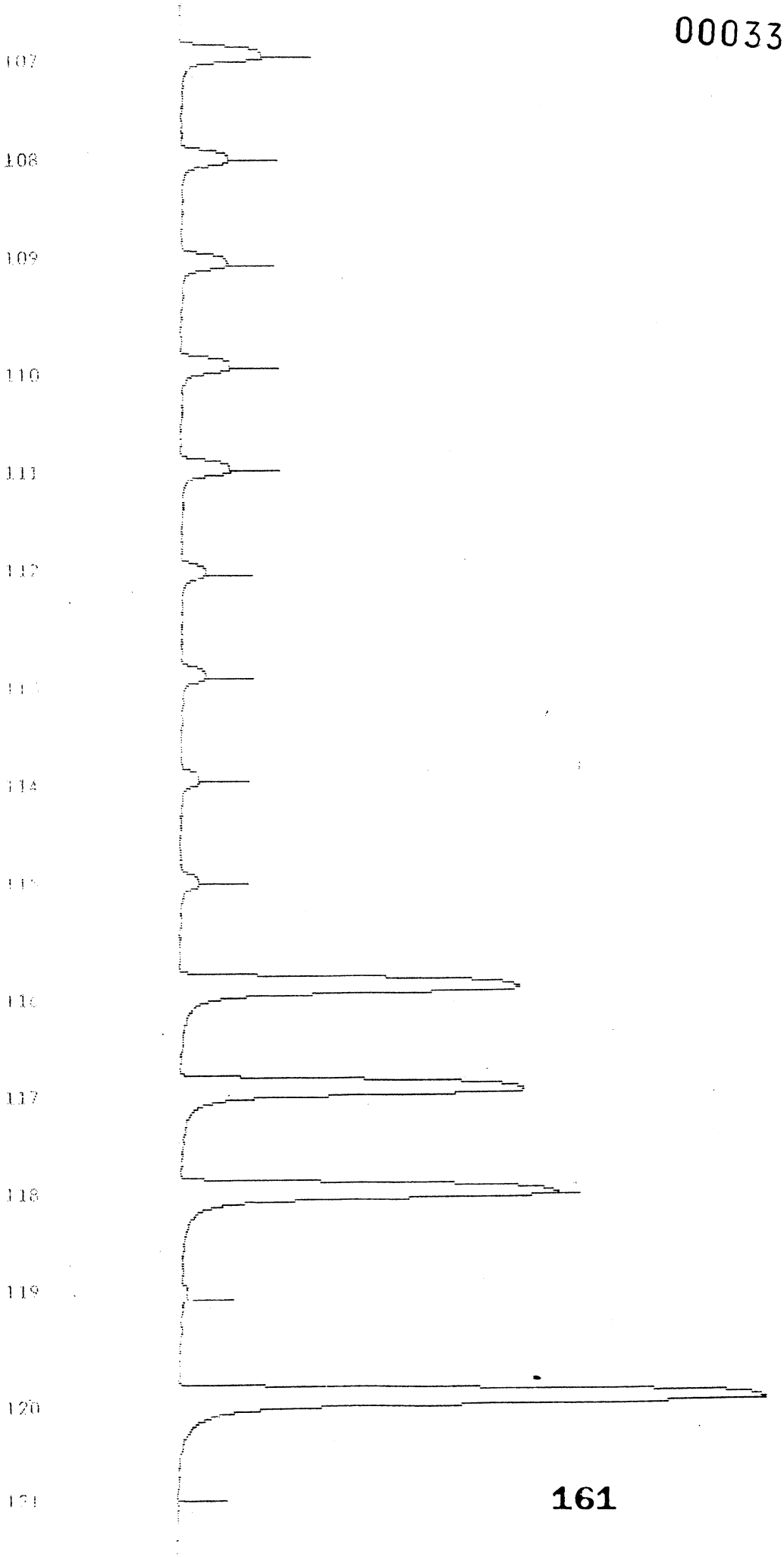
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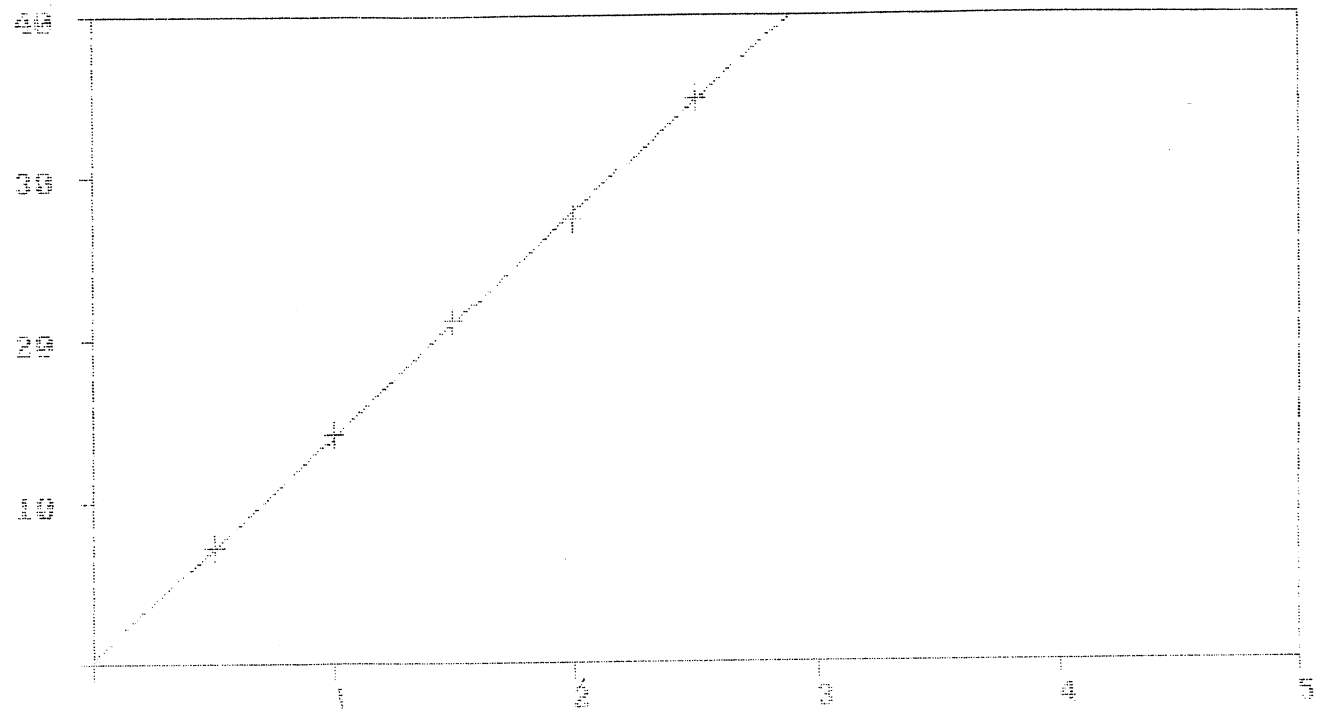
CHANNEL NAME: LDC
RUN NAME: 000329WA



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INTERCEPT = 0.30

CALIBRATION ORDER: 1
SLOPE = 13.7408

CORRELATION: .9998737

CHANNEL NAME: LDC
RUN DATE: 03-29-2000
SAMPLE TABLE NAME: 000329WA
METHOD NAME: HG-W-20

µg/L

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA		CONCENTRATION	EF
1	PRIMER	1	1	20.0		1.432	S
2	DUMMY	1	1	0.2		0.009	1
3	S1: 0	1	1	0.2		-0.002	1
4	S2: .5	1	1	7.2		0.501	
5	S3: 1	1	1	14.2		1.009	
6	S4: 1.5	1	1	21.1		1.516	
7	S5: 2	1	1	27.4		1.974	
8	S6: 2.5	1	1	34.7		2.507	
9	1C2	1	1	19.8		1.421	95%
10	B	1	1	0.0	Total µg	-0.022	b
11	D4	1	1	21.1		1.516	d
12	BL0329-MNF1 10617,10630	1	1	0.0	<0.01	-0.022	1
13	BL0329-MNF1	1	1	0.0		-0.022	1
14	BL0329S	1	1	14.2	0.101	1.009	101%
15	BL0329S	1	1	14.1		1.002	
16	BL0329DS	1	1	14.6	0.104	1.039	103%
17	BL0329DS	1	1	14.5		1.034	
18	10624	1	1	16.8	0.844	1.205	
19	10624	1	1	16.0		1.206	

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22	106243	1	1	29.4	1.481	2.119		91%
23	106243	1	1	29.4	00035	2.115		
24	1062403	1	1	29.4	1.485	2.118		91%
25	1062403	1	1	29.5		2.125		
26	10617	1	1	0.3	<0.01	-0.000	I	
27	10617	1	1	0.3		0.002	I	
28	10618	1	1	0.0	<0.06	-0.022	I	
29	10618	1	1	0.0		-0.022	I	
30	10619	1	1	0.0	<0.06	-0.022	I	
31	10619	1	1	0.0		-0.022	s	
32	CCV	1	1	13.4		0.956		95%
33	B	1	1	0.0		-0.022	b	
34	D4	1	1	21.1		1.516	d	
35	10625	1	1	0.3	<0.07	-0.000	I	
36	10625	1	1	0.4		0.005	I	
37	10626	1	1	0.2	<0.07	-0.006	I	
38	10626	1	1	0.2		-0.007	I	
39	10631	1	1	0.0	<0.06	-0.022	I	
40	10631	1	1	0.0		-0.022	I	
41	10632	1	1	0.0	<0.06	-0.022	I	
42	10632	1	1	0.0		-0.022	I	
43	10633	1	1	0.0	<0.06	-0.022	I	
44	10633	1	1	0.0		-0.022	I	
45	10638	1	1	0.1	<0.140	-0.016	I	
46	10638	1	1	0.1		-0.014	s	
47	10630	1	1	0.0	<0.01	-0.022	I	
48	10630	1	1	0.0		-0.022	I	
49	10639	1	1	0.0	<0.06	-0.022	I	
50	10639	1	1	0.0		-0.022	I	
51	10640	1	1	0.0	<0.06	-0.022	I	
52	10640	1	1	0.0		-0.022	I	
53	BL0329-MNR1	1	1	0.2	<0.01	-0.006	I	
54	BL0329-MNR1	1	1	0.2		-0.002	I	
55	CCV	1	1	13.4		0.956		95%
56	B	1	1	0.0		-0.022	b	
57	D4	1	1	21.1		1.516	d	
58	BL0329S	1	1	14.1	0.101	1.007		101%
59	BL0329S	1	1	14.1		1.004		
60	BL0329DS	1	1	14.2	0.101	1.009		101%
61	BL0329DS	1	1	14.2		1.009	s	
62	10641	1	1	6.0	0.041	0.412		
63	10641	1	1	5.9		0.409		
64	10641D	1	1	6.0	0.041	0.412		
65	10641D	1	1	6.0		0.412		
66	10641S	1	1	19.3	0.139	1.384		97%
67	10641S	1	1	19.3		1.386		
68	10641DS	1	1	19.4	0.139	1.390		98%
69	10641DS	1	1	19.4		1.393		
70	10642	1	1	4.1	0.028	0.279		
71	10642	1	1	4.2		0.281		
72	10643	1	1	5.0	0.034	0.343		
73	10643	1	1	5.0		0.345		
74	10627	4	1	13.9	0.395	3.973		
75	10627	4	1	13.7		3.916		
76	10628	1	1	30.6 mb	0.221	2.209	s	
77	10628	1	1	30.8		2.218		
78	CCV	1	1	13.3		0.947		95%
79	B	1	1	0.0		-0.022	b	
80	D4	1	1	21.1		1.516	d	
81	10629	1	1	20.2	0.145	1.452		
82	10629	1	1	20.3		1.453		
83	BL0329-MNP1	1	1	0.0	<0.01	-0.022	I	
84	BL0329-MNP1	1	1	0.0		-0.020	I	
85	BL0329S	1	1	14.0	0.101	1.000		101%

88	RI0329DS	1	1	14.0	0.099	0.999		99%
89	10409	1	1	0.9	0.036	0.040		
90	10409	1	1	0.9		0.041		
91	10409D	1	1	1.0	<0.01	0.050	s	
92	10409D	1	1	0.9		0.046		
93	10409S	1	1	14.9	0.106	1.061		101%
94	10409S	1	1	14.8		1.057		
95	10409DS	1	1	14.7	0.106	1.050		101%
96	10409DS	1	1	14.8		1.059		
97	10410	1	1	1.1	<0.100	0.058		
98	10410	1	1	1.1		0.060		
99	10411	1	1	0.8	<0.100	0.039		
100	10411	1	1	0.9		0.041		
101	CCV	1	1	13.6		0.965		97%
102	B	1	1	0.0		-0.022	b	
103	D4	1	1	21.1		1.516	d	
104	10627	1	1	3.0	0.020	0.195		
105	10627	1	1	3.0		0.195		
106	10628	1	1	2.7	0.017	0.174	s	
107	10628	1	1	2.6		0.170		
108	10629	1	1	1.3	<0.01	0.076		
109	10629	1	1	1.4		0.080		
110	10641	1	1	1.4	<0.01	0.083		
111	10641	1	1	1.4		0.081		
112	10642	1	1	0.6	<0.01	0.019		
113	10642	1	1	0.6		0.019		
114	10643	1	1	0.3	<0.01	0.003	I	
115	10643	1	1	0.4		0.007	I	
116	~~NIST 1633P~~ VOID mb	1	1	12.1		~~0.969~~ VOID		
117	~~NIST 1633B~~	1	1	12.1		~~0.962~~ VOID		
118	CCV	1	1	13.3		0.949		95%
119	B	1	1	0.0		-0.022	b	
120	D4	1	1	21.1		1.516	d	

INTERCEPT: 0.30 LINEAR COEF: 13.7408

CORRELATION COEF: .9998737

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
010413	MOSTARDI	Unit 1 Inlet-R2	Mercury -	PV	1.482						00/03/24	1BKC	00/03/24	MG02	57.	15.	
010414	MOSTARDI	Unit 1 Inlet-R3	Mercury -	PV	2.973						00/03/24	1BKC	00/03/24	MG02	56.	15.	
010415	MOSTARDI	Unit 2 Inlet-R1	Mercury -	PV	0.667	0.663	1.699	103.	1.715	105.	00/03/24	1BKC	00/03/24	MG02	57.	15.	
010416	MOSTARDI	Unit 2 Inlet-R2	Mercury -	PV	0.991						00/03/24	1BKC	00/03/24	MG02	57.	15.	
010417	MOSTARDI	Unit 2 Inlet-R3	Mercury -	PV	0.960						00/03/24	1BKC	00/03/24	MG02	56.	15.	
010617	MOSTARDI	MB R456	Mercury -	PV	-0.030	-99999.0	0.322	107.	0.322	107.	00/03/24	1BKC	00/03/24	MG02	31.	14.	
010620	MOSTARDI	Reagent Blank 02/22	Mercury -	PV	-0.030						00/03/24	1BKC	00/03/24	MG02	31.	14.	
010622	MOSTARDI	Unit 1 Outlet-FB	Mercury -	PV	-0.050						00/03/24	1BKC	00/03/24	MG02	31.	14.	
010623	MOSTARDI	Unit 1 Inlet-FB	Mercury -	PV	-0.050						00/03/24	1BKC	00/03/24	MG02	31.	14.	
010624	MOSTARDI	Unit 1 Outlet-R1	Mercury -	PV	7.559						00/03/24	1BKC	00/03/24	MG02	31.	14.	
010625	MOSTARDI	Unit 1 Outlet-R2	Mercury -	PV	11.258						00/03/24	1BKC	00/03/24	MG02	31.	14.	
BL0324	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.322	107.	0.324	108.	00/03/24	1BKC	00/03/24	MG02	$$$	$$$	
010626	MOSTARDI	Unit 1 Outlet-R3	Mercury -	PV	9.824						00/03/24	2BKC	00/03/24	MG02	30.	14.	
010627	MOSTARDI	Unit 1 Inlet-R1	Mercury -	PV	3.161	3.220	4.103	91.	4.192	100.	00/03/24	2BKC	00/03/24	MG02	31.	14.	
010628	MOSTARDI	Unit 1 Inlet-R2	Mercury -	PV	4.834						00/03/24	2BKC	00/03/24	MG02	31.	14.	
010629	MOSTARDI	Unit 1 Inlet-R3	Mercury -	PV	4.051						00/03/24	2BKC	00/03/24	MG02	30.	14.	
010630	MOSTARDI	MB R456	Mercury -	PV	-0.030	-99999.0	0.328	109.	0.322	107.	00/03/24	2BKC	00/03/24	MG02	45.	14.	
010634	MOSTARDI	Reagent Blank 02/08	Mercury -	PV	-0.030						00/03/24	2BKC	00/03/24	MG02	45.	14.	
010636	MOSTARDI	Unit 1 Outlet-FB	Mercury -	PV	0.063						00/03/24	2BKC	00/03/24	MG02	45.	14.	
010637	MOSTARDI	Unit 1 Inlet-FB	Mercury -	PV	0.302						00/03/24	2BKC	00/03/24	MG02	45.	14.	
010638	MOSTARDI	Unit 1 Outlet-R1	Mercury -	PV	0.356						00/03/24	2BKC	00/03/24	MG02	45.	14.	
010639	MOSTARDI	Unit 1 Outlet-R2	Mercury -	PV	0.239						00/03/24	2BKC	00/03/24	MG02	45.	14.	
010640	MOSTARDI	Unit 1 Outlet-R3	Mercury -	PV	0.409						00/03/24	2BKC	00/03/24	MG02	44.	14.	
BL0324	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.328	109.	0.322	107.	00/03/24	2BKC	00/03/24	MG02	$$$	$$$	
010403	MOSTARDI	Unit 3 Stack-R1	Mercury -	PV	0.280	0.273	1.328	105.	1.317	104.	00/03/24	3BKC	00/03/24	MG02	59.	15.	
010641	MOSTARDI	Unit 1 Inlet-R1	Mercury -	PV	0.827						00/03/24	3BKC	00/03/24	MG02	45.	14.	
010642	MOSTARDI	Unit 1 Inlet-R2	Mercury -	PV	0.370	0.377	1.416	104.	1.419	105.	00/03/24	3BKC	00/03/24	MG02	45.	14.	
010643	MOSTARDI	Unit 1 Inlet-R3	Mercury -	PV	0.191						00/03/24	3BKC	00/03/24	MG02	44.	14.	
BL0324	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.318	105.	0.316	105.	00/03/24	3BKC	00/03/24	MG02	$$$	$$$	

29 Tests for OHKCL with an MDL of 0.030 ug Validated By cmb Control Chart Updated N/A IO Requirements met N/A

165

00037

00038

LDC AUTOSAMPLER RUN LOG (MERCURY)

1/3

Date: 00.03.24 Run Code: MG02 Matrix: MU?

Analyst: MG Units: µg (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			WS 378			
13			ORG. REF			
14			BL0324	1BKC		
15			"			
16			BL0324 S			
17			"			
18			BL0324 DS			
19			"			
20			10415			
21			"			
22			10415 D			
23			"			
24			10415 S			
25			"			
26			10415 DS			
27			"			
28			10413			
29			"			
30		1/2	10414			
31		↓	"			
32			10416			
33			"			
34			CCV			
35			B			
36			D4			
37			10417			
38			"			
39			10420			
40			"			
41			10422			
42			"			
43			10423			
44			"			
45		1/4	10424			
46		↓	"			
47		1/5	10425			
48		↓	"			
49			BL0324	2BKC		
50			"			
51			BL0324S			
52			"			
53			BL0324DS			
54			"			
55		1/2	10627			
56		↓	"			
57			CCV			
58			B			
59			D4			
60		1/2	10627 D			
61		↓	"			
62			10627S			
63			"			
64			10627 DS			
65			"			
66		1/5	10626			
67		↓	"			
68		1/4	10628			
69		↓	"			
70			10629			
71			"			
72			10634			
73			"			
74			10636			
75			"			
76			10637			
77			"			
78			10638			
79			"			
80			CCV			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY) 00039 2/3

Date: 00·0324 Run Code: MG02 Matrix: IMP

Analyst: MG Units: _____ (see comments) MDL: _____

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21			B			
22			D4			
23			10639			
24			"			
25			10640			
26			"			
27			BL0324	3BKC		
28			"			
29			BL0324S			
30			"			
31			BL0324DS			
32			"			
33			10642			
34			"			
35			10642 D			
36			"			
37			10642 S			
38			"			
39			10642 DS			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			10641			
42			"			
43			CCV			
44			B			
45			D4			
46			10643			
47			"			
48			10403			
49			"			
50			10403 D			
51			"			
52			10403 S			
53			"			
54			10403 DS			
55			"			
56			10276			
57			"			
58			10278			
59			"			
60			10280			
61			"			
62			10282			
63			"			
64			CCV			
65			B			
66			D4			
67			BL0324	STB1		
68			BL0324S			
69			11461			
70			61 D			
71			61 S			
72			11258			
73			11474			
74			75			
75			76			
76			77			
77			78			
78			79			
79			11714			
80			15			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY) 00040 3/3

Date: 00.03.24 Run Code: MG02 Matrix: WATER

Analyst: MG Units: _____ (see comments) MDL: _____

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19			10416			
20			"			
141 21			WS 378			
22			ORG. REF			
23			CCV			
24			B			
25			D4			
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
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56						
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80						

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

Revision 1.0
Effective 000216

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG, DGHGLEACH, DG29*

Calibration Solutions:

#	I.D.	**Conc.	Spike	***Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
8	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples shaken and bulked
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	1BKC	20 ml	30 ml	1 X	1.5 ppb = 600 ul of MES-ZENO 30/QCA (Ref Std)
AB 10-03-24	10	BL 0323	"	"	"	"	(Processed Blank) 10617MB.
	11	BL 0323 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	12	BL 0323 DS					(Duplicate Blank Spike)
1	13	10415	"	"	"	"	FV=1000 ml
1	14	D	"	"	"	"	(Duplicate sample)
1	15	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	16	DS	"	"	"	"	(Duplicate Spiked sample)
2	17	10413	"	"	"	"	
3	18	14	"	"	"	"	
4	19	16	"	"	"	"	
5	20	17	"	"	"	"	
6	21	10620	"	"	"	"	FV=50 ml
7	22	22	"	"	"	"	FV=500 ml
8	23	23	"	"	"	"	FV=500 ml
9	23	24	"	"	"	"	FV=1000 ml
10	24	25	"	"	"	"	FV=1000 ml
	25	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)
00-03-24 AB.	26	BL 0324	2BKC	20 ml	30 ml	"	(Processed Blank) 10630MB.
	27	BL 0324 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	28	BL 0324 DS					(Duplicate Blank Spike)
1	29	10627	"	"	"	"	FV=1000 ml
1	30	D	"	"	"	"	(Duplicate sample)
1	31	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	32	DS	"	"	"	"	(Duplicate Spiked sample)
2	33	10626	"	"	"	"	
3	34	28	"	"	"	"	
4	35	29	"	"	"	"	
5	36	10634	"	"	"	"	FV=50 ml
6	37	36	"	"	"	"	FV=500 ml
7	38	37	"	"	"	"	FV=500 ml
8	39	38	"	"	"	"	FV=1000 ml
9	40	39	"	"	"	"	FV=1000 ml
10	41	40	"	"	"	"	FV=1000 ml
	42	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Comments

** concentration based on 30 ml final volume, *** concentration based on 20 ml final volume

Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C

DG29HGI, DG29HGF, DG101AA1, DG101AA2

Philip Analytical Services-Burlington

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	43	BL 0324	3BKC	"	"	"	(Processed Blank)
	44	BL 0324 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	45	BL 0324 DS					(Duplicate Blank Spike)
1	46	10642	"	"	"	"	FV= 1000 ml
1	47	D	"	"	"	"	(Duplicate sample)
1	48	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	49	DS	"	"	"	"	(Duplicate Spiked sample)
2	50	10641	"	"	"	"	
3	51	43	"	"	"	"	
4	52	10403	"	"	"	"	Full QC DONE ' 1000 ml
5	53	10276	"	"	"	"	
6	54	78	"	"	"	"	
7	55	80	"	"	"	"	
8	56	82	"	"	"	"	
9	57		"	"	"	"	
10	58		"	"	"	"	
	57	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

13 03.24

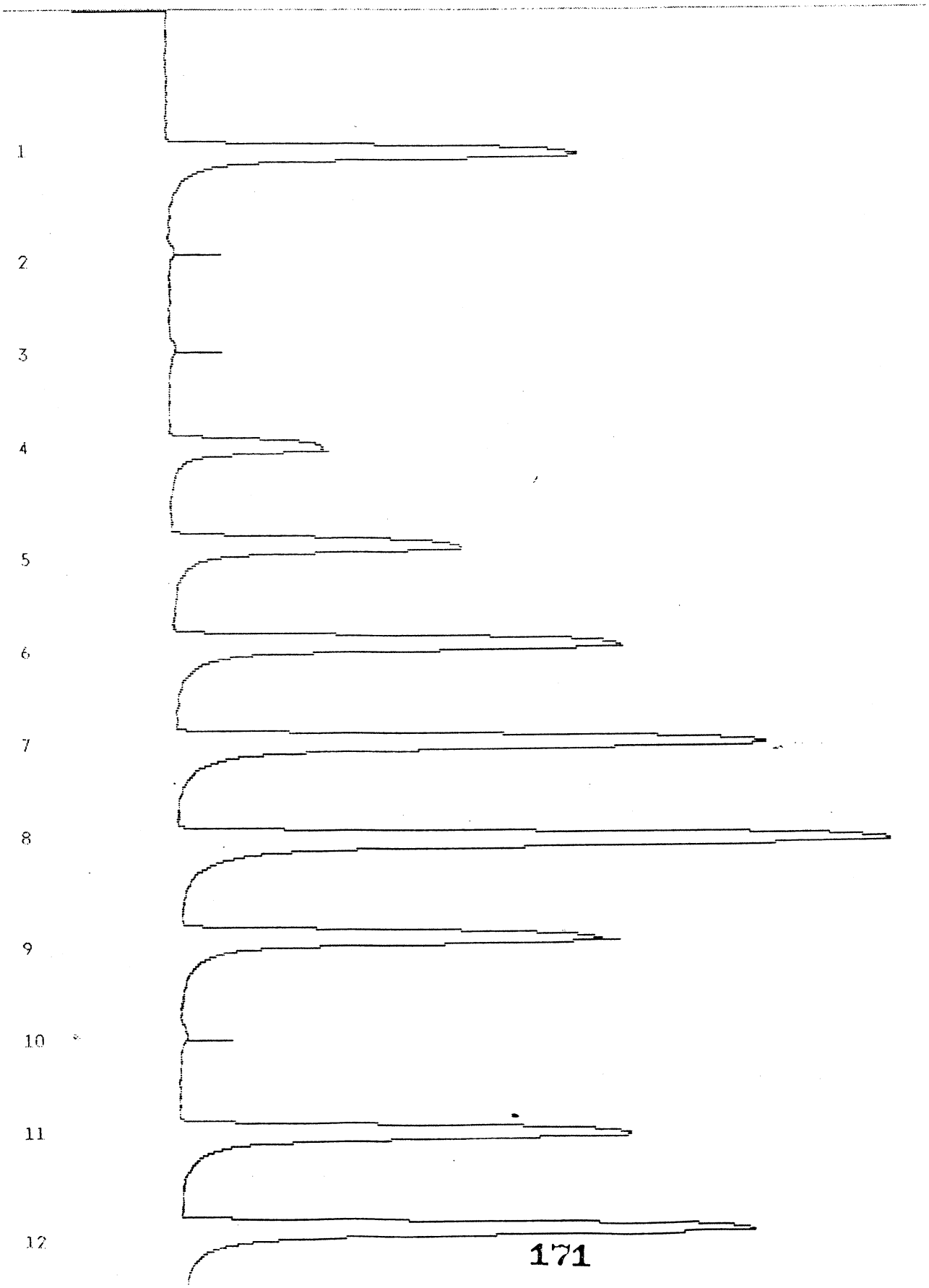
Procedure/Methodology:

1 Prepare 25 ppm Intermediate Calibration Standard (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO_3
2 Prepare 0.05 ppm Working standard daily by pipetting 200 ul., of 25 ppm Intermediate to 100 ml final volume of 2% HNO_3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Include one External Reference Material sample per run
7 Incude one Organic Mercury Control Standard per run
8 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
9 Spike the tubes as indicated in the comment sector of the digestion sheet
10 Add 0.5 ml. of conc. Nitric Acid (HNO_3), and 1 ml. of conc. Sulphuric acid, (H_2SO_4), to each tube
11 Add 3 ml. Of 6% $KMnO_4$, purple colour must remain for at least 15 minutes
12 Add 1.5 ml. of 5% potassium persulphate, ($K_2S_2O_8$), to each tube
13 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
14 Remove tubes and allow to cool to room temperature
15 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
16 Recap tubes and shake until $KMnO_4$ is destroyed and sample becomes colourless
17 Dilute the sample to a final volume of 30 ml.

Supplier/Lot Information	Supplier	Lot	Expiry Date
Stock Calibration Standard	Inorganic Ventures	N-HG 02019	00/04/01
Intermediate Cal Standard	Internal	00/03/09 A	00/04/09
Stock Reference Standard	High Purity	836309	00 Feb.
External Reference Material	SPEX	CONC-12 (00.03.23)	00.05.23.
Organic Mercury Control Standard	Aldrich	06811 HR	01.02.07
6% potassium permanganate	Internal	00.03.10 B	00.05.10
5% potassium persulphate	Internal	00.02.15 B	00/04/15
20% hydroxylamine hydrochloride	Internal	00.03.10 A	00/05/10
HNO_3	Anachemia	119100	00/05/13
H_2SO_4	Anachemia	219020	00/05/13
Bath Temps: 1 195°C	Time ON: 11:30am	Time OFF: 1:30pm	00/04/21
Prepared By: AB	Date: 00.03.24	Checked by:	

AB 00.03.

RUN DATE: 03-24-2000 CHART DATE: 03-27-2000
CHART SPEED: 30
DATA FILE NAME: C:\DP4\DATA\000324W.DAT



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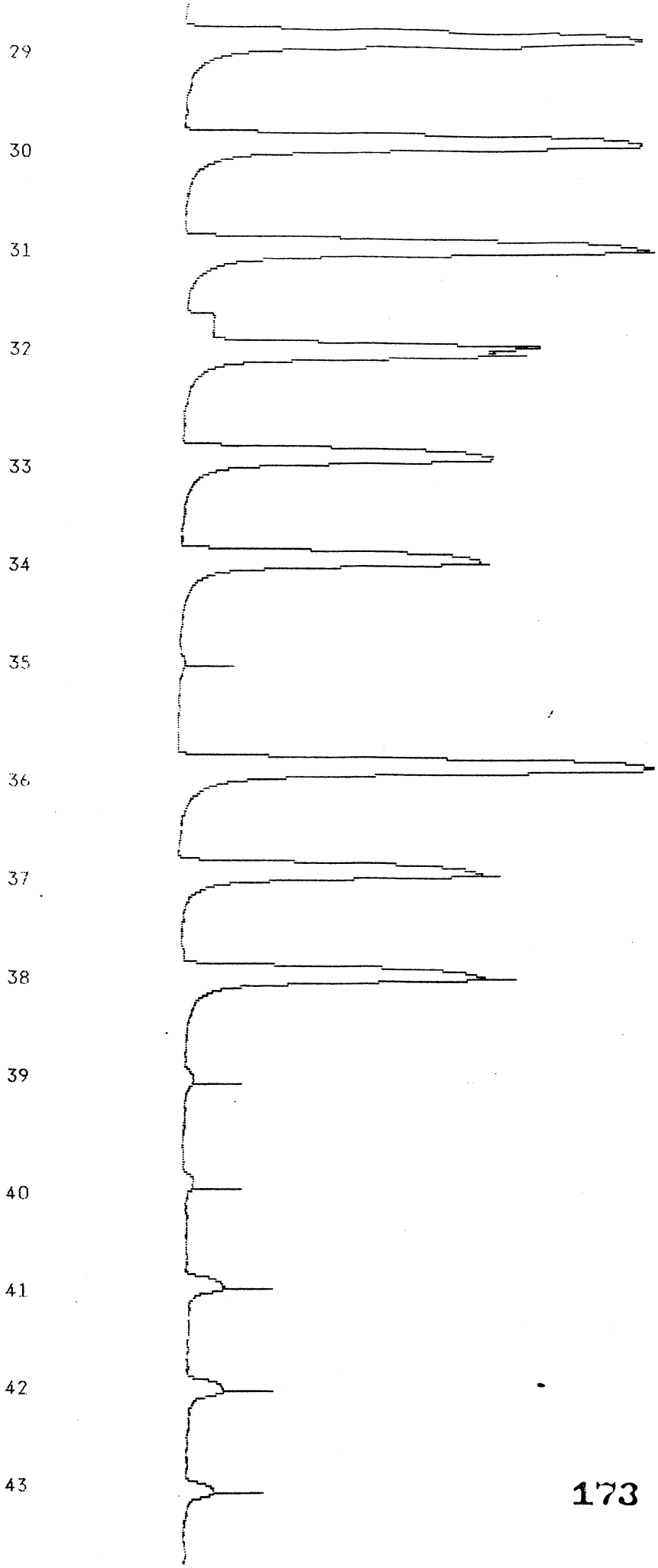
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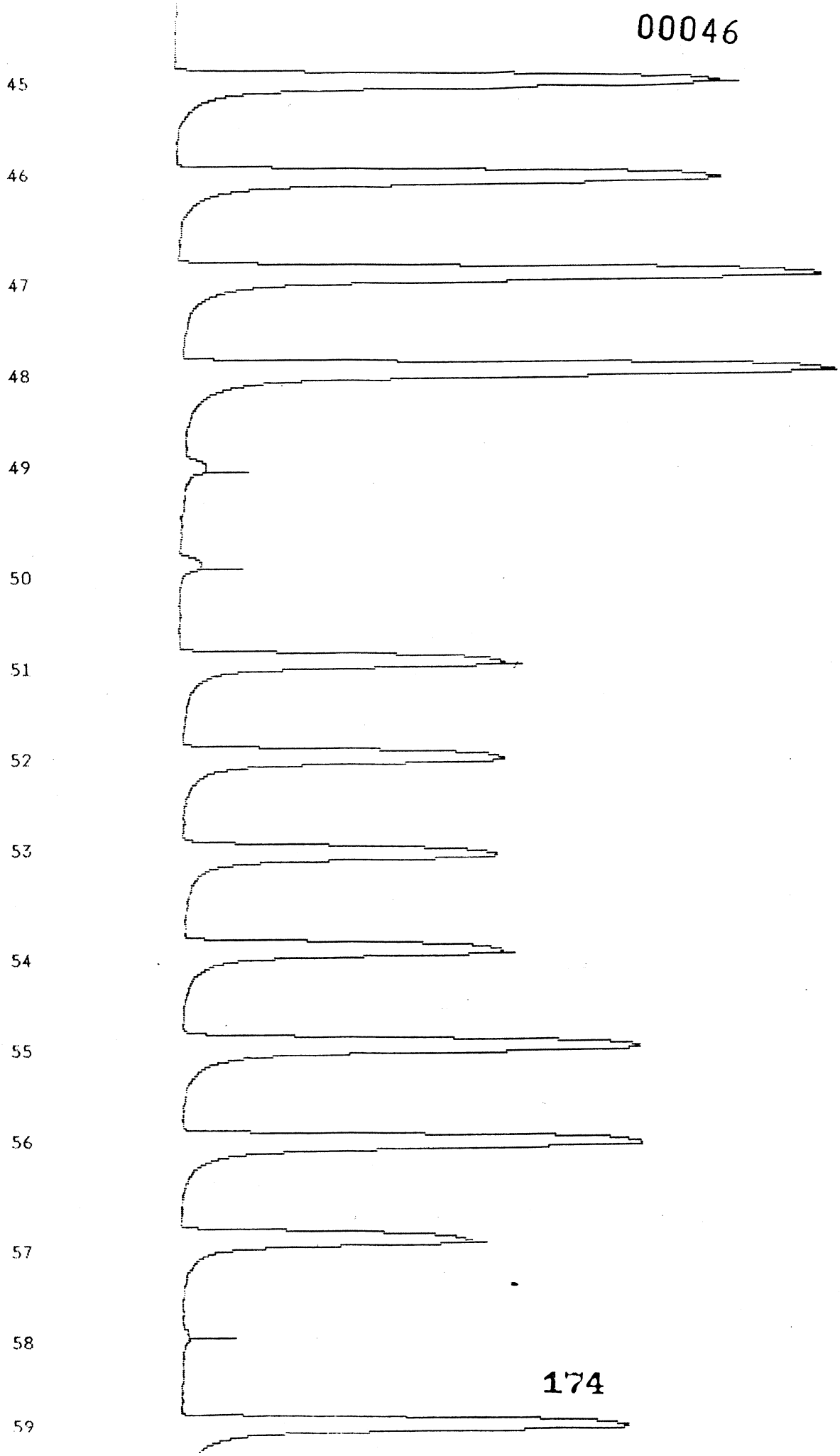
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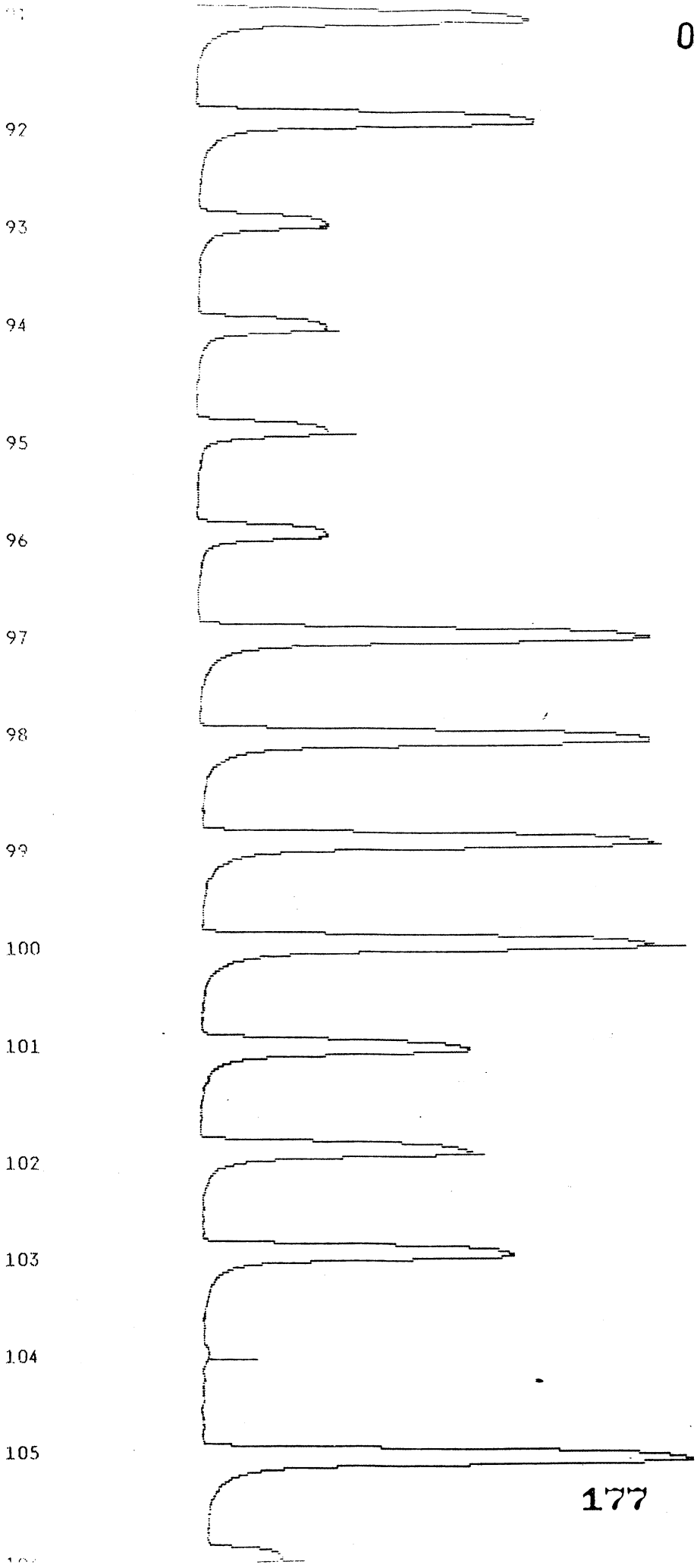
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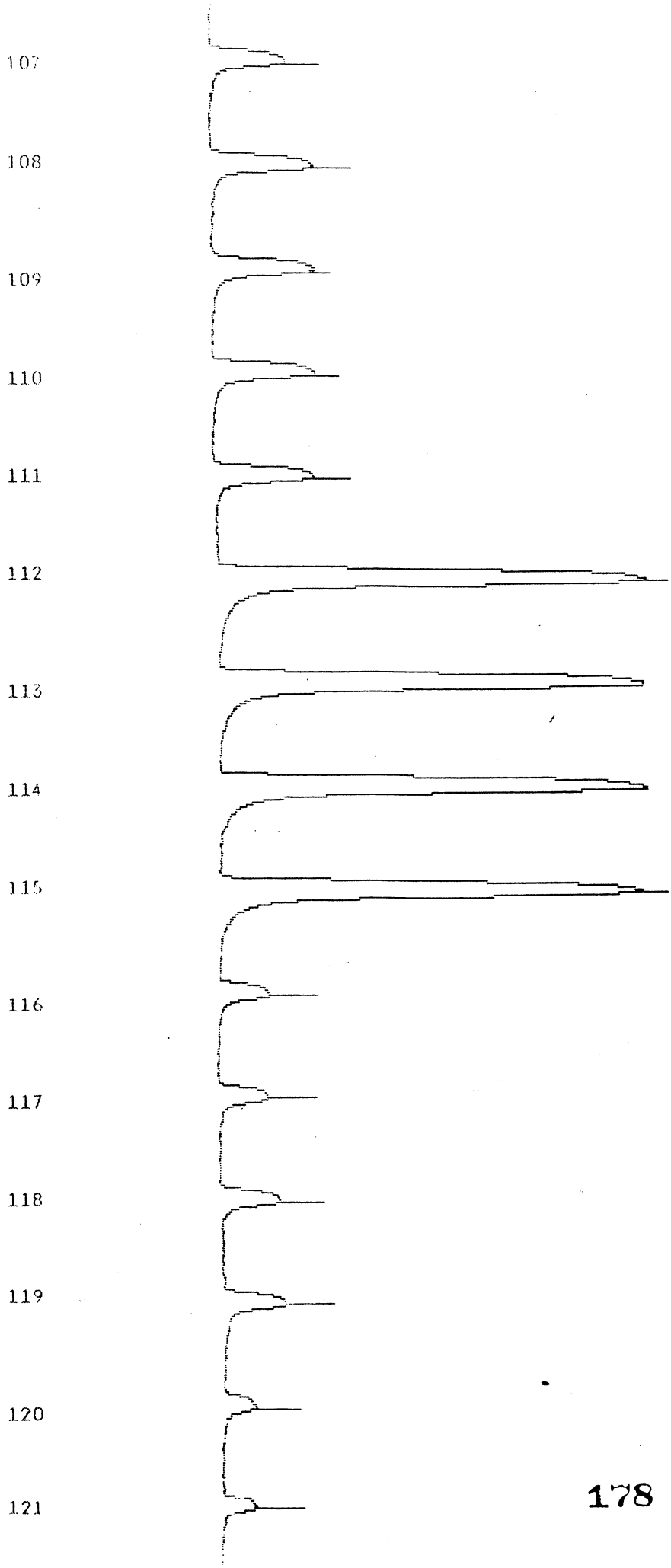
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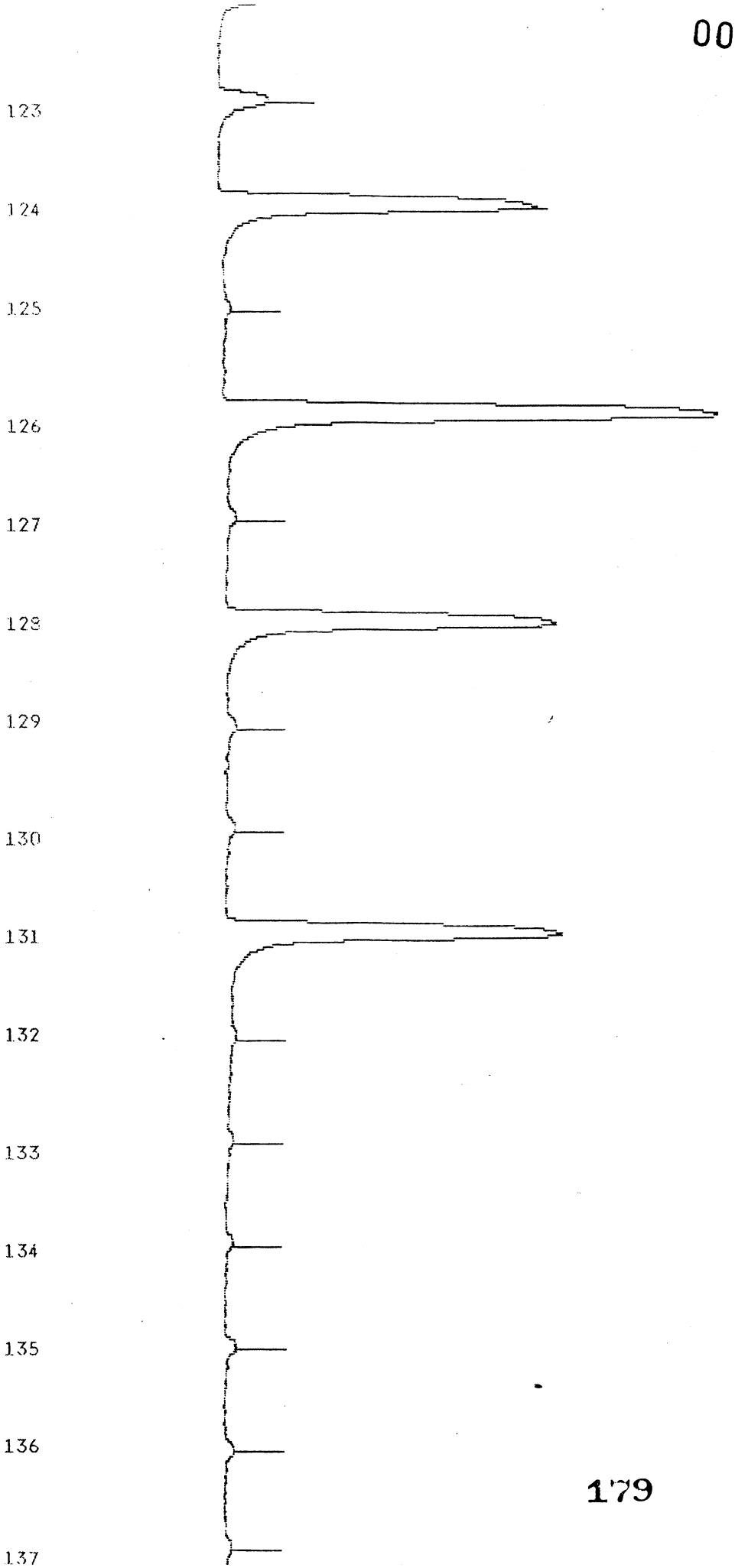
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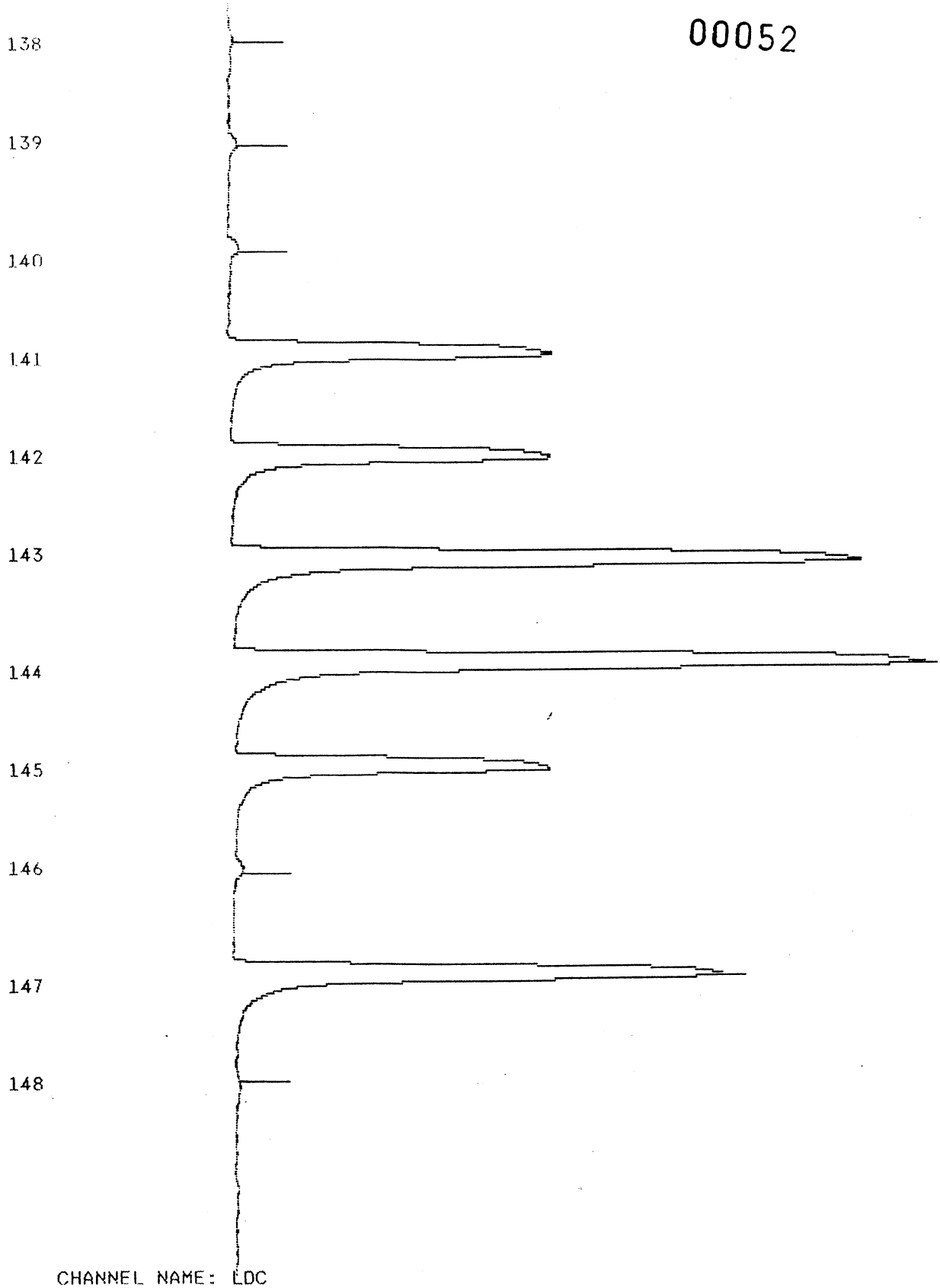
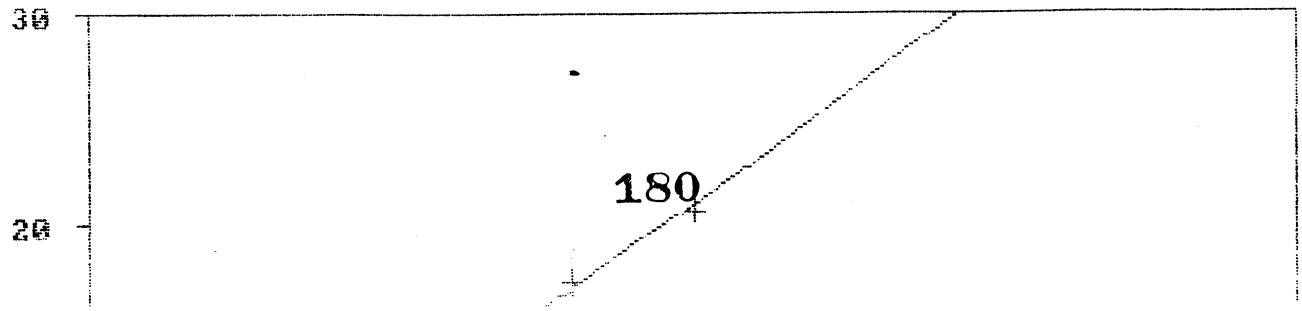
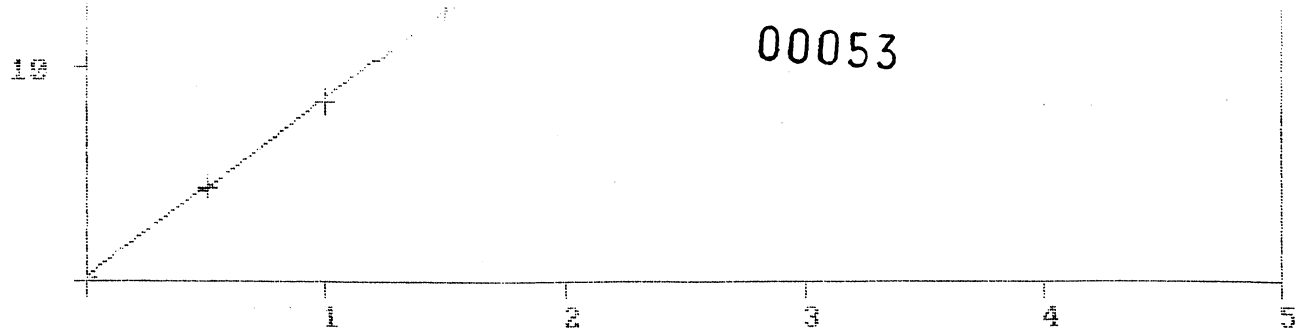


CHANNEL NAME: LDC
RUN NAME: 000324W





DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.24 SLOPE = 8.297226

CORRELATION: .9996467

CHANNEL NAME: LDC
RUN DATE: 03-24-2000
SAMPLE TABLE NAME: 000324W
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	µg/L	CONCENTRATION	EF
1	PRIMER	1	1	12.1		1.425	s
2	DUMMY	1	1	0.2		-0.009	I
3	S1: 0	1	1	0.1		-0.012	I
4	S2: .5	1	1	4.4		0.500	
5	S3: 1	1	1	8.5		0.992	
6	S4: 1.5	1	1	12.9		1.525	
7	S5: 2	1	1	17.1		2.031	
8	S6: 2.5	1	1	20.7		2.464	
9	ICV	1	1	12.0		1.422	95%
10	B	1	1	0.0		-0.029	b
11	D4	1	1	12.9		1.525	d
12	WS 378	1	1	16.4	TUG	1.951	95%
13	ORG REF	1	1	18.2		2.169	109%
14	BL0324-18KC 10617	1	1	0.3	<0.03	0.009	I
15	BL0324-18KC	1	1	0.3		0.009	I
16	BL0324S	1	1	9.1	0.322	1.066	109%
17	BL0324S	1	1	9.2		1.077	
18	BL0324DS	1	1	9.2	0.324	1.077	108%
19	BL0324DS	1	1	9.2		1.083	
20	10415	1	1	5.7	0.667	0.659	
21	10415	1	1	5.8		0.674	
22	10415D	1	1	5.8	0.663	0.671	
23	10415D	1	1	5.7		0.654	
24	10415S	1	1	14.5	1.699	1.713	103%
25	10415S	1	1	14.2		1.684	
26	104150S	1	1	14.4	1.715	1.707	105%
27	10415DS	1	1	14.5		1.722	
28	10413	1	1	12.6	1.482	1.483	
29	10413	1	1	12.5		1.481	
30	10414	2	1	12.6	2.973	2.967	
31	10414	2	1	12.6		2.979	s
32	10416	1	1	10.3		1.216	] RERUN @ END mb
33	10416	1	1	8.5		0.992	
34	CCV	1	1	8.1		0.951	95%
35	B	1	1	0.0	181	-0.029	b
36	D4	1	1	12.9		1.525	d
37	10417	1	1	8.2	0.960	0.963	
38	10417	1	1	8.2		0.957	
39	104120	1	1	0.1	<0.03	-0.018	I

42	10422		1	1	0.8		0.068	
43	10423		1	1	0.5	0.054	0.033	
44	10423		1	1	0.6		0.038	
45	10424		4	1	15.9	7.559	7.570	
46	10424		4	1	15.9		7.547	s
47	10425		5	1	18.9	11.258	11.214	
48	10425		5	1	19.0		11.302	
49	BL0324-2BKC	10630	1	1	0.4	<0.03	0.024	I
50	BL0324-2BKC		1	1	0.5		0.027	I
51	BL0324S		1	1	9.3	0.328	1.095	109%
52	BL0324S		1	1	9.3		1.092	
53	BL0324DS		1	1	9.1	0.322	1.066	107%
54	BL0324DS		1	1	9.2		1.080	
55	10627		2	1	13.3	3.161	3.149	
56	10627		2	1	13.4		3.173	
57	CCV		1	1	8.4		0.977	97%
58	B		1	1	0.0		-0.029	b
59	D4		1	1	12.9		1.525	d
60	10627D		2	1	13.7	3.220	3.238	
61	10627D		2	1	13.5		3.202	s
62	10627S		2	1	17.3	4.103	4.121	91%
63	10627S		2	1	17.2		4.085	
64	10627DS		2	1	17.7	4.192	4.203	100%
65	10627DS		2	1	17.6		4.180	
66	10626		5	1	16.8	9.824	9.978	
67	10626		5	1	16.3		9.669	
68	10628		4	1	10.3	4.834	4.863	
69	10628		4	1	10.2		4.804	
70	10629		4	1	8.7	4.051	4.086	
71	10629		4	1	8.6		4.015	
72	10634		1	1	0.0	<0.03	-0.029	I
73	10634		1	1	0.0		-0.029	I
74	10636		1	1	1.3	0.063	0.127	
75	10636		1	1	1.3		0.124	
76	10637		1	1	5.3	0.302	0.606	s
77	10637		1	1	5.2		0.601	
78	10638		1	1	3.2	0.356	0.350	
79	10638		1	1	3.2		0.362	
80	CCV		1	1	8.2		0.957	95%
81	B		1	1	0.0		-0.029	b
82	D4		1	1	12.9		1.525	d
83	10639		1	1	2.2	0.239	0.241	
84	10639		1	1	2.2		0.236	
85	10640		1	1	3.6	0.409	0.403	
86	10640		1	1	3.7		0.415	
87	BL0324-3BKC		1	1	0.2	<0.03	0.000	I
88	BL0324-3BKC		1	1	0.3		0.009	I
89	BL0324S		1	1	9.0	0.318	1.051	105%
90	BL0324S		1	1	9.1		1.066	
91	BL0324DS		1	1	9.0	0.316	1.054	105%
92	BL0324DS		1	1	9.0		1.051	
93	10642		1	1	3.3	0.370	0.368	
94	10642		1	1	3.3		0.371	
95	10642D		1	1	3.4	0.377	0.377	
96	10642D		1	1	3.4		0.377	
97	10642S		1	1	12.0	1.416	1.413	104%
98	10642S		1	1	12.0		1.419	
99	10642DS		1	1	12.0	1.419	1.413	105%
100	10642DS		1	1	12.1		1.425	
101	10641		1	1	7.1	0.827	0.824	
102	10641		1	1	7.1		0.830	
103	CCV		1	1	8.3	182	0.971	97%
104	B		1	1	0.0		-0.029	b
105	D4		1	1	12.9		1.525	d

107	[illegible]						
108	10403	1	1	2.6	0.280	0.280	
109	10403	1	1	2.6	00055	0.280	
110	10403D	1	1	2.6	0.273	0.283	
111	10403D	1	1	2.4		0.262	
112	10403S	1	1	11.2	1.328	1.322	105%
113	10403S	1	1	11.3		1.333	
114	10403DS	1	1	11.3	1.317	1.330	104%
115	10403DS	1	1	11.1		1.304	
116	10276	1	1	1.0	0.091	0.088	
117	10276	1	1	1.0		0.094	
118	10278	1	1	1.2	0.123	0.115	
119	10278	1	1	1.3		0.130	
120	10280	1	1	0.6	<0.05	0.044	
121	10280	1	1	0.7		0.053	s
122	10282	1	1	1.1	0.093	0.100	
123	10282	1	1	1.0		0.085	
124	CCV	1	1	8.2		0.954	95%
125	B	1	1	0.0		-0.029	b
126	D4	1	1	12.9		1.525	d
127	BL0324-STB1	1	1	0.0		-0.026	I
128	BL0324S	1	1	8.5		0.998	100%
129	11461	1	1	0.0		-0.026	I
130	11461D	1	1	0.0		-0.023	I
131	11461S	1	1	8.6		1.010	101%
132	11258	1	1	0.0		-0.029	I
133	11474	1	1	0.0		-0.029	I
134	11475	1	1	0.0		-0.029	I
135	11476	1	1	0.1		-0.020	I
136	11477	1	1	0.0		-0.023	s
137	11478	1	1	0.0		-0.029	I
138	11479	1	1	0.0		-0.029	I
139	11714	1	1	0.0		-0.029	I
140	11715	1	1	0.1		-0.020	I
141	10416	1	1	8.5	0.991	0.998	
142	10416	1	1	8.4		0.983	
143	WS 378	1	1	16.6		1.975	99%
144	ORG REF	1	1	18.4		2.190	109%
145	CCV	1	1	8.3		0.971	97%
146	B	1	1	0.0		-0.029	b
147	D4	1	1	12.9		1.525	d

INTERCEPT: 0.24 LINEAR COEF: 8.297226
CORRELATION COEF: .9996467

enon umber	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
10387	MOSTARDI	MB R456	Mercury -	PV	-0.030	-99999.0	0.306	101.	0.308	103.	00/03/30	1BMN	00/03/30	MG02	65.	21.	
10394	MOSTARDI	Reagent Blank 01/25	Mercury -	PV	-0.030						00/03/30	1BMN	00/03/30	MG02	65.	21.	
10395	MOSTARDI	Reagent Blank 01/26	Mercury -	PV	-0.030						00/03/30	1BMN	00/03/30	MG02	64.	21.	
10396	MOSTARDI	Reagent Blank 01/27	Mercury -	PV	-0.030						00/03/30	1BMN	00/03/30	MG02	63.	21.	
10397	MOSTARDI	Reagent Blank 01/28	Mercury -	PV	-0.030						00/03/30	1BMN	00/03/30	MG02	62.	21.	
10398	MOSTARDI	Unit 1/2 Stack-FB	Mercury -	PV	-0.100						00/03/30	1BMN	00/03/30	MG02	63.	21.	
10399	MOSTARDI	Unit 3 Stack-FB	Mercury -	PV	-0.100						00/03/30	1BMN	00/03/30	MG02	65.	21.	
10400	MOSTARDI	Unit 1 Inlet-FB	Mercury -	PV	-0.100						00/03/30	1BMN	00/03/30	MG02	63.	21.	
10401	MOSTARDI	Unit 2 Inlet-FB	Mercury -	PV	-0.100						00/03/30	1BMN	00/03/30	MG02	63.	21.	
10402	MOSTARDI	Unit 3 Inlet-FB	Mercury -	PV	-0.100						00/03/30	1BMN	00/03/30	MG02	65.	21.	
10403	MOSTARDI	Unit 3 Stack-R1	Mercury -	PV	12.387	12.330	21.712	93.	21.816	95.	00/03/30	1BMN	00/03/30	MG02	65.	21.	*PDS*
L0330	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.306	101.	0.308	103.	00/03/30	1BMN	00/03/30	MG02	$$$	$$$	
10404	MOSTARDI	Unit 3 Stack-R2	Mercury -	PV	16.553						00/03/30	2BMN	00/03/30	MG02	65.	21.	
10405	MOSTARDI	Unit 3 Stack-R3	Mercury -	PV	14.494						00/03/30	2BMN	00/03/30	MG02	64.	21.	
10406	MOSTARDI	Unit 1/2 Stack-R1	Mercury -	PV	16.969	17.026	36.092	95.	36.242	96.	00/03/30	2BMN	00/03/30	MG02	63.	21.	*PDS*
10407	MOSTARDI	Unit 1/2 Stack-R2	Mercury -	PV	16.856						00/03/30	2BMN	00/03/30	MG02	63.	21.	
10408	MOSTARDI	Unit 1/2 Stack-R3	Mercury -	PV	16.289						00/03/30	2BMN	00/03/30	MG02	62.	21.	
10409	MOSTARDI	Unit 3 Inlet-R1	Mercury -	PV	20.219						00/03/30	2BMN	00/03/30	MG02	65.	21.	
10410	MOSTARDI	Unit 3 Inlet-R2	Mercury -	PV	20.144						00/03/30	2BMN	00/03/30	MG02	65.	21.	
10411	MOSTARDI	Unit 3 Inlet-R3	Mercury -	PV	17.895						00/03/30	2BMN	00/03/30	MG02	64.	21.	
10412	MOSTARDI	Unit 1 Inlet-R1	Mercury -	PV	4.788						00/03/30	2BMN	00/03/30	MG02	63.	21.	
10413	MOSTARDI	Unit 1 Inlet-R2	Mercury -	PV	8.878						00/03/30	2BMN	00/03/30	MG02	63.	21.	
L0330	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.310	103.	0.307	102.	00/03/30	2BMN	00/03/30	MG02	$$$	$$$	
10415	MOSTARDI	Unit 2 Inlet-R1	Mercury -	PV	1.866	1.854	3.729	93.	3.719	93.	00/03/30	3BMN	00/03/30	MG02	63.	21.	*PDS*
10416	MOSTARDI	Unit 2 Inlet-R2	Mercury -	PV	1.368						00/03/30	3BMN	00/03/30	MG02	63.	21.	
10617	MOSTARDI	MB R456	Mercury -	PV	-0.030	-99999.0	0.307	102.	0.309	103.	00/03/30	3BMN	00/03/30	MG02	37.	20.	
10620	MOSTARDI	Reagent Blank 02/22	Mercury -	PV	-0.030						00/03/30	3BMN	00/03/30	MG02	37.	20.	
10621	MOSTARDI	Reagent Blank 02/23	Mercury -	PV	-0.030						00/03/30	3BMN	00/03/30	MG02	36.	20.	
10622	MOSTARDI	Unit 1 Outlet-FB	Mercury -	PV	-0.100						00/03/30	3BMN	00/03/30	MG02	37.	20.	
10623	MOSTARDI	Unit 1 Inlet-FB	Mercury -	PV	-0.100						00/03/30	3BMN	00/03/30	MG02	37.	20.	
10624	MOSTARDI	Unit 1 Outlet-R1	Mercury -	PV	13.624						00/03/30	3BMN	00/03/30	MG02	37.	20.	
10625	MOSTARDI	Unit 1 Outlet-R2	Mercury -	PV	13.681						00/03/30	3BMN	00/03/30	MG02	37.	20.	
L0330	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.307	102.	0.309	103.	00/03/30	3BMN	00/03/30	MG02	$$$	$$$	
10627	MOSTARDI	Unit 1 Inlet-R1	Mercury -	PV	11.414	11.433	20.824	94.	20.900	95.	00/03/30	4BMN	00/03/30	MG02	37.	20.	*PDS*
10629	MOSTARDI	Unit 1 Inlet-R3	Mercury -	PV	7.011						00/03/30	4BMN	00/03/30	MG02	36.	20.	
10630	MOSTARDI	MB R456	Mercury -	PV	-0.030	-99999.0	0.313	104.	0.306	102.	00/03/30	4BMN	00/03/30	MG02	51.	20.	
10634	MOSTARDI	Reagent Blank 02/08	Mercury -	PV	-0.030						00/03/30	4BMN	00/03/30	MG02	51.	20.	
10635	MOSTARDI	Reagent Blank 02/09	Mercury -	PV	-0.030						00/03/30	4BMN	00/03/30	MG02	50.	20.	
10636	MOSTARDI	Unit 1 Outlet-FB	Mercury -	PV	-0.100						00/03/30	4BMN	00/03/30	MG02	51.	20.	
10637	MOSTARDI	Unit 1 Inlet-FB	Mercury -	PV	-0.100						00/03/30	4BMN	00/03/30	MG02	51.	20.	
10638	MOSTARDI	Unit 1 Outlet-R1	Mercury -	PV	4.702						00/03/30	4BMN	00/03/30	MG02	51.	20.	
10639	MOSTARDI	Unit 1 Outlet-R2	Mercury -	PV	3.715						00/03/30	4BMN	00/03/30	MG02	51.	20.	
L0330	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.313	104.	0.306	102.	00/03/30	4BMN	00/03/30	MG02	$$$	$$$	
10640	MOSTARDI	Unit 1 Outlet-R3	Mercury -	PV	3.946						00/03/30	5BMN	00/03/30	MG02	50.	20.	
10641	MOSTARDI	Unit 1 Inlet-R1	Mercury -	PV	5.423	5.395	10.157	95.	10.096	93.	00/03/30	5BMN	00/03/30	MG02	51.	20.	*PDS*
10642	MOSTARDI	Unit 1 Inlet-R2	Mercury -	PV	3.353						00/03/30	5BMN	00/03/30	MG02	51.	20.	
10643	MOSTARDI	Unit 1 Inlet-R3	Mercury -	PV	3.519						00/03/30	5BMN	00/03/30	MG02	50.	20.	
L0330	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.299	100.	0.302	102.	00/03/30	5BMN	00/03/30	MG02	$$$	$$$	

00056

enon umber	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments

48 Tests for OHMN4 with an MDL of 0.030 ug Validated By cmb Control Chart Updated N/A IO Requirements met N/A

185

00057

enon umber	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
10387	MOSTARDI	MB R456	Mercury -	PV	-0.010	-99999.0	0.098	98.	0.097	97.	00/03/30	6BHY	00/03/30	MG02	65.	21.	*BLKIMP*
10394	MOSTARDI	Reagent Blank 01/25	Mercury -	PV	-0.010						00/03/30	6BHY	00/03/30	MG02	65.	21.	
10617	MOSTARDI	MB R456	Mercury -	PV	-0.010	-99999.0	0.098	98.	0.097	97.	00/03/30	6BHY	00/03/30	MG02	37.	20.	*BLKIMP*
10620	MOSTARDI	Reagent Blank 02/22	Mercury -	PV	-0.010						00/03/30	6BHY	00/03/30	MG02	37.	20.	
10630	MOSTARDI	MB R456	Mercury -	PV	-0.010	-99999.0	0.098	98.	0.097	97.	00/03/30	6BHY	00/03/30	MG02	51.	20.	*BLKIMP*
10634	MOSTARDI	Reagent Blank 02/08	Mercury -	PV	-0.010						00/03/30	6BHY	00/03/30	MG02	51.	20.	
L0330	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.098	98.	0.097	97.	00/03/30	6BHY	00/03/30	MG02	$$$	$$$	*BLKIMP*

7 Tests for OHHYX with an MDL of 0.010 ug Validated By cmb Control Chart Updated N/A IO Requirements met N/A

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00058

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
010394	MOSTARDI	Reagent Blank 01/25	Mercury -	PV	-0.010						00/03/30	6BHY	00/03/30	MG02	65.	21.	
010620	MOSTARDI	Reagent Blank 02/22	Mercury -	PV	-0.010						00/03/30	6BHY	00/03/30	MG02	37.	20.	
010634	MOSTARDI	Reagent Blank 02/08	Mercury -	PV	-0.010						00/03/30	6BHY	00/03/30	MG02	51.	20.	

3 Tests for OHHNO3 with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

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00059

00060 1/3

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.03.30 WA Run Code: MG02 Matrix: IMP

Analyst: _____ Units: µg (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			BL0330	1BMN.		
13			"			
14			BL0330S			
15			"			
16			BL0330 DS			
17			"			
18		1/10	10403			
19			"			
20			10403 D			
21			"			
22			10403 S			
23			"			
24			10403 DS			
25			"			
26			10394			
27			"			
28			10395			
29			"	10396		
30			10397			
31			"			
32			CCV			
33			B			
34			D4			
35			10398			
36			"			
37			10399			
38			"			
39			10400			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			10401			
42			"			
43			10402			
44			"			
45			BL0330	2BMN		
46			"			
47			BL0330S			
48			"			
49			BL0330 DS			
50			"			
51		1/20	10406			
52			"			
53			10406 D			
54			"			
55			CCV			
56			B			
57			D4			
58		1/20	10406 S			
59			"			
60			10406 DS			
61			"			
62		1/20	10404			
63			"			
64			10405			
65			"			
66			10407			
67			"			
68			10408			
69			"			
70			10409			
71			"			
72			10410			
73			"			
74			~~10470~~ 10411 MS			
75			"			
76		1/4	10412			
77			"			
78			CCV			
79			B			
80			D4			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

00061

2/3

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.03.30 WA Run Code: M602 Matrix: INP

Analyst: MG Units: µg (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
81 ~~21~~		1/4	10413			
22		↓	"			
23			BL0330	3BMN		
24			"			
25			BL0330 S			
26			"			
27			BL0330 DS			
28			"			
29		1/2	10415			
30			"			
31			10415 D			
32			"			
33			10415 S			
34			"			
35			10415 DS			
36			"			
37	MP		10414	1x		
38			"			
39		1/2	10416			
40		↓	"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			CCV			
42			B			
43			D4			
44		1/20	10417			
45		↓	"			
46			10620			
47			"			
48			10621			
49			"			
50			10622			
51			"			
52			10623			
53			"			
54		1/20	10624			
55		↓	"			
56		1/8	10625			
57		↓	"			
58			BL0330	4BMN		
59			"			
60			BL0330 S			
61			"			
62			BL0330 DS			
63			"			
64			CCV			
65			B			
66			D4			
67		1/10	10627			
68			"			
69			10627 D			
70			"			
71			10627 S			
72			"			
73			10627 DS			
74			"			
75			10626			
76			"			
77		1/4	10628			
78			"			
79			10629			
80			"			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

00062 3/3

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00·03.30 WA Run Code: MG02 Matrix: MP

Analyst: MG Units: µg (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
141 ~~21~~			10634			
22			"			
23			10635			
24			"			
25			10636			
26			"			
27			CCV			
28			B			
29			D4			
30			10637			
31			"			
32		1/4	10638			
33			"			
34			10639			
35			"			
36			BL0330	5BMN		
37			"			
38			BL0330 S			
39			"			
40			BL0330 DS			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			BL0330 DS			
42		1/5	10641			
43			"			
44			10641 D			
45			"			
46			10641 S			
47			"			
48			10641 DS			
49			"			
50			CCV			
51			B			
52			D4			
53		1/4	10640			
54			"			
55			10642			
56			"			
57			10643			
58			"			
59			BL0330	6BHY		
60			"			
61			BL0330 S			
62			"			
63			BL0330 DS			
64			"			
65			10620			
66			"			
67			10634			
68			"			
69			10394			
70			"			
71			10620	0.1N HNO_3		
72			"			
73			10634			
74			"			
75			10394			
76			"			
77			CCV			
78			B			
79			D4			
80						

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG, DGHGLEACH, DG29*

Calibration Solutions:

#	I.D.	**Conc.	Spike	***Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
8	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List

- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- N/A Bath at 95 degrees C
- N/A Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples shaken and bulked
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	46MN	20 ml	30 ml	1 X	1.5 ppb = 600 ul of MES-ZENO 30/QCA (Ref Std)
	10	BL 0330	"	"	"	"	(Processed Blank) 10630 MB
	11	BL 0330 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	12	BL 0330 DS					(Duplicate Blank Spike)
1	13	10627	"	"	"	"	FV=1000ml
1	14	D	"	"	"	"	(Duplicate sample)
1	15	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	16	DS	"	"	"	"	(Duplicate Spiked sample)
2	17	10626	"	"	"	"	FV=1000ml
3	18	628	"	"	"	"	↓
4	19	629	"	"	"	"	↓
5	20	10634	"	"	"	"	FV=50ml
6	21	35	"	"	"	"	FV=50ml
7	22	36	"	"	"	"	FV=1000ml
8	23	37	"	"	"	"	↓
9	23	38	"	"	"	"	↓
10	24	39	"	"	"	"	↓
	25	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)
	26	BL 0330	56MN	20 ml	30 ml	"	(Processed Blank)
	27	BL 0330 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	28	BL 0330 DS					(Duplicate Blank Spike)
1	29	10641	"	"	"	"	FV=1000ml
1	30	D	"	"	"	"	(Duplicate sample)
1	31	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	32	DS	"	"	"	"	(Duplicate Spiked sample)
2	33	10640	"	"	"	"	↓
3	34	42	"	"	"	"	↓
4	35	43	"	"	"	"	↓
5	36		"	"	"	"	
6	37		"	"	"	"	
7	38		"	"	"	"	
8	39		"	"	"	"	
9	40		"	"	"	"	
10	41		"	"	"	"	
	42	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Comments

** concentration based on 30 ml final volume, *** concentration based on 20 ml final volume

Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C

DG29HGI, DG29HGF, DG101AA1, DG101AA2

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG, DGHGLEACH, DG29*

Calibration Solutions:

#	I.D.	**Conc.	Spike	***Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
8	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List

- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- N/A ✓ Bath at 95 degrees C
- N/A ✓ Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples shaken and bulked
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	1BMN	20 ml	30 ml	1 X	1.5 ppb = 600 ul of MES-ZENO 30/QCA (Ref Std)
	10	BL 0330	"	"	"	"	(Processed Blank) 10387-MB.
	11	BL 0330 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	12	BL 0330 DS					(Duplicate Blank Spike)
1	13	10403	"	"	"	"	FV=1000ml
1	14	D	"	"	"	"	(Duplicate sample)
1	15	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	16	DS	"	"	"	"	(Duplicate Spiked sample)
2	17	10394	"	"	"	"	FV=50ml
3	18	95	"	"	"	"	
4	19	96	"	"	"	"	
5	20	97	"	"	"	"	
6	21	98	"	"	"	"	FV=1000ml
7	22	99	"	"	"	"	
8	23	10400	"	"	"	"	
9	23	401	"	"	"	"	
10	24	402	"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)
	26	BL 0330	2BMN	20 ml	30 ml	"	(Processed Blank)
	27	BL 0330 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	28	BL 0330 DS					(Duplicate Blank Spike)
1	29	10406	"	"	"	"	FV=1000ml
1	30	D	"	"	"	"	(Duplicate sample)
1	31	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	32	DS	"	"	"	"	(Duplicate Spiked sample)
2	33	10404	"	"	"	"	
3	34	405	"	"	"	"	
4	35	407	"	"	"	"	
5	36	408	"	"	"	"	
6	37	409	"	"	"	"	
7	38	410	"	"	"	"	
8	39	411	"	"	"	"	
9	40	412	"	"	"	"	
10	41	413	"	"	"	"	
	42	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Comments

** concentration based on 30 ml final volume, *** concentration based on 20 ml final volume

Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C

DG29HGI, DG29HGF, DG101AA1, DG101AA2

Revision 1.0
Effective 000216

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG, DGHGLEACH, DG29*

Calibration Solutions:

#	I.D.	**Conc.	Spike	***Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
8	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples shaken and bulked
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	6BHY	20 ml	30 ml	1 X	1.5 ppb = 600 ul of MES-ZENO 30/QCA (Ref Std)
	10	BL 0330	"	"	"	"	(Processed Blank) 10617MB, 10630, 10387
	11	BL 0330 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	12	BL 0330 DS					(Duplicate Blank Spike)
1	13	10620	"	"	"	"	FV= 115ml
1	14	D	"	"	"	"	(Duplicate sample)
1	15	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	16	DS	"	"	"	"	(Duplicate Spiked sample)
2	17	10634	"	"	"	"	FV=115ml
3	18	10394	"	"	"	"	FV=115ml
4	19	10620(0.1N HNO_3)	"	"	"	"	FV=55ml
5	20	10634(0.1N HNO_3)	"	"	"	"	FV=50ml
AB 03.30 6	21	~~106~~ 10394(0.1N HNO_3)	"	"	"	"	FV=50ml
7	22		"	"	"	"	
8	23		"	"	"	"	
9	23		"	"	"	"	
10	24		"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)
	26	BL		20 ml	30 ml	"	(Processed Blank)
	27	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	28	BL DS					(Duplicate Blank Spike)
1	29		"	"	"	"	
1	30	D	"	"	"	"	(Duplicate sample)
1	31	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	32	DS	"	"	"	"	(Duplicate Spiked sample)
2	33		"	"	"	"	
3	34		"	"	"	"	
4	35		"	"	"	"	
5	36		"	"	"	"	
6	37		"	"	"	"	
7	38		"	"	"	"	
8	39		"	"	"	"	
9	40		"	"	"	"	
10	41		"	"	"	"	
	42	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Comments

** concentration based on 30 ml final volume, *** concentration based on 20 ml final volume

Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C

DG29HGI, DG29HGF, DG101AA1, DG101AA2

Philip Analytical Services-Burlington

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	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	43	BL 0330	38MN	"	"	"	(Processed Blank) 10617MB
	44	BL 0330 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	45	BL 0330 DS					(Duplicate Blank Spike)
1	46	10415	"	"	"	"	FV=1000ml
1	47	D	"	"	"	"	(Duplicate sample)
1	48	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	49	DS	"	"	"	"	(Duplicate Spiked sample)
2	50	10414	"	"	"	"	
3	51	416	"	"	"	"	
4	52	417	"	"	"	"	
5	53	10620	"	"	"	"	FV=50ml
6	54	621	"	"	"	"	FV=47ml
7	55	10622	"	"	"	"	FV=1000ml
8	56	23	"	"	"	"	
9	57	24	"	"	"	"	
10	58	25	"	"	"	"	
	57	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Procedure/Methodology:

1 Prepare 25 ppm Intermediate Calibration Standard (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO_3
2 Prepare 0.05 ppm Working standard daily by pipetting 200 ul., of 25 ppm Intermediate to 100 ml final volume of 2% HNO_3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Include one External Reference Material sample per run
7 Incude one Organic Mercury Control Standard per run
8 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
9 Spike the tubes as indicated in the comment sector of the digestion sheet
10 Add 0.5 ml. of conc. Nitric Acid (HNO_3), and 1 ml. of conc. Sulphuric acid, (H_2SO_4), to each tube
11 Add 3 ml. Of 6% $KMnO_4$, purple **colour must remain for at least 15 minutes**
12 Add 1.5 ml. of 5% potassium persulphate, ($K_2S_2O_8$), to each tube
13 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
14 Remove tubes and allow to cool to room temperature
15 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
16 Recap tubes and shake until $KMnO_4$ is destroyed and sample becomes colourless
17 Dilute the sample to a final volume of 30 ml.

Supplier/Lot Information	Supplier	Lot	Expiry Date
Stock Calibration Standard	Inorganic Ventures	N-HG02019	00/04/01
Intermediate Cal Standard	Internal	00/03/09 A	00/04/09
Stock Reference Standard	High Purity	836309	00 Feb
External Reference Material	SPEX		
Organic Mercury Control Standard	Aldrich		
6% potassium permanganate	Internal AB 00.03.30	00/03/10 B C	00/05/10
5% potassium persulphate	Internal	00/02/15 B	00/04/15
20% hydroxylamine hydrochloride	Internal	00/03/10 A	00/05/10
HNO_3	Anachemia	110001o	00/05/13
H_2SO_4	Anachemia	319020	00/04/21
Bath Temps: / / C	Time ON:	Time OFF:	

Prepared By: AB Date: 00.03.30 Checked by: [illegible]

00067

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	43	BL		"	"	"	(Processed Blank)
	44	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	45	BL DS					(Duplicate Blank Spike)
1	46		"	"	"	"	
1	47	D	"	"	"	"	(Duplicate sample)
1	48	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	49	DS	"	"	"	"	(Duplicate Spiked sample)
2	50		"	"	"	"	
3	51		"	"	"	"	
4	52		"	"	"	"	
5	53		"	"	"	"	
6	54		"	"	"	"	
7	55		"	"	"	"	
8	56		"	"	"	"	
9	57		"	"	"	"	
10	58		"	"	"	"	
	57	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

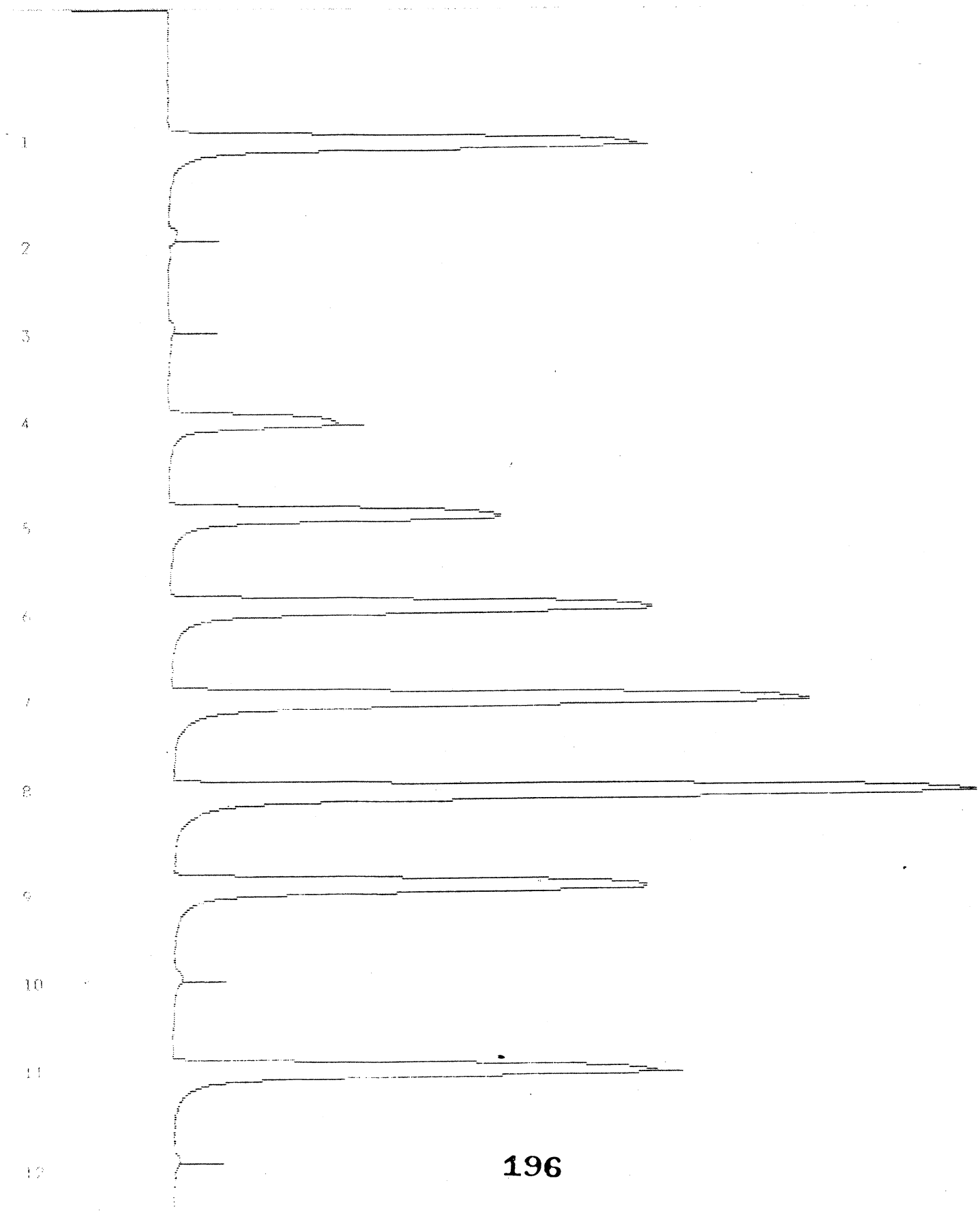
Procedure/Methodology:

1 Prepare 25 ppm Intermediate Calibration Standard (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO_3
2 Prepare 0.05 ppm Working standard daily by pipetting 200 ul., of 25 ppm Intermediate to 100 ml final volume of 2% HNO_3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Include one External Reference Material sample per run
7 Incude one Organic Mercury Control Standard per run
8 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
9 Spike the tubes as indicated in the comment sector of the digestion sheet
10 Add 0.5 ml. of conc. Nitric Acid (HNO_3), and 1 ml. of conc. Sulphuric acid, (H_2SO_4), to each tube
11 Add 3 ml. Of 6% $KMnO_4$, purple colour must remain for at least 15 minutes
12 Add 1.5 ml. of 5% potassium persulphate, ($K_2S_2O_8$), to each tube
13 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
14 Remove tubes and allow to cool to room temperature
15 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
16 Recap tubes and shake until $KMnO_4$ is destroyed and sample becomes colourless
17 Dilute the sample to a final volume of 30 ml.

Supplier/Lot Information	Supplier	Lot	Expiry Date
Stock Calibration Standard	Inorganic Ventures	N-HG-02019	00/04/01
Intermediate Cal Standard	Internal	00/03/09A	00/04/09
Stock Reference Standard	High Purity	R316309	00 Feb
External Reference Material	SPEX		
Organic Mercury Control Standard	Aldrich		
6% potassium permanganate	Internal AB 00.03.30	00/03/10 BC	00/05/10
5% potassium persulphate	Internal	00/02/15 B	00/04/15
20% hydroxylamine hydrochloride	Internal	00/03/10 A	00/05/10
HNO_3	Anachemia	1100010	00/05/13
H_2SO_4	Anachemia	319020	00/04/21
Bath Temps: / / C	Time ON:	Time OFF:	

Prepared By: AB Date: 00.03.30 Checked by: CMB

RUN DATE: 03-30-2000 CHART DATE: 03-31-2000
CHART SPEED: 30
DATA FILE NAME: C:\DP4\DATA\000330WA.DAT



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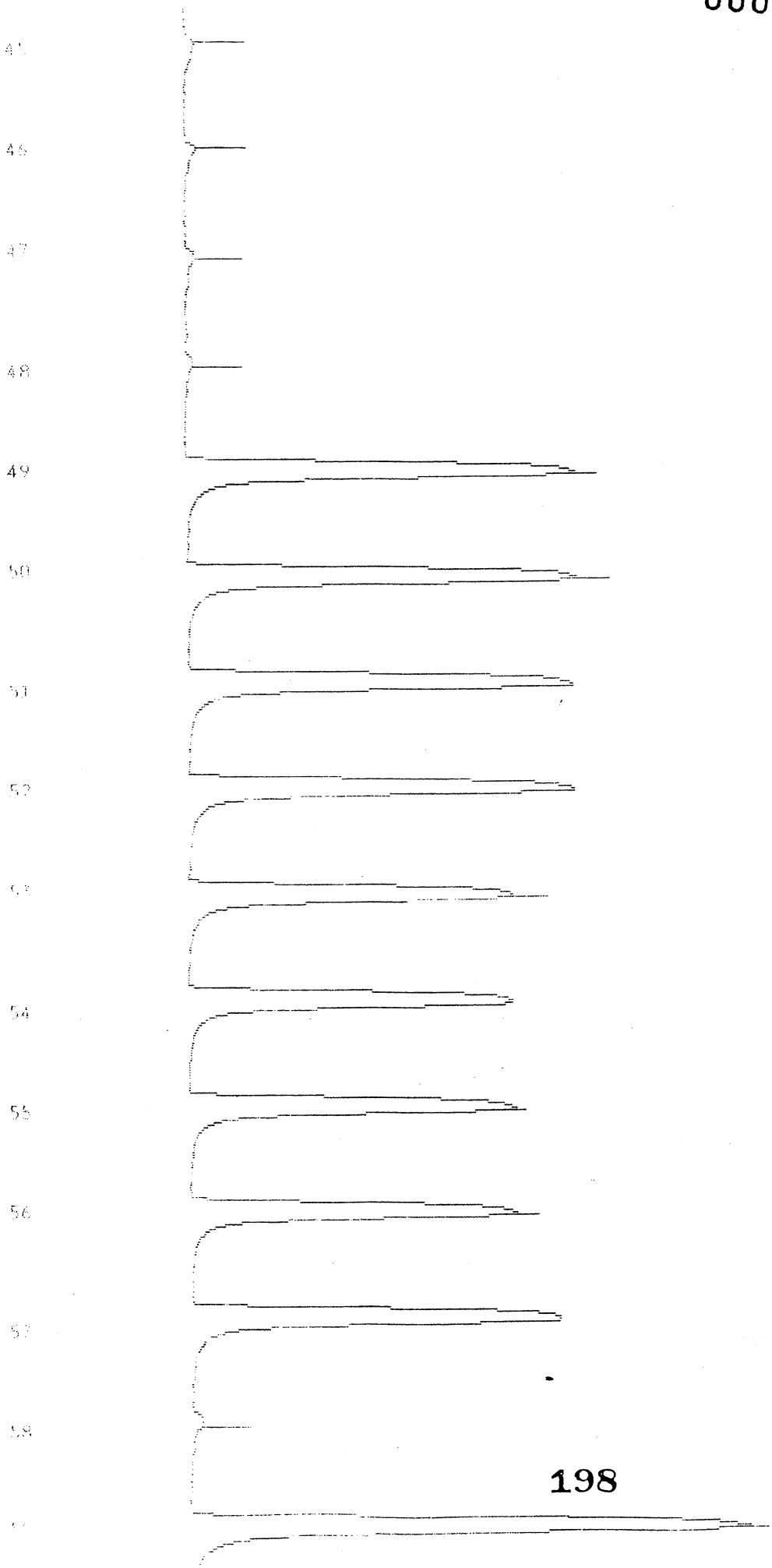
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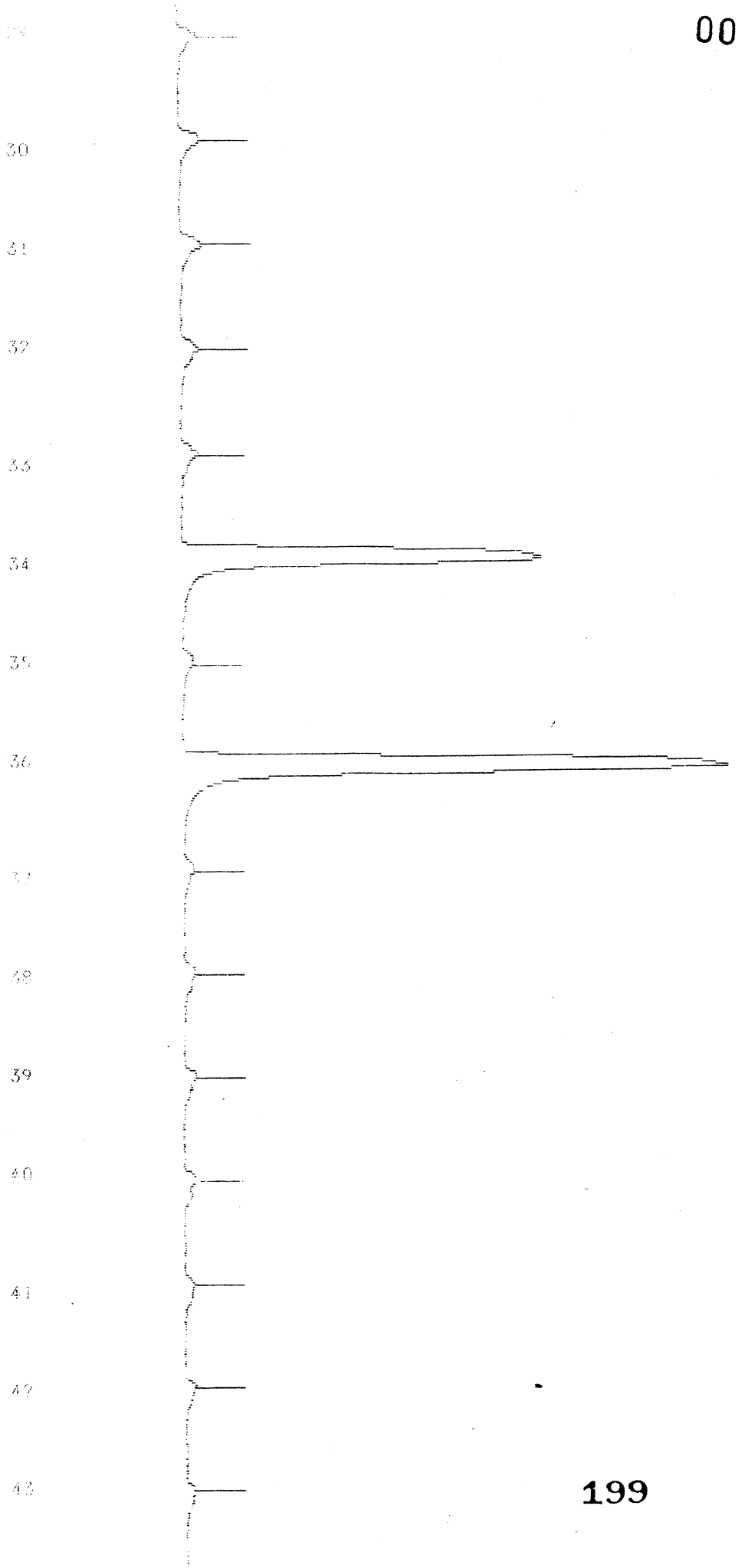
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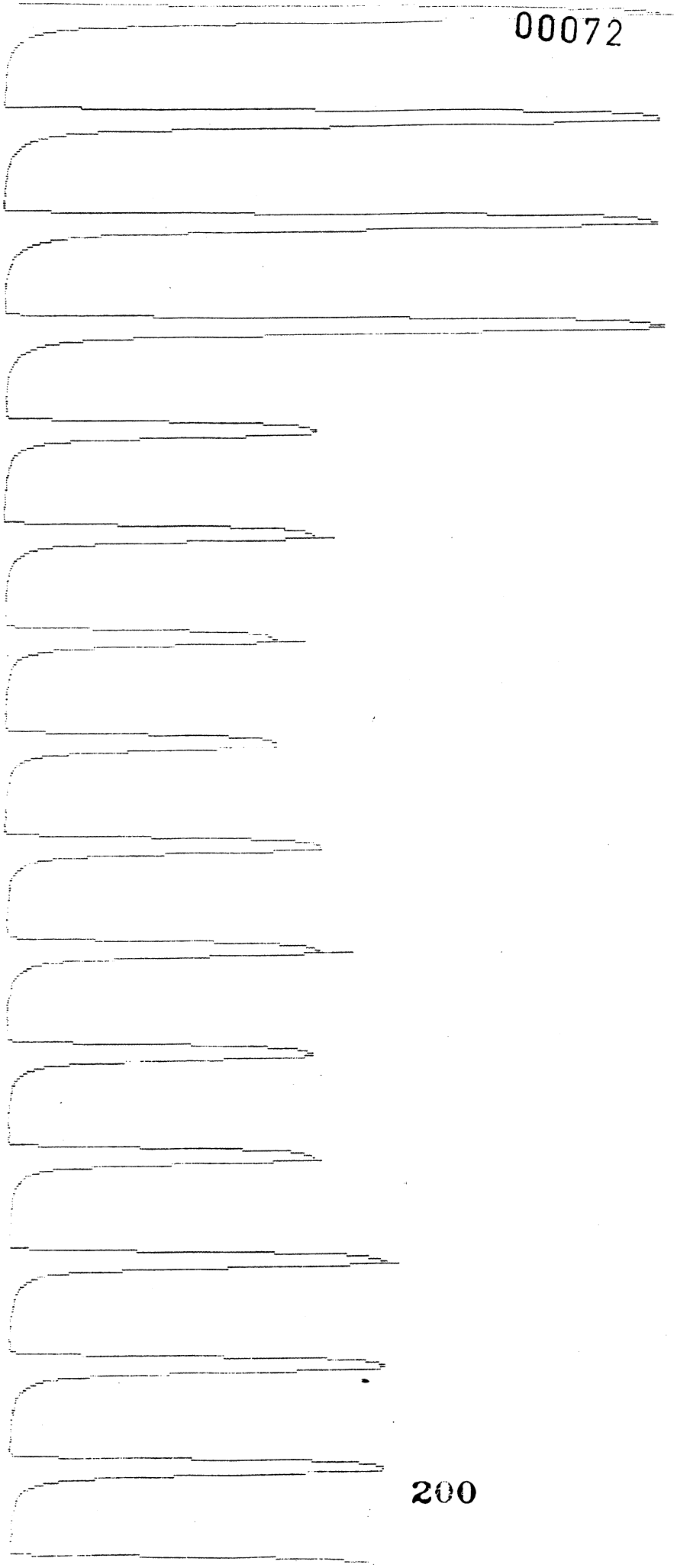

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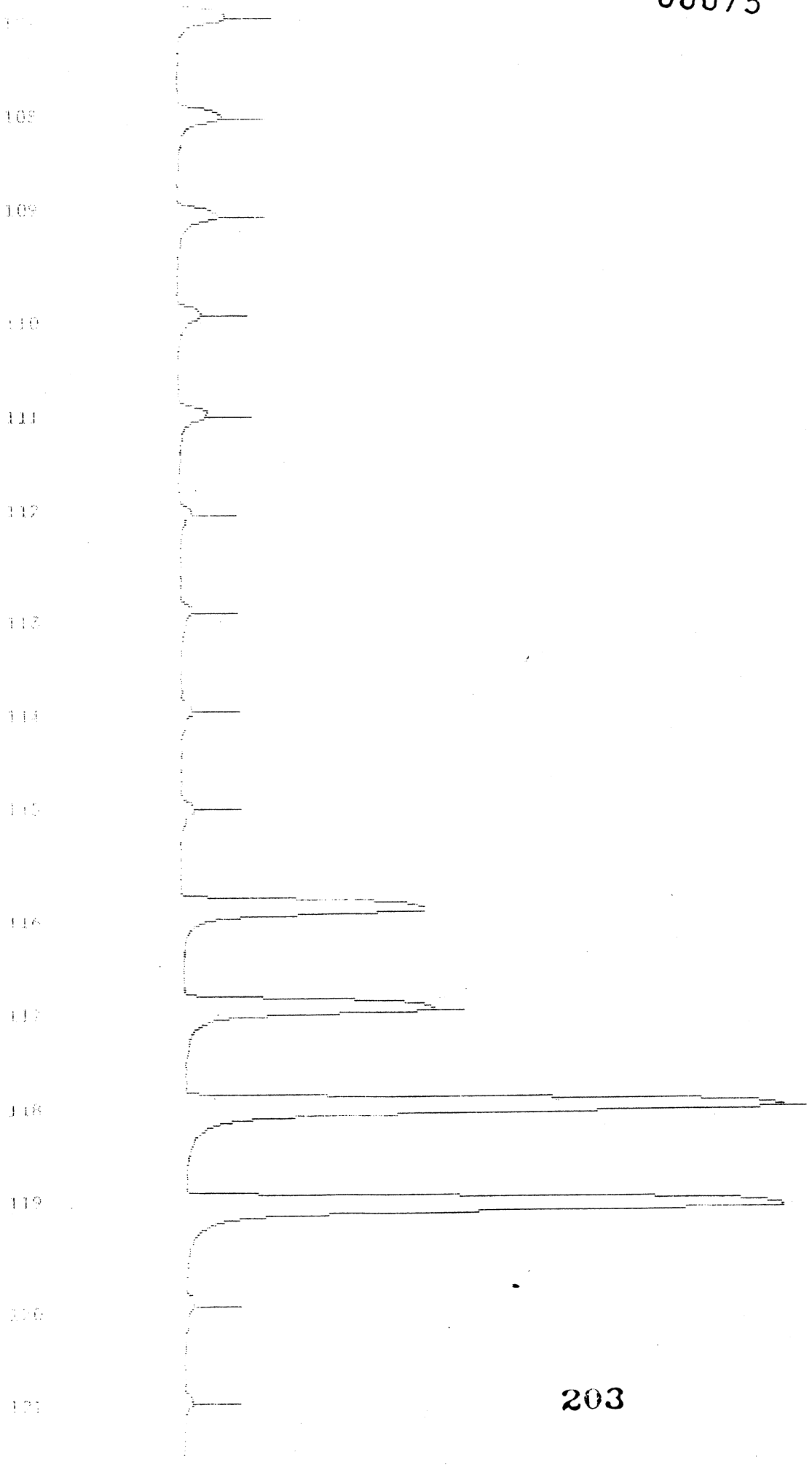
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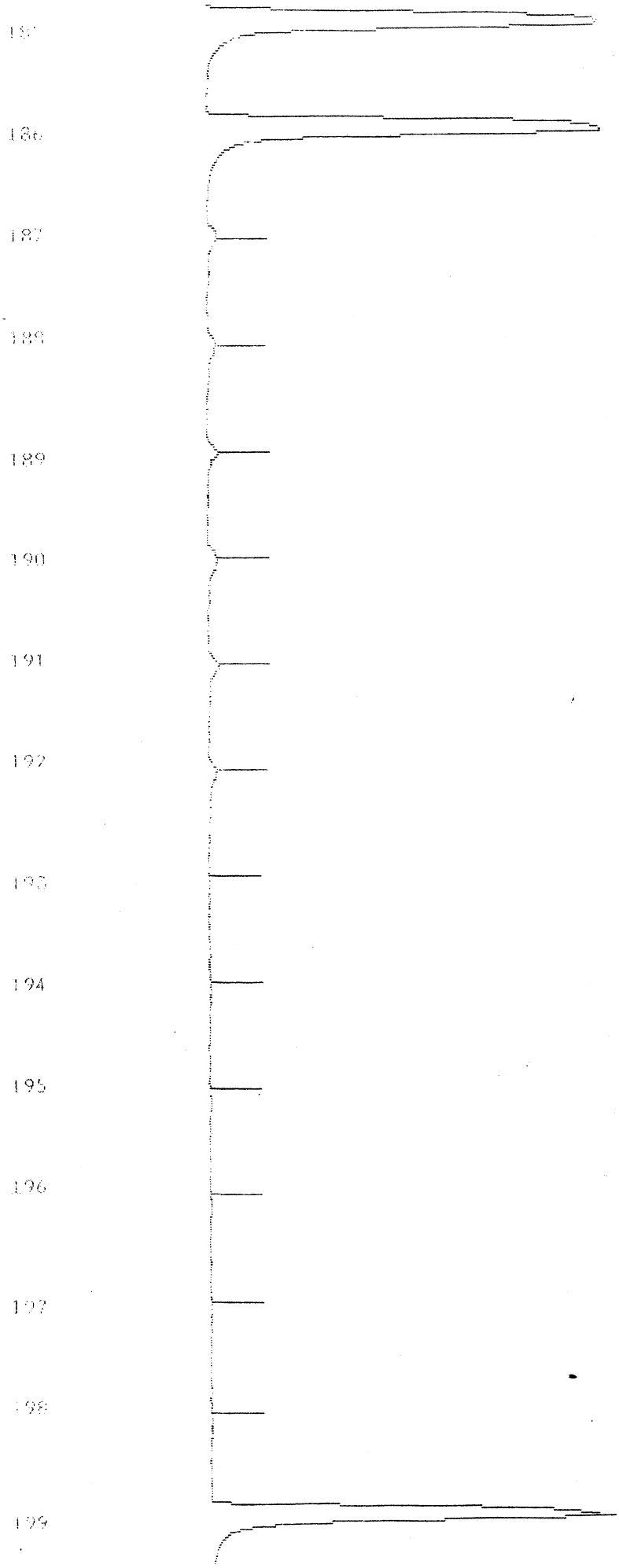
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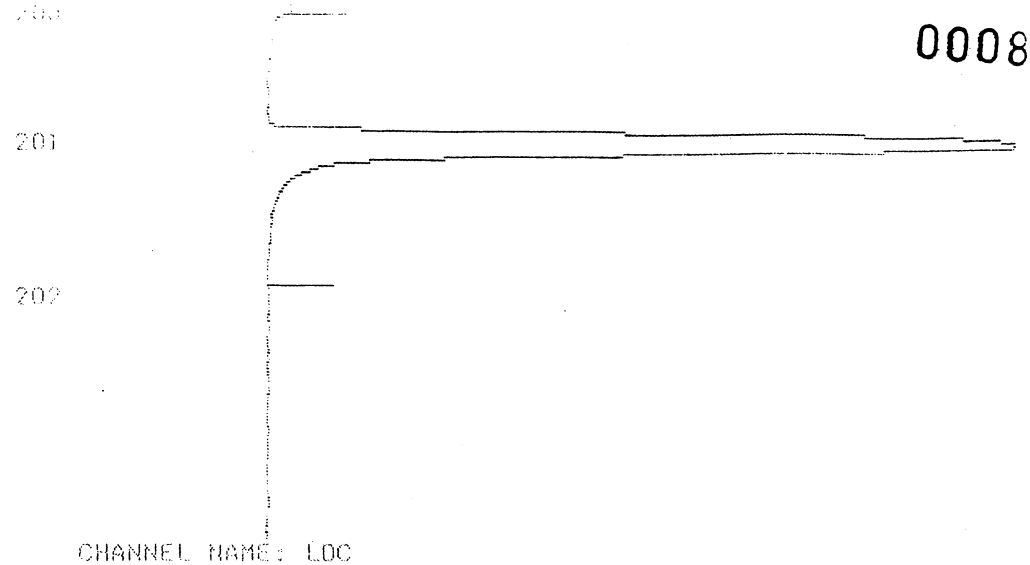
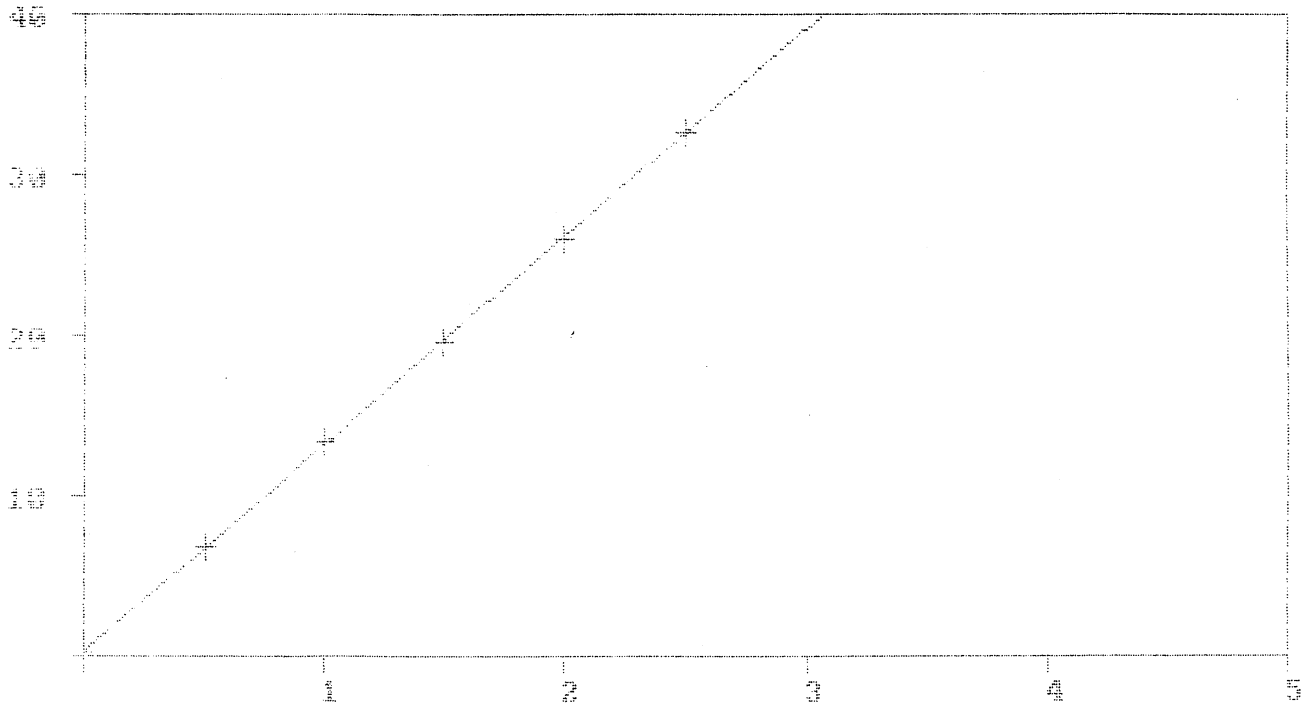


CHANNEL NAME: LOC
RUN NAME: 000330WA



DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.29 SLOPE = 12.92308

CORRELATION: .9998918

CHANNEL NAME: LOC
RUN DATE: 03-30-2000
SAMPLE TABLE NAME: 000330WA
METHOD NAME: HG-W-20

µg/L

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION	EF
1	PRIMER	1	1	19.2	1.466	S
2	DUMMY	1	1	0.2	-0.008	I
3	STD 0	1	1	0.1	-0.011	I
4	STD .5	1	1	6.8	0.506	
5	STD 1	1	1	13.5	1.020	
6	STD 1.5	1	1	19.6	1.493	
7	STD 2	1	1	25.9	1.984	
8	STD 2.5	1	1	32.7	[illegible]	

11	[illegible]		1	[illegible]		[illegible]	[illegible]	
12	BL0330-18MN 10367	1	1	0.0	<0.0882	0.023	I	
13	BL0330-18MN	1	1	0.0		-0.023	I	
14	BL0330S	1	1	13.4	0.306	1.013		101%
15	BL0330S	1	1	13.5		1.024		
16	BL03300S	1	1	13.6	0.308	1.026		103%
17	BL03300S	1	1	13.6		1.028		
18	10403	10	1	16.3	12.387	12.358		
19	10403	10	1	16.3		12.415		
20	104030	10	1	16.2	12.330	12.302		
21	104030	10	1	16.3		12.358		
22	10403S	10	1	28.2	21.712	21.599		93%
23	10403S	10	1	28.5		21.825		
24	104030S	10	1	28.5	21.816	21.825		95%
25	104030S	10	1	28.5		21.806		
26	10394	1	1	0.3	<0.03	-0.002	I	
27	10394	1	1	0.2		-0.009	I	
28	10395	1	1	0.1	<0.03	-0.011	I	
29	10395	1	1	0.4		0.006	I	
30	10396	1	1	0.4	<0.03	0.008	I	
31	10396	1	1	0.4		0.011	s	
32	10397	1	1	0.3	<0.03	0.004	I	
33	10397	1	1	0.3		0.004	I	
34	CCV	1	1	12.9		0.979		97%
35	B	1	1	0.0		-0.023	b	
36	D4	1	1	19.6		1.493	d	
37	10398	1	1	0.0	<0.100	-0.023	I	
38	10398	1	1	0.0		-0.019	I	
39	10399	1	1	0.1	<0.100	-0.015	I	
40	10399	1	1	0.1		-0.017	I	
41	10400	1	1	0.0	<0.100	-0.023	I	
42	10400	1	1	0.1		-0.015	I	
43	10401	1	1	0.0	<0.100	-0.023	I	
44	10401	1	1	0.0		-0.023	I	
45	10402	1	1	0.0	<0.100	-0.019	I	
46	10402	1	1	0.0		-0.021	s	
47	BL0330-2RMN	1	1	0.0	<0.03	-0.023	I	
48	BL0330-2RMN	1	1	0.0		-0.023	I	
49	BL0330S	1	1	13.6	0.310	1.030		103%
50	BL0330S	1	1	13.7		1.034		
51	BL03300S	1	1	13.6	0.307	1.026		102%
52	BL03300S	1	1	13.5		1.020		
53	10406	20	1	11.3	16.969	17.007		
54	10406	20	1	11.2		16.931		
55	104060	20	1	11.4	17.026	17.120		
56	104060	20	1	11.2		16.931		
57	CCV	1	1	12.9		0.977		97%
58	B	1	1	0.0		-0.023	b	
59	D4	1	1	19.6		1.493	d	
60	10406S	20	1	23.5	36.092	35.941		95%
61	10406S	20	1	23.7		36.243	s	
62	104060S	20	1	23.5	36.242	35.979		96%
63	104060S	20	1	23.9		36.508		
64	10404	20	1	11.0	16.553	16.591		
65	10404	20	1	11.0		16.515		
66	10405	20	1	9.6	14.494	14.399		
67	10405	20	1	9.7		14.588		
68	10407	20	1	11.2	16.856	16.931		
69	10407	20	1	11.1		16.780		
70	10408	20	1	10.8	16.289	16.289		
71	10408	20	1	10.8		16.289		
72	10409	20	1	13.4	20.219	20.219		
73	10409	20	1	13.4		20.219		
74	10410	20	1	13.3	20.144	20.144		

77	10411	[illegible]	1	[illegible]	17.075	[illegible]		
78	10412	4	1	15.2	4.788	4.769		
79	10412	4	1	15.5		4.807		
80	CCV	1	1	12.9		0.977	97%	
81	B	1	1	0.0		-0.023	b	
82	D4	1	1	19.6		1.493	d	
83	10413	4	1	29.2	8.878	8.934		
84	10413	4	1	28.8		8.821		
85	BL0330-38MN 10617	1	1	0.0	<0.03	-0.023	I	
86	BL0330-38MN	1	1	0.0		-0.023	I	
87	BL0330S	1	1	13.6	0.307	1.032	102%	
88	BL0330S	1	1	13.4		1.011		
89	BL03300S	1	1	13.6	0.309	1.030	103%	
90	BL03300S	1	1	13.6		1.030		
91	10415	2	1	12.3	1.866	1.856	s	
92	10415	2	1	12.4		1.875		
93	104150	2	1	12.3	1.854	1.852		
94	104150	2	1	12.3		1.856		
95	10415S	2	1	24.4	3.729	3.734	93%	
96	10415S	2	1	24.3		3.723		
97	104150S	2	1	24.2	3.719	3.704	93%	
98	104150S	2	1	24.4		3.734		
99	10414 VOID mb	1	1	92.6	OFF SCALE	7.139	R	RERUN ON 03/31
100	10414	1	1	92.0		7.096	R	
101	10416	2	1	9.1	1.368	1.368		
102	10416	2	1	9.1		1.368		
103	CCV	1	1	13.0		0.981	98%	
104	B	1	1	0.0		-0.023	b	
105	D4	1	1	19.6		1.493	d	
106	10417 VOID mb	20	1	1.5	TOO LOW	1.814	s	RERUN ON 1X DIL.
107	10417	20	1	1.4		1.738		
108	10620	1	1	1.3	<0.03	0.077		
109	10620	1	1	1.2		0.070		
110	10621	1	1	0.5	<0.03	0.017		
111	10621	1	1	0.7		0.034		
112	10622	1	1	0.0	<0.100	-0.021	I	
113	10622	1	1	0.0		-0.021	I	
114	10623	1	1	0.0	<0.100	-0.023	I	
115	10623	1	1	0.1		-0.013	I	
116	10624	20	1	9.0	13.624	13.454		
117	10624	20	1	9.2		13.794		
118	10625	8	1	22.4	13.681	13.681		
119	10625	8	1	22.4		13.681		
120	BL0330-48MN 10650	1	1	0.0	<0.03	-0.023	I	
121	BL0330-48MN	1	1	0.0		-0.023	s	
122	BL0330S	1	1	13.7	0.313	1.036	104%	
123	BL0330S	1	1	13.9		1.051		
124	BL03300S	1	1	13.5	0.306	1.020	102	
125	BL03300S	1	1	13.5		1.020		
126	CCV	1	1	12.8		0.971	97%	
127	B	1	1	0.0		-0.023	b	
128	D4	1	1	19.6		1.493	d	
129	10627	10	1	15.2	11.414	11.508		
130	10627	10	1	14.9		11.319		
131	106270	10	1	15.1	11.433	11.489		
132	106270	10	1	15.0		11.376		
133	10627S	10	1	27.3	20.824	20.862	94%	
134	10627S	10	1	27.2		20.786		
135	106270S	10	1	27.4	20.900	20.956	95%	
136	106270S	10	1	27.2		20.843	s	
137	10626 VOID mb	1	1	93.7	OFF SCALE	7.230	R	RERUN ON 03/31
138	10626	1	1	93.3			O	
139	10628	2	1	45.8	OFF SCALE	14.007	R	
140	10628	2	1	45.3		13.915	R	

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143	10634		1	0.0	<0.03	-0.023	I	
144	10634	1	1	0.0		-0.023	I	
145	10635	1	1	0.0	<0.03	-0.023	I	
146	10635	1	1	0.0		-0.023	I	
147	10636	1	1	0.0	<0.100	-0.023	I	
148	10636	1	1	0.0		-0.023	I	
149	CCV	1	1	12.7		0.962		96%
150	B	1	1	0.0		-0.023	b	
151	D4	1	1	19.6		1.493	s	
152	10637	1	1	0.0	<0.100	-0.023	I	
153	10637	1	1	0.0		-0.023	I	
154	10638	4	1	15.4	4.702	4.664		
155	10638	4	1	15.6		4.739		
156	10639	4	1	12.4	3.715	3.734		
157	10639	4	1	12.2		3.696		
158	BL0330-5RMN	1	1	0.0	<0.03	-0.023	I	
159	BL0330-5RMN	1	1	0.0		-0.023	I	
160	BL0330S	1	1	13.1	0.299	0.990		100%
161	BL0330S	1	1	13.2		1.000		
162	BL0330DS	1	1	13.3	0.302	1.005		101%
163	BL0330DS	1	1	13.3		1.009		
164	10641	5	1	14.4	5.423	5.442		
165	10641	5	1	14.3		5.404		
166	10641D	5	1	14.2	5.395	5.395	s	
167	10641D	5	1	14.2		5.395		
168	10641S	5	1	26.5	10.157	10.138		95%
169	10641S	5	1	26.6		10.176		
170	10641DS	5	1	26.3	10.096	10.081		93%
171	10641DS	5	1	26.4		10.110		
172	CCV	1	1	12.6		0.950		95%
173	B	1	1	0.0		-0.023	b	
174	D4	1	1	19.6		1.493	d	
175	10640	4	1	13.1	3.946	3.953		
176	10640	4	1	13.0		3.938		
177	10642	4	1	11.2	3.353	3.364		
178	10642	4	1	11.1		3.341		
179	10643	4	1	11.9	3.519	3.583		
180	10643	4	1	11.5		3.454		
181	BL0330-68HY 10387, 10617,	1	1	0.0	<0.01	-0.023	s	
182	BL0330-68HY 10630	1	1	0.0		-0.023	I	
183	BL0330S	1	1	12.9	0.098	0.979		98%
184	BL0330S	1	1	12.9		0.979		
185	BL0330DS	1	1	12.8	0.097	0.967		97%
186	BL0330DS	1	1	12.8		0.971		
187	10620	1	1	0.0	<0.01	-0.023	I	
188	10620	1	1	0.0		-0.023	I	
189	10634	1	1	0.0	<0.01	-0.023	I	
190	10634	1	1	0.0		-0.023	I	
191	10394	1	1	0.0	<0.01	-0.023	I	
192	10394	1	1	0.0		-0.023	I	
193	10620-0.1NHNO$_3$	1	1	0.0	<0.01	-0.023	I	
194	10620-0.1NHNO$_3$	1	1	0.0		-0.023	I	
195	10634-0.1NHNO$_3$	1	1	0.0	<0.01	-0.023	I	
196	10634-0.1NHNO$_3$	1	1	0.0		-0.023	s	
197	10394-0.1NHNO$_3$	1	1	0.0	<0.01	-0.023	I	
198	10394-0.1NHNO$_3$	1	1	0.0		-0.023	I	
199	CCV	1	1	12.3		0.930		93%
200	B	1	1	0.0		-0.023	b	
201	D4	1	1	19.6		1.493	d	

INTERCEPT: 0.29 LINEAR COEF: 12.92308
CORRELATION COEF: .9998918

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
010617	MOSTARDI	MB R456	Mercury -	PV	-0.0100	-99999.0	0.1040	103.	0.1040	104.	00/03/21	1BPO	00/03/21	MG02	28.	11.	*BLKIMP*
010620	MOSTARDI	Reagent Blank 02/22	Mercury -	PV	-0.2500						00/03/21	1BPO	00/03/21	MG02	28.	11.	*DDL*
010622	MOSTARDI	Unit 1 Outlet-FB	Mercury -	PV	-0.2500						00/03/21	1BPO	00/03/21	MG02	28.	11.	*DDL*
010623	MOSTARDI	Unit 1 Inlet-FB	Mercury -	PV	-0.2500						00/03/21	1BPO	00/03/21	MG02	28.	11.	*DDL*
010624	MOSTARDI	Unit 1 Outlet-R1	Mercury -	PV	-0.2500	-0.2500	2.9570	109.	2.9470	108.	00/03/21	1BPO	00/03/21	MG02	28.	11.	*DDL*
010625	MOSTARDI	Unit 1 Outlet-R2	Mercury -	PV	1.2710						00/03/21	1BPO	00/03/21	MG02	28.	11.	
010626	MOSTARDI	Unit 1 Outlet-R3	Mercury -	PV	0.3940						00/03/21	1BPO	00/03/21	MG02	27.	11.	
010627	MOSTARDI	Unit 1 Inlet-R1	Mercury -	PV	-0.2500						00/03/21	1BPO	00/03/21	MG02	28.	11.	*DDL*
010628	MOSTARDI	Unit 1 Inlet-R2	Mercury -	PV	0.4630						00/03/21	1BPO	00/03/21	MG02	28.	11.	
010629	MOSTARDI	Unit 1 Inlet-R3	Mercury -	PV	-0.2500						00/03/21	1BPO	00/03/21	MG02	27.	11.	*DDL*
BL0321	INTERNAL		Mercury -	PV	-0.0100	-99999.0	0.1040	103.	0.1040	104.	00/03/21	1BPO	00/03/21	MG02	$$$	$$$	*BLKIMP*
010630	MOSTARDI	MB R456	Mercury -	PV	-0.0100	-99999.0	0.1050	105.	0.1050	105.	00/03/21	2BPO	00/03/21	MG02	42.	11.	*BLKIMP*
010634	MOSTARDI	Reagent Blank 02/08	Mercury -	PV	-0.2500						00/03/21	2BPO	00/03/21	MG02	42.	11.	*DDL*
010636	MOSTARDI	Unit 1 Outlet-FB	Mercury -	PV	-0.2500						00/03/21	2BPO	00/03/21	MG02	42.	11.	*DDL*
010637	MOSTARDI	Unit 1 Inlet-FB	Mercury -	PV	-0.2500						00/03/21	2BPO	00/03/21	MG02	42.	11.	*DDL*
010638	MOSTARDI	Unit 1 Outlet-R1	Mercury -	PV	-0.2500	-0.2500	2.7860	109.	2.8130	110.	00/03/21	2BPO	00/03/21	MG02	42.	11.	*DDL*
010639	MOSTARDI	Unit 1 Outlet-R2	Mercury -	PV	-0.2500						00/03/21	2BPO	00/03/21	MG02	42.	11.	*DDL*
010640	MOSTARDI	Unit 1 Outlet-R3	Mercury -	PV	-0.2500						00/03/21	2BPO	00/03/21	MG02	41.	11.	*DDL*
010641	MOSTARDI	Unit 1 Inlet-R1	Mercury -	PV	-0.2500						00/03/21	2BPO	00/03/21	MG02	42.	11.	*DDL*
010642	MOSTARDI	Unit 1 Inlet-R2	Mercury -	PV	-0.2500						00/03/21	2BPO	00/03/21	MG02	42.	11.	*DDL*
010643	MOSTARDI	Unit 1 Inlet-R3	Mercury -	PV	-0.2500						00/03/21	2BPO	00/03/21	MG02	41.	11.	*DDL*
BL0321	INTERNAL		Mercury -	PV	-0.0100	-99999.0	0.1050	105.	0.1050	105.	00/03/21	2BPO	00/03/21	MG02	$$$	$$$	*BLKIMP*

22 Tests for OHPOX with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

213

00085

00086

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.03.21(W) Run Code: MG02 Matrix: IMP

Analyst: MG Units: µg (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			WS 378			
13			ORG. REF.			
14			BL0321	1BPO.		
15			"			
16			BL0321 S			
17			"			
18			BL0321 DS			
19			"			
20	10		10624			
21			"			
22			10624 D			
23			"			
24			10624 S			
25			"			
26			10624 DS			
27			"			
28			10620			
29			"			
30			10621			
31			"			
32			10623			
33			"			
34			CCV			
35			B			
36			D4			
37	10		10625			
38			"			
39			10626			
40			"			
41	10		10627			
42			"			
43			10628			
44			"			
45			10629			
46			"			
47			BL0321	2BPO		
48			"			
49			BL0321 S			
50			"			
51			BL0321 DS			
52			"			
53	10		10638			
54			"			
55			10638 D			
56			"			
57			CCV			
58			B			
59			D4			
60	10		10638 S			
61			"			
62			10638 DS			
63			"			
64			10634			
65			"			
66			10636			
67			"			
68			10637			
69			"			
70			10639			
71			"			
72			10640			
73			"			
74			10641			
75			"			
76			10642			
77			"			
78			10643			
79			"			
80			CCV			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

00087

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00-03-21 Run Code: MG02 Matrix: MP

Analyst: MG Units: µg (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21			B			
22			D4			
23			BL0321			
24			"			
25			BL0321 S			
26			"			
27			BL0321 DS			
28			"			
29			10275			
30			"			
31			10275 D			
32			"			
33			10275 PS			
34			"			
35			10275 PS			
36			"			
37			10277			
38			"			
39			10279			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			10281			
42			10281			
43			CCV			
44			B			
45			D4			
46						
47						
48						
49						
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Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

Revision 1.0
Effective 000216

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG, DGHGLEACH, DG29*

Calibration Solutions:

#	I.D.	**Conc.	Spike	***Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
8	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples shaken and bulked
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	1BP0	20 ml	30 ml	1 X	1.5 ppb = 600 ul of MES-ZENO 30/QCA (Ref Std)
HB 9.03.21	10	BL 0320	"	"	"	"	(Processed Blank) 10617MB
	11	BL 0320 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	12	BL 0320 DS					(Duplicate Blank Spike)
1	13	10624	"	1ml	15ml	10X	
1	14	D	"	"	"	"	(Duplicate sample)
1	15	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	16	DS	"	"	"	"	(Duplicate Spiked sample)
2	17	10620	"	"	"	"	
3	18	22	"	"	"	"	
4	19	23	"	"	"	"	
5	20	25	"	"	"	"	
6	21	26	"	"	"	"	
7	22	27	"	"	"	"	
8	23	28	"	"	"	"	
9	23	29	"	"	"	"	
10	24		"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	-	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)
	26	BL 0320	2BP0	20 ml	30 ml	"	(Processed Blank) 10630MB
HB .03.21	27	BL 0320 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	28	BL 0320 DS					(Duplicate Blank Spike)
1	29	10638	"	1ml	15ml	10X	
1	30	D	"	"	"	"	(Duplicate sample)
1	31	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	32	DS	"	"	"	"	(Duplicate Spiked sample)
2	33	10634	"	"	"	"	
3	34	36	"	"	"	"	
4	35	37	"	"	"	"	
5	36	39	"	"	"	"	
6	37	40	"	"	"	"	
7	38	41	"	"	"	"	
8	39	42	"	"	"	"	
9	40	43	"	"	"	"	
10	41		"	"	"	"	
	42	CCV (Cont. Calib. Verif.)	-	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Comments

** concentration based on 30 ml final volume, *** concentration based on 20 ml final volume

Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C

DG29HGI, DG29HGF, DG101AA1, DG101AA2

Philip Analytical Services-Burlington

AB
00-03-21

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	43	BL 0320	3BKC	"	"	"	(Processed Blank)
	44	BL 0320 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	45	BL 0320 DS					(Duplicate Blank Spike)
1	46	10275/76 MB	"	"	"	"	FV= 70ml
1	47	D	"	"	"	"	(Duplicate sample)
1	48	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	49	DS	"	"	"	"	(Duplicate Spiked sample)
2	50	10277/78 MB	"	"	"	"	FV= 70ml
3	51	~~10279/80 MB~~	"	2ml	30ml	10X	FV= 69ml
4	52	~~10281/82 MB~~	"	↓	↓	10X	FV= 81ml
5	53	10279	"	"	"	"	UNDIGESTED SAMPLE USED
6	54	10281	"	"	"	"	"
7	55		"	"	"	"	
8	56		"	"	"	"	
9	57		"	"	"	"	
10	58		"	"	"	"	
	57	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Procedure/Methodology:

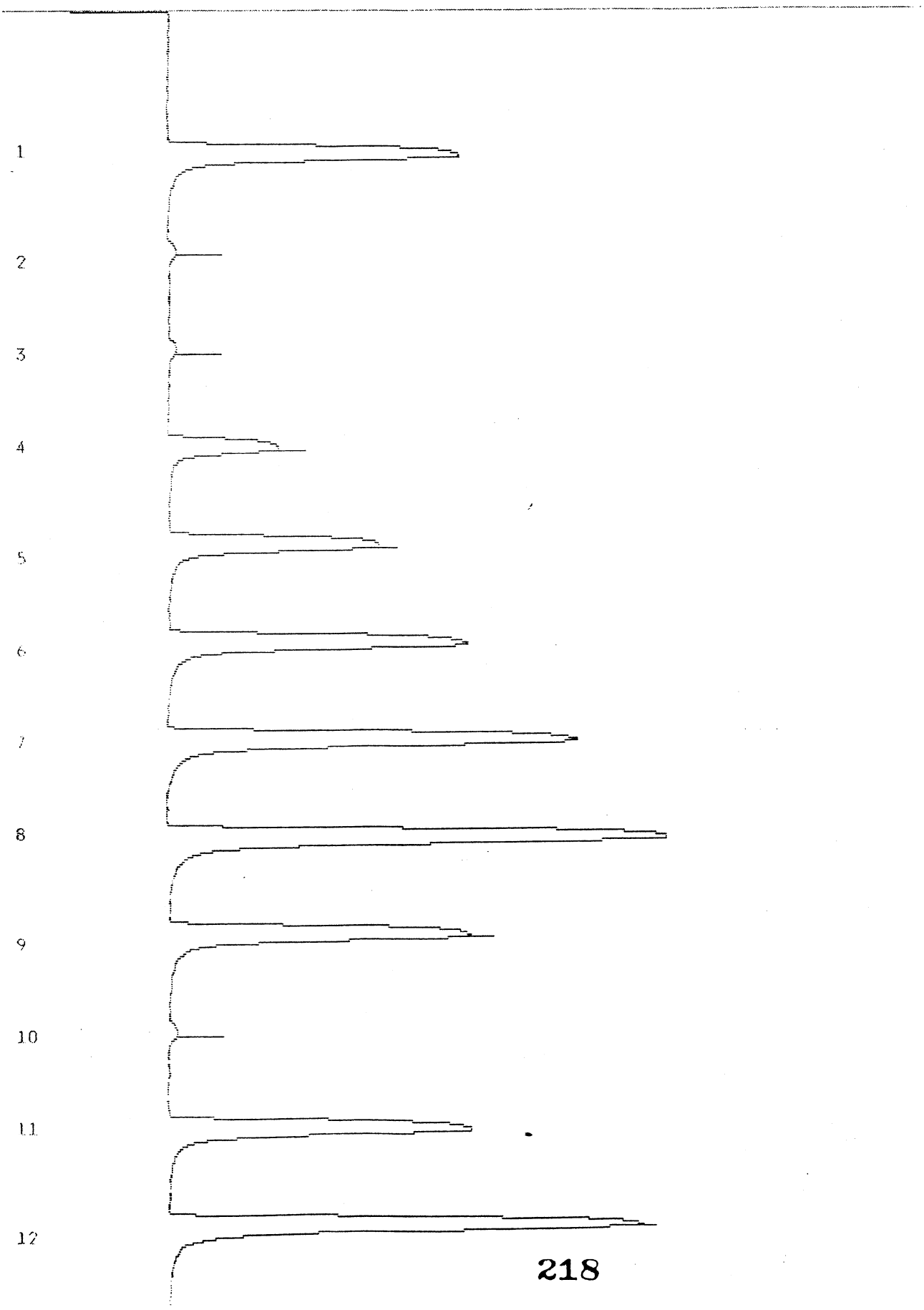
1 Prepare 25 ppm Intermediate Calibration Standard (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO_3
2 Prepare 0.05 ppm Working standard daily by pipetting 200 ul., of 25 ppm Intermediate to 100 ml final volume of 2% HNO_3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Include one External Reference Material sample per run
7 Incude one Organic Mercury Control Standard per run
8 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
9 Spike the tubes as indicated in the comment sector of the digestion sheet
10 Add 0.5 ml. of conc. Nitric Acid (HNO_3), and 1 ml. of conc. Sulphuric acid, (H_2SO_4), to each tube
11 Add 3 ml. Of 6% $KMnO_4$, purple **colour must remain for at least 15 minutes**
12 Add 1.5 ml. of 5% potassium persulphate, ($K_2S_2O_8$), to each tube
13 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
14 Remove tubes and allow to cool to room temperature
15 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
16 Recap tubes and shake until $KMnO_4$ is destroyed and sample becomes colourless
17 Dilute the sample to a final volume of 30 ml.

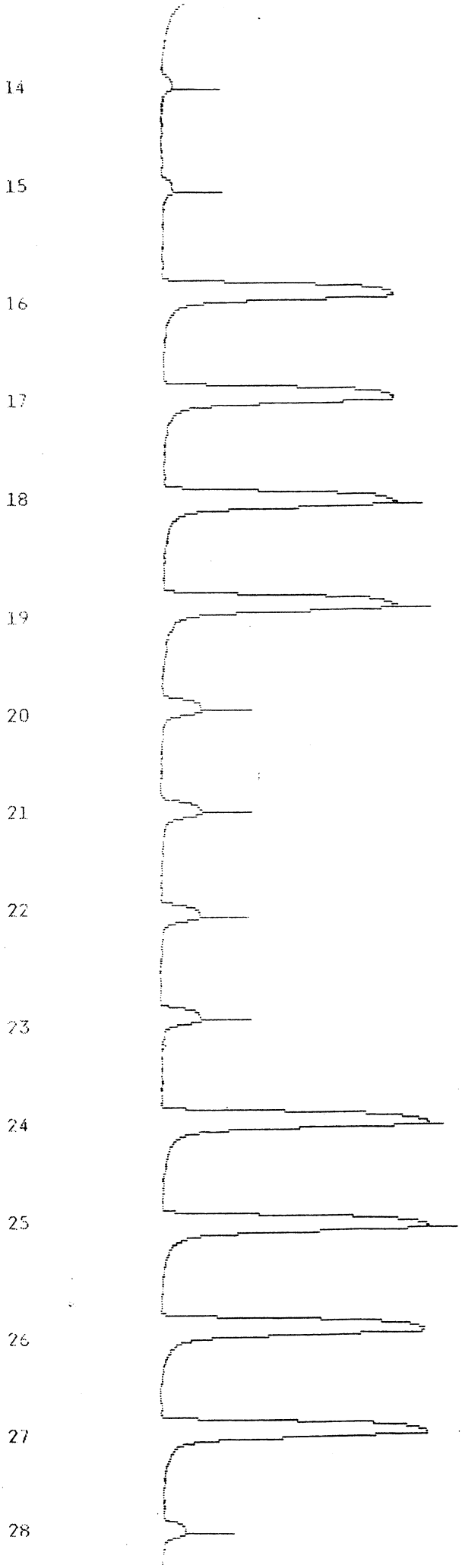
Supplier/Lot Information	Supplier	Lot	Expiry Date
Stock Calibration Standard	Inorganic Ventures	N-HG 02019	00/04/01
Intermediate Cal Standard	Internal	00.03.09 A	00.04.09
Stock Reference Standard	High Purity 00.03.21 AB	~~CONC 12~~ 836309	00 Feb
External Reference Material	SPEX	CONC.12	00.04.17
Organic Mercury Control Standard	Aldrich	06811 HR	01.02.07
6% potassium permanganate	Internal	00.03.10B	00.05.10
5% potassium persulphate	Internal	00.02.15B	00.04.15
20% hydroxylamine hydrochloride	Internal	00.03.10A	00.05.10
HNO_3	Anachemia	119100	00.05.10
H_2SO_4	Anachemia	319020	00.04.21
Bath Temps: 1 195°C	Time ON: 11:20 Am	Time OFF: 1:20 pm	

Prepared By: AB Date: 00.03.20 Checked by: [illegible]

AB. 00.03.21

RUN DATE: 03-21-2000 CHART DATE: 03-21-2000
CHART SPEED: 30
DATA FILE NAME: C:\OP4\DATA\000321W.DAT

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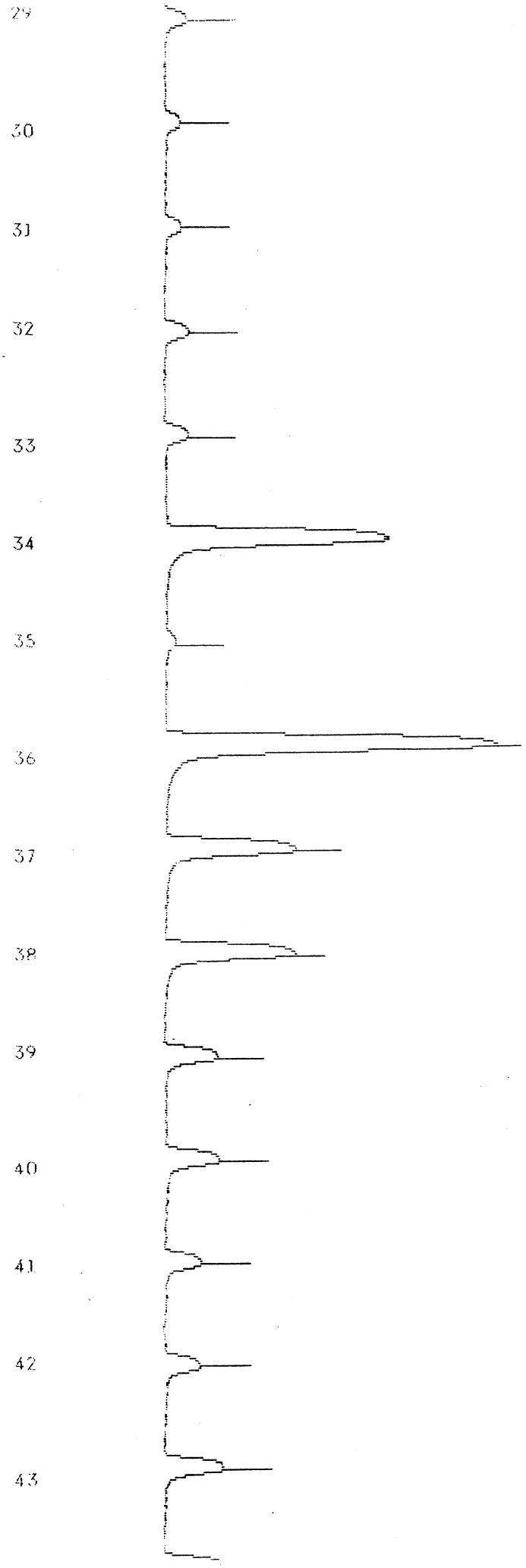
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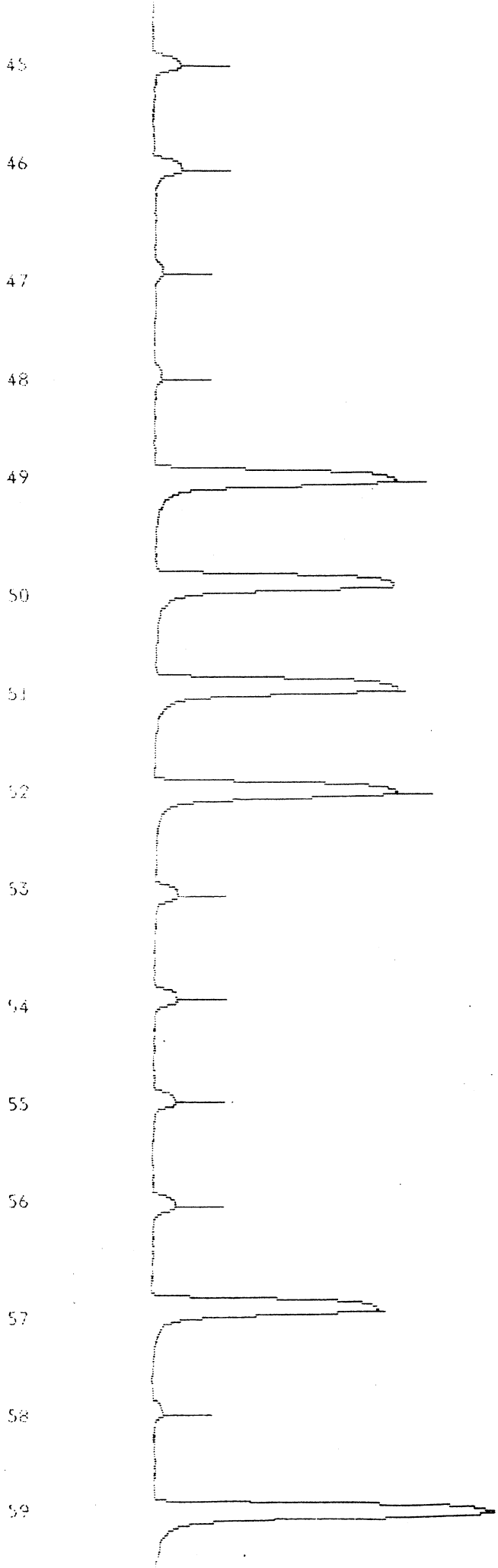
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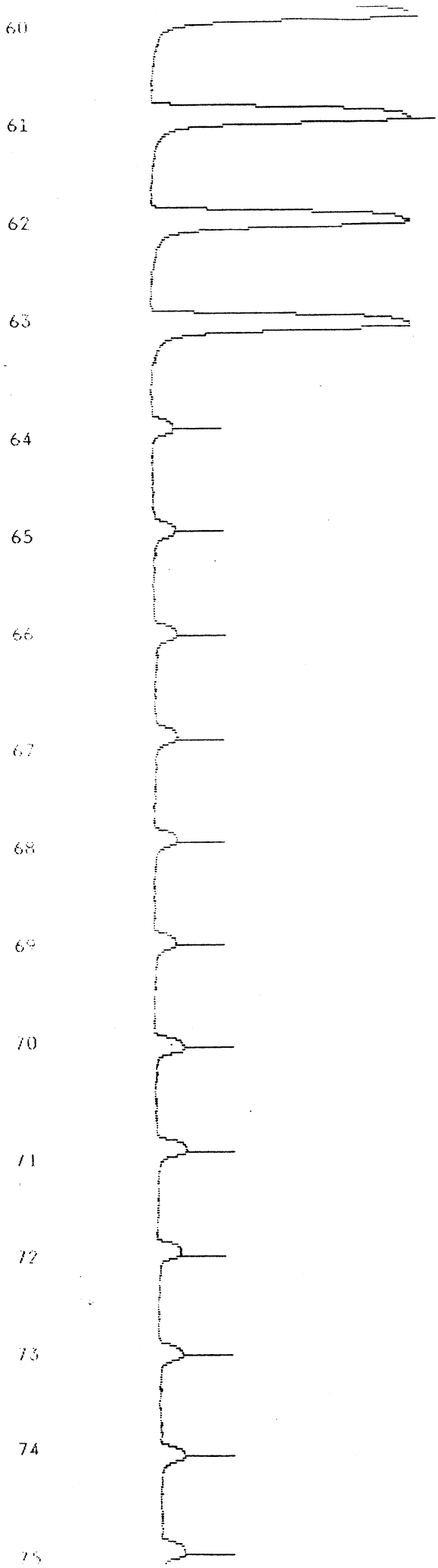
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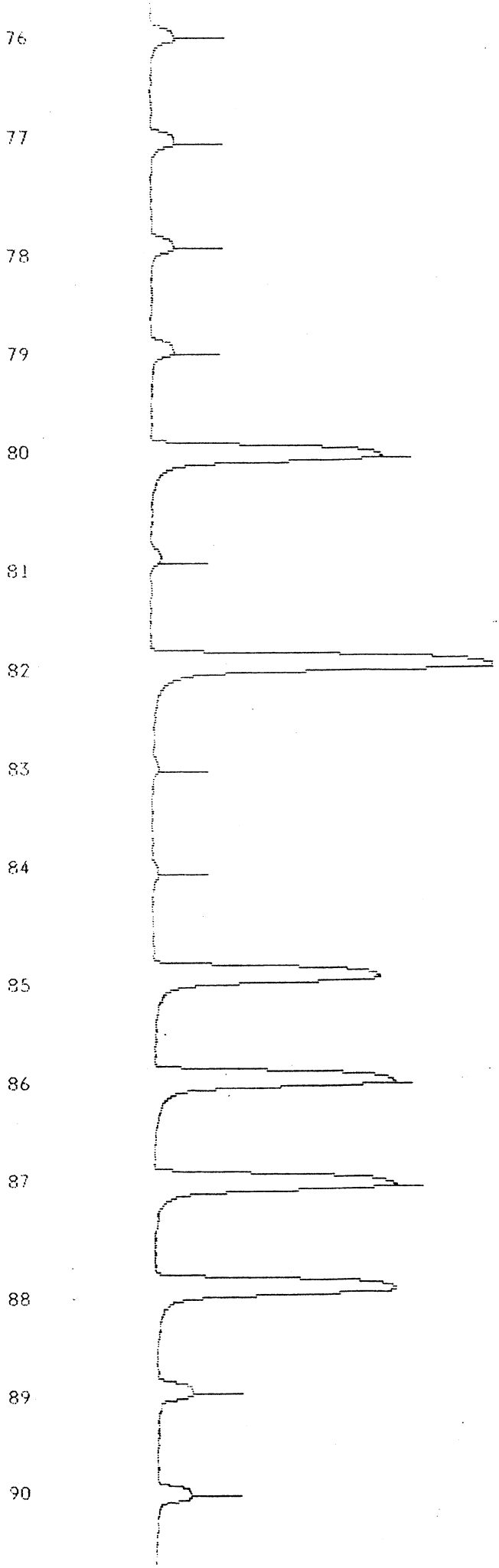
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Lenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
)10515	MOSTARDI	NIST 1633b reference	Mercury	PV	0.14						00/03/27	MNF1	00/03/27	MG01	13.	13.	
3L0327	INTERNAL		Mercury	PV	-0.04	-99999.0	1.01	101.	1.01	101.	00/03/27	MNF1	00/03/27	MG01	$$$	$$$	

2 Tests for 7471HG-S with an MDL of 0.04 mg/kg Validated By cmb Control Chart Updated N/A IO Requirements met N/A

226

00098

00099 ½

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.03.27 Run Code: MG01 Matrix: MP

Analyst: MG Units: µg (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			BL0327	MNF1.		
13			"			
14			BL0327 S			
15			"			
16			BL0327 DS			
17			"			
18		½	10403			
19			"			
20			10403 D			
21			"			
22			10403 S			
23			"			
24			10403 DS			
25			"			
26			10388			
27			"			
28			10389			
29			"			
30			10390			
31			"			
32			10391			
33			"			
34			CCV			
35			B			
36			D4			
37			10392			
38			"			
39			10393			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			10404			
42			"			
43		¼	10405			
44			"			
45			10406			
46			"			
47			10407			
48			"			
49			10408			
50			"			
51			10515			
52			"			
53			BL0327	MNP1		
54			"			
55			BL0327 S			
56			"			
57			CCV			
58			B			
59			D4			
60			BL0327 DS			
61			"			
62			10412			
63			"			
64			10412 D			
65			"			
66			10412 S			
67			"			
68			10412 DS			
69			"			
70			10413			
71			"			
72			10414			
73			"			
74			10415			
75			10415			
76			10416			
77			10416			
78			10417			
79			"			
80			CCV			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

00100 2/2

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.03.27 Run Code: MG01 Matrix: IMP.

Analyst: MG Units: ug (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21			B			
22			D4			
23			BL0327	MN31		
24			"			
25			BL0327 S			
26			"			
27			BL0327 DS			
28			"			
29		1/2	10412			
30			"			
31			10412 D			
32			"			
33			10412 S			
34			"			
35			10412 DS			
36			"			
37			10409			
38			"			
39			10410			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			10411			
42			"			
43			CCV			
44			B			
45			D4			
46			10413			
47			"			
48			10414			
49			"			
50		1/4	10415			
51			"			
52			10416			
53			"			
54			10417			
55			"			
56			NIST 1633b			
57			"			
58			CCV			
59			B			
60			D4			
61						
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63						
64						
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Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

Revision 1.0
Effective 000216

00101 DGOHFLT (FILTER + F 1/2 RINSE)

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG, DGHGLEACH, DG29*

Calibration Solutions:

#	I.D.	**Conc.	Spike	***Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
8	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

STANDARDS MATRIX MATCHED WITH HF & HNO3 AQUA REGIA

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- Reagents added
- Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested 2 HRS
- Hydroxylamine HCl added
- ✓ Samples shaken and bulked
- Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	MNF1	20 ml	30 ml	1 X	1.5 ppb = 600 ul of MES-ZENO 30/QCA (Ref Std)
	10	BL 0327	"	"	"	"	(Processed Blank)
	11	BL 0327 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	12	BL 0327 DS					(Duplicate Blank Spike) 600 ml S
1	13	10388	"	"	"	"	FILTER ONLY SUBMITTED
1	14	D	"	"	"	"	(Duplicate sample)
1	15	000327MN S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	16	DS	"	"	"	"	(Duplicate Spiked sample)
2	17	89	"	"	"	"	FILTER ONLY SUBMITTED 700
3	18	90	"	"	"	"	FILTER ONLY SUBMITTED 600
4	19	91	"	"	"	"	FILTER ONLY SUBMITTED 100
5	20	92	"	"	"	"	FILTER ONLY SUBMITTED 100
6	21	93	"	"	"	"	FILTER ONLY SUBMITTED 100
7	22	10403	"	"	"	"	DUP & POST SPIKE 100
8	23	10404	"	"	"	"	400
9	23	10405	"	"	"	"	100
10	24	10406	"	"	"	"	100
	25	CCV (Cont. Calib. Verif.)	-	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)
	26	BL 0327	MNF2	20 ml	30 ml	"	(Processed Blank)
	27	BL 0327 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	28	BL 0327 DS					(Duplicate Blank Spike)
1	29	10407	"	"	"	"	100
1	30	D	"	"	"	"	(Duplicate sample)
1	31	000327MN S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	32	DS	"	"	"	"	(Duplicate Spiked sample)
2	33	10408	"	"	"	"	100
3	34	10515	"	"	"	"	REFERENCE NIST 1633 b 100
4	35		"	"	"	"	
5	36		"	"	"	"	
6	37		"	"	"	"	
7	38		"	"	"	"	
8	39		"	"	"	"	
9	40		"	"	"	"	
10	41		"	"	"	"	
	42	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Comments HF & AQUA REGIA DIGEST FOR ONTARIO HYDRO METHOD

** concentration based on 30 ml final volume, *** concentration based on 20 ml final volume

Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C

DG29HGI, DG29HGF, DG101AA1, DG101AA2

Philip Analytical Services-Burlington

DG0HPRO 00102 DG0HFLTB(FILTER) ~~+ RINSE~~

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG, DGHGLEACH, DG29*

Calibration Solutions:

#	I.D.	**Conc.	Spike	***Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
8	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

TRIX ATCHED H HF + HNO3 QUA REGIA

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added HF + HNO3
- Reagents added
- Samples spiked
- ✓ Bath at 85 degrees C 8 HRS
- Samples digested
- Hydroxylamine HCl added
- ✓ Samples shaken and bulked
- Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	MNB1	20 ml	30 ml	1 X	1.5 ppb = 600 ul of MES-ZENO 30/QCA (Ref Std)
	10	BL 0327	"	"	"	"	(Processed Blank)
	11	BL 0327 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	12	BL 0327 DS					(Duplicate Blank Spike) FINAL VOL 100
1	13	10409	"	"	"	"	
1	14	D	"	"	"	"	(Duplicate sample)
1	15	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	16	000327 / MN DS	"	"	"	"	(Duplicate Spiked sample)
2	17	10410	"	"	"	"	
3	18	10411	"	"	"	"	
4	19	12	"	"	"	"	DUP & POST SPIKE
5	20	13	"	"	"	"	
6	21	14	"	"	"	"	
7	22	15	"	"	"	"	
8	23	16	"	"	"	"	
9	23	17	"	"	"	"	
10	24		"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	-	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)
	26	BL 0327	MNP1	20 ml	30 ml	"	(Processed Blank)
	27	BL 0327 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	28	BL 0327 DS					(Duplicate Blank Spike)
1	29	~~10409~~ 000327 MN	"	"	"	"	FINAL VOL 100
1	30	D	"	"	"	"	(Duplicate sample)
1	31	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	32	DS	"	"	"	"	(Duplicate Spiked sample)
2	33	~~10410~~ 000327 MN	"	"	"	"	
3	34	~~11~~ 000327 MN	"	"	"	"	
4	35	12	"	"	"	"	DUP + POST SPIKE
5	36	13	"	"	"	"	
6	37	14	"	"	"	"	
7	38	15	"	"	"	"	
8	39	16	"	"	"	"	
9	40	17	"	"	"	"	
10	41		"	"	"	"	
	42	CCV (Cont. Calib. Verif.)	-	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Comments HF & AQUA REGIA DIGEST FOR ONTARIO HYDRO METHOD

** concentration based on 30 ml final volume, *** concentration based on 20 ml final volume

Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C

DG29HGI, DG29HGF, DG101AA1, DG101AA2

Philip Analytical Services-Burlington

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	43	BL		"	"	"	(Processed Blank)
	44	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	45	BL DS					(Duplicate Blank Spike)
1	46		"	"	"	"	
1	47	D	"	"	"	"	(Duplicate sample)
1	48	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	49	DS	"	"	"	"	(Duplicate Spiked sample)
2	50		"	"	"	"	
3	51		"	"	"	"	
4	52		"	"	"	"	
5	53		"	"	"	"	
6	54		"	"	"	"	
7	55		"	"	"	"	
8	56		"	"	"	"	
9	57		"	"	"	"	
10	58		"	"	"	"	
	57	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Procedure/Methodology:

1 Prepare 25 ppm Intermediate Calibration Standard (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO_3
2 Prepare 0.05 ppm Working standard daily by pipetting 200 ul. of 25 ppm Intermediate to 100 ml final volume of 2% HNO_3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Include one External Reference Material sample per run
7 Incude one Organic Mercury Control Standard per run
8 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
9 Spike the tubes as indicated in the comment sector of the digestion sheet
10 Add 0.5 ml. of conc. Nitric Acid (HNO_3), and 1 ml. of conc. Sulphuric acid, (H_2SO_4), to each tube
11 Add 3 ml. Of 6% $KMnO_4$, purple colour must remain for at least 15 minutes
12 Add 1.5 ml. of 5% potassium persulphate, ($K_2S_2O_8$), to each tube
13 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
14 Remove tubes and allow to cool to room temperature
15 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
16 Recap tubes and shake until $KMnO_4$ is destroyed and sample becomes colourless
17 Dilute the sample to a final volume of 30 ml.

Supplier/Lot Information	Supplier	Lot	Expiry Date
Stock Calibration Standard	Inorganic Ventures	N HG02019	000401
Intermediate Cal Standard	Internal	00 03 09 A	00 04 09
Stock Reference Standard	High Purity	836309	00FEB
External Reference Material	SPEX		
Organic Mercury Control Standard	Aldrich		
6% potassium permanganate	Internal		
5% potassium persulphate	Internal		
20% hydroxylamine hydrochloride	Internal		
HNO_3 / HCl	Anachemia	119100 / 419061	000513/000422
H_2SO_4	Anachemia	519070	00 05 27
Bath Temps: 1 195 C	Time ON: 11:30 AM	Time OFF: 2:30 PM	
Prepared By: M Shiparop	Date: 000327	Checked by: M Shiparop	

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	43	BL		"	"	"	(Processed Blank)
	44	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
	45	BL DS					(Duplicate Blank Spike)
1	46		"	"	"	"	
1	47	D	"	"	"	"	(Duplicate sample)
1	48	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm IV Working Cal Std
1	49	DS	"	"	"	"	(Duplicate Spiked sample)
2	50		"	"	"	"	
3	51		"	"	"	"	
4	52		"	"	"	"	
5	53		"	"	"	"	
6	54		"	"	"	"	
7	55		"	"	"	"	
8	56		"	"	"	"	
9	57		"	"	"	"	
10	58		"	"	"	"	
	57	CCV (Cont. Calib. Verif.)	"	20 ml	30 ml	1 X	1.0 ppb = 400 ul of MES-ZENO 30/QCA (Ref Std)

Procedure/Methodology:

1 Prepare 25 ppm Intermediate Calibration Standard (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO_3
2 Prepare 0.05 ppm Working standard daily by pipetting 200 ul., of 25 ppm Intermediate to 100 ml final volume of 2% HNO_3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Include one External Reference Material sample per run
7 Incude one Organic Mercury Control Standard per run
8 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
9 Spike the tubes as indicated in the comment sector of the digestion sheet
10 Add 0.5 ml. of conc. Nitric Acid (HNO_3), and 1 ml. of conc. Sulphuric acid, (H_2SO_4), to each tube
11 Add 3 ml. Of 6% $KMnO_4$, purple colour must remain for at least 15 minutes
12 Add 1.5 ml. of 5% potassium persulphate, ($K_2S_2O_8$), to each tube
13 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
14 Remove tubes and allow to cool to room temperature
15 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
16 Recap tubes and shake until $KMnO_4$ is destroyed and sample becomes colourless
17 Dilute the sample to a final volume of 30 ml.

Supplier/Lot Information	Supplier	Lot	Expiry Date
Stock Calibration Standard	Inorganic Ventures	N HG02019	00 04 01
Intermediate Cal Standard	Internal	00 03 09 A	00 04 09
Stock Reference Standard	High Purity	836309	00 FEB
External Reference Material	SPEX		
Organic Mercury Control Standard	Aldrich		
6% potassium permanganate	Internal		
5% potassium persulphate	Internal		
20% hydroxylamine hydrochloride	Internal		
HNO_3 / HCl	Anachemia	117100 / 419064	00 05 13 / 00 04 22
000327 MN ~~H_2SO_4~~ HF	Anachemia	519070	00 05 27
Bath Temps: 1 185 C	Time ON: 11:30 AM	Time OFF: 7:30 PM	
Prepared By: M Rhsperop	Date: 000327	Checked by: M Rhsperop	

RUN DATE: 03-27-2000 CHART DATE: 03-28-2000
CHART SPEED: 30
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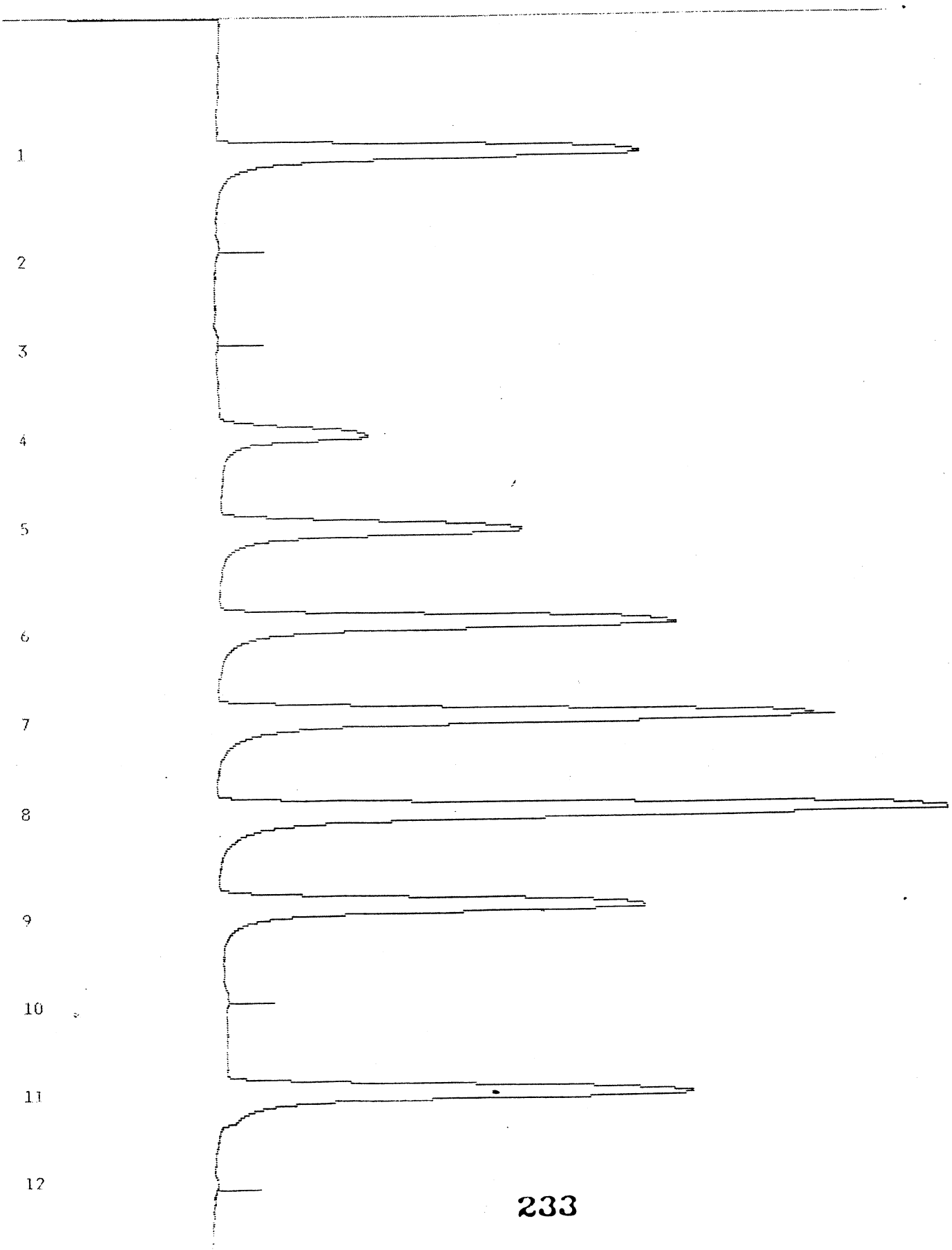

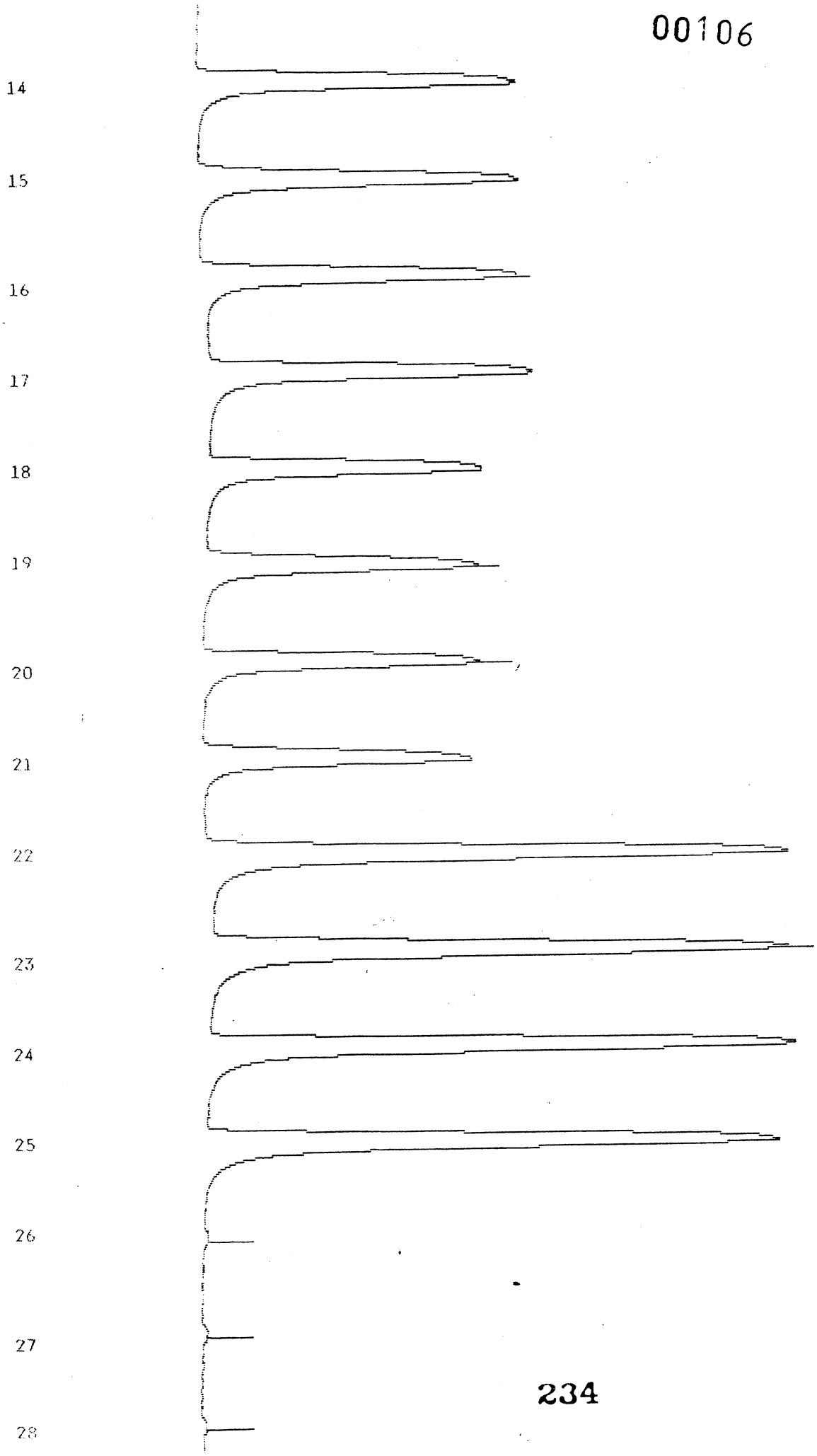
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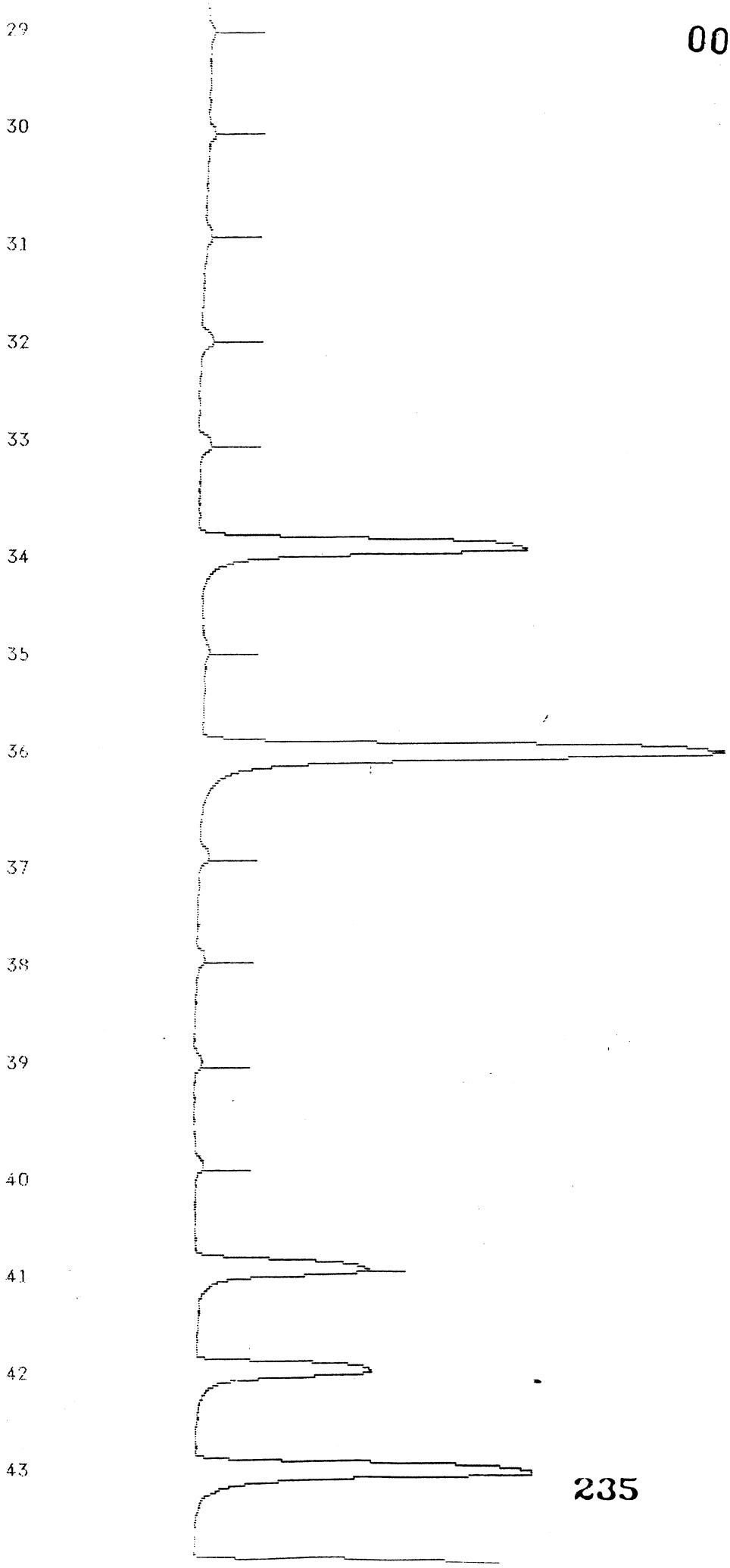
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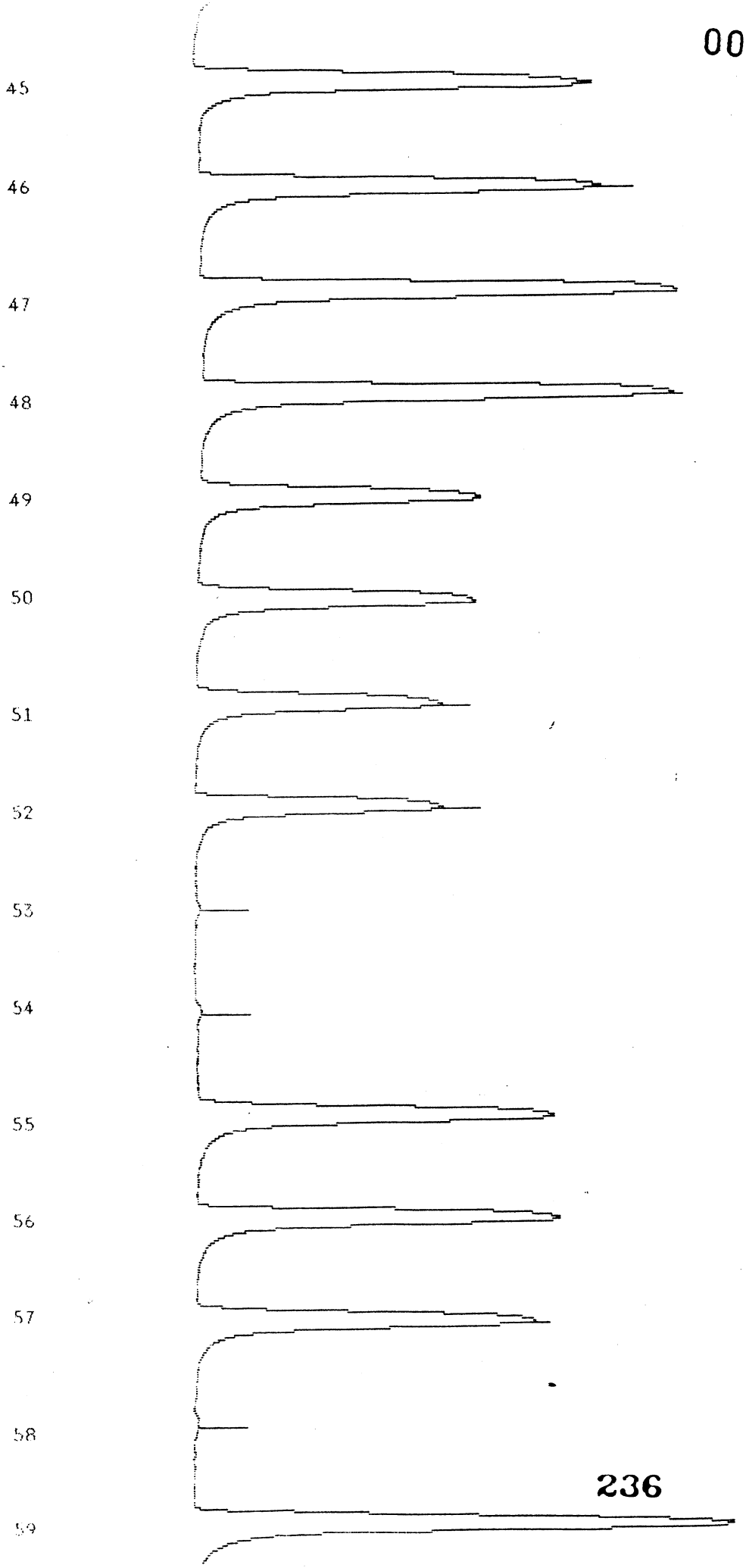
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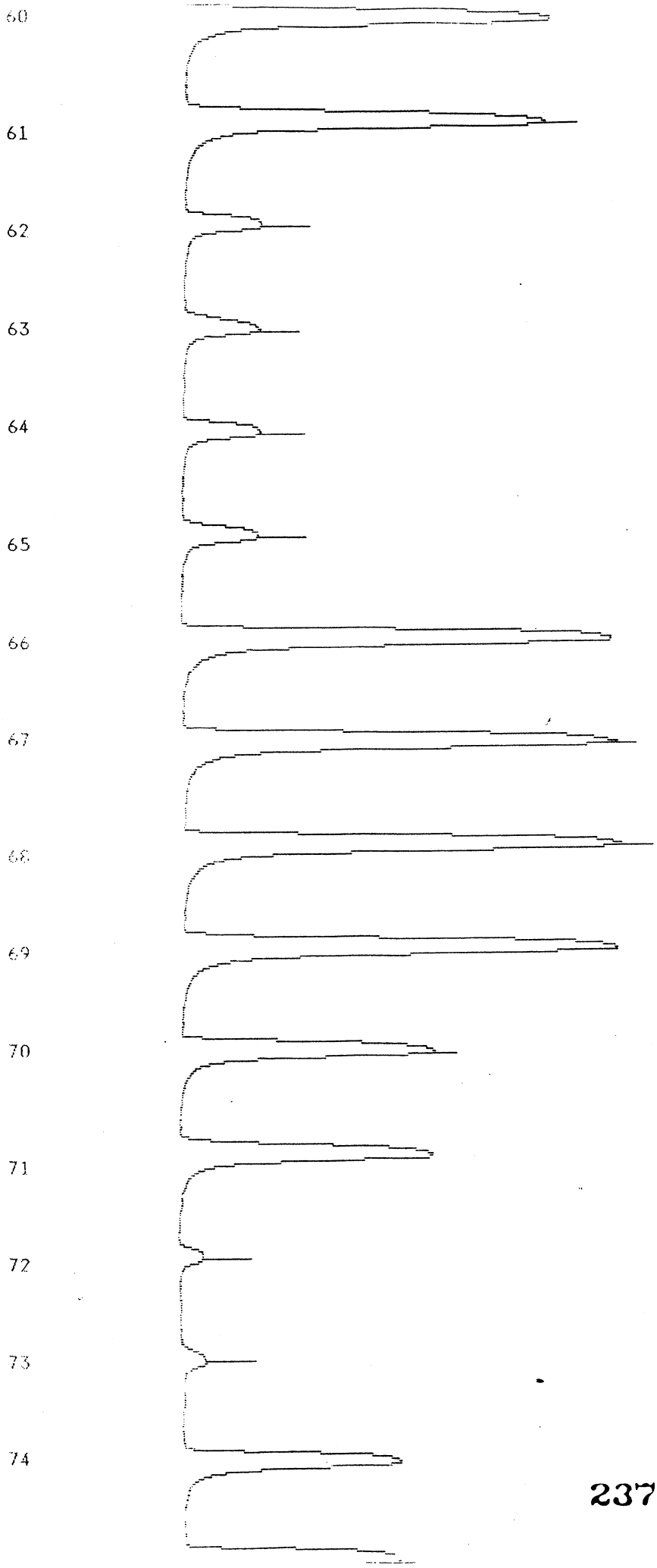
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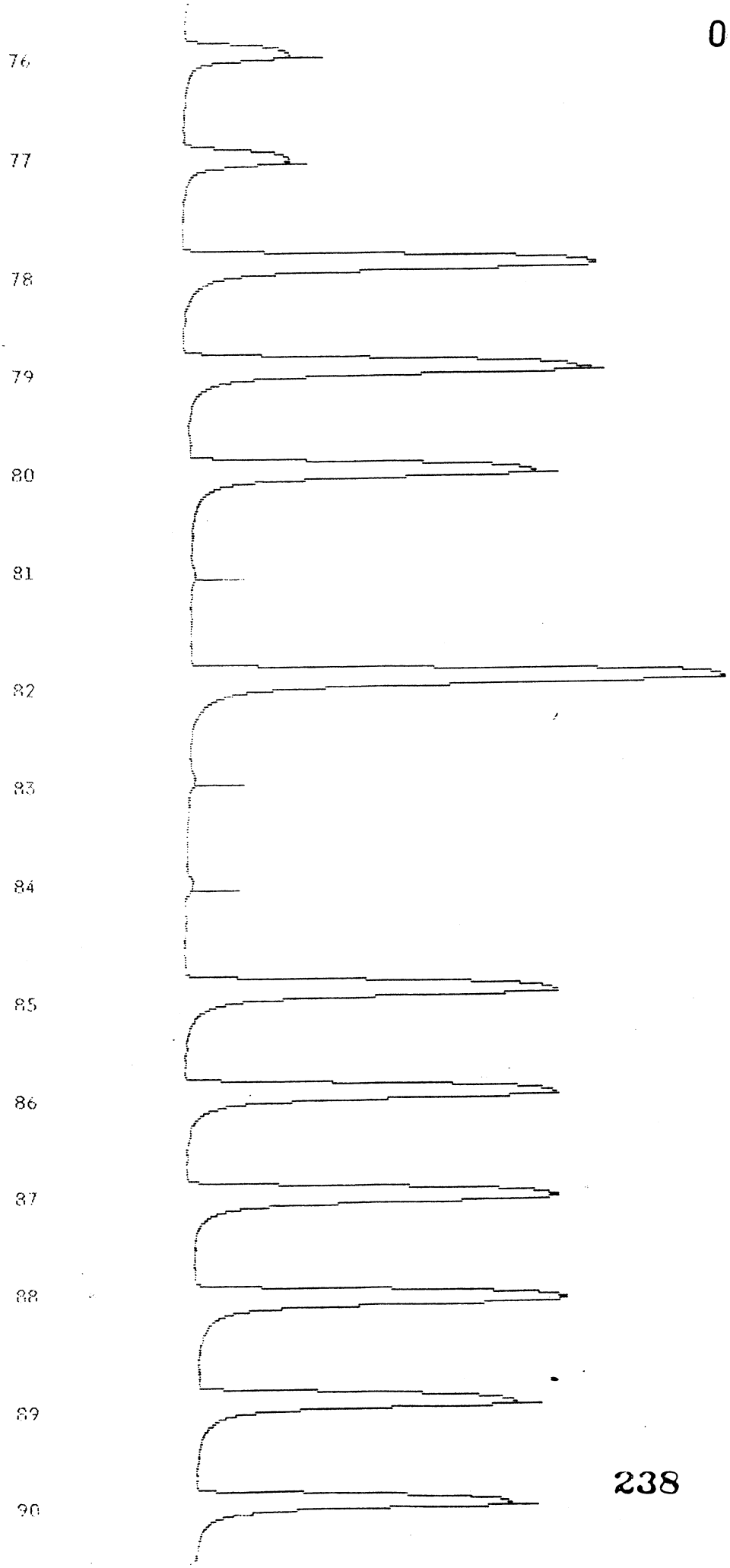
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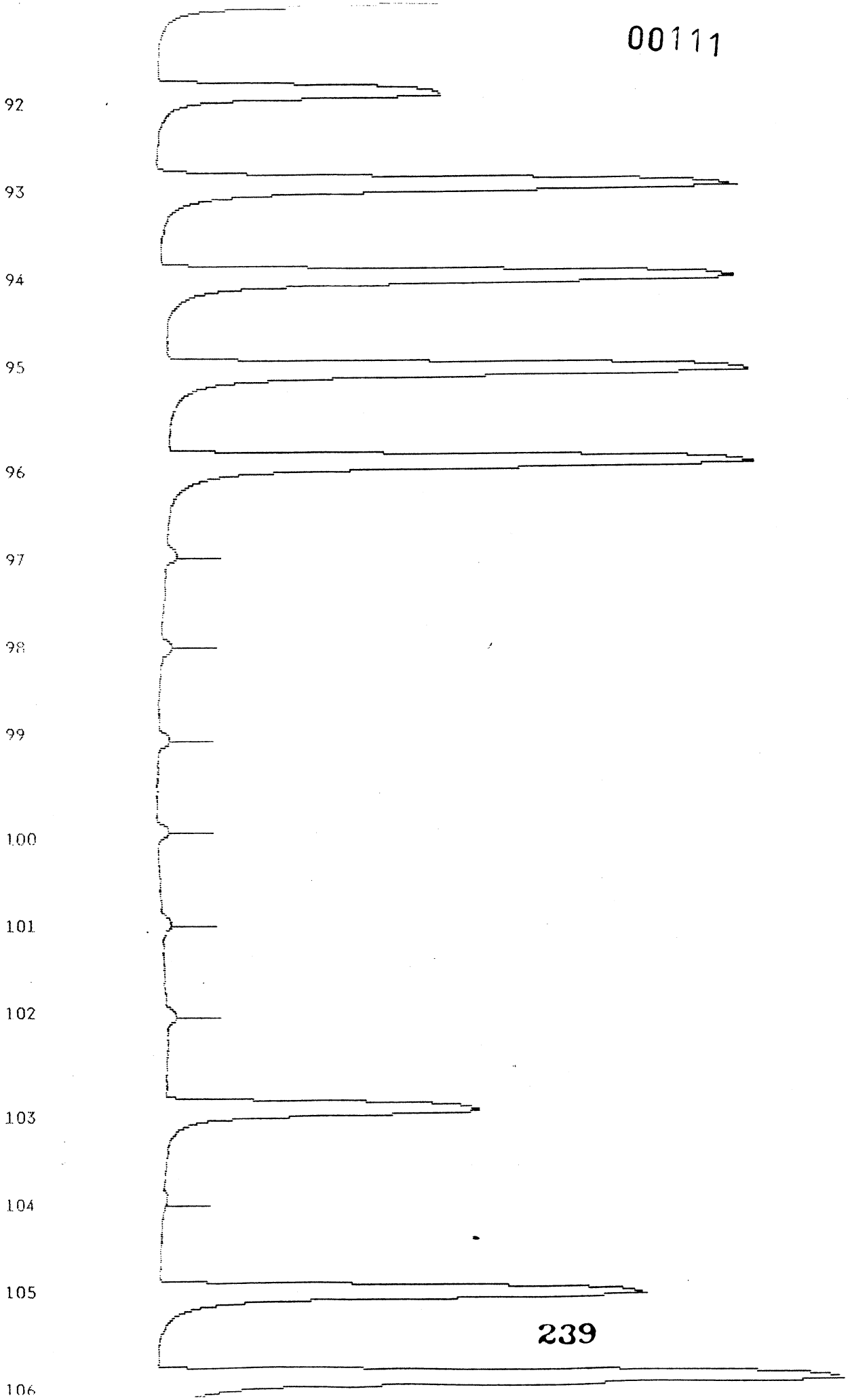
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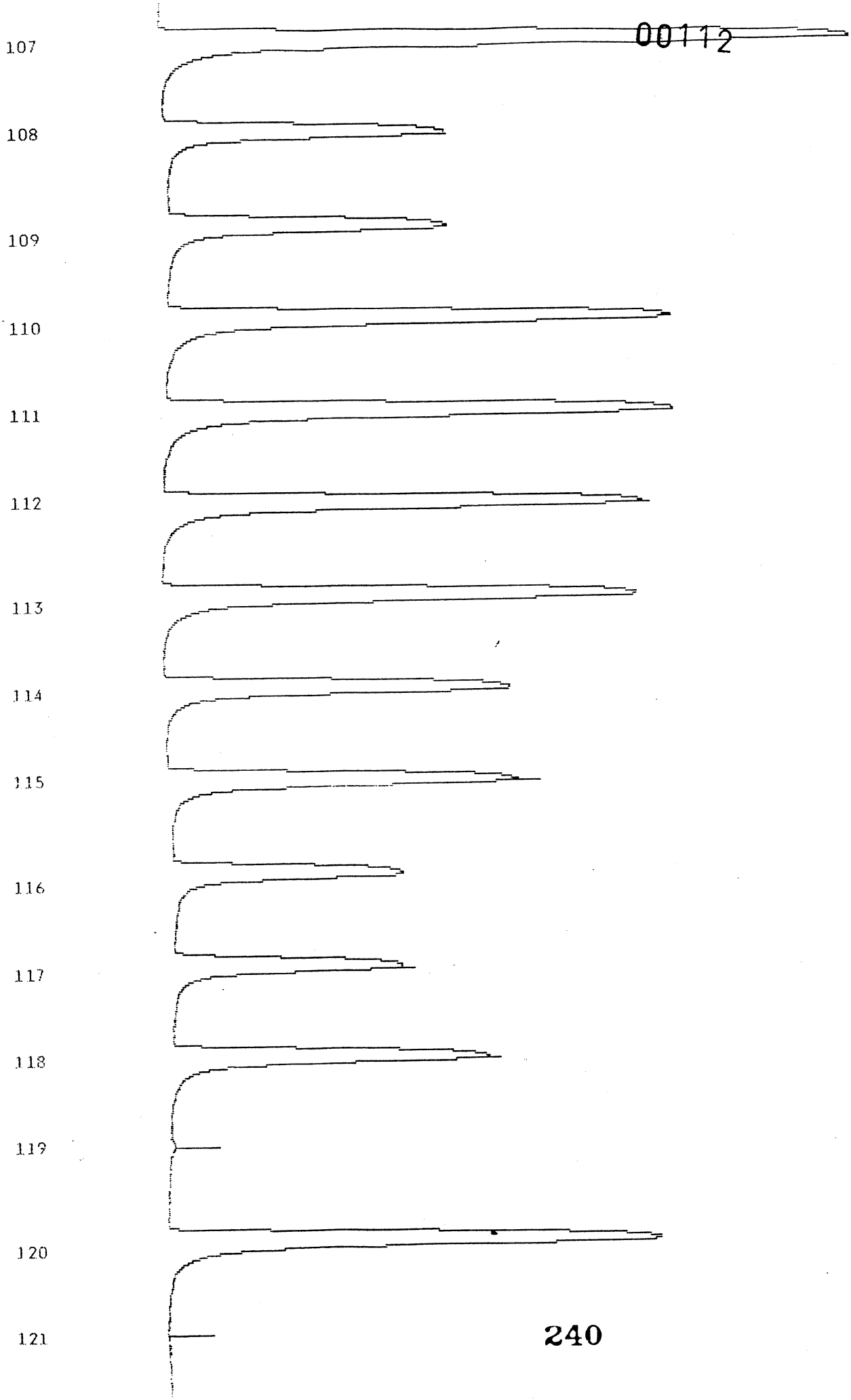
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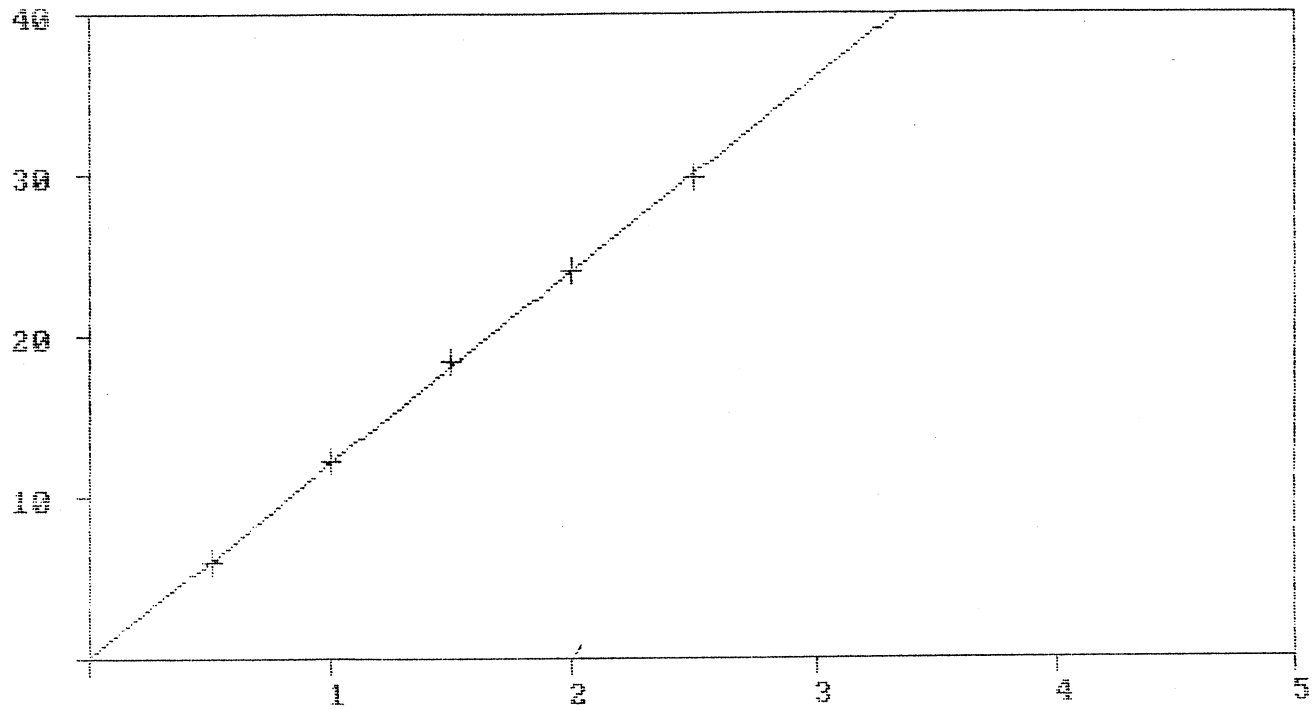
CHANNEL NAME: LDC
RUN NAME: 000327W



DATA TYPE: FIA
CALIBRATION ORDER: 1
INTERCEPT = 0.11
SLOPE = 11.93511

CORRELATION: .9998206

CHANNEL NAME: LDC
RUN DATE: 03-27-2000
SAMPLE TABLE NAME: 000327W
METHOD NAME: HG-W-20

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA		CONCENTRATION µg/L	EF
1	PRIMER	1	1	17.1		1.423	s
2	DUMMY	1	1	0.1		0.003	I
3	S1: 0	1	1	0.0		-0.007	I
4	S2: .5	1	1	6.0		0.490	
5	S3: 1	1	1	12.1		1.005	
6	S4: 1.5	1	1	18.4		1.533	
7	S5: 2	1	1	23.9		1.994	
8	S6: 2.5	1	1	29.8		2.485	
9	ICV	1	1	16.8		1.394	93%
10	8	1	1	0.0	TUG	-0.009	b
11	D4	1	1	18.4		1.533	d
12	BL0327-MNF1 10387	1	1	0.0	20.01	-0.005	I
13	BL0327-MNF1	1	1	0.0		-0.005	I
14	BL0327S	1	1	12.2	0.101	1.014	101%
15	BL0327S	1	1	12.2		1.016	
16	BL0327DS	1	1	12.0	0.101	0.993	99%
17	BL0327DS	1	1	12.3		1.024	
18	10403	2	1	10.5	0.172	1.733	

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21	10403D	2	1	10.2	[illegible]	1.696	
22	10403S	2	1	22.1	0.0461	3.676	97%
23	10403S	2	1	21.8		3.636	
24	10403DS	2	1	22.2	0.365	3.705	97%
25	10403DS	2	1	21.6		3.599	
26	10388	1	1	0.0	<0.06	-0.009	I
27	10388	1	1	0.0		-0.007	I
28	10389	1	1	0.0	<0.07	-0.009	I
29	10389	1	1	0.0		-0.005	I
30	10390	1	1	0.0	<0.06	-0.009	I
31	10390	1	1	0.0		-0.007	s
32	10391	1	1	0.2	<0.01	0.011	I
33	10391	1	1	0.2		0.009	I
34	CCV	1	1	11.5		0.954	95%
35	B	1	1	0.0		-0.009	b
36	D4	1	1	18.4		1.533	d
37	10392	1	1	0.1	<0.01	0.001	I
38	10392	1	1	0.1		-0.001	I
39	10393	1	1	0.1	<0.01	-0.003	I
40	10393	1	1	0.2		0.005	I
41	10404	1	1	6.0	0.196	0.490	
42	10404	1	1	6.0		0.490	
43	10405	4	1	11.8	0.392	3.907	
44	10405	4	1	11.8		3.932	
45	10406	4	1	13.7	0.457	4.562	
46	10406	4	1	13.8		4.579	s
47	10407	4	1	16.4	0.541	5.446	
48	10407	4	1	16.1		5.372	
49	10408	1	1	9.6	0.079	0.793	
50	10408	1	1	9.6		0.793	
51	* 10515	1	1	8.4	MB ~~0.070~~	0.699	0.140 µg/g
52	10515	1	1	8.4		0.699	
53	BL0327-MNP1	1	1	0.0	<0.01	-0.009	I
54	BL0327-MNP1	1	1	0.0		-0.009	I
55	BL0327S	1	1	12.2	0.101	1.010	101%
56	BL0327S	1	1	12.3		1.022	
57	CCV	1	1	11.5		0.952	95%
58	B	1	1	0.0		-0.009	b
59	D4	1	1	18.4		1.533	d
60	BL0327DS	1	1	12.5	0.103	1.034	103%
61	BL0327DS	1	1	12.3		1.018	s
62	10412	1	1	2.5	0.020	0.199	
63	10412	1	1	2.4		0.193	
64	10412D	1	1	2.4	0.019	0.193	
65	10412D	1	1	2.4		0.193	
66	10412S	1	1	14.7	0.123	1.222	103%
67	10412S	1	1	14.9		1.237	
68	10412DS	1	1	14.9	0.124	1.241	104%
69	10412DS	1	1	14.9		1.239	
70	10413	1	1	8.7	0.072	0.719	
71	10413	1	1	8.7		0.717	
72	10414	1	1	0.6	<0.01	0.040	I
73	10414	1	1	0.6		0.042	I
74	10415	1	1	7.4	0.061	0.609	
75	10415	1	1	7.4		0.609	
76	10416	1	1	3.4	0.028	0.277	s
77	10416	1	1	3.4		0.279	
78	10417	1	1	14.2	0.117	1.177	
79	10417	1	1	14.0		1.161	
80	CCV	1	1	11.9		0.985	99%
81	B	1	1	0.0		-0.009	b
82	D4	1	1	18.4		1.533	d
83	BL0327-MNR1	1	1	0.1	<0.01	-0.001	I
84	BL0327-MNR1	1	1	0.1		0.001	I

87	BL0327DS	1	1	12.6	0.105	1.046	105%
88	BL0327DS	1	1	12.6	00715	1.048	
89	10412	2	1	10.8	0.179	1.798	
90	10412	2	1	10.7		1.774	
91	10412D	2	1	10.8	0.180	1.798	s
92	10412D	2	1	10.8		1.794	
93	10412S	2	1	22.0	0.367	3.664	93%
94	10412S	2	1	22.1		3.681	
95	10412DS	2	1	22.4	0.374	3.730	97%
96	10412DS	2	1	22.5		3.750	
97	10409	1	1	0.2	<0.01	0.005	I
98	10409	1	1	0.2		0.009	I
99	10410	1	1	0.2	<0.01	0.005	I
100	10410	1	1	0.1		0.003	I
101	10411	1	1	0.1	<0.01	0.001	I
102	10411	1	1	0.2		0.005	I
103	CCV	1	1	11.9		0.989	99%
104	8	1	1	0.0		-0.009	b
105	D4	1	1	18.4		1.533	d
106	10413	1	1	26.2	0.219	2.182	s
107	10413	1	1	26.4		2.202	
108	10414	1	1	10.6	0.088	0.877	
109	10414	1	1	10.5		0.873	
110	10415	4	1	19.1	0.638	6.379	
111	10415	4	1	19.1		6.379	
112	10416	4	1	18.0	0.598	5.986	
113	10416	4	1	17.9		5.970	
114	10417	4	1	12.9	0.432	4.300	
115	10417	4	1	13.1		4.341	
116	NIST 1633B	1	1	8.6		0.709	0.141 µg/g
117	NIST 1633B	1	1	8.5	mb ~~0.071~~	0.701	
118	CCV	1	1	11.7		0.975	97%
119	8	1	1	0.0		-0.009	b
120	D4	1	1	18.4		1.533	d

INTERCEPT: 0.11 LINEAR COEF: 11.93511
CORRELATION COEF: .9998206

$* \; 0.699 \, \mu g/L \times \frac{0.1L}{0.5g} = 0.1398 \, \mu g/g$

4. SHIPPING/RECEIVING DOCUMENTS

Airbills (No. of shipments)
Chain-of-Custody Records
Sample Log-In Sheets
Miscellaneous Shipping/Receiving Records (describe or list)
NOTICE OF SAMPLE RECEIPT

Page ___ of ___ 00117

US SAMPLE LOG IN SHEET

MOSTARDI PLATT

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Gaus

Received By (Signature): KG

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ___ Absent ✓	per'd intact
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	1Z 54E 150 03 4117 2069	14°C
	41675847	14°C
	~~41479407~~	
	41432457	14°C
	41304014	14°C
	41311620	14°C
	41797624	30°F
	41002233	30°F
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	3-10-00	
Time Received	12:00	

Temperature of Coolers

Cooler ID:	Temperature
6 Coolers	see above

Relinquished By: [illegible]

Date: 3-10-00

Logbook No: ___

Logbook Page No. ___

14.

MOSTARDI-PLATT ASSOCIATES, INC.

Environmental Consultants

Read Instructions on Reverse Side Before Completing Form!

CHAIN-OF-CUSTODY RECORD

Project Number: 000604	Date Results Required:
Client: ALLIANT	TAT(Assessment Only)
Plant/Location: NELSON DEWEY / Cassville, WI	LAB Use Only — PO Number: 23157
Project Supervisor: JRP	LIMS Entry:

Sample Number	Date Sampled	Sample Point Identification	# of Conts	Grab/ Comp	Analysis Requested	Sub Lab
001	2/8/00	UNIT 1 INLET, TEST 1, FILTER	1	500P	MERCURY By Ontario Hydro Method	10641
002	↓	TEST 2	1	↓		10642
003	2/9/00	TEST 3	1	↓		10643
004	2/8/00	UNIT 1 INLET, TEST 1, Front 1/2 Nitric Rinse	1	500AV		10641
005	↓	TEST 2	1	↓		10642
006	2/9/00	TEST 3	1	↓		10643
007	2/8/00	UNIT 1 INLET, TEST 1, IMPS 1,2,3 (KCl)	2	100 500G		10641
008	↓	TEST 2	2	↓		10642
009	2/9/00	TEST 3	2	↓		10643
010	2/8/00	UNIT 1 INLET, TEST 1, IMP 4 (HNO_3/H_2O_2)	1	250AV		10641
011	↓	TEST 2	1	↓		10642
012	2/9/00	TEST 3	1	↓		10643
013	2/8/00	UNIT 1 INLET, TEST 1, IMPS 5,6,7 (H_2SO_4/$KMnO_4$)	1	1LAG		10641
014	↓	TEST 2	1	↓		10642
015	2/9/00	TEST 3	1	↓		10643
016	2/8/00	UNIT 1 OUTLET, TEST 1, FILTER	2	500P x2	↓	10638

Delivered by:	Date/Time	Processed by:	Date/Time	Received by Laboratory:
JRP	2/9/00 18:00	John Wendell	2/10/00 9:00	PAS 000310

Special Instructions:

12:02

MOSTARDI-PLATT ASSOCIATES, INC.

Environmental Consultants

-2-

Read Instructions on Reverse Side Before Completing Form!

CHAIN-OF-CUSTODY RECORD

Project Number: 000604	Date Results Required:
Client:	TAT(Assessment Only)
Plant/Location:	LAB Use Only — PO Number:
Project Supervisor:	LIMS Entry:

Sample Number	Date Sampled	Sample Point Identification	# of Conts	Grab/ Comp	Analysis Requested	Sub Lab
017	2/8/00	UNIT 1 OUTLET, TEST 2, FILTER	1	500P	MERCURY By Ontario Hydro Method	10639
018	2/9/00	↓ TEST 3 ↓	1	500P		10640
019	2/8/00	UNIT 1 OUTLET, TEST 1, Front ½ Nitric Rinse	1	1LGA		10638
020	↓	↓ TEST 2 ↓	1	↓		10639
021	2/9/00	↓ TEST 3 ↓	1	↓		10640
022	2/8/00	UNIT 1 OUTLET, TEST 1, IMPS 1,2,3 (KCl)	2	1LGA 500P		10638
023	↓	↓ TEST 2 ↓	2	↓		10639
024	2/9/00	↓ TEST 3 ↓	2	↓		10640
025	2/8/00	UNIT 1 OUTLET, TEST 1, IMP 4 (HNO_3/H_2O_2)	1	250A		10638
026		↓ TEST 2 ↓	1	↓		10639
027	2/9/00	↓ TEST 3 ↓	1	↓		10640
028	2/8/00	UNIT 1 OUTLET, TEST 1, IMPS 5,6,7 ($H_2SO_4/KMnO_4$)	1	1LA		10638
029	↓	↓ TEST 2 ↓	1	↓		10639
030	2/9/00	↓ TEST 3 ↓	1	↓		10640
031	2/8/00	UNIT 1 INLET, FIELD BLANK, IMPS 1,2,3 (KCl)	1	500P		10637
032	↓	↓ ↓ IMP 4 (HNO_3/H_2O_2)	1	250A	↓	

Delivered by:	Date/Time	Processed by:	Date/Time	Received by Laboratory:
				022310 12:00

Special Instructions:

MOSTARDI-PLATT ASSOCIATES, INC.

Environmental Consultants

-3-

MB- 10630

Read Instructions on Reverse Side Before Completing Form!

CHAIN-OF-CUSTODY RECORD

Project Number: 000604	Date Results Required:
Client:	TAT(Assessment Only)
Plant/Location:	LAB Use Only — PO Number:
Project Supervisor:	LIMS Entry:

Sample Number	Date Sampled	Sample Point Identification	# of Conts	Grab/ Comp	Analysis Requested	Sub Lab
033	2/8/00	UNIT 1 INLET, FIELD BLANK, IMPS 5,6,7 (H_2SO_4/$KMnO_4$)	1	1LAG	MERCURY By Ontario Hydro Method	10637
034	2/8/00	UNIT 1 OUTLET, FIELD BLANK, IMPS 1,2,3 (KCl)	1	500AG		
035	↓	↓ IMP 4 (HNO_3/H_2O_2)	1	250AG		10636
036	↓	↓ IMPS 5,6,7 (H_2SO_4/$KMnO_4$)	1	1LAG		
037	2/8/00	BLANKS: 50mL 0.1N HNO_3	1	125AG		
038	2/8/00	50mL 1N KCl	1	↓		
039	2/8/00	50mL HNO_3/H_2O_2	1			10634
040	2/8/00	50mL H_2SO_4/$KMnO_4$	1			
041	2/9/00	50mL H_2SO_4/$KMnO_4$	1			10635
042	2/8/00	100mL 10% Hydroxylamine	1	↓		10634
043	2/8/00	BLANK FILTER: (#36)	1	500P		10631
044	↓	↓ (#137)	1	↓		10632
045	↓	↓ (#138)	1	↓	↓	10633
046	2/8/00	COAL SAMPLE: TEST 1	1		MERCURY By Ontario Hydro Method,	
047	↓	↓ TEST 2	1		Ult. + Proximate,	
048	2/9/00	↓ TEST 3	1		Chlorine	

Delivered by:	Date/Time	Processed by:	Date/Time	Received by Laboratory:

Special Instructions:

000310 12:02

F:\DATA\LAB\CUSTODY.FRM

Revision Date: March 9, 1995

ALLIANT/000604 00121

Volume Sheet

Mostardi-Platt Associates Volume Record Sheet			
	Description	Initial Volume	Analyst/Date
1	004	102 mL	JW 2/10/00
2	005	53 mL	
3	006	72 mL	
4	007	832 mL	
5	008	771 mL	
6	009	842 mL	
7	010	144 mL	
8	011	158 mL	
9	012	154 mL	
10	013	763 mL	
11	014	633 mL	
12	015	812 mL	
13	019	50 mL	
14	020	90 mL	
15	021	78 mL	
16	022	638 mL	
17	023	697 mL	
18	024	775 mL	
19	025	126 mL	
20	026	134 mL	
21	027	137 mL	
22	028	720 mL	
23	029	726 mL	
24	030	684 mL	
25	031	416 mL	
26	032	98 mL	
27	033	680 mL	
28	034	440 mL	
29	035	123 mL	
30	036	580 mL	

Mostardi-Platt Associates Volume Record Sheet		
Description	Initial Volume	Analyst/Date
1 037	50 mL	JW 2/10/00
2 038	50 mL	↓ ↓
3 039	50 mL	
4 040	50 mL	
5 041	50 mL	
6 042	100 mL	
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SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060

February 25, 2000

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us: Coal

MPA Sample No: 000604-046

Sample taken at: ------

Sample taken by: Mostardi-Platt Assoc., Inc.

Date sampled: February 8, 2000

Date received: February 16, 2000

P.O. No. 23051

Analysis Report No. 71-114773

PROXIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	22.40	xxxxx
% Ash	3.91	5.04
% Volatile	29.52	38.04
% Fixed Carbon	44.17	56.92
	100.00	100.00
Btu/lb	10093	13006
% Sulfur	1.15	1.48
MAF Btu		13696

ULTIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	22.40	xxxxx
% Carbon	58.51	75.40
% Hydrogen	3.64	4.69
% Nitrogen	0.81	1.04
% Sulfur	1.15	1.48
% Ash	3.91	5.04
% Oxygen(diff)	9.58	12.35
	100.00	100.00
CHLORIDE ug/g	110	141

METHODS

Moisture: ASTM D 3302; Ash: ASTM D 3174; Volatile: ASTM D 3175; Fixed Carbon: Calculated Value; ASTM D 3172
Btu/lb: ASTM 5865; Sulfur: ASTM D 4239 (Method C); Carbon, Hydrogen & Nitrogen: ASTM D 5373; Chloride: ASTM D 4208

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Joseph B. Fabrizio

251 South Holland Laboratory

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February 25, 2000

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us: Coal

MPA Sample No: 000604-046

Sample taken at: ------

Sample taken by: Mostardi-Platt Assoc., Inc.

Date sampled: February 8, 2000

Date received: February 16, 2000

P.O. No. 23051

Analysis Report No. 71-114773

	Dry Basis, ug/g	MDL, ug/g
Mercury, Hg	0.06	0.01

	Expected	Observed
SARM 1157	0.05	0.05
NIST 1630A	0.11	0.10

MDL Denotes Method Detection Limit

METHOD
Mercury: ASTM D 3684

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Joseph B. Hauser

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SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060

February 25, 2000

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us: Coal

MPA Sample No: 000604-047

Sample taken at: ------

Sample taken by: Mostardi-Platt Assoc., Inc.

Date sampled: February 8, 2000

Date received: February 16, 2000

P.O. No. 23051

Analysis Report No. 71-114774

PROXIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	21.52	xxxxx
% Ash	3.79	4.83
% Volatile	30.18	38.46
% Fixed Carbon	44.51	56.71
	100.00	100.00
Btu/lb	10243	13052
% Sulfur	1.08	1.37
MAF Btu		13714

ULTIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	21.52	xxxxx
% Carbon	59.06	75.25
% Hydrogen	3.90	4.97
% Nitrogen	0.82	1.05
% Sulfur	1.08	1.37
% Ash	3.79	4.83
% Oxygen(diff)	9.83	12.53
	100.00	100.00
CHLORIDE ug/g	119	151

METHODS

Moisture: ASTM D 3302; Ash: ASTM D 3174; Volatile: ASTM D 3175; Fixed Carbon: Calculated Value; ASTM D 3172
Btu/lb: ASTM 5865; Sulfur: ASTM D 4239 (Method C); Carbon, Hydrogen & Nitrogen: ASTM D 5373; Chloride: ASTM D 4208

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Joseph B. Housey

South Holland Laboratory

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253

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TEL: (708) 331-2900
FAX: (708) 333-3060

February 25, 2000

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us Coal

MPA Sample No: 000604-047

Sample taken at ------

Sample taken by Mostardi-Platt Assoc., Inc.

Date sampled February 8, 2000

Date received February 16, 2000

P.O. No. 23051

Analysis Report No. 71-114774

	Dry Basis, ug/g	MDL, ug/g
Mercury, Hg	0.06	0.01

	Expected	Observed
SARM 1157	0.05	0.05
NIST 1630A	0.11	0.10

MDL Denotes Method Detection Limit

METHOD
Mercury: ASTM D 3684

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Joseph B. Hrusek

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SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060

February 25, 2000

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us: Coal

MPA Sample No: 000604-048

Sample taken at: ------

Sample taken by: Mostardi-Platt Assoc., Inc.

Date sampled: February 9, 2000

Date received: February 16, 2000

P.O. No. 23051

Analysis Report No. 71-114775

PROXIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	23.56	xxxxx
% Ash	3.77	4.93
% Volatile	29.78	38.96
% Fixed Carbon	42.89	56.11
	100.00	100.00
Btu/lb	9925	12984
% Sulfur	1.03	1.35
MAF Btu		13657

ULTIMATE ANALYSIS

	As Received	Dry Basis
% Moisture	23.56	xxxxx
% Carbon	57.15	74.77
% Hydrogen	3.84	5.03
% Nitrogen	0.77	1.01
% Sulfur	1.03	1.35
% Ash	3.77	4.93
% Oxygen(diff)	9.88	12.91
	100.00	100.00
CHLORIDE ug/g	72	95

METHODS

Moisture: ASTM D 3302; Ash: ASTM D 3174; Volatile: ASTM D 3175; Fixed Carbon: Calculated Value; ASTM D 3172
Btu/lb: ASTM 5865; Sulfur: ASTM D 4239 (Method C); Carbon, Hydrogen & Nitrogen: ASTM D 5373; Chloride: ASTM D 4208

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Joseph B. Fousek

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SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060

February 25, 2000

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us: Coal

MPA Sample No: 000604-048

Sample taken at: ------

Sample taken by: Mostardi-Platt Assoc., Inc.

Date sampled: February 9, 2000

Date received: February 16, 2000

P.O. No. 23051

Analysis Report No. 71-114775

	Dry Basis, ug/g	MDL, ug/g
Mercury, Hg	0.06	0.01

	Expected	Observed
SARM 1157	0.05	0.05
NIST 1630A	0.11	0.10

MDL Denotes Method Detection Limit

METHOD
Mercury: ASTM D 3684

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Joseph B. Hausch

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LIST OF PARTICIPANTS

Name	Organization	Project Role
Linda Lynch	Alliant Energy	Plant Coordinator
Sharon Klinger-Kingsley	Alliant Energy	Plant Coordinator
James R. Platt	Mostardi Platt	Vice President
John Wendell	Mostardi Platt	Laboratory Chemist
David Hillesheim	Mostardi Platt	Test Supervisor
Dan Tuider	Mostardi Platt	Test Technician
David Helm	Mostardi Platt	Test Technician
Todd Barr	Mostardi Platt	Test Technician
Ron McLeod	Philip Services	Speciated Hg Sample Analysis
Joseph Houser	CTE	Coal Sample Analysis