APPENDIX A

RESULTS AND CALCULATIONS

Appendix A.1

Emissions Summary

SUMMARY OF MERCURY EMISSIONS AND REMOVAL EFFICIENCIES RATES[1]
SALEM HARBOR GENERATING STATION (Unit #3)

Method/Component	Units	ESP Inlet					Outlet Stack					I/O Removal Efficiency				
		1	2	3	4	avg	1	2	3	4	avg	1	2	3	4	avg
Ontario Hydro/ Hg																
Particle bound	*ug/dscm*	2.79	3.29	2.84	2.86	2.83	0.0439	0.0568	0.0696	0.0527	0.0554					
	mg/hr	1978	2333	1902	1932	1938	32.07	41.33	48.79	37.44	39	98.38%	98.23%	97.43%	98.06%	97.96%
Oxidized, Hg^{2+}	*ug/dscm*	0.22	0.11	0.03	0.04	0.10	0.1756	0.1095	0.0491	0.0527	0.0925					
	mg/hr	156	78	22	29	69	128.28	79.71	34.44	37.44	67	17.68%	-2.64%	-55.87%	-31.04%	-23.07%
Elemental, Hg^0	*ug/dscm*	0.43	0.42	0.22	0.22	0.29	0.3432	0.3365	0.2128	0.1944	0.2501					
	mg/hr	308	302	148	151	202	250.72	245.04	149.25	138.25	179	18.56%	18.93%	-1.09%	8.39%	8.62%
Total, Hg	*ug/dscm*	3.44	3.82	3.08	3.13	3.22	0.5627	0.5027	0.3314	0.2997	0.3980					
	mg/hr	2442	2713	2072	2112	2209	411.06	366.09	232.49	213.14	286	83.17%	86.51%	88.78%	89.91%	87.28%

Method/Component	Units	Process Samples					Overall Process RE				
		1	2	3	4	avg	1	2	3	4	avg
Coal Samples											
Hg	*ug/g*	3.00E-02	2.00E-02	3.00E-02	3.00E-02	3.00E-02	***75.07%***	***66.72%***	***85.50%***	***86.70%***	***82.42%***
Hg rate	*mg/hr*	1644	1095	1599	1599	1614					
Sulfur	*Wt%*	0.7	0.69	0.74	0.75	0.73					
Chlorine	*%*	0.01	0.01	0.01	0.02	0.01					
HHV	*Btu/lb*	13889	13850	13707	13642	13746					
Urea											
Hg	*mg/L*	0.0002	0.0002	0.0002	0.0002	0.0002					
Hg rate	*mg/hr*	5	5	4	4	5					
Total Hg Feed Rate	*mg/hr*	**1649**	**1100**	**1603**	**1603**	**1618**					

1-REPORTED AVERAGES NOT INCLUSIVE OF RUN 2 DATA POINTS

SUMMARY OF MERCURY EMISSION RATES[1]
SALEM HARBOR GENERATING STATION (Unit #3)

Method/Component	Units	ESP Inlet					Outlet Stack				
		1	2	3	4	avg	1	2	3	4	avg
Ontario Hydro/ Hg											
Particle bound	*lb/hr*	4.30E-03	5.08E-03	4.14E-03	4.20E-03	4.22E-03	6.98E-05	8.99E-05	1.06E-04	8.15E-05	8.58E-05
	lb/MMBtu	5.91E-06	6.74E-06	5.84E-06	5.66E-06	5.81E-06	4.96E-08	5.99E-08	7.04E-08	5.38E-08	5.79E-08
Oxidized, Hg^{2+}	*lb/hr*	3.39E-04	1.69E-04	4.81E-05	6.22E-05	1.50E-04	2.79E-04	1.73E-04	7.49E-05	8.15E-05	1.45E-04
	lb/MMBtu	4.67E-07	2.18E-07	6.66E-08	8.39E-08	2.06E-07	1.98E-07	1.15E-07	4.97E-08	5.38E-08	1.01E-07
Elemental, Hg^0	*lb/hr*	6.70E-04	6.58E-04	3.21E-04	3.28E-04	4.40E-04	5.46E-04	5.33E-04	3.25E-04	3.01E-04	3.90E-04
	lb/MMBtu	9.20E-07	8.46E-07	4.46E-07	4.37E-07	6.01E-07	3.88E-07	3.55E-07	2.15E-07	1.98E-07	2.67E-07
Total, Hg	*lb/hr*	5.31E-03	5.90E-03	4.51E-03	4.59E-03	4.81E-03	8.94E-04	7.97E-04	5.06E-04	4.64E-04	6.21E-04
	lb/MMBtu	7.30E-06	7.80E-06	6.35E-06	6.19E-06	6.61E-06	6.36E-07	5.30E-07	3.36E-07	3.06E-07	4.26E-07

1-REPORTED AVERAGES NOT INCLUSIVE OF RUN 2 DATA POINTS

BOILER #3
STACK EXHAUST OHM - Runs 1, 2, 3 AND 4

Run No.	1	2	3	4	
Date:	24-Aug-99	24-Aug-99	25-Aug-99	25-Aug-99	
Start Time	09:10	14:05	08:30	12:30	
Stop Time	12:02	16:52	11:08	15:07	AVERAGES
Net Sampling Time, (minutes)	144.0	144.0	144.0	144.0	144.0
Volume of Gas Collected, (dscf)	88.474	87.097	86.303	87.182	87.264
Dry Mole Fraction	0.9201	0.9172	0.9181	0.9210	0.9191
CO_2 Concentration, (percent dry)	9.60	10.60	11.10	11.00	10.58
O_2 Concentration, (percent dry)	9.60	8.80	8.30	8.40	8.78
CO and N_2, (percent dry)	80.80	80.60	80.60	80.60	80.65
Stack Pressure, (inches of mercury)	29.98	30.00	30.01	30.01	30.00
Average Stack Temperature, (°F)	263	267	262	266	265
Stack Gas Velocity, (actual feet per minute - afpm)	5,202	5,229	4,995	5,076	5126
Stack Flowrate, (actual cubic feet per minute - acfm)	638,410	641,645	613,034	622,967	629014
Stack Flowrate, (standard cubic feet per minute - scfm)	467,228	467,266	449,657	454,425	459,644
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	429,885	428,568	412,847	418,505	422451
F-Factor	9,780				
EMISSIONS					
Hg^{tp}					
total, ug	0.11	0.14	0.17	0.13	
Concentration, ug/dscf	0.0012	0.0016	0.0020	0.0015	
Concentration, ug/dscm	0.0439	0.0568	0.0696	0.0527	
Emission Rate, mg/hr	32.07	41.33	48.79	37.44	
Emission Rate, lb/hr	6.98E-05	8.99E-05	1.06E-04	8.15E-05	
Emission Rate, lb/MMBtu	4.96E-08	5.99E-08	7.04E-08	5.38E-08	
Hg^{2+} - (KCL)					
total, ug	0.44	0.27	0.12	0.13	
Concentration, ug/dscf	0.0050	0.0031	0.0014	0.0015	
Concentration, ug/dscm	0.1756	0.1095	0.0491	0.0527	
Emission Rate, mg/hr	128.28	79.71	34.44	37.44	
Emission Rate, lb/hr	2.79E-04	1.73E-04	7.49E-05	8.15E-05	
Emission Rate, lb/MMBtu	1.98E-07	1.15E-07	4.97E-08	5.38E-08	
Hg^0					
total, ug (HNO_3-H_2O_2)	0.25	0.25	0.25	0.25	
total, ug (KMnO4-H2SO4)	0.61	0.58	0.27	0.23	
total, ug	0.86	0.83	0.52	0.48	
Concentration, ug/dscf	0.0097	0.0095	0.0060	0.0055	
Concentration, ug/dscm	0.3432	0.3365	0.2128	0.1944	
Emission Rate, mg/hr	250.72	245.04	149.25	138.25	
Emission Rate, lb/hr	5.46E-04	5.33E-04	3.25E-04	3.01E-04	
Emission Rate, lb/MMBtu	3.88E-07	3.55E-07	2.15E-07	1.98E-07	
Hg^{total}					
total, ug	1.41	1.24	0.81	0.74	
Concentration, ug/dscf	0.0159	0.0142	0.0094	0.0085	
Concentration, ug/dscm	0.5627	0.5027	0.3314	0.2997	
Emission Rate, mg/hr	411.06	366.09	232.49	213.14	
Emission Rate, lb/hr	8.94E-04	7.97E-04	5.06E-04	4.64E-04	
Emission Rate, lb/MMBtu	6.36E-07	5.30E-07	3.36E-07	3.06E-07	

BOILER #3
ESP INLET B - OHM - Runs 1, 2, 3 AND 4

Run No.	1	2	3	4	
Date:	24-Aug-99	24-Aug-99	25-Aug-99	25-Aug-99	
Start Time	09:13	14:08	08:33	12:32	
Stop Time	12:04	16:54	11:10	15:09	AVERAGES
Net Sampling Time, (minutes)	144.0	144.0	144.0	144.0	144.0
Volume of Gas Collected, (dscf)	84.344	86.259	84.197	83.789	84.647
Dry Mole Fraction	0.9180	0.9148	0.9165	0.9128	0.9155
CO_2 Concentration, (percent dry)	11.00	11.00	11.00	11.40	11.10
O_2 Concentration, (percent dry)	8.40	8.60	8.60	8.00	8.40
CO and N_2, (percent dry)	80.60	80.40	80.40	80.60	80.50
Stack Pressure, (inches of mercury)	29.14	29.16	29.18	29.18	29.16
Average Stack Temperature, (°F)	254	257	251	256	255
Stack Gas Velocity, (actual feet per minute - afpm)	3,519	3,598	3,386	3,457	3490
Stack Flowrate, (actual cubic feet per minute - acfm)	300,889	307,620	289,530	295,560	298400
Stack Flowrate, (standard cubic feet per minute - scfm)	216,670	220,741	209,657	212,529	214,899
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	198,912	201,932	192,140	194,003	196747
F-Factor	9,780				
EMISSIONS					
Hg^{tp}					
total, ug	5.725	8.668	7.344	7.652	
Concentration, ug/dscf	0.0679	0.1005	0.0872	0.0913	
Concentration, ug/dscm	2.3967	3.5482	3.0799	3.2247	
Emission Rate, mg/hr	810.09	1217.50	1005.55	1063.04	
Emission Rate, lb/hr	1.76E-03	2.65E-03	2.19E-03	2.31E-03	
Emission Rate, lb/MMBtu	2.45E-06	3.68E-06	3.20E-06	3.19E-06	
Hg^{2+} - (KCL)					
total, ug	0.62	0.13	0.044	0.12	
Concentration, ug/dscf	0.0074	0.0015	0.0005	0.0014	
Concentration, ug/dscm	0.2596	0.0532	0.0185	0.0506	
Emission Rate, mg/hr	87.73	18.26	6.02	16.67	
Emission Rate, lb/hr	1.91E-04	3.97E-05	1.31E-05	3.63E-05	
Emission Rate, lb/MMBtu	2.65E-07	5.52E-08	1.91E-08	5.00E-08	
Hg^0					
total, ug (HNO_3-H_2O_2)	0.25	0.25	0.25	0.25	
total, ug (KMnO4-H2SO4)	0.60	0.20	0.09	0.09	
total, ug	0.85	0.45	0.34	0.34	
Concentration, ug/dscf	0.0101	0.0052	0.0041	0.0041	
Concentration, ug/dscm	0.3558	0.1842	0.1434	0.1445	
Emission Rate, mg/hr	120.28	63.21	46.83	47.65	
Emission Rate, lb/hr	2.62E-04	1.38E-04	1.02E-04	1.04E-04	
Emission Rate, lb/MMBtu	3.63E-07	1.91E-07	1.49E-07	1.43E-07	
Hg^{total}					
total, ug	7.195	9.248	7.730	8.115	
Concentration, ug/dscf	0.0853	0.1072	0.0918	0.0969	
Concentration, ug/dscm	3.0121	3.7857	3.2417	3.4198	
Emission Rate, mg/hr	1018.10	1298.97	1058.40	1127.36	
Emission Rate, lb/hr	2.22E-03	2.83E-03	2.30E-03	2.45E-03	
Emission Rate, lb/MMBtu	3.08E-06	3.93E-06	3.36E-06	3.38E-06	

BOILER #3
ESP INLET A - OHM - Runs 1, 2, 3 AND 4

Run No.	1	2	3	4	
Date:	24-Aug-99	24-Aug-99	25-Aug-99	25-Aug-99	
Start Time	09:10	14:05	08:30	12:30	
Stop Time	12:02	16:52	11:08	15:07	AVERAGES
Net Sampling Time, (minutes)	144.0	144.0	144.0	144.0	144.0
Volume of Gas Collected, (dscf)	93.407	89.418	83.628	85.551	88.001
Dry Mole Fraction	0.9186	0.9122	0.9182	0.9112	0.9150
CO_2 Concentration, (percent dry)	10.20	11.50	11.00	11.40	11.03
O_2 Concentration, (percent dry)	9.20	8.20	8.40	8.00	8.45
CO and N_2, (percent dry)	80.60	80.30	80.60	80.60	80.53
Stack Pressure, (inches of mercury)	29.14	29.16	29.18	29.18	29.16
Average Stack Temperature, (°F)	255	261	266	266	262
Stack Gas Velocity, (actual feet per minute - afpm)	3,830	3,879	3,658	3,701	3767
Stack Flowrate, (actual cubic feet per minute - acfm)	327,490	331,696	312,780	316,461	322107
Stack Flowrate, (standard cubic feet per minute - scfm)	235,494	236,697	221,813	224,424	229,607
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	216,328	215,918	203,659	204,497	210101
F-Factor	9,780				
EMISSIONS					
Hg^{tp}					
total, ug	8.408	7.700	6.135	6.060	
Concentration, ug/dscf	0.0900	0.0861	0.0734	0.0708	
Concentration, ug/dscm	3.1784	3.0406	2.5904	2.5012	
Emission Rate, mg/hr	1168.36	1115.60	896.44	869.14	
Emission Rate, lb/hr	2.54E-03	2.43E-03	1.95E-03	1.89E-03	
Emission Rate, lb/MMBtu	3.47E-06	3.06E-06	2.64E-06	2.47E-06	
Hg^{2+} - (KCL)					
total, ug	0.49	0.41	0.11	0.08	
Concentration, ug/dscf	0.0052	0.0046	0.0013	0.0010	
Concentration, ug/dscm	0.1852	0.1619	0.0464	0.0343	
Emission Rate, mg/hr	68.09	59.40	16.07	11.90	
Emission Rate, lb/hr	1.48E-04	1.29E-04	3.50E-05	2.59E-05	
Emission Rate, lb/MMBtu	2.02E-07	1.63E-07	4.74E-08	3.39E-08	
Hg^{0}					
total, ug (HNO_3-H_2O_2)	0.25	0.25	0.25	0.25	
total, ug (KMnO4-H2SO4)	1.10	1.40	0.44	0.47	
total, ug	1.35	1.65	0.69	0.72	
Concentration, ug/dscf	0.0145	0.0185	0.0083	0.0084	
Concentration, ug/dscm	0.5103	0.6516	0.2913	0.2972	
Emission Rate, mg/hr	187.59	239.06	100.82	103.26	
Emission Rate, lb/hr	4.08E-04	5.20E-04	2.19E-04	2.25E-04	
Emission Rate, lb/MMBtu	5.57E-07	6.55E-07	2.97E-07	2.94E-07	
Hg^{total}					
total, ug	10.248	9.760	6.935	6.863	
Concentration, ug/dscf	0.1097	0.1092	0.0829	0.0802	
Concentration, ug/dscm	3.8740	3.8541	2.9282	2.8326	
Emission Rate, mg/hr	1424.04	1414.06	1013.33	984.30	
Emission Rate, lb/hr	3.10E-03	3.08E-03	2.20E-03	2.14E-03	
Emission Rate, lb/MMBtu	4.23E-06	3.87E-06	2.99E-06	2.80E-06	

Appendix A.2

Isokinetic Summary

BOILER #3
STACK EXHAUST OHM - Runs 1, 2, 3 AND 4

Run No.		Cal. Check	1	2	3	4	
Date:			24-Aug-99	24-Aug-99	25-Aug-99	25-Aug-99	
Start Time			9:10	14:05	8:30	12:30	
Stop Time			12:02	16:52	11:08	15:07	AVERAGES
Nozzle Diameter, (inches)			0.180	0.180	0.180	0.180	0.180
Barometric Pressure, (inches of mercury)			30.08	30.10	30.12	30.12	30.11
Net Sampling Time, (minutes)			144.0	144.0	144.0	144.0	144.0
Volume Metered, (cubic feet)			93.063	92.058	90.996	92.413	92.133
Average Dry Gas Meter Temperature, (°F)		#DIV/0!	93	96	95	98	96
Average ΔH, (inches of water)			1.41	1.38	1.37	1.40	1.39
Average ΔH, (inches of mercury)			0.1037	0.1015	0.1007	0.1029	0.1022
Dry Gas Meter Calibration Factor (Y)	Meterbox # 90336	0.987	0.987	0.987	0.987	0.987	0.987
Dry Gas Meter ΔH @		1.981	1.981	1.981	1.981	1.981	1.981
Volume of Gas Collected, (dscf)			88.474	87.097	86.303	87.182	87.264
Total Water Collected, (mL)			163.0	166.8	163.2	158.7	162.9
Volume of Water Vapor, (scf)			7.685	7.865	7.695	7.483	7.682
Moisture, (percent)			8.0	8.3	8.2	7.9	8.1
Dry Mole Fraction			0.9201	0.9172	0.9181	0.9210	0.9191
CO_2 Concentration, (percent dry)			9.60	10.60	11.10	11.00	10.58
O_2 Concentration, (percent dry)			9.60	8.80	8.30	8.40	8.78
CO and N_2, (percent dry)			80.80	80.60	80.60	80.60	80.65
Dry Molecular Weight, (lb/lb mole)			29.92	30.05	30.11	30.10	30.04
Wet Molecular Weight, (lb/lb mole)			28.97	29.05	29.12	29.14	29.07
Excess Air at Stack, (percent)			81.8	70.5	64.0	65.2	70.4
Stack Area, (square inches)	ID(inches) = 150		17671.5	17671.5	17671.5	17671.5	17671.5
Static Pressure, (inches of water)			-1.30	-1.35	-1.50	-1.50	-1.41
Stack Pressure, (inches of mercury)			29.98	30.00	30.01	30.01	30.00
Average Stack Temperature, (°F)			263	267	262	266	265
Average Sqroot of ΔP			1.3232	1.3285	1.2753	1.2929	1.3050
SDE Average			35.579	35.820	34.267	34.836	35.126
Pitot Coefficient			0.84	0.84	0.84	0.84	0.84
Stack Gas Velocity, (actual feet per minute - afpm)			5,202	5,229	4,995	5,076	5126
Stack Flowrate, (actual cubic feet per minute - acfm)			638,410	641,645	613,034	622,967	629014
Stack Flowrate, (standard cubic feet per minute - scfm)			467,228	467,266	449,657	454,425	459,644
Stack Flowrate, (dry standard cubic feet per minute - dscfm)			429,885	428,568	412,847	418,505	422451
Isokinetics, Percent			**99.3**	**98.0**	**100.8**	**100.5**	**99.6**
Meterbox Calibration Verifications							
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)		#DIV/0!					
Post Test: Y_{qc}			0.98	0.98	0.99	0.98	0.98
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)			0%	-1%	0%	0%	0%

Calibration Check Time (min.)	DGM IN	DGM OUT
0		
2		
4		
6		
8		
10		
#DIV/0!		

Traverse Point	RUN1 Delta P	RUN1 Sqrt Delta P	RUN1 DGM IN	RUN1 DGM OUT	RUN1 Delta H	RUN1 Sqrt Delta H	RUN1 Stack Temp °F	RUN2 Delta P	RUN2 Sqrt Delta P	RUN2 DGM IN	RUN2 DGM OUT	RUN2 Delta H	RUN2 Sqrt Delta H	RUN2 Stack Temp °F
A1	1.6	1.2649	85	85	1.55	1.16	258	1.8	1.3416	91	90	1.40	1.18	268
A2	1.6	1.2649	85	84	1.55	1.16	260	1.65	1.2845	90	90	1.50	1.14	268
A3	1.8	1.3416	87	85	1.50	1.22	260	1.75	1.3229	92	91	1.55	1.16	269
A4	1.8	1.3416	89	86	1.50	1.22	261	1.65	1.2845	95	91	1.50	1.14	268
A5	1.75	1.3229	91	87	1.45	1.20	261	1.9	1.3784	95	92	1.50	1.22	269
A6	1.9	1.3784	92	89	1.60	1.26	261	1.9	1.3784	98	93	1.50	1.22	269
A7	1.7	1.3038	92	92	1.40	1.18	263	1.9	1.3784	95	94	1.50	1.22	268
A8	1.8	1.3416	92	92	1.50	1.22	262	1.75	1.3229	95	94	1.35	1.16	269
A9	1.7	1.3038	93	92	1.40	1.18	262	1.9	1.3784	97	95	1.50	1.22	269
A10	1.6	1.2649	95	92	1.35	1.16	263	1.9	1.3784	98	95	1.50	1.22	269
A11	1.75	1.3229	97	93	1.45	1.20	263	1.8	1.3416	99	95	1.40	1.18	268
A12	1.9	1.3784	98	94	1.60	1.26	262	2	1.4142	100	95	1.55	1.24	267
B1	1.7	1.3038	95	94	1.40	1.18	264	1.8	1.3416	98	96	1.40	1.18	267
B2	1.75	1.3229	95	95	1.35	1.16	264	1.6	1.2649	98	96	1.25	1.12	266
B3	1.8	1.3416	96	95	1.40	1.18	264	1.7	1.3038	98	96	1.50	1.14	266
B4	1.9	1.3784	98	95	1.50	1.22	265	1.7	1.3038	99	96	1.30	1.14	265
B5	1.7	1.3038	99	95	1.50	1.14	265	1.7	1.3038	100	96	1.30	1.14	266
B6	1.85	1.3601	99	96	1.45	1.20	265	1.6	1.2649	101	97	1.25	1.12	266
B7	1.65	1.2845	95	95	1.30	1.14	266	1.7	1.3038	97	96	1.30	1.14	265
B8	1.85	1.3601	96	95	1.45	1.20	266	1.8	1.3416	99	97	1.40	1.18	266
B9	1.7	1.3038	97	95	1.30	1.14	266	1.85	1.3601	100	97	1.45	1.20	266
B10	1.7	1.3038	98	95	1.30	1.14	266	1.75	1.3229	101	97	1.35	1.16	266
B11	1.7	1.3038	99	96	1.30	1.14	266	1.7	1.3038	101	97	1.30	1.14	266
B12	1.85	1.3601	100	96	1.45	1.20	266	1.6	1.2649	101	97	1.25	1.12	263
Average	1.75	1.3232	95		1.41	1.19	263	1.77	1.3285	96		1.38	1.17	267

Traverse Point	RUN3 Delta P	RUN3 Sqrt Delta P	RUN3 DGM IN	RUN3 DGM OUT	RUN3 Delta H	RUN3 Sqrt Delta H	RUN3 Stack Temp °F	RUN4 Delta P	RUN4 Sqrt Delta P	RUN4 DGM IN	RUN4 DGM OUT	RUN4 Delta H	RUN4 Sqrt Delta H	RUN4 Stack Temp °F
A1	1.65	1.2845	87	88	1.40	1.1832	260	1.65	1.2845	92	92	1.40	1.18	259
A2	1.60	1.2649	88	88	1.35	1.1619	265	1.8	1.3416	92	92	1.50	1.22	265
A3	1.60	1.2649	89	87	1.35	1.1619	265	1.65	1.2845	95	92	1.40	1.18	265
A4	1.50	1.2247	90	88	1.25	1.1180	265	1.55	1.2450	95	93	1.30	1.14	265
A5	1.50	1.2247	92	89	1.25	1.1180	265	1.75	1.3229	97	94	1.45	1.20	265
A6	1.60	1.2649	93	90	1.35	1.1619	265	1.75	1.3229	98	95	1.45	1.20	265
A7	1.60	1.2649	95	92	1.35	1.1619	262	1.65	1.2845	96	96	1.40	1.18	266
A8	1.60	1.2649	96	93	1.35	1.1619	262	1.8	1.3416	98	96	1.50	1.22	266
A9	1.60	1.2649	97	95	1.35	1.1619	262	1.7	1.3038	99	96	1.40	1.18	265
A10	1.70	1.3038	98	95	1.45	1.2042	262	1.75	1.3229	99	97	1.45	1.20	265
A11	1.70	1.3038	98	94	1.45	1.2042	261	1.8	1.3416	101	98	1.50	1.22	265
A12	1.60	1.2649	99	95	1.35	1.1619	261	1.8	1.3416	101	98	1.50	1.22	266
B1	1.70	1.3038	98	96	1.45	1.2042	261	1.7	1.3038	98	98	1.40	1.18	266
B2	1.60	1.2649	99	96	1.35	1.1619	262	1.5	1.2247	98	98	1.25	1.12	266
B3	1.70	1.3038	99	96	1.45	1.2042	261	1.5	1.2247	99	98	1.25	1.12	266
B4	1.55	1.2450	99	97	1.30	1.1402	262	1.6	1.2649	100	98	1.35	1.16	266
B5	1.55	1.2450	101	97	1.30	1.1402	261	1.6	1.2649	101	98	1.35	1.16	266
B6	1.60	1.2649	101	97	1.35	1.1619	261	1.6	1.2649	101	99	1.35	1.16	266
B7	1.75	1.3229	99	97	1.45	1.2042	262	1.6	1.2649	99	98	1.35	1.16	267
B8	1.75	1.3229	100	97	1.45	1.2042	262	1.7	1.3038	100	99	1.40	1.18	266
B9	1.65	1.2845	100	97	1.35	1.1619	263	1.65	1.2845	101	99	1.40	1.18	266
B10	1.65	1.2845	101	97	1.35	1.1619	263	1.6	1.2649	101	99	1.35	1.16	266
B11	1.70	1.3038	101	97	1.40	1.1832	263	1.8	1.3416	102	99	1.50	1.22	267
B12	1.60	1.2649	100	97	1.35	1.1619	263	1.65	1.2845	102	99	1.40	1.18	267
Average	1.63	1.2753	95		1.37	1.17	262	1.67	1.2929	98		1.40	1.18	266

BOILER #3
ESP INLET A - OHM - Runs 1, 2, 3 AND 4

Run No.	Cal. Check	1	2	3	4	
Date:		24-Aug-99	24-Aug-99	25-Aug-99	25-Aug-99	
Start Time		9:10	14:05	8:30	12:30	
Stop Time		12:02	16:52	11:08	15:07	AVERAGES
Nozzle Diameter, (inches)		0.219	0.215	0.213	0.213	0.215
Barometric Pressure, (inches of mercury)		30.08	30.10	30.12	30.12	30.11
Net Sampling Time, (minutes)		144.0	144.0	144.0	144.0	144.0
Volume Metered, (cubic feet)		98.465	96.089	86.662	91.745	93.240
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	91	102	82	101	94
Average ΔH, (inches of water)		1.54	1.49	1.25	1.33	1.40
Average ΔH, (inches of mercury)		0.1132	0.1096	0.0919	0.0978	0.1031
Dry Gas Meter Calibration Factor (Y) Meterbox # 90343	0.981	0.981	0.981	0.981	0.981	0.981
Dry Gas Meter ΔH @	1.885	1.885	1.885	1.885	1.885	1.885
Volume of Gas Collected, (dscf)		93.407	89.418	83.628	85.551	88.001
Total Water Collected, (mL)		175.5	182.5	158.1	176.8	173.2
Volume of Water Vapor, (scf)		8.276	8.605	7.454	8.336	8.168
Moisture, (percent)		8.1	8.8	8.2	8.9	8.5
Dry Mole Fraction		0.9186	0.9122	0.9182	0.9112	0.9150
CO_2 Concentration, (percent dry)		10.20	11.50	11.00	11.40	11.03
O_2 Concentration, (percent dry)		9.20	8.20	8.40	8.00	8.45
CO and N_2, (percent dry)		80.60	80.30	80.60	80.60	80.53
Dry Molecular Weight, (lb/lb mole)		30.00	30.17	30.10	30.14	30.10
Wet Molecular Weight, (lb/lb mole)		29.02	29.10	29.11	29.07	29.07
Excess Air at Stack, (percent)		76.2	63.1	65.2	60.2	66.2
Stack Area, (square inches) ID(inches) = 114x108		12312.0	12312.0	12312.0	12312.0	12312.0
Static Pressure, (inches of water)		-12.85	-12.85	-12.85	-12.85	-12.85
Stack Pressure, (inches of mercury)		29.14	29.16	29.18	29.18	29.16
Average Stack Temperature, (°F)		255	261	266	266	262
Average Sqroot of ΔP		0.9227	0.9322	0.8764	0.8861	0.9044
SDE Average		24.673	25.031	23.614	23.875	24.298
Pitot Coefficient		0.88	0.88	0.88	0.88	0.88
Stack Gas Velocity, (actual feet per minute - afpm)		3,830	3,879	3,658	3,701	3767
Stack Flowrate, (actual cubic feet per minute - acfm)		327,490	331,696	312,780	316,461	322107
Stack Flowrate, (standard cubic feet per minute - scfm)		235,494	236,697	221,813	224,424	229,607
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		216,328	215,918	203,659	204,497	210101
Isokinetics, Percent		**98.0**	**97.5**	**98.5**	**100.4**	**98.6**
Meterbox Calibration Verifications						
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!					
Post Test: Y_{qa}		0.99	1.01	1.00	0.99	1.00
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		1%	3%	2%	1%	2%

Calibration Check Time (min.)	DGM IN	DGM OUT
0		
2		
4		
6		
8		
10		
	#DIV/0!	

Traverse Point	RUN1 Delta P	RUN1 Sqrt Delta P	RUN1 DGM IN	RUN1 DGM OUT	RUN1 Delta H	RUN1 Sqrt Delta H	RUN1 Stack Temp °F	RUN2 Delta P	RUN2 Sqrt Delta P	RUN2 DGM IN	RUN2 DGM OUT	RUN2 Delta H	RUN2 Sqrt Delta H	RUN2 Stack Temp °F
A1	0.98	0.9899	74	71	1.75	1.32	267	0.95	0.9747	99	96	1.65	1.28	252
A2	0.99	0.9950	78	72	1.75	1.32	263	0.99	0.9950	101	97	1.70	1.30	254
A3	0.94	0.9695	80	74	1.66	1.29	251	0.87	0.9327	102	97	1.50	1.22	255
A4	0.89	0.9434	82	75	1.59	1.26	247	0.82	0.9055	102	98	1.40	1.18	259
A5	0.85	0.9220	85	77	1.54	1.24	254	0.83	0.9110	101	98	1.40	1.18	261
A6	0.71	0.8426	87	77	1.50	1.14	263	0.71	0.8426	102	98	1.20	1.10	248
1.00	0.95	0.9644	89	85	1.55	1.24	267	1.05	1.0247	99	98	1.75	1.32	273
2.00	0.96	0.9798	92	86	1.65	1.28	269	1.1	1.0488	102	98	1.85	1.36	277
3.00	0.96	0.9798	94	87	1.70	1.30	269	0.92	0.9592	104	99	1.55	1.24	275
4.00	0.92	0.9592	96	89	1.70	1.30	266	0.87	0.9327	105	100	1.45	1.20	267
5.00	0.84	0.9165	97	90	1.60	1.26	255	0.66	0.8124	105	100	1.10	1.05	264
6.00	0.59	0.7681	97	91	1.50	1.22	268	0.52	0.7211	105	101	0.90	0.95	248
1.00	0.97	0.9849	96	93	1.10	1.05	265	1	1.0000	102	101	1.70	1.30	260
2.00	0.99	0.9950	97	94	1.70	1.30	259	1.05	1.0247	107	102	1.75	1.32	269
3.00	1	1.0000	97	94	1.75	1.32	256	0.97	0.9849	107	102	1.65	1.28	266
4.00	0.96	0.9798	96	94	1.80	1.34	252	0.93	0.9644	107	102	1.60	1.26	264
5.00	0.8	0.8944	97	95	1.65	1.28	240	0.79	0.8888	108	104	1.35	1.16	261
6.00	0.78	0.8832	97	95	1.45	1.20	246	0.6	0.7746	106	105	1.05	1.02	247
1.00	0.86	0.9274	98	96	1.55	1.24	248	0.97	0.9849	104	105	1.65	1.28	260
2.00	0.81	0.9000	100	96	1.45	1.20	254	1	1.0000	105	105	1.70	1.30	262
3.00	0.77	0.8775	101	97	1.40	1.18	251	0.83	0.9110	104	102	1.45	1.20	261
4.00	0.71	0.8426	103	98	1.30	1.14	249	0.92	0.9592	102	102	1.55	1.24	263
5.00	0.8	0.8944	105	99	1.45	1.20	241	0.92	0.9592	101	101	1.55	1.24	260
6.00	0.54	0.7348	107	101	0.99	0.99	260	0.74	0.8602	101	100	1.30	1.14	248
Average	0.86	0.9227	91		1.54	1.24	255	0.88	0.9322	102		1.49	1.22	261

Traverse Point	RUN3 Delta P	RUN3 Sqrt Delta P	RUN3 DGM IN	RUN3 DGM OUT	RUN3 Delta H	RUN3 Sqrt Delta H	RUN3 Stack Temp °F	RUN4 Delta P	RUN4 Sqrt Delta P	RUN4 DGM IN	RUN4 DGM OUT	RUN4 Delta H	RUN4 Sqrt Delta H	RUN4 Stack Temp °F
A1	0.89	0.9434	74	73	1.45	1.2042	267	0.78	0.8832	95	96	1.25	1.12	274
A2	0.89	0.9434	75	73	1.45	1.2042	267	0.79	0.8888	95	96	1.25	1.12	277
A3	0.82	0.9055	75	73	1.35	1.1619	264	0.76	0.8718	96	96	1.25	1.12	272
A4	0.84	0.9165	76	74	1.35	1.1619	260	0.73	0.8544	98	96	1.20	1.10	272
A5	0.80	0.8944	77	75	1.30	1.1402	261	0.74	0.8602	98	97	1.20	1.10	272
A6	0.71	0.8426	77	75	1.15	1.0724	259	0.54	0.7348	99	97	0.89	0.94	269
1.00	0.96	0.9798	77	76	1.55	1.2450	265	0.92	0.9592	98	97	1.50	1.22	272
2.00	0.93	0.9644	80	77	1.50	1.2247	267	0.96	0.9798	99	97	1.60	1.26	276
3.00	0.75	0.8660	83	78	1.20	1.0954	266	0.96	0.9798	101	97	1.60	1.26	271
4.00	0.81	0.9000	84	80	1.30	1.1402	265	0.89	0.9434	101	98	1.50	1.22	270
5.00	0.76	0.8718	84	81	1.20	1.0954	260	0.71	0.8426	102	98	1.20	1.10	269
6.00	0.57	0.7550	86	82	0.95	0.9747	252	0.52	0.7211	103	99	0.88	0.94	254
1.00	0.88	0.9381	84	83	1.40	1.1832	274	0.89	0.9434	102	99	1.50	1.22	269
2.00	0.95	0.9747	88	84	1.55	1.2450	272	0.94	0.9695	106	99	1.70	1.30	258
3.00	0.88	0.9381	89	84	1.40	1.1832	271	0.87	0.9327	107	101	1.50	1.22	259
4.00	0.86	0.9274	89	85	1.40	1.1832	267	0.84	0.9165	108	102	1.40	1.18	267
5.00	0.78	0.8832	89	86	1.25	1.1180	266	0.75	0.8660	108	102	1.25	1.12	259
6.00	0.50	0.7071	88	87	0.85	0.9110	257	0.49	0.7000	109	103	0.84	0.92	252
1.00	0.82	0.9055	85	86	1.30	1.1402	277	0.86	0.9274	107	104	1.45	1.20	254
2.00	0.72	0.8485	87	86	1.15	1.0724	275	0.92	0.9592	108	104	1.55	1.24	253
3.00	0.72	0.8485	87	86	1.15	1.0724	275	0.9	0.9487	108	104	1.50	1.22	269
4.00	0.60	0.7746	87	87	0.97	0.9849	271	0.83	0.9110	107	104	1.40	1.18	266
5.00	0.66	0.8124	87	87	1.10	1.0488	270	0.76	0.8718	107	104	1.50	1.14	261
6.00	0.48	0.6928	89	87	0.78	0.8832	265	0.64	0.8000	109	104	1.10	1.05	258
Average	0.77	0.8764	82		1.25	1.11	266	0.79	0.8861	101		1.33	1.15	266

BOILER #3
ESP INLET B - OHM - Runs 1, 2, 3 AND 4

Run No.	Cal. Check	1	2	3	4	
Date:		24-Aug-99	24-Aug-99	25-Aug-99	25-Aug-99	
Start Time		9:13	14:08	8:33	12:32	
Stop Time		12:04	16:54	11:10	15:09	AVERAGES
Nozzle Diameter, (inches)		0.218	0.218	0.218	0.218	0.218
Barometric Pressure, (inches of mercury)		30.08	30.10	30.12	30.12	30.11
Net Sampling Time, (minutes)		144.0	144.0	144.0	144.0	144.0
Volume Metered, (cubic feet)		89.091	92.840	87.223	89.979	89.783
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	93	104	83	103	96
Average ΔH, (inches of water)		1.36	1.47	1.31	1.39	1.38
Average ΔH, (inches of mercury)		0.1000	0.1081	0.0963	0.1022	0.1017
Dry Gas Meter Calibration Factor (Y) Meterbox # 90342	0.983	0.983	0.983	0.983	0.983	0.983
Dry Gas Meter ΔH @	1.973	1.973	1.973	1.973	1.973	1.973
Volume of Gas Collected, (dscf)		84.344	86.259	84.197	83.789	84.647
Total Water Collected, (mL)		159.7	170.4	162.8	169.7	165.7
Volume of Water Vapor, (scf)		7.530	8.034	7.676	8.001	7.810
Moisture, (percent)		8.2	8.5	8.4	8.7	8.4
Dry Mole Fraction		0.9180	0.9148	0.9165	0.9128	0.9155
CO_2 Concentration, (percent dry)		11.00	11.00	11.00	11.40	11.10
O_2 Concentration, (percent dry)		8.40	8.60	8.60	8.00	8.40
CO and N_2, (percent dry)		80.60	80.40	80.40	80.60	80.50
Dry Molecular Weight, (lb/lb mole)		30.10	30.10	30.10	30.14	30.11
Wet Molecular Weight, (lb/lb mole)		29.10	29.07	29.09	29.09	29.09
Excess Air at Stack, (percent)		65.2	68.1	68.1	60.2	65.4
Stack Area, (square inches) ID(inches) = 114x108		12312.0	12312.0	12312.0	12312.0	12312.0
Static Pressure, (inches of water)		-12.85	-12.85	-12.85	-12.85	-12.85
Stack Pressure, (inches of mercury)		29.14	29.16	29.18	29.18	29.16
Average Stack Temperature, (°F)		254	257	251	256	255
Average Sqroot of ΔP		0.8593	0.8765	0.8290	0.8432	0.8520
SDE Average		22.961	23.470	22.105	22.562	22.775
Pitot Coefficient		0.87	0.87	0.87	0.87	0.87
Stack Gas Velocity, (actual feet per minute - afpm)		3,519	3,598	3,386	3,457	3490
Stack Flowrate, (actual cubic feet per minute - acfm)		300,889	307,620	289,530	295,560	298400
Stack Flowrate, (standard cubic feet per minute - scfm)		216,670	220,741	209,657	212,529	214,899
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		198,912	201,932	192,140	194,003	196747
Isokinetics, Percent		**97.1**	**97.9**	**100.4**	**98.9**	**98.6**
Meterbox Calibration Verifications						
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!					
Post Test: Y_{qa}		1.00	1.01	1.00	1.01	1.00
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		2%	3%	1%	3%	2%

Calibration Check Time (min.)	DGM IN	DGM OUT
0		
2		
4		
6		
8		
10		
#DIV/0!		

	RUN1							RUN2							RUN 3							RUN4						
Traverse Point	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F
A1	0.83	0.9110	76	76	1.50	1.22	267	0.75	0.8660	101	99	1.40	1.18	265	0.75	0.8544	73	72	1.40	1.1832	250	0.75	0.8660	95	95	1.40	1.18	261
A2	0.8	0.8944	77	75	1.50	1.22	247	0.8	0.8944	105	99	1.50	1.22	267	0.75	0.8660	74	72	1.40	1.1832	250	0.66	0.8124	96	95	1.20	1.10	261
A3	0.71	0.8426	78	74	1.50	1.14	246	0.65	0.8062	105	99	1.20	1.10	267	0.80	0.8944	75	72	1.50	1.2247	248	0.59	0.7681	99	96	1.10	1.05	261
A4	0.71	0.8426	81	75	1.50	1.14	245	0.65	0.8062	102	99	1.20	1.10	264	0.79	0.8888	75	73	1.50	1.2247	246	0.55	0.7416	99	96	1.00	1.00	261
A5	0.7	0.8367	83	77	1.50	1.14	243	0.65	0.8062	102	99	1.20	1.10	261	0.75	0.8660	76	74	1.40	1.1832	245	0.56	0.7483	101	97	1.10	1.05	258
A6	0.58	0.7616	86	79	1.10	1.05	240	0.55	0.7416	102	99	1.10	1.05	260	0.63	0.7937	77	74	1.20	1.0954	242	0.56	0.7483	102	98	1.60	1.26	256
1.00	0.82	0.9055	88	84	1.50	1.22	250	0.94	0.9695	101	99	1.70	1.30	265	0.86	0.9274	78	76	1.60	1.2649	250	0.88	0.9381	102	99	1.60	1.26	258
2.00	0.91	0.9539	90	86	1.60	1.26	255	0.95	0.9747	104	99	1.80	1.34	265	0.90	0.9487	81	77	1.70	1.3038	249	0.86	0.9274	104	99	1.60	1.26	260
3.00	0.91	0.9539	93	87	1.60	1.26	253	0.85	0.9220	107	101	1.60	1.26	264	0.85	0.9220	84	78	1.60	1.2649	249	0.84	0.9165	104	99	1.50	1.22	258
4.00	0.86	0.9274	95	89	1.60	1.26	252	0.88	0.9381	108	102	1.70	1.30	260	0.77	0.8775	86	80	1.50	1.2247	248	0.8	0.8944	105	101	1.50	1.22	257
5.00	0.8	0.8944	96	90	1.50	1.22	251	0.75	0.8544	108	105	1.40	1.18	254	0.65	0.8062	87	81	1.20	1.0954	244	0.69	0.8307	107	101	1.30	1.14	254
6.00	0.51	0.7141	98	92	0.96	0.98	243	0.5	0.7071	108	104	0.97	0.98	250	0.41	0.6403	87	82	0.79	0.8888	240	0.4	0.6325	107	102	0.78	0.88	252
1.00	0.82	0.9055	97	95	1.50	1.22	258	0.88	0.9381	108	104	1.70	1.30	260	0.86	0.9274	87	84	1.60	1.2649	258	0.84	0.9165	106	102	1.60	1.26	258
2.00	0.92	0.9592	98	95	1.70	1.30	258	0.95	0.9644	110	105	1.80	1.34	256	0.86	0.9274	89	84	1.60	1.2649	257	0.86	0.9274	107	102	1.70	1.30	260
3.00	0.9	0.9487	99	95	1.60	1.26	260	0.85	0.9220	110	105	1.60	1.26	253	0.84	0.9165	89	85	1.60	1.2649	255	0.9	0.9487	109	103	1.70	1.30	257
4.00	0.88	0.9381	100	96	1.60	1.26	258	0.8	0.8944	110	105	1.50	1.22	252	0.76	0.8718	90	86	1.40	1.1832	253	0.83	0.9110	110	104	1.60	1.26	255
5.00	0.84	0.9165	101	98	1.50	1.22	256	0.67	0.8185	111	106	1.30	1.14	250	0.70	0.8367	91	87	1.30	1.1402	249	0.68	0.8246	111	104	1.30	1.14	255
6.00	0.6	0.7746	102	98	1.10	1.05	252	0.54	0.7348	110	106	1.04	1.02	247	0.37	0.6083	90	87	0.70	0.8367	249	0.4	0.6325	111	105	0.78	0.88	251
1.00	0.77	0.8775	101	99	1.40	1.18	260	0.91	0.9539	107	105	1.70	1.30	252	0.71	0.8426	88	87	1.30	1.1402	258	0.84	0.9165	109	105	1.60	1.26	256
2.00	0.75	0.8660	105	100	1.30	1.14	261	0.88	0.9381	108	105	1.70	1.30	254	0.65	0.8062	89	87	1.20	1.0954	258	0.87	0.9327	109	105	1.70	1.30	256
3.00	0.6	0.7746	106	101	1.10	1.05	260	0.88	0.9381	108	106	1.70	1.30	251	0.53	0.7280	90	88	0.99	0.9950	257	0.85	0.9220	110	105	1.60	1.26	255
4.00	0.62	0.7874	107	102	1.10	1.05	257	0.82	0.9055	108	106	1.60	1.26	250	0.55	0.7416	92	88	1.00	1.0000	256	0.8	0.8944	109	105	1.50	1.22	255
5.00	0.66	0.8124	108	102	1.20	1.10	257	0.82	0.9055	107	104	1.60	1.26	249	0.56	0.7483	92	89	1.10	1.0488	254	0.66	0.8124	110	105	1.50	1.14	249
6.00	0.39	0.6245	110	104	0.70	0.84	255	0.7	0.8367	105	103	1.50	1.14	248	0.43	0.6557	92	88	0.82	0.9055	252	0.6	0.7746	110	106	1.20	1.10	247
Average	0.75	0.8593	93		1.36	1.16	254	0.77	0.8765	104		1.47	1.21	257	0.70	0.8290	85		1.31	1.14	251	0.72	0.8452	105		1.39	1.17	256

Appendix A.3

Process Mercury Inflow Calculations

Process Stream	Run No.	lb/hr	TPH	g/hr	hg ug/g	ug/hr	mg/hr
Coal	1	120796.82	60.398	5.4793E+07	3.00E-02	1.6438E+06	1644
	2	120717.68	60.359	5.4757E+07	2.00E-02	1.0951E+06	1095
	3	117476.72	58.738	5.3287E+07	3.00E-02	1.5986E+06	1599
	4	117478.69	58.739	5.3287E+07	3.00E-02	1.5986E+06	1599

		GPM	L/hr	mg/L	mg/hr
urea	1	105.58	23979.83	0.0002	5
	2	106.76	24247.84	0.0002	5
	3	95.6	21713.12	0.0002	4
	4	96.31	21874.38	0.0002	4

APPENDIX B

RAW FIELD DATA AND CALIBRATION DATA SHEETS

Appendix B.1

Raw Field Data Sheets

Project No.: 26046-0030-00002
Client: PG&E
Facility: Salem Harbor
Source: Unit 3
Sample Location: @ ESP outlet
Stack Diameter:
Date: 8/23/99
Run No.: PG&E-S-OHM-0-FB
Operator: RN/KL
Meterbox No.: 90336
Meterbox ΔH @: 2.051
Y Factor: 0.975

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH

Sheet 1 of 1

Train Prepared By: Ed Martinuzzi
Pitot Number and Side: P-22-C
Pitot Tube CP: .84
Filter No.: n/a
Ambient Temp., °F:
Bar. Pressure, In. Hg.: 29.95
Assumed Moisture, %:
Heater Box Setting, °F:
Nozzle # / Dia., In.:
Probe Length / Material: 5' glass
Probe Heater Setting:

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
1 1	1329		483.500													
2			484.025													
3																
2 1																
2																
3																
3 1																
2																
3																
4 1																
2																
3	1550		484.025													

Comments:

Train Leak Check:

Before Test: 0.002 CF in 60 Seconds at 12.0 In. Hg
After Test: 0.005 CF in 60 Seconds at 13.5 In. Hg

	Initial	Final		Static Pressure			
Pitot Tube Leak Check	✓	✓	Port				
			Inches H₂O				
ORSAT Train Leak Check	○	○	Inches Hg				

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.: 26046
t: PG&E
ty: Salem Harbor
ce: Outlet

Date: 8/23/99
Run No.: Outlet FB
Train Type: Ontario-Hydro
Recovery Person: G

NT HALF

No.:	N/A		
ble No.:	N/A		

Comments:

Trap No.:	N/A			
Wt. (g):				
l Wt. (g):				
Collected (g):				

Comments:

INGERS

nger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	656.9	712.0	690.3	706.0	662.1	716.7	698.3
l Vol. (ml/g):	656.9	712.1	690.4	706.1	662.1	716.8	698.3
Collected (ml/g):	0	-0.1	-0.1	-0.1	0	-0.1	0

a Gel Impinger:	8			Comments:
l Vol. (ml/g):	881.4			
al Vol. (ml/g):	881.2			
Collected (ml/g):	0.2			

ments/Notes:

TAL MOISTURE (Impingers and Silica Gel) (g) = -0.2

Sample Train Tracking Form

Sample Train: OH - Hg

Date: 8/23/99

Location: Outlet

Run: Field Blk

Sample ID: PG&E-S-OHM-O-FB

Train Set Up By: [illegible]

Date: 8/23/99 Time: 1225

Transported to Location By: [illegible]

Date: 8/23/99 Time: 1318

Received at Location By: [illegible]

Date: 8.23.99 Time: 1322

Transported to Recovery Area By: [illegible]

Date: 8.23.99 Time: 1608

Received at Recovery Area By: [illegible]

Date: 8/23/99 Time: 1612

Train Recovered By: [illegible]

Date: 8/23/99 Time: 1612

Comments:

Hg

Project No.: 26046-0030-00002
Client: PG+E
Facility: Salem Harbor
Source: Unit 3
Sample Location: ESP Inlet
Stack Diameter: 114 x 108
Date: 8/23/99
Run No.: PG+E-S-OHM-I-FB
Operator: R. Rebello
Meterbox No.: 90342
Meterbox ΔH @: 1.936
Y Factor: 0.982

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH

Sheet 1 of 1

Train Prepared By: Ed Mark Nuwan
Pitot Number and Side: P-9 Static
Pitot Tube CP:
Filter No.:
Ambient Temp., °F: 95 °F
Bar. Pressure, In. Hg.:
Assumed Moisture, %: 9.1
Heater Box Setting, °F: 250°F
Nozzle # / Dia., In.: —
Probe Length / Material: 12' Glass
Probe Heater Setting: 250°F

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	~~Pitot In. H₂O ΔP~~	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
	13:22		927.913	Start												
			928.229	Stop												
			928.229	Start												
	15:22		928.465	Stop												

Comments:

Train Leak Check:

Before Test: .000 CF in 60 Seconds at 23 In. Hg
After Test: .000 CF in 60 Seconds at 20.0 In. Hg

	Initial	Final		Static Pressure			
			Port				
Pitot Tube Leak Check	✓	○	Inches H_2O				
ORSAT Train Leak Check	○	○	Inches Hg				

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.:	26046	Date:	8/23/99
::	PG&E	Run No.:	Inlet FB
ty:	Salem Harbor	Train Type:	Ontario-Hydro
:e:	Inlet	Recovery Person:	Em

NT HALF

No.:	N/A			Comments:
ble No.:	N/A			

Trap No.:	N/A				Comments:
Wt. (g):					
l Wt. (g):					
:ollected (g):					

NGERS

ıger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	769.3	644.2	612.3	708.7	646.5	699.0	700.1
l Vol. (ml/g):	714.8	644.3	612.5	708.8	646.5	699.1	700.4
:ollected (ml/g):	~~2~~4.5 4	-0.1	-0.2	-0.1	0	-0.1	-0.3

a Gel Impinger:	8			Comments:
l Vol. (ml/g):	872.3			
ıl Vol. (ml/g):	871.8			
:ollected (ml/g):	0.5			

ıments/Notes: Weight gain in Impinger #1 due to 10% HNO_3 left in sample line from cleaning activity. Final rinse of 10% HNO_3 was not removed from line. (cleaning)

Should be no impact on analysis or results of blank.

TAL MOISTURE (Impingers and Silica Gel) (g) = ~~2~~4 4.2

Sample Train Tracking Form

ample Train: OH - Hg

Date: 8/23/99

ocation: Inlet

Run: Field Blank

ample ID: PG&E-S-OHM-I-FB

Train Set Up By: [signature]

Date: 8/23/99 Time: 1244

Transported to Location By: [signature]

Date: 8/23/99 Time: 1250

Received at Location By: [signature]

Date: 8/23/99 Time: 1304

Transported to Recovery Area By: [signature]

Date: 8/23/99 Time: 1530

Received at Recovery Area By: [signature]

Date: 8/23/99 Time: 1542

Train Recovered By: [signature]

Date: 8/23/99 Time: 1542

Comments:

Hg

STACK GEOMETRY AND GAS VELOCITY DATA

Date: 6/17/99	Project No.:
Client: U.S. Gen	Sample Location: Inlet #1 Outboard
Facility: Salem, MA	Load Condition:
Run No.: Run #1	Operator:
Barometric Pressure (in. Hg): 30.07	Meterbox No.:
% Moisture:	Static (in. H_2O): 24 mm Hg
Pitot Tube ID:	Pitot Tube Coefficient: .84
Post Leak Check:	Stack Diameter (in.): P-9

Measurement Device:

Micromanometer:

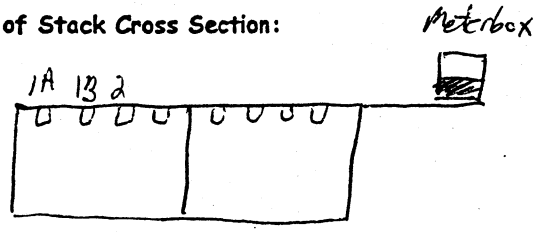
10" Manometer:

Magnehelic:

Other:

Explain:

Schematic of Stack Cross Section:



Stack Diameters Upstream:

Stack Diameters Downstream:

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
12:45	1A	253	.82	
	2A	258	.79	
	3A	259	.78	
	4A	258	.78	
	5A	257	.70	
	6A	208	.46	
	1B	249	.82	
	2B	257	.86	
	3B	260	.84	
	4B	260	.75	
	5B	258	.54	
	6B	184	.31	

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
	1C	249	.69	
	2C	260	.80	
	3C	263	.79	
	4C	264	.75	
	5C	262	.62	
	6C	209	.26	
	1D	254	.76	
	2D	264	.68	
	3D	266	.62	
	4D	267	.60	
	5D	266	.54	
12:59	6D	208	.13	

TRC

Project No.: [illegible]
Client: PG&E
Facility: Salem Harbor Station
Source: Unit #3

Date: 01/11/99
Run No.: PG&E-~~OHLS~~-OHM-IA-2
Sample Location: Inlet A
Operator: S.T., B.S., M.S.

Sheet 4 of 4

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
	1036	72	725.218													
			Port change													
3-1	1043	72	725.46	.97	1.7	1.7	96	93	7.5	✓	268	270	62	NA	170	262
3-2		78	729.585	.99	1.76	1.75	97	94	8.0	✓	265	271	58	NA	164	261
3-3		84	733.88	1.0	1.77	1.80	97	94	8.0	✓	254	270	58	NA	169	260
3-4		90	738.245	0.96	1.65	1.65	96	94	8.5	✓	256	274	60	NA	173	262
3-5		96	742.55	0.8	1.43	1.45	97	95	8.5	✓	252	278	61	NA	178	255
3-6	1113	102	746.6	0.78	1.42	1.4	97	95	8.5	✓	240	279	62	NA	180	256
	1119	108	750.532													
			Port Change													
4-1	1126	108	750.79	0.86	1.55	1.55	98	96	9.0	✓	246	287	65	NA	181	258
4-2		114	754.74	0.81	1.45	1.45	100	96	9.2	✓	248	286	58	NA	178	256
4-3		120	758.7	0.77	1.37	1.4	101	97	9.0	✓	254	285	56	NA	180	255
4-4		126	762.7	0.71	1.28	1.3	103	98	9.5	✓	251	284	56	NA	183	254
4-5		132	766.49	0.80	1.45	1.45	105	99	10.0	✓	249	282	55	NA	184	254
4-6		138	770.55	0.54	.99	.99	107	101	9.0	✓	241	279	57	NA	186	253
	1207	144	774.038													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____
_____ CF in _____ Seconds at _____ In. Hg _____

Meter Reading: Stop _____ Start _____

Comments:

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.:	26046	Date:	8/23/99 / 8/24/99
::	PG&E	Run No.:	1 - A - Inlet
ty:	Salem Harbor	Train Type:	Ontario-Hydro
:e:	Inlet A	Recovery Person:	[illegible]

NT HALF

No.:	N/A			Comments:
ble No.:	N/A			

Trap No.:	N/A				Comments:
Wt. (g):					
l Wt. (g):					
:ollected (g):					

NGERS

nger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	785.4	748.3	686.2	635.1	740.8	713.6	693.3
l Vol. (ml/g):	681.5	711.0	679.3	632.7	741.0	712.2	694.2
Collected (ml/g):	103.9	37.3	6.9	2.4	-0.2	1.4	-0.9

a Gel Impinger:	8			Comments:
l Vol. (ml/g):	841.3			~40% spent
al Vol. (ml/g):	816.6			
Collected (ml/g):	24.7			

ments/Notes:

TAL MOISTURE (Impingers and Silica Gel) (g) = 175.5

ORSAT ANALYSIS

Project No. 26046-6030-00002
Client PG&E
Facility Salem
Source Unit #3
Location Inlet A

Date 8/24/99
Run PG&E-5-OHM-IA-2
Operator MAM
Comments

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 20.8
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
	1620	10.2	19.4	9.2	—	—	1.147
	1725	10.2	19.4	9.2	—	—	1.147
	1737	10.2	19.4	9.2	—	—	1.147

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\,O_2}{\%\,CO_2}$$

Fuel Bituminous
Reported F_o 1.147

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Sample Train Tracking Form

Sample Train: OH - Hg

Date: 8/24/99

Location: Inlet A

Run: 1

Sample ID: PG&E-S-OHm-Ia-1

Train Set Up By: [signature]

Date: 8/24/99 Time: 0715

Transported to Location By: [signature]

Date: 8/24/99 Time: 0725

Received at Location By: [signature]

Date: 8/24/99 Time: 740

Transported to Recovery Area By: [signature]

Date: 8/24/99 Time: 1340

Received at Recovery Area By: [signature]

Date: 8/24/99 Time: 1346

Train Recovered By: [signature]

Date: 8/24/99 Time: 1350

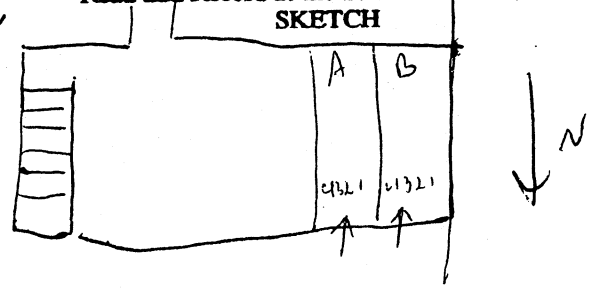
Comments:

Hg

Project No.: 26046-0030-00002
Client: PG&E
Facility: Salem Harbor Station
Source: Unit #3
Sample Location: Inlet A
Stack Diameter: 114" x 108"
Date: 8/24/99
Run No.: PG&E-S-OHM-IA-2
Operator: S. Tibbetts
Meterbox No.: 90343
Meterbox ΔH @: 1.885
Y Factor: 0.981

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point

SKETCH



Sheet 1 of 2

Train Prepared By: Ed Mackinnon
Pitot Number and Side: P-1
Pitot Tube CP: 0.88
Filter No.: —
Ambient Temp., °F: 96
Bar. Pressure, In. Hg.: ~~30.05~~ mpm 30.10
Assumed Moisture, %: 10.0
Heater Box Setting, °F: 250
Nozzle # / Dia., In.: L-2 / .215
Probe Length / Material: 12' Glass
Probe Heater Setting: 250

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
4-1	1405	0	784.275	.95	1.653	1.65	99	96	6.5	✓	252	279	66	NA	192	257
4-2		6	784.295	.99	1.7	1.7	101	97	7.0	✓	254	280	61	NA	197	255
4-3		12	788.411	.87	1.505	1.5	102	97	7.0	✓	255	287	59	NA	183	253
4-4		18	792.46	.82	1.4	1.4	102	98	7.0	✓	259	284	60	NA	187	255
4-5		24	796.3	.83	1.4	1.4	101	98	7.0	✓	261	284	59	NA	191	254
4-6		30	800.2	.71	1.19	1.2	102	98	7.5	✓	248	285	59	NA	194	259
	1441	36	803.865													
3-1	1452	36	804.30	1.05	1.76	1.75	99	98	7.0	✓	273	282	68	NA	189	262
3-2		42	806.54	1.1	1.84	1.85	102	98	7.0	✓	277	285	62	NA	202	265
3-3		48	813.0	0.92	1.54	1.55	104	99	8.0	✓	275	284	62	NA	205	266
3-4		54	817.2	0.89	1.43	1.45	105	100	7.5	✓	267	284	66	NA	207	268
3-5		60	821.1	0.66	1.129	1.1	105	100	7.5	✓	264	283	61	NA	205	262
3-6		66	824.8	0.52	0.90	0.9	105	101	6.0	✓	248	282	57	NA	203	264
3-	1528	72	828.12													

Comments:

Train Leak Check:

Before Test: .003 CF in 60 Seconds at 18.5 In. Hg
After Test: .001 CF in 60 Seconds at 12.5 In. Hg

	Initial	Final	Static Pressure Port			
Pitot Tube Leak Check	✓	✓	Inches H₂O			
ORSAT Train Leak Check	✓	✓	Inches Hg (mm)	~~.24~~ .24		

lowell02.w

Project No.: 260416-0030-00002
Client: PG+E
Facility: Salem Harbor Station
Source: Unit #3

Date: 8/24/99
Run No.: PG+E-S-04M-IA-2
Sample Location: Inlet A
Operator: S Tibbetts

Sheet 2 of 2

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (F) °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
2-1	1535	72	828.278	1.0	1.72	1.7	102	101	7.0	✓	260	280	61	NA	190	258
2-2		78	832.441	1.05	1.77	1.75	107	102	7.5	✓	269	284	54	NA	195	260
2-3		84	836.79	0.97	1.65	1.65	107	102	7.5	✓	266	290	55	NA	196	261
2-4		90	841.05	0.93	1.59	1.6	107	102	8.0	✓	264	288	56	NA	201	263
2-5		96	845.22	0.79	1.35	1.35	108	104	7.5	✓	261	285	57	NA	197	260
2-6		102	849.17	0.60	1.05	1.05	106	103	7.0	✓	247	280	58	NA	202	251
	1611	108	852.785													
1-1	1616	108	854.03	0.97	1.67	1.65	104	103	9.0	✓	260	273	60	NA	205	254
1-2		114	857.99	1.0	1.72	1.7	105	103	9.0	✓	262	270	57	NA	206	255
1-3		120	862.26	0.83	1.43	1.45	104	102	9.0	✓	261	276	57	NA	210	259
1-4		126	866.31	0.92	1.57	1.55	102	102	9.0	✓	263	275	57	NA	210	260
1-5		132	870.37	0.92	1.55	1.55	101	101	9.5	✓	260	264	55	NA	209	255
1-6		138	874.42	0.74	1.28	1.3	101	100	9.5	✓	248	272	58	NA	205	251
	1652	144	878.282													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____
_____ CF in _____ Seconds at _____ In. Hg _____

Meter Reading: Stop _____ Start _____

Comments:

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

:t No.: 26046
:: PG&E
ty: Salem Harbor
:e: Inlet A

Date: 8/24/99
Run No.: 2 A Inlet
Train Type: Ontario-Hydro
Recovery Person: ar

NT HALF

No.:	N/A		
ole No.:	N/A		

Comments:

Trap No.:	N/A			
Wt. (g):				
Wt. (g):				
ollected (g):				

Comments:

NGERS

ger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	831.1	670.0	618.5	714.7	642.2	700.5	702.8
l Vol. (ml/g):	715.2	643.3	612.7	710.4	643.5	697.3	696.7
:ollected (ml/g):	115.9	26.7	5.8	4.3	-1.3	3.2	6.1

a Gel Impinger:	8			Comments:
Vol. (ml/g):	894.1			~20% spent
l Vol. (ml/g):	872.3			
:ollected (ml/g):	21.8			

ments/Notes:

TAL MOISTURE (Impingers and Silica Gel) (g) = 182.5

ORSAT ANALYSIS

Project No. 260~~X~~4C-0030-00002
Client PG&E
Facility Salem
Source Unit 3
Location Inlet A-

Date 8/24/99
Run PG&E-S-OHM-1A-2
Operator MPM
Comments

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 ~~&~~ 0.0 O_2 20.8.
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
	1834	11.6	19.8	8.2			1.095
	1843	11.5	19.7	8.2			
	1854	11.5	19.8	8.3			

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \% O_2}{\% CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Sample Train Tracking Form

ample Train: OH - Hg Date: 8/24/99

ocation: Inlet A Run: 2

ample ID: PG&E-S-OHM-Ia-2

rain Set Up By: [signature] Date: 8/24/99 Time: 0826

ransported to Location By: [signature] Date: 8/24/99 Time: 1250

eceived at Location By: [signature] Date: 8/24/99 Time: 1300

ransported to Recovery Area By: [signature] mpa Date: 8/24/99 pm Time: 1740 pm

eceived at Recovery Area By: [signature] Date: 8/24/99 Time: 17:45

rain Recovered By: [signature] Date: 8/24/99 Time: 1800

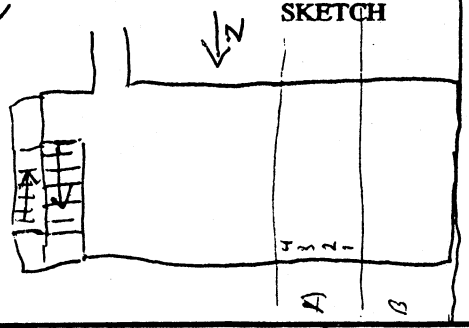
Comments:

Hg

Project No.: 26046-003d-00002
Client: PG+E
Facility: Salem Harbor Station
Source: Unit #3
Sample Location: Inlet A
Stack Diameter: 114" x 108"
Date: 8/25/99
Run No.: PG+E-S-9HM-IA-3
Operator: [illegible]
Meterbox No.: 90343
Meterbox ΔH @: 1.885
Y Factor: 0.681

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point

SKETCH



Sheet 1 of 2

Train Prepared By: Ed Mackinnon
Pitot Number and Side: PG B-1
Pitot Tube CP: ~~PG~~ 0.88
Filter No.:
Ambient Temp., °F: 72°
Bar. Pressure, In. Hg.: 30.10
Assumed Moisture, %: 8.0
Heater Box Setting, °F: 250
Nozzle # / Dia., In.: L4-6
Probe Length / Material: 12' Glass
Probe Heater Setting: 250

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °F Filter Outlet
1-1	0830	0	880.167	0.89	1.44	1.45	74	73	6.5	✓	267	254	67	NA	212	253
1-2		6	884.1	0.89	1.44	1.45	75	73	6.5	✓	267	255	66	NA	203	255
1-3		12	888.03	0.82	1.336	1.35	75	73	6.0	✓	264	261	68	NA	205	258
1-4		18	891.82	0.84	1.37	1.35	76	74	7.0	✓	260	264	68	NA	204	259
1-5		24	895.62	0.80	1.28	1.3	77	75	7.5	✓	261	260	67	NA	205	260
1-6		30	899.35	0.71	1.14	1.15	77	75	7.5	✓	254	258	66	NA	204	260
	0906	36	902.825				~~77~~	~~76~~								
2-1	0911	36	903.08	0.96	1.53	1.55	77	76	7.5	✓	265	268	66	NA	207	263
2-2		42	906.83	0.93	1.49	1.50	80	77	7.5	✓	~~260~~ 267	271	60	NA	210	265
2-3		48	910.75	0.75	1.21	1.20	83	78	7.5	✓	266	278	59	NA	208	264
2-4		54	914.4	0.81	1.30	1.30	84	80	8.0	✓	263	275	59	NA	209	262
2-5		60	918.1	0.76	1.2	1.2	84	81	8.0	✓	260	276	59	NA	208	261
2-6		66	921.58	0.57	0.946	0.95	86	82	8.0	✓	252	270	59	NA	205	255
	0937	72	924.871													

Train Leak Check:

Before Test: .000 CF in 60 Seconds at 16.5 In. Hg
After Test: .005 CF in 60 Seconds at 12.5 In. Hg

Comments:

	Initial	Final		Static Pressure			
			Port	4			
Pitot Tube Leak Check	✓	✓	Inches H₂O				
ORSAT Train Leak Check	✓	✓	~~Inches~~ Hg mm	-24			

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Project No.: 26046-0030-00002
Client: PG+E
Facility: Salem Harbor Station
Source: Unit #3

Date: 4/25/99
Run No.: PG+E-S-01HM-IA-3
Sample Location: Inlet A
Operator: S. Tibbetts

Sheet 2 of 2

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °F Filter Outlet
3-1	0951	72	925.235	0.88	1.411	1.4	84	83	9.5	✓	274	280	64	NA	215	265
3-2		78	929.0	0.95	1.54	1.55	88	84	10.0	✓	272	282	58	NA	218	267
3-3		84	932.9	0.88	1.4	1.4	89	84	10.5	✓	271	280	58	NA	220	268
3-4		90	938.67	0.86	1.4	1.4	89	85	10.5	✓	267	281	59	NA	219	266
3-5		96	940.69	0.78	1.27	1.25	89	86	10.5	✓	266	282	60	NA	220	266
3-6		102	944.4	0.50	0.83	0.83	88	87	9.5	✓	257	281	61	NA	212	260
	1027	105	947.611													
4-1	1032	108	947.895	0.82	1.32	1.3	85	86	10.5	✓	277	277	66	NA	220	271
4-2		114	951.4	0.72	1.159	1.15	87	86	11.0	✓	275	278	61	NA	221	273
4-3		120	955.02	0.72	1.15	1.15	87	86	11.0	✓	275	279	62	NA	220	272
4-4		126	958.56	0.60	0.97	0.97	87	87	11.0	✓	271	284	65	NA	220	275
4-5		132	961.9	0.66	1.06	1.1	87	87	11.5	✓	270	278	66	NA	221	275
4-6		138	965.3	0.48	0.78	0.78	89	87	9.0	✓	265	275	67	NA	215	270
	1108	144	967.732													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____
_____ CF in _____ Seconds at _____ In. Hg _____

Meter Reading

	Stop	Start
	_____	_____
	_____	_____

Comments:

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.: 26046
t: PG&E
ty: Salem Harbor
ce: Inlet A

Date: 8/24/99 / 8/25/99
Run No.: 3 - A - Inlet
Train Type: Ontario-Hydro
Recovery Person: Sm

NT HALF

No.:	N/A		
ble No.:	N/A		

Comments:

Trap No.:	N/A			
Wt. (g):				
l Wt. (g):				
ollected (g):				

Comments:

NGERS

nger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	770.4	740.7	688.4	636.4	738.6	713.7	697.7
l Vol. (ml/g):	681.3	708.6	676.1	633.7	737.8	713.0	697.8
Collected (ml/g):	89.1	32.1	12.3	2.7	0.8	0.7	-0.1

a Gel Impinger:	8			Comments:
l Vol. (ml/g):	861.8			~95% spent
l Vol. (ml/g):	841.3			
Collected (ml/g):	20.5			

ments/Notes:

TAL MOISTURE (Impingers and Silica Gel) (g) = 158.1

ORSAT ANALYSIS

Project No. 26046-0030-00002

Client PG&E

Facility Salem

Source UNIT 3

Location Inlet A

Date 8/25/99

Run PG&E-S-OHM-IA-3

Operator MPM

Comments

Orsat Leak Checked yes / no

Purge System with Sample Gas yes / no

Ambient Air Check CO_2 _____ O_2 _____.

Audit Gas Check (measured/actual): CO_2 ___/___ O_2 ___/___ CO ___/___

Expiration Date of Reagents ___/___/___

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
	1203	11.0	19.4	8.4			
		11.0	19.4	8.4			
		11.0	19.4	8.4			

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \% O_2}{\% CO_2}$$

Fuel _____

Reported F_o _____

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other _____

Sample Train Tracking Form

Sample Train: OH - Hg

Date: 8/25/99

Location: Inlet A

Run: 3-A

Sample ID: PG&E-S-OHM-Ia-3

Train Set Up By: [signature]

Date: 8/25/99 Time: 0715

Transported to Location By: [signature]

Date: 8/25/99 Time: 0725

Received at Location By: [signature]

Date: 8/25/99 Time: 0735

Transported to Recovery Area By: [signature]

Date: 8/25/99 Time: 1205

Received at Recovery Area By: [signature]

Date: 8/25/99 Time: 1206

Train Recovered By: [signature]

Date: 8/25/99 Time: 1206

Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING

Project No.: 26046-0030-00002
Client: PG+E
Facility: Salem Harbor Station
Source: Unit #3
Sample Location: Inlet A
Stack Diameter: 114" x 108"
Date: 8/25/99
Run No.: PG+E-S-OHM-IA-4
Operator: S. Tibbetts
Meterbox No.: 9037-13
Meterbox ΔH @: 1.885
Y Factor: 1.981

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH

Sheet 1 of 2
Train Prepared By: Ed Mackinnon
Pitot Number and Side: P-1
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 95°
Bar. Pressure, In. Hg.: 30.05
Assumed Moisture, %: 8
Heater Box Setting, °F: 250
Nozzle # / Dia., In.: L-4-G / 0.213
Probe Length / Material: 12' Glass
Probe Heater Setting: 250

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
~~12:30~~	1230	0	970.350	0.78	1.25	1.25	95	96	6.0	✓	274	272	67	NA	210	261
4-2		6	974.15	0.79	1.25	1.25	95	96	6.0	✓	277	270	60	NA	217	266
4-3		12	977.9	0.76	1.25	1.25	96	96	6.5	✓	272	274	57	NA	219	267
4-4		18	981.55	0.73	1.21	1.2	98	96	6.5	✓	272	273	58	NA	221	268
4-5		24	985.18	0.74	1.2	1.2	98	97	7.0	✓	272	270	59	NA	220	267
4-6		30	988.78	0.54	0.89	0.89	99	97	6.5	✓	269	276	59	NA	219	267
	1306	36	991.975													
3-1	1311	36	992.265	0.92	1.51	1.50	98	97	8.5	✓	272	272	61	NA	226	265
3-2		42	996.3	0.96	1.58	1.60	99	97	9.0	✓	276	275	57	NA	224	264
3-3		48	000.42	0.96	1.6	1.6	101	97	9.5	✓	~~281~~ 271	281	52	NA	225	269
3-4		54	004.55	0.89	1.477	1.5	101	98	9.5	✓	270	283	53	NA	223	268
3-5		60	008.55	0.718	1.178	1.2	102	98	9.5	✓	269	284	53	NA	226	270
3-6		66	012.36	0.52	0.88	.88	103	99	8.5	✓	254	281	54	NA	221	264
	1347	72	015.555													

Comments:

Train Leak Check:

Before Test: .000 CF in 60 Seconds at 16.0 In. Hg
After Test: .002 CF in 60 Seconds at 15.0 In. Hg

	Initial	Final		Static Pressure			
			Port	4			
Pitot Tube Leak Check	✓	✓	Inches H₂O				
ORSAT Train Leak Check	✓	✓	~~Inches~~ Hg	-24			

lowell02.

Project No.: 280 10 00 3-0000 0 2
Client: PG+E
Facility: Salem Harbor Station
Source: Unit #3

Date: 8/25/99
Run No.: PG+E-S-OHM-IA-4
Sample Location: Inlet A
Operator: S. Tibbetts

Sheet 2 of 2

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °F Filter Outlet
2-1	1351	72	015.79	0.89	1.477	1.50	102	99	7.0	✓	269	280	61	NA	225	271
2-2		78	019.7	0.94	1.689	1.7	106	99	8.0	✓	258	283	52	NA	220	263
2-3		84	023.9	0.87	1.5	1.5	107	101	8.0	✓	259	281	52	NA	215	259
2-4		90	027.95	0.84	1.4	1.4	106	102	8.0	✓	267	284	54	NA	219	264
2-5		96	031.9	0.75	1.26	1.25	108	102	8.0	✓	259	283	52	NA	220	263
2-6		102	035.7	0.49	0.84	0.84	109	103	7.5	✓	252	280	54	NA	215	255
	1427	108	038.984													
1-1	1431	108	039.376	0.86	1.46	1.45	107	104	9.0	✓	254	280	61	NA	215	254
1-2		114	043.12	0.92	1.56	1.55	108	104	9.5	✓	255	278	54	NA	216	254
1-3		120	047.38	0.90	1.503	1.50	108	104	10.5	✓	269	280	56	NA	218	258
1-4		126	051.3	0.83	1.4	1.4	107	104	10.5	✓	266	279	58	NA	224	263
1-5		132	055.39	0.76	1.276	1.3	107	104	11.0	✓	261	281	59	NA	222	260
1-6		138	059.28	0.64	1.07	1.1	109	104	10.5	✓	258	280	60	NA	222	260
	1507	144	63.012													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____
_____ CF in _____ Seconds at _____ In. Hg _____

Meter Reading
Stop Start
_____ _____
_____ _____

Comments:

lowell02.wp

SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.: 26046
t: PG&E
ty: Salem Harbor
ce: Inlet A

Date: 8/25/99
Run No.: 4-A-Inlet
Train Type: Ontario-Hydro
Recovery Person: [illegible]

NT HALF

No.:	N/A		
ble No.:	N/A		

Comments:

Trap No.:	N/A			
Wt. (g):				
l Wt. (g):				
ollected (g):				

Comments:

NGERS

ıger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	832.3	668.0	616.1	713.1	646.9	702.8	705.7
l Vol. (ml/g):	714.4	643.3	610.8	710.0	648.0	701.8	702.0
ollected (ml/g):	117.9	24.7	5.3	3.1	-1.1	1.0	3.7

ı Gel Impinger:	8			Comments:
Vol. (ml/g):	911.8			~70% spent
l Vol. (ml/g):	893.6			
ollected (ml/g):	22.2			

ments/Notes:

AL MOISTURE (Impingers and Silica Gel) (g) = 176.8

ORSAT ANALYSIS

Project No. 26046
Client PG&E
Facility Salem
Source UNIT 3
Location Inlet A

Date 8/25/99
Run PG&E-S-OHM-IA-4
Operator MBM
Comments

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 20.8.
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
		11.4	19.4	8.0			
		11.4	19.4	8.0			
		11.4	19.4	8.0			

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \% O_2}{\% CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Sample Train Tracking Form

Sample Train: OH - Hg

Date: 8/25/99

Location: Inlet A

Run: 4-A

Sample ID: PG&E-S-01HM-Ia-4

Train Set Up By: [signature]

Date: 8/25/99 Time: 0910

Transported to Location By: [signature]

Date: 8/25/99 Time: 1110

Received at Location By: [signature]

Date: 8/25/99 Time: 1111

Transported to Recovery Area By: [signature]

Date: 8/25/99 Time: 1553

Received at Recovery Area By: [signature]

Date: 8/25/99 Time: 1553

Train Recovered By: [signature]

Date: 8/25/99 Time: 1553

Comments:

Hg

STACK GEOMETRY AND GAS VELOCITY DATA

Date: 8/17/99

Client: U.S. Gen

Facility: Salem, MA

Run No.: Run #1

Barometric Pressure (in. Hg):

% Moisture:

Pitot Tube ID:

Post Leak Check:

Measurement Device:

Micromanometer:

10" Manometer:

Magnehelic:

Other:

Explain:

Project No.:

Sample Location: Inlet #2 Inboard

Load Condition:

Operator: R. Rebello

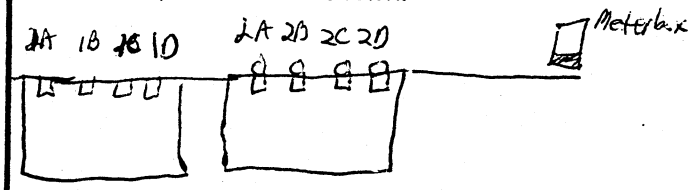
Meterbox No.: 90341

Static (in. H_2O): 24 mm Hg

Pitot Tube Coefficient: .84

Stack Diameter (in.): P-9

Schematic of Stack Cross Section:



Stack Diameters Upstream:

Stack Diameters Downstream:

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
12:24	1A	270	.86	
	2A	270	.82	
	3A	269	.77	
	4A	269	.71	
	5A	265	.66	
	6A	138	.14	
	1B	266	.82	
	2B	269	.83	
	3B	269	.79	
	4B	269	.69	
	5B	264	.63	
	6B	200	.41	

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
	1C	260	.83	
	2C	270	.84	
	3C	273	.81	
	4C	273	.73	
	5C	270	.62	
	6C	200	.34	
	1D	268	.76	
	2D	273	.76	
	3D	276	.73	
	4D	275	.69	
	5D	273	.64	
12:44	6D	257	.36	

TRC

watts
5.5

Field Moisture Determination

Client: U.S. GEN
Location: Salem
Run No.: Run #1 ~~Out~~ Inlet outboard

Project No.:
Date: 8/17/99
Operator: R. Rebello

Data

Minutes	Clock Time	Gas Meter cf vm	TM In	TM Out	Orifice In. H_2O (+)	Vac. Gage In. Hg (-)
0	~~10~~ 13:07	400.812	102	100	2.0	6
5		405.04	104	101	2.0	6
10		408.67	107	101	2.0	6
15		412.44	109	103	2.0	6.5
20		416.26	111	105	2.0	6.5
25		420.04	113	106	2.0	6.5
30	13:37	423.927	115	108	2.0	6.5
Total/Avg		23.115	109	103	2.0	6.3

Int .000 CF in 60sec @ 10 in Hg
Final .000 CF in 60sec @ 10 in Hg

Impingers

	1	2	3
Final mL	[illegible]	[illegible]	[illegible]
Initial mL	814.5	730.1	560.3
Net mL	[illegible]	[illegible]	[illegible]

Total Moisture (Net mL + Net gm) = _____

[illegible] 11.8
[illegible] 19.4/8.0

Silica Gel

Container No. _____
Final gm 889.4
Intial gm 874.8
Net gm 15.6

49

Calculations

(1) PB = 30.07
(2) VM Net = _____
(3) TM Avg = _____

Meterbox No.: 90341
Y = DGM Calibration Factor = 0.983
TM + 460 = _____

(4) PM Avg = + _____ Orifice in. H_2O × $\frac{1}{13.6}$ = + _____ orifice in.Hg.
= - _____ Vacuum gage In. Hg (when meter is before pump)

(5) $VMSTD = \frac{528 \times VM \times (PB + PM) \times (Y)}{29.92 \times (TM + 460)}$ = _____

(6) VW = mL H_2O + gm Silica Gel = _____

(7) VW Gas = VW × 0.04715 = _____

(8) $\%M = \frac{100 \times VW\ Gas}{VMSTD + VW\ Gas} = \frac{100 \times (\quad)}{(\quad) + (\quad)} = \frac{(\quad)}{(\quad)} =$

Project No.: 26046-0030-00002
Client: PG&E
Facility: Salem Harbor
Source: Unit #3
Sample Location: Inlet B
Stack Diameter: 114" x 108"
Date: 8-24-99
Run No.: PG&E-S-OHM-IB-1
Operator: D. Gill
Meterbox No.: 90342
Meterbox ΔH @: 1.936 73 mpm
Y Factor: .983 mpm

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH

Sheet 1 of 2
Train Prepared By: Ed MacKinnon
Pitot Number and Side: P-9
Pitot Tube CP: ~~0.88~~ 0.87 mpm
Filter No.:
Ambient Temp., °F: 75
Bar. Pressure, In. Hg.: 30.08
Assumed Moisture, %: 10
Heater Box Setting, °F: 250
Nozzle # / Dia., In.: L-4 / .218
Probe Length / Material: 12' / 6L
Probe Heater Setting: 250

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) °C Stack	Filter Box	Imp Temp	~~XAD Cond~~	Probe	Filter Outlet
1-1	0913	0	929.685	.83	1.51	1.5	76	76	5	Good	267	246	61	NA	248	223
1-2		6	934.1	.80	1.48	1.5	77	73	5	Good	247	248	61		245	254
1-3		12	937.2	.71	1.32	1.3	78	74	5	Good	246	248	61		245	254
1-4		18	941.0	.71	1.32	1.3	81	75	5	Good	245	251	63		246	251
1-5		24	944.8	.70	1.30	1.3	83	77	5	Good	243	255	60		251	250
1-6		30	948.1	.58	1.08	1.1	86	79	5	Good	240	251	57		248	251
		36	951.672	Port change												
Port 1 leak check				.001 CF	@ 16" Hg	60 sec										
2-1	1000	36	952.221	.82	1.50	1.5	88	84	5	Good	250	255	60		251	251
2		42	956.1	.91	1.65	1.6	90	86	5	Good	255	251	54		251	250
3		48	960.1	.91	1.65	1.6	93	87	5	Good	253	255	54		253	249
4		54	964.1	.86	1.58	1.6	95	89	5	Good	252	251	55		252	251
5		60	968.7	.80	1.47	1.5	96	90	5	Good	251	255	56		253	252
6		66	972.2	.51	.96	.96	98	92	4.5	Good	243	255	57		251	255

Train Leak Check:

Before Test: .001 CF in 60 Seconds at 23 In. Hg
After Test: .010 CF in 60 Seconds at 15 In. Hg

Comments:

	Initial	Final	Static Pressure				
Pitot Tube Leak Check	✓	✓	Port	4			
ORSAT Train Leak Check	✓	✓	Inches H₂O				
			~~Inches~~ mm Hg	-24			

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Field Moisture Determination

ient: U.S. Gen
ıcation: Salem, MA
ın No.: Run #2

Project No.:
Date: 8/17/99
Operator: R. Rebello

Data

Minutes	Clock Time	Gas Meter cf vm	TM In	TM Out	Orifice In. H_2O (+)	Vac. Gage In. Hg (-)
0	13:50	426.264	115	110	2.0	9
5		430.00	117	111	2.0	9
10		433.83	118	112	2.0	9.5
15		437.63	119	113	2.0	9.5
20		441.43	120	115	2.0	9.5
25		445.27	121	115	2.0	9.5
30	14:20	449.115	120	117	2.0	9.5
Total/ Avg		22.851	119	113	2.0	9.4

Int .000 cf in 60sec @ 8 in Hg
Final .000 cf in 60sec @ 12 in Hg

Impingers

	1	2	3
Final mL	810.5	768.1	535.7 ~~556.4~~
Initial mL	788.2	~~788.8~~	~~507.2~~ 527.9
Net mL	22.3		~~49.2~~ 7.8

Total Moisture (Net mL + Net gm) = _____

CO_2 11.8
O_2 20.2 / 8.4

Silica Gel

Container No. _____
Final gm 760.0
Intial gm 746.1
Net gm 13.9

85.4

Calculations

(1) PB = 30.07
(2) VM Net = _____
(3) TM Avg = _____

Meterbox No.: 90341
Y = DGM Calibration Factor = 0.983
TM + 460 = _____

(4) PM Avg = + _____ Orifice in. H_2O × $\frac{1}{13.6}$ = + _____ orifice in.Hg.
= - _____ Vacuum gage In. Hg (when meter is before pump)

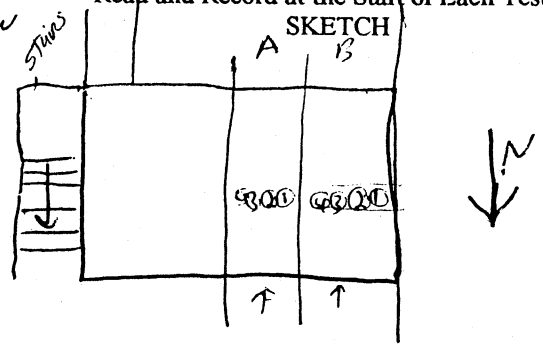
(5) $VMSTD = \frac{528 \times VM \times (PB + PM) \times (Y)}{29.92 \times (TM + 460)}$ = _____
(6) VW = mL H_2O + gm Silica Gel = _____
(7) VW Gas = VW × 0.04715 = _____

(8) $\%M = \frac{100 \times VW\ Gas}{VMSTD + VW\ Gas} = \frac{100 \times (\quad)}{(\quad) + (\quad)} = \frac{(\quad)}{(\quad)} =$

Project No.: 26046-0030-00002
Client: PG&E
Facility: Salem Harbor Station
Source: Unit #3
Sample Location: Inlet A
Stack Diameter: 114" x 108"
Date: 8/24/99
Run No.: PG&E-S-01M-IA-1
Operator: S. Tibbetts
Meterbox No.: 90343
Meterbox ΔH @: 1.855
Y Factor: 0.981

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point

SKETCH



Sheet 1 of 2
Train Prepared By: Ed MacKinnon
Pitot Number and Side: P-1
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 69
Bar. Pressure, In. Hg.: 30.08
Assumed Moisture, %: 10
Heater Box Setting, °F: 250
Nozzle # / Dia., In.: L-5 / .219
Probe Length / Material: 12' Glass
Probe Heater Setting: 250

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
1-1	0910	0	674.43	.96	~~2~~ 1.75	~~2~~ 1.75	74	71	7.5	✓	267	250	60	NA	~~250~~ 161	253
1-2		6	679.1	.94	1.75	1.75	78	72	7.5	✓	263	253	59	NA	~~25~~ 167	255
1-3		12	683.92	.94	1.66	1.65	80	74	8.0	✓	251	252	61	NA	168	253
1-4		18	687.15	.89	1.59	1.6	82	75	8.0	✓	250	260	66	NA	169	255
1-5		24	692.4	.85	1.54	1.55	85	77	8.0	✓	247	259	63	NA	168	254
1-6		30	696.25	.71	1.3	1.3	87	97	7.5	✓	~~219~~ 234	260	63	NA	170	253
	0946	36	700.15													
	Port 1	Post Leak check .001 CF in 60 Sec @ 15.5 in Hg														
2-1	1000	36	700.793	.93	1.65	1.65	89	85	9.0	✓	263	272	58	NA	168	255
2-2		42	704.81	.96	1.689	1.7	92	86	9.2	✓	267	280	57	NA	164	260
2-3		48		.96	1.7	1.7	94	87	9.5	✓	269	280	58	NA	165	261
2-4		54	713.35	.92	1.6	1.6	96	89	9.5	✓	269	279	58	NA	162	261
2-5		60	717.47	.84	1.48	1.5	97	90	9.5	✓	266	281	60	NA	164	263
2-6		66	721.55	.59	1.079	1.1	97	91	8.5	✓	235	279	61	NA	165	262

Train Leak Check:

Before Test: .002 CF in 60 Seconds at 24.0 In. Hg
After Test: .000 CF in 60 Seconds at 10.5 In. Hg

Comments:

1.76

	Initial	Final	Static Pressure			
Pitot Tube Leak Check	✓	✓	Port	4		
ORSAT Train Leak Check	✓	✓	Inches H₂O			
			~~Inches~~ Hg mm	-24		

lowe

Project No.: 26046-0030-00002
Client: PG&E
Facility: Salem Harbor Station
Source: UNit #3

Date: 8-24-99
Run No.: PG+E-5-OHM-IB-1
Sample Location: Inlet B
Operator: D.Gue

Sheet 2 of 2

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
2-6		72	975.442	Port change										—		
Port	2	Leak	check													
3-1	1047	72	976.101	.82	1.49	1.5	97	95	5.5	Good	258	255	63		251	252
2		78	979.7	.92	1.67	1.7	98	95	6	Good	258	254	60		248	251
3		84	983.6	.90	1.63	1.6	99	95	6	Good	260	255	58		251	255
4		90	987.9	.88	1.61	1.6	100	96	6	Good	258	257	61		252	256
5		96	991.7	.84	1.53	1.5	101	98	6	Good	256	255	62		250	255
6		102	996.0	.60	1.10	1.1	102	98	5.5	Good	252	250	63		251	255
		108	999.272													
Port	3															
4-1	1128	108	999.612	.77	1.40	1.4	101	99	6	Good	260	250	65		252	251
2		114	1003.5	.75	1.36	1.3	103	100	6	Good	261	255	60		251	252
3		120	1007.3	.60	1.09	1.1	106	101	6.5	Good	260	257	60		252	252
4		126	1010.2	.62	1.12	1.1	107	102	6	Good	257	255	61		251	250
5		132	1014.2	.66	1.21	1.2	108	102	6.5	Good	257	254	62		255	251
6		138	1017.8	.39	.70	.70	110	104	5	Good	255	255	63		255	252
	1204	144	1020.324													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____
_____ CF in _____ Seconds at _____ In. Hg _____

Meter Reading: Stop _____ Start _____

Comments:

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.: 26046
::: PG&E
ty: Salem Harbor
ce: Inlet B

Date: 8/23/99 / 8/24/99
Run No.: 1 - B Inlet
Train Type: Ontario-Hydro
Recovery Person: SAM

NT HALF

No.:	N/A		
ble No.:	N/A		

Comments:

Trap No.:	N/A			
Wt. (g):				
l Wt. (g):				
ollected (g):				

Comments:

NGERS

nger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	808.5	735.9	702.6	657.3	712.0	724.7	695.1
l Vol. (ml/g):	706.9	707.5	698.5	654.3	711.5	723.4	694.5
Collected (ml/g):	101.6	28.4	4.1	3.0	0.5	1.3	0.6

a Gel Impinger:	8			Comments:
l Vol. (ml/g):	804.7			~30% spent
l Vol. (ml/g):	784.5			
Collected (ml/g):	20.2			

ments/Notes:

TAL MOISTURE (Impingers and Silica Gel) (g) = 159.7

ORSAT ANALYSIS

Project No. 260416-0030-00002
Client PG+E
Facility Salem
Source Unit #3
Location Inlet B

Date 8/24/99
Run PG+E-S-OHM-IB-1
Operator MGM
Comments

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 20.8.
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
	1655	11.0	19.4	8.4	—	—	1.136
	1605	11.0	19.5	8.5	—	—	1.127
	1613	11.0	19.4	8.4	—	—	1.136

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\,O_2}{\%\,CO_2}$$

Fuel Bituminous
Reported F_o

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Sample Train Tracking Form

Sample Train: OH - Hg Date: 8/24/99

Location: Inlet B Run: 1

Sample ID: PG&E-S-OHM-Ib-1

Train Set Up By: [signature] Date: 8/24/99 Time: 0715

Transported to Location By: [signature] Date: 8/24/99 Time: 0725

Received at Location By: [signature] Date: 8/24/99 Time: 0726

Train Ran by [signature] 8/24/99 0913

Transported to Recovery Area By: [signature] Date: 8/24/99 Time: 1240

Received at Recovery Area By: [signature] Date: 8/24/99 Time: 12:45

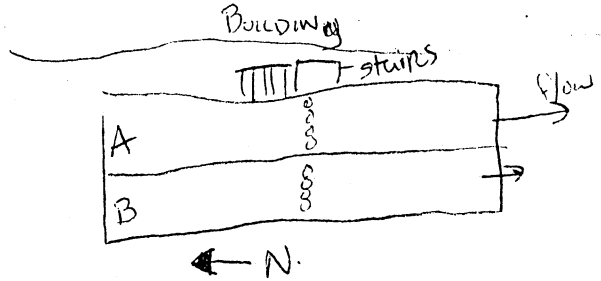
Train Recovered By: [signature] Date: 8/24/99 Time: 12:56

Comments:

Hg

Project No.: 26046-0030-00002
Client: PG&E
Facility: Salem Harbor Station
Source: Unit #3
Sample Location: Inlet B
Stack Diameter: 114" x 108"
Date: 8/24/98
Run No.: PG&E-S-OHM-IB-2
Operator: D. Gill
Meterbox No.: 90342
Meterbox ΔH @: 1.973
Y Factor: 0.983

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 1

Train Prepared By: Ed Mackinnon
Pitot Number and Side: P-9
Pitot Tube CP: 0.8847 m/m
Filter No.:
Ambient Temp., °F: 98
Bar. Pressure, In. Hg.: ~~30.05~~ mm 30.10
Assumed Moisture, %: 10
Heater Box Setting, °F: 250
Nozzle # / Dia., In.: L-4 / .218
Probe Length / Material: 12' / GL
Probe Heater Setting: 250

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °C Filter Outlet
4-1	1408	0	22.513	.75	1.41	1.4	101	99	5	GOOD	265	255	65	—	250	249
2		6	26.3	.80	1.50	1.5	103	99	5		267	254	66		251	250
3		12	30.0	.65	1.22	1.2	103	99	5		267	255	66		252	256
4		18	34.1	.65	1.22	1.2	102	99	5		264	258	65		250	252
5		24	37.5	.65	1.22	1.2	102	99	5		261	255	64		252	250
6		30	41.4	.55	1.05	1.1	102	99	5		260	253	60		251	251
		36	44.444													
PORT 4 END																
3-1		36	44.821	.94	1.75	1.7	101	99	5		265	251	62		251	252
2		42	48.5	.95	1.79	1.8	104	99	5		265	251	61		251	252
3		48	52.6	.85	1.60	1.6	107	101	5		264	252	58		252	251
4		54	56.2	.88	1.68	1.7	108	102	5		260	251	55		252	252
5		60	60.5	.73	1.40	1.4	108	103	5		254	251	53		250	250
6		66	64.74	.50	.965	.965	108	104	5		250	252	52		251	251

Train Leak Check:

Before Test: .003 CF in 60 Seconds at 180 In. Hg
After Test: .001 CF in 60 Seconds at 8 In. Hg

Comments:
Particulate carry-over to Impinger #3.

	Initial	Final	Static Pressure			
Port			3			
Pitot Tube Leak Check	✓	✓	Inches H₂O —			
ORSAT Train Leak Check	✓	✓	Inches Hg -22			

mn

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Project No.: 26046-0030-00002
Client: PG&E
Facility: SHS
Source: UNIT #3

Date: 8/24/99
Run No.: PG&E-S-OHM-IB-2
Sample Location: inlet B
Operator: D Gill

Sheet 2 of 2

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °F Filter Outlet
3-6		72	68.123											—		
Point 3 END																
2-1	1538	72	68.552	.88	1.67	1.7	108	104	6	GOOD	260	250	55		250	251
2		78	72.5	.93	1.77	1.8	110	105	6.5		256	255	50		252	251
3		84	76.7	.85	1.62	1.6	110	105	6		253	255	51		252	252
4		90	80.8	.80	1.54	1.5	110	105	6		252	253	51		251	250
5		96	85.2	.67	1.29	1.3	111	106	6		250	252	53		253	251
6		102	88.9	.54	1.04	1.04	110	106	6		247	255	56		251	251
		108	92.222													
1-1	1618	108	92.715	.91	1.75	1.7	107	105	5.5		252	255	56		252	252
2		114	96.6	.88	1.68	1.7	108	105	5.5		254	251	56		252	251
3		120	100.6	.88	1.68	1.7	108	106	6		251	253	57		252	250
4		126	104.8	.82	1.58	1.6	108	106	6		250	251	58		251	250
5		132	108.7	.82	1.58	1.6	107	104	6		249	252	59		252	250
6		138	112.9	.70	1.33	1.3	105	103	5		248	250	61		250	250
7	1654	144	116.652													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____

_____ CF in _____ Seconds at _____

Meter Reading

	Stop	Start
In. Hg	_____	_____
In. Hg	_____	_____

Comments:

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.:	26046	Date:	8/23/99 / 8/24/99
::	PG&E	Run No.:	2 - B - Inlet
ty:	Salem Harbor	Train Type:	Ontario-Hydro
:e:	Inlet B	Recovery Person:	CM

NT HALF

No.:	N/A			Comments:
ple No.:	N/A			

Trap No.:	N/A				Comments:
Wt. (g):					
Wt. (g):					
ollected (g):					

NGERS

ger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	818.9	655.5	627.6	701.6	649.5	652.2	694.7
Vol. (ml/g):	707.0	632.6	623.1	698.7	648.7	651.4	691.6
ollected (ml/g):	111.9	22.9	4.5	2.9	0.8	0.8	3.1

Gel Impinger:	8			Comments:
Vol. (ml/g):	829.9			~35% spent
Vol. (ml/g):	806.4			
ollected (ml/g):	23.5			

nents/Notes: Filter separated from Frit during Run, most likely during release of initial leak check. Resulted in particulate matter carry-over to Impinger #3. No particulate matter observed in impinger #4.

AL MOISTURE (Impingers and Silica Gel) (g) = 170.4

ORSAT ANALYSIS

Project No. 26046-0030-00002
Client PG&E
Facility Salem
Source Unit 3
Location Inlet B

Date 8/24/99
Run PG&E-S-OHM-IB-2
Operator MPM
Comments

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 20.9.
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
	1805	11.0	19.6	8.6	—	—	
	1816	11.0	19.6	8.6	—	—	
	1825	11.0	19.6	8.6	—	—	

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\,O_2}{\%\,CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Sample Train Tracking Form

ample Train: OH - Hg

Date: 8/24/99

ocation: Inlet B

Run: 2

ample ID: PG&E-S-OHM-Ib-2

Train Set Up By: [signature]

Date: 8/24/99 Time: 0836

Transported to Location By: [signature]

Date: 8/24/99 Time: 1250

Received at Location By: [signature]

Date: 8/24/99 Time: 1300

Transported to Recovery Area By: [signature]

Date: 8/24/99 Time: 1740

Received at Recovery Area By: [signature]

Date: 8/24/99 Time: 1745

Train Recovered By: [signature]

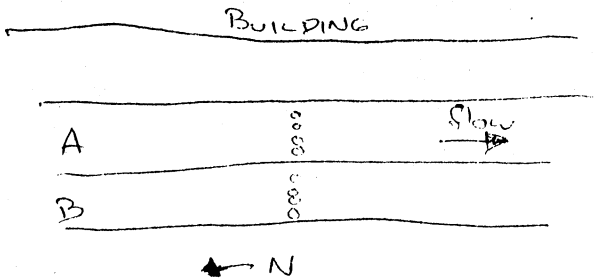
Date: 8/24/99 Time: 1745

Comments:

Hg

Project No.:	26046-003d-00002
Client:	PG&E
Facility:	Salem Harbor Station
Source:	Unit #3
Sample Location:	Inlet B
Stack Diameter:	114 x 108
Date:	8/25/11
Run No.:	PG&E-S-OHM-IB-3
Operator:	D. Gill
Meterbox No.:	~~90342~~
Meterbox ΔH @:	~~1.936~~
Y Factor:	~~0.982~~

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 2

Train Prepared By:	Ed Mackinnon
Pitot Number and Side:	L9
Pitot Tube CP:	~~.84~~ 0.77 mfm
Filter No.:	N/A
Ambient Temp., °F:	72
Bar. Pressure, In. Hg.:	30.102 mfw
Assumed Moisture, %:	8
Heater Box Setting, °F:	250
Nozzle # / Dia., In.:	L4 / 0.218
Probe Length / Material:	12' / G1
Probe Heater Setting:	250

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F ~~XAD~~ Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
1-1	832	0	117.732	~~.70~~ .73	1.39	1.4	73	72	4	GOOD	250	253	55	—	251	251
2		6	121.7	.75	1.43	1.4	74	72	4.5		250	252	57		252	250
3		12	125.5	.80	1.52	1.5	75	72	4.5		248	251	60		253	250
4		18	129.3	.79	1.51	1.5	75	73	5		246	249	61		250	251
5		24	133.0	.75	1.44	1.4	76	74	5		245	252	64		252	250
6		30	136.7	.63	1.19	1.2	77	74	5		242	255	65		253	251
		36	140.352													
2-1	912	36	140.725	.86	1.61	1.6	78	76	5.5		250	255	66		251	249
2		42	144.6	.90	1.70	1.7	81	77	6		249	255	63		251	251
3		48	148.8	.85	1.60	1.6	84	78	6		249	252	61		253	252
4		54	152.6	.77	1.45	1.5	86	80	6		248	255	60		252	254
5		60	156.1	.65	1.22	1.2	87	81	5		244	255	60		253	255
6		66	159.9	.41	.79	.79	87	82	5		240	251	61		252	252
		72	163.012													

Train Leak Check:

Before Test: .001 CF in 60 Seconds at 18 In. Hg
After Test: .001 CF in 60 Seconds at 10 In. Hg

Comments:

	Initial	Final		Static Pressure			
Pitot Tube Leak Check	✓	✓	Port	4			
ORSAT Train Leak Check	✓	✓	Inches H₂O				
			~~Inches Hg~~ mm	-22			

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Project No.: 26046-0030-00002
Client: PG+E
Facility: SHS
Source: UNIT #3

Date: 8/25/99
Run No.: PG+E-S-OHM-1B-3
Sample Location: INLET B
Operator: D. Gee

Sheet 2 of 2

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
3-1	953	72	163.271	.86	1.60	1.6	87	84	7	GOOD	258	255	61	—	252	251
2		78	166.9	.86	1.60	1.6	89	84	7		257	255	60		253	250
3		84	171.1	.84	1.58	1.6	89	85	7.5		255	254	58		252	251
4		90	174.8	.76	1.44	1.4	90	86	7		253	252	57		252	251
5		96	178.7	.70	1.33	1.3	91	87	7		249	253	59		250	250
6		102	182.5	.37	.703	.70	90	87	6.5		249	252	61		251	250
		108	185.372													
4-1	1034	108	185.621	.71	1.33	1.3	88	87	7		258	251	65		253	249
2		114	189.0	.65	1.22	1.2	89	87	7		258	252	66		252	251
3		120	192.6	.53	.99	.99	90	88	7		257	253	58		252	251
4		126	196.4	.55	1.04	1.0	92	88	7		256	254	57		251	252
5		132	199.3	.56	1.06	1.1	92	89	7		254	252	58		252	251
6		138	202.7	.43	.82	.82	92	88	6.5		252	251	59		252	251
	1110	144	205.836	END												

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____
_____ CF in _____ Seconds at _____ In. Hg _____

Meter Reading: Stop _____ Start _____

Comments:

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.:	26046	Date:	8/24/99 / 8/25/99
:	PG&E	Run No.:	3-B-Inlet
ty:	Salem Harbor	Train Type:	Ontario-Hydro
e:	Inlet B	Recovery Person:	[illegible]

NT HALF

No.:	N/A			Comments:
ole No.:	N/A			

Trap No.:	N/A				Comments:
Wt. (g):					
Wt. (g):					
ollected (g):					

NGERS

ger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	806.1	734.0	703.6	658.1	712.7	725.4	697.6
Vol. (ml/g):	707.4	705.0	698.5	653.5	713.3	723.5	695.3
ollected (ml/g):	98.7	31.0	5.1	4.6	-0.6	1.9	2.3

Gel Impinger:	8			Comments:
Vol. (ml/g):	822.5			~90% spent
Vol. (ml/g):	804.7			
ollected (ml/g):	17.8			

ments/Notes:

AL MOISTURE (Impingers and Silica Gel) (g) = 162.8

ORSAT ANALYSIS

Project No. 26046-0030-00002
Client PG&E
Facility Salem
Source Unit 3
Location Inlet ~~A~~ B
MPM

Date 8/25/99
Run PG&E-S-OHM-IB-3
Operator MPM
Comments

Orsat Leak Checked yes / no
Purge System with Sample Gas yes / no
Ambient Air Check CO_2 0.0 O_2 20.8
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
	1258	11.0	19.7	8.7			
	1309	11.0	19.6	8.6			
	1318	11.0	19.6	8.6			

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \% O_2}{\% CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Sample Train Tracking Form

ample Train: OH - Hg Date: 8/25/99

ocation: Inlet B Run: 3 B

ample ID: PG&E-S-OHM-Ib-3

rain Set Up By: [signature] Date: 8/25/99 Time: 0720

ransported to Location By: [signature] Date: 8/25/99 Time: 0724

Received at Location By: [signature] Date: 8/25/99 Time: 0735

ransported to Recovery Area By: [signature] Date: 8/25 Time: 1204

Received at Recovery Area By: [signature] Date: 8/25/99 Time: 1205

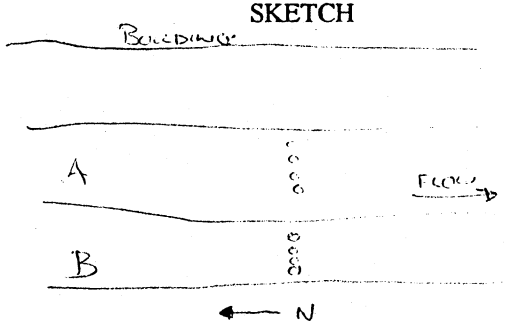
rain Recovered By: [signature] Date: 8/25/99 Time: 1230

Comments:

Hg

Project No.: 26046-003d-00002
Client: PG+E
Facility: Salem Harbor Station
Source: Unit #3
Sample Location: Inlet B
Stack Diameter: 114 x 108
Date: 8/25/99
Run No.: PG+E-S-011M-IB-4
Operator: D. Gill
Meterbox No.: 90342
Meterbox ΔH @: 1.973
Y Factor: 0.983

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 2
Train Prepared By: Ed MacKinnon
Pitot Number and Side: P-9
Pitot Tube CP: 0.87
Filter No.: —
Ambient Temp., °F: 98
Bar. Pressure, In. Hg.: 30.05 ~12 mm
Assumed Moisture, %: 8
Heater Box Setting, °F: 250
Nozzle # / Dia., In.: L-4 / .218
Probe Length / Material: 12' / 6L
Probe Heater Setting: 250

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
4-1	1232	0	207.246	.75	1.41	1.4	95	95	5	Good	261	259	63		252	250
2		6	211.2	.66	1.24	1.2	96	95	5		261	258	57		251	251
3		12	214.8	.59	1.11	1.1	99	96	5		261	259	54		252	252
4		18	218.3	.55	1.03	1.0	99	96	5		261	260	54		251	255
5		24	221.5	.56	1.05	1.1	101	97	5		258	258	55		252	254
6		30	225.1	.56	1.05	1.1	102	98	5		256	259	55		253	254
		36	228.521	Port Change												
3-1		36	228.451	.88	1.65	1.6	102	99	6		258	266	58		251	248
2		42	232.2	.86	1.65	1.6	104	99	6		260	260	55		251	249
3		48	236.2	.84	1.62	1.6	104	99	6.5		258	260	55		252	251
4		54	240.2	.80	1.54	1.5	105	101	6.5		257	265	57		251	252
5		60	244.2	.69	1.34	1.3	107	101	6		254	262	59		251	255
6		66	247.9	.40	.78	.78	107	102	5		252	261	60		252	254
		72	250.989													

Train Leak Check:

Before Test: .003 CF in 60 Seconds at 15 In. Hg
After Test: .001 CF in 60 Seconds at 10 In. Hg

Comments:

	Initial	Final		Static Pressure			
Pitot Tube Leak Check	Ø	Ø	Port				
			Inches H_2O				
ORSAT Train Leak Check	Ø	Ø	~~Inches~~ Hg mm	-22			

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Project No.: 26046-0050-00007
Client: PG&E
Facility: SHS
Source: Unit 3

Date: 01/25/99
Run No.: PG&E-S-OHM-1B-4
Sample Location: ~~ex~~ inlet B
Operator: D. Gill

Sheet 2 of 2

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
2-1	1353	72	251.412	.84	1.62	1.6	106	102	7	Good	258	268	65	—	251	251
2		78	255.2	.86	1.65	1.7	107	102	7	Good	260	268	61		251	252
3		84	259.3	.90	1.73	1.7	109	103	8	Good	257	265	63		251	252
4		90	263.41	.83	1.61	1.6	110	104	8		255	267	54		252	255
5		96	267.8	.68	1.31	1.3	111	104	7		255	~~68~~ 268	53		252	252
6		102	271.2	.49	.78	.78	111	105	5		251	265	51		251	252
		108	274.381								256 DSG					
1-1	1433	108	274.832	.84	1.62	1.6	109	105	8		~~258~~	265	59		252	250
2		114	278.5	.87	1.67	1.7	109	105	9		256	266	49		251	255
3		120	282.4	.85	1.65	1.6	110	105	9		255	266	50		252	255
4		126	286.2	.80	1.54	1.5	109	105	8		253	266	51		252	255
5		132	290.6	.66	1.29	1.3	110	105	8		249	266	52		252	254
6		138	294.5	.60	1.17	1.2	110	106	8		247	265	55		252	252
	1509	144	298.029													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____
_____ CF in _____ Seconds at _____ In. Hg _____

Meter Reading: Stop _____ Start _____

Comments:

lowell02.wp

SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.:	26046	Date:	8/25/99
::	PG&E	Run No.:	4-B-Inlet
ty:	Salem Harbor	Train Type:	Ontario-Hydro
:e:	Inlet B	Recovery Person:	GM

NT HALF

No.:	N/A			Comments:
ole No.:	N/A			

Trap No.:	N/A				Comments:
Wt. (g):					
Wt. (g):					
ollected (g):					

NGERS

ger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	829.0	648.7	624.8	703.6	653.6	652.8	695.4
Vol. (ml/g):	707.0	629.6	622.1	699.9	653.8	652.3	691.8
ollected (ml/g):	122.0	19.1	2.7	~~X~~3.7	-0~~8.8~~2 mpm	0.5	3.6

Gel Impinger:	8			Comments:
Vol. (ml/g):	913.1			~ 70% spent
Vol. (ml/g):	894.8			
ollected (ml/g):	18.3			

nents/Notes:

AL MOISTURE (Impingers and Silica Gel) (g) = 169.7 mpm

ORSAT ANALYSIS

Project No. _____ Date 8/25/99

Client _____ Run PG&E-S-OHM-IB-4

Facility _____ Operator _____

Source _____ Comments _____

Location _____

Orsat Leak Checked yes / no

Purge System with Sample Gas yes / no

Ambient Air Check CO_2 _____ O_2 _____.

Audit Gas Check (measured/actual): CO_2 ___/___ O_2 ___/___ CO ___/___

Expiration Date of Reagents ___/___/___

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
		11.4	19.4	8.0			
		11.4	19.4	8.0			
		11.4	19.4	8.0			

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\,O_2}{\%\,CO_2}$$

Fuel _____
Reported F_o _____

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other _____

Sample Train Tracking Form

ample Train: OH - Hg

Date: 8/25/99

ocation: Inlet B

Run: 4

ample ID: PG&E-S-OHm-Ib-4

rain Set Up By: [signature]

Date: 8/25/99 Time: 0858

ransported to Location By: [signature]

Date: 8/25/99 Time: 1109

eceived at Location By: [signature]

Date: 8/25/99 Time: 1110

ransported to Recovery Area By: [signature]

Date: 8/25/99 Time: 1553

eceived at Recovery Area By: [signature]

Date: 8/25/99 Time: 1554

rain Recovered By: [signature]

Date: 8/25/99 Time: 1554

Comments:

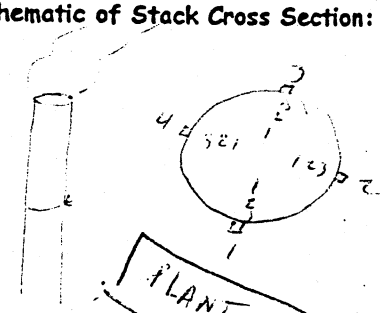
Hg

STACK GEOMETRY AND GAS VELOCITY DATA

-0

ate:	5/23/95
lient:	US Gen
acility:	Salem
un No.:	Pre - Flow
arometric Pressure (in. Hg):	29.95
Moisture:	
itot Tube ID:	P-200
st Leak Check:	Good
easurement Device:	
icromanometer:	
)" Manometer:	
agnehelic:	
ther:	
plain:	

Project No.:	
Sample Location:	Outlet
Load Condition:	
Operator:	RN/KL
Meterbox No.:	903336
Static (in. H_2O):	-1.5
Pitot Tube Coefficient:	.84
Stack Diameter (in.):	
Schematic of Stack Cross Section:	
Stack Diameters Upstream:	
Stack Diameters Downstream:	



Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
142	1-1	257	1.6	
	2	257	1.6	
	3	256	1.5	
	2-1	256	1.5	
	2	257	1.9	
	3	257	1.7	
	3-1	255	1.7	
	2	255	1.5	
	3	256	1.7	
	4 1	257	1.6	
	2	255	1.7	
	3	255	1.6	

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle

TRC

.1101.xls

Project No.:	26046-0030-00002
Client:	PG+E
Facility:	Salem Harbor Station
Source:	Unit #3
Sample Location:	Exhaust Stack
Stack Diameter:	150"
Date:	8-24-94
Run No.:	PG+E-S-OHM-0-7
Operator:	KLAAKSO/BNIXON
Meterbox No.:	403336
Meterbox ΔH @:	1.981
Y Factor:	0.987

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH

Sheet 1 of 2

Train Prepared By:	Ed Mackiewicz
Pitot Number and Side:	S-200
Pitot Tube CP:	0.84
Filter No.:	—
Ambient Temp., °F:	70°F
Bar. Pressure, In. Hg.:	~~29.66~~ mm 30.04
Assumed Moisture, %:	10
Heater Box Setting, °F:	250°F
Nozzle # / Dia., In.:	PGE-N-1 / 0.188 in
Probe Length / Material:	5' GLASS mm
Probe Heater Setting:	250°F

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
1-1	0910	0	484.177	1.60	1.33	1.35	85	85	6.0	G	258	265	65	NA	264	250
2		6	487.800	1.60	1.35	1.35	85	84	5.5	G	260	262	64	—	258	252
1-2		12	491.850	1.80	1.49	1.50	87	85	5.5	G	260	263	63	—	257	251
		18	495.700	1.80	1.49	1.50	89	86	5.5	G	261	264	63	—	261	250
1-3		24	499.600	1.75	1.45	1.45	91	87	5.5	G	261	260	63	—	260	248
		30	503.480	1.90	1.58	1.60	92	89	6.0	G	261	260	64	—	262	254
STOP	0946	36	507.593													
		END OF PORT 1 LEAK RATE OF 0.001 CF IN 60 SEC @ 7.0 In Hg / START OF PORT 2 LEAK RATE OF 0.001 CF IN 60 SEC @ 16.0 In Hg														
2-1	1000	36	507.002	1.70	1.40	1.40	92	92	6.0	G	263	262	62	NA	260	255
		42	511.050	1.80	1.49	1.50	92	92	6.0	G	262	259	64	—	259	256
2-2		48	515.480	1.70	1.40	1.40	93	92	6.0	G	262	257	65	—	256	255
		54	519.300	1.60	1.33	1.35	95	92	6.0	G	263	259	65	—	256	256
2-3		60	523.000	1.75	1.45	1.45	97	93	6.0	G	263	261	62	—	258	259
		66	527.100	1.90	1.58	1.60	98	99	6.5	G	262	262	61	—	257	257

Train Leak Check:

Before Test: 0.001 CF in 60 Seconds at 15.0 In. Hg
After Test: 0.002 CF in 60 Seconds at 8.0 In. Hg

Comments:

	Initial	Final	Static Pressure			
Port			2-2			
Pitot Tube Leak Check	✓	✓	Inches H₂O -1.3			
ORSAT Train Leak Check	✓	✓	Inches Hg			

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Project No.: [illegible]
Client: PG&E
Facility: Salem Harbor Station
Source: Unit #3

Date: [illegible]
Run No.: PG&E-S-OHM-0-1
Sample Location: Exhaust Stack
Operator: R LARKSON / B NIXON

Sheet 2 of 2

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °C Filter Outlet
STOP	1036	72	531.061													
			END OF POINT 2 LEAK RATE OF 0.002 CF IN 60 SEC @ 10.5 In Hg / START OF POINT 3 LEAK RATE OF 0.003 CF IN 60 SEC @ 10.0 In Hg													
3-1	1043	72	531.173	1.70	1.40	1.40	95	94	5.5	G	264	260	62	NA	258	255
		78	535.060	1.75	1.37	1.35	95	95	5.5	G	264	259	62	—	256	260
3-2		84	538.900	1.80	1.40	1.40	96	95	5.5	G	264	258	63	—	261	261
		90	542.650	1.90	1.48	1.50	98	95	6.0	G	265	262	63	—	260	262
3-3		96	546.590	1.70	1.32	1.30	99	95	6.0	G	265	263	63	—	259	262
		102	550.330	1.85	1.44	1.45	99	96	6.0	G	265	261	65	—	255	263
STOP	1119	108	554.113													
			END OF POINT 3 LEAK RATE OF 0.002 CF IN 60 SEC @ 11.5 In Hg / START OF POINT 4 LEAK RATE OF 0.003 CF IN 60 SEC @ 14.0 In Hg													
4-1	1126	108	554.220	1.65	1.29	1.30	95	95	5.5	G	266	263	62	NA	252	260
		114	557.950	1.85	1.44	1.45	96	95	6.0	G	266	260	62	—	253	262
4-2		120	561.790	1.70	1.32	1.30	97	95	6.0	G	266	257	61	—	254	263
		126	565.350	1.70	1.32	1.30	98	95	5.5	G	266	256	64	—	254	261
4-3		132	568.900	1.70	1.32	1.30	99	96	5.5	G	266	262	65	—	255	261
		138	572.480	1.85	1.44	1.45	100	96	5.5	G	266	260	65	—	255	261
STOP	1202	144	576.868													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____
_____ CF in _____ Seconds at _____ In. Hg _____

Meter Reading: Stop _____ Start _____

Comments:

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325

SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.: 26046
t: PG&E
ty: Salem Harbor
:e: Outlet

Date: ~~8/23/99~~ / 8/24
Run No.: 1 — Outlet
Train Type: Ontario-Hydro
Recovery Person: Em

NT HALF

No.:	N/A		
ole No.:	N/A		

Comments:

Trap No.:	N/A			Comments:
Wt. (g):				
Wt. (g):				
ollected (g):				

NGERS

ger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	718.2	749.9	706.5	711.7	719.4	712.4	697.7
Vol. (ml/g):	626.1	710.3	699.2	706.8	720.1	711.1	699.2
ollected (ml/g):	92.1	39.6	7.3	4.9	-0.7	1.3	-2.5

Gel Impinger:	8			Comments:
Vol. (ml/g):	804.0			~ 30% spent
Vol. (ml/g):	783.0			
ollected (ml/g):	21.0			

nents/Notes:

AL MOISTURE (Impingers and Silica Gel) (g) = 163

ORSAT ANALYSIS

Project No.	2604-0030-00002	Date	8/24/99
Client	PG&E	Run	PG&E-S-OHM-0-1
Facility	Salem Harbor	Operator	MPM
Source	Unit 3	Comments	
Location	Exhaust stack		

Orsat Leak Checked (yes) / no

Purge System with Sample Gas (yes) / no

Ambient Air Check CO_2 0.0 O_2 20.8.

Audit Gas Check (measured/actual): CO_2 / O_2 / CO /

Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
	1515	9.6	19.2	9.6	—	—	1.177
	1535	9.6	19.2	9.6			1.177
	1546	9.6	19.2	9.6			1.177

Net O_2 Reading = Reading 2 - Reading 1 (Actual)

Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%O_2}{\%CO_2}$$

Fuel Bituminous

Reported F_o 1.177

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Sample Train Tracking Form

Sample Train: OH - Hg

Date: 8/24/99

Location: Outlet

Run: 1

Sample ID: PG&E-S-OHM-O-1

Train Set Up By:		Date: 8/24/99	Time: 0715
Transported to Location By:		Date: 8-24-99	Time: 0732
Received at Location By:		Date: 8-24-99	Time: 0737
Transported to Recovery Area By:		Date: 8-24-99	Time: 1215
Received at Recovery Area By:		Date: 8/24/99	Time: 1225
Train Recovered By:		Date: 8/24/99	Time: 1227

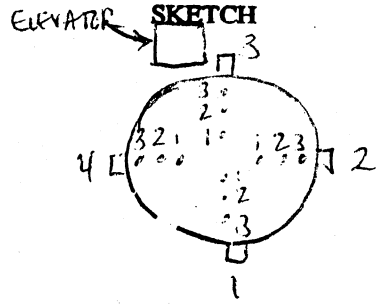
Comments:

Hg

Project No.: 26046-003d-00002
Client: PG&E
Facility: Salem Harbor Station
Source: Unit #3
Sample Location: ~~TSO~~ Exhaust Stack
Stack Diameter: 150"
Date: 8-24-99
Run No.: PG&E-S-OHM-0-2
Operator: R LAMKSO
Meterbox No.: 40336
Meterbox ΔH @: 1.981
Y Factor: 0.987

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point

SKETCH



Sheet 1 of 2
Train Prepared By: Ed Mackinnon
Pitot Number and Side: P-200
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 75°F
Bar. Pressure, In. Hg.: ~~29.80~~ MM 30.03 MM
Assumed Moisture, %: 18
Heater Box Setting, °F: 250°F
Nozzle # / Dia., In.: PGE-N1 / 0.18 in
Probe Length / Material: 5' GLASS
Probe Heater Setting: 250°F

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °F Filter Outlet
4-1	1405	0	577.068	1.80	1.40	1.40	91	90	5.0	G	268	265	67	NA	268	260
		6	581.040	1.65	1.29	1.30	90	90	5.0	G	268	262	60	—	268	262
4-2		12	584.700	1.75	1.36	1.35	92	91	5.0	G	269	266	60	—	265	261
		18	588.410	1.65	1.29	1.30	93	91	5.0	G	268	264	62	—	263	262
4-3		24	592.130	1.90	1.48	1.50	95	92	5.0	G	269	264	62	—	260	263
		30	596.060	1.90	1.48	1.50	98	93	5.0	G	269	263	63	—	260	261
STOP	1441	36	599.479													
			FINAL LEAK RATE PORT 4 OF 0.00 CF IN 60 SEC @ 8.0 In Hg / INITIAL LEAK RATE OF 0.00 CF IN 60 SEC @ 8.0 In Hg													
3-1	1452	36	600.415	1.90	1.48	1.50	95	94	5.0	G	268	265	64	NA	262	263
		42	604.380	1.75	1.36	1.35	95	94	5.0	G	269	266	60	—	261	263
3-2		48	608.150	1.90	1.48	1.50	97	95	5.0	G	269	264	59	—	266	261
		54	612.100	1.90	1.48	1.50	98	95	5.0	G	269	265	57	—	265	262
3-3		60	616.030	1.80	1.40	1.40	99	95	5.0	G	268	263	60	—	264	263
		66	619.950	2.00	1.56	1.55	100	95	5.0	G	267	262	61	—	263	262

Train Leak Check:

Before Test: 0.004 CF in 60 Seconds at 15.0 In. Hg
After Test: _____ CF in 60 Seconds at 8.0 In. Hg

Comments:

	Initial	Final	Static Pressure			
Pitot Tube Leak Check	✓	✓	Port	2-3		
ORSAT Train Leak Check	✓	✓	Inches H₂O	-1.35		
			Inches Hg			

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Project No.: 20048 0030 0000 2
Client: PG&E
Facility: SALEM HARBOR STATION
Source: UNIT #3

Date: 0-24-99
Run No.: PG&E - S - GHM - 0 - 2
Sample Location: EXHAUST STACK
Operator: K LAARSO

Sheet 4 of 2

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
STOP	1528	72	623.891													
			FINAL LEAK RATE PORT 3 OF 0.002 CF IN 60 SEC @ 7.0 InHg / INITIAL LEAK RATE PORT 2 OF 0.002 CF IN 60 SEC @ 8.0 InHg													
2-1	1535	72	624.159	1.80	1.40	1.40	98	96	5.0	G	267	262	65	NA	260	263
		78	628.050	1.60	1.25	1.25	98	96	5.0	G	266	263	62	—	261	265
2-2		84	631.960	1.70	1.31	1.30	98	96	5.0	G	266	264	60	—	259	265
		90	635.850	1.70	1.32	1.30	99	96	5.0	G	265	263	61	—	261	264
2-3		96	639.840	1.70	1.32	1.30	100	96	5.0	G	266	262	62	—	262	264
		102	643.380	1.60	1.25	1.25	101	97	5.0	G	266	263	62	—	260	262
STOP	1611	108	647.148													
		~~114~~	FINAL LEAK RATE PORT 2 OF 0.002 CF IN 60 SEC @ 10.5 InHg / INITIAL LEAK RATE PORT 1 OF 0.001 CF IN 60 SEC @ 8.0 InHg													
1-1	1616	108	647.254	1.70	1.32	1.30	97	96	5.0	G	265	262	60	NA	265	263
		114	650.800	1.80	1.40	1.40	99	97	5.0	G	266	261	62	—	265	263
1-2		120	654.700	1.85	1.45	1.45	100	97	5.0	G	266	263	62	—	262	264
		126	658.600	1.75	1.36	1.35	101	97	5.0	G	266	264	63	—	263	264
1-3		132	662.410	1.70	1.32	1.30	101	97	5.0	G	266	265	62	—	264	263
		138	666.360	1.60	1.25	1.25	101	97	5.0	G	263	261	65	—	263	265
STOP	1652	144	669.936													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____
_____ CF in _____ Seconds at _____ In. Hg _____

Meter Reading: Stop _____ Start _____

Comments:

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

ect No.:	26046	Date:	8/24/99
t:	PG&E	Run No.:	2
ity:	Salem Harbor	Train Type:	Ontario-Hydro
ce:	Outlet	Recovery Person:	[illegible]

NT HALF

No.:	N/A			Comments:
ble No.:	N/A			

Trap No.:	N/A				Comments:
Wt. (g):					
l Wt. (g):					
ollected (g):					

NGERS

nger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	762.9	729.9	691.1	709.7	660.8	712.5	692.3
l Vol. (ml/g):	653.3	705.5	685.5	706.1	658.6	710.8	691.1
ollected (ml/g):	109.6	24.4	5.6	3.6	2.2	1.7	1.2

Gel Impinger:	8			Comments:
Vol. (ml/g):	900.0			~20% Spent
l Vol. (ml/g):	881.5			
ollected (ml/g):	18.5			

ments/Notes:

AL MOISTURE (Impingers and Silica Gel) (g) = 166.8

ORSAT ANALYSIS

Project No. 26046-0030-00002
Client PG&E
Facility Salem
Source Unit 3
Location Exhaust Stack

Date 8/24/99
Run PG&E-OHM-0-2
Operator MPM
Comments

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 20.8
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
	1725	10.6	19.4	8.8	—	—	1.142
	1733	10.6	19.4	8.8	—	—	1.142
	1744	10.6	19.4	8.8	—	—	1.142

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\,O_2}{\%\,CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Sample Train Tracking Form

Sample Train: OH - Hg

Date: 8/24/99

Location: Outlet

Run: 2

Sample ID: PG&E-S-OHM-O-2

Train Set Up By: [signature]

Date: 8/24/99 Time: 0810

Transported to Location By: [signature]

Date: 8-24-99 Time: 1230

Received at Location By: [signature]

Date: 8-24-99 Time: 1233

Transported to Recovery Area By: [signature]

Date: 8-24-99 Time: ~~14~~ 1708

Received at Recovery Area By: [signature]

Date: 8/24/99 Time: 1711

Train Recovered By: [signature]

Date: 8/24/99 Time: 1712

Comments:

Hg

Project No.:	26046-003d-00002
Client:	PG&E
Facility:	Salem Harbor Station
Source:	Unit #3
Sample Location:	Outlet Stack
Stack Diameter:	150"
Date:	8-25-99
Run No.:	PG&E-S-OHM-D-3
Operator:	K LAAKSO
Meterbox No.:	90336
Meterbox ΔH @:	1.961
Y Factor:	0.987

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH

Sheet 1 of 2

Train Prepared By:	Ed Mackinnon
Pitot Number and Side:	P-200
Pitot Tube CP:	0.84
Filter No.:	—
Ambient Temp., °F:	70°F
Bar. Pressure, In. Hg.:	30.12
Assumed Moisture, %:	8
Heater Box Setting, °F:	250°F
Nozzle # / Dia., In.:	PG&E-N-1/0.180
Probe Length / Material:	5'-GLASS
Probe Heater Setting:	250°F

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Temperatures (°F) Filter Box	Temperatures (°F) Imp Temp	Temperatures (°F) XAD Cond	Temperatures (°F) Probe	Temperatures (°F) Filter Outlet
1-1	0830	0	670.177	1.65	1.39	1.40	87	88	5.5	G	260	266	62	NA	258	265
		6	674.000	1.60	1.33	1.35	88	88	5.5	G	263	267	62	—	259	266
1-2		12	677.720	1.60	1.33	1.35	89	87	5.5	G	263	267	63	—	265	265
		18	681.450	1.50	1.25	1.25	90	88	5.5	G	263	265	64	—	267	264
1-3		24	685.050	1.50	1.25	1.25	92	89	5.5	G	263	266	64	—	267	265
		30	688.680	1.60	1.33	1.35	93	90	5.5	G	263	263	64	—	266	263
STOP	0906	36	692.305													
			PORT 1 FINAL LEAK CHECK - 0.002 CF IN 60 SEC @ 6.0 In Hg / PORT 2 INITIAL LEAK CHECK - 0.001 CF IN 60 SEC @ 6.5 In Hg													
2-1	0911	36	692.421	1.60	1.33	1.35	93	92	5.5	G	262	260	63	NA	265	260
		42	696.200	1.60	1.33	1.35	96	93	5.5	G	262	255	64	—	262	260
2-2		48	700.050	1.60	1.33	1.35	97	93	5.5	G	262	258	64	—	263	261
		54	703.800	1.70	1.43	1.45	98	93	6.0	G	262	258	65	—	262	263
2-3		60	707.660	1.70	1.43	1.45	98	94	6.0	G	261	260	60	—	262	262
		66	711.530	1.60	1.33	1.35	99	95	6.0	G	261	259	60	—	263	262

Train Leak Check:

Before Test: 0.002 CF in 60 Seconds at 10.5 In. Hg
After Test: 0.001 CF in 60 Seconds at 8.0 In. Hg

Comments:

	Initial	Final	Static Pressure			
Pitot Tube Leak Check	✓	✓	Port	4-2		
ORSAT Train Leak Check	✓	✓	Inches H₂O	-1.50		
			Inches Hg			

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Project No.: 200410-0030-0000L
Client: PGE
Facility: SALEM HARBOR STATION
Source: OUTLET STACK

Date: 8-25-99
Run No.: PGE-S-OHM-D-3
Sample Location: UNIT #3
Operator: KIRK LARKSO

Sheet 1 of 2

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °C Filter Outlet
STOP	0947	72	715.324													
			PORT 2 - FINAL LEAK RATE OF 0.001 CF IN 60 SEC @ 8.0 In Hg / PORT 3 - INITIAL LEAK RATE OF 0.002 CF IN 60 SEC @ 10.5 In Hg													
3-1	0951	72	715.515	1.70	1.43	1.45	98	96	6.0	G	261	263	66	NA	265	261
		78	719.370	1.60	1.34	1.35	99	96	6.0	G	262	262	60	—	266	262
3-2		84	723.160	1.70	1.43	1.45	99	96	6.0	G	261	265	60	—	263	262
		90	727.000	1.55	1.30	1.30	99	97	6.0	G	262	264	61	—	263	263
3-3		96	730.010	1.55	1.30	1.30	101	97	6.0	G	261	261	62	—	262	264
		102	733.150	1.60	1.34	1.35	101	97	6.0	G	261	262	62	—	264	264
STOP	1027	108	738.491													
			PORT 3 - FINAL LEAK RATE OF 0.002 CF IN 60 SEC @ 10.0 In Hg / PORT 4 - INITIAL LEAK RATE OF 0.001 CF IN 60 SEC @ 8.5 In Hg													
4-1	1032	108	738.665	1.75	1.47	1.45	99	97	6.0	G	262	262	65	NA	265	255
		114	742.300	1.75	1.47	1.45	100	97	6.0	G	262	263	60	—	262	256
4-2		120	746.400	1.65	1.37	1.35	100	97	6.0	G	263	263	59	—	263	263
		126	749.860	1.65	1.37	1.35	101	97	6.0	G	263	264	61	—	264	264
4-3		132	753.990	1.70	1.41	1.40	101	97	6.0	G	263	262	62	—	263	263
		138	757.850	1.60	1.33	1.35	100	97	6.0	G	263	263	63	—	260	263
STOP	1108	144	761.654													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg

_____ CF in _____ Seconds at _____ In. Hg

Meter Reading

	Stop	Start
In. Hg	_____	_____
In. Hg	_____	_____

Comments:

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.:	26046	Date:	8/24/99 / 8/25/99
t:	PG&E	Run No.:	3
ty:	Salem Harbor	Train Type:	Ontario-Hydro
ce:	Outlet	Recovery Person:	[illegible]

NT HALF

No.:	N/A			Comments:
ble No.:	N/A			

Trap No.:	N/A				Comments:
Wt. (g):					
Wt. (g):					
ollected (g):					

NGERS

ger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	719.5	747.1	705.2	710.7	728.7	715.0	698.6
Vol. (ml/g):	626.4	709.6	698.5	706.2	726.5	712.8	698.2
ollected (ml/g):	93.1	37.5	6.7	4.5	2.2	2.2	0.4

Gel Impinger:	8			Comments:
Vol. (ml/g):	820.6			~90% spent
Vol. (ml/g):	804.0			
ollected (ml/g):	16.6			

nents/Notes:

AL MOISTURE (Impingers and Silica Gel) (g) = 163.2

ORSAT ANALYSIS

Project No.	26046-0030-00002	Date	8/25/99
Client	PG+E	Run	PG+E-S-OHM-0-3
Facility	Salem	Operator	MPM
Source	Unit 3	Comments	
Location	Exhaust STACK		

Orsat Leak Checked (yes) / no

Purge System with Sample Gas (yes) / no

Ambient Air Check CO_2 0.0 O_2 20.8

Audit Gas Check (measured/actual): CO_2 / O_2 / CO /

Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
	1136	11.0	19.4	8.4	—	—	
	1144	11.2	19.4	8.2	—	—	
	1153	11.1	19.4	8.3	—	—	

Net O_2 Reading = Reading 2 - Reading 1 (Actual)

Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%O_2}{\%CO_2}$$

Fuel

Reported F_o

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Sample Train Tracking Form

Sample Train: OH - Hg

Date: 8/25/99

Location: Outlet

Run: 3

Sample ID: PG&E-SOHM-O-3

Train Set Up By: [signature] Date: 8/25/99 Time: 0715

Transported to Location By: [signature] Date: 8/25/99 Time: 0730

Received at Location By: [signature] Date: 8/25/99 Time: 0733

Transported to Recovery Area By: [signature] Date: 8/25/99 Time: 11:25

Received at Recovery Area By: [signature] Date: 8/25/99 Time: 1132

Train Recovered By: [signature] Date: 8/25/99 Time: 1132

Comments:

Hg

[illegible] FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-003d-00002
Client: PG&E
Facility: Salem Harbor Station
Source: Unit #3
Sample Location: Exhaust Stack
Stack Diameter: 150"
Date: 8-25-99
Run No.: PG&E-S-OHM-0-4
Operator: KLARKSO
Meterbox No.: 90336
Meterbox ΔH @:
Y Factor:

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH

Sheet 1 of 2
Train Prepared By: Ed Mackinnon
Pitot Number and Side:
Pitot Tube CP: 0.84
Filter No.:
Ambient Temp., °F: 80°F
Bar. Pressure, In. Hg.: 30.12
Assumed Moisture, %: 8
Heater Box Setting, °F: 250°F
Nozzle # / Dia., In.: PG&E-N-1 / 0.180
Probe Length / Material: 6'-GLASS 5-1 winder
Probe Heater Setting: 250°F

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
4-1	1230	0	761.863	1.65	1.39	1.40	92	92	5.0	G	259	258	66	NA	265	250
		6	765.880	1.80	1.49	1.50	92	92	5.0	G	265	260	60	—	265	253
4-2		12	769.620	1.65	1.39	1.40	93	92	5.0	G	265	260	60	—	265	252
		18	773.590	1.55	1.29	1.30	95	93	4.5	G	265	261	62	—	262	253
4-3		24	777.120	1.75	1.45	1.45	97	94	5.0	G	265	259	63	—	261	255
		30	781.050	1.75	1.45	1.45	98	95	5.0	G	265	257	63	—	264	255
STOP	1306	36	785.065													
			PORT 4 FINAL LEAK CHECK OF 0.001 CF IN 60 SEC @ 6.0 In Hg / PORT 3 INITIAL LEAK CHECK OF 0.002 CF IN 60 SEC @ 8.0 In Hg													
3-1	1311	36	785.292	1.65	1.39	1.40	96	96	5.0	G	266	264	66	NA	268	254
		42	789.040	1.80	1.49	1.50	98	96	5.0	G	266	263	64	—	266	259
3-2		48	792.840	1.70	1.41	1.40	99	96	5.0	G	265	264	64	—	265	257
		54	796.700	1.75	1.45	1.45	99	97	5.0	G	265	262	65	—	266	257
3-3		60	800.620	1.80	1.49	1.50	101	98	5.0	G	265	262	67	—	263	256
		66	804.548	1.80	1.49	1.50	101	98	5.0	G	266	264	67	—	264	256

Train Leak Check:

Before Test: 0.001 CF in 60 Seconds at 13.5 In. Hg
After Test: 0.000 CF in 60 Seconds at 9.0 In. Hg

Comments:

	Initial	Final	Static Pressure			
Pitot Tube Leak Check	✓	✓	Port			
ORSAT Train Leak Check	✓	✓	Inches H₂O			
			Inches Hg			

Project No.: [illegible]
Client: PG+E
Facility: SALEM HARBOR STATION
Source: UNIT #3

Date: [illegible]
Run No.: PG+E-S-OHM-0-4
Sample Location: 01 EXHAUST STACK
Operator: R LAAKSO

Sheet 2 of 2

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
STOP	1347	72	808.502													
	PORT 3 FINAL LEAK CHECK OF 0.001 CF IN 60 SEC @ 8.0 In Hg / PORT 2 INITIAL LEAK CHECK OF 0.002 CF IN 60 SEC @ 11.5 In Hg															
2-1	1351	72	808.725	1.70	1.41	1.40	98	98	5.0	G	266	263	66	NA	259	252
		78	812.500	1.50	1.24	1.25	98	98	5.0	G	266	262	64	—	258	253
2-2		84	816.240	1.50	1.24	1.25	99	98	5.0	G	266	263	64	—	255	251
		90	820.000	1.60	1.33	1.35	100	98	5.0	G	266	263	60	—	255	252
2-3		96	823.780	1.60	1.33	1.35	101	99	5.0	G	264	265	61	—	256	251
		102	827.670	1.60	1.33	1.35	101	99	5.0	G	266	261	61	—	256	253
STOP	1420	108	831.628													
	PORT 2 - FINAL LEAK CHECK OF 0.002 CF IN 60 SEC @ 9.0 In Hg / PORT 1 - INITIAL LEAK RATE OF 0.002 CF IN 60 SEC @ 10.5 In Hg															
1-1	1431	108	831.896	1.60	1.33	1.35	99	98	5.0	G	267	263	66	NA	259	250
		114	835.700	1.70	1.41	1.40	100	99	5.0	G	266	264	62	—	258	252
1-2		120	839.530	1.65	1.39	1.40	101	99	5.0	G	266	264	63	—	256	254
		126	843.360	1.60	1.33	1.35	101	99	5.0	G	266	266	62	—	255	250
1-3		132	847.150	1.80	1.49	1.50	102	99	5.0	G	267	266	65	—	256	252
		138	851.100	1.65	1.39	1.40	102	99	5.0	G	267	264	66	—	254	253
STOP	1507	144	854.994													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____
_____ CF in _____ Seconds at _____ In. Hg _____

Meter Reading: Stop _____ Start _____

Comments:

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

ct No.: 26046
t: PG&E
ty: Salem Harbor
:e: Outlet

Date: 8/25/99
Run No.: 4
Train Type: Ontario-Hydro
Recovery Person: [illegible]

NT HALF

No.:	N/A		
ole No.:	N/A		

Comments:

Trap No.:	N/A			
Wt. (g):				
Wt. (g):				
ollected (g):				

Comments:

NGERS

ger No.:	1	2	3	4	5	6	7
ent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Vol. (ml/g):	755.4	735.4	695.4	712.0	661.0	714.1	696.0
Vol. (ml/g):	653.4	706.4	688.0	707.5	661.5	712.9	695.5
ollected (ml/g):	102.0	29.0	7.4	5.5	-0.5	1.2	0.5

Gel Impinger:	8			Comments:
Vol. (ml/g):	919.2			~60% spent
Vol. (ml/g):	900.1			
ollected (ml/g):	19.1			

ents/Notes:

AL MOISTURE (Impingers and Silica Gel) (g) = 158.7

ORSAT ANALYSIS

Project No. 26046-0030-00002
Client PG&E
Facility Salem
Source Unit 3
Location Exhaust stack.

Date 8/25/99
Run PG&E-S-OHM-O-4
Operator MPM
Comments

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 20.8 mpm
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
	1900	11.0	19.4	8.4	—	—	
		11.0	19.4	8.4	—	—	
		11.0	19.4	8.4	—	—	

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%O_2}{\%CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Sample Train Tracking Form

ample Train: OH - Hg

Date: 8/25/99

ocation: Outlet

Run: 4

ample ID: PG&E-S-OHM-O-4

rain Set Up By: [signature]

Date: 8/25/99 Time: 0921

ransported to Location By: [signature]

Date: 8-25-99 Time: 11:00

eceived at Location By: [signature]

Date: 8-25-99 Time: 1100

ransported to Recovery Area By: [signature]

Date: 8-25-99 Time: 1520

eceived at Recovery Area By: [signature]

Date: 8/25/99 Time: 1522

rain Recovered By: [signature]

Date: 8/25/99 Time: 1522

Comments:

Hg

Appendix B.2

Calibration Data Sheets

TRC Environmental
Pitot Calibration Data
Order Number 0005266
4-Aug-99

ambient density = 0.0718 #/cu. Ft.
Reference Probe WT-1
Reference Cp = 0.99

probe P-1

trial	reference	velocity	probe side A	probe Cp	reference	velocity	probe side B	probe Cp
1	0.10	1281	0.12	0.90	0.08	1146	0.10	0.89
2	0.40	2562	0.52	0.87	0.39	2530	0.48	0.89
3	0.68	3341	0.88	0.87	0.61	3164	0.76	0.89
4	0.85	3735	1.10	0.87	0.87	3779	1.09	0.88
5	1.29	4601	1.68	0.87	1.29	4601	1.64	0.88
max	2.07	5829	2.66	0.87	1.94	5643	2.45	0.88
			Avg Cp	0.88			Avg Cp	0.88

probe P-3

trial	reference	velocity	probe side A	probe Cp	reference	velocity	probe side B	probe Cp
1	0.10	1281	0.13	0.87	0.10	1281	0.12	0.90
2	0.43	2657	0.53	0.89	0.38	2497	0.45	0.91
3	0.67	3316	0.84	0.88	0.62	3190	0.78	0.88
4	0.88	3800	1.10	0.89	0.86	3757	1.06	0.89
5	1.29	4601	1.62	0.88	1.27	4565	1.55	0.90
max	2.12	5899	2.68	0.88	1.95	5657	2.38	0.90
			Avg Cp	0.88			Avg Cp	0.90

probe P-9

trial	reference	velocity	probe side A	probe Cp	reference	velocity	probe side B	probe Cp
1	0.08	1146	0.12	0.81	0.12	1403	0.14	0.92
2	0.40	2562	0.50	0.89	0.41	2594	0.51	0.89
3	0.66	3291	0.84	0.88	0.68	3341	0.83	0.90
4	0.90	3843	1.14	0.88	0.99	4031	1.11	0.93
5	1.30	4619	1.63	0.88	1.26	4547	1.55	0.89
max	2.02	5758	2.51	0.89	2.03	5772	2.50	0.89
			Avg Cp	0.87			Avg Cp	0.90

probe 200

trial	reference	velocity	probe side A	probe Cp	reference	velocity	probe side B	probe Cp
1	0.10	1281	0.14	0.84	0.10	1281	0.14	0.84
2	0.39	2530	0.55	0.83	0.39	2530	0.54	0.84
3	0.60	3138	0.83	0.84	0.64	3241	0.89	0.84
4	0.82	3669	1.12	0.85	0.87	3779	1.19	0.85
5	1.20	4438	1.64	0.85	1.26	4547	1.74	0.84
max	2.10	5871	2.84	0.85	2.10	5871	2.88	0.85
			Avg Cp	0.84			Avg Cp	0.84

Ambient Conditions DB = 73F WB = 64F Baro =29.34 in Hg

NOZZLE CALIBRATION

	Nozzle No.	Diameter (in.) a	b	c	Average	Nozzle Set No.
pm 8/28/99	PG&E-N-1	0.179	0.180	0.180	0.180	~~Salem Harbor~~ 0.180
31/99	PG&E-N-2	0.180	0.180	0.180		
pm 31/99	PGE-N-3	0.184	0.184	0.184	0.184	~~0.18~~
	PGE-N-4	0.185	0.185	0.185	0.185	

GLASS NOZZLE CALIBRATIONS

Nozzle ID No.	Diameter (in.)			Average	Nozzle Set No.	Calibration Date
	a	b	c			
L-1-G	0.158	0.158	0.158	0.158	1	4/21/98
L-2-G	0.191	0.191	0.191	0.191	1	4/21/98
L-3-G	0.192	0.193	0.192	0.192	1	4/21/98
L-4-G	0.213	0.213	0.212	0.213	1	4/21/98
L-5-G	0.268	0.268	0.268	0.268	1	4/21/98
L-6-G	0.313	0.311	0.310	0.311	1	4/21/98
L-7-G	0.354	0.356	0.356	0.355	1	4/21/98
L-8-G	0.371	0.370	0.370	0.370	1	4/21/98
L-9-G	0.437	0.436	0.436	0.436	1	4/21/98
L-10-G	0.453	0.454	0.454	0.454	1	4/21/98
L-11-G	0.494	0.496	0.496	0.495	1	4/21/98
L-12-G	0.625	0.625	0.625	0.625	1	4/21/98
L-13-G	0.153	0.152	0.153	0.153	2	4/21/98
L-14-G	0.192	0.192	0.192	0.192	2	4/21/98
L-15-G	0.238	0.239	0.239	0.239	2	4/21/98
L-16-G	0.240	0.241	0.240	0.240	2	4/21/98
L-17-G	0.288	0.289	0.290	0.289	2	4/21/98
L-18-G	0.310	0.310	0.311	0.310	2	4/21/98
L-19-G	0.345	0.346	0.346	0.346	2	4/21/98
L-20-G	0.316	0.315	0.315	0.315	2	4/21/98
L-21-G	0.267	0.268	0.268	0.268	2	4/21/98
L-22-G	0.456	0.457	0.457	0.457	2	4/21/98
L-23-G	0.314	0.314	0.314	0.314	2	4/21/98
L-24-G	0.504	0.504	0.504	0.504	2	4/21/98
L-25-G	0.159	0.158	0.159	0.159	3	5/1/98
L-26-G	0.280	0.280	0.280	0.280	3	5/1/98
L-27-G	0.235	0.235	0.234	0.235	3	5/1/98
L-28-G	0.504	0.504	0.504	0.504	3	5/1/98
L-29-G	0.310	0.310	0.311	0.310	3	5/1/98
L-30-G	0.390	0.390	0.390	0.390	3	5/1/98
L-31-G	0.455	0.455	0.455	0.455	3	5/1/98
L-32-G	0.233	0.236	0.234	0.234	3	5/1/98
L-33-G	0.465	0.464	0.464	0.464	3	5/1/98
L-34-G	0.518	0.512	0.515	0.515	3	5/1/98
L-35-G	0.655	0.657	0.655	0.656	3	5/1/98
L-36-G	0.154	0.154	0.153	0.154	4	5/1/98
L-37-G	0.192	0.194	0.194	0.193	4	5/1/98
L-38-G	0.318	0.318	0.318	0.318	4	5/1/98
L-39-G	0.263	0.262	0.263	0.263	4	5/1/98

NOZZLE CALIBRATION

Nozzle No.	Diameter (in.)				Nozzle Set No.
	a	b	c	Average	
L-1	.220	.219	.220	.220	
L-2	.215	.216	.215	.215	
L-3	.216	.215	.217	.216	
L-4	.218	.218	.219	.218	
L-5	.219	.219	.219	.219	
L-6	.222	.221	.223	.222	
L-7	.217	.217	.216	.217	

METERBOX THERMOCOUPLE CALIBRATION FORM

METERBOX NUMBER: 90336

Thermocouple Number	Reference Temp.1 °F	Temp. Reading 1 °F	Criteria	Reference Temp.2 °F	Temp. Reading 2 °F	Criteria
#1	32.0	31		250.0	249	
#2		31			249	
#3		32			249	
#4		31			249	
#5		31			249	

Thermocouple Number	Reference Temp.3 °F	Temp. Reading 3 °F	Criteria	Reference Temp.4 °F	Temp. Reading 4 °F	Criteria
#1	500.0	500		1800.0	1800	
#2		500			1800	
#3		500			1800	
#4		500			1800	
#5		500			1800	

Name: Scott Tibbitts

Date: 8/5/99

Criteria: Percent difference between the Reference Temperature and the Average Temperature Reading can be only +/- 1.5% °R

Equation:

$$\frac{((\text{Ref. Temp.} + 460) - (\text{Temp. Reading} + 460))}{(\text{Ref. Temp.} + 460)} \times 100$$

TRC

METHOD 5 DRY GAS METER CALIBRATION

Calibrated: Scott Tibbetts

Date: 08/02/99

Barometric Pressure, 29.91 in. Hg

Meter Box No.: 90336

Orifice Manometer Setting delta H in. H_2O	Gas Volume Wet Test Meter Vw ft^3	Gas Volume Dry Test Meter Vd ft^3	Temperature: Wet Test Meter tw °F	Temperature: Dry gas meter: Inlet td_i °F	Temperature: Dry gas meter: Outlet td_o °F	Temperature: Dry gas meter: Average td_a °F	Time T min.	Y	delta H @	Deviation: Y	Deviation: delta H @
0.5	5.716	5.825	75.0	82	78	80	15.0	0.989	1.956	0.001	0.025
1.0	8.018	8.190	75.0	85	79	82	15.0	0.989	1.981	0.002	0.000
1.5	9.801	10.064	75.0	89	81	85	15.0	0.988	1.983	0.001	0.002
2.0	11.260	11.595	75.0	89	83	86	15.0	0.986	1.995	0.001	0.015
3.0	13.799	14.267	75.0	93	84	89	15.0	0.984	1.989	0.003	0.008
							AVERAGE	0.987	1.981		

CALCULATIONS

Y	delta H @
$\frac{Vw \times Pb \times (td_a + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_a + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

Y = Ratio of reading of wet test meter to dry gas meter;
Tolerance for individual value ± 0.02 from average

delta H @ = Orifice pressure differential that equates to 0.75 cfm of air at 68°F and 29.92 inches of mercury, in. H2O;
Tolerance for individual values ± 0.20 from average

METHOD 5 DRY GAS METER CALIBRATION

Calibrated: Scott Tibbetts

Date: 08/04/99

Barometric Pressure, 29.98 in. Hg

Meter Box No.: 90342

Orifice Manometer Setting delta H in. H_2O	Gas Volume Wet Test Meter Vw ft^3	Gas Volume Dry Test Meter Vd ft^3	Temperature: Wet Test Meter tw °F	Temperature: Dry gas meter: Inlet td_i °F	Temperature: Dry gas meter: Outlet td_o °F	Temperature: Dry gas meter: Average td_a °F	Time T min.	Y	delta H @	Deviation: Y	Deviation: delta H @
0.5	5.770	5.901	76.0	84	80	82	15.0	0.987	1.913	0.004	0.060
1.0	8.132	8.296	76.0	82	78	80	15.0	0.985	1.933	0.002	0.040
1.5	9.801	10.040	76.0	84	79	82	15.0	0.983	1.993	0.000	0.020
2.0	11.232	11.539	76.0	86	81	84	15.0	0.982	2.016	0.001	0.042
3.0	13.771	14.178	76.0	87	81	84	15.0	0.979	2.011	0.004	0.038
							AVERAGE	0.983	1.973		

CALCULATIONS

Y	delta H @
$\frac{Vw \times Pb \times (td_a + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_a + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

Y = Ratio of reading of wet test meter to dry gas meter;
Tolerance for individual value ± 0.02 from average

delta H @ = Orifice pressure differential that equates to 0.75 cfm of air at 68°F and 29.92 inches of mercury, in. H2O;
Tolerance for individual values ± 0.20 from average

METHOD 5 DRY GAS METER CALIBRATION

Calibrated: Scott Tibbetts

Barometric Pressure, 29.8 in. Hg

Date: 07/29/99

Meter Box No.: 90343

Orifice Manometer Setting delta H in. H_2O	Gas Volume Wet Test Meter Vw ft^3	Gas Volume Dry Test Meter Vd ft^3	Temperature: Wet Test Meter tw °F	Temperature: Dry gas meter: Inlet td_i °F	Temperature: Dry gas meter: Outlet td_o °F	Temperature: Dry gas meter: Average td_a °F	Time T min.	Y	delta H @	Deviation: Y	Deviation: delta H @
0.5	5.989	6.134	76.0	83	79	81	15.0	0.984	1.790	0.003	0.095
1.0	8.311	8.554	76.0	87	81	84	15.0	0.983	1.852	0.002	0.034
1.5	9.936	10.268	76.0	89	83	86	15.0	0.982	1.937	0.001	0.052
2.0	11.477	11.886	76.0	92	84	88	15.0	0.982	1.931	0.001	0.046
3.0	14.086	14.632	76.0	94	86	87	15.0	0.974	1.916	0.007	0.031
							AVERAGE	0.981	1.885		

CALCULATIONS

Y	delta H @
$\frac{Vw \times Pb \times (td_a + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_a + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

Y = Ratio of reading of wet test meter to dry gas meter;
Tolerance for individual value ± 0.02 from average

delta H @ = Orifice pressure differential that equates to 0.75 cfm of air at 68°F and 29.92 inches of mercury, in. H2O;
Tolerance for individual values ± 0.20 from average

METERBOX THERMOCOUPLE CALIBRATION FORM

METERBOX NUMBER: 90342

Thermocouple Number	Reference Temp.1 °F	Temp. Reading 1 °F	Criteria	Reference Temp.2 °F	Temp. Reading 2 °F	Criteria
#1	32.0	32		250.0	250	
#2		32			250	
#3		32			250	
#4		32			250	
#5		32			250	

Thermocouple Number	Reference Temp.3 °F	Temp. Reading 3 °F	Criteria	Reference Temp.4 °F	Temp. Reading 4 °F	Criteria
#1	500.0	500		1800.0	1800	
#2		500			1800	
#3		500			1800	
#4		500			1800	
#5		500			1800	

Name: Scott T. Tibbitts
Scott Tibbitts

Date: 8/4/99

Criteria: Percent difference between the Reference Temperature and the Average Temperature Reading can be only +/- 1.5% °R

Equation:

$$\frac{((\text{Ref. Temp.} + 460) - (\text{Temp. Reading} + 460))}{(\text{Ref. Temp.} + 460)} \times 100$$

TRC

METERBOX THERMOCOUPLE CALIBRATION FORM

METERBOX NUMBER: 90343

Thermocouple Number	Reference Temp.1 °F	Temp. Reading 1 °F	Criteria	Reference Temp.2 °F	Temp. Reading 2 °F	Criteria
#1	32.0	31		250.0	249	
#2		31			249	
#3		31			249	
#4		31			249	
#5		31			249	

Thermocouple Number	Reference Temp.3 °F	Temp. Reading 3 °F	Criteria	Reference Temp.4 °F	Temp. Reading 4 °F	Criteria
#1	500.0	500		1800.0	1800	
#2		500			1800	
#3		500			1800	
#4		500			1800	
#5		500			1800	

Name: Scott Tibbetts

Date: 8/5/99

Criteria: Percent difference between the Reference Temperature and the Average Temperature Reading can be only +/- 1.5% °R

Equation:

$$\frac{((\text{Ref. Temp.} + 460) - (\text{Temp. Reading} + 460))}{(\text{Ref. Temp.} + 460)} \times 100$$

TRC

APPENDIX C

SAMPLING LOG AND CHAIN-OF-CUSTODY RECORDS

Appendix C.1

Exhaust Gas Streams

(See Appendix D.1)

Appendix C.2

Process Streams

Time Start			
3-1	090747	433021	
3-2	090807	609416	TPH
3-3	090820	696180	TPH
3-4	090832	416014	TPH

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SALEM HARBOR STATION
26046-0030-00002

PULVERIZED COAL SAMPLE LOG unit 3

RUN No. 1

Feeder	Time	Recovery
3-1		
3-2		
3-3		
3-4		

FE

3-1 FS-2 cannot use Front.

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
				Samplers Sean O'Brien - PG&E Howard Schiff TRC
8/24/99	0940	3-1	3 scoops	3 scoops Taken from each of the two sampling ports
	0942	3-2	✓	L and R from each feeder cone
	0944	3-3	✓	
	0946	3-4	✓	4 Buckets of cone Riffilled twice to
8/24/99	0940	3-1	✓	obtain one composite sample bucket.
	0942	3-2	✓	
	0944	3-3	✓	
	0946	3-4	✓	
8/24/99	1010	3-1	✓	
	12	3-2	✓	
	14	3-3	✓	
	16	3-4	✓	
8/24/99	1040	3-1	✓	
	42	3-2	✓	
	44	3-3	✓	
	46	3-4	✓	
8/24/99	1110	3-1	✓	
	12	3-2	✓	
	14	3-3	✓	
	16	3-4	✓	
8/24/99	1140	3-1	✓	
	42	3-2	✓	
	44	3-3	✓	
	46	3-4	✓	
~~8/24/99~~	~~1210~~	~~3-1~~		
	~~12~~	~~3-2~~		
	~~14~~	~~3-3~~		
	~~16~~	~~3-4~~		

Run start 0910 Run End 1204

3-1		
3-2		
3-3		
3-4		

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SALEM HARBOR STATION
26046-0030-00002
unit 3

PULVERIZED COAL SAMPLE LOG

RUN No. 2

3-1		
3-2		
3-3		
3-4		

DATE	TIME	SILO #	APPROX VOLUME	COMMENT samplers – Shown on page
8/24/99	1405	3-1	3 scoops/Pot	2 ports/sample : 3 scoops per pot
	7	3-2	✓	
	9	3-3	✓	4 Buckets of coal supplied twice
	11	3-4	✓	to obtain one composite sample bucket
8/24/99	1435	3-1	✓	
	37	3-2	✓	
	39	3-3	✓	
	41	3-4	✓	
8/24/99	1505	3-1	✓	
	07	3-2	✓	
	09	3-3	✓	
	11	3-4	✓	
8/24/99	1535	3-1	✓	
	37	3-2	✓	
	39	3-3	✓	
	41	3-4	✓	
8/24/99	1605	3-1	✓	
	07	3-2	✓	
	09	3-3	✓	
	11	3-4	✓	
8/24/99	1635	3-1	✓	
	37	3-2	✓	
	39	3-3	✓	
	41	3-4	✓	
8/ /99	1705	~~3-1~~		STOP – End Test Run #2
		~~3-2~~		
		~~3-3~~		
		~~3-4~~		

Run start 1405 Run End 1615

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SALEM HARBOR STATION
26046-0030-00002

PULVERIZED COAL SAMPLE LOG
Unit 3
RUN No. 3

Log Sheet

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
				Sampler - Shaun O'Brien - GPE
8/25/99	0830	3-1	35 cups/pt x 2 ✓	35 cups/pt 2 pts / Feeder
	33	3-2	✓	
	36	3-3	✓	4 buckets mixed juice to obtain one
	39	3-4	✓	composite sample bucket
8/25/99	0900	3-1	✓	
	03	3-2	✓	
	06	3-3	✓	
	09	3-4	✓	
8/25/99	0930	3-1	✓	
	33	3-2	✓	
	36	3-3	✓	
	39	3-4	✓	
8/25/99	1000	3-1	✓	
	03	3-2	✓	
	06	3-3	✓	
	09	3-4	✓	
8/25/99	1030	3-1	✓	
	33	3-2	✓	
	36	3-3	✓	
	39	3-4	✓	
8/25/99	1100	3-1	✓	
	03	3-2	✓	
	06	3-3	✓	
	09	3-4	✓	end sample at 1111
~~8/25/99~~	~~1130~~	~~3-1~~		
	~~33~~	~~3-2~~		
	~~36~~	~~3-3~~		
	~~39~~	~~3-4~~		

Rem shot 0830

Rem end 1111

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SALEM HARBOR STATION
26046-0030-00002
UNIT 3

PULVERIZED COAL SAMPLE LOG

RUN No. 4

DATE	TIME	SILO #	APPROX VOLUME	COMMENT: Sampler Shawn O'Brien PGE
8/21/99	1230	3-1	3 scoop/port	3 scoops/port 2 port per feeder
	33	3-2	✓	
	36	3-3	✓	4 buckets refilled twice to
	39	3-4	✓	obtain one composite sample
8/21/99	1300	3-1	✓	bucket.
	03	3-2	✓	
	06	3-3	✓	
	09	3-4	✓	
8/21/99	1330	3-1	✓	
	33	3-2	✓	
	36	3-3	✓	
	39	3-4	✓	
8/21/99	1400	3-1	✓	
	03	3-2	✓	
	06	3-3	✓	
	09	3-4	✓	
8/21/99	1430	3-1	✓	
	33	3-2	✓	
	36	3-3	✓	
	39	3-4	✓	
8/21/99	1500	3-1	✓	
	03	3-2	✓	
	06	3-3	✓	
	09	3-4	✓	
~~8/21/99~~	~~1530~~	~~3-1~~		
		~~3-2~~		
		~~3-3~~		
		~~3-4~~		

Run start 1230 Run end 1509

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26046-0030-00002

UREA SOLUTION SAMPLE (500 ML GRABS) AND DATA LOG

Sampler Schiff TAC

Unit 3 RUN No. 1

DATE	SKID #1 TIME	GRAB Y/N	WATER GPM	WATER TOTAL	UREA GPH	UREA TOTAL	SKID #2 TIME	GRAB Y/N	WATER GPM	WATER TOTAL	UREA GPH	UREA TOTAL
8/24/99	0917	✓	6.9	957273	56.9	768023	09/24 0914		7.4	167454	56.7	375859
8/24/99	0941	✓	7.3		56.2		0942	✓	7.5		56.4	
8/24/99	1011	✓	7.1		56.5		1012	✓	7.5		56.6	
8/24/99	1041	✓	6.6		56.5		1042	✓	7.3		56.7	
8/24/99	1110	✓	6.6		56.9		1112	✓	7.3		56.5	
8/24/99	1141	✓	6.6		56.5		1142	✓	7.3		56.4	
	1211						1211					
	1251			958809			1254	W -	overall	169126		376067
	1252					768233				158879		
	1259											

Run start 0910
Run end 1204

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SALEM HARBOR STATION
26046-0030-00002
Unit 3

UREA SOLUTION SAMPLE (500 ML GRABS) AND DATA LOG

RUN No. 2

Sampler: Howard Schell TRC / MARK Gollovers TRC

	SKID #1						SKID #2					
		GRAB	WATER		UREA			GRAB	WATER		UREA	
DATE	TIME	Y/N	GPM	TOTAL	GPH	TOTAL	TIME	Y/N	GPM	TOTAL	GPH	TOTAL
8/24/99	1405	✓	6.7	959246			1406	✓	7.3		56.6	376154
8/24/99	1405				57.0	768295	1406		~~169627~~	169627	56.9	
	1435	✓	6.8		56.8			✓	7.4			
	1505	✓	7.2		56.4		1505	✓	7.5		56.7	
	1535	✓	7.1		57.0		1535	✓	7.5		57.0	
	1610	✓	7.1		56.6		1610	✓	7.5		56.8	
1642	~~1635~~	✓	7.0		54.1		1642	✓	7.5		54.3	
	1705		End Test Run #1	960495		768458	1705		End Test Run #2	170973		~~768458~~
												576297

Run start 1405
Run End 1655

PG & E GENERATING
SALEM HARBOR STATION
26046-0030-00002
UNIT 3

UREA SOLUTION SAMPLE (500 ML GRABS) AND DATA LOG

RUN No. 3

Stangler/Kschmitt/Tc

DATE	SKID #1 TIME	GRAB Y/N	WATER GPM	WATER TOTAL	UREA GPH	UREA TOTAL	SKID #2 TIME	GRAB Y/N	WATER GPM	WATER TOTAL	UREA GPH	UREA TOTAL
8/21/99	081815		✓	965794			081931					378917
8/21/99	081849					769083	081956			177376		
8/21/99	0831	✓	7.1		48.37		0832	✓	7.6		44.2	
8/21/99	0901	✓	7.1		47.4		0902	✓	7.6		41.0	
8/21/99	0931	✓	7.1		48.4		0932	✓	7.5		46.1	
8/4/99	1001	✓	7.1		49.3		1002	✓	7.6		48.4	
8/25/99	1031		7.1		51.2		1032		7.5		51.5	
8/25/99	1101		7.0		57.4		1102		7.5		52.1	
	111100			967085			111204					
	111136					769228	111250			179673		370058

Run start 0830
Run end 1111

PG & E GENERATING
SALEM HARBOR STATION
26046-0030-00002
Unit 3

UREA SOLUTION SAMPLE (500 ML GRABS) AND DATA LOG

RUN No. ~~1~~ 4

	SKID #1						SKID #2					
		GRAB	WATER		UREA			GRAB	WATER		UREA	
DATE	TIME	Y/N	GPM	TOTAL	GPH	TOTAL	TIME	Y/N	GPM	TOTAL	GPH	TOTAL
8/25/99	1231	19	6.9		48.6	769296	1229	7	7.5	180256	41.9	
8/25/99	1232	✓	~~[illegible]~~	967586			1230	23 ✓				377129
8/25/99	1301	✓	7.1		48.6		1300	✓	7.5		41.9	
8/25/99	1331	✓	6.9		47.9		1330	✓	7.8		46.3	
8/25/99	1401	✓	6.9		48.7		1400	✓	7.4		49.2	
8/25/99	1431	✓	6.9		48.3		1430	✓	7.5		48.7	
8/25/99	1501	✓	7.0		48.7		1500	✓	7.6		49.0	
8/25/99	1509			~~[illegible]~~ 101			1520	38		171469		377254
	1509	49			~~[illegible]~~	769427	1511	09				

Run Start 1230
Run End 1509

Project Name: [illegible]
Project No.: 26046-0030-00002
Sampling Date(s): 8/24 & 8/25/99
Laboratory:
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name: TRC

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous - UREA	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-S-OHM-1U-S1	8/24/99	500mL	G	+						UREA solution skid 1	+										
PG&E-S-OHM-1U-S2	8/24/99	500mL	G	+						urea solution skid 2	+										
PG&E-S-OHM-2U-S1	8/24/99	500mL	G	+						urea solution skid 1	+										
PG&E-S-OHM-2U-S2	8/24/99	500mL	G	+						urea solution skid 2	+										
PG&E-S-OHM-3U-S1	8/25/99	500mL	G	+						urea solution skid 1	+										
PG&E-S-OHM-3U-S2	8/25/99	500mL	G	+						urea solution skid 2	+										
PG&E-S-OHM-4U-S1	8/25/99	500mL	G	+						urea solution skid 1	+										
PG&E-S-OHM-4U-S2	8/25/99	500mL	G	+						urea solution skid 2	+										

Relinquished by: [signature]	Date/Time: 8/26/99 1300	Relinquished by: [signature]	Date/Time: 9-1-99 1500
Received by: [signature]	Date/Time: 9-1-99 1100	Received by:	Date/Time:

REMARKS (*):

№ 10067

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC
TRC Environmental Corporation

Project Name: PG&E Salem Harbor
Project No.: 76046 - 0030 - 0000
Sampling Date(s): 8/21/21/99
Laboratory:
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other (Specify)	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	[illegible]*	[illegible]*	Comments
PG&E-S-OHM-1GC	8/21/99	5 gal	P					X			X		X						X				Run 1 composite
PG&E-S-OHM-2GC	8/21/99	5 gal	P					X			X		X						X				Run 2 composite
PG&E-S-OHM-3GC	8/21/99	5 gal	P					X			X		X						X				Run 3 composite
PG&E-S-OHM-4GC	8/21/99	5 gal	P					X			X		X						X				Run 4 composite

Relinquished by:	Date/Time:	Relinquished by:	Date/Time:
Received by:	Date/Time:	Received by:	Date/Time:

REMARKS (*): PROXIMATE (Moisture, Ash, Sulfur, Volatile, BTU/lb)

10032

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC
TRC Environmental Corporation

PSC
PHILIP SERVICES

INORGANIC DATA PACKAGE
FOR
TRC ENVIRONMENTAL CORPORATION
Project # 26046

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

Submission #: 9H0989

Prepared by : Janice Joseph - CSR Initial : _____
Approved by : Dr. Ron McLeod - Principal Scientist Initial : _____

1. CASE NARRATIVE

PROJECT NARRATIVE

PHILIP Analytical Services (Burlington ON)
Philip Project: AN990787
Philip Submission #:9H0989

Client: TRC Environmental Corporation
Client Project: 26046

I. SAMPLE RECEIPT/ANALYSIS

a) Sample Listing

Philip ID	Client Sample ID	Date Sampled	Date Received	Date Prepped	Run Date
Mercury via SW846 Method 7471A					
047506 99	Method Blank	99/08/24	99/08/27	99/10/12	99/10/12
047507 99	PG&E-S-OHM-Ia-1-A	99/08/24	99/08/27	99/10/12	99/10/12
047508 99	PG&E-S-OHM-Ib-1-A	99/08/22	99/08/27	99/10/12	99/10/12
047509 99	PG&E-S-OHM-Ia-2-A	99/08/24	99/08/27	99/10/12	99/10/12
047510 99	PG&E-S-OHM-Ib-2-A	99/08/24	99/08/27	99/10/12	99/10/12
047511 99	PG&E-S-OHM-Ia-3-A	99/08/25	99/08/27	99/10/12	99/10/12
047512 99	PG&E-S-OHM-Ib-3-A	99/08/25	99/08/27	99/10/12	99/10/12
047513 99	PG&E-S-OHM-Ia-4-A	99/08/25	99/08/27	99/10/12	99/10/12
047514 99	PG&E-S-OHM-Ib-4-A	99/08/25	99/08/27	99/10/12	99/10/12
047556 99	NIST 1633b coal ash	99/08/30	99/08/30	99/10/12	99/10/12
Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- Front Half					
047488 99	Method Blank	99/08/24	99/08/27	99/10/08	99/10/08
047489 99	PG&E-S-OHM-RB	99/08/24	99/08/27	99/10/09	99/10/09
047490 99	PG&E-S-OHM-I-FB	99/08/23	99/08/27	99/10/08	99/10/08
047499 99	PG&E-S-OHM-O-FB	99/08/23	99/08/27	99/10/08	99/10/08
047500 99	PG&E-S-OHM-O-1	99/08/24	99/08/27	99/10/08	99/10/08
047501 99	PG&E-S-OHM-O-2	99/08/24	99/08/27	99/10/08	99/10/08
047502 99	PG&E-S-OHM-O-3	99/08/25	99/08/27	99/10/08	99/10/08
047503 99	PG&E-S-OHM-O-4	99/08/25	99/08/27	99/10/09	99/10/09
047488 99	Method Blank	99/08/24	99/08/27	99/10/10	99/10/10
047491 99	PG&E-S-OHM-Ia-1	99/08/24	99/08/27	99/10/10	99/10/10
047492 99	PG&E-S-OHM-Ib-1	99/08/22	99/08/27	99/10/10	99/10/10
047493 99	PG&E-S-OHM-Ia-2	99/08/24	99/08/27	99/10/10	99/10/10
047494 99	PG&E-S-OHM-Ib-2	99/08/24	99/08/27	99/10/10	99/10/10
047495 99	PG&E-S-OHM-Ia-3	99/08/25	99/08/27	99/10/10	99/10/10
047496 99	PG&E-S-OHM-Ib-3	99/08/25	99/08/27	99/10/10	99/10/10
047497 99	PG&E-S-OHM-Ia-4	99/08/25	99/08/27	99/10/10	99/10/10
047498 99	PG&E-S-OHM-Ib-4	99/08/25	99/08/27	99/10/10	99/10/10

Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- Hydroxylamine

047488 99	Method Blank	99/08/24	99/08/27	99/10/01	99/10/01
047489 99	PG&E-S-OHM-RB	99/08/24	99/08/27	99/10/01	99/10/01

Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- KCl Impingers/Rinses

047488 99	Method Blank	99/08/24	99/08/27	99/09/20	99/09/20
047489 99	PG&E-S-OHM-RB	99/08/24	99/08/27	99/09/20	99/09/20
047490 99	PG&E-S-OHM-I-FB	99/08/23	99/08/27	99/09/20	99/09/20
047491 99	PG&E-S-OHM-Ia-1	99/08/24	99/08/27	99/09/20	99/09/20
047492 99	PG&E-S-OHM-Ib-1	99/08/22	99/08/27	99/09/20	99/09/20
047493 99	PG&E-S-OHM-Ia-2	99/08/24	99/08/27	99/09/20	99/09/20
047494 99	PG&E-S-OHM-Ib-2	99/08/24	99/08/27	99/09/20	99/09/20
047495 99	PG&E-S-OHM-Ia-3	99/08/25	99/08/27	99/09/20	99/09/20
047496 99	PG&E-S-OHM-Ib-3	99/08/25	99/08/27	99/09/20	99/09/20
047497 99	PG&E-S-OHM-Ia-4	99/08/25	99/08/27	99/09/20	99/09/20
047498 99	PG&E-S-OHM-Ib-4	99/08/25	99/08/27	99/09/20	99/09/20
047499 99	PG&E-S-OHM-O-FB	99/08/23	99/08/27	99/09/20	99/09/20
047500 99	PG&E-S-OHM-O-1	99/08/24	99/08/27	99/09/20	99/09/20
047501 99	PG&E-S-OHM-O-2	99/08/24	99/08/27	99/09/20	99/09/20
047502 99	PG&E-S-OHM-O-3	99/08/25	99/08/27	99/09/20	99/09/20
047503 99	PG&E-S-OHM-O-4	99/08/25	99/08/27	99/09/20	99/09/20

Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- KMNO4 Impingers/Rinses

047488 99	Method Blank	99/08/24	99/08/27	99/09/20	99/09/20
047489 99	PG&E-S-OHM-RB	99/08/24	99/08/27	99/09/20	99/09/20
047490 99	PG&E-S-OHM-I-FB	99/08/23	99/08/27	99/09/20	99/09/20
047491 99	PG&E-S-OHM-Ia-1	99/08/24	99/08/27	99/09/20	99/09/20
047492 99	PG&E-S-OHM-Ib-1	99/08/22	99/08/27	99/09/20	99/09/20
047493 99	PG&E-S-OHM-Ia-2	99/08/24	99/08/27	99/09/20	99/09/20
047494 99	PG&E-S-OHM-Ib-2	99/08/24	99/08/27	99/09/20	99/09/20
047495 99	PG&E-S-OHM-Ia-3	99/08/25	99/08/27	99/09/20	99/09/20
047496 99	PG&E-S-OHM-Ib-3	99/08/25	99/08/27	99/09/20	99/09/20
047497 99	PG&E-S-OHM-Ia-4	99/08/25	99/08/27	99/09/20	99/09/20
047498 99	PG&E-S-OHM-Ib-4	99/08/25	99/08/27	99/09/20	99/09/20
047499 99	PG&E-S-OHM-O-FB	99/08/23	99/08/27	99/09/20	99/09/20
047500 99	PG&E-S-OHM-O-1	99/08/24	99/08/27	99/09/20	99/09/20
047501 99	PG&E-S-OHM-O-2	99/08/24	99/08/27	99/09/20	99/09/20
047502 99	PG&E-S-OHM-O-3	99/08/25	99/08/27	99/09/20	99/09/20
047503 99	PG&E-S-OHM-O-4	99/08/25	99/08/27	99/09/20	99/09/20

Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- HNO3/H202 Impingers/Rinses

047488 99	Method Blank	99/08/24	99/08/27	99/09/07	99/09/08
047489 99	PG&E-S-OHM-RB	99/08/24	99/08/27	99/09/07	99/09/08
047490 99	PG&E-S-OHM-I-FB	99/08/23	99/08/27	99/09/07	99/09/08
047491 99	PG&E-S-OHM-Ia-1	99/08/24	99/08/27	99/09/07	99/09/08
047492 99	PG&E-S-OHM-Ib-1	99/08/22	99/08/27	99/09/07	99/09/08
047493 99	PG&E-S-OHM-Ia-2	99/08/24	99/08/27	99/09/07	99/09/08
047494 99	PG&E-S-OHM-Ib-2	99/08/24	99/08/27	99/09/07	99/09/08
047495 99	PG&E-S-OHM-Ia-3	99/08/25	99/08/27	99/09/07	99/09/08

2. ANALYTICAL DATA REPORT

PSC
PHILIP SERVICES

December 6, 1999

Ed McKinnon
TRC Environmental Corp
Booth Mills South, Foot of John Street
Lowell, MA
01852

Dear Mr. McKinnon:

Re Correction on Proj# 26046, PG&E (PASC Submission # 9H0989):

Regretfully, we must inform you that there were calculation errors on some of the draft ASTM mercury speciation data reported to you in the past. The portions that were impacted are the KCl and KMnO4 impinger data which were reported high by a factor of 9/4th relative to the correct value.

The error occurred where a correction factor for sample vs standard prep of 1.5 was applied to the data in the wrong direction - a multiplication rather than a division. The 1.5 factor compensates for a 1.5-fold dilution of the standards during the preparation of these digested standards.

Enclosed is a revised report that presents the final results to the correct values. In regard to the corresponding data packages; the concentrations on the corresponding run sequence tables are incorrect since the dilution factors were entered as 1.5 (or appropriate dilutions of this value) rather than 0.667. The corresponding final ug of mercury per train portion as reported on the run sequence tables and on the validation tables have been reported high by the factor of 9/4th. I have enclosed copies of example pages from the original data package in which these errors are present. Instead of correcting each erroneous page of the original package, I request that with the data package as submitted to you prior, you include this letter of explanation and the enclosed revised report.

Of course quality data is of great concern to Philip and since this error has past several review stages before it has been identified, our review processes must be re-evaluated. We will also keep you informed as to the appropriated corrective actions that we implement to ensure that such an error will not repeat.

Should you have any questions in this regard please do not hesitate to contact me at extension 236 or the QA/QC scientist, Gerry Bengert, at extension 248.

Yours truly,

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

cc: Gerry Bengert

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

PHILIP SERVICES

Certificate of Analysis

CLIENT INFORMATION

Attention: Ed McKinnon
Client Name: TRC Environmental Corporation
Project: 26046
Project Desc: PG&E

Address: Boott Mills South, Foot of John Street
Lowell, MA
MA 01852
Fax Number: 978-453-1995
Phone Number: 978-970-5600

LABORATORY INFORMATION

Contact: Ron McLeod
Project: AN990787
Date Received: 99/08/27
Date Reported: 99/10/12

Submission No.: 9H0989
Sample No.: 047488-047503

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: **Revision 99/12/03**

Certified by:

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

12/3/99

PASC - Certificate of Analysis

			Method Blank	Blank Spike#1	Blank Spike#1	Blank Spike#2	Blank Spike#2	PG&E S-OHM-RB	PG&E S-OHM-I-FB	PG&E S-OHM-Ia-1	PG&E S-OHM-Ia-1
Client ID:			Blank	Spike#1	Spike#1	Spike#2	Spike#2	S-OHM-RB	S-OHM-I-FB	S-OHM-Ia-1	S-OHM-Ia-1
Lab No.:			047488 99	047488 99	047488 99	047488 99	047488 99	047489 99	047490 99	047491 99	047491 99
Date Sampled:			-	-	-	-	-	99/08/24	99/08/23	99/08/24	99/08/24
Component	**MDL**	**Units**			% Recoveries		% Recoveries				Duplicate
Impinger volume - hydroxylamine		ml	100	-	-	-	-	100	-	-	-
Final volume - KCl - combined		"	100	-	-	-	-	1000	1000	1000	-
Final volume - KMnO4 - combined		"	100	-	-	-	-	90	440	580	-
Mercury - FH (Outlet)	0.010	ug	<	0.10	100	0.10	100	<	<	-	-
Mercury - FH (Inlet)	0.010	"	<	0.10	100	0.099	99	-	-	3.2	-
Mercury - hydroxylamine	0.010	"	<	-	-	-	-	<	-	-	-
Mercury - KCl	0.030	"	<	0.13	100	0.13	99	<	0.066	0.49	0.49
Mercury - KMnO4	0.030	"	<	0.10	100	0.10	100	<	0.14	1.1	1.1
Mercury - H202	0.010	"	<0.25	0.10	100	0.097	97	<0.25	<0.25	<0.25	-

Client:TRC Environmental Corporation Project:26046

12/3/99

PASC - Certificate of Analysis

Client ID:			PG&E S-OHM-Ia-1	PG&E S-OHM-Ia-1	PG&E S-OHM-Ia-1	PG&E S-OHM-Ia-1	PG&E S-OHM-Ib-1	PG&E S-OHM-Ib-1
Lab No.:			047491 99	047491 99	047491 99	047491 99	047492 99	047492 99
Date Sampled:			99/08/24	99/08/24	99/08/24	99/08/24	99/08/22	99/08/22
Component	**MDL**	**Units**	M. Spike	MS % Rec.	MS Dup	MSD % Rec.		Duplicate
Impinger volume - hydroxylamine		ml	-	-	-	-	-	-
Final volume - KCl - combined		"	-	-	-	-	1000	-
Final volume - KMnO4 - combined		"	-	-	-	-	600	-
Mercury - FH (Outlet)	0.010	ug	-	-	-	-	-	-
Mercury - FH (Inlet)	0.010	"	-	-	-	-	2.8	2.8
Mercury - hydroxylamine	0.010	"	-	-	-	-	-	-
Mercury - KCl	0.030	"	0.94	95	0.94	95	0.62	-
Mercury - KMnO4	0.030	"	2.5	95	2.6	96	0.60	-
Mercury - H202	0.010	"	-	-	-	-	<0.25	-

Client:TRC Environmental Corporation Project:26046

PASC - Summary of Analysis Pre. Dates

	047497 99	
	047498 99	
Run Date:	99/09/20	99/09/20
Date of Sample Prep:	99/09/20	99/09/20
Batch Code:	**0907NRA2**	**0907NRA3**
Mercury - H202	047488 99	047493 99
	047489 99	047494 99
	047490 99	047495 99
	047491 99	047496 99
	047492 99	047497 99
		047498 99
		047499 99
		047500 99
		047501 99
		047502 99
		047503 99
Run Date:	99/09/08	99/09/08
Date of Sample Prep:	99/09/07	99/09/07

PHILIP SERVICES

Certificate of Analysis

CLIENT INFORMATION

Attention: Michael P. Martin
Client Name: TRC Environmental Corporation
Project: 26046
Project Desc: PG&E

Address: Boott Mills South, Foot of John Street
Lowell, MA
MA 01852
Fax Number: 978-453-1995
Phone Number: 978-970-5600

LABORATORY INFORMATION

Contact: Ron McLeod
Project: AN990787
Date Received: 99/08/27
Date Reported: 99/10/13

Submission No.: 9H0989
Sample No.: 047506-047556

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:

10/14/99

PASC - Certificate of Analysis

			PG&E	PG&E	PG&E	NIST 1633b	NIST 1633b	NIST 1633b	NIST 1633b	NIST 1633b
Client ID:			S-OHM-Ib-3-A	S-OHM-Ia-4-A	S-OHM-Ib-4-A	coal ash	coal ash	coal ash	coal ash	coal ash
Lab No.:			047512 99	047513 99	047514 99	047556 99	047556 99	047556 99	047556 99	047556 100
Date Sampled:			99/08/25	99/08/25	99/08/25	99/08/30	99/08/30	99/08/30	99/08/30	99/08/31
Component	**MDL**	**Units**					Duplicate	M. Spike	MS % Rec.	Theoretical
Weight of sample	0.0001	g	12.4	9.4	12.8	-	-	-	-	-
Mercury	0.04	mg/kg	0.31	0.40	0.34	0.13	0.13	1.2	100	0.141

Client:TRC Environmental Corporation Project:26046

3. RAW DATA

/10/09 19:17:56 Printed by MGAS LDCA DATA TO BE VALIDATED (METVAL')

on ber	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
796	TRC-LO	OHM-RB	Mercury -	PV	0.006						99/10/08	1GFL	99/10/08	MG01	58.	52.	
008	INTERNAL		Mercury -	PV	-0.005	-99999.0	0.102	102.	0.102	102.	99/10/08	1GFL	99/10/08	MG01	$$$	$$$	
795	TRC-LO	MB R456	Mercury -	PV	-0.005	-99999.0	0.103	103.	0.103	103.	99/10/08	2GFL	99/10/08	MG01	58.	52.	
797	TRC-LO	[redacted]	Mercury -	PV	-0.005						99/10/08	2GFL	99/10/08	MG01	59.	52.	
804	TRC-LO		Mercury -	PV	0.047	0.047	0.149	101.	0.148	101.	99/10/08	2GFL	99/10/08	MG01	58.	52.	*PDS*
805	TRC-LO		Mercury -	PV	0.043						99/10/08	2GFL	99/10/08	MG01	58.	52.	
806	TRC-LO		Mercury -	PV	0.046						99/10/08	2GFL	99/10/08	MG01	58.	52.	
807	TRC-LO		Mercury -	PV	0.034						99/10/08	2GFL	99/10/08	MG01	58.	52.	
808	TRC-LO		Mercury -	PV	0.034						99/10/08	2GFL	99/10/08	MG01	57.	52.	
809	TRC-LO		Mercury -	PV	0.029						99/10/08	2GFL	99/10/08	MG01	57.	52.	
888	TRC-LO		Mercury -	PV	0.005						99/10/08	2GFL	99/10/08	MG01	59.	52.	
488	TRC-LO	MB R456	Mercury -	PV	-0.005	-99999.0	0.103	103.	0.103	103.	99/10/08	2GFL	99/10/08	MG01	45.	42.	
490	TRC-LO	PG&E-S-OHM-I-FB	Mercury -	PV	0.006						99/10/08	2GFL	99/10/08	MG01	46.	42.	
1008	INTERNAL		Mercury -	PV	-0.005	-99999.0	0.103	103.	0.103	103.	99/10/08	2GFL	99/10/08	MG01	$$$	$$$	
7499	TRC-LO	PG&E-S-OHM-O-FB	Mercury -	PV	-0.005	-0.005	0.103	101.	0.105	102.	99/10/08	3GFL	99/10/08	MG01	46.	42.	*PDS*
7500	TRC-LO	PG&E-S-OHM-O-1	Mercury -	PV	0.105						99/10/08	3GFL	99/10/08	MG01	45.	42.	
7501	TRC-LO	PG&E-S-OHM-O-2	Mercury -	PV	0.136						99/10/08	3GFL	99/10/08	MG01	45.	42.	
7502	TRC-LO	PG&E-S-OHM-O-3	Mercury -	PV	0.169						99/10/08	3GFL	99/10/08	MG01	44.	42.	
1008	INTERNAL		Mercury -	PV	-0.005	-99999.0	0.101	101.	0.100	100.	99/10/08	3GFL	99/10/08	MG01	$$$	$$$	

19 Tests for OHFLT with an MDL of 0.010 ug Validated By CMK Control Chart Updated N/A IO Requirements met N/A

00023

C AUTOSAMPLER RUN LOG (MERCURY)

Matrix: IMP. (OHFCT)

:: 99.10.08 Run Code: MG01 MDL: 0.01

lyst: MG Units: µg (see comments)

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			Std 5 (S5)	2.0		
			Std 6 (S6)	2.5		
			ICV			
			B (Std 1)			
			D4 (Std 4)			
1						
2						
3						
4						
15						
16						
17						
18						
19						
20						
21			B			
22			D4			
23			44805			
24			"			
25			44806			
26			"			
27			44807			
28			"			
29			44808			
30			"			
31			44809			
32			"			
33			44888			
34			44888			
35			47490			
36			"			
37			47489 a			
38			"			
39			47489 b			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			47489 c			
42			"			
43			CCV			
44			B			
45			D4			
46			BL1008	36 ng		
47			"			
48			BL1008 S			
49			"			
50			BL1008 DS			
51			"			
52			47499			
53			"			
54			47499 D			
55			"			
56			47499 S			
57			"			
58			47499 DS			
59			"			
60			47500			
61			"			
62			47501			
63			"			
64			47502			
65			"			
66			CCV			
67			B			
68			D4			
69			47503	REPEATED		
70			"			
71			51449 a			
72			"			
73			51449 b			
74			"			
75			51449 c			
76			"			
77			51450			
78			"			
79			51459			
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.

C AUTOSAMPLER RUN LOG (MERCURY)

Matrix: IMP (OHFLT)

e: 99.10.08 Run Code: MG01

MDL: 0.01

lyst: MG Units: µg (see comments)

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			Std 5 (S5)	2.0		
			Std 6 (S6)	2.5		
			ICV			
			B (Std 1)			
			D4 (Std 4)			
12			WS 378			
13			ORG. REF			
14			BL1008	1GFL		
15			"			
16			BL1008 S			
17			"			
18			BL1008 DS			
19			"			
20			54470			
21			"			
22			54470 D			
23			"			
24			54470 S			
25			"			
26			54470 DS			
27			"			
28			42478			
29			"			
30			42478 D			
31			"			
32			42478 S			
33			"			
34			CCV			
35			B			
36			D4			
37			42478 DS			
38			"			
39			42477 a			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			42477 b			
42			"			
43			42477 c			
44			"			
45			42479			
46			"			
47			42480			
48			"			
49			42481			
50			"			
51			42515			
52			"			
53			42516			
54			"			
55			42517			
56			"			
57			CCV			
58			B			
59			D4			
60			42518			
61			"			
62			44796			
63			"			
64			BL1008	2GFL		
65			"			
66			BL1008 S			
67			"			
68			BL1008 DS			
69			"			
70			44804			
71			"			
72			44804 D			
73			"			
74			44804 S			
75			"			
76			44804 DS			
77			"			
78			44797			
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.

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

C AUTOSAMPLER RUN LOG (MERCURY)

e: 99.10.08 Run Code: MG01 Matrix: IMP. (OHFLT)

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

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			Std 5 (S5)	2.0		
			Std 6 (S6)	2.5		
			ICV			
0			B (Std 1)			
1			D4 (Std 4)			
2						
3						
14						
15						
16						
17						
18						
19						
20						
21		1/10	51460			
22			"			
23			51461			
24			"			
25			BL1008	4GFL		
26			"			
27			BL1008 S			
28			"			
29			CCV			
30			B			
31			D4			
32			BL1008 DS			
33			"			
34			51664			
35			"			
36			51664 D			
37			"			
38			51664 S			
39			"			
40			51664 DS			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			51664 DS			
42		1/10	51462			
43			"			
44			51463			
45			"			
46			53129 a			
47			"			
48			53129 b			
49			"			
50			53129 c			
51			"			
52			CCV			
53			B			
54			D4			
55			53130			
56			"			
57			53138			
58			"			
59			53139			
60			"			
61			53140			
62			"			
63			53141			
64			"			
65			53142			
66			"			
67			BL1008	5GFL		
68			"			
69			BL1008 S			
70			"			
71			BL1008 DS			
72			"			
73			53144			
74			"			
75			CCV			
76			B			
77			D4			
78			53144 D			
79			"			
80			53144 S			

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.

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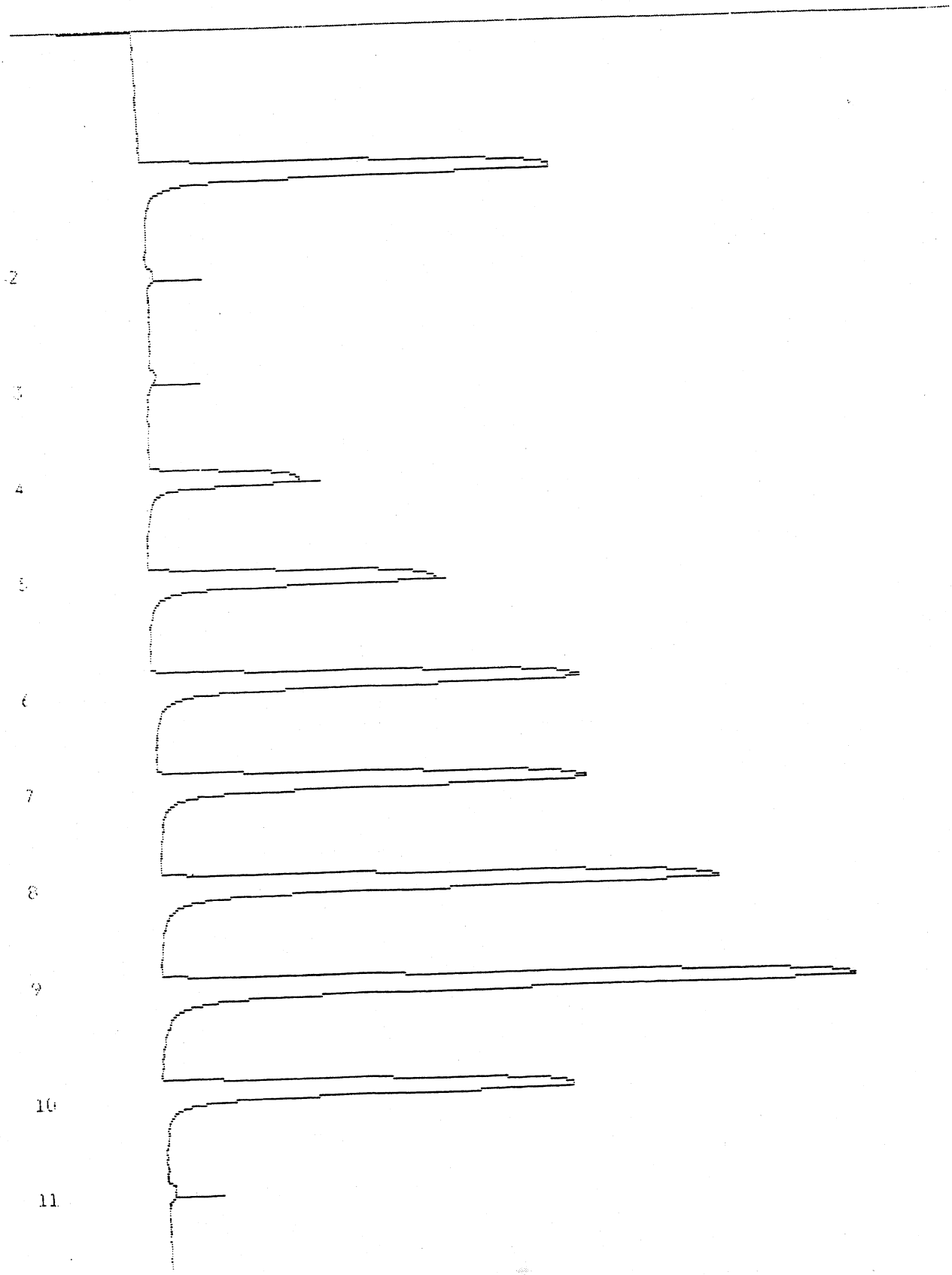

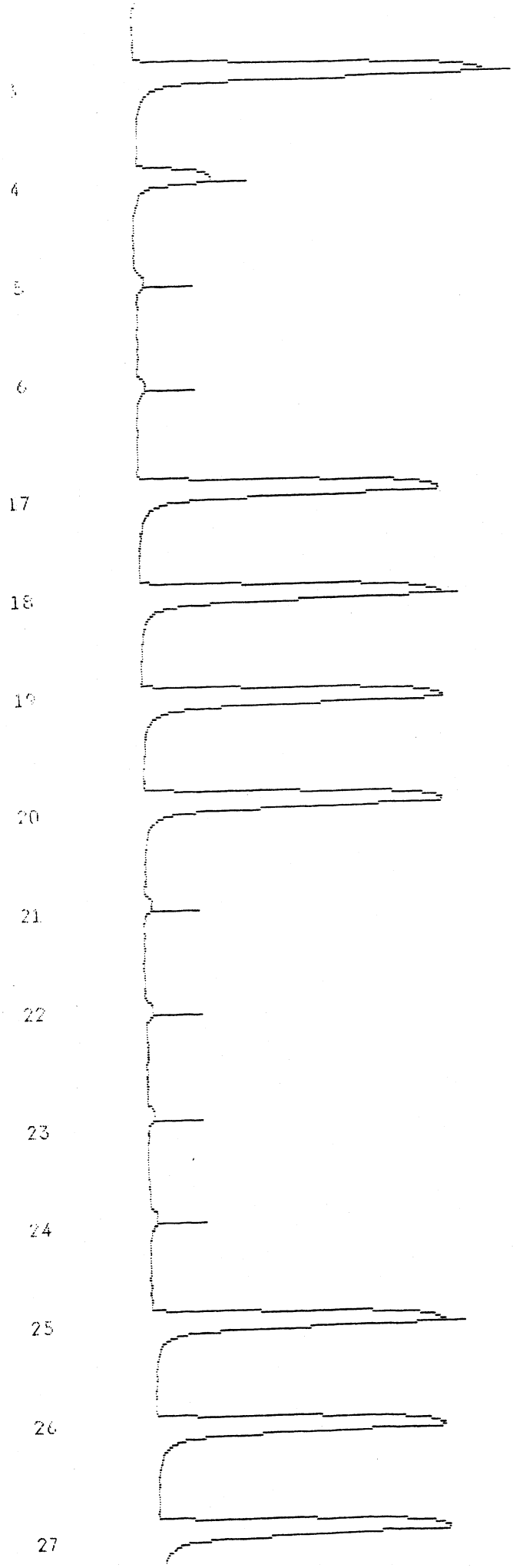
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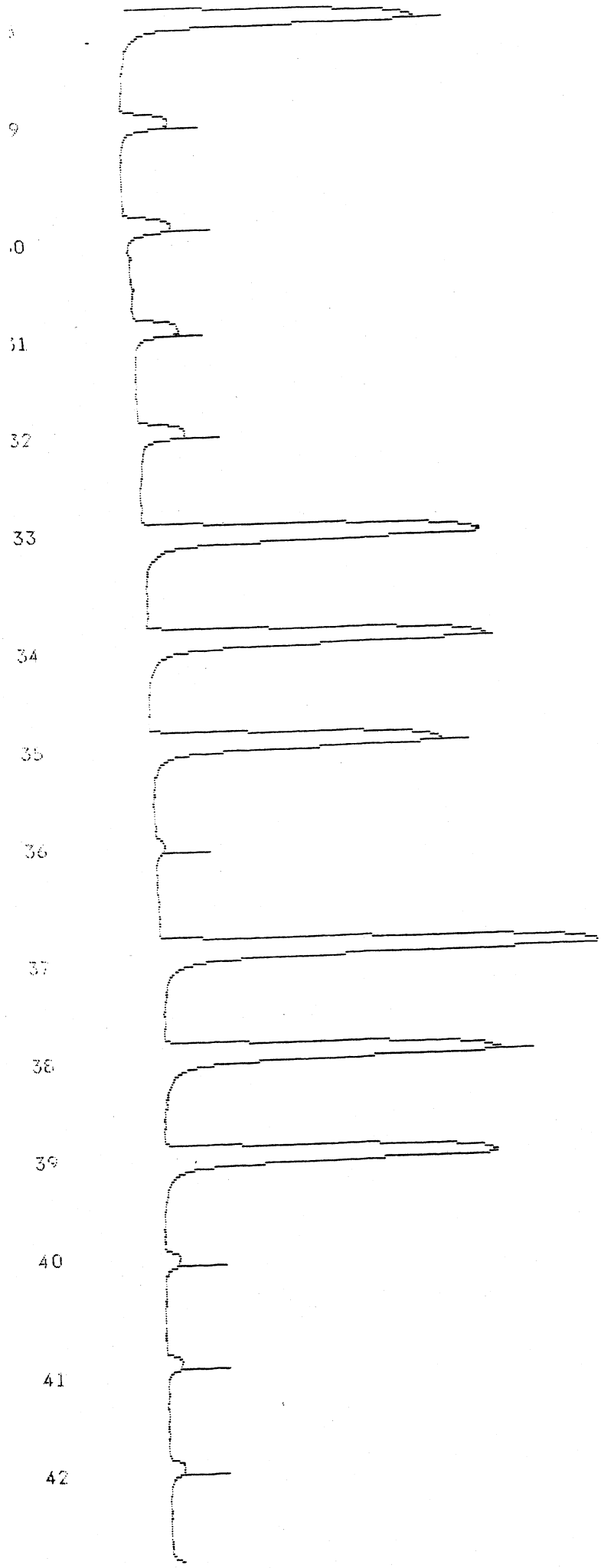
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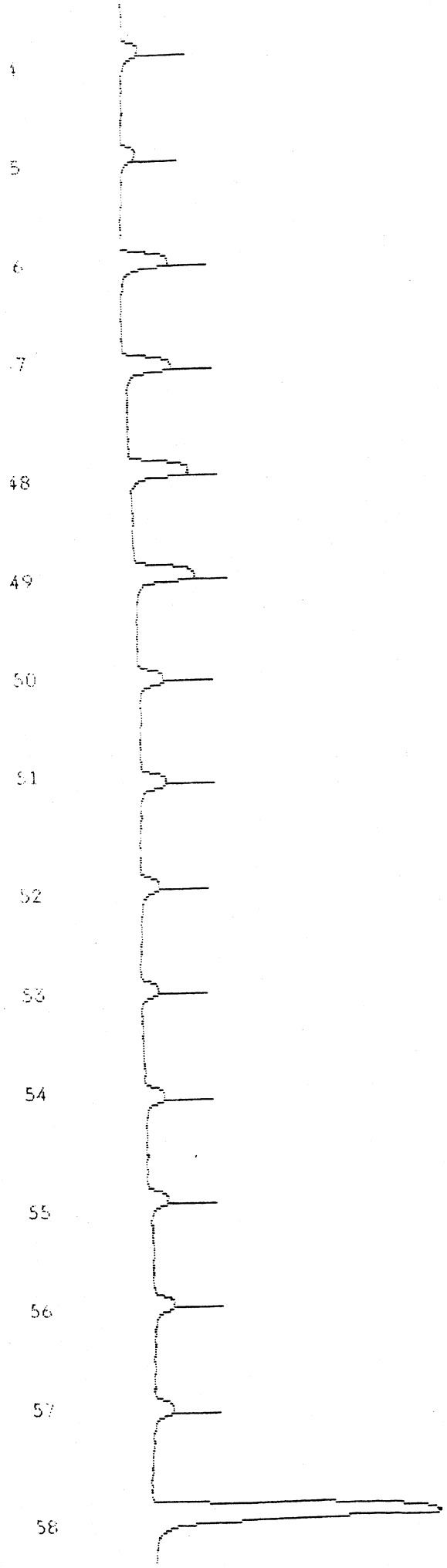
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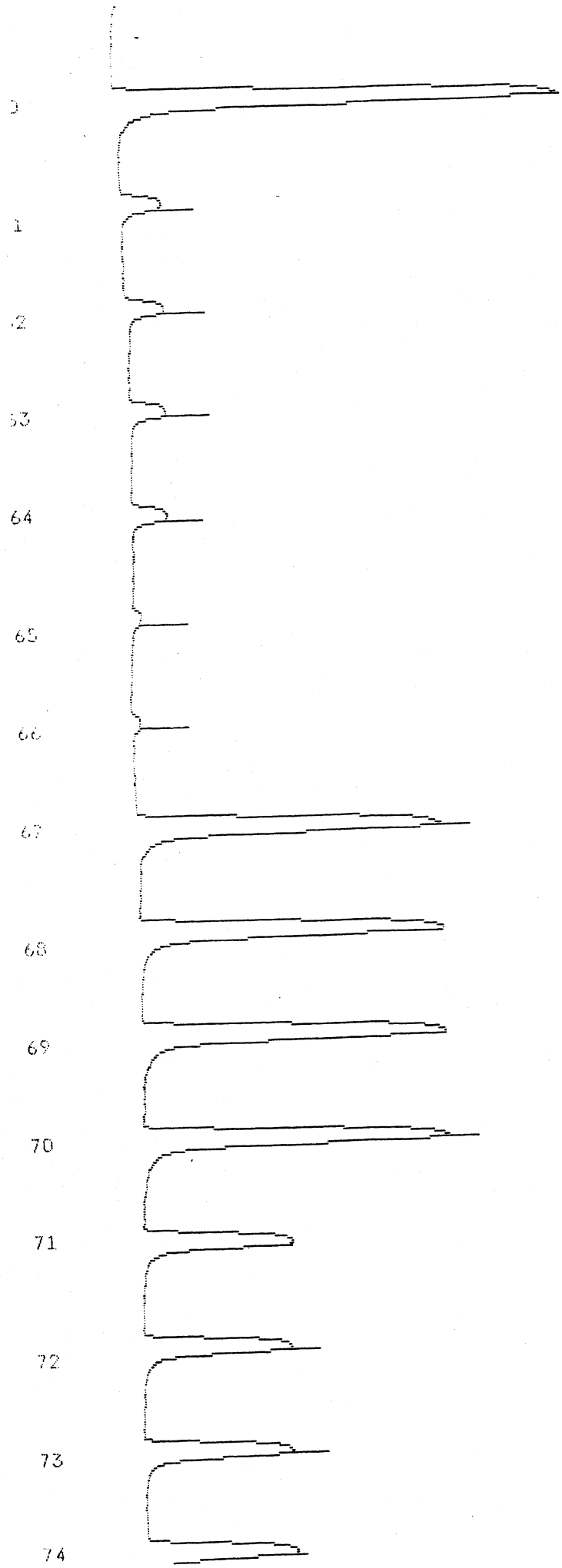
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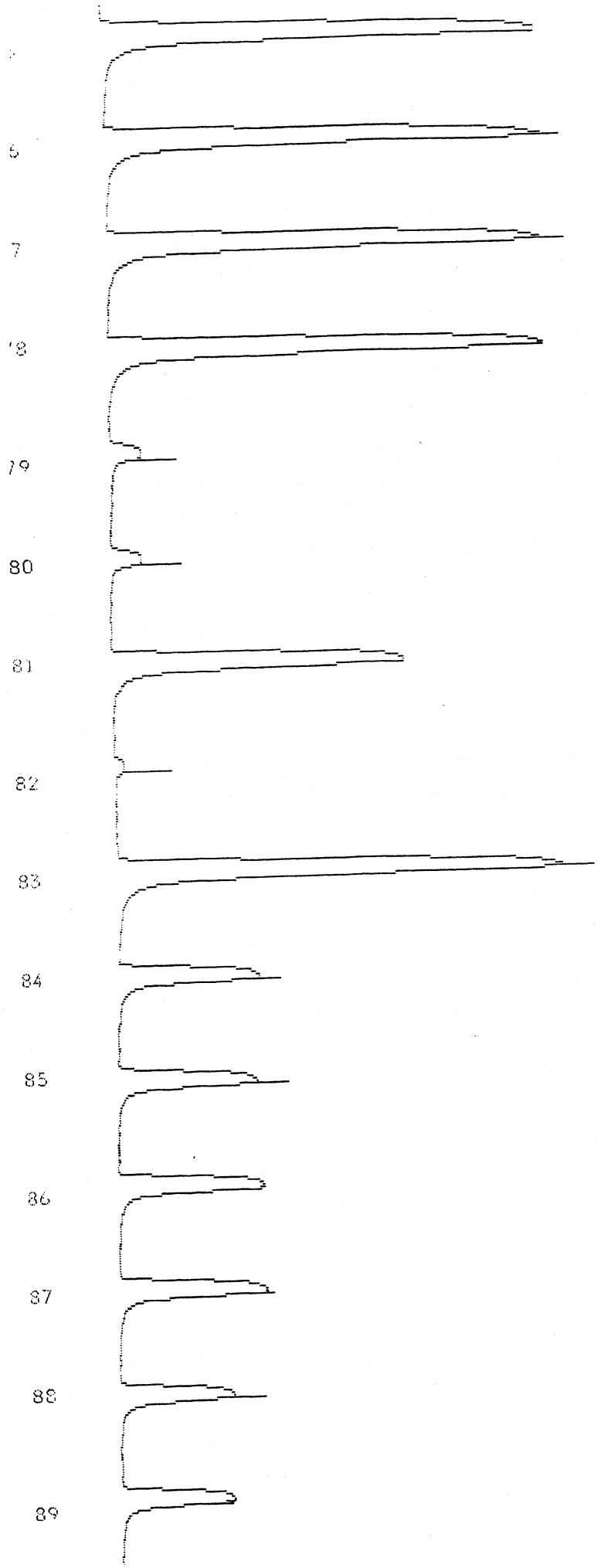
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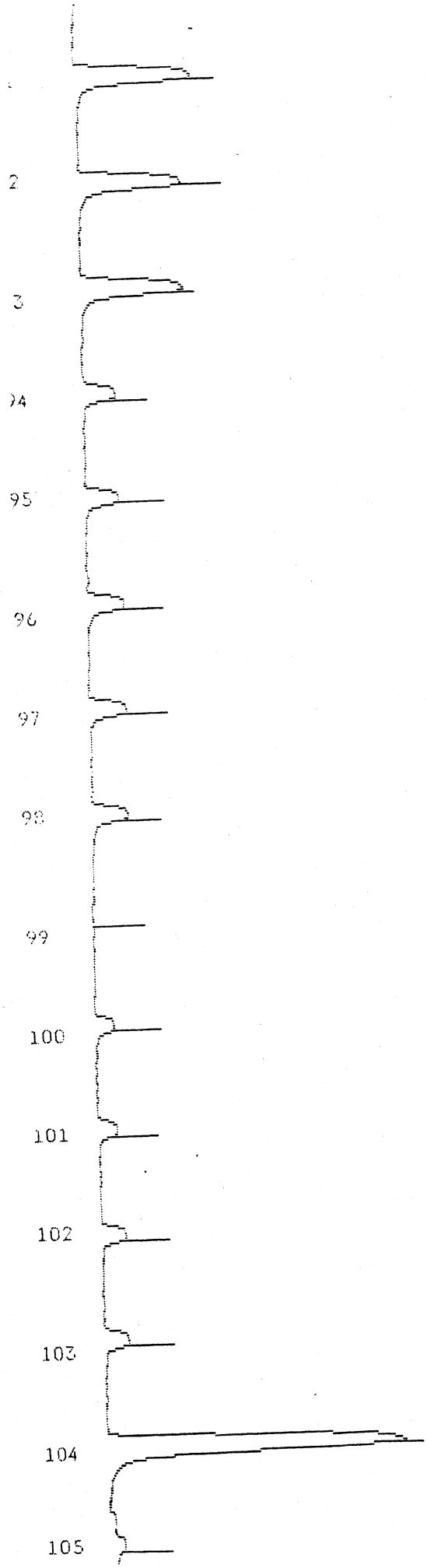
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INTERCEPT [illegible]

					ppb	
			WGT	WEIGHT/AREA	CONCENTRATION	EF
				15.3	1.474	s
			1	0.1	-0.019	I
			1	0.1	-0.019	I
			1	5.4	0.503	
			1	10.7	1.016	
			1	15.8	1.521	
			1	15.9	1.526	
			1	20.6	1.989	
			1	25.7	2.489	
			1	15.2	1.462 98%	
			1	0.0	-0.031 b	
			1	15.8	1.521 d	
			1	12.6	~~1.203~~ VOID MB	
			1	2.4	~~0.202~~ VOID MB	
			1	0.0	-0.026 I	
			1	0.0	-0.031 s	
			1	10.8	1.026	
			1	10.7	1.021	
			1	10.7	1.023	
			1	10.7	1.016	
			1	0.0	-0.031 I	
			1	0.0	-0.031 I	
			1	0.0	-0.031 I	
			1	0.0	-0.028 I	
			1	10.5	0.995	
			1	10.4	0.992	
			1	10.5	0.997	
			1	10.5	0.997	
			1	1.4	0.106	
			1	1.4	0.106	
			1	1.4	0.108 s	
			1	1.4	0.108	
			1	12.1	1.160	
			1	12.1	1.157	
			1	10.4	0.992 99%	
			1	0.0	-0.031 b	
			1	15.8	1.521 d	
			1	12.1	1.157	
			1	12.0	1.148	
			1	0.3	-0.002 I	
			1	0.3	-0.004 I	
			1	0.3	-0.004 I	
			1	0.2	-0.009 I	
			1	0.2	-0.007 I	

		TUG	
		<0.005	
		0.102	102%
		0.102	102%
		<0.01	
		<0.01	
		0.099	99%
		0.100	100%
		0.011	
		0.011	
		0.116	105%
		0.115	104%
		<0.005	
		<0.005	
		<0.005	

C AUTOSAMPLER RUN LOG (MERCURY)

e: 99.10.10(WA) Run Code: MG02 Matrix: IMP.

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

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			Std 5 (S5)	2.0		
			Std 6 (S6)	2.5		
			ICV			
			B (Std 1)			
			D4 (Std 4)			
11			BL1010	1GF		
12			"			
13			BL1010 S			
14			"			
15			BL1010 DS			
16			"			
17		1/10	44798			
18			"			
19			44798 D			
20			"			
21			44798 S			
22			"			
23			44798 DS			
24			"			
25			42477 a			
26			"			
27			42477 b			
28			"			
29			42477 c			
30			"			
31			CCV			
32			B			
33			D4			
34			42534			
35			"			
36			42264			
37			"			
38		1/10	44799			
39						
40						

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41		1/10	44800			
42			"			
43		1/4	44801			
44			"			
45		1/8	44802			
46			"			
47		1/4	44803			
48			"			
49		1/2	47491			
50			"			
51			BL1010	2GF		
52			"			
53			BL1010 S			
54			"			
55			CCV			
56			B			
57			D4			
58			BL1010 DS			
59			"			
60		1/4	47492			
61			"			
62			47492 D			
63			"			
64			47492 S			
65			"			
66			47492 DS			
67			"			
68		1/2	47493			
69			"			
70			47494			
71			"			
72			47495			
73			"			
74			47496			
75			"			
76			47497			
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.

C AUTOSAMPLER RUN LOG (MERCURY)

e: 99.10.10 Run Code: MG02 Matrix: IMP.

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

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			Std 5 (S5)	2.0		
			Std 6 (S6)	2.5		
			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21		1/2	47498			
22		↓	"			
23			51451			
24			"			
25			51452			
26			"			
27			51453			
28			"			
29			BL 1010	3GFT		
30			"			
31			BL1010 S			
32			"			
33			BL1010 DS			
34			"			
35			51454			
36			"			
37			51454 D			
38			"			
39			51454 S			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			CCV			
42			B			
43			D4			
44			51454 DS			
45			"			
46			51455			
47			"			
48			51456			
49			"			
50			51457			
51			"			
52			51458			
53			"			
54		1/8	53131			
55		↓	"			
56		1/2	53132			
57		↓	"			
58		1/4	53133			
59			"			
60			53134			
61		↓	"			
62		1/4	53135			
63		↓	"			
64			CCV			
65			B			
66			D4			
67			BL1010	4GFT		
68			"			
69			BL1010 S			
70			"			
71			BL1010 DS			
72			"			
73		1/10	53136			
74			"			
75			53136 D			
76			"			
77			53136 S			
78			"			
79			53136 DS			
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.

C AUTOSAMPLER RUN LOG (MERCURY)

e: 99.10.10 Run Code: MG02 Matrix: IMP.

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

	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			Std 5 (S5)	2.0		
			Std 6 (S6)	2.5		
			ICV			
0			B (Std 1)			
1			D4 (Std 4)			
2						
13						
14						
15						
16						
17						
18						
19						
20						
21		1/4	53137			
22		↓	"			
23		1/2	53145			
24		↓	"			
25		1/10	53146			
26		↓	"			
27			CCV			
28			B			
29			D4			
30		1/2	53147			
31		↓	"			
32			53148			
33			"			
34			51664	OHFLT		
35			"			
36			51665	OHFLTB		
37			"			
38			CCV			
39			B			
40			D4			

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						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						
69						
70						
71						
72						
73						
74						
75						
76						
77						
78						
79						
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.

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ART SPEED: 30
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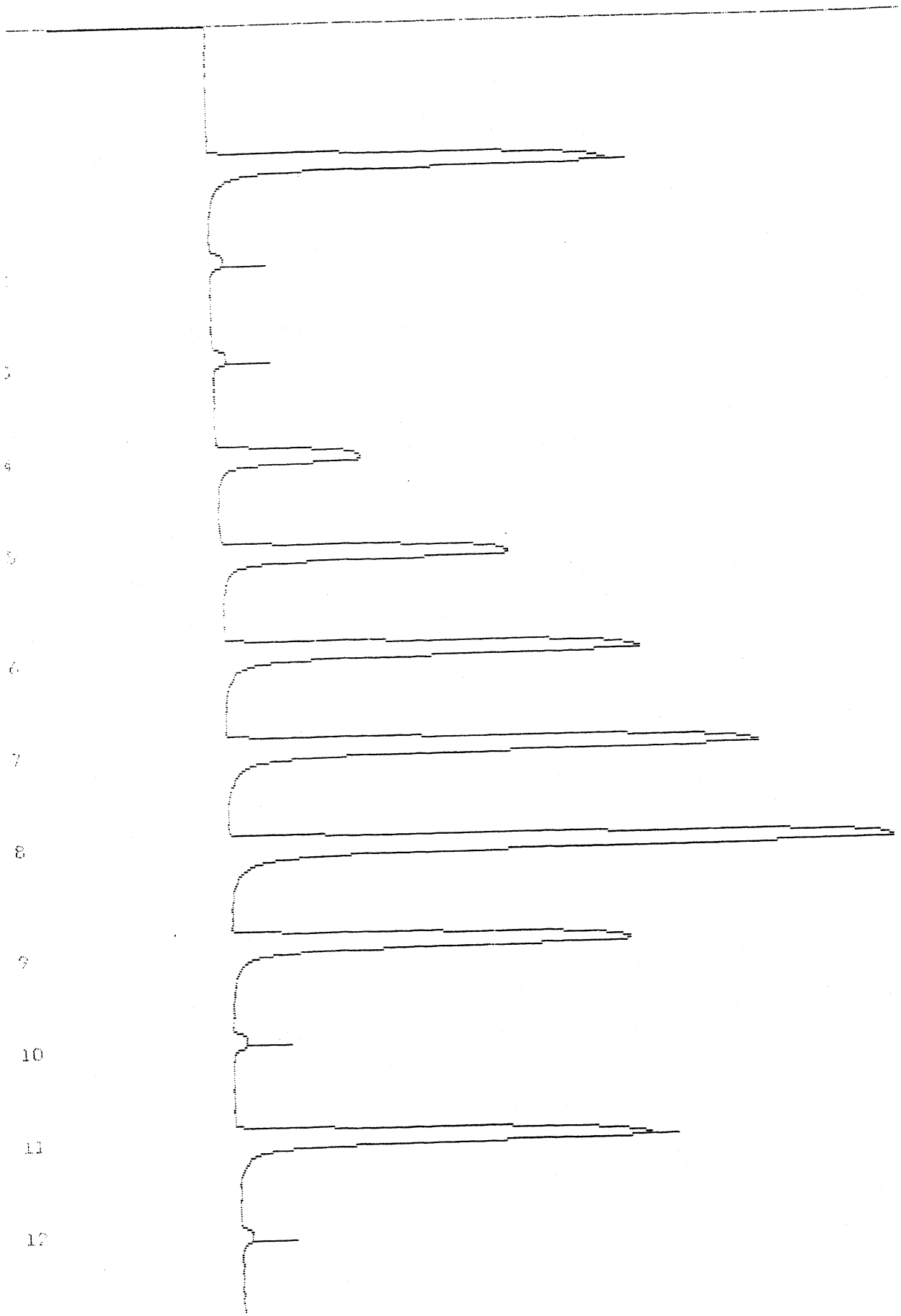

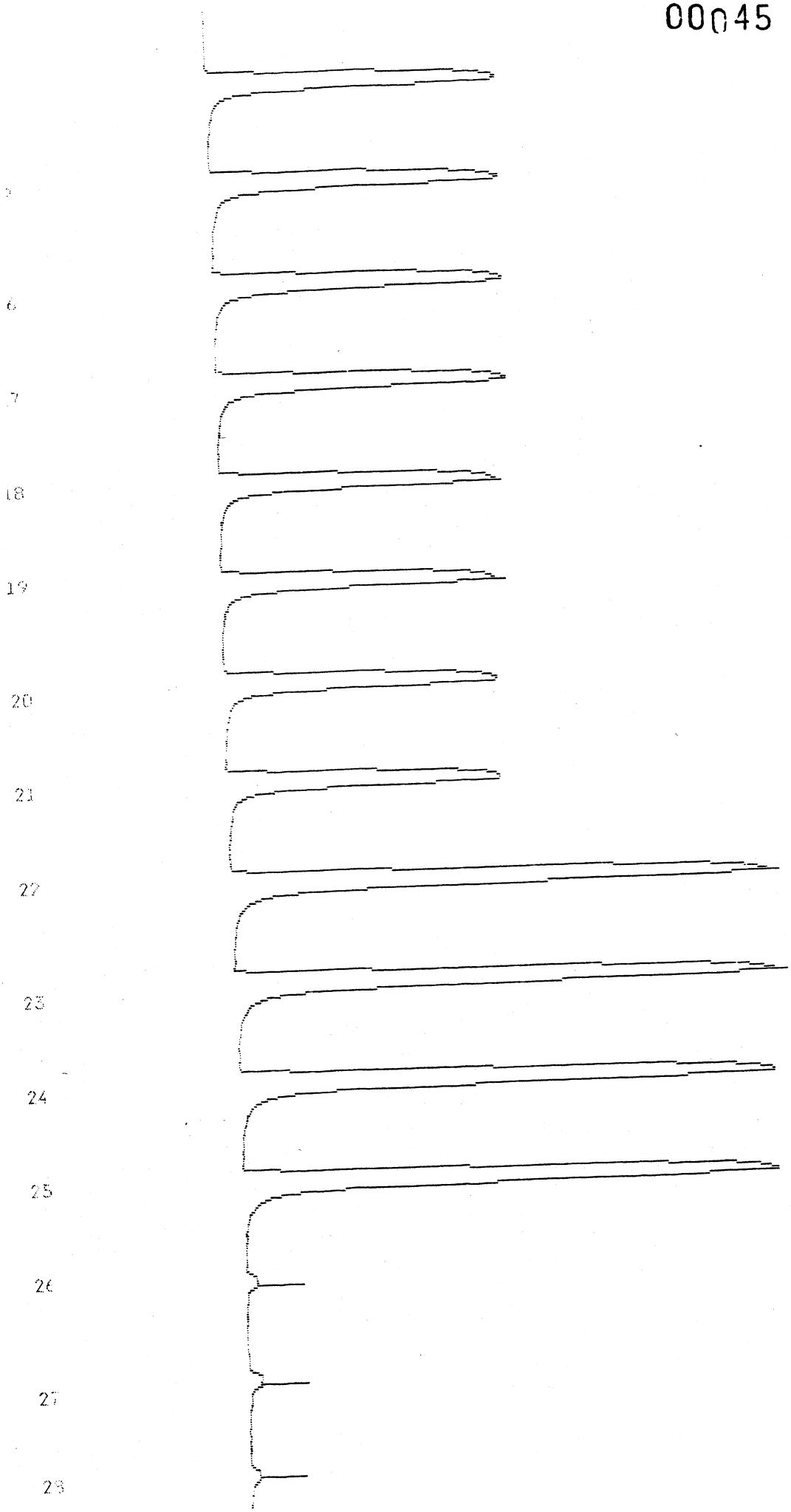
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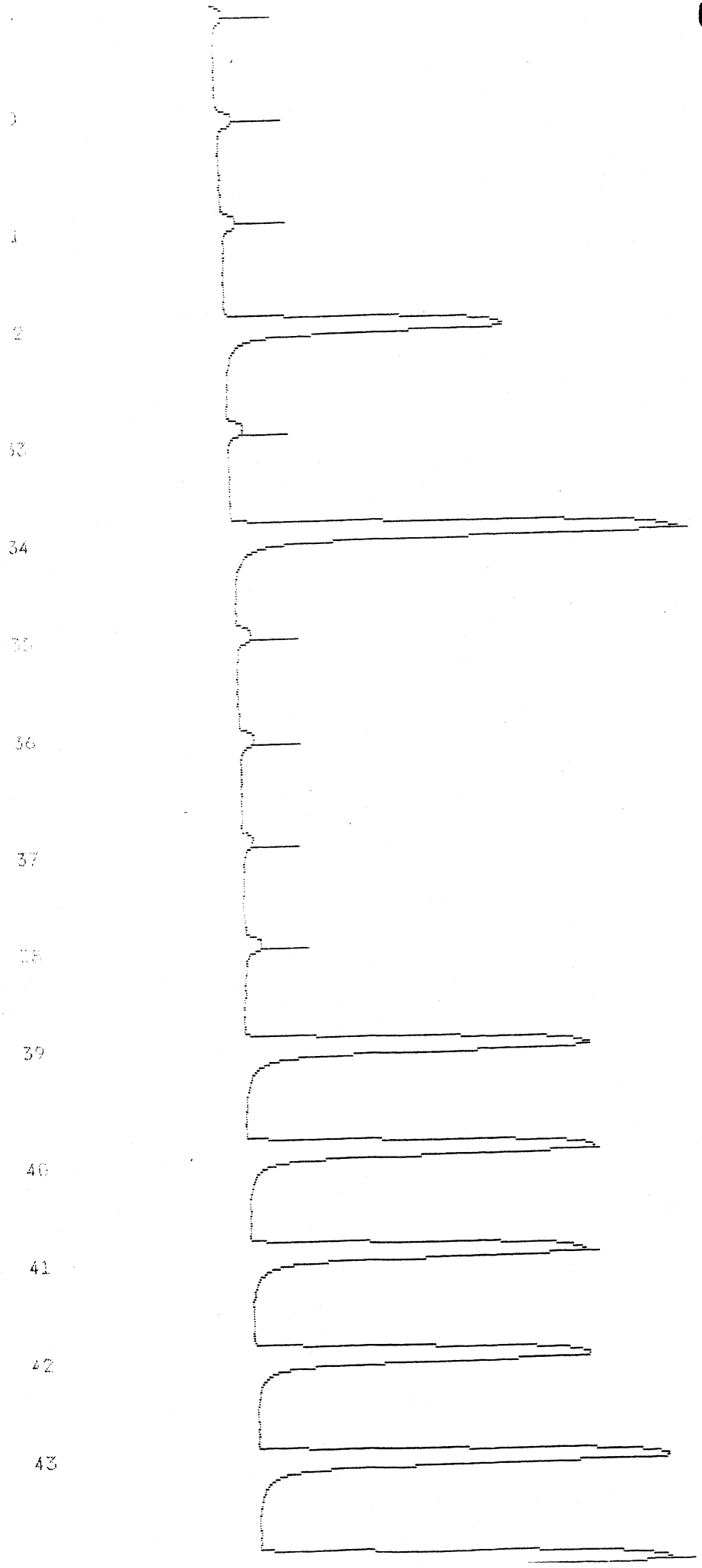
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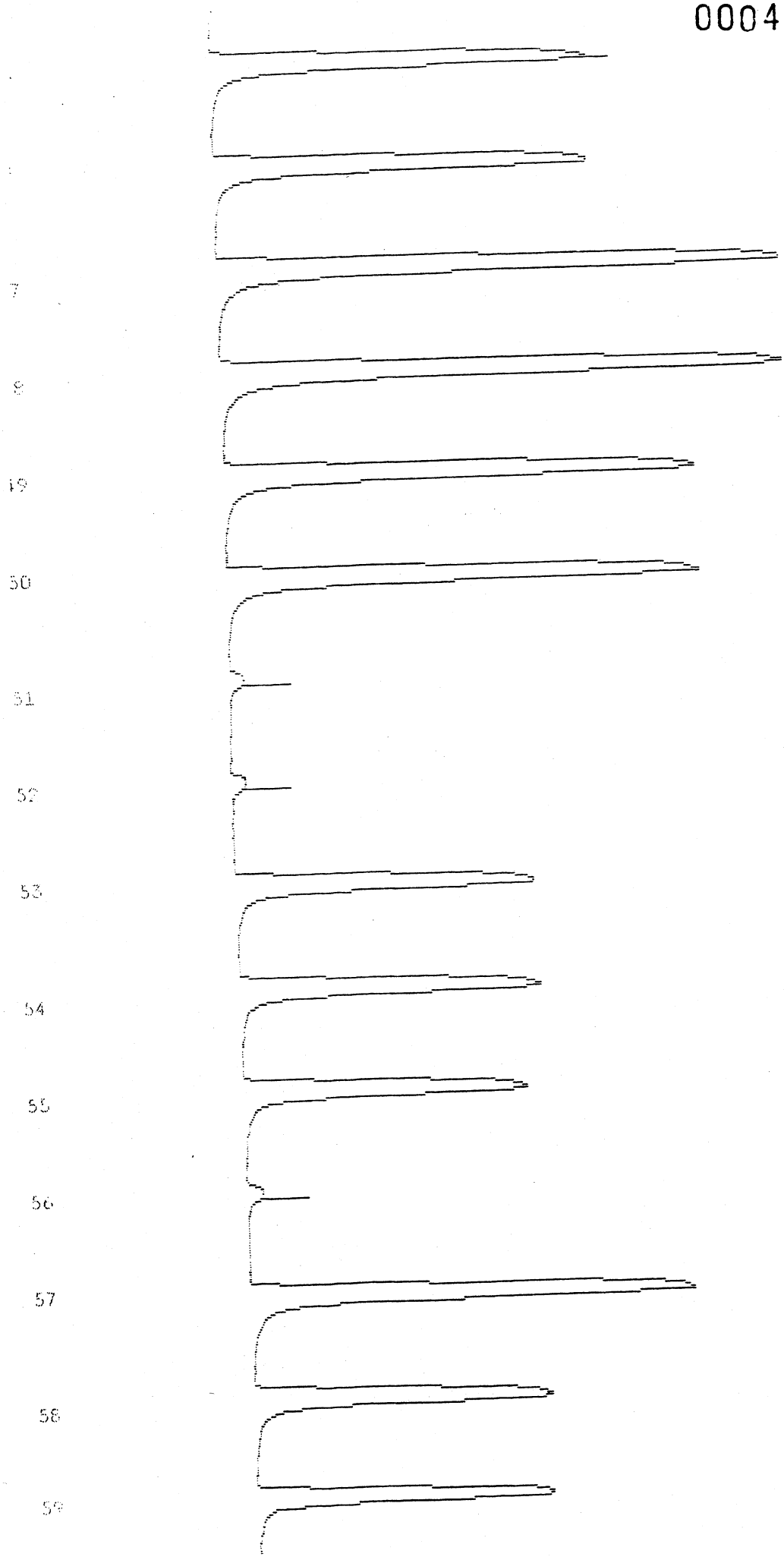
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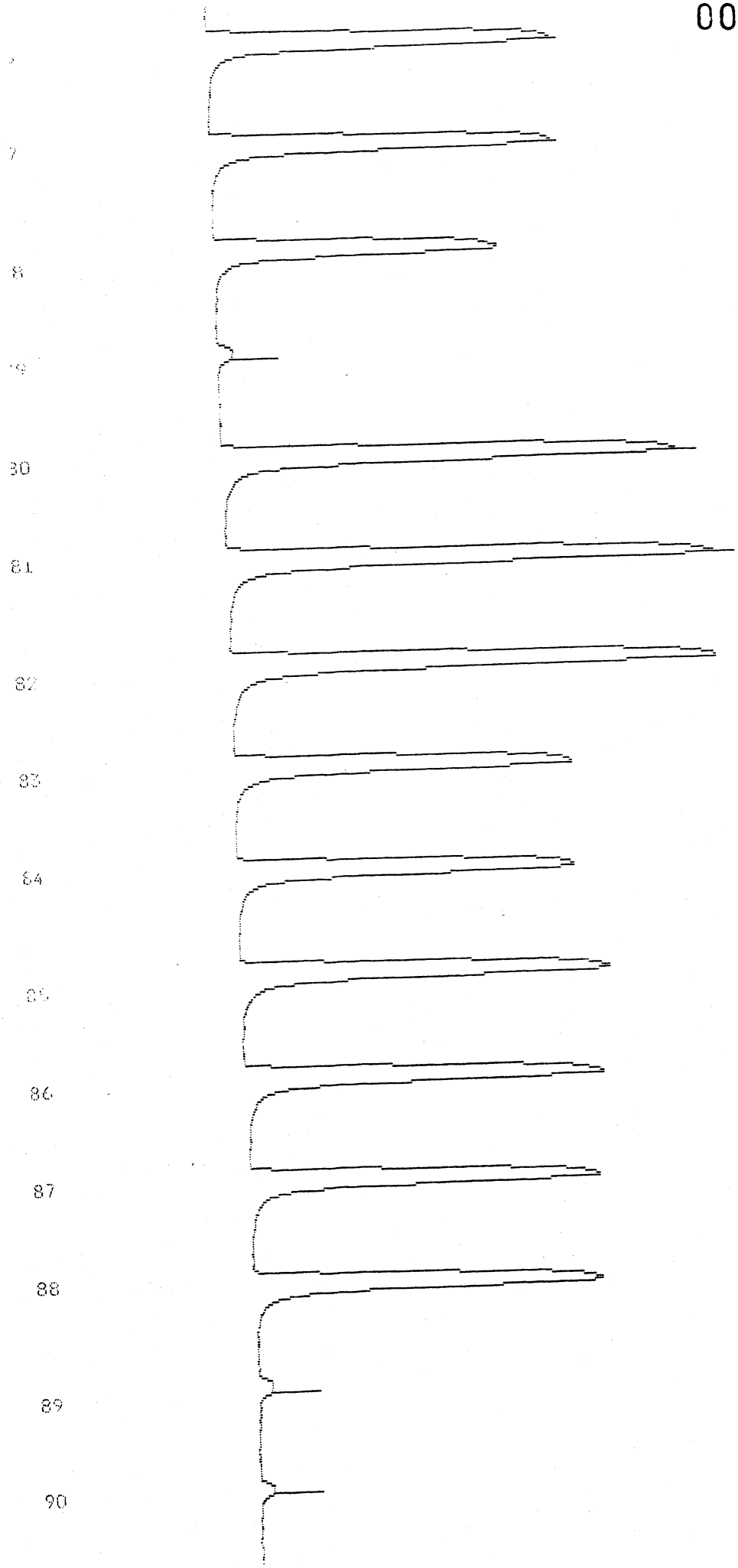
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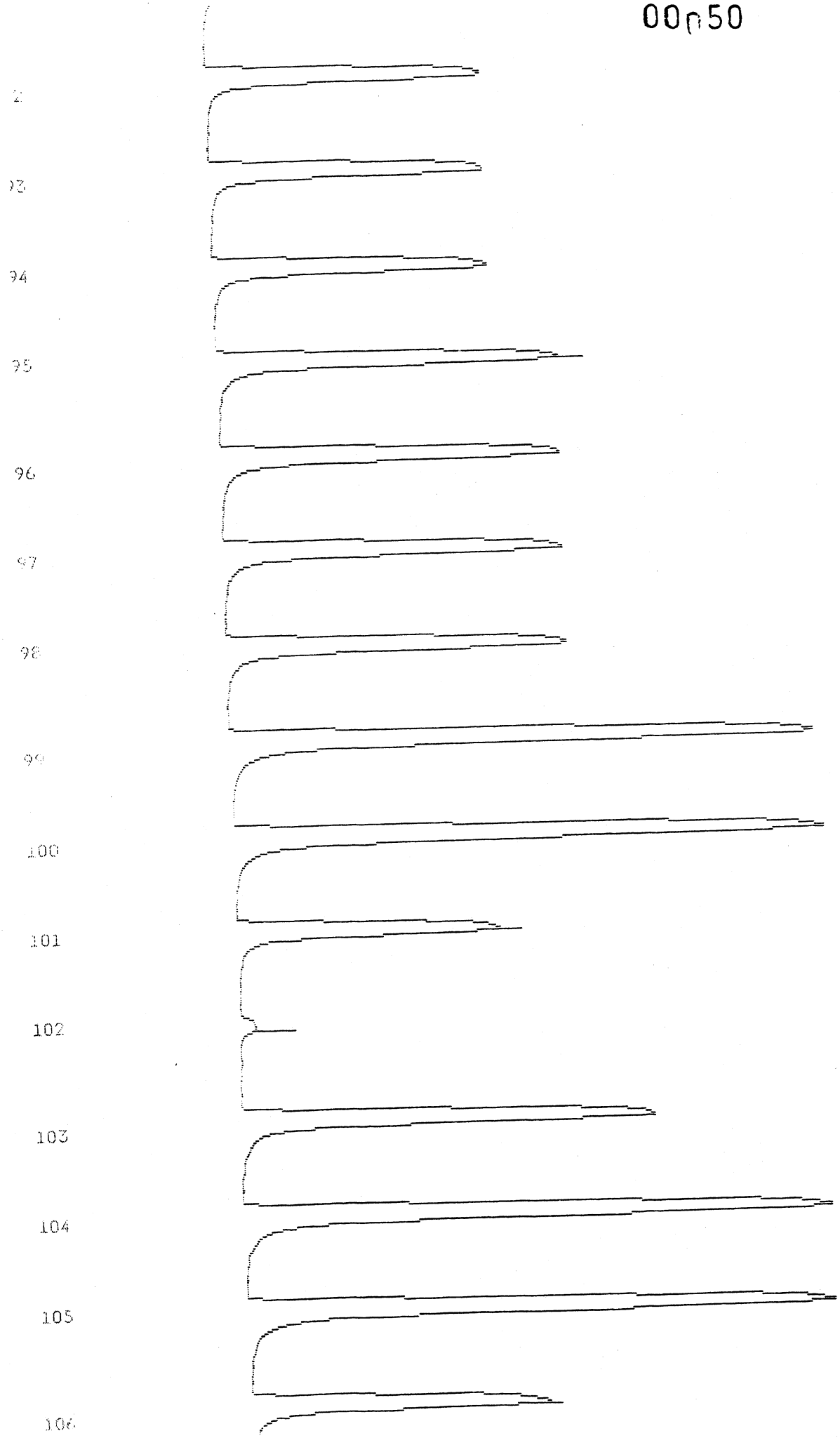
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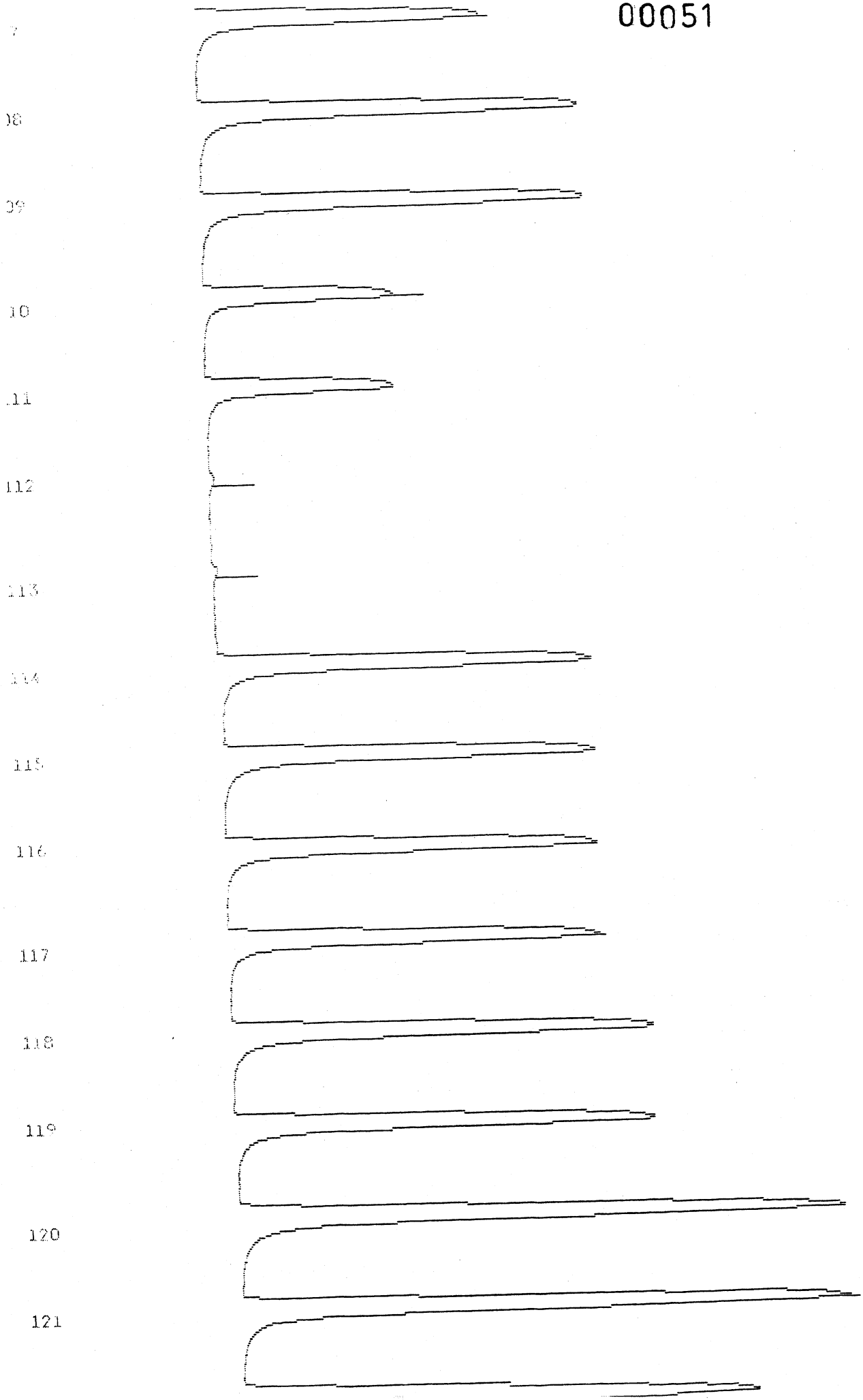
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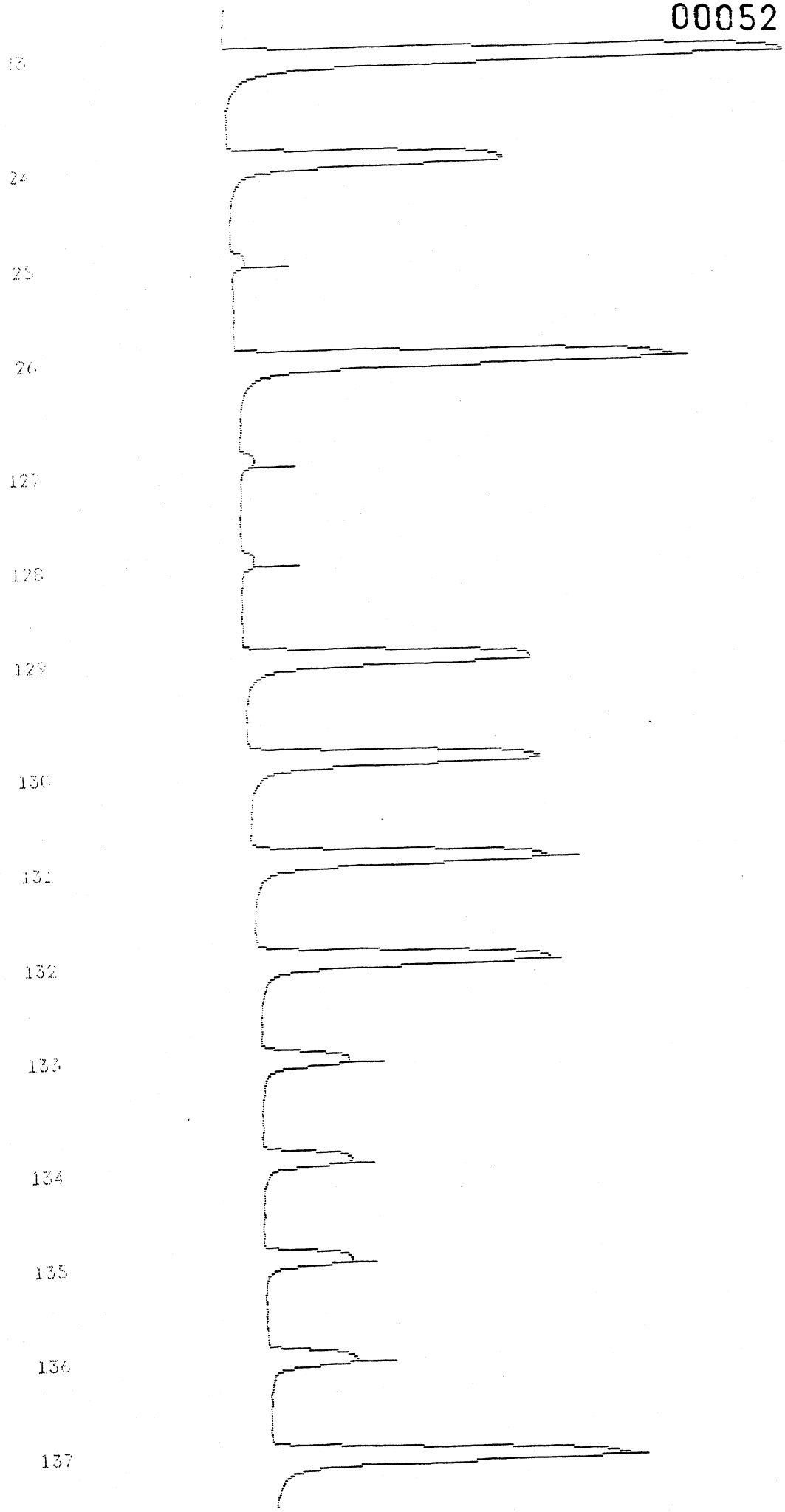
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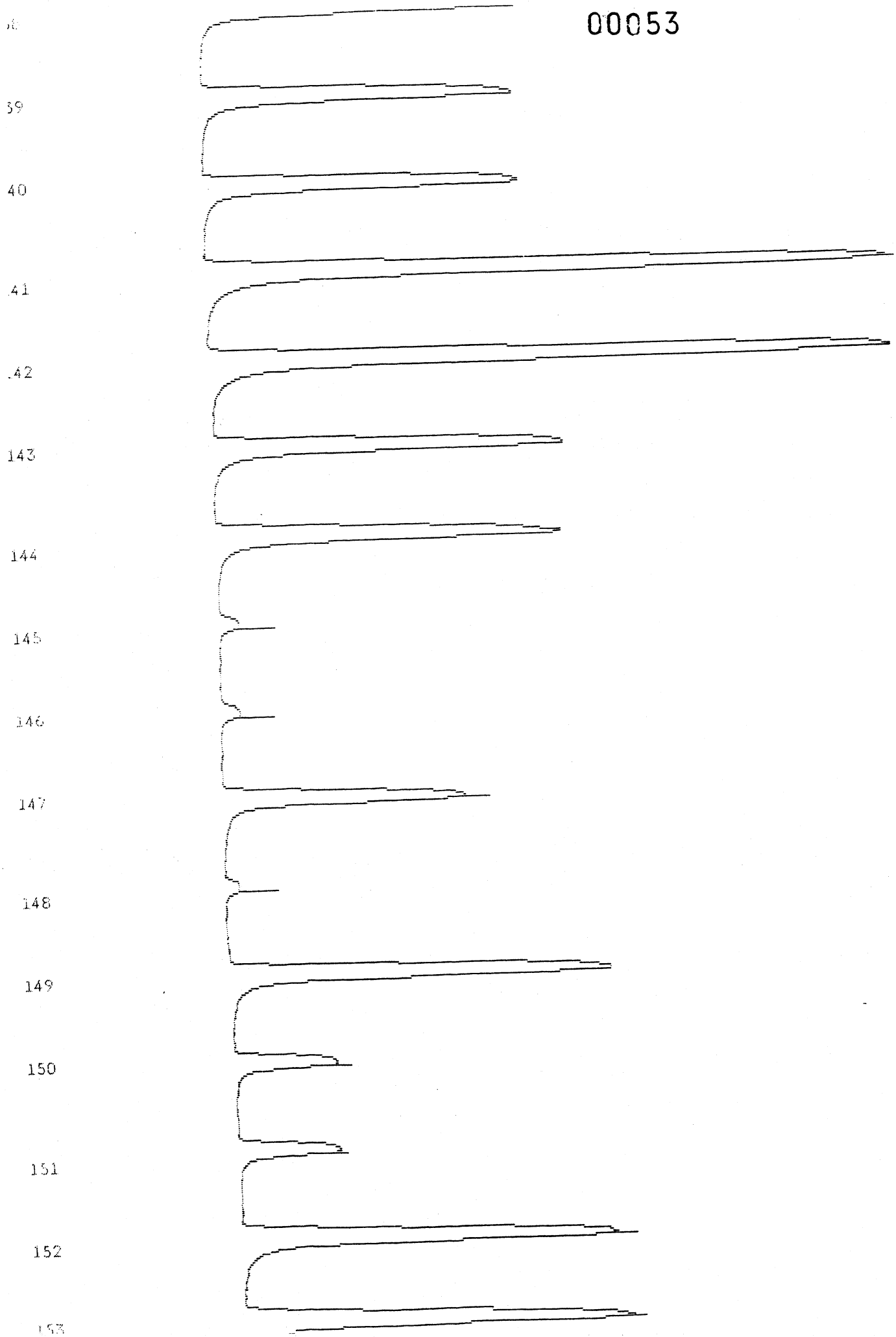
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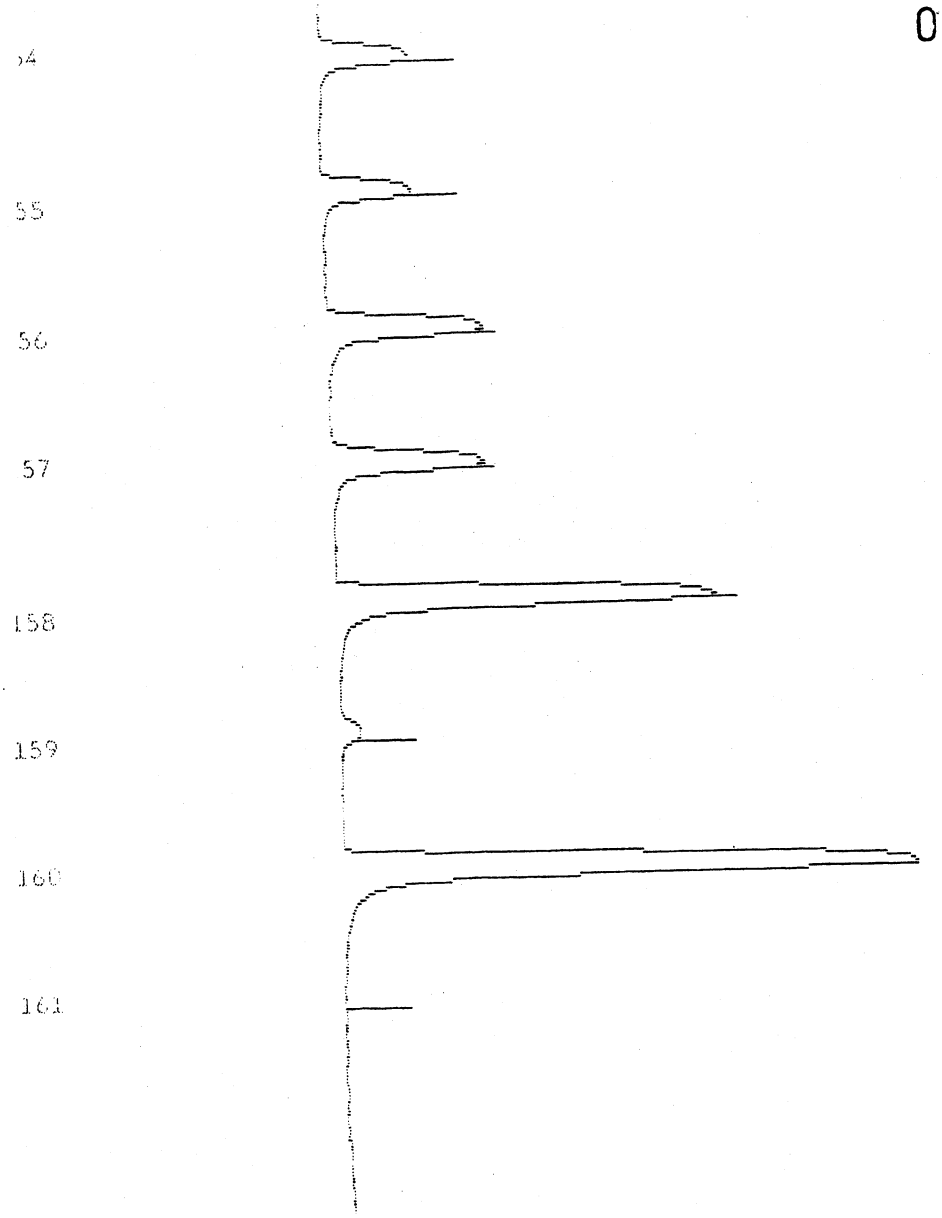
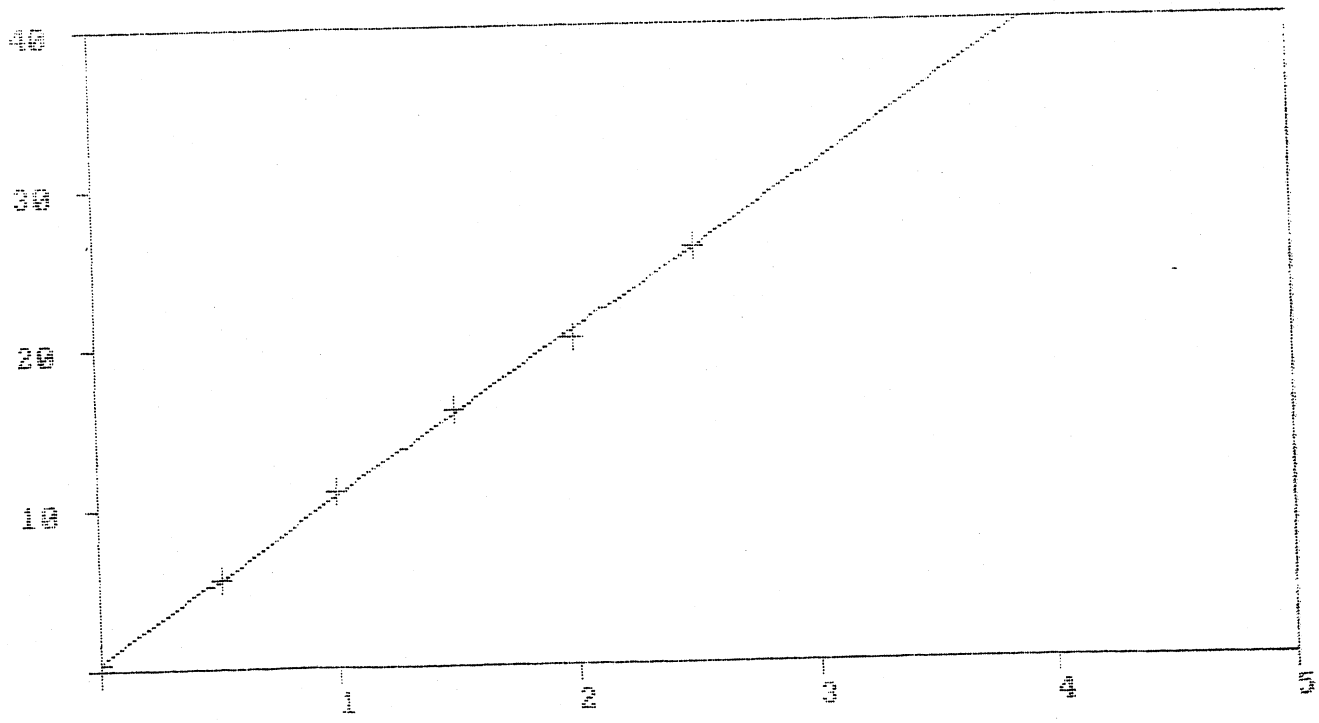


CHANNEL NAME: LDC
RUN NAME: 991010WA



CORRELATION: .9996244

ANNEL NAME: LDC
N DATE: 10-11-1999
MPLE TABLE NAME: 991010WA
THOD NAME: HGWATER

IP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	TUG	CONCENTRATION (ppb)		EF
	PRIMER	1	1	15.6		1.479		s
2	DUMMY	1	1	0.4		-0.015		I
3	S1: 0	1	1	0.4		-0.015		I
4	S2: .5	1	1	5.5		0.492		
5	S3: 1	1	1	11.0		1.034		
6	S4: 1.5	1	1	16.0		1.522		
7	S5: 2	1	1	20.5		1.964		
8	S6: 2.5	1	1	26.0		2.504		
9	ICV	1	1	15.4		1.459	97%	
10	B	1	1	0.0		-0.051		b
11	D4	1	1	16.0		1.522		d
12	BL1010-1GFT 44795	1	1	0.0	<0.01	-0.051		I
13	BL1010-1GFT 47488	1	1	0.0		-0.046		I
14	BL1010S	1	1	10.7	0.100	1.005	100%	
15	BL1010S	1	1	10.6		0.991		
16	BL1010DS	1	1	10.6	0.100	0.996	100%	
17	BL1010DS	1	1	10.7		1.001		
18	44798	10	1	10.2	NS @ 9.466	9.526		
19	44798	10	1	10.1		9.406		
20	44798D	10	1	10.1	9.418	9.430		
21	44798D	10	1	10.1		9.406		
22	44798S	10	1	20.0	19.264	19.204	98%	
23	44798S	10	1	20.2		19.324		
24	44798DS	10	1	20.1	19.240	19.252	98%	
25	44798DS	10	1	20.1		19.228		
26	42477 A	1	1	0.0	<0.01	0.051		I
27	42477 A	1	1	0.0		-0.051		I
28	42477 B	1	1	0.0	<0.01	-0.051		I
29	42477 B	1	1	0.0		-0.051		I
30	42477 C	1	1	0.0	<0.01	-0.051		I
31	42477 C	1	1	0.0		-0.046		s
32	CCV	1	1	9.9		0.921	92%	
33	B	1	1	0.0		-0.051		b
34	D4	1	1	16.0		1.522		d
35	42534	1	1	0.0	<0.200	-0.051		I
36	42534	1	1	0.0		-0.049		I
37	42264	1	1	0.0	<0.01	-0.051		I
38	42264	1	1	0.1		-0.044		I
39	44799	10	1	12.2	11.603	11.519		
40	44799	10	1	12.4		11.687		
41	44800	10	1	12.0	11.231	11.279		
42	44800	10	1	11.9		11.183		
43	44801	4	1	14.7	5.583	5.588		
44	44801	4	1	14.7		5.578		
45	44802	8	1	13.4	10.138	10.157		
46	44802	8	1	13.4		10.118		s
47	44803	4	1	20.5	7.845	7.855		
48	44803	4	1	20.4		7.835		
49	47491	2	1	16.9	3.231	3.216		
50	47491	2	1	17.0		3.245		
51	BL1010-2GFT	1	1	0.0	<0.01	-0.051		I
52	BL1010-2GFT	1	1	0.0		-0.051		I
53	BL1010S	1	1	10.7	0.100	0.998	100%	
				10.7		0.99[illegible]		

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		1	1	0		0.051	b	
	D4	3	1	16.0		1.521	d	
3	BL10100S	1	1	10.6	0.099	0.993	99%	
9	BL10100S	1	1	10.6		0.993		
0	47492	4	1	7.6	2.793	2.783		
1	47492	4	1	7.6		2.802	s	
2	474920	4	1	7.6	2.802	2.792		
3	474920	4	1	7.7		2.811		
4	47492S	4	1	17.9	6.818	6.827	101%	
5	47492S	4	1	17.8		6.808		
6	47492DS	4	1	17.9	6.793	6.817	100%	
7	47492DS	4	1	17.7		6.769		
8	47493	2	1	14.9	2.830	2.837		
9	47493	2	1	14.9		2.823		
0	47494	2	1	19.1	3.671	3.663		
1	47494	2	1	19.2		3.678		
2	47495	2	1	10.2	1.894	1.896		
3	47495	2	1	10.1		1.891		
4	47496	2	1	18.2	3.512	3.485		
5	47496	2	1	18.5		3.538		
6	47497	2	1	12.1	2.266	2.275	s	
7	47497	2	1	12.0		2.256		
8	CCV	1	1	9.9		0.921	92%	
9	B	1	1	0.0		-0.051	b	
0	D4	1	1	16.0		1.522	d	
1	47498	2	1	17.3	3.291	3.293		
2	47498	2	1	17.2		3.289		
3	51451	2	1	11.9	2.239	2.241		
4	51451	2	1	11.9		2.237		
5	51452	1	1	13.0	1.205	1.224		
6	51452	1	1	12.6		1.186		
7	51453	1	1	12.2	1.151	1.152		
8	51453	1	1	12.2		1.150		
9	BL1010-3GFT	1	1	0.0	<0.01	-0.051	I	
0	BL1010-3GFT	1	1	0.0		-0.051	I	
1	BL10100S	1	1	10.5		0.984	s	
2	BL10100S	1	1	10.5	0.098	0.979	98%	
3	BL10100S	1	1	10.5	0.098	0.979	98%	
4	BL10100S	1	1	10.5		0.981		
5	51454	1	1	13.2	1.237	1.243		
6	51454	1	1	13.0		1.231		
7	51454D	1	1	13.1	1.236	1.234		
8	51454D	1	1	13.1		1.238		
9	51454S	1	1	22.9	2.208	2.197	97%	
0	51454S	1	1	23.1		2.218		
1	CCV	1	1	9.9		0.924	92%	
2	B	1	1	0.0		-0.051	b	
3	D4	1	1	16.0		1.522	d	
4	51454DS	1	1	23.0	2.209	2.209	97%	
5	51454DS	1	1	23.0		2.209		
6	51455	1	1	11.4	1.059	1.068	s	
7	51455	1	1	11.2		1.049		
8	51456	1	1	15.1	1.450	1.438		
9	51456	1	1	15.4		1.462		
0	51457	1	1	7.4	0.665	0.672		
1	51457	1	1	7.2		0.657		
2	51458	1	1	0.0	<0.100	-0.051	I	
3	51458	1	1	0.0		-0.051	I	
4	53131	8	1	14.9	11.262	11.252		
5	53131	8	1	14.8		11.271		
6	53132	2	1	14.7	2.799	2.794		
7	53132	2	1	14.8		2.803		
8	53133	4	1	16.8	6.385	6.394		
9	53133	4	1	16.7		6.375		

22	53139	4	1	20.6	7	2.912		
23	53135	4	1	20.7	00057	2.941		
24	CCV	1	1	10.0		0.929	93%	
25	B	1	1	0.0		-0.051	b	
26	D4	1	1	16.0		1.522	d	
27	BL1010-4GFT	1	1	0.0	<0.01	-0.051	I	
28	BL1010-4GFT	1	1	0.0		-0.051	I	
29	BL1010S	1	1	10.4	0.098	0.972	98%	
30	BL1010S	1	1	10.5		[illegible]		
31	BL1010DS	1	1	10.6	0.099	[illegible]	99%	
32	BL1010DS	1	1	10.6		[illegible]		
33	53136	10	1	2.8		[illegible]		RERUN ON 5x DIL. ON 99/10/11. MS
34	53136	10	1	[illegible]		[illegible]		
35	53136D	10	1	[illegible]		[illegible]		
36	53136D	10	1	[illegible]		[illegible]		
37	53136S	10		[illegible]		[illegible]		
38	53136S	[illegible]				[illegible]		
39	53136DS					-0.144		
40	53136DS	[illegible]		[illegible]		-0.209		
41	[illegible]	[illegible]		[illegible]		[illegible] 178	R	RERUN ON 10x DIL. 99/10/11 MS
42	[illegible]			[illegible]		11.246	R	
[illegible]	[illegible]	[illegible]		[illegible]	2.758	2.755		
[illegible]	[illegible]	[illegible]	1	14.6		2.760		
[illegible]	[illegible]	[illegible]	1	0.2		-0.272	R	RERUN ON 1x DIL.
[illegible]	[illegible]	[illegible]	1	0.2		-0.296	R	
[illegible]	[illegible]	1	1	10.0		0.933	93%	
[illegible]	[illegible]	1	1	0.0		-0.051	b	
[illegible]	D4	1	1	16.0		1.522	d	
[illegible]	[illegible]	2	1	4.1		0.695		RERUN ON 1x DIL. MS
151	53147	2	1	4.1		0.695	s	
152	53148	1	1	15.9	1.535	1.515		
153	53148	1	1	16.3		1.555		
154	51664	1	1	1.9	0.014	0.134		
155	51664	1	1	2.0		0.141		
156	51665	1	1	3.8	0.325	0.326		
157	51665	1	1	3.8		0.323		
158	CCV	1	1	10.2		0.955	95%	
159	B	1	1	0.0		-0.051	b	
160	D4	1	1	16.0		1.522	d	

NTERCEPT: 0.52 LINEAR COEF. 10.1685

ORRELATION COEF: 9996244

11/03 10:05:28 Printed by MGAS LDCA DATA TO BE VALIDATED (METVAL') Analyzed by MGAS Page 1 of 1

Nr	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
38	TRC-LO	MB R456	Mercury -	PV	-0.030	-99999.0	0.300	100.	0.297	99.	99/09/20	3GKC	99/09/20	MG02	27.	24.	*PDS*
39	TRC-LO	PG&E-S-OHM-RB	Mercury -	PV	-0.030						99/09/20	3GKC	99/09/20	MG02	27.	24.	
90	TRC-LO	PG&E-S-OHM-I-FB	Mercury -	PV	0.149						99/09/20	3GKC	99/09/20	MG02	28.	24.	
91	TRC-LO	PG&E-S-OHM-Ia-1	Mercury -	PV	1.106	1.101	2.118	95.	2.118	95.	99/09/20	3GKC	99/09/20	MG02	27.	24.	*PDS*
92	TRC-LO	PG&E-S-OHM-Ib-1	Mercury -	PV	1.402						99/09/20	3GKC	99/09/20	MG02	29.	24.	
93	TRC-LO	PG&E-S-OHM-Ia-2	Mercury -	PV	0.918						99/09/20	3GKC	99/09/20	MG02	27.	24.	
94	TRC-LO	PG&E-S-OHM-Ib-2	Mercury -	PV	0.292						99/09/20	3GKC	99/09/20	MG02	27.	24.	
95	TRC-LO	PG&E-S-OHM-Ia-3	Mercury -	PV	0.254						99/09/20	3GKC	99/09/20	MG02	26.	24.	
96	TRC-LO	PG&E-S-OHM-Ib-3	Mercury -	PV	0.099						99/09/20	3GKC	99/09/20	MG02	26.	24.	
97	TRC-LO	PG&E-S-OHM-Ia-4	Mercury -	PV	0.186						99/09/20	3GKC	99/09/20	MG02	26.	24.	
98	TRC-LO	PG&E-S-OHM-Ib-4	Mercury -	PV	0.273						99/09/20	3GKC	99/09/20	MG02	26.	24.	
20	INTERNAL		Mercury -	PV	-0.015	-99999.0	0.150	100.	0.149	99.	99/09/20	3GKC	99/09/20	MG02	$$$	$$$	*PDS*

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

SOC 16

10/22 11:41:20 Printed by MGAS LDCA DATA TO BE VALIDATED (MEIVAL')

r	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
8	TRC-LO	MB R456	Mercury -	PV	-0.023	-99999.0	0.227	101.	0.228	101.	99/09/20	1GMN	99/09/20	MG02	27.	24.	*PDS*
9	TRC-LO	PG&E-S-OHM-RB	Mercury -	PV	-0.023						99/09/20	1GMN	99/09/20	MG02	27.	24.	
0	TRC-LO	PG&E-S-OHM-I-FB	Mercury -	PV	0.314						99/09/20	1GMN	99/09/20	MG02	28.	24.	
1	TRC-LO	PG&E-S-OHM-Ia-1	Mercury -	PV	2.418	2.406	5.732	95.	5.756	96.	99/09/20	1GMN	99/09/20	MG02	27.	24.	*PDS*
2	TRC-LO	PG&E-S-OHM-Ib-1	Mercury -	PV	1.340						99/09/20	1GMN	99/09/20	MG02	29.	24.	
3	TRC-LO	PG&E-S-OHM-Ia-2	Mercury -	PV	3.218						99/09/20	1GMN	99/09/20	MG02	27.	24.	
4	TRC-LO	PG&E-S-OHM-Ib-2	Mercury -	PV	0.444						99/09/20	1GMN	99/09/20	MG02	27.	24.	
5	TRC-LO	PG&E-S-OHM-Ia-3	Mercury -	PV	0.983						99/09/20	1GMN	99/09/20	MG02	26.	24.	
6	TRC-LO	PG&E-S-OHM-Ib-3	Mercury -	PV	0.207						99/09/20	1GMN	99/09/20	MG02	26.	24.	
7	TRC-LO	PG&E-S-OHM-Ia-4	Mercury -	PV	1.055						99/09/20	1GMN	99/09/20	MG02	26.	24.	
8	TRC-LO	PG&E-S-OHM-Ib-4	Mercury -	PV	0.210						99/09/20	1GMN	99/09/20	MG02	26.	24.	
20	INTERNAL		Mercury -	PV	-0.015	-99999.0	0.151	101.	0.152	101.	99/09/20	1GMN	99/09/20	MG02	$$$	$$$	*PDS*
97	TRC-LO	[redacted]	Mercury -	PV	4.071						99/09/20	2GMN	99/09/20	MG02	41.	34.	
88	TRC-LO		Mercury -	PV	4.458						99/09/20	2GMN	99/09/20	MG02	41.	34.	
99	TRC-LO	PG&E-S-OHM-O-FB	Mercury -	PV	0.338						99/09/20	2GMN	99/09/20	MG02	28.	24.	
00	TRC-LO	PG&E-S-OHM-O-1	Mercury -	PV	1.365	1.394	2.267	95.	2.249	93.	99/09/20	2GMN	99/09/20	MG02	27.	24.	*PDS*
01	TRC-LO	PG&E-S-OHM-O-2	Mercury -	PV	1.299						99/09/20	2GMN	99/09/20	MG02	27.	24.	
02	TRC-LO	PG&E-S-OHM-O-3	Mercury -	PV	0.618						99/09/20	2GMN	99/09/20	MG02	26.	24.	
03	TRC-LO	PG&E-S-OHM-O-4	Mercury -	PV	0.519						99/09/20	2GMN	99/09/20	MG02	26.	24.	
20	INTERNAL		Mercury -	PV	-0.015	-99999.0	0.154	103.	0.151	101.	99/09/20	2GMN	99/09/20	MG02	$$$	$$$	*PDS*

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

00059

)C AUTOSAMPLER RUN LOG (MERCURY)

te: 99.09.20(WA) Run Code: MG02 Matrix: IMP.

ialyst: MG Units: µg (see comments) MDL: 0.015

p	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			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			BL0920	1GMN.		
15			"			
16			BL0920 S			
17			"			
18			BL0920 DS			
19			"			
20	1.5	1/4	47491			
21			"			
22			47491 D			
23			"			
24			47491 S			
25			"			
26			47491 DS			
27			"			
28		1/20	47491 DS			
29			"			
30			47489			
31			"			
32			47490			
33			"			
34			CCV			
35			B			
36			D4			
37	1.5		47492			
38			"			
39		1/2	47493			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	1.5		47494			
42			"			
43			47495			
44			"			
45			47496			
46			"			
47			47497			
48			"			
49			47498			
50			"			
51			BL0920	2G MN		
52			"			
53			BL0920 S			
54			"			
55			BL0920 DS			
56			"			
57			CCV			
58			B			
59			D4			
60	1.5		47500			
61			"			
62			47500 D			
63			"			
64			47500 S			
65			"			
66			47500 DS			
67			"			
68			47499			
69			"			
70			47501			
71			"			
72			47502			
73			"			
74			47503			
75			"			
76			BL0920	3GKC		
77			"			
78			BL0920 S			
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.

)C AUTOSAMPLER RUN LOG (MERCURY)

te: 99-09-20 Run Code: MG02 Matrix: IMP

alyst: MG Units: ug (see comments) MDL: 0.015

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			Std 5 (S5)	2.0		
			Std 6 (S6)	2.5		
			ICV			
			B (Std 1)			
			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21			B			
22			D4			
23			BL0920 DS			
24			"			
25	1.5		47491			
26			"			
27			47491 D			
28			"			
29			47491 S			
30			"			
31			47491 DS			
32			"			
33			47489			
34			"			
35			47490			
36			"			
37			47492			
38			"			
39			47493			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	1.5		47494			
42			"			
43			CCV			
44			B			
45			D4			
46	1.5		47495			
47			"			
48			47496			
49			"			
50			47497			
51			"			
52			47498			
53			"			
54			BL0920	4GKC		
55			"			
56			BL0920 S			
57			"			
58			BL0920 DS			
59			"			
60	1.5		47500			
61			"			
62			47500 D			
63			"			
64			47500 S			
65			"			
66			CCV			
67			B			
68			D4			
69	1.5		47500 DS			
70			"			
71			47499			
72			"			
73			47501			
74			"			
75			47502			
76			"			
77			47503			
78			"			
79			1/20 42065			
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.

C AUTOSAMPLER RUN LOG (MERCURY)

e: 99.09.20 Run Code: MG02 Matrix: IMP.

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

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			Std 5 (S5)	2.0		
			Std 6 (S6)	2.5		
			ICV			
			B (Std 1)			
			D4 (Std 4)			
21	1.5	1/10	44797	KMNO4		
22		↓	"	↓		
23			44888			
24			"			
25			WS 378			
26			ORG. REF.			
27			CCV			
28			B			
29			D4			

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						
55						
56						
57						
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72						
73						
74						
75						
76						
77						
78						
79						
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.

00063

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DGHGLEACH, DG29HG***

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
7	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 bulked and mixed
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	4GKC	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 0920	"	"	"	"	(Processed Blank)
	11	BL 0920 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	~~45~~ 47500	"	"	"	"	680 ND
1	13	D	"	"	"	"	(Duplicate sample)
1	14	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	"	"	"	(Duplicate Spiked sample)
2	16	47499	"	"	"	"	440
3	17	47501	"	"	"	"	630
4	18	502	"	"	"	"	680
5	19	503	"	"	"	"	665
6	20	44886	$KMNO_4$	"	"	"	470
7	21	44997	"	"	"	"	420
8	22		"	"	"	"	
9	23		"	"	"	"	
10	24		"	"	"	"	

	25	CCV (Cont. Calib. Verif.)		20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL	"	"	"	"	(Processed Blank)
	27	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28		"	"	"	"	
1	29	D	"	"	"	"	(Duplicate sample)
1	30	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	"	"	"	(Duplicate Spiked sample)
2	32		"	"	"	"	
3	33		"	"	"	"	
4	34		"	"	"	"	
5	35		"	"	"	"	
6	36		"	"	"	"	
7	37		"	"	"	"	
8	38		"	"	"	"	
9	39		"	"	"	"	
10	40		"	"	"	"	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run — Prepare 0.05 ppm standards daily

HNO3 Lot. No. | H2SO4 Lot. No. | Bath Temps. / / °C

Prepared By: [illegible] Date: 99/09/20 Checked by: [illegible]

#00064 NOT DIGESTED

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DGHGLEACH, DG29HG***

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
7	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 bulked and mixed
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	LGMN	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 0920	"	"	"	"	(Processed Blank)
	11	BL 0920 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	47491	"	"	"	"	580 ml
1	13	D	"	"	"	"	(Duplicate sample)
1	14	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	"	"	"	(Duplicate Spiked sample)
2	16	489	"	"	"	"	90 ml
3	17	490	"	"	"	"	440 ml
4	18	492	"	"	"	"	580 ~ (600 ml)
5	19	493	"	"	"	"	580 ml
6	20	494	"	"	"	"	580
7	21	495	"	"	"	"	620
8	22	496	"	"	"	"	600
9	23	497	"	"	"	"	605
10	24	498	"	"	"	"	585
	25	CCV (Cont. Calib. Verif.)	LGMN	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL 0920	"	"	"	"	(Processed Blank)
	27	BL 092 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28	47500	"	"	"	"	620 ml
1	29	D	"	"	"	"	(Duplicate sample)
1	30	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	"	"	"	(Duplicate Spiked sample)
2	32	47499	"	"	"	"	445
3	33	47501	"	"	"	"	570
4	34	502	"	"	"	"	570
5	35	503	"	"	"	"	600
6	36	44797 KMnO4	"	"	"	"	420 ml
7	37	44888 - KMnO4	"	"	"	"	470
8	38		"	"	"	"	
9	39		"	"	"	"	
10	40		"	"	"	"	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run

Prepare 0.05 ppm standards daily

HNO3 Lot. No. | H2SO4 Lot. No. | Bath Temps. / / °C

Prepared By: LMAN Date: 99/09/20 Checked by: LMAN

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	41	CCV (Cont. Calib. Verif.)	3GLG	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	42	BL 0920	"	"	"	"	(Processed Blank)
	43	BL 0920 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	44	47491	"	"	"	"	715 ~
1	45	D	"	"	"	"	(Duplicate sample)
1	46	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	47	DS	"	"	"	"	(Duplicate Spiked sample)
2	48	489	"	"	"	"	100
3	49	490	"	"	"	"	485
4	50	492	"	"	"	"	730
5	51	493	"	"	"	"	685
6	52	494	"	"	"	"	610
7	53	495	"	"	"	"	745
8	54	496	"	"	"	"	710
9	55	497	"	"	"	"	665
10	56	498	"	"	"	"	725

Comments

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

*** group of several Method 29 testcodes

Dilution factor of 1.5 is corrected by entering the calibration concentrations listed above

Procedure/Methodology:

1 Prepare 25 ppm Intermediate stock (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO3
2 Prepare 0.05 ppm Working stock daily by pipetting 200 ul., of 25 ppm Stock to 100 ml final volume of 2% HNO3
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 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
7 Spike the tubes as indicated in the comment sector of the digestion sheet
8 Add 0.5 ml. of conc. Nitric Acid (HNO3), and 1 ml. of conc. Sulphuric acid, (H2SO4), to each tube
9 Add 3 ml. Potassium Permanganate (KMnO4), colour should remain for at least 15 minutes
10 Add 1.5 ml. of Potassium persulphate, (K2S2O8), to each tube
11 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
12 Remove tubes and allow to cool to room temperature
13 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
14 Recap tubes and shake until the Potassium Permanganate (KMnO4) is destroyed and sample becomes colourless
15 Dilute the sample to a final volume of 30 ml., cap and mix well

REFERENCE STANDARDS/SPIKING SOLUTIONS:
Source: Inorganic Ventures Standard, see standard tracking binder for current lot and expiry date information

ICV/CCV STANDARDS:
Source: High Purity MESS-ZENO 30/QCA Standard, see standard tracking binder for current lot

INTERNAL REFERENCE STANDARD: (2 ppb in 10% HNO3)
Source: EPA WS 378 or SPEX CertiPrep Trace Metal - Water Supply, see standard tracking binder for current source, lot and expiry date information.

All reagents used are of a grade suitable for mercury analyses

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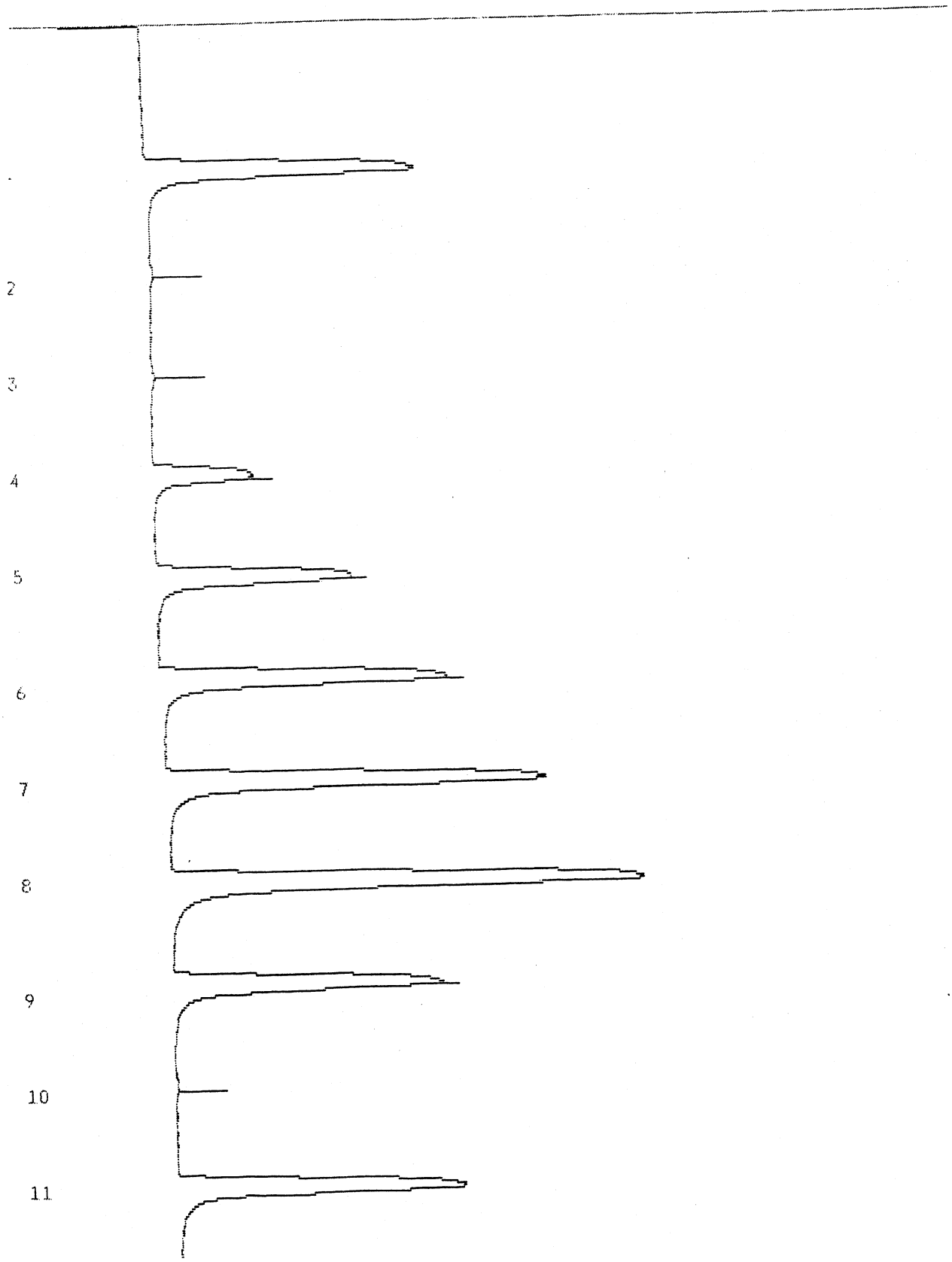

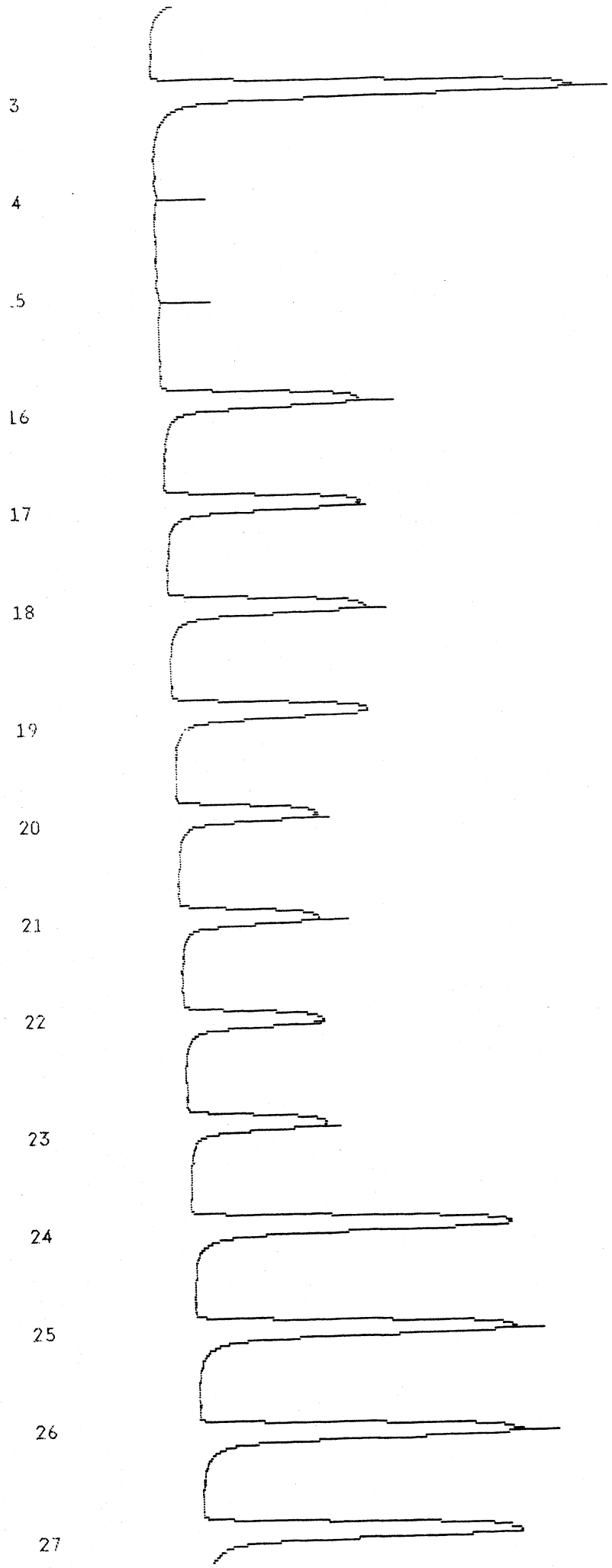
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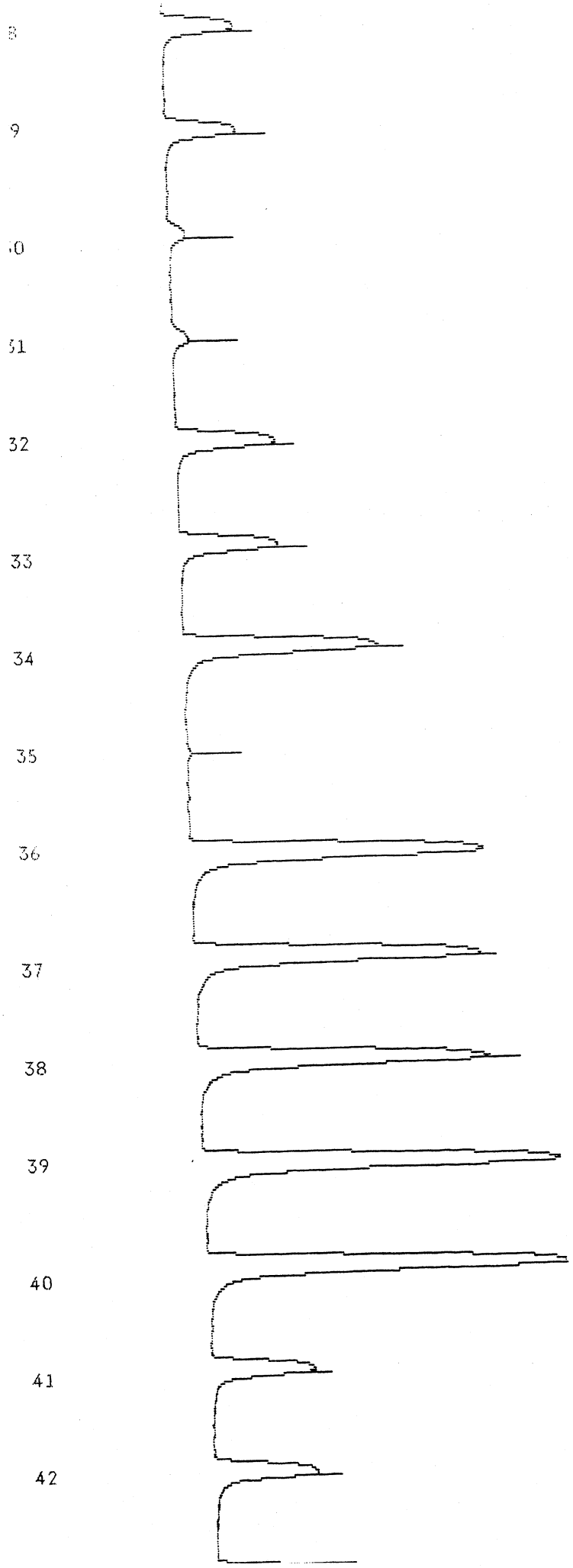
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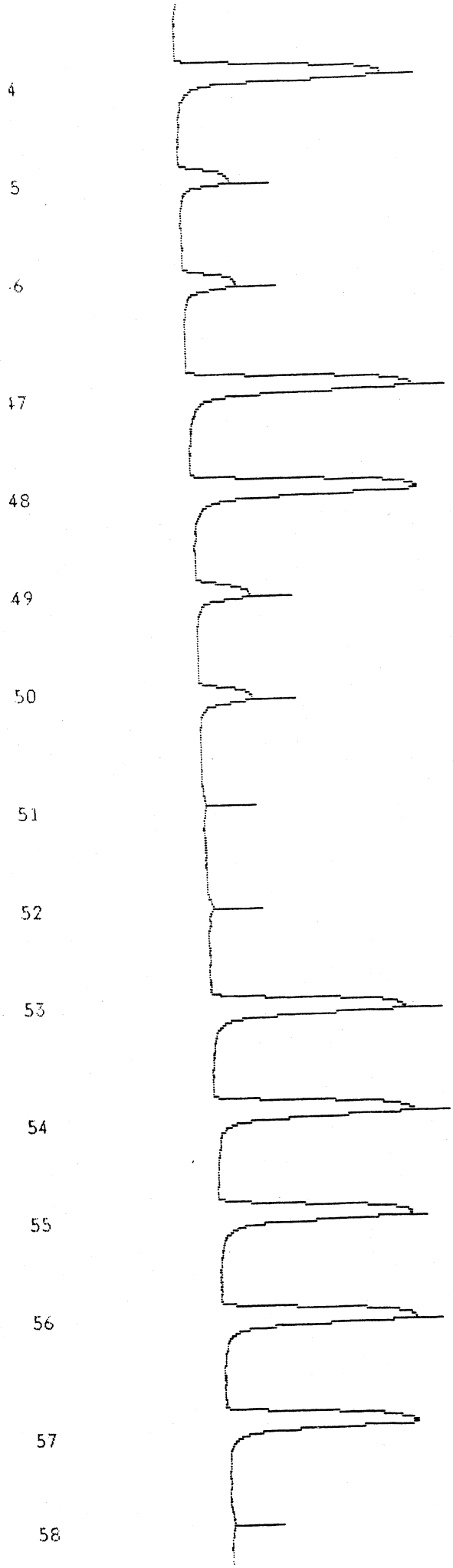
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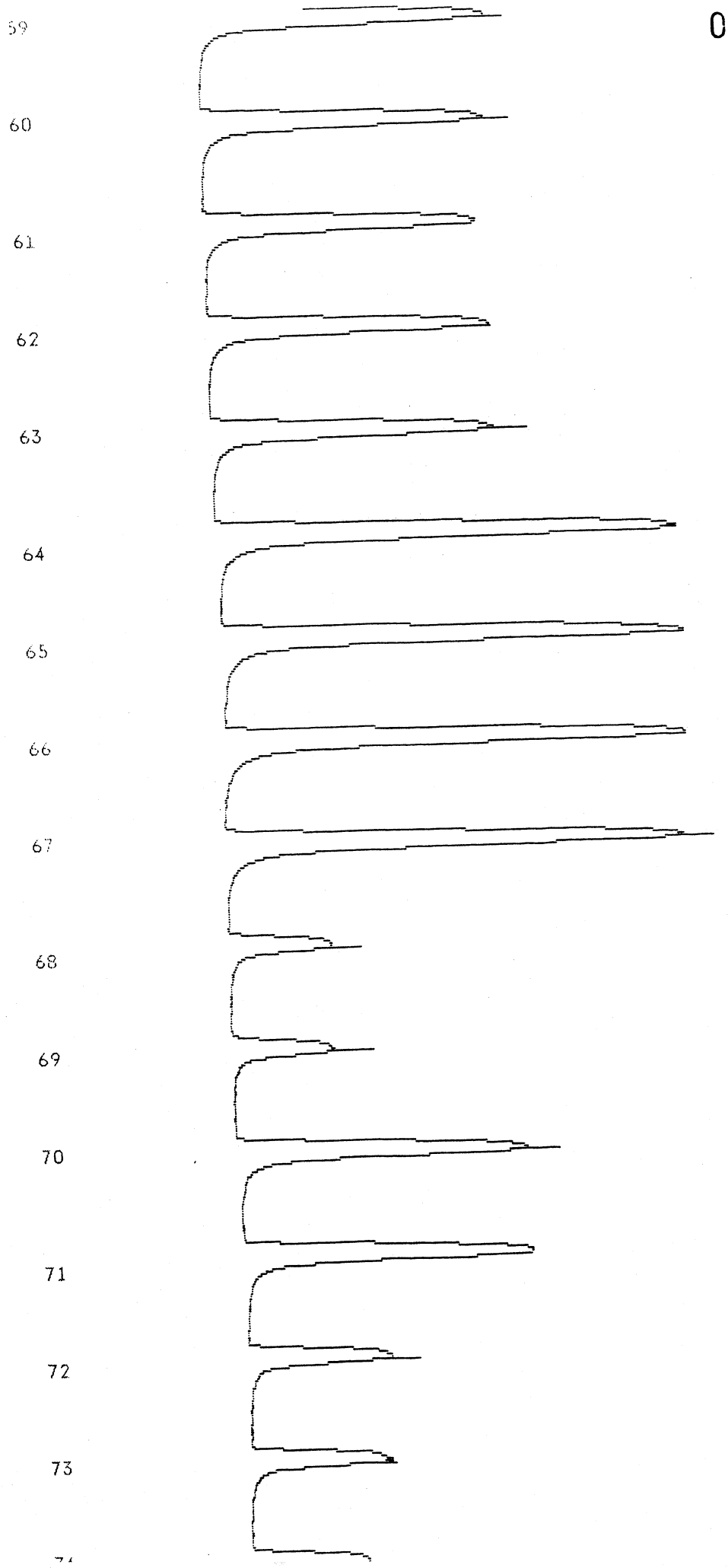
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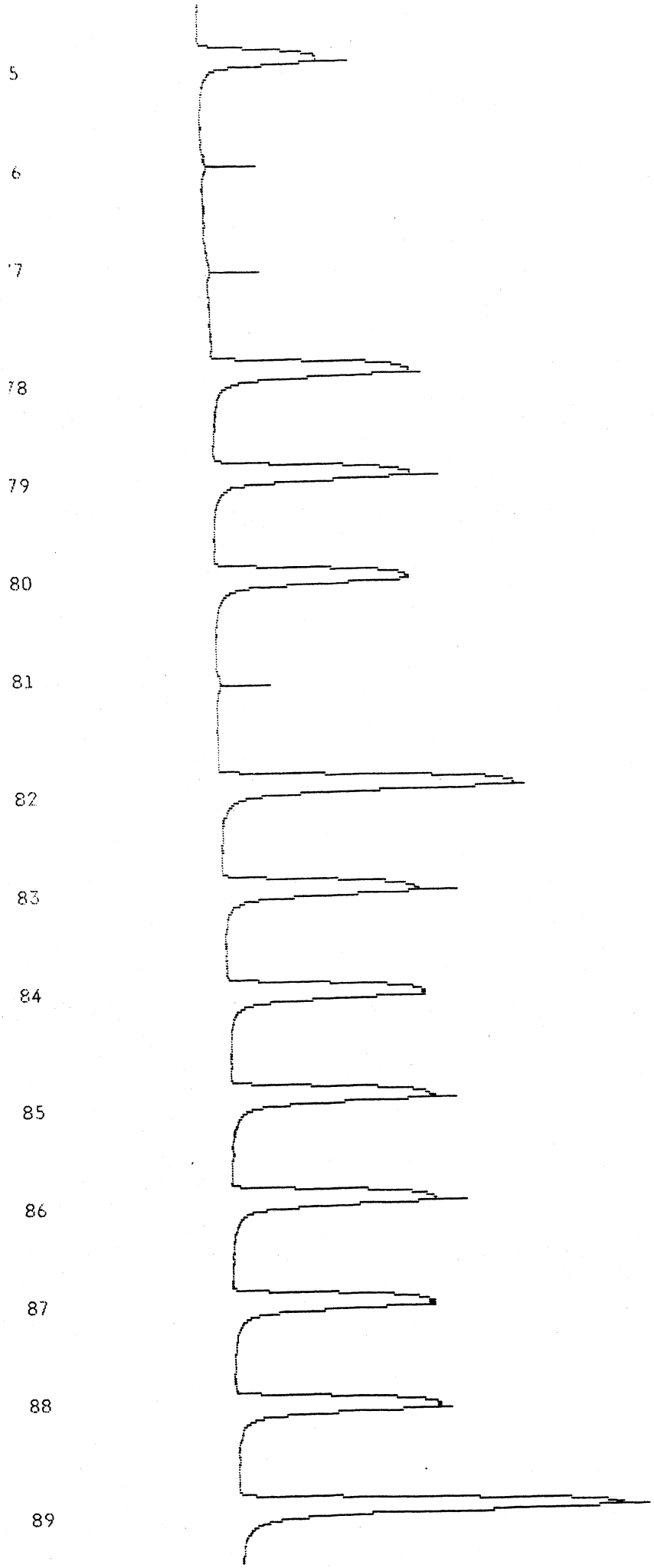
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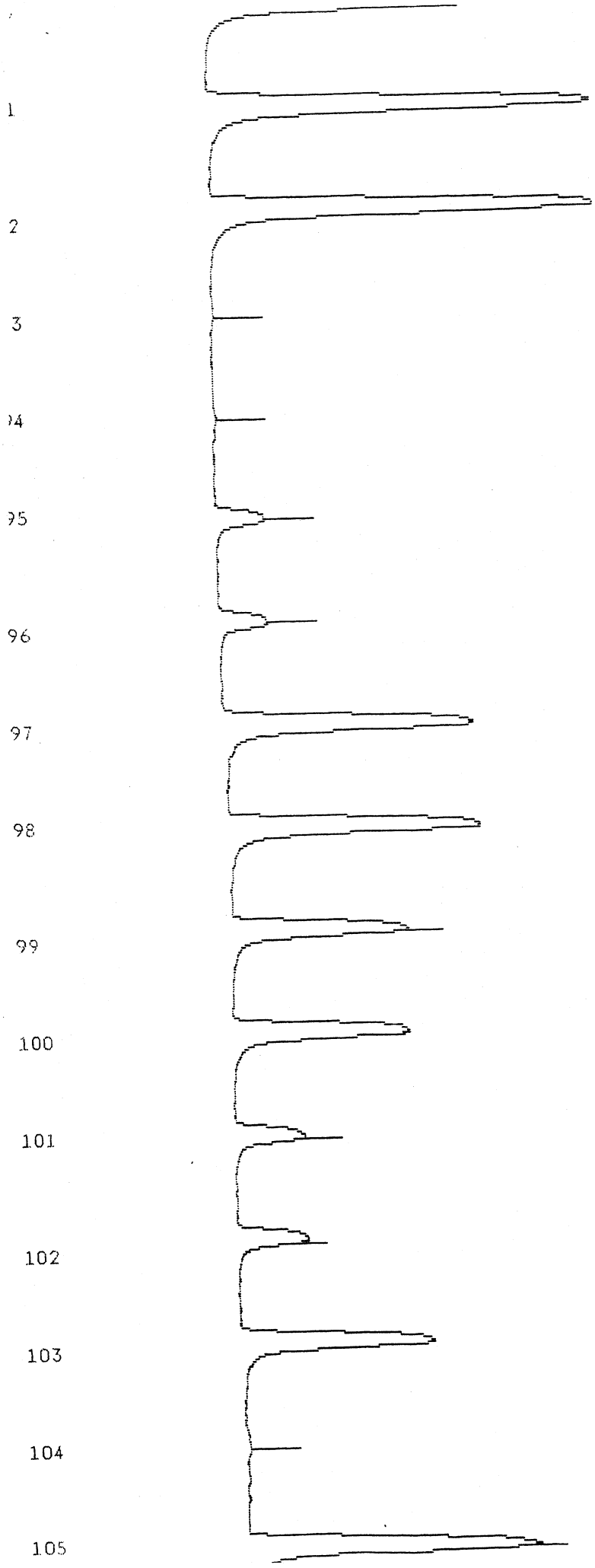
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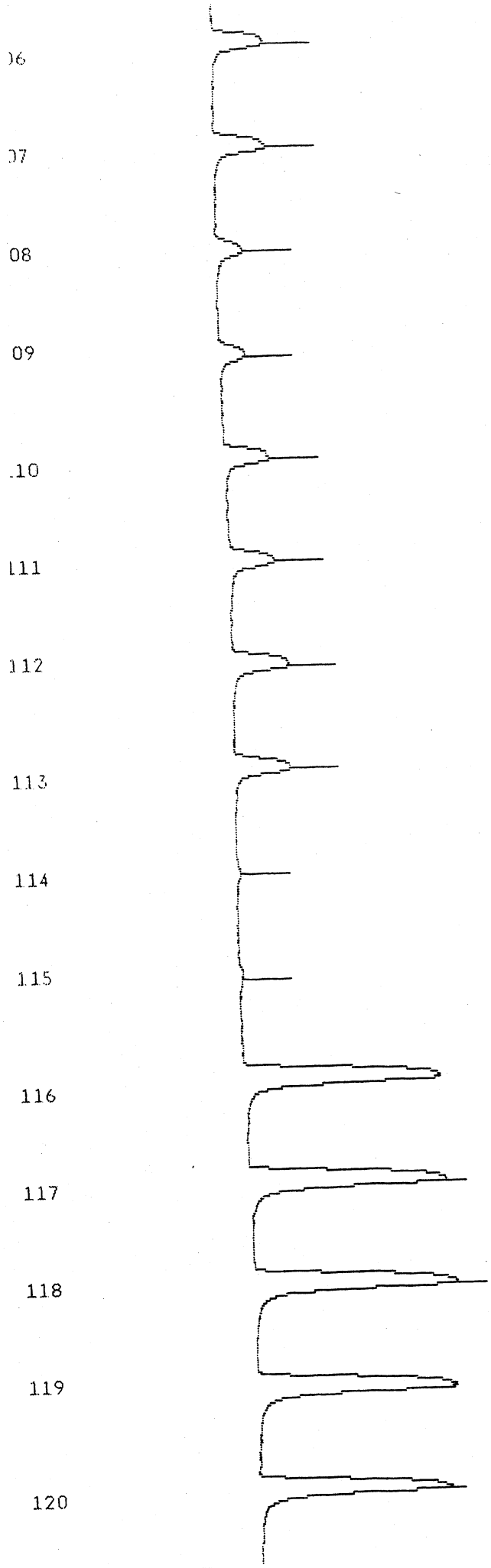
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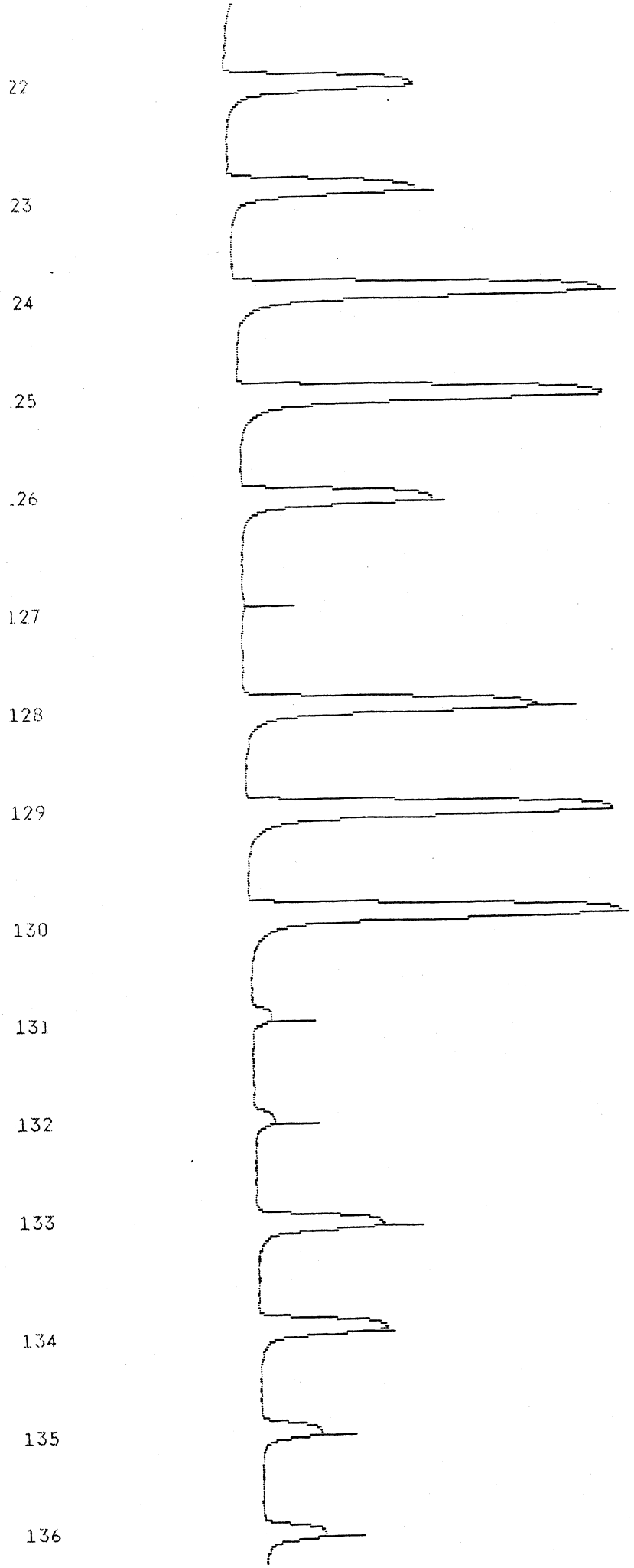
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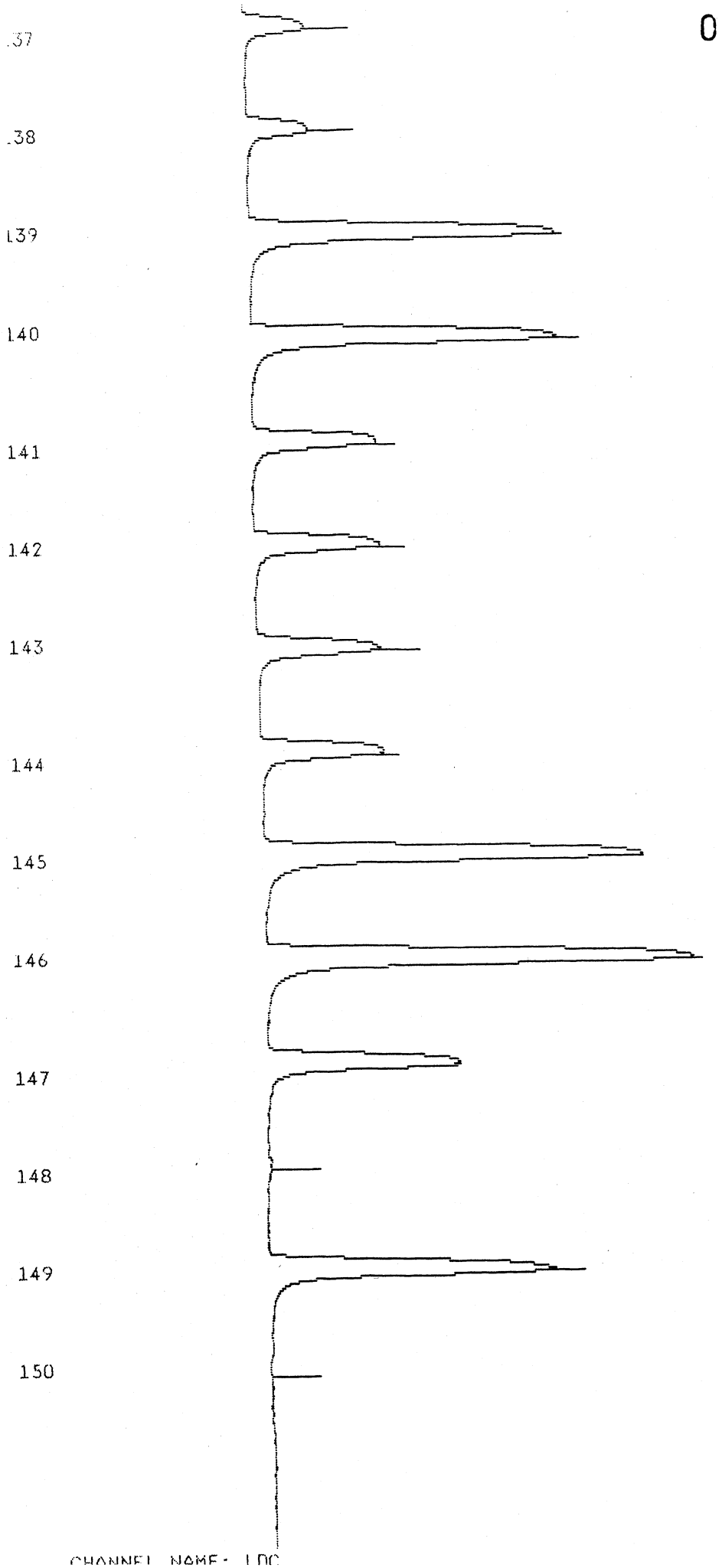
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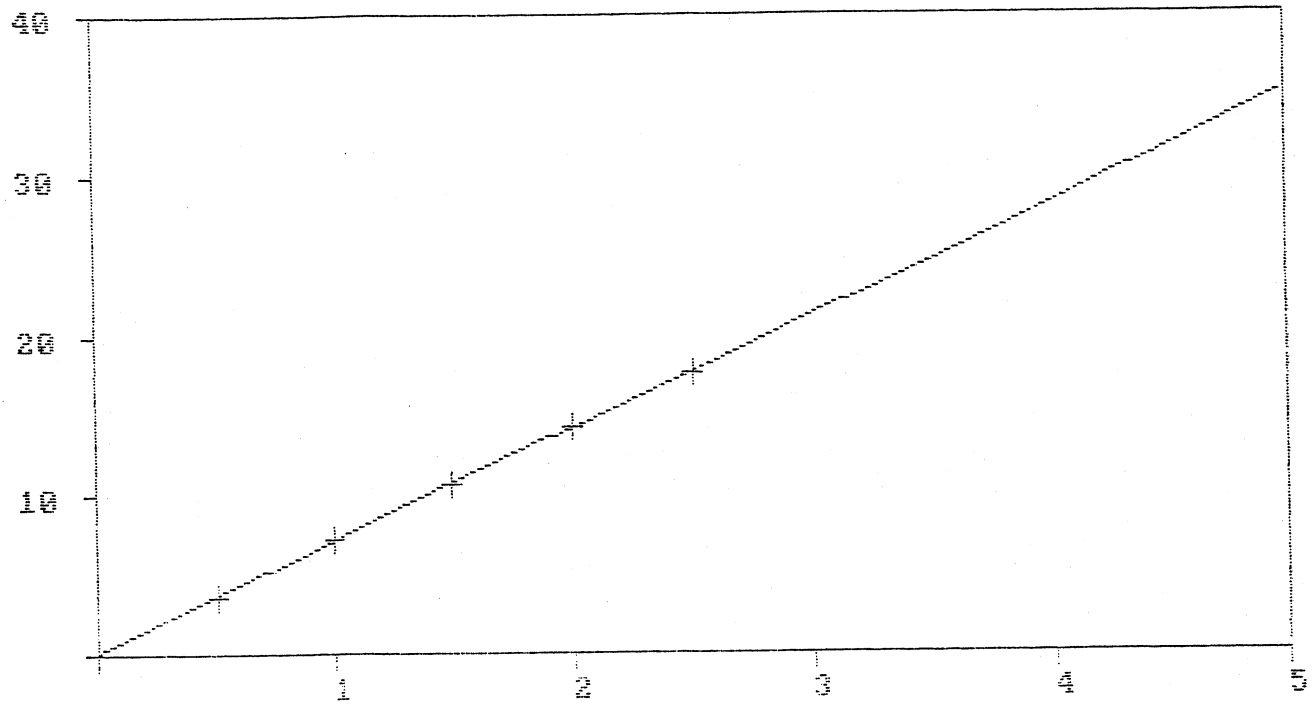
CHANNEL NAME: LDC
RUN NAME: 990920WA



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INTERCEPT = 0.14

CALIBRATION ORDER: 1
SLOPE = 7.003663

CORRELATION: .9999714

HANNEL NAME: LDC
JN DATE: 09-20-1999
AMPLE TABLE NAME: 990920WA
ETHOD NAME: HGWATER

UP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA		CONCENTRATION (ppb)	EF
1	PRIMER	1	1	10.1		1.420	s
2	DUMMY	1	1	0.1		-0.009	I
3	S1: 0	1	1	0.1		-0.006	I
4	S2: .5	1	1	3.6		0.496	
5	S3: 1	1	1	7.2		1.012	
6	S4: 1.5	1	1	10.7		1.504	
7	S5: 2	1	1	14.1		1.999	
8	S6: 2.5	1	1	17.6		2.494	
9	ICV	1	1	10.0		1.403	94%
10	B	1	1	0.0		-0.020	b
11	D4	1	1	10.7		1.504	d
12	WS 378	1	1	13.7	TUG	1.936	97%
13	ORG REF	1	1	15.6		2.205	110%
14	BL0920-1GMN	1	1	0.0	<0.015	-0.020	I
15	BL0920-1GMN	1	1	0.0		-0.020	I
16	BL0920S	1	1	7.2	0.151	1.012	s
17	BL0920S	1	1	7.2		1.002	101
18	BL0920DS	1	1	7.3	0.152	1.019	101%
19	BL0920DS	1	1	7.2		1.005	
20	47491	6	1	5.0	2.418	4.170	
21	47491	6	1	5.0		4.170	

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5	47491S	6	1	11.7		9.902		
6	47491DS	6	1	11.8	5.956	9.965	96%	
7	47491DS	6	1	11.7		9.881		
8	47491DS Dil. Check	30	1	2.4		9.658	2% RPD	
9	47491DS	30	1	2.4		9.763		
0	47489	1.5	1	0.5	<0.023	0.070	I	
1	47489	1.5	1	0.4		0.065	s	
2	47490	1.5	1	3.5	0.314	0.713		
3	47490	1.5	1	3.5		0.713		
4	CCV	1	1	7.1		0.995	100%	
5	B	1	1	0.0		-0.020	b	
6	D4	1	1	10.7		1.504	d	
7	47492	1.5	1	10.5	1.340	2.209		
8	47492	1.5	1	10.7		2.256		
9	47493	3	1	13.1	3.218	5.547		
0	47493	3	1	13.1		5.547		
1	47494	1.5	1	3.7	0.444	0.760		
2	47494	1.5	1	3.7		0.771		
3	47495	1.5	1	7.6	0.983	1.597		
4	47495	1.5	1	7.5		1.571		
5	47496	1.5	1	1.7	0.207	0.336		
6	47496	1.5	1	1.8		0.352	s	
7	47497	1.5	1	8.2	1.055	1.728		
8	47497	1.5	1	8.4		1.759		
9	47498	1.5	1	1.8	0.210	0.363		
0	47498	1.5	1	1.8		0.352		
1	BL0920-2GMN	1	1	0.0	<0.015	-0.020	I	
2	BL0920-2GMN	1	1	0.1		-0.009	I	
3	BL0920S	1	1	7.3	0.154	1.019	103%	
4	BL0920S	1	1	7.4		1.037		
5	BL0920DS	1	1	7.1	0.151	0.995	101%	
6	BL0920DS	1	1	7.3		1.019		
7	CCV	1	1	7.2		1.002	100%	
8	B	1	1	0.0		-0.020	b	
9	D4	1	1	10.7		1.504	d	
0	47500	1.5	1	10.6	1.365	2.235		
1	47500	1.5	1	10.3		2.167	s	
2	47500D	1.5	1	10.6	1.394	2.245		
3	47500D	1.5	1	10.6		2.251		
4	47500S	1.5	1	17.2	2.267	3.652	95%	
5	47500S	1.5	1	17.2		3.658		
6	47500DS	1.5	1	17.1	2.249	3.642	93%	
7	47500DS	1.5	1	17.0		3.611		
8	47499	1.5	1	3.7	0.338	0.755		
9	47499	1.5	1	3.7		0.760		
0	47501	1.5	1	10.8	1.299	2.277		
1	47501	1.5	1	10.8		2.282		
2	47502	1.5	1	5.3	0.618	1.095		
3	47502	1.5	1	5.2		1.074		
4	47503	1.5	1	4.3	0.519	0.891		
5	47503	1.5	1	4.1		0.839		
6	BL0920-3GKC	1	1	0.0	<0.015	-0.013	s	
7	BL0920-3GKC	1	1	0.0		-0.020	I	
8	BL0920S	1	1	7.2	0.300	1.002	100	
9	BL0920S	1	1	7.1		0.998		
0	CCV	1	1	7.0		0.981	98%	
1	B	1	1	0.0		-0.020	b	
2	D4	1	1	10.7		1.504	d	
3	BL0920DS	1	1	7.1	0.297	0.991	99%	
4	BL0920DS	1	1	7.1		0.991		
5	47491	1.5	1	7.4	NS ~~0.738~~ 1.106	1.555		
6	47491	1.5	1	7.3		1.539		
7	47491D	1.5	1	7.3	NS ~~0.734~~ 1.101	1.534		

	47491DS	1.5	1	[illegible]	MB	2.018 ~~0.078~~	2.957	95%
2	47491DS	1.5	1	14.0			2.967	
3	47489	1.5	1	0.0	MB	<0.030	-0.030	I
4	47489	1.5	1	0.0			-0.030	I
5	47490	1.5	1	1.6	MB	~~<0.030~~ 0.149	0.310	
6	47490	1.5	1	1.6			0.305	
7	47492	1.5	1	9.1		1.402	1.916	
8	47492	1.5	1	9.1			1.926	
9	47493	1.5	1	6.4		0.918	1.335	
10	47493	1.5	1	6.4			1.346	
11	47494	1.5	1	2.4		0.292	0.478	
12	47494	1.5	1	2.4			0.478	
13	CCV	1	1	7.0			0.974	97%
14	B	1	1	0.0			-0.020	b
15	D4	1	1	10.7			1.504	d
16	47495	1.5	1	1.8		0.254	0.347	s
17	47495	1.5	1	1.7			0.336	
18	47496	1.5	1	0.9		0.099	0.153	
19	47496	1.5	1	0.7			0.127	I
20	47497	1.5	1	1.4		0.186	0.279	
21	47497	1.5	1	1.4			0.279	
22	47498	1.5	1	1.9		~~0.103~~	0.384	0.273
23	47498	1.5	1	1.9			0.368	
24	BL0920-4GKC	1	1	0.0		<0.03	-0.016	I
25	BL0920-4GKC	1	1	0.0			-0.016	I
26	BL0920S	1	1	7.1		0.298	0.988	99%
27	BL0920S	1	1	7.1			0.998	
28	BL09200S	1	1	7.4		0.304	1.030	101%
29	BL09200S	1	1	7.1			0.995	
30	47500	1.5	1	6.9		0.984	1.450	
31	47500	1.5	1	6.9			1.445	s
32	475000	1.5	1	6.9		0.983	1.450	
33	475000	1.5	1	6.9			1.440	
34	47500S	1.5	1	13.4		1.931	2.831	93%
35	47500S	1.5	1	13.4			2.847	
36	CCV	1	1	7.0			0.984	98%
37	B	1	1	0.0			-0.020	b
38	D4	1	1	10.7			1.504	d
39	47500DS	1.5	1	13.4		1.939	2.836	94%
40	475000S	1.5	1	13.5			2.868	
41	47499	1.5	1	0.6		0.042	0.091	I
42	47499	1.5	1	0.6			0.101	I
43	47501	1.5	1	4.6		0.606	0.959	
44	47501	1.5	1	4.6			0.964	
45	47502	1.5	1	2.1		0.281	0.415	
46	47502	1.5	1	2.1			0.410	s
47	47503	1.5	1	2.1		0.283	0.420	
48	47503	1.5	1	2.1			0.431	
49	42065	30	1	11.2			47.315	
50	42065	30	1	11.2			47.315	
51	44797-KMNO4	15	1	4.7		4.071	9.693	
52	44797-KMNO4	15	1	4.7			9.693	
53	44888-KMNO4	15	1	4.6		4.458	9.484	
54	44888-KMNO4	15	1	4.6			9.484	
55	WS 378	1	1	14.0			1.978	
56	ORG REF	1	1	15.8			2.229	
57	CCV	1	1	7.1			0.998	
58	B	1	1	0.0			-0.020	b
59	D4	1	1	10.7			1.504	d

fm 991103

INTERCEPT: 0.14
CORRELATION COEF: .9999714

LINEAR COEF: 7.003663

/09/24 12:50:35 Printed by MGAS LDCA DATA TO BE VALIDATED (METVAL') Analyzed by MGAS

er	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
95	TRC-LO	[redacted]	Mercury -	PV	-0.0100	-99999.0	0.1010	101.	0.1000	100.	99/09/07	NRA1	99/09/08	MG01	27.	21.	*BLKIMP*
96	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA1	99/09/08	MG01	27.	21.	*DDL*
97	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA1	99/09/08	MG01	28.	21.	*DDL*
98	TRC-LO		Mercury -	PV	0.3350	0.3010	2.9160	103.	2.9160	103.	99/09/07	NRA1	99/09/08	MG01	27.	21.	
99	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA1	99/09/08	MG01	27.	21.	*DDL*
00	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA1	99/09/08	MG01	27.	21.	*DDL*
01	TRC-LO		Mercury -	PV	0.3070						99/09/07	NRA1	99/09/08	MG01	27.	21.	
02	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA1	99/09/08	MG01	26.	21.	*DDL*
03	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA1	99/09/08	MG01	26.	21.	*DDL*
04	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA1	99/09/08	MG01	27.	21.	*DDL*
05	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA1	99/09/08	MG01	27.	21.	*DDL*
07	INTERNAL		Mercury -	PV	-0.0100	-99999.0	0.1010	101.	0.1000	100.	99/09/07	NRA1	99/09/08	MG01	$$$	$$$	*BLKIMP*
306	TRC-LO		Mercury -	PV	-0.2500	-0.2500	2.6340	101.	2.6790	103.	99/09/07	NRA2	99/09/08	MG01	27.	21.	*DDL*
307	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA2	99/09/08	MG01	27.	21.	*DDL*
308	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA2	99/09/08	MG01	26.	21.	*DDL*
309	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA2	99/09/08	MG01	26.	21.	*DDL*
888	TRC-LO		Mercury -	PV	-0.2500						99/09/07	NRA2	99/09/08	MG01	28.	21.	*DDL*
488	TRC-LO	MB R456	Mercury -	PV	-0.2500	-99999.0	0.1020	102.	0.0970	97.	99/09/07	NRA2	99/09/08	MG01	14.	11.	*BLKIMP*
489	TRC-LO	PG&E-S-OHM-RB	Mercury -	PV	-0.2500						99/09/07	NRA2	99/09/08	MG01	14.	11.	*DDL*
490	TRC-LO	PG&E-S-OHM-I-FB	Mercury -	PV	-0.2500						99/09/07	NRA2	99/09/08	MG01	15.	11.	*DDL*
491	TRC-LO	PG&E-S-OHM-Ia-1	Mercury -	PV	-0.2500						99/09/07	NRA2	99/09/08	MG01	14.	11.	*DDL*
492	TRC-LO	PG&E-S-OHM-Ib-1	Mercury -	PV	-0.2500						99/09/07	NRA2	99/09/08	MG01	16.	11.	*DDL*
907	INTERNAL		Mercury -	PV	-0.0100	-99999.0	0.1020	102.	0.0970	97.	99/09/07	NRA2	99/09/08	MG01	$$$	$$$	*BLKIMP*
493	TRC-LO	PG&E-S-OHM-Ia-2	Mercury -	PV	-0.2500						99/09/07	NRA3	99/09/08	MG01	14.	11.	*DDL*
494	TRC-LO	PG&E-S-OHM-Ib-2	Mercury -	PV	-0.2500	-0.2500	2.7640	107.	2.7130	105.	99/09/07	NRA3	99/09/08	MG01	14.	11.	*DDL*
495	TRC-LO	PG&E-S-OHM-Ia-3	Mercury -	PV	-0.2500						99/09/07	NRA3	99/09/08	MG01	13.	11.	*DDL*
496	TRC-LO	PG&E-S-OHM-Ib-3	Mercury -	PV	-0.2500						99/09/07	NRA3	99/09/08	MG01	13.	11.	*DDL*
497	TRC-LO	PG&E-S-OHM-Ia-4	Mercury -	PV	-0.2500						99/09/07	NRA3	99/09/08	MG01	13.	11.	*DDL*
498	TRC-LO	PG&E-S-OHM-Ib-4	Mercury -	PV	-0.2500						99/09/07	NRA3	99/09/08	MG01	13.	11.	*DDL*
499	TRC-LO	PG&E-S-OHM-O-FB	Mercury -	PV	-0.2500						99/09/07	NRA3	99/09/08	MG01	15.	11.	*DDL*
500	TRC-LO	PG&E-S-OHM-O-1	Mercury -	PV	-0.2500						99/09/07	NRA3	99/09/08	MG01	14.	11.	*DDL*
501	TRC-LO	PG&E-S-OHM-O-2	Mercury -	PV	-0.2500						99/09/07	NRA3	99/09/08	MG01	14.	11.	*DDL*
502	TRC-LO	PG&E-S-OHM-O-3	Mercury -	PV	-0.2500						99/09/07	NRA3	99/09/08	MG01	13.	11.	*DDL*
503	TRC-LO	PG&E-S-OHM-O-4	Mercury -	PV	-0.2500						99/09/07	NRA3	99/09/08	MG01	13.	11.	*DDL*
0907	INTERNAL		Mercury -	PV	-0.0100	-99999.0	0.1050	105.	0.1040	104.	99/09/07	NRA3	99/09/08	MG01	$$$	$$$	*BLKIMP*

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

00079

DC AUTOSAMPLER RUN LOG (MERCURY)

ate: 99.09.08 Run Code: MG01 Matrix: IMP

nalyst: 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			BL0907	NRAI.		
15			"			
16			BL0907 S			
17			"			
18			BL0907 DS			
19			"			
20	10		44798			
21			"			
22			44798 D			
23			"			
24			44798 S			
25			"			
26			44798 DS			
27			"			
28			44796			
29			"			
30			44797			
31			"			
32			44799			
33			"			
34			CCV			
35			B			
36			D4			
37	10		44800			
38			"			
39			44801			
40			"			
41	10		44802			
42			"			
43			44803			
44			"			
45			44804			
46			"			
47			44805			
48			"			
49			BL0907	NRA2		
50			"			
51			BL0907 S			
52			"			
53			BL0907 DS			
54			"			
55	10		44806			
56			"			
57			CCV			
58			B			
59			D4			
60	10		44806 D			
61			"			
62			44806 S			
63			"			
64			44806 DS			
65			"			
66			44807			
67			"			
68			44808			
69			"			
70			44809			
71			"			
72			44888			
73			"			
74			44889			
75			47489			
76			47490			
77			"			
78			47491			
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.

)C AUTOSAMPLER RUN LOG (MERCURY)

te: 99.09.08 Run Code: MG01 Matrix: IMP

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

P	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			Std 5 (S5)	2.0		
			Std 6 (S6)	2.5		
			ICV			
			B (Std 1)			
			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21			B			
22			D4			
23	10		47492			
24			"			
25			47493			
26			"			
27			BL0907	NRA3		
28	"		"			
29			BL0907 S			
30			"			
31			BL0907 DS			
32			"			
33	10		47494			
34			"			
35			47494 D			
36			"			
37			47494 S			
38			"			
39			47494 DS			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	10		47495			
42			"			
43			CCV			
44			B			
45			D4			
46	10		47496			
47			"			
48			47497			
49			"			
50			47498			
51			"			
52			47499			
53			"			
54			47500			
55			"			
56			47501			
57			"			
58			47502			
59			"			
60			47503			
61			"			
62			CCV			
63			B			
64			D4			
65			BL0908	ABB3		
66			BL0908 S			
67			49178			
68			178 D			
69			178 S			
70			176			
71			176 S			
72			48702			
73			49158			
74			160			
75	10	1/10	48582	ABA1/0907 (RERUN		
76			WS378			
77			ORG. REF			
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.

00082

DGDHPDX

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DGHGLEACH, DG29HG***

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
7	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 bulked and mixed
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	NRA1	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL0907	"	"	"	"	(Processed Blank)
	11	BL0907 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	044798	"	1	15	10x	250 ml
1	13	D	"	↓	↓	↓	(Duplicate sample)
1	14	S	"	↓	↓	↓	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	↓	↓	↓	(Duplicate Spiked sample)
2	16	796	"	↓	↓	↓	
3	17	797	"	↓	↓	↓	
4	18	799	"	↓	↓	↓	
5	19	800	"	↓	↓	↓	
6	20	801	"	↓	↓	↓	
7	21	802	"	↓	↓	↓	
8	22	803	"	↓	↓	↓	
9	23	804	"	↓	↓	↓	
10	24	805	"	↓	↓	↓	
	25	CCV (Cont. Calib. Verif.)	NRA2	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL0907	"	"	"	"	(Processed Blank)
	27	BL0907 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28	44806	"	1	15	10x	250 ml
1	29	D	"	↓	↓	↓	(Duplicate sample)
1	30	S	"	↓	↓	↓	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	↓	↓	↓	(Duplicate Spiked sample)
2	32	807	"	↓	↓	↓	
3	33	808	"	↓	↓	↓	
4	34	809	"	↓	↓	↓	
5	35	44888	"	↓	↓	↓	
6	36	44889	"	↓	↓	↓	
7	37	490	"	↓	↓	↓	
8	38	491	"	↓	↓	↓	
9	39	492	"	↓	↓	↓	
10	40	493	"	↓	↓	↓	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run

Prepare 0.05 ppm standards daily

HNO3 Lot. No. 119040 | H2SO4 Lot. No. 318060 | Bath Temps. 195 °C

Prepared By: NR Date: 99/09/07 Checked by: MN

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	41	CCV (Cont. Calib. Verif.)	NCA3	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	42	BL 0907	"	"	"	"	(Processed Blank)
	43	BL 0907 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	44	047494	"	1	15	10x	250 ml
1	45	D	"	"	"	"	(Duplicate sample)
1	46	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	47	DS	"	"	"	"	(Duplicate Spiked sample)
2	48	495	"	"	"	"	
3	49	496	"	"	"	"	
4	50	497	"	"	"	"	
5	51	498	"	"	"	"	
6	52	499	"	"	"	"	
7	53	500	"	"	"	"	
8	54	501	"	"	"	"	
9	55	502	"	"	"	"	
10	56	047503	"	"	"	"	

Comments

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

*** group of several Method 29 testcodes

Dilution factor of 1.5 is corrected by entering the calibration concentrations listed above

Procedure/Methodology:

1 Prepare 25 ppm Intermediate stock (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO3
2 Prepare 0.05 ppm Working stock daily by pipetting 200 ul., of 25 ppm Stock to 100 ml final volume of 2% HNO3
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 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
7 Spike the tubes as indicated in the comment sector of the digestion sheet
8 Add 0.5 ml. of conc. Nitric Acid (HNO3), and 1 ml. of conc. Sulphuric acid, (H2SO4), to each tube
9 Add 3 ml. Potassium Permanganate (KMnO4), colour should remain for at least 15 minutes
10 Add 1.5 ml. of Potassium persulphate, (K2S2O8), to each tube
11 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
12 Remove tubes and allow to cool to room temperature
13 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
14 Recap tubes and shake until the Potassium Permanganate (KMnO4) is destroyed and sample becomes colourless
15 Dilute the sample to a final volume of 30 ml., cap and mix well

REFERENCE STANDARDS/SPIKING SOLUTIONS:
Source: Inorganic Ventures Standard, see standard tracking binder for current lot and expiry date information

ICV/CCV STANDARDS:
Source: High Purity MESS-ZENO 30/QCA Standard, see standard tracking binder for current lot

INTERNAL REFERENCE STANDARD: (2 ppb in 10% HNO3)
Source: EPA WS 378 or SPEX CertiPrep Trace Metal - Water Supply, see standard tracking binder for current source, lot and expiry date information.

All reagents used are of a grade suitable for mercury analyses

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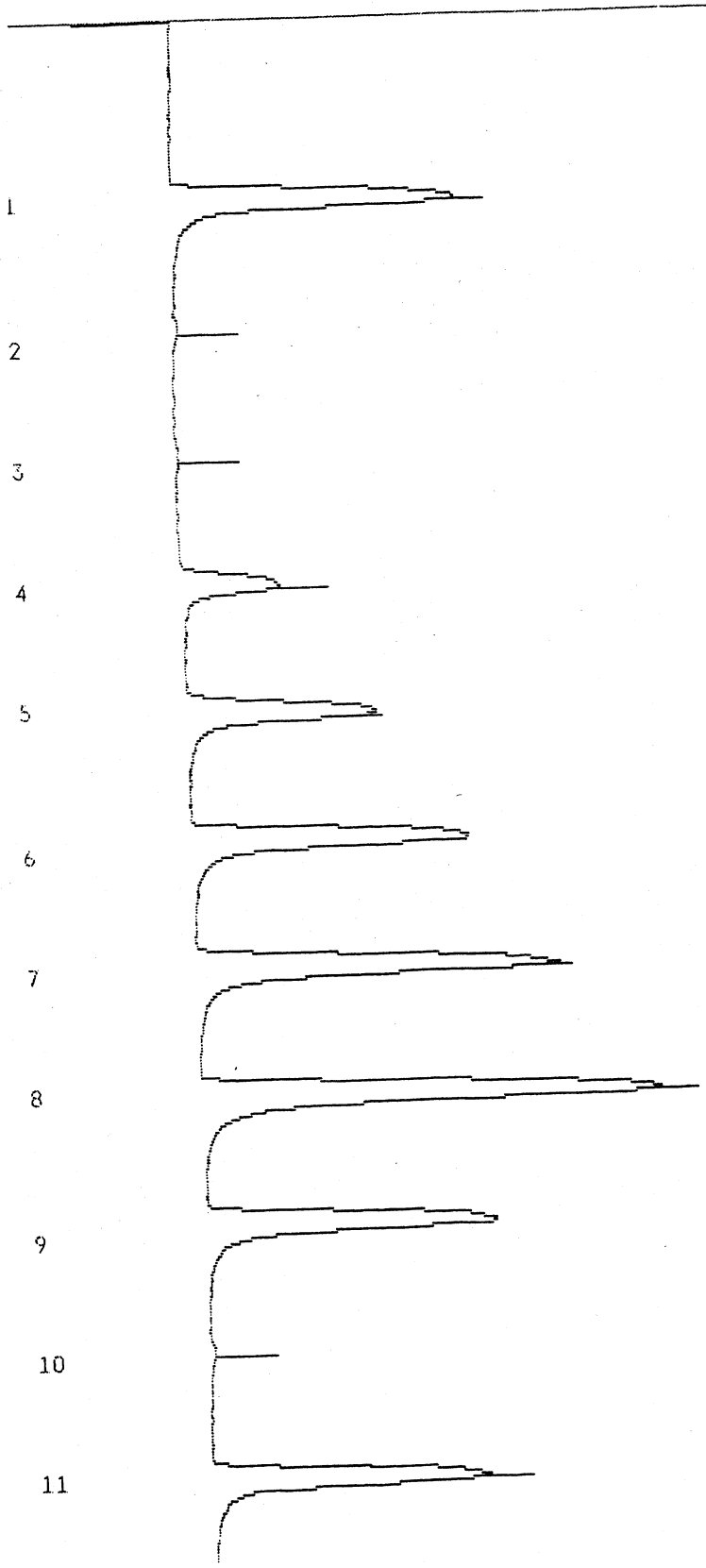
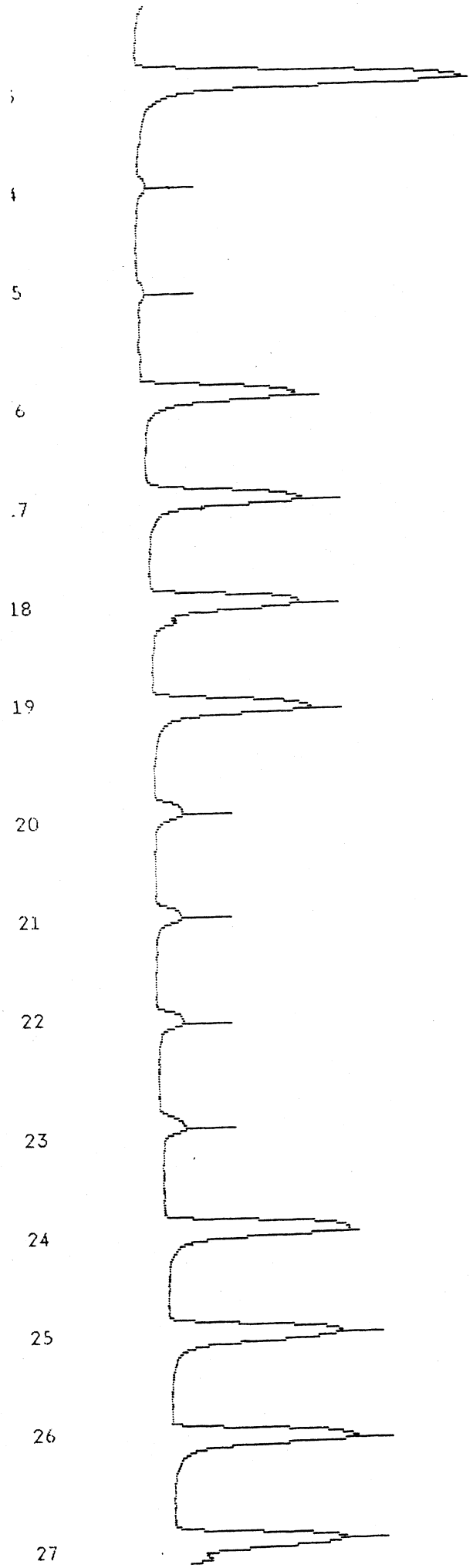
ART SPEED: 30
ITA FILE NAME: C:\DP4\DATA\990908W.DAT

CHART DATE: 09-08-1999

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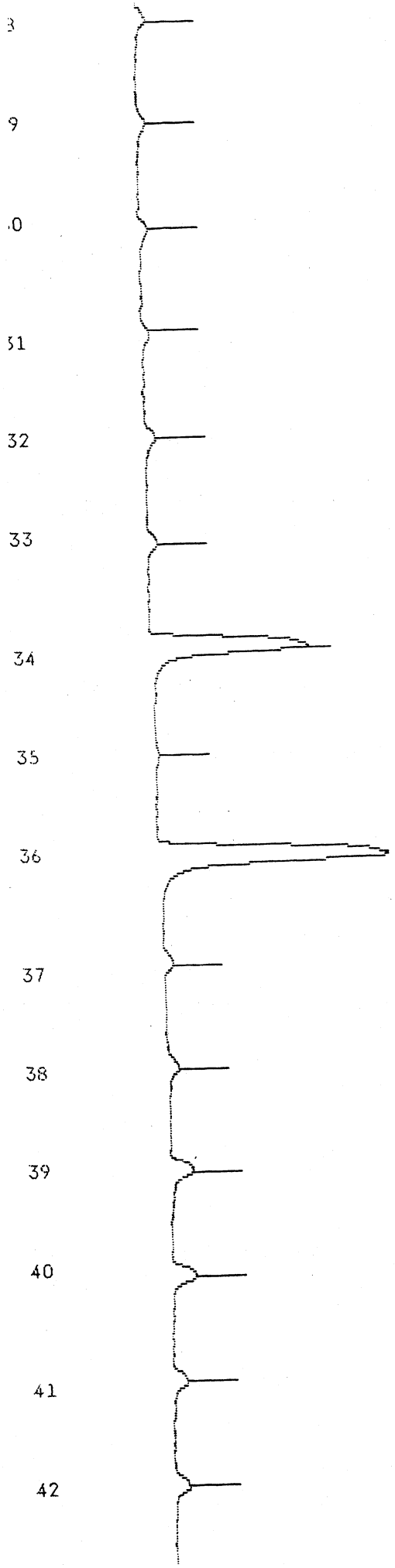
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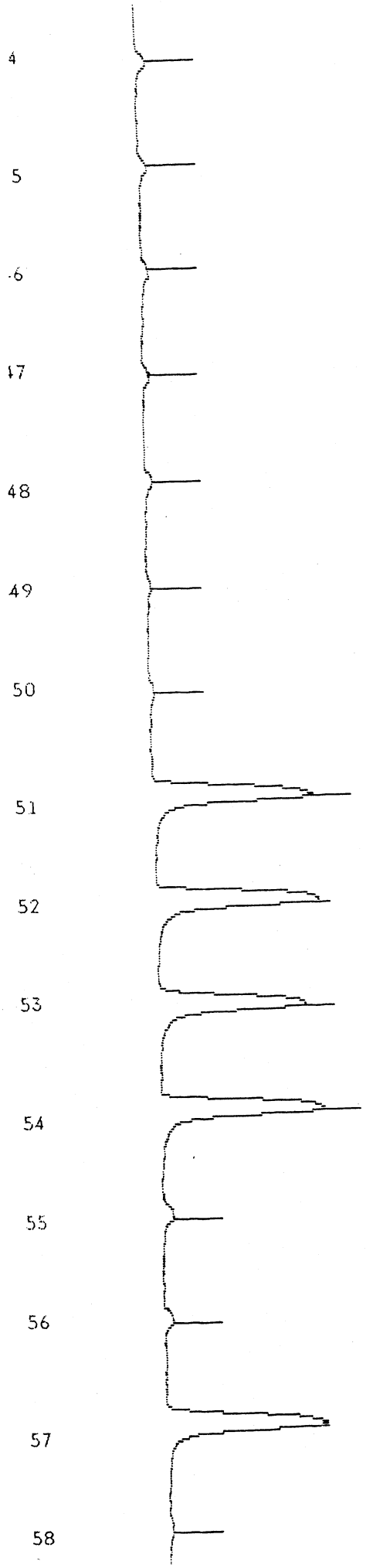
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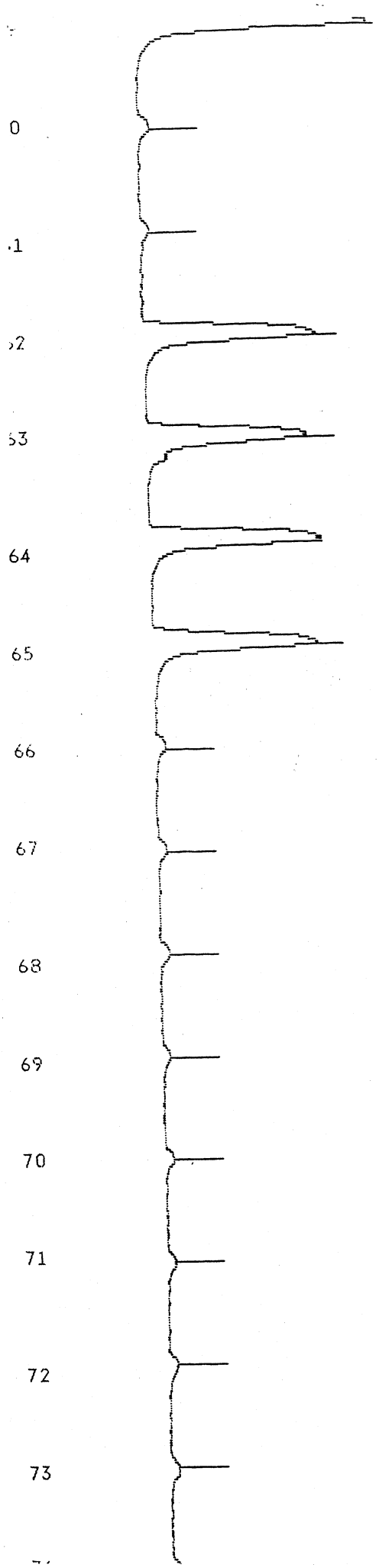
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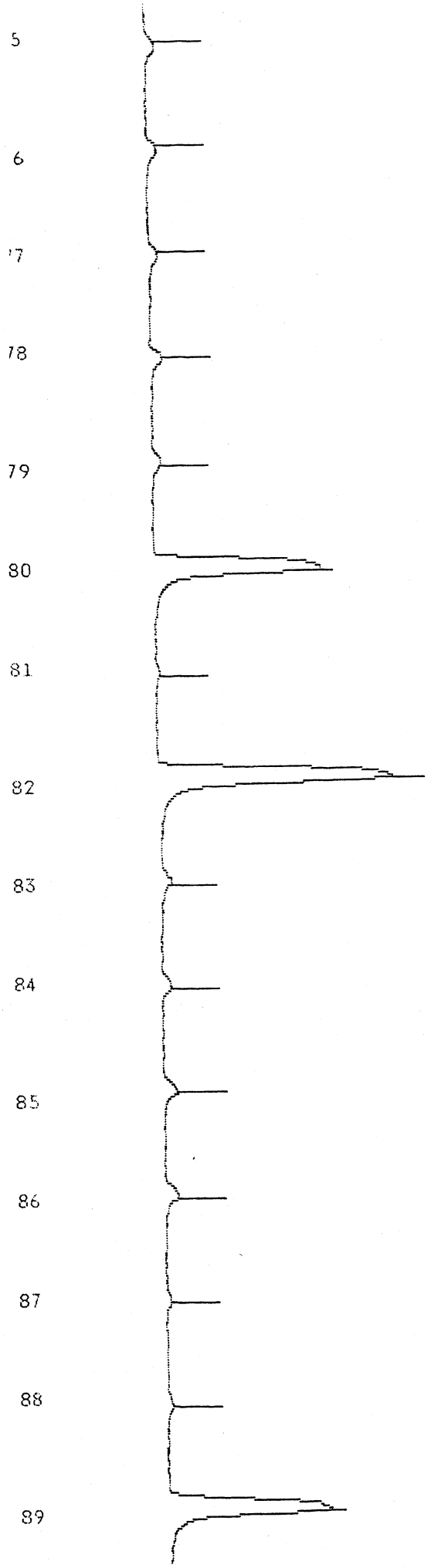
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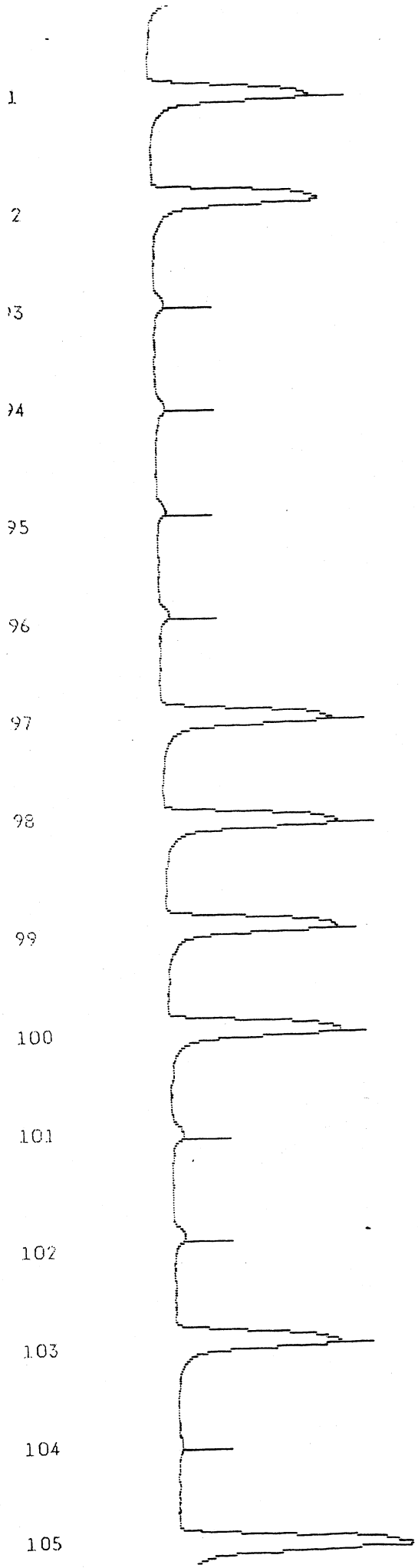
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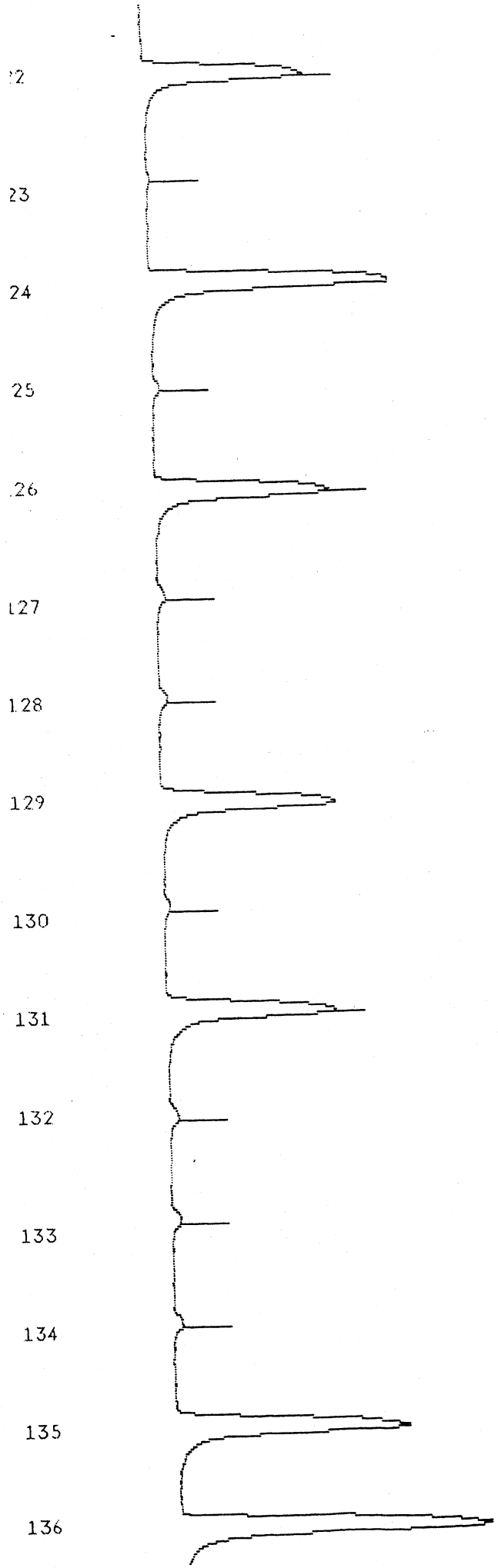
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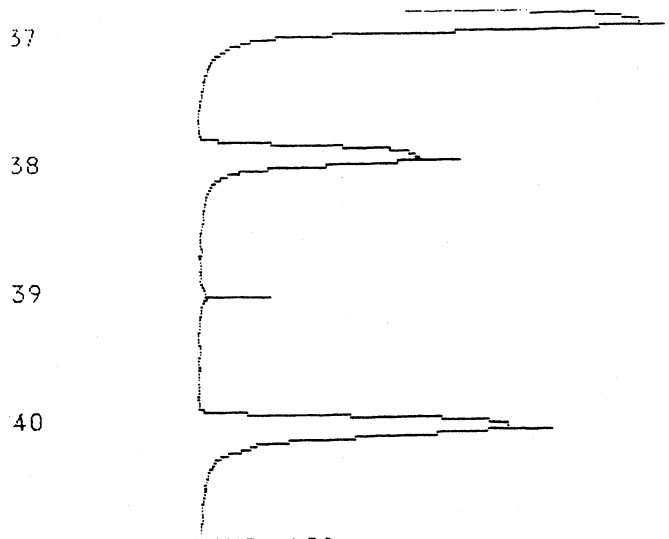

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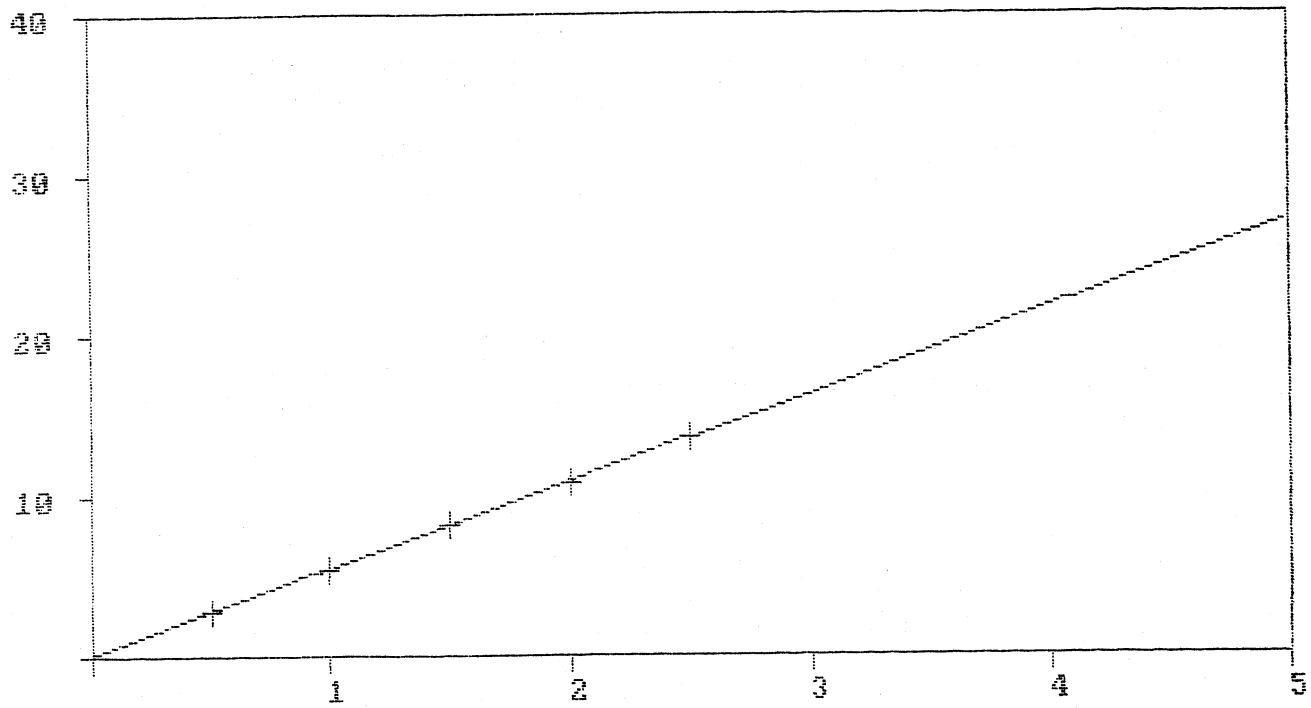
RUN NAME: 990908W



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INTERCEPT = -4.54

CALIBRATION ORDER: 1
SLOPE = 5.4045

CORRELATION: .9999488

HANNEL NAME: LDC
JN DATE: 09-07-1999
AMPLE TABLE NAME: 990908W
ETHOD NAME: HGWATER

JP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION (ppb)	EF
1	PRIMER	1	1	8.4	1.537	s
2	DUMMY	1	1	0.0	-0.004	I
3	S1: 0	1	1	0.0	0.001	I
4	S2: .5	1	1	2.8	0.502	
5	S3: 1	1	1	5.4	0.995	
6	S4: 1.5	1	1	8.2	1.510	
7	S5: 2	1	1	10.8	1.984	
8	S6: 2.5	1	1	13.6	2.508	

1	D4	1	1	8.2	00094	1.510	d	
2	WS 378	1	1	10.8		1.993		100%
3	ORG REF	1	1	11.8		2.183		109%
4	BL0907-NRA1 44795	1	1	0.1	<0.010	0.010	I	
5	BL0907-NRA1	1	1	0.1		0.014	I	
6	BL0907S	1	1	5.4	0.101	0.995		101%
7	BL0907S	1	1	5.5		1.008		
8	BL0907DS	1	1	5.3	0.100	0.963		100%
9	BL0907DS	1	1	5.6		1.031		
0	44798	10	1	0.8	0.335	1.452		
1	44798	10	1	0.7		1.226		
2	44798D	10	1	0.7	0.301	1.181		
3	44798D	10	1	0.7		1.226	I	
4	44798S	10	1	6.6	2.916	12.116		103%
5	44798S	10	1	6.1		11.212		
6	44798DS	10	1	6.6	2.916	12.161		103%
7	44798DS	10	1	6.1		11.167		
8	44796	10	1	0.1	<0.250	0.097	I	
9	44796	10	1	0.1		0.142	I	
0	44797	10	1	0.1	<0.250	0.142	I	
1	44797	10	1	0.1		0.187	s	
2	44799	10	1	0.3	<0.250	0.413	I	
3	44799	10	1	0.2		0.323	I	
4	CCV	1	1	5.5		1.017		101%
5	B	1	1	0.0		-0.008	b	
6	D4	1	1	8.2		1.510	d	
7	44800	10	1	0.2	<0.250	0.368	I	
8	44800	10	1	0.3		0.413	I	
9	44801	10	1	0.7	0.307	1.136	I	
0	44801	10	1	0.8		1.317	I	
1	44802	10	1	0.4	<0.250	0.594	I	
2	44802	10	1	0.4		0.639	I	
3	44803	10	1	0.2	<0.250	0.232	I	
4	44803	10	1	0.3		0.413	I	
5	44804	10	1	0.2	<0.250	0.323	I	
6	44804	10	1	0.2		0.278	s	
7	44805	10	1	0.1	<0.250	0.142	I	
8	44805	10	1	0.2		0.278	I	
9	BL0907-NRA2 47488	1	1	0.0	<0.01	-0.004	I	
50	BL0907-NRA2	1	1	0.1		0.005	I	
51	BL0907S	1	1	5.5	0.102	1.008		102%
52	BL0907S	1	1	5.6		1.035		
53	BL0907DS	1	1	5.0	0.097	0.918		97%
54	BL0907DS	1	1	5.6		1.026		
55	44806	10	1	0.3	<0.250	0.413	I	
56	44806	10	1	0.2		0.278	I	
57	CCV	1	1	5.5		1.013		101%
58	B	1	1	0.0		-0.008	b	
59	D4	1	1	8.2		1.510	d	
60	44806D	10	1	0.3	<0.250	0.413	I	
61	44806D	10	1	0.2		0.323	s	
62	44806S	10	1	6.0	2.634	10.986		101%
63	44806S	10	1	5.5		10.083		
64	44806DS	10	1	5.9	2.679	10.896		103%
65	44806DS	10	1	5.7		10.534		
66	44807	10	1	0.2	<0.250	0.232	I	
67	44807	10	1	0.2		0.232	I	
68	44808	10	1	0.2	<0.250	0.278	I	
69	44808	10	1	0.2		0.232	I	
70	44809	10	1	0.1	<0.250	0.187	I	
71	44809	10	1	0.1		0.187	I	
72	44888	10	1	0.1	<0.250	0.142	I	
73	44888	10	1	0.1		0.187	I	
74	47489	10	1	0.2	<0.250	0.232	I	

7	47490	10	1	0.2		0.232	I	
78	47491	10	1	0.2	<0.250	0.323	I	
79	47491	10	1	0.1		0.187	I	
80	CCV	1	1	5.8		1.072	107%	
81	B	1	1	0.0		-0.008	b	
82	D4	1	1	8.2		1.510	d	
83	47492	10	1	0.2	<0.250	0.278	I	
84	47492	10	1	0.2		0.323	I	
85	47493	10	1	0.4	<0.250	0.594	I	
86	47493	10	1	0.3		0.503	I	
87	BL0907-NRA3	1	1	0.0	<0.01	-0.008	I	
88	BL0907-NRA3	1	1	0.0		0.001	I	
89	BL0907S	1	1	5.7	0.105	1.044	105%	
90	BL0907S	1	1	5.7		1.053		
91	BL0907DS	1	1	5.6	0.104	1.022	103%	
92	BL0907DS	1	1	5.7		1.053		
93	47494	10	1	0.2	<0.250	0.368	I	
94	47494	10	1	0.2		0.323	I	
95	47494D	10	1	0.2	<0.250	0.232	I	
96	47494D	10	1	0.2		0.368	I	
97	47494S	10	1	6.0	2.764	10.986	107%	
98	47494S	10	1	6.1		11.122		
99	47494DS	10	1	5.9	2.713	10.851	105%	
100	47494DS	10	1	5.9		10.851		
101	47495	10	1	0.3	<0.250	0.458	I	
102	47495	10	1	0.3		0.413	I	
103	CCV	1	1	5.7		1.044	104%	
104	B	1	1	0.0		-0.008	b	
105	D4	1	1	8.2		1.510	d	
106	47496	10	1	0.2	<0.250	0.368	s	
107	47496	10	1	0.2		0.232	I	
108	47497	10	1	0.2	<0.250	0.323	I	
109	47497	10	1	0.3		0.413	I	
110	47498	10	1	0.2	<0.250	0.368	I	
111	47498	10	1	0.2		0.278	I	
112	47499	10	1	0.2	<0.250	0.232	I	
113	47499	10	1	0.1		0.142	I	
114	47500	10	1	0.2	<0.250	0.232	I	
115	47500	10	1	0.1		0.142	I	
116	47501	10	1	0.0	<0.250	-0.084	I	
117	47501	10	1	0.1		0.187	I	
118	47502	10	1	0.2	<0.250	0.232	I	
119	47502	10	1	0.2		0.278	I	
120	47503	10	1	0.0	<0.250	-0.084	I	
121	47503	10	1	0.2		0.323	s	
122	CCV	1	1	5.4		0.995	99%	
123	B	1	1	0.0		-0.008	b	
124	D4	1	1	8.2		1.510	d	
125	BL0908-ABB3 48700	1	1	0.1		0.014	I	
126	BL0908S	1	1	5.9		1.090	109%	
127	49178	1	1	0.2		0.023	I	
128	49178D	1	1	0.2		0.023	I	
129	49178S	1	1	5.9		1.076	107%	
130	49176	1	1	0.1		0.010	I	
131	49176S	1	1	5.7		1.044	104%	
132	48702	1	1	0.2		0.023	I	
133	49158	1	1	0.1		0.014	I	
134	49160	1	1	0.1		0.019	I	
135	48582-ABA1	100	1	7.9		146.011		
136	WS 378	1	1	10.6		1.953	97%	
137	ORG REF	1	1	11.5		2.124	106%	
138	CCV	1	1	5.6		1.035	103%	
139	B	1	1	0.0		-0.008	b	
140	D4	1	1	8.2		1.510	d	

IRRELATION COEF: .9999488

99/10/22 15:35:16 Printed by MGAS LDCA DATA TO BE VALIDATED (METVAL') Analyzed by MGAS

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
4795	TRC-LO	MB R456	Mercury -	PV	-0.010	-99999.0	0.100	100.	0.101	101.	99/10/01	MGHY	99/10/01	MG02	51.	45.	*BLKIMP*
4796	TRC-LO	[redacted]	Mercury -	PV	-0.010						99/10/01	MGHY	99/10/01	MG02	51.	45.	
7489	TRC-LO	PG&E-S-OHM-RB	Mercury -	PV	-0.010						99/10/01	MGHY	99/10/01	MG02	38.	35.	
3128	TRC-LO	[redacted]	Mercury -	PV	-0.010	-99999.0	0.100	100.	0.101	101.	99/10/01	MGHY	99/10/01	MG02	17.	13.	*BLKIMP*
3129	TRC-LO	[redacted]	Mercury -	PV	-0.010						99/10/01	MGHY	99/10/01	MG02	17.	13.	
3143	TRC-LO	[redacted]	Mercury -	PV	-0.010						99/10/01	MGHY	99/10/01	MG02	23.	13.	
1001	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.100	100.	0.101	101.	99/10/01	MGHY	99/10/01	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

00097

)C AUTOSAMPLER RUN LOG (MERCURY)

.te: 99.10.01 Run Code: MG02 Matrix: IMP.

ıalyst: MG Units: µg (see comments) MDL: 0.005

p	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			Std 5 (S5)	2.0		
			Std 6 (S6)	2.5		
1			ICV			
0			B (Std 1)			
1			D4 (Std 4)			
2			WS 378			
3			ORG. REF.			
4			BL1001	1B1B		
5			~~xxxxxx~~ NO CUP			
6			BL1001 S			
7			"			
8			BL1001 DS			
9			"			
20	102		50091			
21			"			
22			50091 D			
23			"			
24			50091 S			
25			"			
26			50091 DS			
27			"			
28			50089			
29			"			
30			50090			
31			"			
32			50092			
33			"			
34			CCV			
35			B			
36			D4			
37			50093			
38			"			
39			50094			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			BL1001	1N2B		
42			"			
43			BL1001 S			
44			"			
45			BL1001 DS			
46			"			
47	10		42257			
48			"			
49			42257 D			
50			"			
51			42257 S			
52			"			
53			42257 DS			
54			"			
55			42256			
56			"			
57			CCV			
58			B			
59			D4			
60	10		42258			
61			"			
62			42259			
63			"			
64			42272			
65			"			
66			42273			
67			"			
68			42274			
69			"			
70			42275			
71			"			
72			42280			
73			"			
74			BL1001	2N2B		
75			"			
76			BL1001 S			
77			"			
78			BL1001 DS			
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.

)C AUTOSAMPLER RUN LOG (MERCURY)

te: 99.10.01 Run Code: MG02 Matrix: IMP

alyst: MG Units: µg (see comments) MDL: _____

	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
			Primer (ICV)			
			Dummy (Blk)			
			Std 1 (S1)	0.0		
			Std 2 (S2)	0.5		
			Std 3 (S3)	1.0		
			Std 4 (S4)	1.5		
			Std 5 (S5)	2.0		
			Std 6 (S6)	2.5		
			ICV			
0			B (Std 1)			
1			D4 (Std 4)			
2						
3						
4						
5						
6						
7						
8						
9						
20						
21			BL1001	4N2B		
22			"			
23			BL1001S			
24			"			
25			BL1001 DS			
26			"			
27	10		42745			
28	↓		"			
29			CCV			
30			B			
31			D4			
32	10		42745 D			
33			"			
34			42745 S			
35			"			
36			42745 DS			
37			"			
38			42743			
39			"			
40			42744			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	10		42744 (Cup Missed)			
42			42746			
43			"			
44			42747			
45			"			
46			42748			
47			"			
48			42749			
49			"			
50			42750			
51			"			
52			CCV			
53			B			
54			D4			
55	10		42751			
56	↓		"			
57			42282	HYDR.		
58			"	HYX		
59			42497			
60			"			
61			43224			
62			"			
63			42760			
64			~~44497~~ "			
65			44796			
66			"			
67			47489			
68			"			
69			53129			
70			"			
71			53143			
72			"			
73			53685			
74			"			
75			WS 378			
76			ORG REF			
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.

00100 NOT DIGESTED

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DGHGLEACH, DG29HG***

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
7	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 bulked and mixed
- Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	NGHY	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1001	"	"	"	"	(Processed Blank)
	11	BL 1001 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	42282	"	"	"	"	90 ml
1	13	D	"	"	"	"	(Duplicate sample)
1	14	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	"	"	"	(Duplicate Spiked sample)
2	16	42497	"	"	"	"	50 ml
3	17	43224	"	"	"	"	84 ml
4	18	42760	"	"	"	"	90 ml
5	19	~~42498~~	"	"	"	"	50 ~~ml~~
6	20	44796	"	"	"	"	110 ml
7	21	47489	"	"	"	"	100 ml
8	22	53129	"	"	"	"	48 ml
9	23	53143	"	"	"	"	74 ml
10	24	53685	"	"	"	"	50 ml
	25	CCV (Cont. Calib. Verif.)		20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL	"	"	"	"	(Processed Blank)
	27	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28		"	"	"	"	
1	29	D	"	"	"	"	(Duplicate sample)
1	30	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	"	"	"	(Duplicate Spiked sample)
2	32		"	"	"	"	
3	33		"	"	"	"	
4	34		"	"	"	"	
5	35		"	"	"	"	
6	36		"	"	"	"	
7	37		"	"	"	"	
8	38		"	"	"	"	
9	39		"	"	"	"	
10	40		"	"	"	"	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run

Prepare 0.05 ppm standards daily

HNO3 Lot. No. | H2SO4 Lot. No. | Bath Temps. / / °C

Prepared By: [illegible] Date: 99/10/01 Checked by: [illegible]

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ART SPEED: 30
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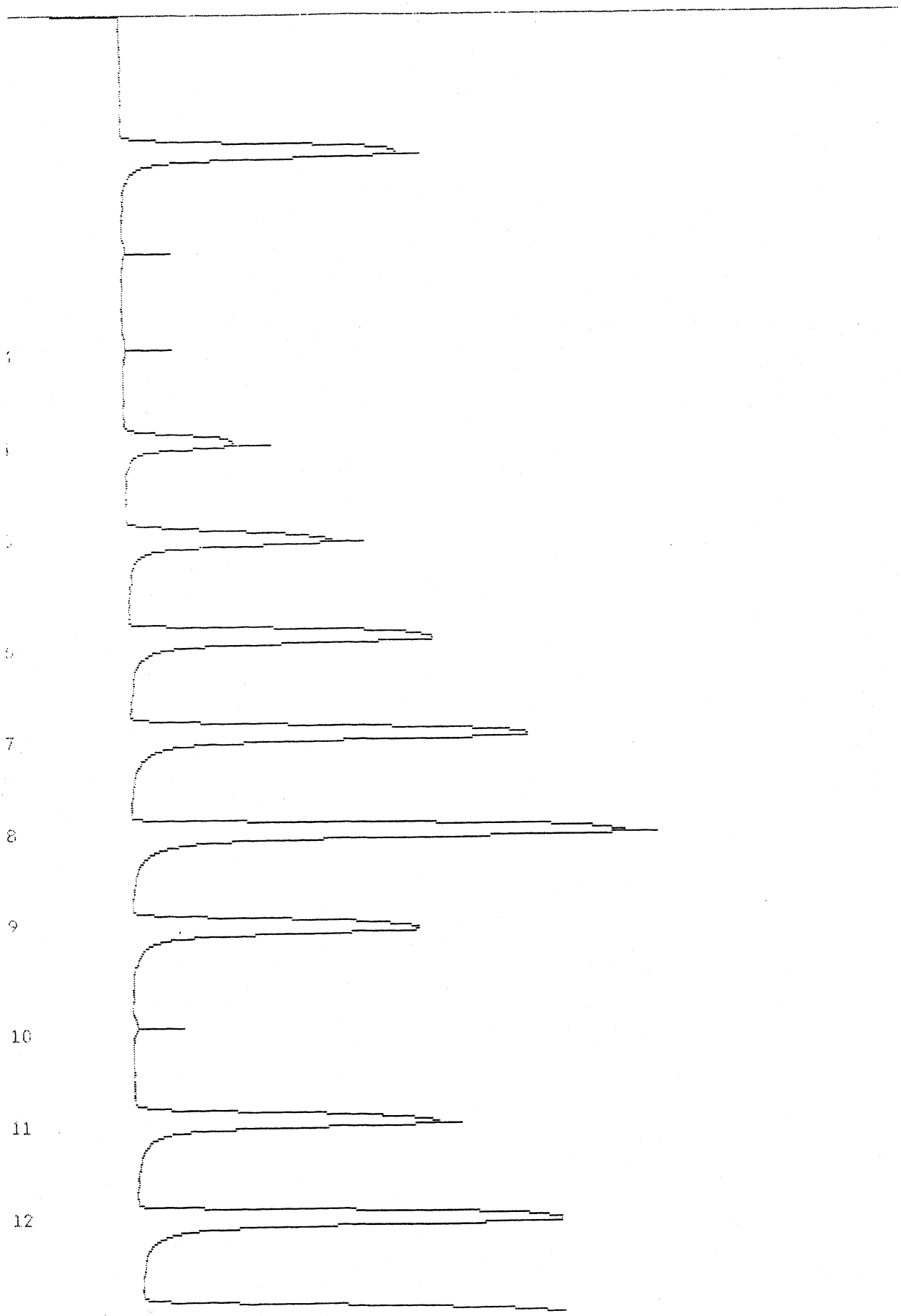

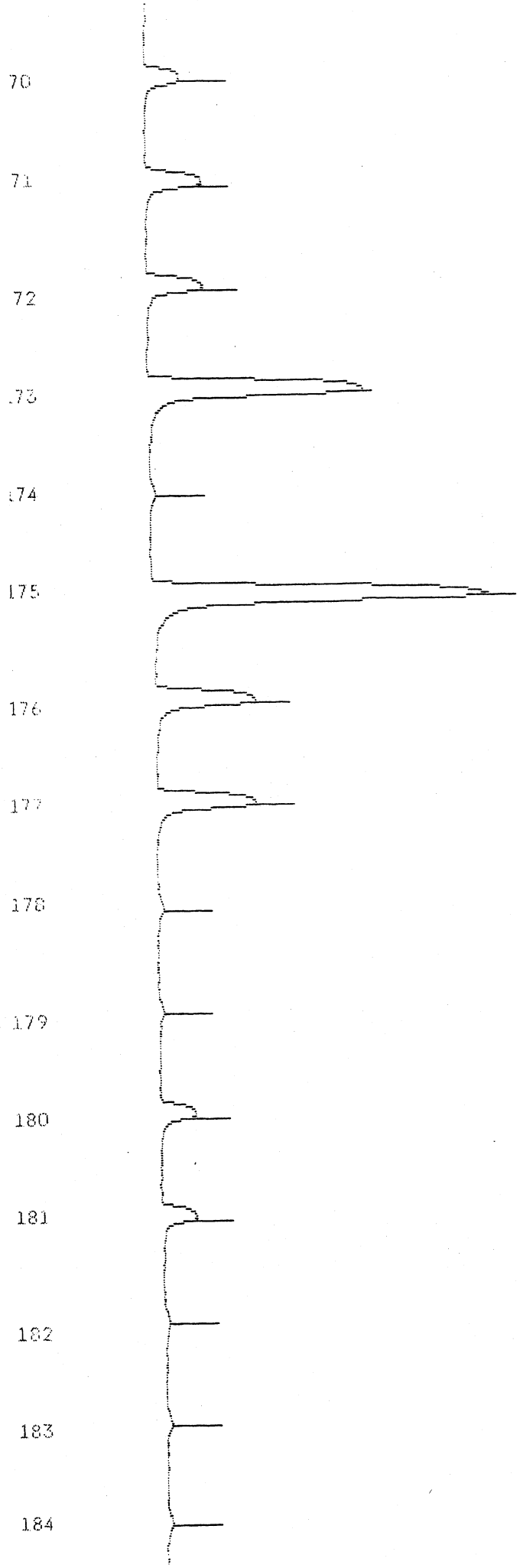
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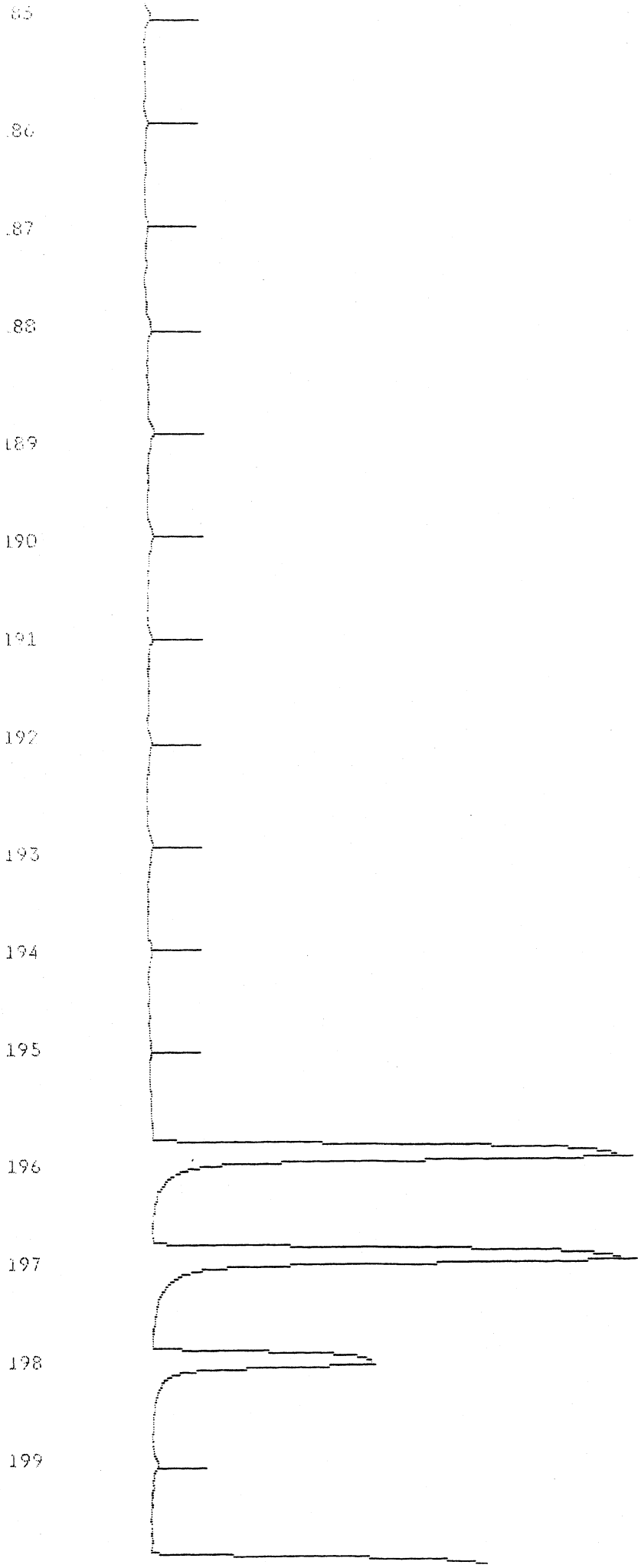
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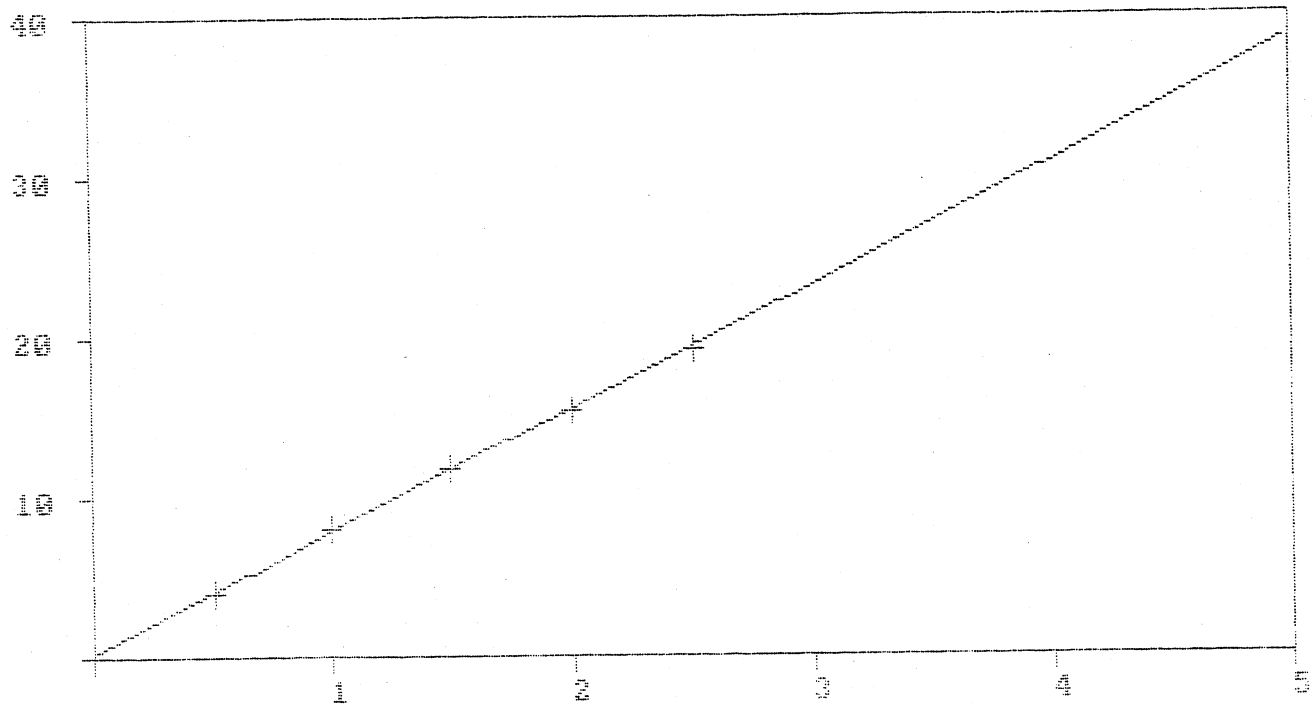
CHANNEL NAME: LDC
RUN NAME: 991001W



DATA TYPE: FIA
INTERCEPT = 0.20

CALIBRATION ORDER: 1
SLOPE = 7.65819

CORRELATION: .9997931

CHANNEL NAME: LDC
RUN DATE: 10-01-1999
SAMPLE TABLE NAME: 991001W
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION (ppb)	EF
1	PRIMER	1	1	10.8	1.383	s
2	DUMMY	1	1	0.0	-0.020	I
3	S1: 0	1	1	0.0	-0.023	I
4	S2: .5	1	1	4.1	0.506	
5	S3: 1	1	1	8.0	1.019	
6	S4: 1.5	1	1	11.9	1.523	
7	S5: 2	1	1	15.4	1.989	
8	S6: 2.5	1	1	19.2	2.486	
9	ICV	1	1	11.2	1.440 96%	
10	B	1	1	0.0	-0.027	b
11	D4	1	1	11.9	1.523	d
12	WS 378	1	1	16.6	2.139 107%	
13	ORG REF	1	1	16.5	2.132 107%	
14	BL1001-1B1B 50089	1	1	0.0	-0.027	I
15	BL1001-1B1B	1	1	0.0	-0.027	I
16	BL10013	1	1	7.8	0.987 99%	

Tug
<0.03

00105

[illegible]	[illegible]	1	1	[illegible]		[illegible]	46%	
[illegible]	[illegible]	1	1	0.0		-0.027		b
52	D4	1	1	11.9		1.523		d
53	427450	10	1	0.5	<0.250	0.372		I
54	427450	10	1	0.5		0.436		I
55	425458	10	1	8.4	2.676	10.640	101%	
56	425458	10	1	8.4		10.767		
57	425450S	10	1	7.9	2.568	10.098	97%	
58	425450S	10	1	8.2		10.449		
59	42743	10	1	0.5	<0.250	0.404		I
60	42743	10	1	0.3		0.085		I
61	42744	10	1	0.2	<0.250	-0.043		I
62	42744	10	1	0.0		-0.266		I
63	42746	10	1	3.5	1.090	4.294		
64	42746	10	1	3.6		4.422		
65	42747	10	1	0.4	<0.250	0.276		I
66	42747	10	1	0.4		0.276		s
67	42748	10	1	0.1	<0.250	-0.170		I
68	42748	10	1	0.1		-0.138		I
69	42749	10	1	1.1	0.264	1.105		
70	42749	10	1	1.0		1.010		
71	42750	10	1	1.8	0.520	2.094		
72	42750	10	1	1.8		2.062		
73	CCV	1	1	7.5		0.956	95%	
74	B	1	1	0.0		-0.027		b
75	D4	1	1	11.9		1.523		d
76	42751	10	1	3.3	1.018	4.071		
77	42751	10	1	3.3		4.071		
78	42282-HYX -MGHYX	1	1	0.0		-0.023		I
79	42282-HYX	1	1	0.0		-0.027		I
80	42497	1	1	1.1		0.111		
81	42497	1	1	1.1		0.114		s
82	43224	1	1	0.0		-0.027		I
83	43224	1	1	0.0		-0.027		I
84	42760	1	1	0.0		-0.020		I
85	42760	1	1	0.0		-0.020		I
86	44796	1	1	0.0		-0.027		I
87	44796	1	1	0.0		-0.027		I
88	47489	1	1	0.0		-0.027		I
89	47489	1	1	0.1		-0.017		I
90	53129	1	1	0.1		-0.017		I
91	53129	1	1	0.0		-0.027		I
92	53143	1	1	0.0		-0.027		I
93	53143	1	1	0.0		-0.027		I
94	53685	1	1	0.0		-0.027		I
95	53685	1	1	0.0		-0.027		I
96	WS 378	1	1	16.1		2.075	103%	
97	ORG REF.	1	1	16.2		2.084	104%	
98	CCV	1	1	7.5		0.952	95%	
99	B	1	1	0.0		-0.027		b
200	D4	1	1	11.9		1.523		d

INTERCEPT: 0.20 LINEAR COEF: 7.65812
CORRELATION COEF: .9997931

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
047506	TRC-LO	MB R456	Mercury	PV	-0.04	-99999.0	1.01	101.			99/10/12	MGA1	99/10/12	MG01	49.	46.	
047507	TRC-LO	PG&E-S-OHM-Ia-1-A	Mercury	PV	0.31						99/10/12	MGA1	99/10/12	MG01	49.	46.	
047508	TRC-LO	PG&E-S-OHM-Ib-1-A	Mercury	PV	0.25						99/10/12	MGA1	99/10/12	MG01	51.	46.	
047509	TRC-LO	PG&E-S-OHM-Ia-2-A	Mercury	PV	0.35						99/10/12	MGA1	99/10/12	MG01	49.	46.	
047510	TRC-LO	PG&E-S-OHM-Ib-2-A	Mercury	PV	0.24						99/10/12	MGA1	99/10/12	MG01	49.	46.	
047511	TRC-LO	PG&E-S-OHM-Ia-3-A	Mercury	PV	0.35						99/10/12	MGA1	99/10/12	MG01	48.	46.	
047512	TRC-LO	PG&E-S-OHM-Ib-3-A	Mercury	PV	0.31						99/10/12	MGA1	99/10/12	MG01	48.	46.	
047513	TRC-LO	PG&E-S-OHM-Ia-4-A	Mercury	PV	0.40						99/10/12	MGA1	99/10/12	MG01	48.	46.	
047514	TRC-LO	PG&E-S-OHM-Ib-4-A	Mercury	PV	0.34						99/10/12	MGA1	99/10/12	MG01	48.	46.	
047556	TRC-LO	NIST 1633b coal ash	Mercury	PV	0.13	0.13	1.15	102.			99/10/12	MGA1	99/10/12	MG01	43.	43.	
BL1012	INTERNAL		Mercury	PV	-0.04	-99999.0	1.01	101.			99/10/12	MGA1	99/10/12	MG01	$$$	$$$	

11 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

00106

C AUTOSAMPLER RUN LOG (MERCURY)

:: 99-10-12 Run Code: MG01 Matrix: SOIL

lyst: MG Units: ~~mg/kg~~ (see comments) MDL: 0.04

Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
		Primer (ICV)			
		Dummy (Blk)			
		Std 1 (S1)	0.0		
		Std 2 (S2)	0.5		
		Std 3 (S3)	1.0		
		Std 4 (S4)	1.5		
		Std 5 (S5)	2.0		
		Std 6 (S6)	2.5		
		ICV			
		B (Std 1)			
		D4 (Std 4)			
		ERA 240			
		BL1012	MGA1		
		BL1012S			
		47556			
		556D			
		556S			
		507			
		508			
		509			
		510			
		511			
		512			
		513			
		514			
		58725			
		CCV			
		B			
		D4			
		BL1012	MGA2		
		BL1012S			
		58726			
		726D			
		726S			
		727			
		728			
		729			
		57173			
		174			
		58518			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			58518			
42			58954			
43			955			
44			ERA 240			
45						
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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.

Blank Spike = 1.0 mg/kg for solid samples.

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DGHGLEACH, DG29HG***

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
7	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 bulked and mixed
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	MGA1	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1012	"	"	"	"	(Processed Blank) 57566
	11	BL 1012 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	47556	"	"	"	"	
1	13	O	"	"	"	"	(Duplicate sample)
1	14	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	"	"	"	(Duplicate Spiked sample)
2	16	47507	"	"	"	"	
3	17	508	"	"	"	"	
4	18	509	"	"	"	"	
5	19	510	"	"	"	"	
6	20	511	"	"	"	"	
7	21	512	"	"	"	"	
8	22	513	"	"	"	"	
9	23	514	"	"	"	"	
10	24	58725	"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	MGAC	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL 1012	"	"	"	"	(Processed Blank)
	27	BL 1012 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28	58726	"	"	"	"	
1	29	D	"	"	"	"	(Duplicate sample)
1	30	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	"	"	"	(Duplicate Spiked sample)
2	32	58727	"	"	"	"	
3	33	728	"	"	"	"	
4	34	729	"	"	"	"	
5	35	58517	"	"	"	"	
6	36	518	"	"	"	"	
7	37	57123	"	"	"	"	
8	38	124	"	"	"	"	
9	39	EPA 240	"	"	"	"	
10	40	58944	"	"	"	"	Total wt = 2.736 g
		955	"	"	"	"	" 3.064 g

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run — NA — Prepare 0.05 ppm standards daily

HNO3 Lot. No. 11906 0 | H2SO4 Lot. No. ~~[illegible]~~ 41903 0 | Bath Temps. 1 95 °C

DATE: 10-12-1999 CHART DATE: 10-13-1999
RT SPEED: 30
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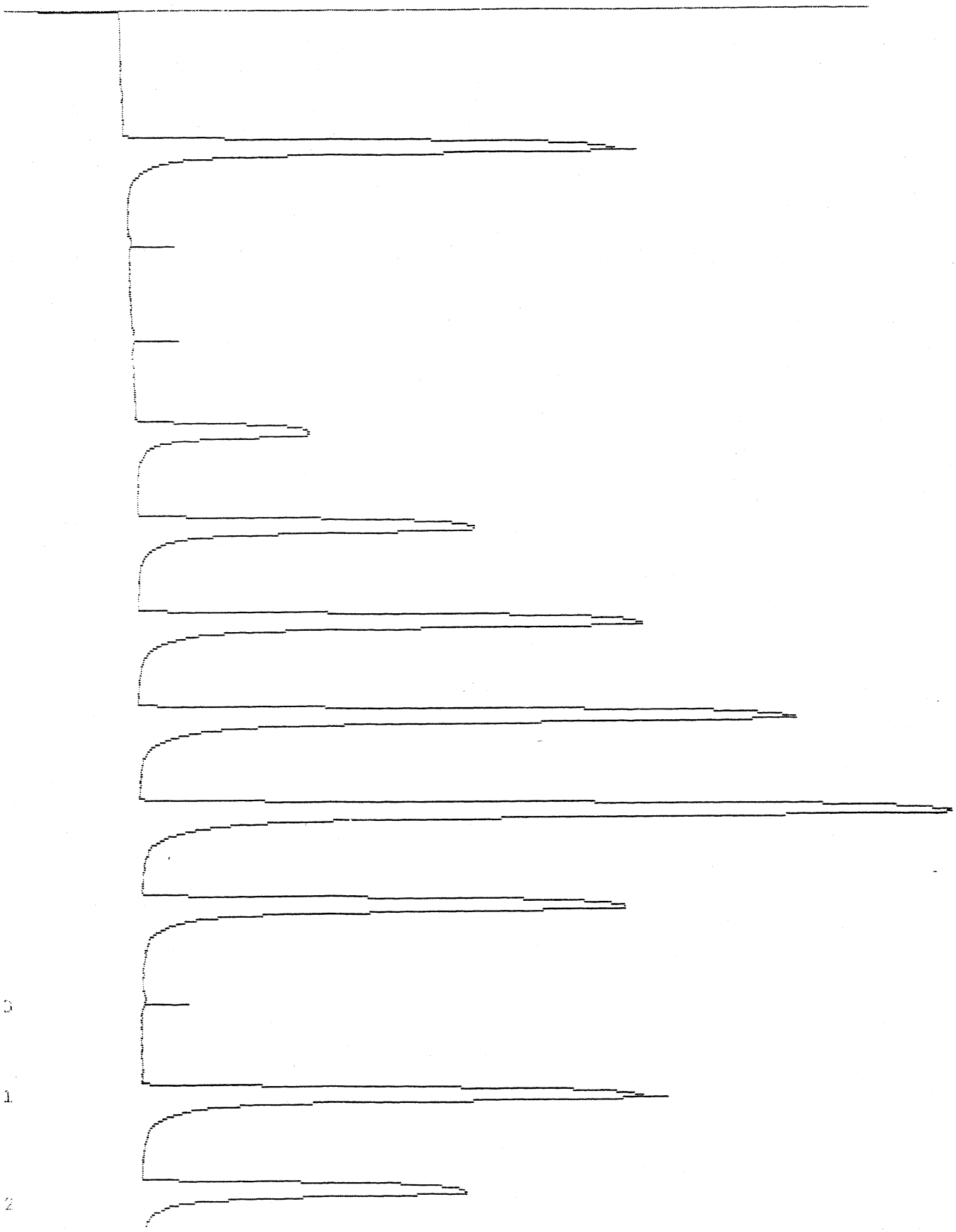

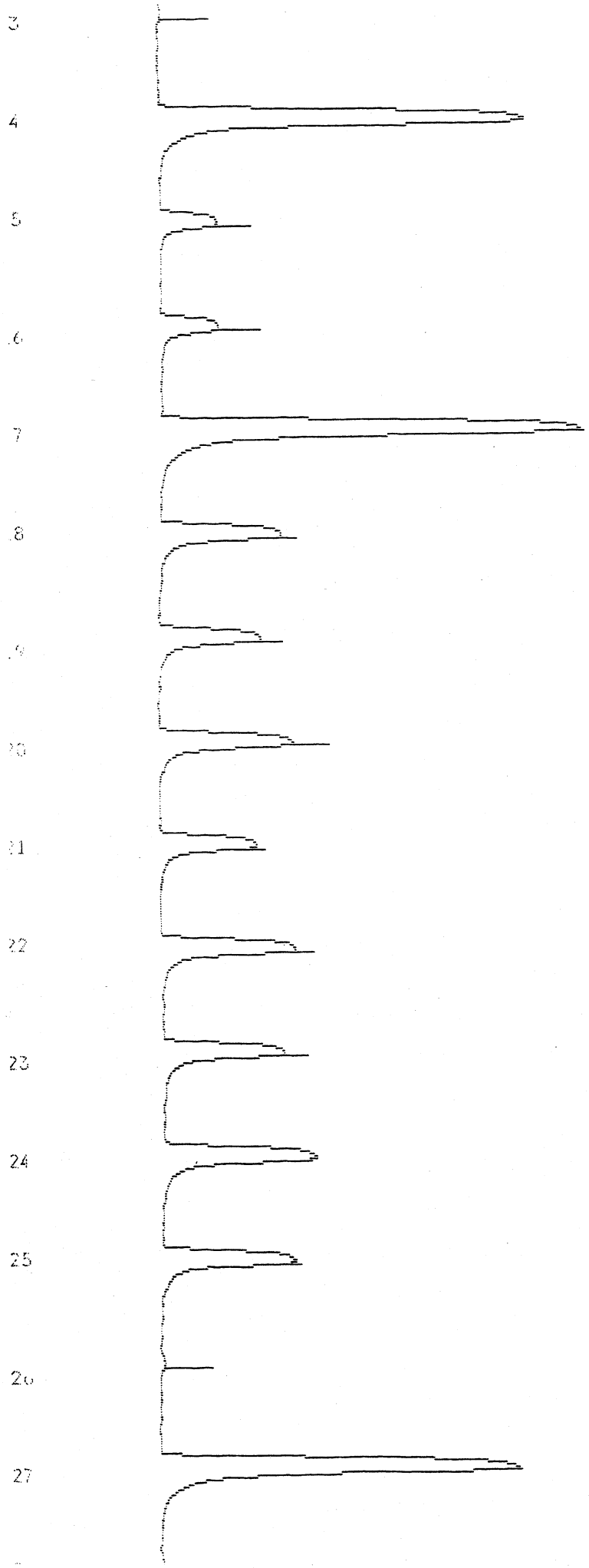
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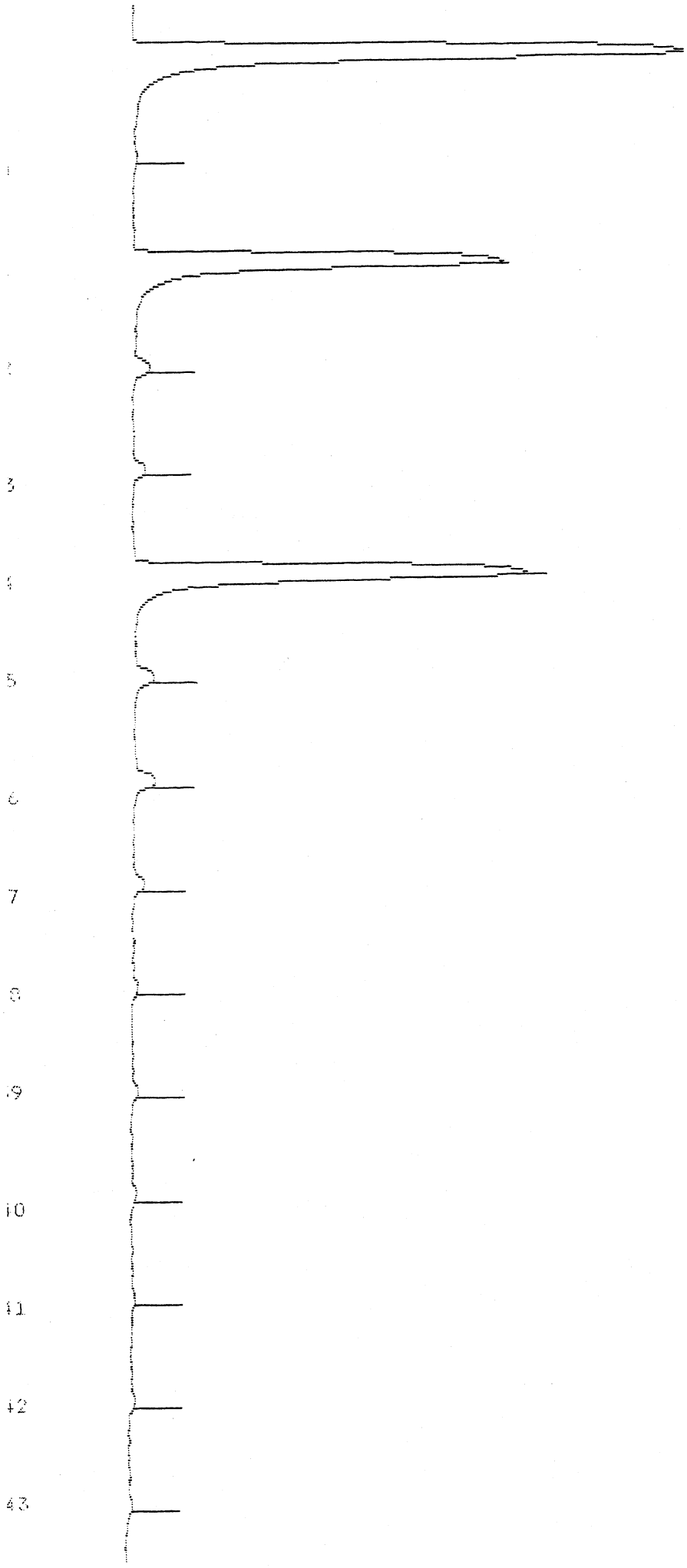
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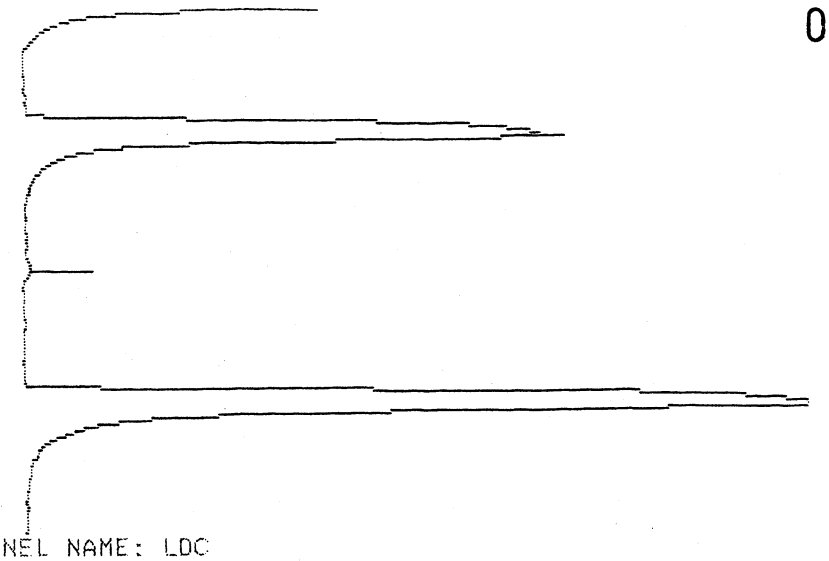
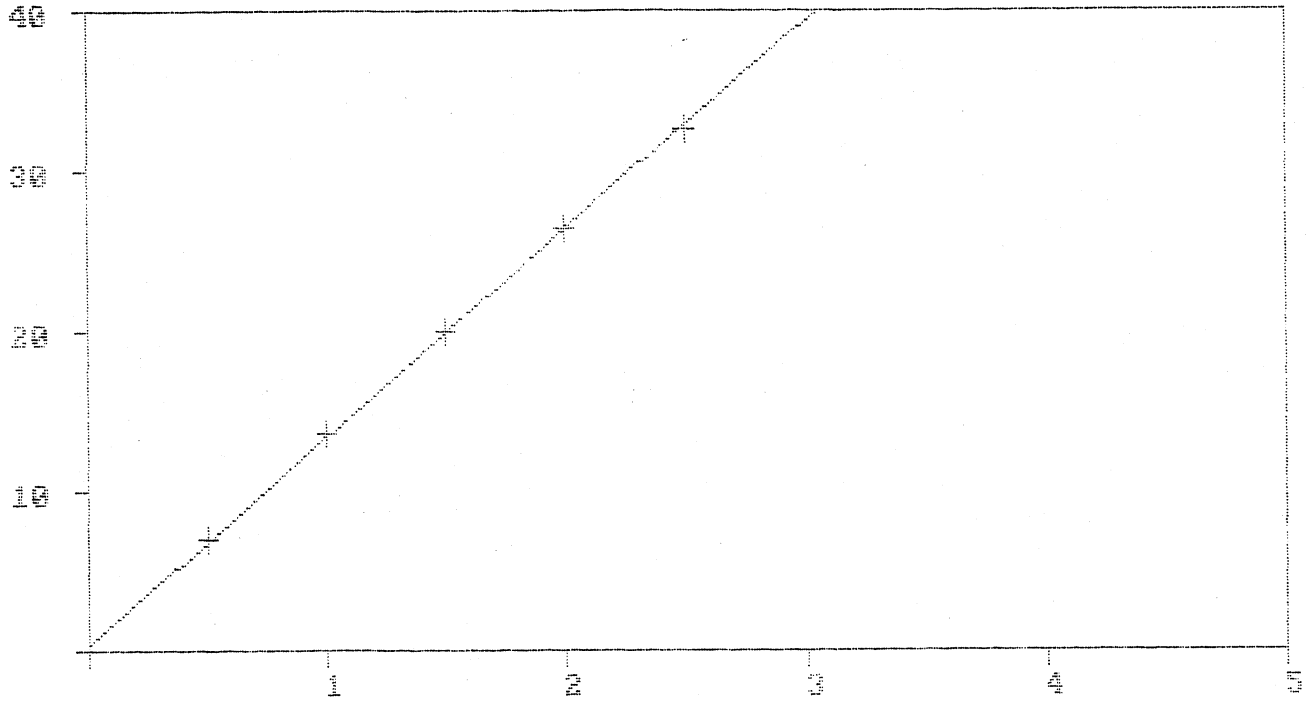


CHANNEL NAME: LDC
RUN NAME: 991012S



DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.30 SLOPE = 13.03332

CORRELATION: .9998578

ANNEL NAME: LDC
N DATE: 10-12-1999
MPLE TABLE NAME: 991012S
THOD NAME: HGSOIL

P#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION	EF
	PRIMER	1	1	19.6	1.480	S
	DUMMY	1	1	0.0	-0.023	I
	S1: 0	1	1	0.0	-0.023	I
	S2: .5	1	1	6.9	0.507	
	S3: 1	1	1	13.5	1.015	
	S4: 1.5	1	1	20.1	1.517	
	S5: 2	1	1	26.3	1.995	
	S6: 2.5	1	1	32.7	2.486	

00113

	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	ERA 240	1	1	12.9	0.970	
[illegible]	BL1012-MGA1 47506	1	1	0.0	-0.023	I
[illegible]	BL1012S	1	1	13.5	1.011	101%
[illegible]	47556	1	1	2.0	0.129	
[illegible]	47556D	1	1	2.0	0.133	s
[illegible]	47556S	1	1	15.3	1.154	102%
[illegible]	47507	1	1	4.3	0.307	
[illegible]	47508	1	1	3.6	0.254	
[illegible]	47509	1	1	4.8	0.346	
[illegible]	47510	1	1	3.4	0.241	
[illegible]	47511	1	1	4.9	0.350	
[illegible]	47512	1	1	4.4	0.314	
[illegible]	47513	1	1	5.5	0.402	
[illegible]	47514	1	1	4.8	0.344	
[illegible]	58725	1	1	0.0	-0.021	I
[illegible]	CCV	1	1	13.1	0.983	98%
[illegible]	B	1	1	0.0	-0.023	b
[illegible]	D4	1	1	20.1	1.517	d
[illegible]	BL1012-MGA2	1	1	0.0	-0.021	I
[illegible]	BL1012S	1	1	13.4	1.004	100%
[illegible]	58726	1	1	0.5	0.015	I
[illegible]	58726D	1	1	0.4	0.005	I
[illegible]	58726S	1	1	14.0	1.053	104%
[illegible]	58727	1	1	0.6	0.022	
[illegible]	58728	1	1	0.7	0.030	
[illegible]	58729	1	1	0.3	-0.000	I
[illegible]	57173	1	1	0.1	-0.013	I
[illegible]	57174	1	1	0.1	-0.013	I
[illegible]	58517	1	1	0.1	-0.013	I
[illegible]	58518	1	1	0.0	-0.023	I
[illegible]	58954	1	1	0.0	-0.019	I
[illegible]	58955	1	1	0.0	-0.023	I
[illegible]	ERA 240	1	1	12.5	0.936	
[illegible]	CCV	1	1	13.3	0.996	100%
[illegible]	B	1	1	0.0	-0.023	b
[illegible]	D4	1	1	20.1	1.517	d

'ERCEPT: 0.30 LINEAR COEF: 13.03332

RRELATION COEF: .9998578

4. SHIPPING/RECEIVING DOCUMENTS

Airbills (No. of shipments)
Chain-of-Custody Records
Sample Log-In Sheets
Miscellaneous Shipping/Receiving Records (describe or list)
Pass notification

Dangerous Goods Airbill

Recipient's Copy

00115

81000643993 0

Questions? Call 1•800•Go•FedEx® (800)463-3339

26/99 Sender's FedEx Account Number [redacted]

DAVID GILL Phone (978) 740-5600

ENVIRONMENTAL CORP

FOOT OF JOHN ST

Dept./Floor/Suite/Room

WELL State MA ZIP 01852

nal Billing Reference Information 26046-0030-00002

5 Packaging

☒ Other Packaging

Dangerous Goods cannot be shipped in FedEx packaging.

6 Special Handling

☒ Dangerous Goods as per attached Shipper's Declaration

☐ Cargo Aircraft Only

Ron McLeod Phone (800) 668-0639 EXT 236

nip Analytical Services

19 Cayuga RD ☐ Check here if residence (Extra charge applies for FedEx Express Saver)

location, print FedEx address here) Dept./Floor/Suite/Room

ecktowaga State NY ZIP 14225

D at FedEx Location check here

For WEEKEND Delivery check here (Extra Charge. Not available at all locations)

Weekday ☐ Hold Saturday (Not available at all locations) (Available for FedEx Priority Overnight and FedEx 2Day only) ☐ Saturday Delivery (Available for FedEx Priority Overnight and FedEx 2Day only) ☐ NEW Sunday Delivery (Available for FedEx Priority Overnight only)

7 Payment

Bill to: ☒ Sender (Account No. in Section 1 will be billed) ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

(Enter FedEx Account No. or Credit Card No. below)

[redacted]

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	140	$ 20000.00	$ Credit Card Auth.

* When declaring a value higher than $100 per shipment, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE, AND LIMIT OF LIABILITY section for further information.

Package Service *Packages under 150 lbs.* Delivery commitment may be later in some areas.

x Priority Overnight (usiness morning) ☐ FedEx Standard Overnight (Next business afternoon)

x 2Day (nd business day) ☐ FedEx Express Saver (Third business day)

Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

x Overnight Freight (usiness day) ☐ FedEx 2Day Freight (Second business day) ☐ FedEx Express Saver Freight (Up to 3 business days)

(Call for delivery schedule. Some restrictions apply. See back for detailed descriptions of freight services.)

Signature Release Unavailable

PART #154251 • Rev. Date 4/98 ©1994-98 FedEx • PRINTED IN U.S.A.

FedEx Tracking Number 810006439930 Form I.D. No. 0204

355 98 SRC

Page 1 of 1 Pages

Two completed and signed copies of this Declaration must be handed to the operator.

WARNING

Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.

PORT DETAILS

s within the scribed for: plicable) ☒ CARGO AIRCRAFT ONLY

Airport of Departure: BOSR

stination BHF

Shipment type: *(delete non-applicable)* NON-RADIOACTIVE ~~RADIOACTIVE~~

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification: Proper Shipping Name	Class or Division	UN or I.D. No.	Packing Group	Subsidiary Risk	Quantity and Type of Packaging	Packing Inst.	Authorization
Corrosive Liquid, n.o.s. (Acid/Acetic Acid)	8	UN 1760	II		1 Cardboard Box 3L	612	

andling Information CARGO Aircraft Only

Prepared for AIR TRANSPORT according to: (Customer MUST check one) ☐ 49 CFR ☒ ICAO / IATA

clare that the contents of this consignment are fully and accurately described above by the proper ame and are classified, packaged, marked, and labelled/placarded, and are in all respects in proper for transport according to applicable international and national governmental regulations.

Name/Title of Signatory David Gill Environ Compliance

Place and Date Lowell, MA 4/26/99

Signature (see warning above)

ephone Number (Required for US Origin or Destination Shipments) (978) 1800 424-1700

E FOR PASSENGER AIRCRAFT, THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS, OR TREATMENT.

Project Name: PG&E Salem
Project No.: 26046
Sampling Date(s): 8/24/99, 8/23/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

MB-47488

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-S-OHM-RB-PF-Hg	8/24	Petri							X	Reagent Blank	X										
PG&E-S-OHM-RB-KCl-Hg		125ml	G	✓							X										
PG&E-S-OHM-RB-HNO3/H2O2-Hg							✓				X			PPO, 1000G+7							47489
PG&E-S-OHM-RB-HNO3-Hg							✓				X										
PG&E-S-OHM-RB-KMnO4-Hg							✓				X										
PG&E-S-OHM-RB-hydrox-Hg				✓							X										
PG&E-S-OHM-RB-10%HNO3-Hg							✓				X										Archive -47504
PG&E-S-OHM-RB-15%KMnO4-Hg	8/24	125ml	G	✓							X										Archive 47505
PG&E-S-OHM-I-FB-PF-Hg	8/23/99	Petri							X	Field Blank Inlet	X										
PG&E-S-OHM-I-FB-PR-Hg		125ml	G				✓				X			PPO, 1000G, 2000G, 3000G, 1L G							47490
PG&E-S-OHM-I-FB-KCl-Hg		1L					✓				X										
PG&E-S-OHM-I-FB-HNO3/H2O2-Hg		500					✓				X										
PG&E-S-OHM-I-FB-KMnO4-Hg		500					✓				X										

Relinquished by: [signature]	Date/Time: 8/26/99 1100	Relinquished by:	Date/Time:
Received by:	Date/Time:	Received by:	Date/Time:

REMARKS (*): Measure & Record all volumes prior to analysis

00116

№ 10060

TRC
TRC Environmental Corporation

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

Project Name: PG&E Salem
Project No.: 26046
Sampling Date(s): 8/24/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-S-OHM-Ia-1-A-Hg ✓	8/24/99	125ml	G			X				Inlet A Run 1	X										47507
PG&E-S-OHM-Ia-1-PF-Hg ✓		Petri							X		X										
PG&E-S-OHM-Ia-1-PR-Hg ✓		250ml	G				X				X										47491.
PG&E-S-OHM-Ia-1-KCl-Hg ✓		1L					X				X										
PG&E-S-OHM-Ia-1-HNO3/H2O2-Hg ✓		250ml					X				X										
PG&E-S-OHM-Ia-1-KMnO4-Hg ✓		1L					X				X										
PG&E-S-OHM-Ib-1-A-Hg ✓	8/23/99	125ml	G			X				Inlet B Run 1	X										-47509-
PG&E-S-OHM-Ib-1-PF-Hg ✓		Petri							X		X										
PG&E-S-OHM-Ib-1-KCl-Hg ✓		~~250ml~~ 1L	G				X				X										47492
PG&E-S-OHM-Ib-1-HNO3/H2O2-Hg ✓		250ml					X				X										
PG&E-S-OHM-Ib-1-KMnO4-Hg ✓		1L					X				X										
PG&E-S-OHM-Ib-1-PR-Hg ✓		250ml	G				X				X										

PP, 20UG+2, 1LG+2

Relinquished by:	Date/Time: 8/26/99 1100	Relinquished by:	Date/Time:
Received by:	Date/Time:	Received by:	Date/Time:

REMARKS (*): Measure & Record all volumes prior to analysis

№ 10062

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC
TRC Environmental Corporation

00117

Project Name: PG&E Salem
Project No.: 26044
Sampling Date(s): 8/24/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-S-OHM-Ia-2-A-Hg	8/24/99	125ml	G			X				Inlet A Run 2	X										47529, 47493
PG&E-S-OHM-Ia-2-PF-Hg		Petri							X		X										
PG&E-S-OHM-Ia-2-PR-Hg		250ml	G				X				X				PAD, 200G-F2, 1LCG-F2						
PG&E-S-OHM-Ia-2-KCl-Hg		1L					X				X										
PG&E-S-OHM-Ia-2-H_2O_2/H_2SO_4-Hg		250ml					X				X										
PG&E-S-OHM-Ia-2-$KMnO_4$-Hg		1L					X				X										
PG&E-S-OHM-Ib-2-A-Hg	8/24/99	125ml	G			X				Inlet B Run 2	X										47510
PG&E-S-OHM-Ib-2-PF-Hg		Petri							X		X										
PG&E-S-OHM-Ib-2-PR-Hg		250ml	G				X				X							"			47494
PG&E-S-OHM-Ib-2-KCl-Hg		1L					X				X										
PG&E-S-OHM-Ib-2-H_2O_2/H_2SO_4-Hg		250ml					X				X										
PG&E-S-OHM-Ib-2-$KMnO_4$-Hg		1L					X				X										

Relinquished by: [signature]	Date/Time: 8/26/99 1100	Relinquished by:	Date/Time:
Received by:	Date/Time:	Received by:	Date/Time:

REMARKS (*): Measure & Record all volumes prior to analysis

00118

№ 10063

TRC
TRC Environmental Corporation

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

Project Name: PG&E Salem
Project No.: 26046
Sampling Date(s): 8/25/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-S-OHM-Ia-3-A-Hg	8/25/99	125ml	G			X				Inlet A Run3	X										47511
PG&E-S-OHM-Ia-3-PF-Hg		Petri							X		X										
PG&E-S-OHM-Ia-3-PR-Hg		250ml	G				X				X		PAD, 200G+2, 1LG+2								47495
PG&E-S-OHM-Ia-3-KCl-Hg		1L					X				X										
PG&E-S-OHM-Ia-3-HNO3/H2O2-Hg		250ml					X				X										
PG&E-S-OHM-Ia-3-KMnO4-Hg		1L					X				X										
PG&E-S-OHm-Ib-3-A-Hg	8/25/99	125ml	G			X				Inlet B Run3	X										47512
PG&E-S-OHM-Ib-3-PF-Hg		Petri							X		X										
PG&E-S-OHM-Ib-3-PR-Hg		250ml	G				X				X		PAD, 200G+2, 1LG+2								47496
PG&E-S-OHm-Ib-3-KCl-Hg		1L					X				X										
PG&E-S-OHm-Ib-3-HNO3/H2O2-Hg		250ml					X				X										
PG&E-S-OHm-Ib-3-KMnO4-Hg		1L					X				X										

Relinquished by:	Date/Time: 8/26/99 1100	Relinquished by:	Date/Time:
Received by:	Date/Time:	Received by:	Date/Time:

REMARKS (*): Measure & Record all volumes prior to analysis

00119

№ 10064

TRC
TRC Environmental Corporation

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

Project Name: PG&E Salem
Project No.: 26046
Sampling Date(s): 8/25/99
Laboratory: Phil. P
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-S-OHM-Ia-4-A-Hg	8/25/99	125ml	G			X				Inlet A Run 4	X										47513
PG&E-S-OHM-Ia-4-PF-Hg		Petri						X			X										
PG&E-S-OHM-Ia-4-PR-Hg		250ml	G				X				X										47497
PG&E-S-OHM-Ia-4-KCl-Hg		1L					X				X										
PG&E-S-OHM-Ia-4-HNO_3/H_2O_2-Hg		250ml					X				X										
PG&E-S-OHM-Ia-4-$KMnO_4$-Hg		1L					X				X										
PG&E-S-OHM-Ib-4-A-Hg	8/25/99	125ml	G			X				Inlet B Run 4	X										47514
PG&E-S-OHM-Ib-4-PF-Hg		Petri						X			X										
PG&E-S-OHM-Ib-4-PR-Hg		250ml	G				X				X										47498
PG&E-S-OHM-Ib-4-KCl-Hg		1L					X				X										
PG&E-S-OHM-Ib-4-HNO_3/H_2O_2-Hg		250ml					X				X										
PG&E-S-OHM-Ib-4-$KMnO_4$-Hg		1L					X				X										

Relinquished by: [signature] Date/Time: 8/26/99 1100
Received by: Date/Time:
Relinquished by: Date/Time:
Received by: Date/Time:
REMARKS (*):

00120

№ 10066

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC
TRC Environmental Corporation

Project Name: PG&E Salem
Project No.: 26046
Sampling Date(s): 8/23/99, 8/24/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-S-OHM-O-FB-PF-Hg	8/23/99	Petri							✓	Outlet Field Blank	X										
PG&E-S-OHM-O-FB-PR-Hg	✓	125ml	G				✓			↓	X										
PG&E-S-OHM-O-FB-KCl-Hg	✓	500ml	↓				✓				X			PP, 1000G, 2000G, 500CG×2							47499
PG&E-S-OHM-O-FB-HNO3/H2O2-Hg	✓	250ml					✓				X										
PG&E-S-OHM-O-FB-KMnO4-Hg	✓	500ml					✓				X										
PG&E-S-OHM-O-1-PF-Hg	✓ 8/24/99	Petri							✓	Outlet Run 1	X										
PG&E-S-OHM-O-1-PR-Hg	✓	250ml	G				X			↓	X										
PG&E-S-OHM-O-1-KCl-Hg	✓	1L	↓				X				X			PP, 2000G×2, 1LCG×2							47502
PG&E-S-OHM-O-1-HNO3/H2O2-Hg	✓	250ml					X				X										
PG&E-S-OHM-O-1-KMnO4-Hg	✓	1L					X				X										
PG&E-S-OHM-O-2-PF-Hg	✓ 8/24/99	Petri							✓	Outlet Run 2	X										
PG&E-S-OHM-O-2-PR-Hg	✓	250ml	G				X			↓	X										
PG&E-S-OHM-O-2-KCl-Hg	✓	1L	↓				X				X			PP, 2000G×2, 1LCG×2							47501
PG&E-S-OHM-O-2-HNO3/H2O2-Hg	✓	250ml					X				X										
PG&E-S-OHM-O-2-KMnO4-Hg	✓	1L					X				X										

Relinquished by:	Date/Time:	Relinquished by:	Date/Time:
Received by:	Date/Time:	Received by:	Date/Time:

REMARKS (*): Measure & Record volumes prior to analysis

№ 10061

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC
TRC Environmental Corporation

00121

Project No.: 86046
Sampling Date(s): 8/25/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-S-OHM-0-3-PF-Hg	8/25/99	Petri							X	Outlet Run 3	X										
PG&E-S-OHM-0-3-PR-Hg	↓	250ml	G			X				↓	X										
PG&E-S-OHM-0-3-KCl-Hg	↓	1L	↓			X					X					PM, 2000G x 2					47502
PG&E-S-OHM-0-3-~~HNO3/H2O2~~-Hg	↓	250ml	↓			X					X					1-1G x 2					
PG&E-S-OHM-0-3-KMnO4-Hg	↓	1L	↓			X				↓	X										
PG&E-S-OHM-0-4-PF-Hg	8/25	Petri							X	Outlet Run 4	X										
PG&E-S-OHM-0-4-PR-Hg	↓	250ml	G			X				↓	X										47503
PG&E-S-OHM-0-4-KCl-Hg	↓	1L	↓			X					X										
PG&E-S-OHM-0-4-~~HNO3/H2O2~~-Hg	↓	250ml	↓			X					X										
PG&E-S-OHM-0-4-KMnO4-Hg	↓	1L	↓			X				↓	X										

Relinquished by:	Date/Time: 8/26/99 1100	Relinquished by:	Date/Time:
Received by:	Date/Time:	Received by:	Date/Time:

REMARKS (*): Measure & Record all volumes prior to Analysis

00122

№ 10065

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC
TRC Environmental Corporation

Page ___ of ___

US SAMPLE LOG IN SHEET

TRC

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Lavano

Received By (Signature):

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ___ Absent ✓	Samples rec'd intact.
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	8100064399 30	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	08-27-99	
Time Received	12:00	

Temperature of Coolers

Cooler ID:	Temperature
1 crate	not taken

Relinquished By: _____

Date: 08-27-99

Logbook No: _____

Logbook Page No. _____

FedEx
Federal Express

NOTIFICATION FOR LOADING OF DANGEROUS GOODS (PA

PRESS HARD - 9 PART FORM - USE BALL POINT PEN ONLY

Employee #: 364727

Origin: CEDA

Dest: ZYOUFA

Date:

Proper Shipping Name, Class or Division, UN or ID#, Pkg Group, Subsidiary Risks, or other entries as appropriate, ex. DOT-E-XXXX, Dangerous When Wet. (Per Title 49 CFR & IATA/ICAO)	PAX	CAO	# of Pkgs	Net Qty Per Pkg	T
CORROSIVE LIQUID, N.O.S. 8 UN 1760 II (NITRIC ACID/SULFURIC ACID)	X		1	3L	Elec

24 hr Emergency 1-50

CARGO AIRCR.

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00124

Appendix D.2

Process Streams

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CE 1908®

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RT. 2, BOX 162A
MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - SALEM GENERATING STATION
SAMPLING PROGRAM
COAL SAMPLE RUN 1
CODE: PG&E-S-OHM-1a-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled August 24, 1999

Date received September 9, 1999

Analysis Report No. 49-121881

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	9.59	xxxxx		
% Ash	4.90	5.42		
% Volatile	34.87	38.57		
% Fixed Carbon	50.64	56.01		
	100.00	100.00		
Btu/lb	12557	13889	MAF	14685
% Sulfur	0.63	0.70		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

MEMBER ACIL

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September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - SALEM GENERATING STATION
SAMPLING PROGRAM
COAL SAMPLE RUN 1
CODE: PG&E-S-OHM-1a-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled August 24, 1999

Date received September 9, 1999

Analysis report no. 49-121881

PARAMETER	RESULTS
Mercury, Hg	0.03 ppm
Chlorine, Cl	0.01 %

Procedure: The sample was prepared according to ASTM, Part 05.05, Method D 3683. The sample was analyzed for trace elements by Inductively Coupled Plasma Emission Spectroscopy.
Mercury was determined by Manual Coal Vapor Atomic Absorption.

Results: Results are reported in parts per million (ppm).

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler
Middlesboro Laboratory

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September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - SALEM GENERATING STATION
SAMPLING PROGRAM
COAL SAMPLE RUN 2
CODE: PG&E-S-OHM-2a-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled August 24, 1999

Date received September 9, 1999

Analysis Report No. 49-121879

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	9.64	xxxxx		
% Ash	5.17	5.72		
% Volatile	39.44	43.65		
% Fixed Carbon	45.75	50.63		
	100.00	100.00		
Btu/lb	12515	13850	MAF	14690
% Sulfur	0.62	0.69		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler
Middlesboro Laboratory

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TEL: (606) 248-4205
FAX: (606) 248-0044

September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - SALEM GENERATING STATION
SAMPLING PROGRAM
COAL SAMPLE RUN 2
CODE: PG&E-S-OHM-2a-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled August 24, 1999

Date received September 9, 1999

Analysis report no. 49-121879

PARAMETER	RESULTS
Mercury, Hg	0.02 ppm
Chlorine, Cl	0.01 %

Procedure: The sample was prepared according to ASTM, Part 05.05, Method D 3683. The sample was analyzed for trace elements by Inductively Coupled Plasma Emission Spectroscopy.
Mercury was determined by Manual Coal Vapor Atomic Absorption.

Results: Results are reported in parts per million (ppm).

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - SALEM GENERATING STATION
SAMPLING PROGRAM
COAL SAMPLE RUN 3
CODE: PG&E-S-OHM-3a-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled August 25, 1999

Date received September 9, 1999

Analysis Report No. 49-121882

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	8.63	xxxxx		
% Ash	5.97	6.53		
% Volatile	34.15	37.38		
% Fixed Carbon	51.25	56.09		
	100.00	100.00		
Btu/lb	12524	13707	MAF	14665
% Sulfur	0.68	0.74		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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FAX: (606) 248-0044

September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - SALEM GENERATING STATION
SAMPLING PROGRAM
COAL SAMPLE RUN 3
CODE: PG&E-S-OHM-3a-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled August 25, 1999

Date received September 9, 1999

Analysis report no. 49-121882

PARAMETER	RESULTS
Mercury, Hg	0.03 ppm
Chlorine, Cl	0.01 %

Procedure: The sample was prepared according to ASTM, Part 05.05, Method D 3683. The sample was analyzed for trace elements by Inductively Coupled Plasma Emission Spectroscopy.
Mercury was determined by Manual Coal Vapor Atomic Absorption.

Results: Results are reported in parts per million (ppm).

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - SALEM GENERATING STATION
SAMPLING PROGRAM
COAL SAMPLE RUN 4
CODE: PG&E-S-OHM-4-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled August 25, 1999

Date received September 9, 1999

Analysis Report No. 49-121880

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	8.54	xxxxx		
% Ash	6.39	6.99		
% Volatile	33.96	37.13		
% Fixed Carbon	51.11	55.88		
	100.00	100.00		
Btu/lb	12477	13642	MAF	14667
% Sulfur	0.69	0.75		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - SALEM GENERATING STATION
SAMPLING PROGRAM
COAL SAMPLE RUN 4
CODE: PG&E-S-OHM-4-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled August 25, 1999

Date received September 9, 1999

Analysis report no. 49-121880

PARAMETER	RESULTS
Mercury, Hg	0.03 ppm
Chlorine, Cl	0.02 %

Procedure: The sample was prepared according to ASTM, Part 05.05, Method D 3683. The sample was analyzed for trace elements by Inductively Coupled Plasma Emission Spectroscopy.
Mercury was determined by Manual Coal Vapor Atomic Absorption.

Results: Results are reported in parts per million (ppm).

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler
Middlesboro Laboratory

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September 28, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL

SAMPLE BROUGHT IN
PG&E - SALEM HARBOR
UREA SOLUTION - SKID 1
CODE:PG&E-S-OHM-1U-S1 GRAB

Kind of sample reported to us UREA SOLUTION

Sample taken at

Sample taken by

Date sampled August 24, 1999

Date received September 1, 1999

Analysis report no. 49-123032

ANALYZED PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.0002	mg/L	SW7470	9/03/99 16:30 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste; 3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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September 28, 1999

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5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL

SAMPLE BROUGHT IN
PG&E - SALEM HARBOR
UREA SOLUTION - SKID 2
CODE:PG&E-S-OHM-1U-S2 GRAB

Kind of sample reported to us UREA SOLUTION

Sample taken at

Sample taken by

Date sampled August 24, 1999

Date received September 1, 1999

Analysis report no. 49-123033

ANALYZED PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.0002	mg/L	SW7470	9/03/99 16:34 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste; 3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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September 28, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL

SAMPLE BROUGHT IN
PG&E - SALEM HARBOR
UREA SOLUTION - SKID 1
CODE:PG&E-S-OHM-2U-S1 GRAB

Kind of sample reported to us UREA SOLUTION

Sample taken at

Sample taken by

Date sampled August 24, 1999

Date received September 1, 1999

Analysis report no. 49-123034

ANALYZED PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.0002	mg/L	SW7470	9/03/99 16:36 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste; 3rd Edition; Nov. 1986

Respectfully submitted,
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Jerry Wheeler

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FAX: (606) 248-0044

September 28, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL

SAMPLE BROUGHT IN
PG&E - SALEM HARBOR
UREA SOLUTION - SKID 2
CODE:PG&E-S-OHM-2U-S2 GRAB

Kind of sample reported to us UREA SOLUTION

Sample taken at

Sample taken by

Date sampled August 24, 1999

Date received September 1, 1999

Analysis report no. 49-123035

ANALYZED PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	DATE/TIME/ANALYST
IETALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.0002	mg/L	SW7470	9/03/99 16:37 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste; 3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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FAX: (606) 248-0044

September 28, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL

SAMPLE BROUGHT IN
PG&E - SALEM HARBOR
UREA SOLUTION - SKID 1
CODE:PG&E-S-OHM-3U-S1 GRAB

Kind of sample reported to us UREA SOLUTION

Sample taken at

Sample taken by

Date sampled August 25, 1999

Date received September 1, 1999

Analysis report no. 49-123036

ANALYZED PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	DATE/TIME/ANALYST
ETALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.0002	mg/L	SW7470	9/03/99 16:38 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste; 3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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FAX: (606) 248-0044

September 28, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL

SAMPLE BROUGHT IN
PG&E - SALEM HARBOR
UREA SOLUTION - SKID 2
CODE:PG&E-S-OHM-3U-S2 GRAB

Kind of sample reported to us UREA SOLUTION

Sample taken at

Sample taken by

Date sampled August 25, 1999

Date received September 1, 1999

Analysis report no. 49-123037

ANALYZED PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.0002	mg/L	SW7470	9/03/99 16:40 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste; 3rd Edition; Nov. 1986

Respectfully submitted,
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Jerry Wheeler

Middlesboro Laboratory

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September 28, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL

SAMPLE BROUGHT IN
PG&E - SALEM HARBOR
UREA SOLUTION - SKID 1
CODE:PG&E-S-OHM-4U-S1 GRAB

Kind of sample reported to us UREA SOLUTION

Sample taken at

Sample taken by

Date sampled August 25, 1999

Date received September 1, 1999

Analysis report no. 49-123038

ANALYZED PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	DATE/TIME/ANALYST
IETALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.0002	mg/L	SW7470	9/03/99 16:41 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste; 3rd Edition; Nov. 1986

Respectfully submitted,
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Jerry Wheeler

Middlesboro Laboratory

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September 28, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL

SAMPLE BROUGHT IN
PG&E - SALEM HARBOR
UREA SOLUTION - SKID 2
CODE:PG&E-S-OHM-4U-S2 GRAB

Kind of sample reported to us UREA SOLUTION

Sample taken at

Sample taken by

Date sampled August 25, 1999

Date received September 1, 1999

Analysis report no. 49-123039

ANALYZED PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.0002	mg/L	SW7470	9/03/99 16:43 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste; 3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Middlesboro Laboratory

MEMBER ACIL

'ER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

Watermarked For Your Protection

TERMS AND CONDITIONS ON REVERSE

APPENDIX E

AUDIT DATA SHEETS

COMMERCIAL TESTING & ENGINEERING CO.

ROUTE 2, BOX 162-A

MIDDLESBORO, KENTUCKY 40965

FAX NO. (606) 248-0044

FAX TRANSMISSION COVER SHEET

FROM: Jerry Wheeler

TO: Ed

COMPANY: TRC

FAX NO.: 978-453-4215

DATE: 11-22-99

NUMBER OF PAGES: 1
(Not including cover sheet)

If you do not receive all of these pages, please contact us immediately at (606) 248-4205.

Thank you!

MESSAGE:

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-953-9300 FAX: 708-953-9306
SINCE 1906

PLEASE ADDRESS ALL CORRESPONDENCE TO:
RT. 2, BOX 162A, MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

NIST Standard Results for Mercury
Nist 1630A (0.106) ± .023

Date	Lab Results
9/3/99	0.11
9/15/99	0.09
9/22/99	0.09
9/28/99	0.11
10/8/99	0.10
10/12/99	0.09
10/20/99	0.10

Mercury Standard used NIST 1630 A
Standard Results (0.106) ± .023

Test run Results.

Date	Results
9-3-99	0.11
9-15-99	0.09
9-22-99	0.09
9-27-99	0.11
10-8-99.	0.10
10-12-99	0.09
10-20-99	0.10

PARAMETER REPORT: Calorific Value, Dry BTU/lb

6H0035: High Rank Coal - 60 Mesh
Sample ID: 1

Customer No: 004900

Issued Date: 10/20/99
mm/dd/yy

COMMERCIAL TESTING & ENGINEERING
Middlesboro

STATISTICS

Lab Value	
Mean	SD
15078	16.3

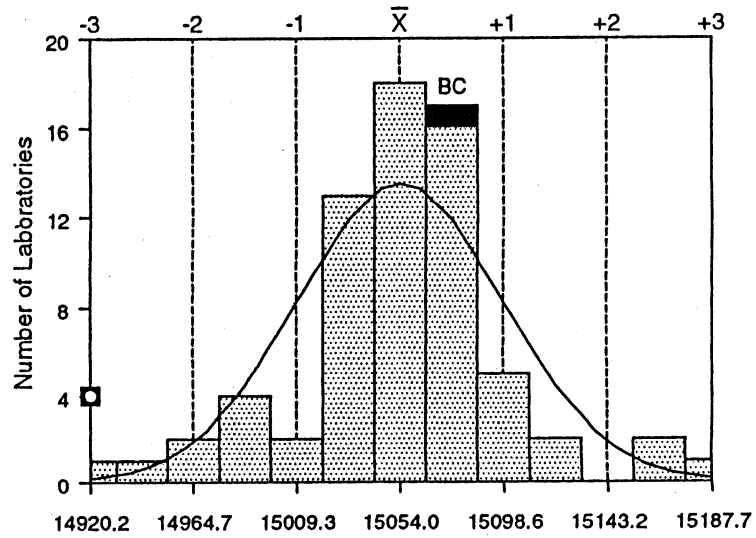
Group Value		
Mean	SD	n
15054	44.6	68

Accuracy	Laboratory	Ref. Standard
Mean Difference	24.0	within +/- 89.2
Standard Score	0.52	within +/- 2.0
Relative Difference(%)	0.159	within +/- 0.592
Precision Ratio	1.0	< 2.8

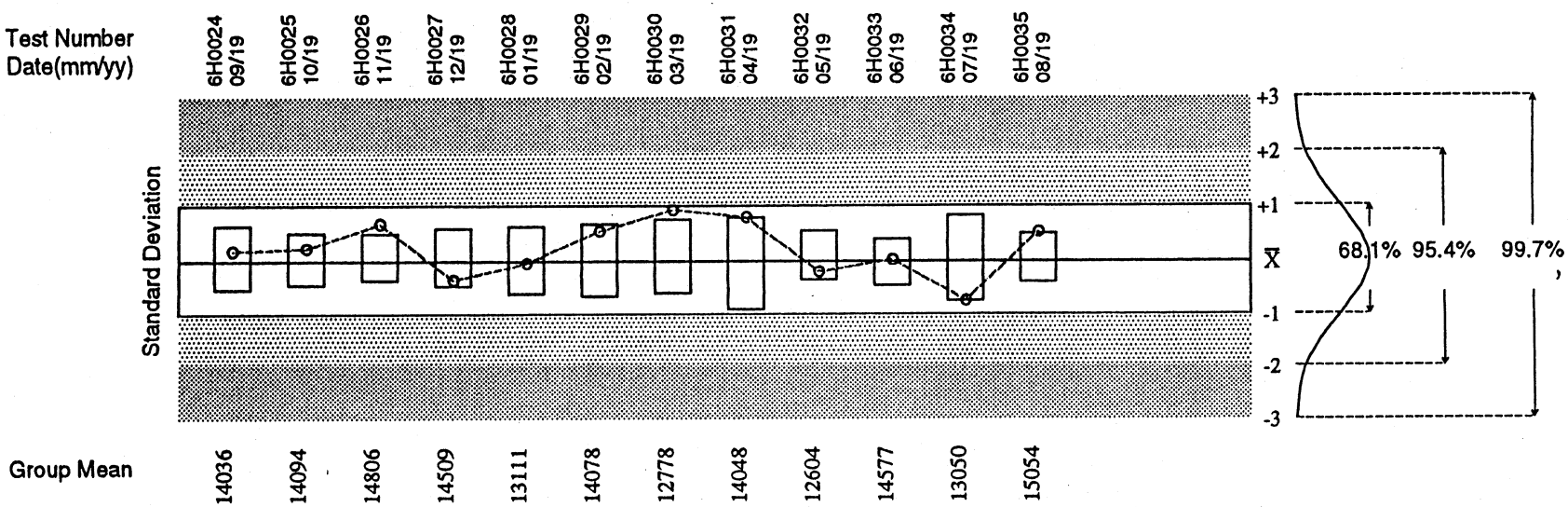
Precision Estimates

Precision Factors	Group
Repeatability (r)	45.03358
Reproducibility (R)	128.9395
Confidence Interval	21.6023

FREQUENCY DISTRIBUTION



HISTORICAL PERFORMANCE



Laboratory Quality Services International
A Division of Commercial Testing & Engineering Co.

F-355

PARAMETER REPORT: Calorific Value, As Rec'd BTU/lb

6H0035: High Rank Coal - 60 Mesh
Sample ID: 1

Customer No: 004900

COMMERCIAL TESTING & ENGINEERING
Middlesboro

Issued Date: 10/20/99
mm/dd/yy

STATISTICS

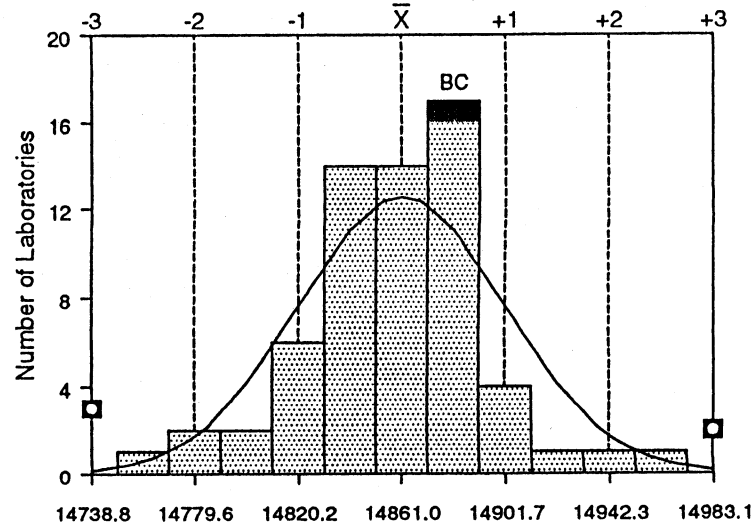
Lab Value	
Mean	SD
14888	21.9

Group Value		
Mean	SD	n
14861	40.7	64

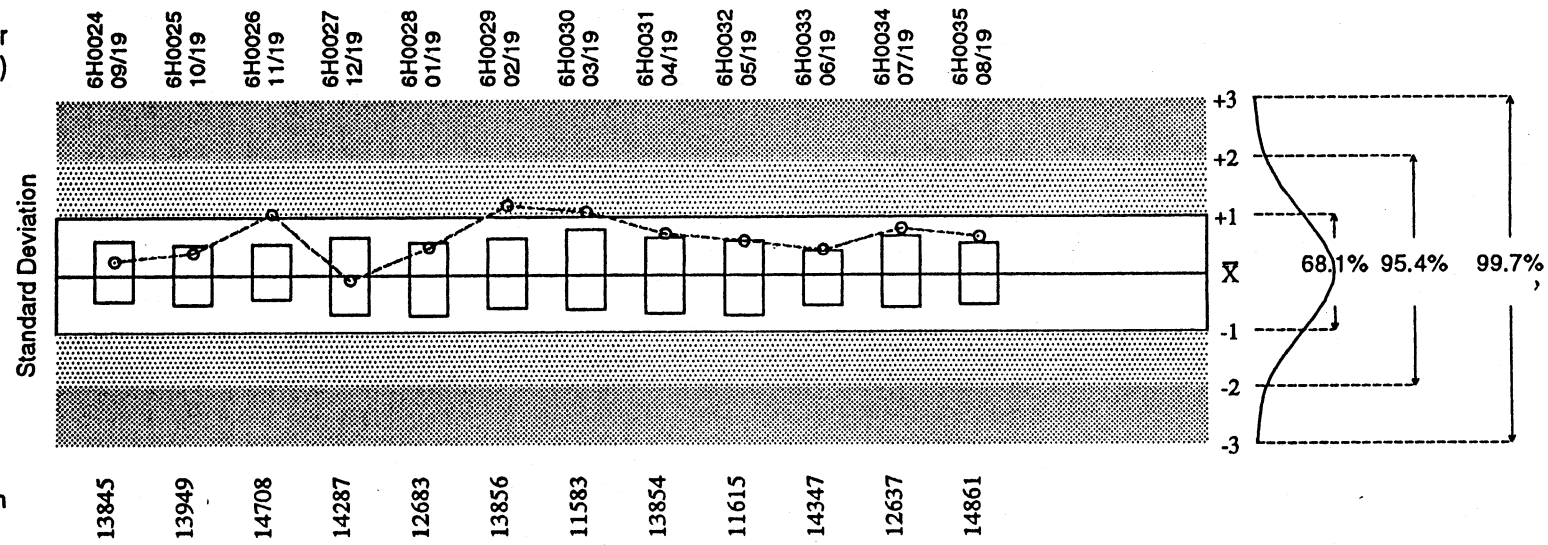
Accuracy	Precision Estimates: Laboratory	Precision Estimates: Ref. Standard
Mean Difference	27.0	within +/- 81.4
Standard Score	0.64	within +/- 2.0
Relative Difference(%)	0.181	within +/- 0.547
Precision Ratio	1.3	< 2.8

Precision Factors	Group
Repeatability (r)	43.80387
Reproducibility (R)	117.9812
Confidence Interval	20.3118

FREQUENCY DISTRIBUTION



HISTORICAL PERFORMANCE



Laboratory Quality Services International
A Division of Commercial Testing & Engineering Co.

F-355

PARAMETER REPORT: Sulfur % by wt

6H0035: High Rank Coal - 60 Mesh
Sample ID: 1

Customer No: 004900
COMMERCIAL TESTING & ENGINEERING
Middlesboro

Issued Date: 10/20/99
mm/dd/yy

STATISTICS

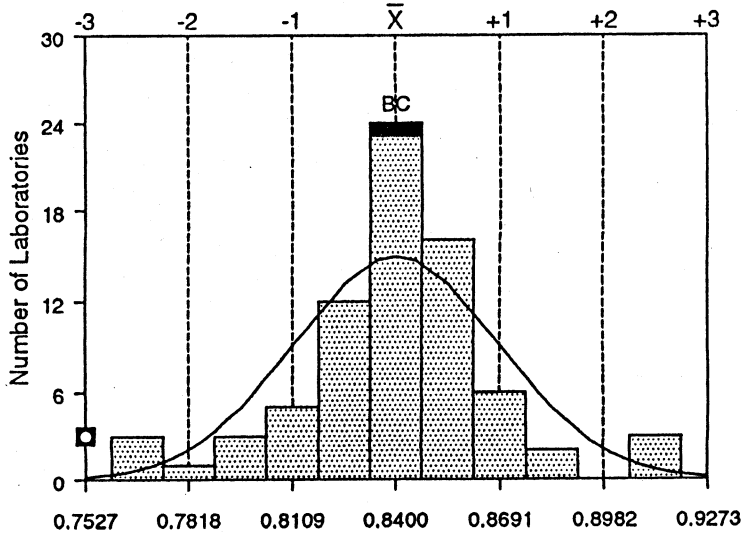
Lab Value	
Mean	SD
0.835	0.0071

Group Value		
Mean	SD	n
0.840	0.0291	74

Accuracy	Precision Estimates: Laboratory	Precision Estimates: Ref. Standard
Mean Difference	-0.00500	within +/- 0.0582
Standard Score	-0.17	within +/- 2.0
Relative Difference(%)	-0.595	within +/- 6.9
Precision Ratio	0.759	< 2.8

Precision Factors	Group
Repeatability (r)	0.02616
Reproducibility (R)	0.08369
Confidence Interval	0.0135

FREQUENCY DISTRIBUTION



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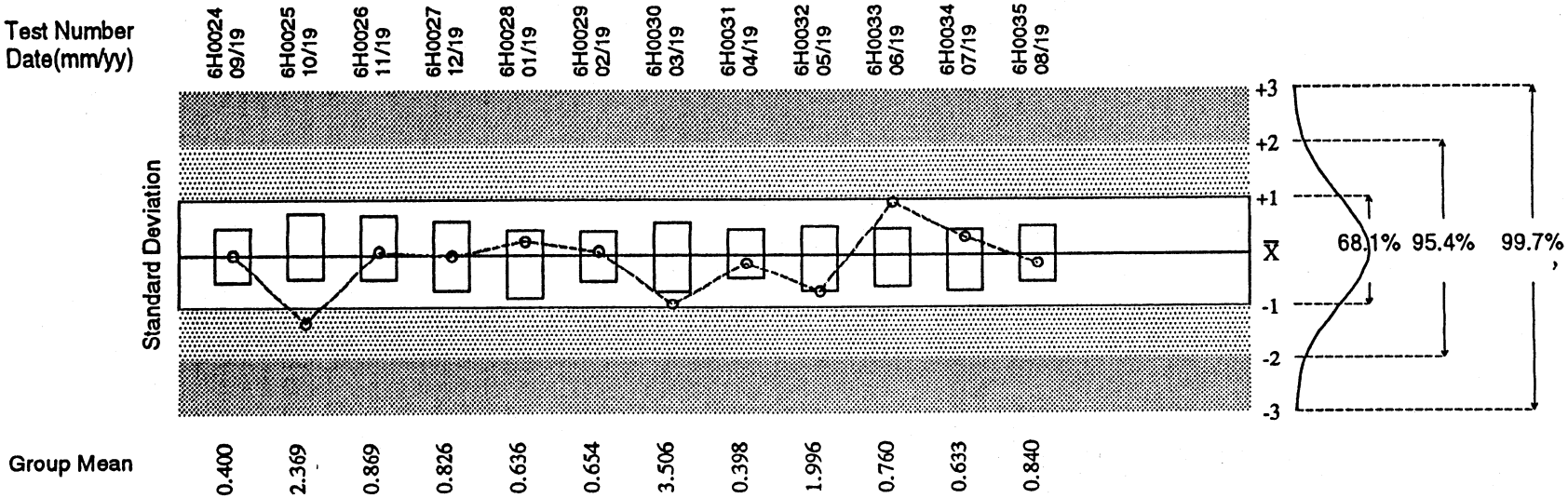


Laboratory Quality Services International
A Division of Commercial Testing & Engineering Co.

F-355

PARAMETER REPORT: Ash % by wt

6H0035: High Rank Coal - 60 Mesh
Sample ID: 1

Customer No: 004900

Issued Date: 10/20/99
mm/dd/yy

COMMERCIAL TESTING & ENGINEERING
Middlesboro

STATISTICS

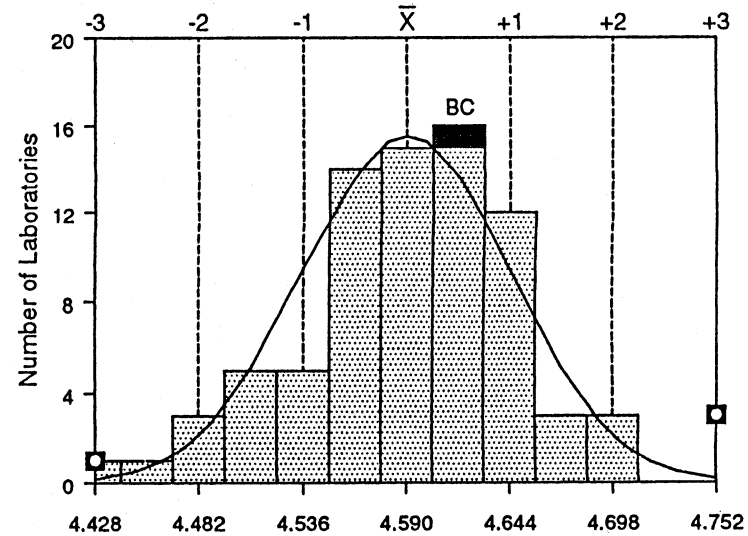
Lab Value	
Mean	SD
4.63	0.035

Group Value		
Mean	SD	n
4.59	0.054	77

Accuracy	Laboratory	Ref. Standard
Mean Difference	0.0400	within +/- 0.108
Standard Score	0.65	within +/- 2.0
Relative Difference(%)	0.871	within +/- 2.3
Precision Ratio	1.0	< 2.8

Precision Factors	Group
Repeatability (r)	0.08971
Reproducibility (R)	0.16359
Confidence Interval	0.0244

FREQUENCY DISTRIBUTION



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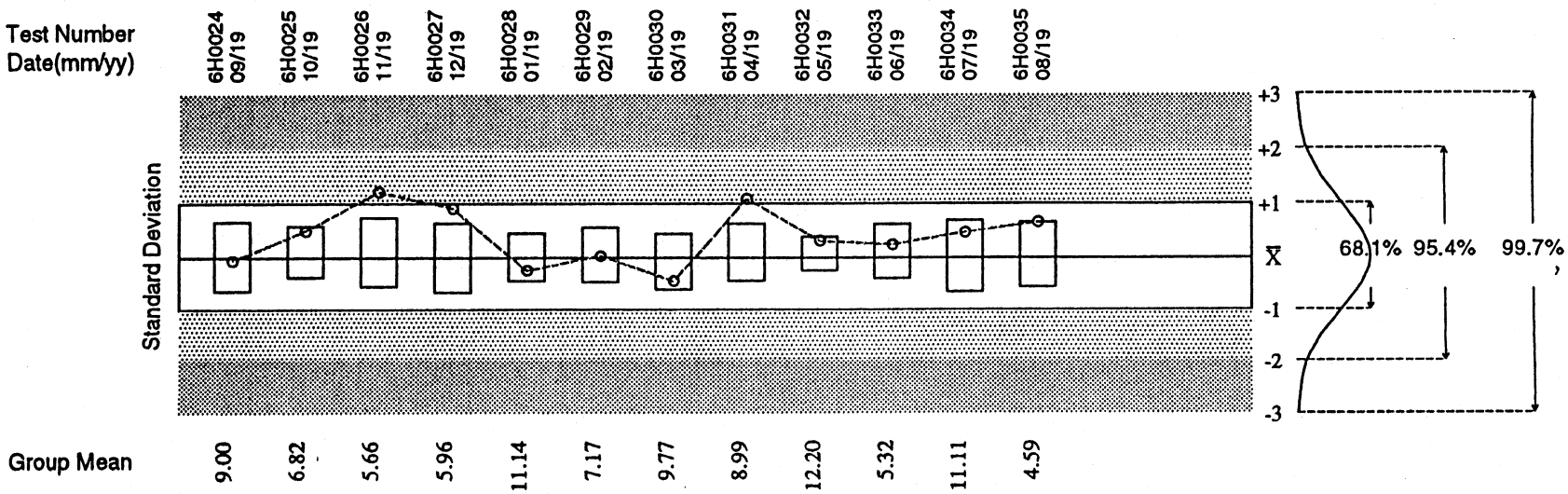


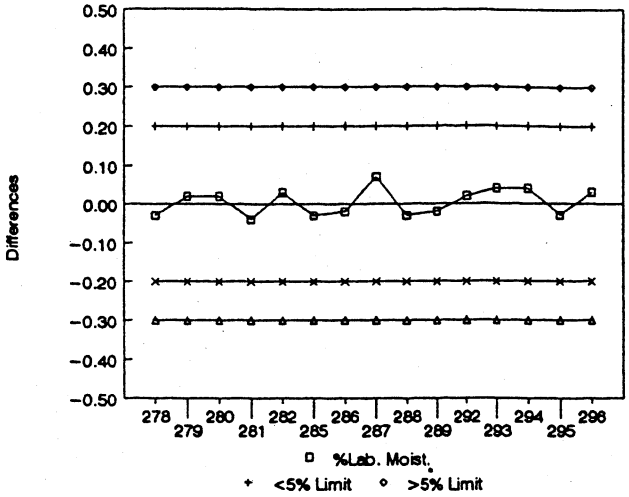
Laboratory Quality Services International
A Division of Commercial Testing & Engineering Co.

F-355

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

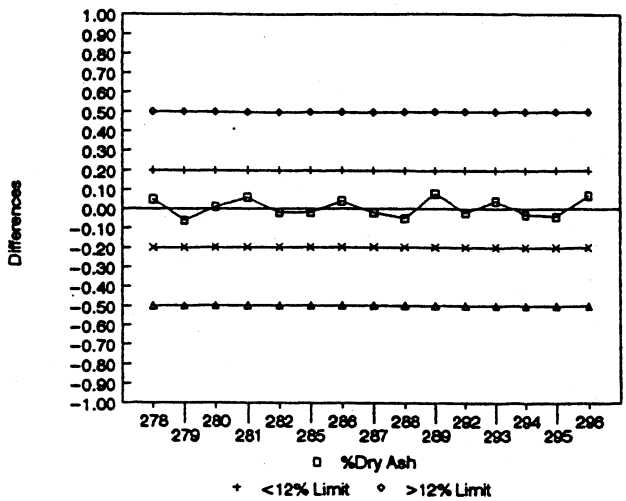
Daily 60 Mesh – %Lab. Moisture

Actual Difference



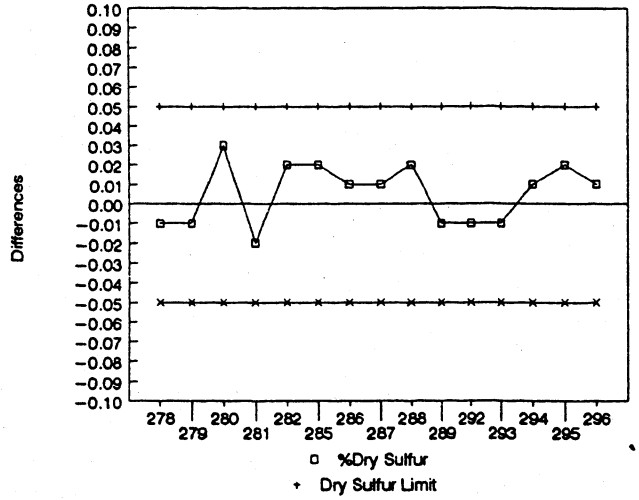
Daily 60 Mesh – %Dry Ash

Actual Difference



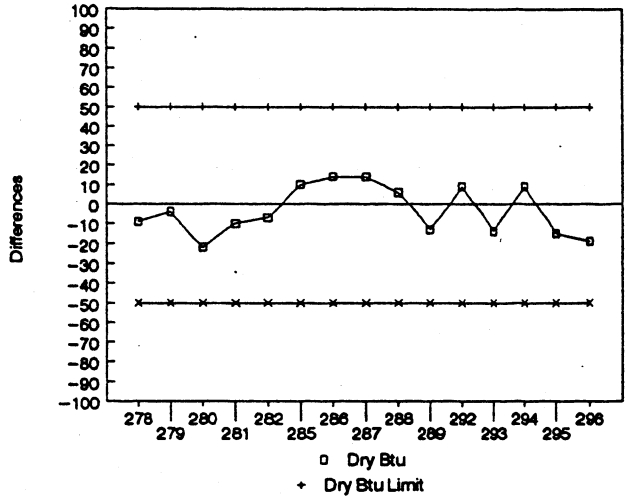
Daily 60 Mesh – %Dry Sulfur

Actual Difference



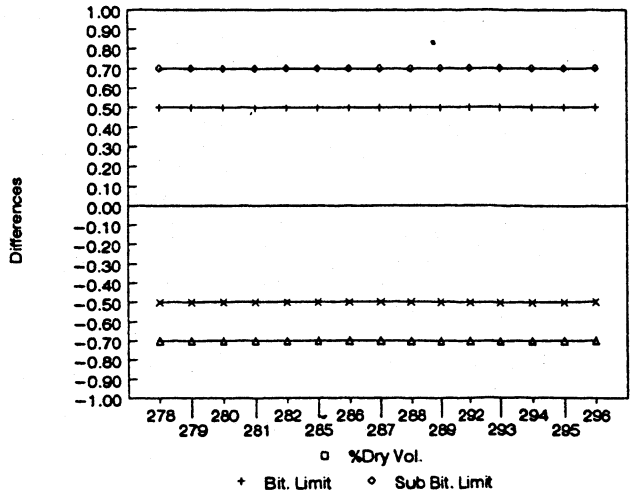
Daily 60 Mesh – Dry Btu/lb

Actual Difference



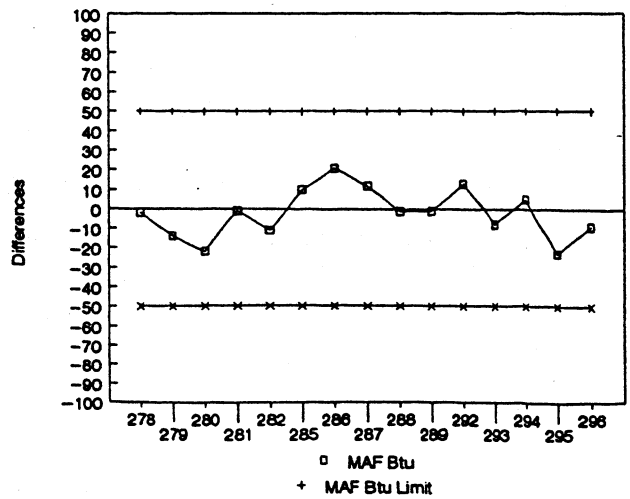
Daily 60 Mesh – %Dry Volatile

Actual Difference



Daily 60 Mesh – MAF Btu/lb

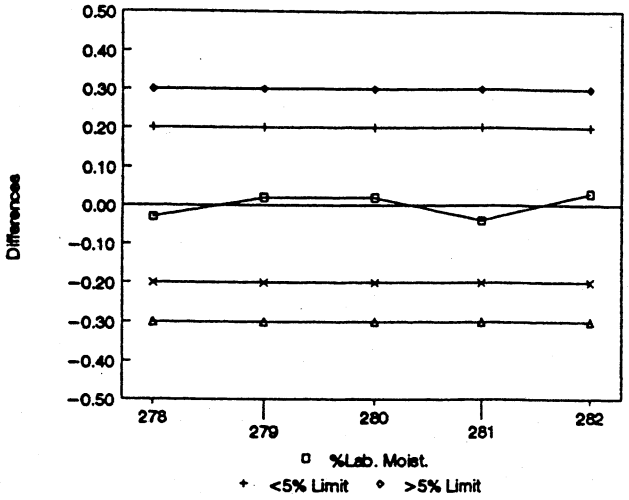
Actual Difference



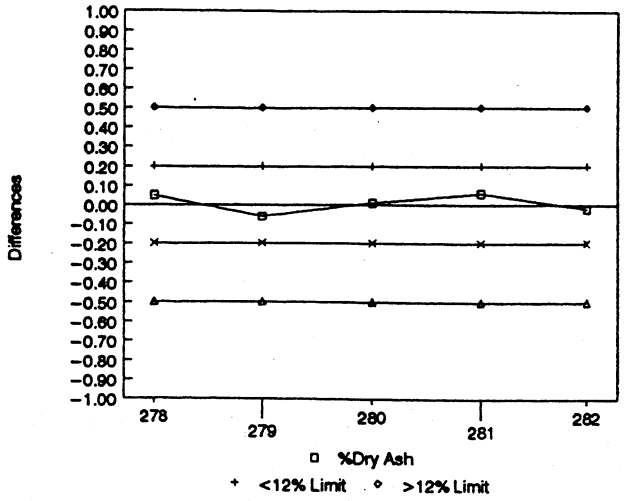
From: October 5, 1998 To: October 23, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

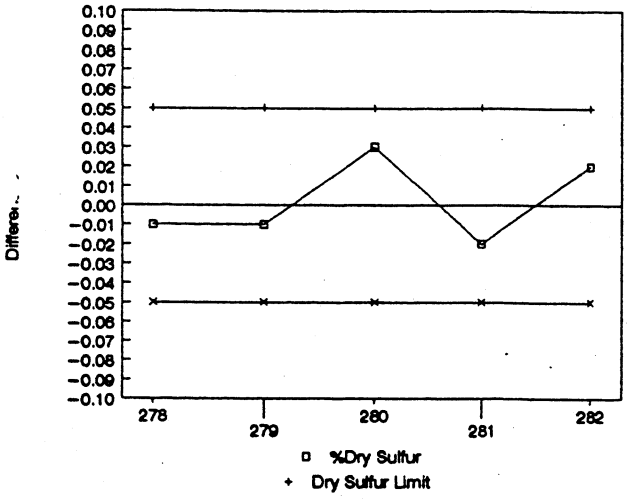
Daily 60 Mesh – %Lab. Moisture
Actual Difference



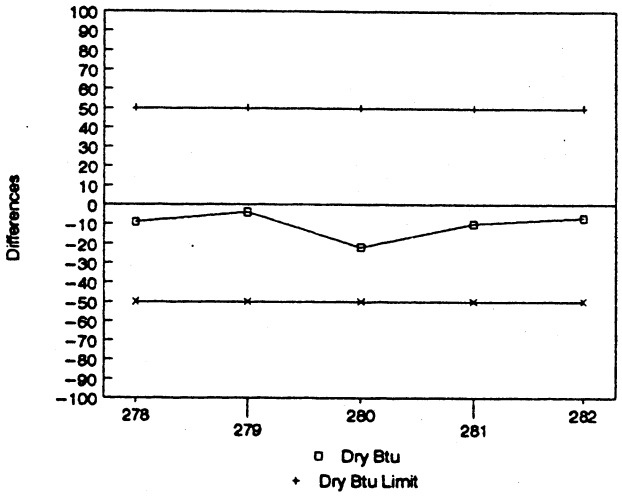
Daily 60 Mesh – %Dry Ash
Actual Difference



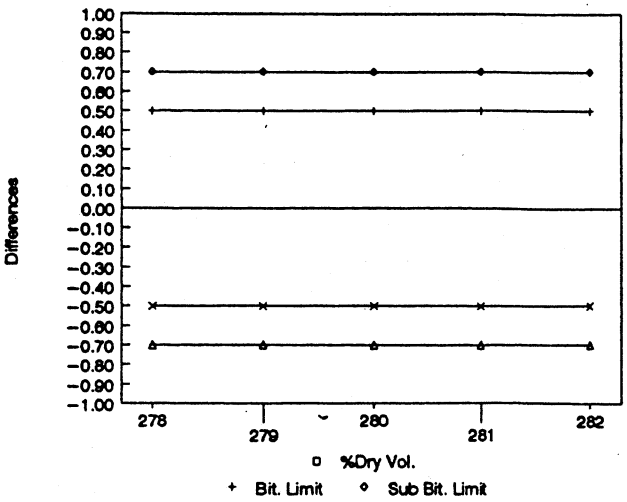
Daily 60 Mesh – %Dry Sulfur
Actual Difference



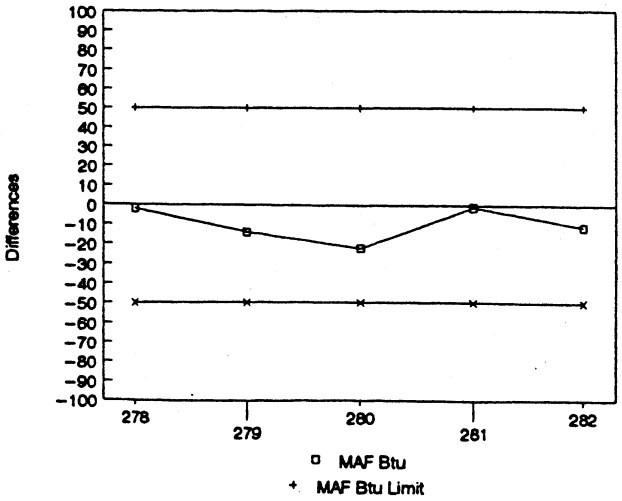
Daily 60 Mesh – Dry Btu/lb
Actual Difference



Daily 60 Mesh – %Dry Volatile
Actual Difference



Daily 60 Mesh – MAF Btu/lb
Actual Difference

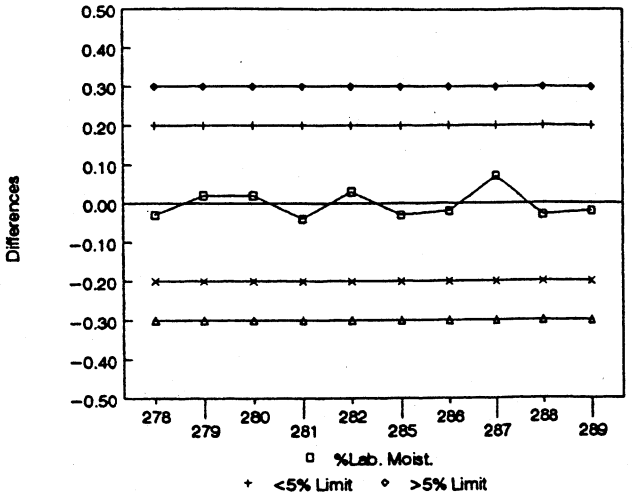


From: October 5, 1998 To: October 9, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

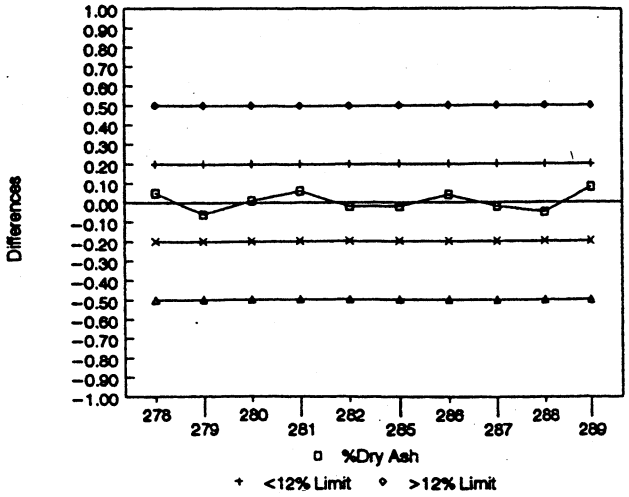
Daily 60 Mesh – %Lab. Moisture

Actual Difference



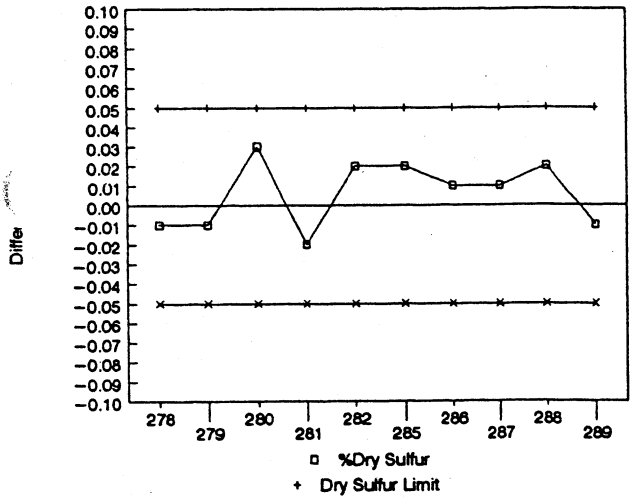
Daily 60 Mesh – %Dry Ash

Actual Difference



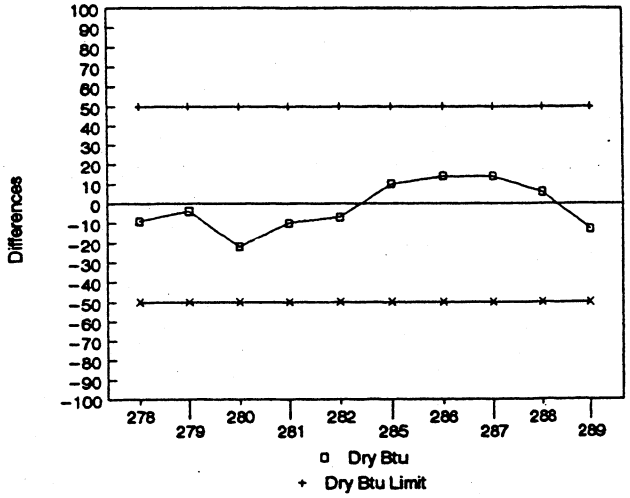
Daily 60 Mesh – %Dry Sulfur

Actual Difference



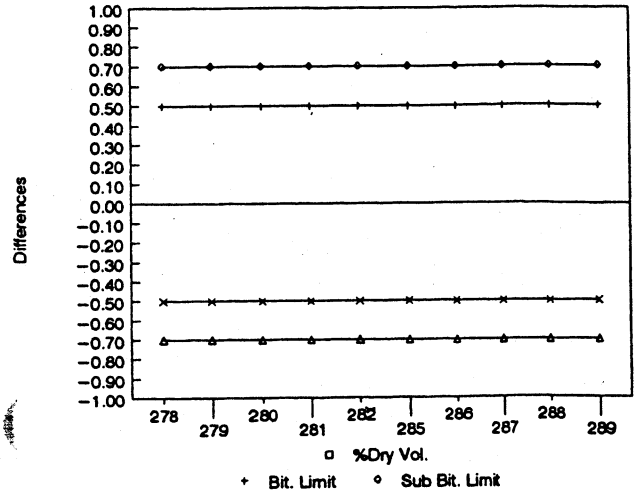
Daily 60 Mesh – Dry Btu/lb

Actual Difference



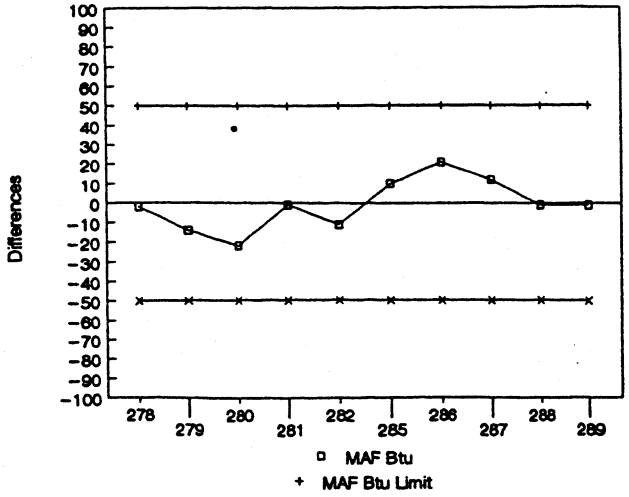
Daily 60 Mesh – %Dry Volatile

Actual Difference



Daily 60 Mesh – MAF Btu/lb

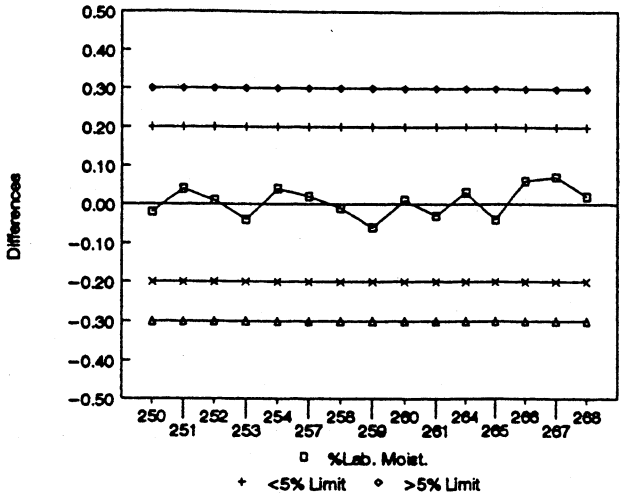
Actual Difference



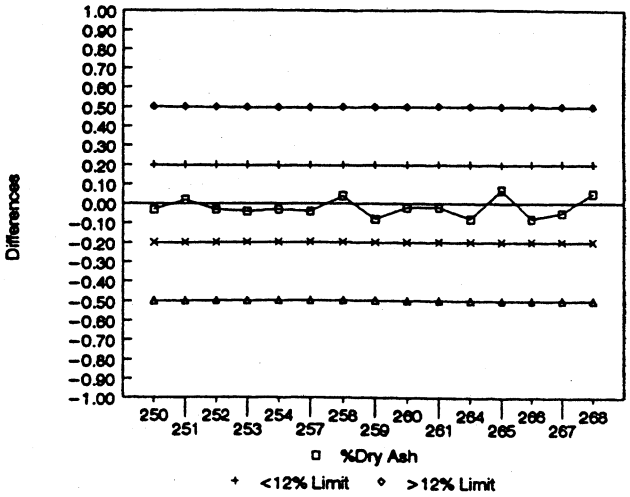
From: October 5, 1998 To: October 16, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

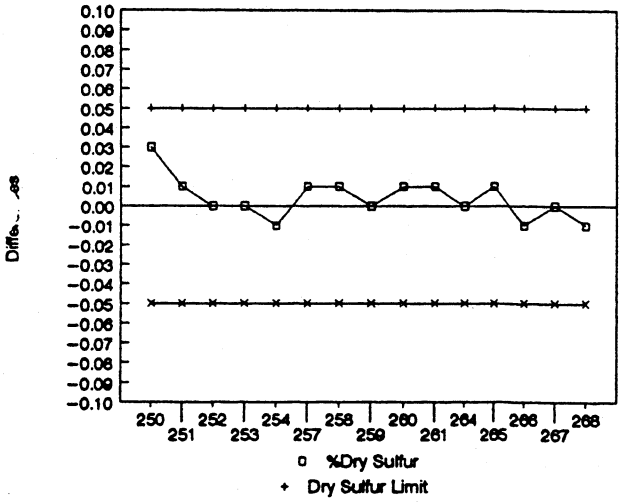
Daily 60 Mesh – %Lab. Moisture
Actual Difference



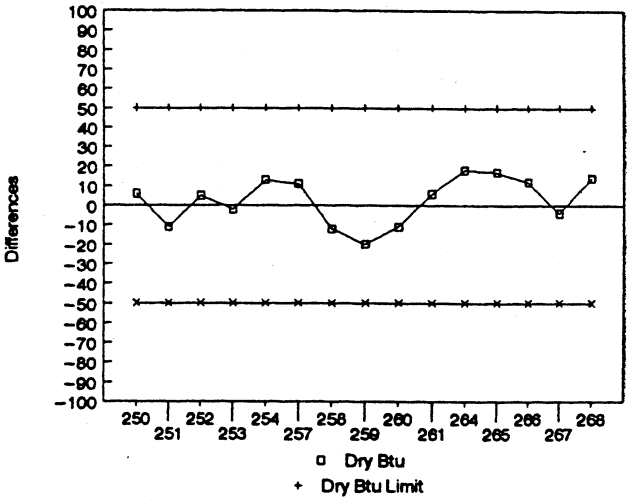
Daily 60 Mesh – %Dry Ash
Actual Difference



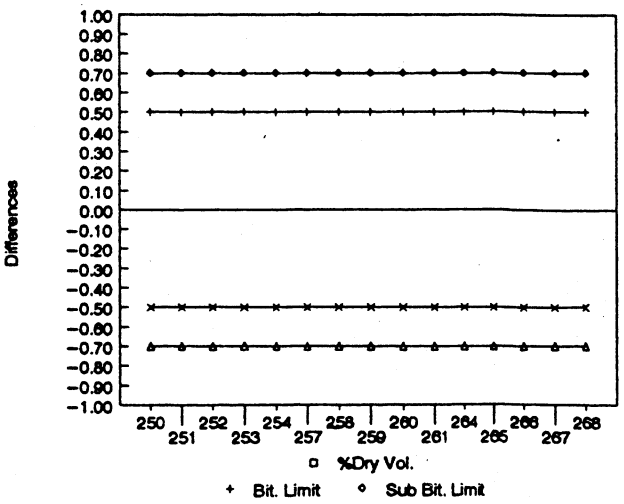
Daily 60 Mesh – %Dry Sulfur
Actual Difference



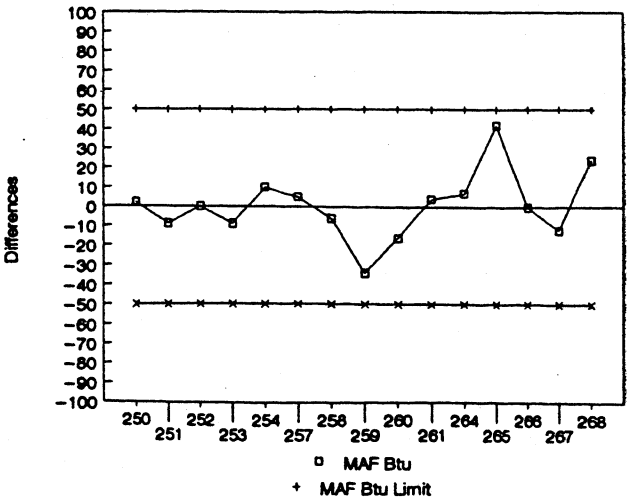
Daily 60 Mesh – Dry Btu/lb
Actual Difference



Daily 60 Mesh – %Dry Volatile
Actual Difference



Daily 60 Mesh – MAF Btu/lb
Actual Difference

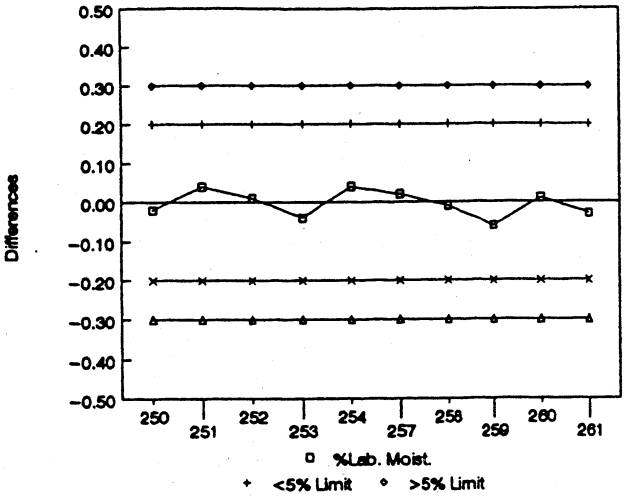


From: September 7, 1998 To: September 25, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

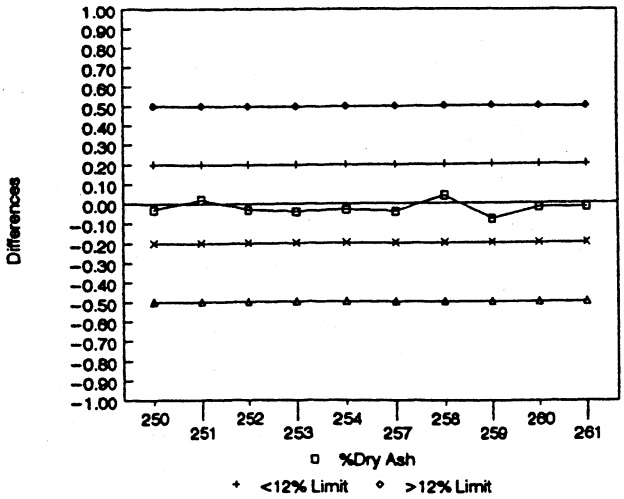
Daily 60 Mesh – %Lab. Moisture

Actual Difference



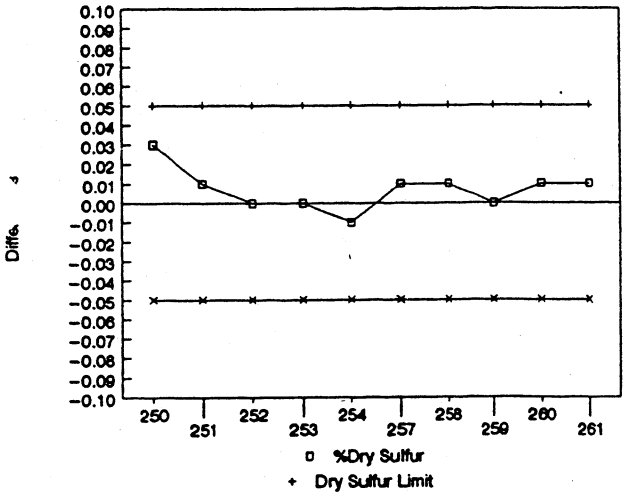
Daily 60 Mesh – %Dry Ash

Actual Difference



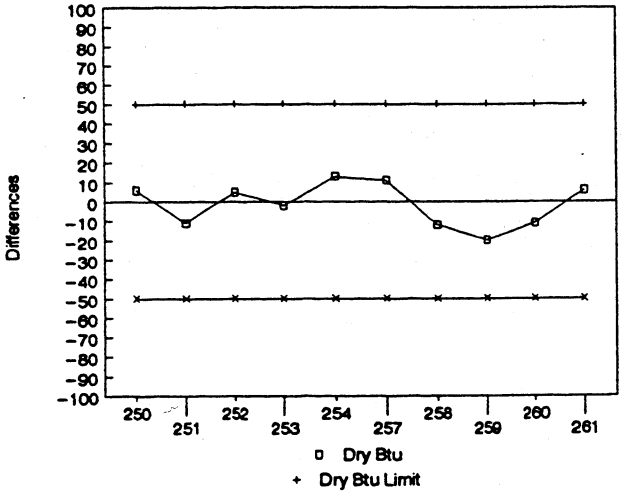
Daily 60 Mesh – %Dry Sulfur

Actual Difference



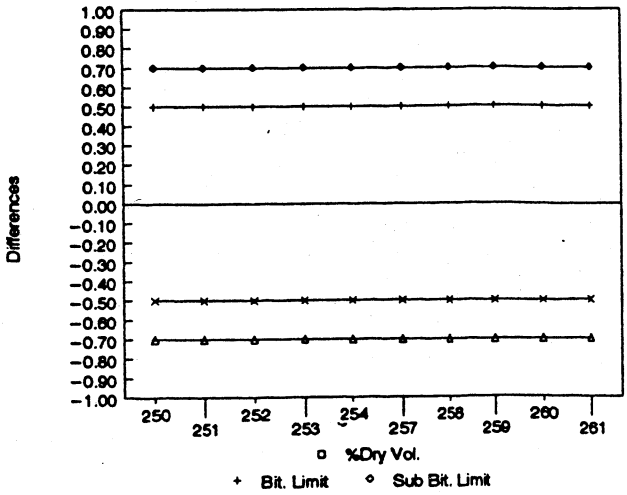
Daily 60 Mesh – Dry Btu/lb

Actual Difference



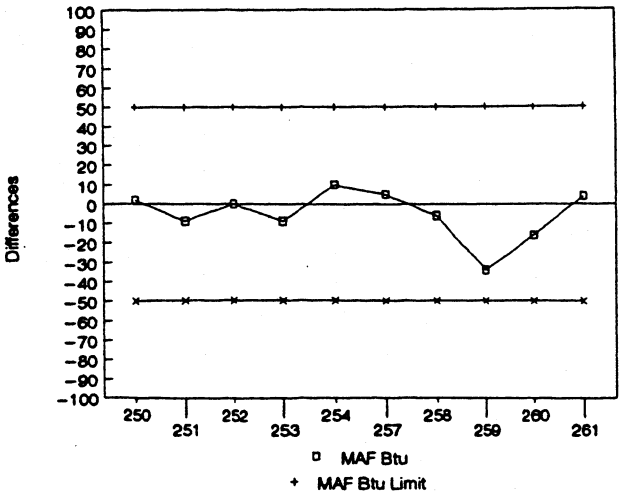
Daily 60 Mesh – %Dry Volatile

Actual Difference



Daily 60 Mesh – MAF Btu/lb

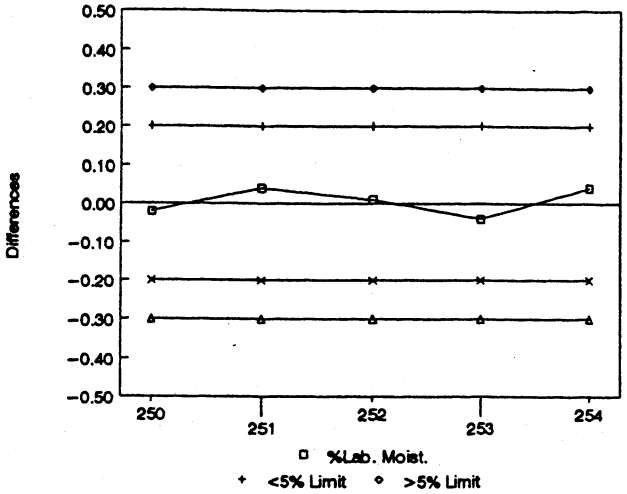
Actual Difference



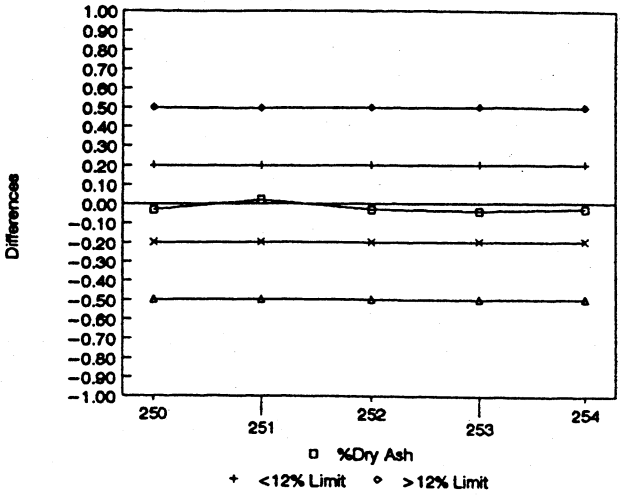
From: September 7, 1998 To: September 18, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

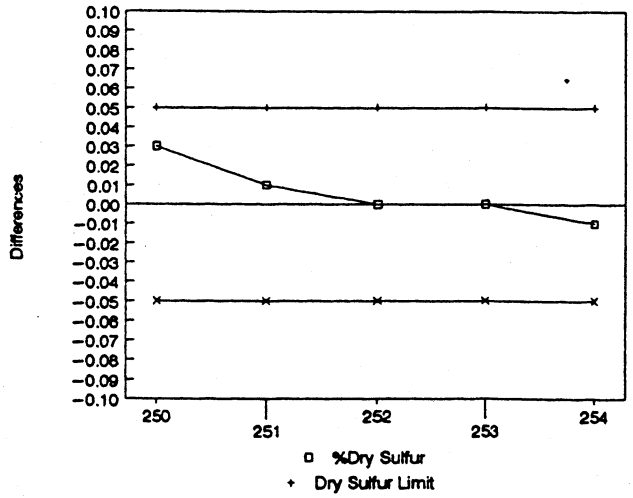
Daily 60 Mesh – %Lab. Moisture
Actual Difference



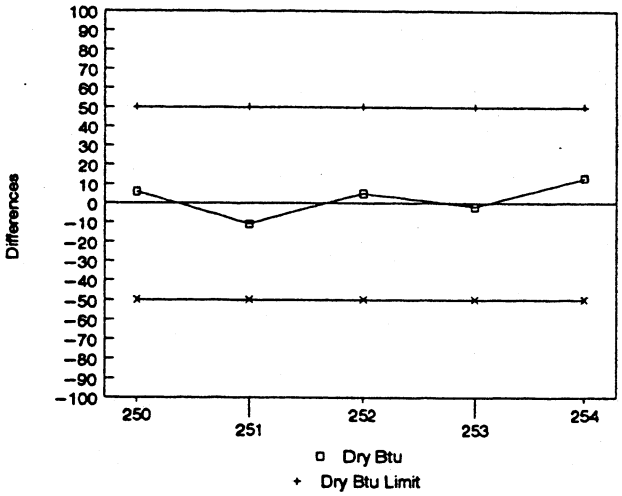
Daily 60 Mesh – %Dry Ash
Actual Difference



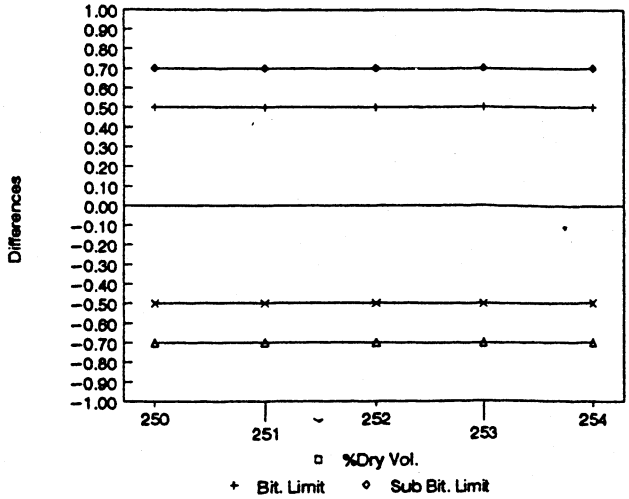
Daily 60 Mesh – %Dry Sulfur
Actual Difference



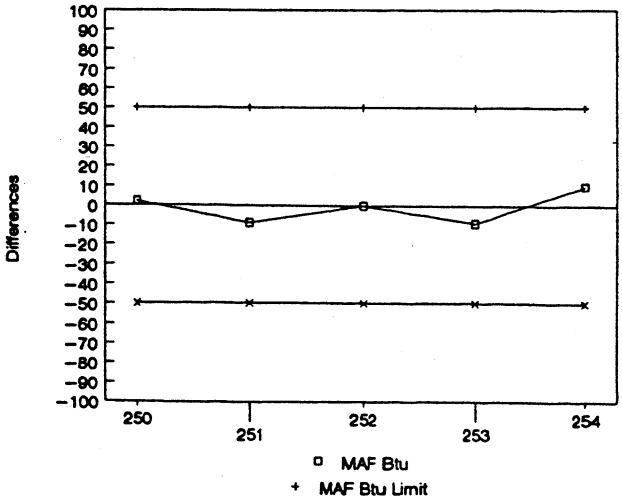
Daily 60 Mesh – Dry Btu/lb
Actual Difference



Daily 60 Mesh – %Dry Volatile
Actual Difference



Daily 60 Mesh – MAF Btu/lb
Actual Difference



From: September 7, 1998 To: September 11, 1998

APPENDIX F

LIST OF PARTICIPANTS

Michael Martin - Field Team Coordinator

Edward MacKinnon - Sample Setup and Recovery

Scott Tibbetts - ESP Inlet Sampling

Kirk Laakso - ESP Exhaust Sampling

David Gill - ESP Inlet Sampling

Robert Nixon - ESP Inlet Sampling

Robert Rebello - ESP Inlet Sampling

Howard Schiff - Process Sampling/QA

APPENDIX G

ADDITIONAL INFORMATION

Salem Harbor Unit 3 Mercury Emissions Test

Start Time 8/24/99 9:00
End Time 8/24/99 11:30
Interval 0.3 hour

RUN 1

Gross MW 3k211.pv	Net MW 3k216hc.pv	Main Steam Flow; KLB/Hr 3fw2p05.pv	Main Steam Temp; F 3t810.pv	Main Steam Pressure; PSIG 3p200.pv	Feedwater Flow; Klb/hr 3fw1p07.pv	Boiler Air Flow Total; % 3ss1p08.pv	South Overfire Air Flow; KLB/HR u3f153.pv	North Overfire Air Flow; KLB/HR u3f154.pv	Undiluted Urea Flow Skid 1; GPH u3f070.pv	Undiluted Urea Flow Skid 2; GPH u3f071.pv
154.07	142.85	1062.72	989.75	1887.74	1018.03	80.36	41.20	25.24	50.29	55.46
154.13	142.36	1062.94	989.95	1885.78	1019.23	80.24	40.96	25.15	50.41	55.27
154.20	142.28	1063.16	990.59	1883.82	1014.41	80.30	41.12	25.01	50.52	55.09
154.26	142.70	1063.39	991.55	1882.01	1011.83	80.83	41.27	25.56	50.64	54.91
154.32	144.06	1063.61	991.95	1881.72	1021.16	81.94	40.88	25.66	50.76	54.72
154.39	143.86	1063.83	991.74	1881.84	1019.94	82.12	40.70	24.39	50.87	54.54
154.45	143.83	1064.05	992.05	1881.95	1014.41	81.57	40.71	25.05	51.04	54.36
154.52	143.91	1064.27	991.81	1882.07	1016.17	81.50	40.75	24.75	51.59	54.17
154.29	**143.23**	**1063.50**	**991.18**	**1883.37**	**1016.90**	**81.11**	**40.95**	**25.10**	**50.76**	**54.82**

Total Urea GPH **105.58**

Calc'd Heat Rate Btu/kWh	**Calc'd** Heat Input mmBtu/Hr	**Manual** Coal HHV Btu/lb	Fuel Flow lb/hr
10312	1473.03	12228	120,464.09
10311	1467.85		120,040.06
10311	1466.95		119,966.46
10312	1471.47		120,336.00
10315	1485.90		121,516.28
10314	1483.80		121,344.37
10314	1483.51		121,320.83
10314	1484.31		121,386.50
10312.80	**1477.10**		**120,796.82**

Salem Harbor Unit 3 Mercury Emissions Test

Start Time 8/24/99 14:00
End Time 8/24/99 16:30
Interval 0.3 hour

RUN 2

Gross MW 3k211.pv	Net MW 3k216hc.pv	Main Steam Flow; KLB/Hr 3fw2p05.pv	Main Steam Temp; F 3t810.pv	Main Steam Pressure; PSIG 3p200.pv	Feedwater Flow; Klb/hr 3fw1p07.pv	Boiler Air Flow Total; % 3ss1p08.pv	South Overfire Air Flow; KLB/HR u3f153.pv	North Overfire Air Flow; KLB/HR u3f154.pv	Undiluted Urea Flow Skid 1; GPH u3f070.pv	Undiluted Urea Flow Skid 2; GPH u3f071.pv
154.80	143.76	1062.40	989.12	1893.62	1033.47	82.72	40.38	23.65	55.76	52.40
154.71	143.42	1062.18	984.17	1895.23	1034.15	82.73	41.35	24.96	55.58	52.21
154.64	142.90	1061.96	978.03	1895.82	1028.31	82.65	41.23	25.23	55.40	52.03
154.64	143.22	1061.74	983.31	1895.71	1029.91	82.43	40.77	25.03	55.22	51.85
154.65	143.57	1061.53	986.67	1895.61	1030.55	82.21	40.85	25.29	55.04	51.66
154.67	142.89	1061.31	987.96	1895.50	1029.39	82.12	41.71	25.27	54.86	51.48
154.68	142.60	1061.09	988.12	1895.39	1025.66	82.01	41.14	25.15	54.68	51.20
154.70	142.76	1060.87	989.08	1895.28	1024.32	82.16	40.97	25.13	54.50	50.25
154.69	**143.14**	**1061.63**	**985.81**	**1895.27**	**1029.47**	**82.38**	**41.05**	**24.96**	**55.13**	**51.63**

Calc'd Heat Rate Btu/kWh	Calc'd Heat Input mmBtu/Hr	Manual Coal HHV Btu/lb	Fuel Flow lb/hr
10314	1482.78	12,228	121,261
10313	1479.18		120,966
10312	1473.56		120,507
10313	1476.95		120,784
10314	1480.74		121,094
10312	1473.50		120,502
10311	1470.34		120,244
10312	1472.05		120,383
10312.57	**1476.14**		**120,717.68**

Total Urea GPH **106.76**

Salem Harbor Unit 3 Mercury Emissions Test

Start Time 8/25/99 8:30
End Time 8/25/99 11:00
Interval .3 hour

RUN 3

Gross MW 3k211.pv	Net MW 3k216hc.pv	Main Steam Flow; KLB/Hr 3fw2p05.pv	Main Steam Temp; F 3t810.pv	Main Steam Pressure; PSIG 3p200.pv	Feedwater Flow; Klb/hr 3fw1p07.pv	Boiler Air Flow Total; % 3ss1p08.pv	South Overfire Air Flow; KLB/HR u3f153.pv	North Overfire Air Flow; KLB/HR u3f154.pv	Undiluted Urea Flow Skid 1; GPH u3f070.pv	Undiluted Urea Flow Skid 2; GPH u3f071.pv
153.35	140.96	1050.58	978.74	1879.61	1011.52	78.58	41.19	25.58	47.12	47.65
153.28	140.32	1050.93	980.11	1880.47	1002.04	78.55	40.71	24.49	47.28	46.76
153.62	142.62	1051.27	987.13	1882.65	1020.51	78.95	41.12	25.39	47.44	45.99
154.55	142.89	1051.62	987.37	1888.97	1022.60	79.34	41.16	25.78	47.60	46.60
154.78	142.69	1051.96	988.26	1889.86	1017.93	79.00	41.15	25.59	47.76	47.60
154.84	143.06	1052.31	988.68	1889.70	1019.73	78.73	41.22	24.83	47.92	48.60
154.90	143.05	1052.66	988.89	1889.54	1016.62	79.17	40.74	24.59	48.08	49.60
154.96	142.96	1053.00	989.89	1889.39	1012.89	79.43	41.52	25.52	48.24	50.60
154.28	**142.32**	**1051.79**	**986.13**	**1886.27**	**1015.48**	**78.97**	**41.10**	**25.22**	**47.68**	**47.92**

Total Urea GPH **95.60**

Calc'd Heat Rate Btu/kWh	**Calc'd** Heat Input mmBtu/Hr	**Manual** Coal HHV Btu/lb	Fuel Flow lb/hr
10308	1452.98	12,491	116,322
10306	1446.12		115,773
10311	1470.62		117,734
10312	1473.45		117,961
10311	1471.32		117,790
10312	1475.32		118,111
10312	1475.16		118,098
10312	1474.25		118,025
10310.66	**1467.40**		**117,476.72**

Salem Harbor Unit 3 Mercury Emissions Test

Start Time 8/25/99 12:30
End Time 8/25/99 15:00
Interval .3 hour

RUN 4

Gross MW 3k211.pv	Net MW 3k216hc.pv	Main Steam Flow; KLB/Hr 3fw2p05.pv	Main Steam Temp; F 3t810.pv	Main Steam Pressure; PSIG 3p200.pv	Feedwater Flow; Klb/hr 3fw1p07.pv	Boiler Air Flow Total; % 3ss1p08.pv	South Overfire Air Flow; KLB/HR u3f153.pv	North Overfire Air Flow; KLB/HR u3f154.pv	Undiluted Urea Flow Skid 1; GPH u3f070.pv	Undiluted Urea Flow Skid 2; GPH u3f071.pv
154.62	141.72	1055.19	982.14	1888.69	1019.39	79.54	40.74	24.68	49.25	47.08
154.47	142.33	1055.54	986.68	1888.62	1024.20	79.87	41.12	25.44	49.42	45.64
154.49	142.21	1055.89	988.24	1888.55	1020.25	79.73	40.75	25.18	49.59	45.01
154.59	142.43	1056.23	988.64	1888.47	1021.78	79.38	40.76	24.98	49.76	45.50
154.53	142.33	1056.58	989.21	1888.40	1017.42	79.81	41.11	25.39	49.94	46.00
154.47	142.52	1056.92	989.44	1888.11	1024.38	79.67	40.95	25.06	50.11	46.50
154.41	142.66	1057.21	989.75	1886.69	1024.23	79.95	41.20	25.35	50.28	47.15
154.32	142.37	1057.10	991.15	1885.12	1021.21	80.10	40.71	25.05	50.45	48.81
154.49	**142.32**	**1056.33**	**988.16**	**1887.83**	**1021.61**	**79.76**	**40.92**	**25.14**	**49.85**	**46.46**
									Total Urea GPH	**96.31**

Calc'd Heat Rate Btu/kWh	Calc'd Heat Input mmBtu/Hr	Manual Coal HHV Btu/lb	Fuel Flow lb/hr
10309	1461.03	12,491	116,967
10311	1467.52		117,486
10310	1466.29		117,387
10311	1468.56		117,570
10311	1467.51		117,485
10311	1469.57		117,650
10311	1471.02		117,766
10311	1467.91		117,518
10310.62	**1467.43**		**117,478.69**

PG&E Generating

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Fax Message

Date: 9/2/99

To: MIKE MARTIN

Facsimile No.: (978) 453-1995

Phone No.: (978) 656-3550

Company: TRC

No. of Pages: 3 (including this one)

City/State:

Facsimile No.: (978) 740-8358

From: Jeffrey R. Marrs

Phone No.: (978) 740-8348

Special Instructions:

If transmittal is incomplete or illegible, please call at (978) 740-8348.

Message: MIKE,

ATTACHED ARE THE UNIT #3 DAILY REPORT WITH HOURLY AVERAGES FROM THE CEMS. IF YOU NEED ANYTHING ELSE LET ME KNOW.

JEFF

CONFIDENTIALITY NOTICE

The information contained in this telefacsimile message is privileged and confidential, and intended only for the use of the individual(s) and/or entity(ies) named above. If you are not the intended recipient, you are hereby notified that any unauthorized disclosure, copying, distribution or taking of any action in reliance on the contents of the telecopy material is strictly prohibited and review by any individual other than the intended recipient shall not constitute waiver of the attorney/client privilege. If you have received this transmission in error, please immediately notify us by telephone (collect) to arrange for the return of the materials. Thank you.

24 Fort Avenue Salem, MA 01970 978-740-8200 FAX 978-740-8358

Unit #3 Daily Report

	NADB	Date	HR	SO2	SO2 Tons	SO2 lbs	NOX	CO2	NOX lbs	FLOW	MWGE	HEAT	CO lbs	OPT
1	3	8/24/199	0	378.22	0.86	1.08	154.49	10.44	0.318	27548990.0	153	1598.0	0.019	1.00
2	3	8/24/199	1	379.17	0.89	1.08	156.78	10.50	0.321	28254800.0	155	1647.7	0.017	1.00
3	3	8/24/199	2	323.79	0.57	1.04	116.84	9.26	0.271	21203150.0	102	1090.8	0.022	1.00
4	3	8/24/199	3	340.30	0.50	1.07	131.03	9.52	0.296	17694740.0	98	935.7	0.038	1.00
5	3	8/24/199	4	374.40	0.88	1.07	153.30	10.44	0.316	28199780.0	153	1635.9	0.021	1.00
6	3	8/24/199	5	371.05	0.88	1.06	151.62	10.44	0.312	28576510.0	156	1657.6	0.021	1.00
7	3	8/24/199	6	369.39	0.87	1.06	156.28	10.38	0.324	28429120.0	156	1639.3	0.020	1.00
8	3	8/24/199	7	370.91	0.87	1.06	156.83	10.44	0.323	28256390.0	155	1639.0	0.021	1.00
9	3	8/24/199	8	376.81	0.87	1.07	152.16	10.56	0.310	27975700.0	155	1640.5	0.021	1.00
10	3	8/24/199	9	377.66	0.89	1.07	158.94	10.55	0.324	28258580.0	155	1656.6	0.020	1.00
11	3	8/24/199	10	376.73	0.88	1.07	156.27	10.56	0.318	28120400.0	155	1649.6	0.020	1.00
12	3	8/24/199	11	374.76	0.88	1.06	155.19	10.53	0.317	28197600.0	154	1650.2	0.021	1.00
13	3	8/24/199	12	375.91	0.87	1.07	156.27	10.51	0.320	27980270.0	155	1634.4	0.020	1.00
14	3	8/24/199	13	375.42	0.88	1.07	154.33	10.48	0.317	28238270.0	155	1644.3	0.020	1.00
15	3	8/24/199	14	372.97	0.87	1.06	153.45	10.48	0.315	28228490.0	155	1644.0	0.018	1.00
16	3	8/24/199	15	376.04	0.89	1.07	154.78	10.50	0.317	28414920.0	154	1658.0	0.019	1.00
17	3	8/24/199	16	379.09	0.89	1.08	157.77	10.51	0.323	28417390.0	154	1659.6	0.019	1.00
18	3	8/24/199	17	382.24	0.91	1.08	158.80	10.55	0.324	28600770.0	155	1675.5	0.019	1.00
19	3	8/24/199	18	385.62	0.90	1.09	157.70	10.56	0.321	28188940.0	155	1653.6	0.019	1.00
20	3	8/24/199	19	387.58	0.91	1.10	159.05	10.57	0.324	28168880.0	156	1653.8	0.020	1.00
21	3	8/24/199	20	388.01	0.91	1.10	166.33	10.57	0.338	28240450.0	156	1658.3	0.020	1.00
22	3	8/24/199	21	385.65	0.90	1.09	197.17	10.58	0.401	28054510.0	155	1649.1	0.019	1.00
23	3	8/24/199	22	385.86	0.89	1.09	196.14	10.58	0.399	27697250.0	155	1627.8	0.020	1.00
24	3	8/24/199	23	383.35	0.89	1.09	178.13	10.55	0.363	27814870.0	154	1630.0	0.019	1.00
SUM					20.54						3606	38229.3		
AVG				374.62		1.07	157.90	10.42	0.325	27448365.4			0.021	

Unit #3 Daily Report

	NADB	Date	HR	SO2	SO2 Tons	SO2 lbs	NOX	CO2	NOX lbs	FLOW	MWGE	HEAT	CO lbs	OPT
1	3	8/25/199	0	384.92	0.89	1.08	157.58	10.64	0.318	27922030.0	156	1650.8	0.022	1.00
2	3	8/25/199	1	351.06	0.74	1.07	132.71	9.83	0.290	25368920.0	128	1385.8	0.023	1.00
3	3	8/25/199	2	341.38	0.67	1.06	133.26	9.60	0.298	23635320.0	118	1260.7	0.022	1.00
4	3	8/25/199	3	366.48	0.79	1.07	156.71	10.20	0.330	25813630.0	140	1462.6	0.020	1.00
5	3	8/25/199	4	390.40	0.89	1.09	152.36	10.71	0.306	27510990.0	153	1637.1	0.032	1.00
6	3	8/25/199	5	391.63	0.89	1.09	155.90	10.74	0.312	27366620.0	153	1632.7	0.037	1.00
7	3	8/25/199	6	389.20	0.88	1.09	165.65	10.69	0.333	27096010.0	153	1608.9	0.040	1.00
8	3	8/25/199	7	388.34	0.88	1.09	151.88	10.60	0.308	27292590.0	153	1606.8	0.040	1.00
9	3	8/25/199	8	389.84	0.89	1.10	154.25	10.60	0.313	27426770.0	154	1614.7	0.033	1.00
10	3	8/25/199	9	394.32	0.90	1.10	155.22	10.69	0.312	27377370.0	155	1625.2	0.027	1.00
11	3	8/25/199	10	393.33	0.90	1.10	152.53	10.66	0.308	27546390.0	155	1631.5	0.026	1.00
12	3	8/25/199	11	387.74	0.89	1.09	150.33	10.61	0.305	27743040.0	154	1634.8	0.026	1.00
13	3	8/25/199	12	389.47	0.89	1.09	155.37	10.65	0.314	27499790.0	154	1627.8	0.025	1.00
14	3	8/25/199	13	391.96	0.90	1.10	157.09	10.69	0.316	27653170.0	154	1641.7	0.023	1.00
15	3	8/25/199	14	391.78	0.90	1.10	158.08	10.65	0.319	27555230.0	153	1630.2	0.023	1.00
16	3	8/25/199	15	391.11	0.90	1.11	158.65	10.54	0.324	27715380.0	152	1622.7	0.024	1.00
17	3	8/25/199	16	393.47	0.90	1.11	158.54	10.60	0.322	27526320.0	153	1620.5	0.023	1.00
18	3	8/25/199	17	392.80	0.90	1.10	162.34	10.63	0.328	27713290.0	154	1636.5	0.029	1.00
19	3	8/25/199	18	392.97	0.90	1.10	163.23	10.66	0.329	27711120.0	154	1641.4	0.028	1.00
20	3	8/25/199	19	393.43	0.90	1.10	164.56	10.70	0.331	27478320.0	154	1633.6	0.032	1.00
21	3	8/25/199	20	392.66	0.89	1.10	161.80	10.68	0.326	27379830.0	154	1624.8	0.035	1.00
22	3	8/25/199	21	390.51	0.90	1.09	161.29	10.72	0.323	27856360.0	155	1658.8	0.039	1.00
23	3	8/25/199	22	385.59	0.88	1.08	169.49	10.70	0.341	27431760.0	154	1630.1	0.040	1.00
24	3	8/25/199	23	384.97	0.85	1.06	162.60	10.81	0.323	26748710.0	154	1606.6	0.073	1.00
SUM					20.91						3617	38326.3		
AVG				385.81		1.09	156.31	10.57	0.318	27182040.0			0.031	

Soot Blowing 11:17 1K - 11:46

PG & E GENERATING
SALEM HARBOR STATION
26046-0030-00002

- OPACITY PRINTOUT EVERY 15 MIN.

CONTROL ROOM DATA LOG

DATE 8-24-99

RUN No. 1

DATE	TIME	FURNACE DRAFT (in H2O) North/South	FURNACE O2 % (wet) North/South	WIND BOX (in H2O)	AIR HEATER IN deg F N/S	AIR HEATER OUT deg F N/S	FUEL TOTALIZER (TONS) 1	2	3	4
8/24/99	0910	-.6/-.3	5.0/5.0	4.4	111.6/103.9	545.5/574.0	453033	609429	696196	416027
8/24/99	0925	-.7/-.3	5.0/5.2	4.3	112.0/105.0	546.7/574.4				
8/24/99	0940	-.7/-.3	5.0/5.3	4.4	112.8/105.7	547.0/574.6				
8/24/99	0955	-.6/-.2	5.1/5.1	4.4	112.8/106.0	547.6/574.6				
8/24/99	1010	-.6/-.2	5.5/5.0	4.3	112.6/106.9	548.4/576.5				
8/24/99	1025	-.6/-.2	5.8/5.0	4.4	113.1/107.9	548.5/576.6				
8/24/99	1040	-.6/-.2	5.6/5.3	4.4	113.3/107.8	546.8/576.7				
8/24/99	1055	-.7/-.2	5.1/5.2	4.4	113.3/108.1	547.1/577.2				
8/24/99	1110	-.7/-.2	5.6/5.2	4.4	113.9/108.6	546.8/577.1				
8/24/99	1125	-.6/-.1	5.7/5.2	4.4	114.3/108.8	546.9/577.1				
8/24/99	1140	-.6/-.1	5.1/5.0	4.3	114.6/109.7	546.0/576.1				
8/24/99	1155	-.6/-.1	5.5/5.0	4.4	114.7/110.1	546.8/576.3				
END 8/24/99	1204	-.6/-.2	5.5/5.0	4.4	115.0/110.3	546.0/576.7	453798	610254	697224	416867

0910

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	260	22	40	89	20
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	298	39	41	164	28
3-B-2	4	ON	322	49	43	253	16
3-C-1	5	ON	298	60	41	275	12
3-C-2	6	ON	290	50	40	210	0
3-D-1	7	ON	294	42	41	175	12
3-D-2	8	ON	320	76	41	375	8
3-E-1	9	ON	251	47	40	222	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	213	22	40	71	0
3-F-2	12	ON	326	88	40	436	0
3-G-1	13	ON	251	45	40	182	0
3-G-2	14	ON	273	37	40	134	0
3-H-1	15	ON	337	58	40	246	0
3-H-2	16	ON	253	40	40	134	0

AUG. 24, 1999 09:18

ENTER M FOR MENU

Opacity: 0%

UNIT #3

** DIGICON SWITCH STATUS **

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-H-1	1	52	44	43	4	4	16
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	44	40	4	4	32
3-B-2	4	50	44	42	4	4	16
3-C-1	5	48	42	40	2	2	12
3-C-2	6	48	42	41	2	2	12
3-D-1	7	46	42	41	2	2	8
3-D-2	8	46	42	41	2	2	0
3-E-1	9	44	40	40	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	40	40	1	1	0
3-F-2	12	42	42	41	1	1	4
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	40	40	1	1	0
3-H-1	15	38	40	40	1	1	0
3-H-2	16	38	40	40	1	1	0

AUG. 24, 1999 09:19

ENTER M FOR MENU

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

- ENTER M FOR MENU

AUG. 24, 1999 09:19

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

- ENTER M FOR MENU AUG. 24, 1999 09:19

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 188

AUG. 24, 1999 09:20

ENTER M FOR MENU

0925

UNIT #3

*** CONSOLE STATUS ***

Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	279	27	41	121	8
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	273	34	39	136	40
3-B-2	4	ON	279	37	40	167	20
3-C-1	5	ON	288	56	40	246	12
3-C-2	6	ON	294	52	40	216	0
3-D-1	7	ON	305	45	41	193	0
3-D-2	8	ON	324	76	41	386	0
3-E-1	9	ON	241	46	40	216	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	217	22	40	71	0
3-F-2	12	ON	333	96	41	484	0
3-G-1	13	ON	255	45	40	174	0
3-G-2	14	ON	275	38	40	134	0
3-H-1	15	ON	339	60	40	246	0
3-H-2	16	ON	253	40	40	142	0

AUG. 24, 1999 09:33

ENTER M FOR MENU

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-H-1	1	52	44	43	4	4	20
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	44	39	4	4	24
3-B-2	4	50	44	40	4	4	24
3-C-1	5	48	42	34	2	2	4
3-C-2	6	48	42	41	2	2	16
3-D-1	7	46	42	41	2	2	0
3-D-2	8	46	42	41	2	2	4
3-E-1	9	44	40	40	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	40	40	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	40	40	1	1	0
3-H-1	15	38	40	40	1	1	0
3-H-2	16	38	40	40	1	1	0

AUG. 24, 1999 09:34

ENTER M FOR MENU

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 09:34

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 189

ENTER M FOR MENU AUG. 24, 1999 09:34

UNIT #3

*** CONSOLE STATUS ***

Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	322	38	45	183	24
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	328	54	43	250	36
3-B-2	4	ON	388	72	49	421	28
3-C-1	5	ON	270	54	40	240	40
3-C-2	6	ON	286	53	40	222	24
3-D-1	7	ON	339	57	45	257	16
3-D-2	8	ON	356	93	44	492	8
3-E-1	9	ON	286	61	43	322	4
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	236	28	42	95	0
3-F-2	12	ON	333	96	41	492	0
3-G-1	13	ON	249	45	40	182	0
3-G-2	14	ON	300	46	42	174	4
3-H-1	15	ON	316	46	37	174	0
3-H-2	16	ON	219	30	37	103	0

AUG. 24, 1999 09:40

ENTER M FOR MENU

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	52	46	4	4	32
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	41	4	4	36
3-B-2	4	50	50	45	4	4	40
3-C-1	5	48	48	44	2	2	24
3-C-2	6	48	48	40	2	2	24
3-D-1	7	46	46	43	2	2	20
3-D-2	8	46	46	43	2	2	20
3-E-1	9	44	44	43	1	1	12
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 09:41

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 09:41

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY

# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 245

ENTER M FOR MENU AUG. 24, 1999 09:41

UNIT #3

*** CONSOLE STATUS ***

Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	294	31	42	140	20
3-A-2	2	OFF	0	0	0	0	0
3-B-1	3	ON	268	32	38	128	24
3-B-2	4	ON	330	49	45	242	32
3-C-1	5	ON	294	60	41	263	16
3-C-2	6	ON	361	80	46	386	20
3-D-1	7	ON	339	58	45	263	8
3-D-2	8	ON	367	98	45	533	4
3-E-1	9	ON	286	60	43	310	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	232	28	42	95	0
3-F-2	12	ON	331	96	41	492	0
3-G-1	13	ON	255	45	40	174	0
3-G-2	14	ON	301	48	42	174	0
3-H-1	15	ON	309	46	37	182	0
3-H-2	16	ON	228	30	37	95	0

AUG. 24, 1999 09:55

. ENTER M FOR MENU

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	52	46	4	4	36
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	42	4	4	28
3-B-2	4	50	50	42	4	4	36
3-C-1	5	48	48	45	2	2	32
3-C-2	6	48	48	45	2	2	16
3-D-1	7	46	46	45	2	2	4
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 09:55

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

..APPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 09:56

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 09:56

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 209

ENTER M FOR MENU AUG. 24, 1999 09:56

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
[illegible]-1	1	ON	300	33	43	152	44
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	324	49	43	210	28
3-B-2	4	ON	270	29	39	125	44
3-C-1	5	ON	356	93	47	480	12
3-C-2	6	ON	305	57	42	251	16
3-D-1	7	ON	341	59	45	269	12
3-D-2	8	ON	363	99	45	544	4
3-E-1	9	ON	286	60	43	310	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	232	28	42	95	0
3-F-2	12	ON	335	97	41	492	0
3-G-1	13	ON	253	45	40	182	4
3-G-2	14	ON	296	48	42	174	0
3-H-1	15	ON	318	46	37	182	0
3-H-2	16	ON	226	30	37	95	0

ENTER M FOR MENU AUG. 24, 1999 10:10

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	52	42	4	4	32
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	44	4	4	28
3-B-2	4	50	50	39	4	4	32
3-C-1	5	48	48	46	2	2	24
3-C-2	6	48	48	46	2	2	24
3-D-1	7	46	46	45	2	2	4
3-D-2	8	46	46	45	2	2	4
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	4
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 10:10

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 10:11

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 10:11

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 234

ENTER M FOR MENU AUG. 24, 1999 10:11

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 237

AUG. 24, 1999 10:25

- ENTER M FOR MENU

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 10:25

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3 1	1	52	52	45	4	4	32
3-H-2	2	---	0	0	0	0	0
3-B-1	3	50	50	42	4	4	8
3-B-2	4	50	50	36	4	4	28
3-C-1	5	48	48	47	2	2	32
3-C-2	6	48	48	46	2	2	0
3-D-1	7	46	46	45	2	2	8
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 10:25

UNIT #3

*** CONSOLE STATUS ***

Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-H-1	1	ON	318	39	45	191	40
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	211	17	33	54	44
3-B-2	4	ON	337	55	45	285	36
3-C-1	5	ON	271	55	40	240	12
3-C-2	6	ON	371	86	47	427	24
3-D-1	7	ON	339	57	45	263	4
3-D-2	8	ON	363	99	45	533	0
3-E-1	9	ON	286	60	43	304	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	238	28	41	95	0
3-F-2	12	ON	337	97	41	492	0
3-G-1	13	ON	255	46	40	182	0
3-G-2	14	ON	296	48	42	174	0
3-H-1	15	ON	315	46	37	182	0
3-H-2	16	ON	217	30	37	103	0

AUG. 24, 1999 10:24

ENTER M FOR MENU

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 A-1	1	ON	316	27	45	175	24
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	318	51	43	234	32
3-B-2	4	ON	322	40	44	222	28
3-C-1	5	ON	345	86	46	427	24
3-C-2	6	ON	367	86	47	427	12
3-D-1	7	ON	345	59	45	275	8
3-D-2	8	ON	367	98	45	533	8
3-E-1	9	ON	279	61	43	304	4
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	42	95	0
3-F-2	12	ON	335	97	41	500	4
3-G-1	13	ON	251	45	40	182	0
3-G-2	14	ON	301	48	42	182	0
3-H-1	15	ON	318	46	37	182	0
3-H-2	16	ON	226	30	37	95	0

AUG. 24, 1999 10:43

- ENTER M FOR MENU

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	52	47	4	4	24
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	43	4	4	32
3-B-2	4	50	50	46	4	4	32
3-C-1	5	48	48	47	2	2	16
3-C-2	6	48	48	47	2	2	16
3-D-1	7	46	46	45	2	2	0
3-D-2	8	46	46	45	2	2	8
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 10:43

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 10:44

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 10:44

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 245

ENTER M FOR MENU AUG. 24, 1999 10:44

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 1	1	ON	285	29	41	128	44
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	279	36	40	148	60
3-B-2	4	ON	350	59	46	312	24
3-C-1	5	ON	286	57	41	246	32
3-C-2	6	ON	292	52	40	222	28
3-D-1	7	ON	277	36	39	140	20
3-D-2	8	ON	367	100	45	539	8
3-E-1	9	ON	285	60	43	304	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	232	28	42	95	0
3-F-2	12	ON	331	97	41	500	0
3-G-1	13	ON	245	45	40	182	0
3-G-2	14	ON	294	48	42	182	4
3-H-1	15	ON	318	48	37	190	0
3-H-2	16	ON	228	30	37	95	0

ENTER M FOR MENU AUG. 24, 1999 10:54

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3 -1	1	52	52	43	4	4	20
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	41	4	4	32
3-B-2	4	50	50	44	4	4	44
3-C-1	5	48	48	45	2	2	24
3-C-2	6	48	48	40	2	2	24
3-D-1	7	46	46	44	2	2	16
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 10:55

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 10:55

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T _R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 10:55

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 230

ENTER M FOR MENU AUG. 24, 1999 10:56

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
[illegible]-1	1	ON	333	43	46	214	28
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	322	52	42	238	24
3-B-2	4	ON	270	34	38	160	28
3-C-1	5	ON	348	95	47	486	28
3-C-2	6	ON	354	81	46	386	8
3-D-1	7	ON	341	59	45	269	0
3-D-2	8	ON	365	100	45	539	0
3-E-1	9	ON	285	60	43	304	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	236	28	42	95	0
3-F-2	12	ON	330	93	41	468	0
3-G-1	13	ON	251	45	40	174	0
3-G-2	14	ON	294	48	42	182	0
3-H-1	15	ON	318	48	37	190	0
3-H-2	16	ON	225	30	37	95	0

ENTER M FOR MENU AUG. 24, 1999 11:10

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3 1	1	52	52	46	4	4	28
3 2	2	---	0	0	0	0	0
3-B-1	3	50	50	47	4	4	24
3-B-2	4	50	50	46	4	4	20
3-C-1	5	48	48	47	2	2	16
3-C-2	6	48	48	46	2	2	24
3-D-1	7	46	46	45	2	2	0
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 11:10

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

AUG. 24, 1999 11:11

- ENTER M FOR MENU

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T R # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

ENTER M FOR MENU AUG. 24, 1999 11:11

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 250

ENTER M FOR MENU AUG. 24, 1999 11:11

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 1	1	ON	348	48	47	253	28
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	345	62	44	292	32
3-B-2	4	ON	365	67	47	375	24
3-C-1	5	ON	283	63	41	287	32
3-C-2	6	ON	324	67	43	304	32
3-D-1	7	ON	345	59	45	275	16
3-D-2	8	ON	367	99	45	544	4
3-E-1	9	ON	283	60	43	310	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	238	28	42	95	0
3-F-2	12	ON	330	92	41	468	0
3-G-1	13	ON	249	45	40	182	0
3-G-2	14	ON	300	48	42	174	0
3-H-1	15	ON	307	46	37	190	0
3-H-2	16	ON	228	30	37	103	0

ENTER M FOR MENU AUG. 24, 1999 11:24

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3 1	1	52	52	45	4	4	28
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	44	4	4	28
3-B-2	4	50	50	48	4	4	28
3-C-1	5	48	48	43	2	2	32
3-C-2	6	48	48	45	2	2	28
3-D-1	7	46	46	45	2	2	0
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 11:25

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 11:25

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T R # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

ENTER M FOR MENU AUG. 24, 1999 11:25

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 229

ENTER M FOR MENU AUG. 24, 1999 11:26

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
[illegible]-1	1	ON	320	37	45	175	28
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	330	56	44	265	36
3-B-2	4	ON	397	75	49	457	8
3-C-1	5	ON	330	79	44	380	36
3-C-2	6	ON	367	89	47	445	24
3-D-1	7	ON	225	23	35	82	20
3-D-2	8	ON	365	100	45	544	12
3-E-1	9	ON	285	60	43	310	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	42	95	0
3-F-2	12	ON	324	93	41	476	0
3-G-1	13	ON	253	45	40	182	0
3-G-2	14	ON	301	48	42	182	0
3-H-1	15	ON	320	48	37	182	0
3-H-2	16	ON	217	30	37	103	0

ENTER M FOR MENU AUG. 24, 1999 11:39

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3 -1	1	52	52	45	4	4	32
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	40	4	4	32
3-B-2	4	50	50	50	4	4	32
3-C-1	5	48	48	43	2	2	28
3-C-2	6	48	48	36	2	2	36
3-D-1	7	46	46	40	2	2	28
3-D-2	8	46	46	43	2	2	4
3-E-1	9	44	44	43	1	1	4
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 11:39

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

AUG. 24, 1999 11:40

- ENTER M FOR MENU

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TI ? # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

ENTER M FOR MENU

AUG. 24, 1999 11:40

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 231

AUG. 24, 1999 11:40

- ENTER M FOR MENU

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 1	1	ON	343	45	46	234	32
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	273	35	38	140	28
3-B-2	4	ON	311	44	43	214	32
3-C-1	5	ON	333	79	45	392	24
3-C-2	6	ON	356	80	46	386	20
3-D-1	7	ON	343	59	45	269	12
3-D-2	8	ON	371	101	45	550	0
3-E-1	9	ON	277	60	43	304	4
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	232	28	41	95	0
3-F-2	12	ON	337	98	41	500	0
3-G-1	13	ON	243	46	40	182	8
3-G-2	14	ON	301	48	42	182	0
3-H-1	15	ON	315	48	37	182	0
3-H-2	16	ON	228	30	37	95	0

ENTER M FOR MENU AUG. 24, 1999 11:54

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3 1	1	52	52	41	4	4	44
3-H-2	2	---	0	0	0	0	0
3-B-1	3	50	50	40	4	4	24
3-B-2	4	50	50	47	4	4	32
3-C-1	5	48	48	47	2	2	32
3-C-2	6	48	48	47	2	2	16
3-D-1	7	46	46	45	2	2	0
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 11:55

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 11:55

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 11:55

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 241

ENTER M FOR MENU AUG. 24, 1999 11:56

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 1	1	ON	320	40	45	195	32
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	307	48	41	214	40
3-B-2	4	ON	331	49	45	250	32
3-C-1	5	ON	275	55	40	234	24
3-C-2	6	ON	337	71	44	333	32
3-D-1	7	ON	285	41	40	164	24
3-D-2	8	ON	369	100	45	550	20
3-E-1	9	ON	285	60	43	304	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	236	28	42	95	0
3-F-2	12	ON	339	98	41	500	0
3-G-1	13	ON	253	46	40	182	0
3-G-2	14	ON	301	48	42	182	0
3-H-1	15	ON	309	48	37	190	0
3-H-2	16	ON	226	30	37	103	0

ENTER M FOR MENU AUG. 24, 1999 12:05

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3 -1	1	52	52	43	4	4	32
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	43	4	4	32
3-B-2	4	50	50	45	4	4	28
3-C-1	5	48	48	44	2	2	28
3-C-2	6	48	48	39	2	2	28
3-D-1	7	46	46	44	2	2	20
3-D-2	8	46	46	43	2	2	8
3-E-1	9	44	44	43	1	1	0
3-E-2	10	----	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 12:05

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 12:06

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 12:06

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 254

AUG. 24, 1999 12:06

ENTER M FOR MENU

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T IR # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 25, 1999 10:01

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY

# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 218

ENTER M FOR MENU AUG. 25, 1999 10:01

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 -1	1	ON	341	45	47	226	8
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	365	69	46	343	28
3-B-2	4	ON	356	64	46	351	0
3-C-1	5	ON	333	83	45	404	16
3-C-2	6	ON	348	77	45	380	16
3-D-1	7	ON	301	46	42	193	28
3-D-2	8	ON	354	93	44	492	12
3-E-1	9	ON	277	58	43	298	4
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	238	28	41	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	253	44	40	174	0
3-G-2	14	ON	300	46	42	174	4
3-H-1	15	ON	307	45	37	174	0
3-H-2	16	ON	219	29	37	95	0

ENTER M FOR MENU AUG. 25, 1999 10:16

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	47	4	4	16
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	44	4	4	36
3-B-2	4	50	47	46	4	4	0
3-C-1	5	48	47	42	2	2	28
3-C-2	6	48	47	45	2	2	20
3-D-1	7	46	46	40	2	2	12
3-D-2	8	46	46	45	2	2	20
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

AUG. 25, 1999 10:17

. ENTER M FOR MENU

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 25, 1999 10:17

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 25, 1999 10:17

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 202

ENTER M FOR MENU AUG. 25, 1999 10:18

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 1	1	ON	341	45	47	234	8
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	345	55	44	281	28
3-B-2	4	ON	358	64	46	347	12
3-C-1	5	ON	330	77	44	369	28
3-C-2	6	ON	348	76	45	357	12
3-D-1	7	ON	273	36	39	140	16
3-D-2	8	ON	367	98	45	539	0
3-E-1	9	ON	283	59	43	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	42	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	245	44	40	174	0
3-G-2	14	ON	300	46	42	174	0
3-H-1	15	ON	318	46	37	182	0
3-H-2	16	ON	226	30	37	95	0

ENTER M FOR MENU AUG. 25, 1999 10:30

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN	ESLIM USE	ES KV	SR SW.	SR IN	SR USE	SR SPM
3 1	1	52		48	46	4		4	16
3-A-2	2	---		0	0	0		0	0
3-B-1	3	50		47	45	4		4	24
3-B-2	4	50		47	46	4		4	0
3-C-1	5	48		47	42	2		2	28
3-C-2	6	48		47	44	2		2	16
3-D-1	7	46		46	45	2		2	32
3-D-2	8	46		46	45	2		2	0
3-E-1	9	44		44	43	1		1	4
3-E-2	10	---		0	0	0		0	0
3-F-1	11	42		42	41	1		1	0
3-F-2	12	---		0	0	0		0	0
3-G-1	13	40		40	40	1		1	0
3-G-2	14	43		43	42	1		1	0
3-H-1	15	38		38	37	1		1	0
3-H-2	16	38		38	37	1		1	0

ENTER M FOR MENU AUG. 25, 1999 10:30

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 25, 1999 10:30

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T R # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

ENTER M FOR MENU AUG. 25, 1999 10:31

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 194

ENTER M FOR MENU AUG. 25, 1999 10:31

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	328	37	46	175	24
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	292	39	40	167	56
3-B-2	4	ON	348	61	46	328	32
3-C-1	5	ON	303	65	42	298	24
3-C-2	6	ON	350	78	45	369	32
3-D-1	7	ON	294	42	41	164	20
3-D-2	8	ON	365	97	45	527	16
3-E-1	9	ON	281	58	43	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	41	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	255	44	40	174	0
3-G-2	14	ON	300	46	42	174	0
3-H-1	15	ON	318	45	37	174	0
3-H-2	16	ON	217	29	37	95	0

ENTER M FOR MENU AUG. 25, 1999 10:45

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-H-1	1	52	48	46	4	4	12
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	42	4	4	28
3-B-2	4	50	47	45	4	4	24
3-C-1	5	48	47	43	2	2	16
3-C-2	6	48	47	42	2	2	16
3-D-1	7	46	46	45	2	2	4
3-D-2	8	46	46	45	2	2	4
3-E-1	9	44	44	43	1	1	8
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 25, 1999 10:45

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 25, 1999 10:46

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 25, 1999 10:46

JNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 217

ENTER M FOR MENU AUG. 25, 1999 10:47

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 1	1	ON	337	41	46	199	40
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	352	64	45	316	32
3-B-2	4	ON	339	53	45	265	16
3-C-1	5	ON	268	51	39	210	40
3-C-2	6	ON	350	76	45	357	40
3-D-1	7	ON	298	43	41	175	16
3-D-2	8	ON	369	99	45	539	0
3-E-1	9	ON	286	59	43	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	230	26	42	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	251	44	40	174	0
3-G-2	14	ON	300	46	42	174	0
3-H-1	15	ON	318	46	37	182	0
3-H-2	16	ON	226	30	37	95	0

ENTER M FOR MENU AUG. 25, 1999 11:10

Opacity: 0%

UNIT #3

** DIGICON SWITCH STATUS **

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	46	4	4	32
3-A-2	2	----	0	0	0	0	0
3-B-1	3	50	47	45	4	4	20
3-B-2	4	50	47	44	4	4	24
3-C-1	5	48	47	38	2	2	16
3-C-2	6	48	47	38	2	2	36
3-D-1	7	46	46	45	2	2	16
3-D-2	8	46	46	43	2	2	12
3-E-1	9	44	44	43	1	1	0
3-E-2	10	----	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	----	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	8
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

AUG. 25, 1999 11:11

ENTER M FOR MENU

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

AUG. 25, 1999 11:11

ENTER M FOR MENU

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 25, 1999 11:11

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 209

ENTER M FOR MENU AUG. 25, 1999 11:11

PG & E GENERATING
SALEM HARBOR STATION
26046-0030-00002

CONTROL ROOM DATA LOG

RUN No. 4

DATE	TIME	FURNACE DRAFT (in H2O)	FURNACE O2 % (wet)	WIND BOX (in H2O)	AIR HEATER IN deg F	AIR HEATER OUT deg F	FUEL TOTALIZER (TONS) 1	2	3	4
8/25/99	1230	-.7/-.3	4.6/4.5	4.4	107.5/110.9	541.5/568.4	459944	616753	705606	423923
	1245	-.7/-.2	4.3/5.0	4.4	107.4/110.9	541.6/569.3				
	1300	-.6/-.2	4.8/5.0	4.4	107.5/110.6	541.6/569.9				
	1315	-.6/-.2	4.8/4.6	4.4	108.1/110.6	542.1/569.7				
	1330	-.6/-.2	4.8/4.5	4.4	109.2/112.3	544.5/570.4				
	1345	-.6/-.2	5.0/4.5	4.3	109.8/113.2	544.8/570.7				
	1400	-.6/-.2	4.6/4.7	4.5	110.3/114.1	544.1/571.6				
	1415	-.6/-.2	4.6/4.6	4.4	110.5/114.7	546.4/572.1				
	1430	-.6/-.2	4.9/4.0	4.3	110.4/115.1	547.6/572.8				
	1445	-.6/-.2	4.9/3.8	4.3	110.5/115.5	547.1/573.0				
	1500	-.5/-.1	5.0/4.0	4.4	102.3/105.7	546.7/573.1				
END	1515	-.6/-.2	5.0/4.0	4.3	103.1/105.1	546.8/572.7	460654	617454	706570	424779

PG & E GENERATING
SALEM HARBOR STATION
26046-0030-00002

CONTROL ROOM DATA LOG

RUN No. _____

DATE	TIME	FURNACE DRAFT (in H2O)	FURNACE O2 % (wet)	WIND BOX (in H2O)	AIR HEATER IN deg F	AIR HEATER OUT deg F	FUEL TOTALIZER (TONS) 1	2	3	4

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3- 1	1	ON	333	38	46	183	24
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	354	64	45	308	20
3-B-2	4	ON	313	47	42	230	24
3-C-1	5	ON	339	88	46	445	4
3-C-2	6	ON	356	80	46	386	12
3-D-1	7	ON	339	58	45	263	8
3-D-2	8	ON	363	99	45	544	0
3-E-1	9	ON	273	59	43	292	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	228	26	41	87	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	245	44	40	174	0
3-G-2	14	ON	296	48	42	174	0
3-H-1	15	ON	318	46	37	182	0
3-H-2	16	ON	221	29	37	95	0

ENTER M FOR MENU AUG. 25, 1999 12:31

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	47	4	4	4
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	43	4	4	28
3-B-2	4	50	47	46	4	4	28
3-C-1	5	48	47	46	2	2	4
3-C-2	6	48	47	46	2	2	8
3-D-1	7	46	46	45	2	2	4
3-D-2	8	46	46	45	2	2	8
3-E-1	9	44	44	43	1	1	8
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	4
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

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UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

AUG. 25, 1999 12:32

ENTER M FOR MENU

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 25, 1999 12:32

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 223

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UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 1	1	ON	331	38	47	187	32
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	361	67	46	332	28
3-B-2	4	ON	315	45	43	214	40
3-C-1	5	ON	288	56	40	246	12
3-C-2	6	ON	348	78	46	380	12
3-D-1	7	ON	339	58	45	263	0
3-D-2	8	ON	363	98	45	527	4
3-E-1	9	ON	273	58	43	292	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	42	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	253	45	40	174	0
3-G-2	14	ON	296	48	42	182	4
3-H-1	15	ON	311	46	37	182	0
3-H-2	16	ON	226	30	37	95	0

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UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-[illegible]	1	52	48	45	4	4	20
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	43	4	4	20
3-B-2	4	50	47	44	4	4	28
3-C-1	5	48	47	43	2	2	24
3-C-2	6	48	47	46	2	2	28
3-D-1	7	46	46	45	2	2	0
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	12
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 25, 1999 12:45

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 25, 1999 12:45

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

ENTER M FOR MENU AUG. 25, 1999 12:45

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 206

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UNIT #3

*** CONSOLE STATUS ***

Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	337	42	46	214	0
3-A-2	2	OFF	0	0	0	0	0
3-B-1	3	ON	361	71	46	355	4
3-B-2	4	ON	350	60	46	320	20
3-C-1	5	ON	277	52	39	228	24
3-C-2	6	ON	330	69	43	316	16
3-D-1	7	ON	307	47	42	199	28
3-D-2	8	ON	369	99	45	539	8
3-E-1	9	ON	285	58	43	292	4
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	236	28	41	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	247	44	40	174	0
3-G-2	14	ON	296	48	42	174	0
3-H-1	15	ON	307	45	37	174	0
3-H-2	16	ON	226	30	37	95	0

AUG. 25, 1999 13:00

- ENTER M FOR MENU

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3- 1	1	52	48	47	4	4	24
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	45	4	4	20
3-B-2	4	50	47	46	4	4	24
3-C-1	5	48	47	44	2	2	20
3-C-2	6	48	47	36	2	2	40
3-D-1	7	46	46	45	2	2	20
3-D-2	8	46	46	44	2	2	8
3-E-1	9	44	44	43	1	1	4
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	4
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 25, 1999 13:00

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 25, 1999 13:01

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 25, 1999 13:01

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 204

AUG. 25, 1999 13:02

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UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-H-1	1	ON	318	34	45	164	24
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	318	49	43	222	32
3-B-2	4	ON	354	57	47	312	8
3-C-1	5	ON	298	64	42	287	20
3-C-2	6	ON	305	58	41	257	32
3-D-1	7	ON	343	59	45	263	12
3-D-2	8	ON	367	99	45	539	12
3-E-1	9	ON	283	59	43	304	8
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	232	28	42	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	255	45	40	174	0
3-G-2	14	ON	301	48	42	182	0
3-H-1	15	ON	311	46	37	174	0
3-H-2	16	ON	226	30	37	95	0

ENTER M FOR MENU AUG. 25, 1999 13:31

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3 1	1	52	48	47	4	4	36
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	45	4	4	20
3-B-2	4	50	47	46	4	4	20
3-C-1	5	48	47	42	2	2	32
3-C-2	6	48	47	45	2	2	28
3-D-1	7	46	46	44	2	2	20
3-D-2	8	46	46	45	2	2	12
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 25, 1999 13:32

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 25, 1999 13:32

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T_ _R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 25, 1999 13:33

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY

# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 198

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UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 -1	1	ON	341	44	47	222	36
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	318	51	42	230	20
3-B-2	4	ON	345	60	45	320	28
3-C-1	5	ON	277	60	41	263	32
3-C-2	6	ON	245	37	35	140	32
3-D-1	7	ON	279	37	40	146	28
3-D-2	8	ON	361	100	45	544	4
3-E-1	9	ON	281	59	43	298	4
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	236	28	42	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	245	44	40	174	0
3-G-2	14	ON	298	48	42	182	0
3-H-1	15	ON	320	46	37	182	0
3-H-2	16	ON	217	30	37	95	0

ENTER M FOR MENU AUG. 25, 1999 13:44

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	47	4	4	28
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	45	4	4	32
3-B-2	4	50	47	45	4	4	16
3-C-1	5	48	47	42	2	2	24
3-C-2	6	48	47	42	2	2	24
3-D-1	7	46	46	42	2	2	20
3-D-2	8	46	46	43	2	2	16
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

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UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

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AUG. 25, 1999 13:45

JNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T..R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

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JNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS :NORMAL
PRESENT OPACITY : 0%
OPACITY SETPOINT : 4% (4%)
BACKDOWN CONFIGURATION MODE : #2R
OPERATION MODE :RELEASED MANUALLY

OF DIGICONS BACKED DOWN : 0

COMM. FAILURE, DIGICON(S) : 2 10 12

MANUAL DISABLE, DIGICON(S) :NONE
TOTAL PRECIP. POWER, KVA : 194

ENTER M FOR MENU AUG. 25, 1999 13:46

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
[illegible]	1	ON	279	25	42	105	20
3-[illegible] 2	2	OFF	0	0	0	0	0
3-B-1	3	ON	330	52	44	238	32
3-B-2	4	ON	326	46	44	222	56
3-C-1	5	ON	301	69	43	328	28
3-C-2	6	ON	345	73	45	345	16
3-D-1	7	ON	328	55	44	240	8
3-D-2	8	ON	333	83	42	427	0
3-E-1	9	ON	279	59	43	298	4
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	42	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	253	45	40	174	0
3-G-2	14	ON	301	48	42	182	0
3-H-1	15	ON	307	46	37	182	0
3-H-2	16	ON	228	30	37	95	0

ENTER M FOR MENU AUG. 25, 1999 14:00

Opacity: 0%

UNIT #3

** DIGICON SWITCH STATUS **

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	47	4	4	36
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	46	4	4	16
3-B-2	4	50	47	42	4	4	32
3-C-1	5	48	47	41	2	2	32
3-C-2	6	48	47	45	2	2	20
3-D-1	7	46	46	45	2	2	8
3-D-2	8	46	46	45	2	2	32
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

AUG. 25, 1999 14:00

ENTER M FOR MENU

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 25, 1999 14:00

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

AUG. 25, 1999 14:01

ENTER M FOR MENU

INIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

MISSOMETER STATUS	:NORMAL
RESENT OPACITY	: 0%
PACITY SETPOINT	: 4% (4%)
ACKDOWN CONFIGURATION MODE	: #2R
PERATION MODE	:RELEASED MANUALLY
OF DIGICONS BACKED DOWN	: 0
OMM. FAILURE, DIGICON(S)	: 2 10 12
ANUAL DISABLE, DIGICON(S)	:NONE
OTAL PRECIP. POWER, KVA	: 208

NTER M FOR MENU AUG. 25, 1999 14:01

Opacity: 0%

UNIT #3

*** CONSOLE STATUS ***

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	322	38	45	183	20
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	356	64	45	316	32
3-B-2	4	ON	348	61	46	328	16
3-C-1	5	ON	346	86	46	427	24
3-C-2	6	ON	361	83	46	404	0
3-D-1	7	ON	345	59	45	263	4
3-D-2	8	ON	371	101	45	544	4
3-E-1	9	ON	283	59	43	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	232	28	42	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	253	44	40	166	0
3-G-2	14	ON	301	48	42	174	4
3-H-1	15	ON	318	45	37	174	0
3-H-2	16	ON	217	30	37	95	0

AUG. 25, 1999 14:14

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UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-..-1	1	52	48	46	4	4	8
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	41	4	4	4
3-B-2	4	50	47	43	4	4	20
3-C-1	5	48	47	46	2	2	12
3-C-2	6	48	47	46	2	2	0
3-D-1	7	46	46	45	2	2	0
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	4
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	41	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 25, 1999 14:15

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU

AUG. 25, 1999 14:15

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 25, 1999 14:15

JNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TR. .SMISSOMETER STATUS :NORMAL
PRESENT OPACITY : 0%
OPACITY SETPOINT : 4% (4%)
BACKDOWN CONFIGURATION MODE : #2R
OPERATION MODE :RELEASED MANUALLY

OF DIGICONS BACKED DOWN : 0

COMM. FAILURE, DIGICON(S) : 2 10 12

MANUAL DISABLE, DIGICON(S) :NONE
TOTAL PRECIP. POWER, KVA : 205

ENTER M FOR MENU AUG. 25, 1999 14:16

UNIT #3

*** CONSOLE STATUS ***

Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	330	39	46	191	8
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	333	55	43	253	48
3-B-2	4	ON	281	33	40	144	28
3-C-1	5	ON	320	73	43	351	20
3-C-2	6	ON	350	76	46	375	8
3-D-1	7	ON	341	59	45	275	8
3-D-2	8	ON	371	102	45	562	0
3-E-1	9	ON	286	59	43	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	228	26	41	87	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	251	44	40	174	0
3-G-2	14	ON	301	49	42	190	0
3-H-1	15	ON	307	46	37	182	0
3-H-2	16	ON	221	29	37	95	0

AUG. 25, 1999 14:34

ENTER M FOR MENU

JNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3	1	52	48	46	4	4	28
3	2	---	0	0	0	0	0
3-B-1	3	50	47	43	4	4	16
3-B-2	4	50	47	40	4	4	32
3-C-1	5	48	47	45	2	2	28
3-C-2	6	48	47	46	2	2	0
3-D-1	7	46	46	45	2	2	4
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

NTER M FOR MENU AUG. 25, 1999 14:34

UNIT #3 Opacity: 0%

** RAPPER STATUS **

UNIT #3

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

AUG. 25, 1999 14:35

ENTER M FOR MENU

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

AUG. 25, 1999 14:35

ENTER M FOR MENU

Opacity: 0%

UNIT #3

* ENERGY-SAVINGS STATUS *

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 208

AUG. 25, 1999 14:35

ENTER M FOR MENU

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 1	1	ON	326	41	45	207	24
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	168	9	30	23	24
3-B-2	4	ON	341	53	45	277	16
3-C-1	5	ON	296	57	41	251	28
3-C-2	6	ON	330	67	43	310	4
3-D-1	7	ON	341	58	45	257	0
3-D-2	8	ON	369	101	45	556	0
3-E-1	9	ON	275	59	43	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	41	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	253	45	40	174	0
3-G-2	14	ON	303	49	42	182	0
3-H-1	15	ON	318	46	37	182	0
3-H-2	16	ON	228	30	37	95	0

ENTER M FOR MENU AUG. 25, 1999 14:46

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	46	4	4	28
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	41	4	4	60
3-B-2	4	50	47	45	4	4	20
3-C-1	5	48	47	45	2	2	20
3-C-2	6	48	47	44	2	2	16
3-D-1	7	46	46	45	2	2	4
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	42	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 25, 1999 14:46

Opacity: 0%

UNIT #3

*** CONSOLE STATUS ***

CONSOLE	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	331	42	46	210	12
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	367	73	46	375	4
3-B-2	4	ON	341	53	45	277	12
3-C-1	5	ON	330	79	44	386	20
3-C-2	6	ON	361	83	46	410	8
3-D-1	7	ON	348	61	45	275	0
3-D-2	8	ON	371	102	45	556	0
3-E-1	9	ON	281	58	43	298	4
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	42	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	251	44	40	174	0
3-G-2	14	ON	300	48	42	182	0
3-H-1	15	ON	316	46	37	182	0
3-H-2	16	ON	221	30	37	103	0

AUG. 25, 1999 14:47

ENTER M FOR MENU

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: Ø%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 25, 1999 14:47

Opacity: 0%

UNIT #3

* ENERGY-SAVINGS STATUS *

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 212

AUG. 25, 1999 14:48

ENTER M FOR MENU

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	292	29	43	136	24
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	262	30	38	117	28
3-B-2	4	ON	286	39	40	187	20
3-C-1	5	ON	339	82	45	398	4
3-C-2	6	ON	298	57	41	251	8
3-D-1	7	ON	341	59	45	269	8
3-D-2	8	ON	371	101	45	556	0
3-E-1	9	ON	266	53	42	257	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	230	26	41	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	253	44	40	174	0
3-G-2	14	ON	303	48	42	182	0
3-H-1	15	ON	318	46	37	174	0
3-H-2	16	ON	228	30	37	103	0

ENTER M FOR MENU AUG. 25, 1999 15:14

Opacity: 0%

UNIT #3

** DIGICON SWITCH STATUS **

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	44	4	4	28
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	44	4	4	52
3-B-2	4	50	47	39	4	4	28
3-C-1	5	48	47	42	2	2	36
3-C-2	6	48	47	35	2	2	32
3-D-1	7	46	46	45	2	2	16
3-D-2	8	46	46	45	2	2	4
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	4
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

AUG. 25, 1999 15:14

ENTER M FOR MENU

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

AUG. 24, 1999 14:06

ENTER M FOR MENU

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 217

AUG. 24, 1999 14:06

ENTER M FOR MENU

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-...-1	1	ON	285	29	42	128	36
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	204	17	33	54	24
3-B-2	4	ON	358	61	47	335	32
3-C-1	5	ON	277	57	41	246	32
3-C-2	6	ON	271	45	38	181	24
3-D-1	7	ON	328	54	44	234	16
3-D-2	8	ON	358	95	44	503	32
3-E-1	9	ON	277	56	43	281	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	238	28	42	95	0
3-F-2	12	ON	339	100	41	500	0
3-G-1	13	ON	255	48	40	190	4
3-G-2	14	ON	303	49	42	190	4
3-H-1	15	ON	315	48	37	190	0
3-H-2	16	ON	230	33	37	111	0

ENTER M FOR MENU AUG. 24, 1999 14:20

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	52	43	4	4	32
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	32	4	4	32
3-B-2	4	50	50	40	4	4	28
3-C-1	5	48	48	37	2	2	32
3-C-2	6	48	48	36	2	2	32
3-D-1	7	46	46	37	2	2	24
3-D-2	8	46	46	42	2	2	8
3-E-1	9	44	44	43	1	1	12
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 14:21

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 14:21

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 14:21

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 226

ENTER M FOR MENU AUG. 24, 1999 14:22

UNIT #3

*** CONSOLE STATUS ***

Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	301	33	43	152	40
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	249	27	36	101	32
3-B-2	4	ON	307	45	42	218	36
3-C-1	5	ON	316	69	43	322	24
3-C-2	6	ON	371	86	47	433	16
3-D-1	7	ON	341	59	45	269	4
3-D-2	8	ON	369	100	45	550	0
3-E-1	9	ON	277	59	43	304	8
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	41	95	0
3-F-2	12	ON	335	100	41	508	0
3-G-1	13	ON	253	46	40	182	0
3-G-2	14	ON	301	49	42	190	4
3-H-1	15	ON	320	48	37	190	0
3-H-2	16	ON	221	32	37	111	0

AUG. 24, 1999 14:37

ENTER M FOR MENU

JNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
)- 1	1	52	52	43	4	4	24
)- 2	2	---	0	0	0	0	0
)-B-1	3	50	50	41	4	4	40
)-B-2	4	50	50	39	4	4	20
)-C-1	5	48	48	47	2	2	20
)-C-2	6	48	48	47	2	2	12
)-D-1	7	46	46	45	2	2	0
)-D-2	8	46	46	45	2	2	4
)-E-1	9	44	44	43	1	1	0
)-E-2	10	---	0	0	0	0	0
)-F-1	11	42	42	42	1	1	0
)-F-2	12	42	42	41	1	1	0
)-G-1	13	40	40	40	1	1	0
)-G-2	14	43	43	42	1	1	0
)-H-1	15	38	38	37	1	1	0
)-H-2	16	38	38	37	1	1	0

:NTER M FOR MENU AUG. 24, 1999 14:38

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU

AUG. 24, 1999 14:38

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

1 R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 14:38

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 239

ENTER M FOR MENU AUG. 24, 1999 14:39

JNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3- 1	1	ON	309	33	44	156	28
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	296	43	40	187	40
3-B-2	4	ON	315	47	43	234	48
3-C-1	5	ON	285	62	41	281	24
3-C-2	6	ON	262	43	37	169	24
3-D-1	7	ON	316	51	43	210	24
3-D-2	8	ON	346	90	43	474	20
3-E-1	9	ON	285	60	43	310	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	236	28	42	95	0
3-F-2	12	ON	337	100	41	508	0
3-G-1	13	ON	249	48	40	190	0
3-G-2	14	ON	301	50	42	190	0
3-H-1	15	ON	311	49	37	190	0
3-H-2	16	ON	230	33	37	111	0

ENTER M FOR MENU AUG. 24, 1999 14:53

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	52	41	4	4	32
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	42	4	4	24
3-B-2	4	50	50	43	4	4	16
3-C-1	5	48	48	40	2	2	24
3-C-2	6	48	48	40	2	2	24
3-D-1	7	46	46	45	2	2	12
3-D-2	8	46	46	45	2	2	4
3-E-1	9	44	44	43	1	1	12
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	4
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

AUG. 24, 1999 14:53

ENTER M FOR MENU

JNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

'PER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 14:54

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

AUG. 24, 1999 14:54

ENTER M FOR MENU

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 235

ENTER M FOR MENU AUG. 24, 1999 14:54

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY

# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 204

ENTER M FOR MENU AUG. 24, 1999 15:07

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 15:06

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 15:06

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3- 1	1	52	52	41	4	4	28
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	39	4	4	40
3-B-2	4	50	50	45	4	4	44
3-C-1	5	48	48	37	2	2	24
3-C-2	6	48	48	31	2	2	52
3-D-1	7	46	46	39	2	2	20
3-D-2	8	46	46	38	2	2	40
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 15:06

JNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 1	1	ON	298	31	44	144	40
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	324	49	43	222	28
3-B-2	4	ON	352	58	46	308	40
3-C-1	5	ON	281	54	40	234	28
3-C-2	6	ON	241	36	35	134	36
3-D-1	7	ON	283	38	40	152	20
3-D-2	8	ON	339	87	42	445	24
3-E-1	9	ON	283	60	43	304	4
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	41	95	0
3-F-2	12	ON	339	100	41	515	0
3-G-1	13	ON	249	46	40	190	0
3-G-2	14	ON	305	50	42	190	0
3-H-1	15	ON	313	49	37	198	0
3-H-2	16	ON	221	32	37	111	0

ENTER M FOR MENU AUG. 24, 1999 15:05

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-.. 1	1	ON	300	31	44	144	28
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	275	35	39	144	28
3-B-2	4	ON	390	73	49	429	12
3-C-1	5	ON	341	82	45	404	24
3-C-2	6	ON	354	81	46	398	16
3-D-1	7	ON	341	59	45	269	20
3-D-2	8	ON	367	100	45	544	0
3-E-1	9	ON	281	59	43	298	4
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	41	95	0
3-F-2	12	ON	339	100	42	508	0
3-G-1	13	ON	255	46	40	182	0
3-G-2	14	ON	301	49	42	182	0
3-H-1	15	ON	309	46	37	182	0
3-H-2	16	ON	223	32	37	103	0

ENTER M FOR MENU AUG. 24, 1999 15:20

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	52	39	4	4	28
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	35	4	4	44
3-B-2	4	50	50	49	4	4	44
3-C-1	5	48	48	40	2	2	36
3-C-2	6	48	48	45	2	2	24
3-D-1	7	46	46	42	2	2	8
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	4
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	42	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 15:20

JNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

PER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 15:20

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T. R # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

ENTER M FOR MENU AUG. 24, 1999 15:21

JNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS :NORMAL
PRESENT OPACITY : 0%
OPACITY SETPOINT : 4% (4%)
BACKDOWN CONFIGURATION MODE : #2R
OPERATION MODE :RELEASED MANUALLY

OF DIGICONS BACKED DOWN : 0

COMM. FAILURE, DIGICON(S) : 2 10

MANUAL DISABLE, DIGICON(S) :NONE
TOTAL PRECIP. POWER, KVA : 208

ENTER M FOR MENU AUG. 24, 1999 15:21

JNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

'RANSMISSOMETER STATUS	:NORMAL
'RESENT OPACITY	: 0%
)PACITY SETPOINT	: 4% (4%)
ACKDOWN CONFIGURATION MODE	: #2R
)PERATION MODE	:RELEASED MANUALLY
OF DIGICONS BACKED DOWN	: 0
OMM. FAILURE, DIGICON(S)	: 2 10
ANUAL DISABLE, DIGICON(S)	:NONE
OTAL PRECIP. POWER, KVA	: 259

NTER M FOR MENU AUG. 24, 1999 15:36

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

1. R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 15:36

JNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

PER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 15:35

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-..-1	1	52	52	48	4	4	28
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	41	4	4	24
3-B-2	4	50	50	47	4	4	24
3-C-1	5	48	48	47	2	2	16
3-C-2	6	48	48	47	2	2	24
3-D-1	7	46	46	45	2	2	0
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 15:35

JNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3	1	ON	330	41	45	207	24
3-H-2	2	3	0	0	0	0	0
3-B-1	3	ON	318	51	42	230	28
3-B-2	4	ON	324	49	44	238	32
3-C-1	5	ON	333	79	44	375	36
3-C-2	6	ON	346	76	45	369	12
3-D-1	7	ON	345	59	45	269	20
3-D-2	8	ON	367	98	45	544	8
3-E-1	9	ON	275	59	43	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	228	26	41	87	0
3-F-2	12	ON	337	97	41	500	0
3-G-1	13	ON	255	46	40	182	0
3-G-2	14	ON	296	48	42	182	0
3-H-1	15	ON	318	48	37	190	0
3-H-2	16	ON	221	32	37	103	0

ENTER M FOR MENU AUG. 24, 1999 15:34

JNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3	1	ON	309	35	44	167	32
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	356	65	45	312	32
3-B-2	4	ON	384	70	49	406	32
3-C-1	5	ON	354	95	47	486	24
3-C-2	6	ON	373	86	47	427	8
3-D-1	7	ON	341	59	45	269	8
3-D-2	8	ON	369	98	45	533	0
3-E-1	9	ON	285	59	43	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	230	26	41	87	0
3-F-2	12	ON	335	97	41	492	0
3-G-1	13	ON	253	45	40	174	0
3-G-2	14	ON	296	48	42	182	0
3-H-1	15	ON	305	46	37	182	0
3-H-2	16	ON	219	30	37	103	0

NTER M FOR MENU AUG. 24, 1999 15:50

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	52	48	4	4	28
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	47	4	4	24
3-B-2	4	50	50	47	4	4	48
3-C-1	5	48	48	43	2	2	24
3-C-2	6	48	48	43	2	2	36
3-D-1	7	46	46	37	2	2	36
3-D-2	8	46	46	44	2	2	20
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 15:51

JNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

PER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

NTER M FOR MENU AUG. 24, 1999 15:51

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T[illegible]R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 15:51

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 257

ENTER M FOR MENU AUG. 24, 1999 15:51

JNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

'RAnSMISSOMETER STATUS	:NORMAL
'RESENT OPACITY	: 0%
)PACITY SETPOINT	: 4% (4%)
ACKDOWN CONFIGURATION MODE	: #2R
)PERATION MODE	:RELEASED MANUALLY
OF DIGICONS BACKED DOWN	: 0
:OMM. FAILURE, DIGICON(S)	: 2 10
ANUAL DISABLE, DIGICON(S)	:NONE
OTAL PRECIP. POWER, KVA	: 226

NTER M FOR MENU AUG. 24, 1999 16:11

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 16:11

JNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

'PER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 16:10

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 16:10

JNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3	1	52	52	46	4	4	24
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	42	4	4	28
3-B-2	4	50	50	50	4	4	16
3-C-1	5	48	48	38	2	2	28
3-C-2	6	48	48	44	2	2	20
3-D-1	7	46	46	40	2	2	8
3-D-2	8	46	46	43	2	2	20
3-E-1	9	44	44	44	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 16:10

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 1	1	ON	315	37	45	179	44
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	337	57	44	273	48
3-B-2	4	ON	313	44	43	214	24
3-C-1	5	ON	348	94	47	474	12
3-C-2	6	ON	324	65	43	298	32
3-D-1	7	ON	346	59	45	269	0
3-D-2	8	ON	369	98	45	533	12
3-E-1	9	ON	275	59	43	304	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	232	28	42	95	0
3-F-2	12	ON	331	97	41	492	0
3-G-1	13	ON	255	46	40	182	0
3-G-2	14	ON	301	49	42	182	0
3-H-1	15	ON	316	46	37	182	0
3-H-2	16	ON	228	32	37	103	0

ENTER M FOR MENU AUG. 24, 1999 16:09

JNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 .	1	ON	303	34	44	164	44
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	292	39	40	160	56
3-B-2	4	ON	348	55	46	285	32
3-C-1	5	ON	298	61	41	275	16
3-C-2	6	ON	346	73	45	339	32
3-D-1	7	ON	298	42	41	169	4
3-D-2	8	ON	369	98	45	539	8
3-E-1	9	ON	285	60	44	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	26	41	87	0
3-F-2	12	ON	335	98	41	508	0
3-G-1	13	ON	255	45	40	182	0
3-G-2	14	ON	303	49	42	182	0
3-H-1	15	ON	318	48	37	182	0
3-H-2	16	ON	230	32	37	103	0

ENTER M FOR MENU AUG. 24, 1999 16:19

JNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3	1	52	52	41	4	4	40
3-H-2	2	---	0	0	0	0	0
3-B-1	3	50	50	40	4	4	20
3-B-2	4	50	50	44	4	4	32
3-C-1	5	48	48	40	2	2	44
3-C-2	6	48	48	36	2	2	40
3-D-1	7	46	46	40	2	2	28
3-D-2	8	46	46	45	2	2	16
3-E-1	9	44	44	43	1	1	4
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 16:19

JNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

·PER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 16:19

JNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T. . # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 16:20

INIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

RANSMISSOMETER STATUS	:NORMAL
RESENT OPACITY	: 0%
PACITY SETPOINT	: 4% (4%)
ACKDOWN CONFIGURATION MODE	: #2R
PERATION MODE	:RELEASED MANUALLY
OF DIGICONS BACKED DOWN	: 0
OMM. FAILURE, DIGICON(S)	: 2 10
ANUAL DISABLE, DIGICON(S)	:NONE
OTAL PRECIP. POWER, KVA	: 221

NTER M FOR MENU AUG. 24, 1999 16:20

JNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3	1	ON	352	50	47	257	36
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	330	55	43	253	32
3-B-2	4	ON	382	71	48	410	40
3-C-1	5	ON	307	68	42	310	24
3-C-2	6	ON	365	86	47	433	28
3-D-1	7	ON	345	59	45	263	4
3-D-2	8	ON	365	98	45	544	8
3-E-1	9	ON	241	43	40	199	4
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	26	41	87	0
3-F-2	12	ON	330	93	41	468	0
3-G-1	13	ON	251	45	40	174	0
3-G-2	14	ON	301	48	42	182	0
3-H-1	15	ON	309	46	37	182	0
3-H-2	16	ON	230	32	37	103	0

ENTER M FOR MENU AUG. 24, 1999 16:36

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
1	1	52	52	43	4	4	36
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	43	4	4	36
3-B-2	4	50	50	45	4	4	32
3-C-1	5	48	48	40	2	2	20
3-C-2	6	48	48	45	2	2	0
3-D-1	7	46	46	41	2	2	0
3-D-2	8	46	46	45	2	2	4
3-E-1	9	44	44	43	1	1	12
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 16:36

UNIT #3

** RAPPER STATUS **

UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

AUG. 25, 1999 15:15

ENTER M FOR MENU

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

AUG. 25, 1999 15:15

ENTER M FOR MENU

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 181

ENTER M FOR MENU AUG. 25, 1999 15:15

Opacity: 0%

UNIT #3

*** CONSOLE STATUS ***

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	333	39	47	191	20
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	333	55	43	253	24
3-B-2	4	ON	313	46	42	226	24
3-C-1	5	ON	318	72	43	345	20
3-C-2	6	ON	294	54	40	234	20
3-D-1	7	ON	339	58	45	263	24
3-D-2	8	ON	356	94	43	486	28
3-E-1	9	ON	275	59	43	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	238	28	41	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	241	44	40	174	0
3-G-2	14	ON	300	48	42	174	0
3-H-1	15	ON	309	46	37	182	0
3-H-2	16	ON	226	29	37	95	0

AUG. 25, 1999 08:33

ENTER M FOR MENU

Opacity: 0%

UNIT #3

** DIGICON SWITCH STATUS **

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	47	4	4	20
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	46	4	4	28
3-B-2	4	50	47	41	4	4	32
3-C-1	5	48	47	42	2	2	28
3-C-2	6	48	47	41	2	2	24
3-D-1	7	46	46	43	2	2	20
3-D-2	8	46	46	45	2	2	8
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

AUG. 25, 1999 08:34

ENTER M FOR MENU

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

AUG. 25, 1999 08:34

ENTER M FOR MENU

JNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T[illegible]R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 25, 1999 08:34

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 208

ENTER M FOR MENU AUG. 25, 1999 08:34

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
[illegible]-1	1	ON	328	37	47	175	28
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	324	51	43	226	32
3-B-2	4	ON	354	62	46	332	4
3-C-1	5	ON	288	58	41	251	28
3-C-2	6	ON	266	44	37	181	28
3-D-1	7	ON	305	45	42	181	0
3-D-2	8	ON	369	100	45	550	0
3-E-1	9	ON	283	59	43	304	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	41	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	251	44	40	166	0
3-G-2	14	ON	296	46	42	174	0
3-H-1	15	ON	318	45	37	182	0
3-H-2	16	ON	215	29	37	95	0

ENTER M FOR MENU AUG. 25, 1999 08:45

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3 1	1	52	48	44	4	4	24
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	40	4	4	36
3-B-2	4	50	47	45	4	4	4
3-C-1	5	48	47	46	2	2	20
3-C-2	6	48	47	35	2	2	20
3-D-1	7	46	46	44	2	2	12
3-D-2	8	46	46	45	2	2	12
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 25, 1999 08:45

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

OPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 25, 1999 08:46

JNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: Ø%

T R # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

ENTER M FOR MENU AUG. 25, 1999 Ø8:46

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 164

ENTER M FOR MENU AUG. 25, 1999 08:46

Opacity: 0%

UNIT #3

*** CONSOLE STATUS ***

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	320	33	46	160	20
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	253	27	37	101	52
3-B-2	4	ON	354	61	46	324	0
3-C-1	5	ON	279	52	40	222	36
3-C-2	6	ON	313	63	41	281	32
3-D-1	7	ON	273	36	40	140	12
3-D-2	8	ON	247	48	34	205	4
3-E-1	9	ON	277	59	43	298	8
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	41	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	253	44	40	174	0
3-G-2	14	ON	296	48	42	182	0
3-H-1	15	ON	315	46	37	174	0
3-H-2	16	ON	226	29	37	95	0

AUG. 25, 1999 08:59

ENTER M FOR MENU

UNIT #3

** DIGICON SWITCH STATUS **

Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	46	4	4	24
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	36	4	4	16
3-B-2	4	50	47	46	4	4	16
3-C-1	5	48	47	39	2	2	16
3-C-2	6	48	47	45	2	2	28
3-D-1	7	46	46	35	2	2	28
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

AUG. 25, 1999 08:59

ENTER M FOR MENU

UNIT #3

** RAPPER STATUS **

UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

AUG. 25, 1999 09:00

ENTER M FOR MENU

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

AUG. 25, 1999 09:00

ENTER M FOR MENU

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 216

ENTER M FOR MENU AUG. 25, 1999 09:00

UNIT #3

*** CONSOLE STATUS ***

Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	305	33	45	152	28
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	326	51	44	230	24
3-B-2	4	ON	286	36	41	164	36
3-C-1	5	ON	343	82	46	404	28
3-C-2	6	ON	345	74	46	345	4
3-D-1	7	ON	345	58	45	257	0
3-D-2	8	ON	365	98	45	539	0
3-E-1	9	ON	283	58	43	298	8
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	236	28	42	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	240	37	38	134	0
3-G-2	14	ON	300	46	42	174	0
3-H-1	15	ON	309	45	37	174	0
3-H-2	16	ON	226	29	37	87	0

AUG. 25, 1999 09:15

ENTER M FOR MENU

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	46	4	4	28
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	44	4	4	32
3-B-2	4	50	47	45	4	4	32
3-C-1	5	48	47	45	2	2	12
3-C-2	6	48	47	46	2	2	12
3-D-1	7	46	46	45	2	2	0
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	4
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

AUG. 25, 1999 09:15

ENTER M FOR MENU

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 25, 1999 09:15

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS
TIMER # 2	* 1
TIMER # 3	NO FAULTS
TIMER # 4	NO FAULTS
TIMER # 5	NO FAULTS
TIMER # 6	* 1
TIMER # 7	NO FAULTS
TIMER # 8	NO FAULTS

ENTER M FOR MENU AUG. 25, 1999 09:16

JNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
[illegible]	1	ON	337	39	47	187	24
[illegible]	2	2	0	0	0	0	0
[illegible]-B-1	3	ON	363	66	46	324	20
[illegible]-B-2	4	ON	339	49	46	242	16
[illegible]-C-1	5	ON	335	80	45	386	20
[illegible]-C-2	6	ON	360	80	46	380	4
[illegible]-D-1	7	ON	339	58	45	263	0
[illegible]-D-2	8	ON	365	99	45	539	0
[illegible]-E-1	9	ON	283	58	43	292	0
[illegible]-E-2	10	OFF	0	0	0	0	0
[illegible]-F-1	11	ON	234	28	41	95	0
[illegible]-F-2	12	OFF	0	0	0	0	0
[illegible]-G-1	13	ON	251	44	40	166	0
[illegible]-G-2	14	ON	300	46	42	174	8
[illegible]-H-1	15	ON	307	45	37	174	0
[illegible]-H-2	16	ON	226	29	37	95	0

NTER M FOR MENU AUG. 25, 1999 09:16

JNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

T.. .SMISSOMETER STATUS :NORMAL
PRESENT OPACITY : 0%
OPACITY SETPOINT : 4% (4%)
BACKDOWN CONFIGURATION MODE : #2R
OPERATION MODE :RELEASED MANUALLY

OF DIGICONS BACKED DOWN : 0

COMM. FAILURE, DIGICON(S) : 2 10 12

MANUAL DISABLE, DIGICON(S) :NONE
TOTAL PRECIP. POWER, KVA : 214

ENTER M FOR MENU AUG. 25, 1999 09:16

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3- 1	1	ON	320	36	45	167	20
3-H-2	2	3	0	0	0	0	0
3-B-1	3	ON	360	65	46	320	28
3-B-2	4	ON	292	41	40	191	28
3-C-1	5	ON	311	68	43	316	20
3-C-2	6	ON	360	80	46	398	28
3-D-1	7	ON	345	58	45	263	8
3-D-2	8	ON	367	98	45	539	4
3-E-1	9	ON	283	59	43	304	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	240	28	41	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	249	42	40	166	0
3-G-2	14	ON	300	46	42	174	0
3-H-1	15	ON	309	45	37	174	0
3-H-2	16	ON	225	29	37	87	0

ENTER M FOR MENU AUG. 25, 1999 09:33

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	45	4	4	36
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	45	4	4	32
3-B-2	4	50	47	45	4	4	32
3-C-1	5	48	47	42	2	2	24
3-C-2	6	48	47	46	2	2	16
3-D-1	7	46	46	45	2	2	4
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 25, 1999 09:34

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

.PPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 25, 1999 09:34

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 25, 1999 09:34

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10 12
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 217

ENTER M FOR MENU AUG. 25, 1999 09:35

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3 1	1	ON	341	42	47	214	20
3-A-2	2	3	0	0	0	0	0
3-B-1	3	ON	296	42	41	175	28
3-B-2	4	ON	352	61	46	332	0
3-C-1	5	ON	275	51	39	216	28
3-C-2	6	ON	358	81	46	398	12
3-D-1	7	ON	328	53	44	234	4
3-D-2	8	ON	361	98	45	527	4
3-E-1	9	ON	281	58	43	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	232	26	41	87	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	255	45	40	182	0
3-G-2	14	ON	300	46	42	174	0
3-H-1	15	ON	309	45	37	174	0
3-H-2	16	ON	225	29	37	95	0

ENTER M FOR MENU AUG. 25, 1999 09:45

Opacity: 0%

UNIT #3

** DIGICON SWITCH STATUS **

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	47	4	4	16
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	45	4	4	28
3-B-2	4	50	47	46	4	4	24
3-C-1	5	48	47	43	2	2	28
3-C-2	6	48	47	46	2	2	12
3-D-1	7	46	46	45	2	2	12
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	4
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

AUG. 25, 1999 09:46

ENTER M FOR MENU

UNIT #3

** RAPPER STATUS **

UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

AUG. 25, 1999 09:46

ENTER M FOR MENU

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

AUG. 25, 1999 09:46

ENTER M FOR MENU

JNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS :NORMAL
PRESENT OPACITY : 0%
OPACITY SETPOINT : 4% (4%)
BACKDOWN CONFIGURATION MODE : #2R
OPERATION MODE :RELEASED MANUALLY

OF DIGICONS BACKED DOWN : 0

COMM. FAILURE, DIGICON(S) : 2 10 12

MANUAL DISABLE, DIGICON(S) :NONE
TOTAL PRECIP. POWER, KVA : 217

ENTER M FOR MENU AUG. 25, 1999 09:47

Opacity: 0%

UNIT #3

*** CONSOLE STATUS ***

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	326	38	46	179	36
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	264	33	38	132	16
3-B-2	4	ON	345	58	45	300	40
3-C-1	5	ON	324	79	45	386	28
3-C-2	6	ON	350	79	46	392	8
3-D-1	7	ON	337	57	45	257	8
3-D-2	8	ON	367	97	45	521	8
3-E-1	9	ON	285	59	43	298	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	234	28	42	95	0
3-F-2	12	OFF	0	0	0	0	0
3-G-1	13	ON	251	44	40	174	0
3-G-2	14	ON	298	46	42	174	0
3-H-1	15	ON	315	45	37	174	0
3-H-2	16	ON	228	29	37	95	0

AUG. 25, 1999 10:00

ENTER M FOR MENU

UNIT #3

** DIGICON SWITCH STATUS **

Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	48	46	4	4	20
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	47	45	4	4	12
3-B-2	4	50	47	40	4	4	20
3-C-1	5	48	47	45	2	2	20
3-C-2	6	48	47	41	2	2	20
3-D-1	7	46	46	45	2	2	0
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	---	0	0	0	0	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

AUG. 25, 1999 10:00

ENTER M FOR MENU

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

...APPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 25, 1999 10:00

JNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

PER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 16:37

UNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

T R # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 16:37

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY
# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 239

ENTER M FOR MENU AUG. 24, 1999 16:37

UNIT #3 * ENERGY-SAVINGS STATUS * Opacity: 0%

TRANSMISSOMETER STATUS	:NORMAL
PRESENT OPACITY	: 0%
OPACITY SETPOINT	: 4% (4%)
BACKDOWN CONFIGURATION MODE	: #2R
OPERATION MODE	:RELEASED MANUALLY

# OF DIGICONS BACKED DOWN	: 0
COMM. FAILURE, DIGICON(S)	: 2 10
MANUAL DISABLE, DIGICON(S)	:NONE
TOTAL PRECIP. POWER, KVA	: 233

ENTER M FOR MENU AUG. 24, 1999 16:50

JNIT #3 ** RAPPER FAULT SUMMARY ** UNIT #3 Opacity: 0%

TIMER # 1	NO FAULTS	
TIMER # 2	*	1
TIMER # 3	NO FAULTS	
TIMER # 4	NO FAULTS	
TIMER # 5	NO FAULTS	
TIMER # 6	*	1
TIMER # 7	NO FAULTS	
TIMER # 8	NO FAULTS	

ENTER M FOR MENU AUG. 24, 1999 16:50

UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

RAPPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

ENTER M FOR MENU AUG. 24, 1999 16:50

UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
[illegible] 1	1	52	52	44	4	4	32
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	43	4	4	40
3-B-2	4	50	50	45	4	4	44
3-C-1	5	48	48	39	2	2	32
3-C-2	6	48	48	46	2	2	12
3-D-1	7	46	46	45	2	2	16
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	41	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

ENTER M FOR MENU AUG. 24, 1999 16:49

UNIT #3 *** CONSOLE STATUS *** Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
[illegible] 1	1	ON	281	27	41	117	28
3-[illegible]-2	2	3	0	0	0	0	0
3-B-1	3	ON	324	49	43	222	24
3-B-2	4	ON	288	35	41	164	32
3-C-1	5	ON	343	86	46	421	32
3-C-2	6	ON	371	82	47	398	4
3-D-1	7	ON	343	59	45	275	0
3-D-2	8	ON	371	99	45	533	0
3-E-1	9	ON	283	59	43	304	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	232	26	42	87	0
3-F-2	12	ON	335	97	41	500	0
3-G-1	13	ON	253	45	40	182	0
3-G-2	14	ON	303	48	42	182	0
3-H-1	15	ON	318	48	37	182	0
3-H-2	16	ON	219	32	37	103	0

ENTER M FOR MENU AUG. 24, 1999 16:49

PG & E GENERATING
SALEM HARBOR STATION
26046-0030-00002

CONTROL ROOM DATA LOG

RUN No. 3

DATE	TIME	FURNACE DRAFT (in H2O)	FURNACE O2 % (wet)	WIND BOX (in H2O)	AIR HEATER IN deg F	AIR HEATER OUT deg F	FUEL TOTALIZER (TONS) 1	2	3	4
8/25/99	0830	-.6/-.2	5.0/5.0	4.3	110.3/104.5	545.0/570.9	458922	615761	704200	422684
	0845	-.6/-.2	4.5/5.0	4.4	110.3/104.7	543.9/569.8				
	0900	-.8/-.4	4.5/5.0	4.3	110.7/104.4	540.9/568.7				
	0915	-.7/-.3	4.5/5.0	4.4	111.5/105.3	540.8/565.3				
	0930	-.6/-.2	4.8/5.0	4.4	112.3/105.9	542.3/567.0				
	0945	-.6/-.2	4.6/5.0	4.4	113.0/106.8	543.7/568.1				
	1000	-.6/-.2	4.8/4.9	4.4	105.9/107.8	543.2/567.8				
	1015	-.6/-.2	4.8/4.3	4.3	106.4/108.1	543.5/568.4				
	1030	-.6/-.2	4.9/4.8	4.4	106.6/108.6	543.9/569.2				
	1045	-.6/-.2	5.0/4.7	4.4	107.4/107.1	544.2/569.7				
	1100	-.6/-.2	5.1/4.5	4.4	108.4/110.1	543.7/570.1				
END	1115	-.6/-.2	5.2/4.5	4.4	108.7/110.5	544.8/570.6	459598	616416	705132	423506

PG & E GENERATING
SALEM HARBOR STATION
26046-0030-00002

CONTROL ROOM DATA LOG 8.24.99

RUN No. 2

DATE	TIME	FURNACE DRAFT (in H2O)	FURNACE O2 % (wet)	WIND BOX (in H2O)	AIR HEATER IN deg F	AIR HEATER OUT deg F	FUEL TOTALIZER (TONS) 1	2	3	4
8/24/99	1405	-.5/-.1	6.2/5.2	4.4	116.0/110.7	548.7/579.9	454323	610806	697919	417439
	1420	-.5/-.1	6.0/5.5	4.4	116.0/110.6	543.9/577.6				
	1435	-.5/-.2	5.4/5.5	4.4	115.7/110.9	543.0/574.3				
	1450	-.6/-.1	5.6/5.2	4.4	115.0/109.9	542.2/573.0				
	1505	-.6/-.2	5.4/5.1	4.3	114.7/109.6	538.2/568.5				
	1520	-.6/-.3	5.1/5.1	4.3	113.8/108.8	539.8/566.8				
	1535	-.6/-.2	4.9/5.1	4.4	113.6/108.9	540.3/568.2				
	1550	-.6/-.2	4.9/5.5	4.4	113.5/108.5	539.8/569.1				
	1605	-.6/-.2	4.5/5.1	4.4	113.0/108.4	540.0/570.0				
	1620	-.6/-.3	5.0/5.1	4.4	113.1/108.2	540.3/570.6				
	1635	-.6/-.2	5.0/5.2	4.4	112.5/108.3	541.6/570.9				
END	1650	-.6/-.2	4.5/5.4	4.4	112.7/107.8	541.6/570.3	455068	611574	698902	418248
	~~1705~~									

UNIT #3

*** CONSOLE STATUS ***

Opacity: 0%

CONSOLE #	INDEX #	STATUS	EP VOLTS	IP AMPS	ES KV	IS MA	SR SPM
3-A-1	1	ON	288	27	43	125	32
3-A-2	2	2	0	0	0	0	0
3-B-1	3	ON	316	47	42	210	36
3-B-2	4	ON	380	70	48	398	36
3-C-1	5	ON	320	77	45	369	20
3-C-2	6	ON	247	38	35	146	16
3-D-1	7	ON	343	59	45	275	4
3-D-2	8	ON	363	100	44	544	16
3-E-1	9	ON	286	60	43	304	0
3-E-2	10	OFF	0	0	0	0	0
3-F-1	11	ON	236	28	41	95	0
3-F-2	12	ON	335	100	41	515	0
3-G-1	13	ON	253	46	40	182	0
3-G-2	14	ON	301	49	42	190	0
3-H-1	15	ON	309	48	37	190	0
3-H-2	16	ON	228	32	37	103	0

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UNIT #3 ** DIGICON SWITCH STATUS ** Opacity: 0%

CONSOLE #	INDEX #	ESLIM SW.	ESLIM IN USE	ES KV	SR SW.	SR IN USE	SR SPM
3-A-1	1	52	52	42	4	4	20
3-A-2	2	---	0	0	0	0	0
3-B-1	3	50	50	39	4	4	32
3-B-2	4	50	50	48	4	4	36
3-C-1	5	48	48	47	2	2	20
3-C-2	6	48	48	46	2	2	0
3-D-1	7	46	46	45	2	2	0
3-D-2	8	46	46	45	2	2	0
3-E-1	9	44	44	43	1	1	0
3-E-2	10	---	0	0	0	0	0
3-F-1	11	42	42	42	1	1	0
3-F-2	12	42	42	41	1	1	0
3-G-1	13	40	40	40	1	1	0
3-G-2	14	43	43	42	1	1	0
3-H-1	15	38	38	37	1	1	0
3-H-2	16	38	38	37	1	1	0

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UNIT #3 ** RAPPER STATUS ** UNIT #3 Opacity: 0%

CONTROL MODE: MANUAL

...PPER LOCATION	INDEX #	STATUS	OFF-TIME SWITCH	OFF-TIME IN USE	ON-TIME SWITCH	ON-TIME IN USE
RAPPER MTR 3-A-1	1	ON	5	5	23	23
RAPPER MTR 3-A-2	2	OPEN	5	5	23	23
RAPPER MTR 3-B-1	3	ON	16	16	23	23
RAPPER MTR 3-B-2	4	ON	16	16	23	23
RAPPER MTR 3-C-1	5	ON	22	22	23	23
RAPPER MTR 3-C-2	6	OPEN	22	22	23	23
RAPPER MTR 3-D-1	7	ON	39	39	23	23
RAPPER MTR 3-D-2	8	ON	39	39	23	23

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